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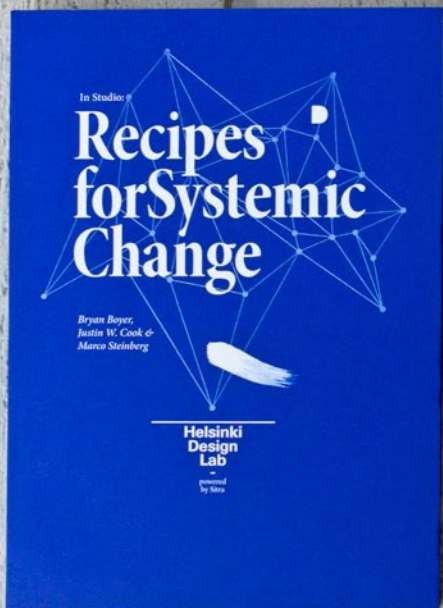
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Was it useful?

Was something missing?

In Studio:
Recipes forSystemic Change

*Bryan Boyer,
Justin W. Cook &
Marco Steinberg*

**Helsinki
Design
Lab
—
powered
by Sitra**

Are you working on the same challenges or in a similar way?

What's your recipe for change?

Let us know by writing to HDL@sitra.fi

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Ways Through This Book

Acknowledging that many of us read in different ways and most of us have less time for reading than we would like, the adjacent page offers a few suggestions for taking an abbreviated path through this book.

If you're reading this digitally you can click on a heading to jump to that page.

To navigate between sections more easily, click on the page number at the top of any page to jump back to the Table of Contents.

This is intended to be a hybrid between a philosophical operations manual and an operational philosophy. We hope it to be thought-provoking as well as useful, but most importantly we hope that this book will inspire you to share your own experiences with the emerging community of strategic designers and other related practitioners, such as those in the social innovation community, who are motivated to find their role in tackling large-scale challenges. This is our attempt to open-source the Helsinki Design Lab (HDL) Studio Model. We are continually developing this way of working at Sitra and if what you read here is useful in your own context we look forward to hearing about your adaptations.

When the term 'open source' is used to describe a piece of software it means that the programming that makes software function, the 'source code,' is available for anyone to read, learn from and re-use. If you are not a programmer, you might associate 'open source' with free, and that indeed is one very attractive aspect of most open source software. But 'open source' also means that the code can be shared, modified and developed in collaboration. This gives a boost to other programmers who are trying to accomplish something similar but want to learn from others who have already trodden a similar path.

In this book we're attempting to do something similar by opening up the 'source code' of the HDL Studio Model so that our work might also be useful to anyone else who is struggling with the same issues. The question we're trying to answer is how the design studio might be used to deliver strategic input on hard problems.

The findings enclosed here are accumulated from our experiences organising and hosting seven week-long studio sessions in 2010 and 2011, the Low2No Sustainable Design and Development Competition and stewardship of its ongoing realization as a concrete project, as well as many analogous experiences from our individual backgrounds in teaching, researching and working as architects.

If this book is useful to you, or should you have suggestions, amendments, alterations, or corrections, please join the conversation via Twitter @HDL2010 or on the web at www.helsinkidesignlab.org/instudio/. By working in an open manner we hope that tomorrow's mistakes will be new ones.

The last few years have brought growing worldwide interest in applying design methods and design thinking to social and public policy challenges. At their best these methods catalyse people to see issues and possibilities in a fresh way. They spark creativity and help us to spot the possible connections between things, which so often become obscured by the silos of daily life which dominate governments and businesses alike. The visualisation techniques which are second nature to designers can be particularly useful in enabling us to escape the constraints of prose and numbers which tend to dominate bureaucracies. Best of all the design mind often sees possibilities that are simply invisible to policy makers.

As a result this book is very timely. We're at a fascinating moment where design is influencing new fields. Its contribution is recognised as never before in areas like health, education, welfare or housing. But just as fascinating is the fact that designers are now acknowledging how much they have to learn, if their tools are to realise their full potential. An important field of innovation is itself undergoing rapid innovation.

The Helsinki Design Lab is one of the most interesting of a family of new hybrid models that are trying to synthesise the best of design with the best of public policy and problem solving. These models tend to draw on three sets of tools.

A first set help with understanding. Designers have adapted some of the methods of ethnography to see how the world looks and feels to the users of services, tools that were at times used in public services but more often forgotten. Under the banner of 'user led design' they've also taken some of the methods of social movements—like the disability rights movement—which have always involved people in need to shape new alternatives. Serious engagement with end users in this way invariably brings new insights to the surface, showing how apparently well-designed systems often fail to take account for the fine grain of daily life. Individual services may work well but the whole service journey does not, whether for a patient with a life threatening condition, or a pupil passing through schools and colleges.

*—A note from the authors:
Mentioning Alexander here is prescient, as he was one of the guests at Helsinki Design Lab Global 1968**, a conference that marked the beginning of Sitra's relationship with forward-thinking design practice. Also in attendance were Finnish design leaders such as Kaj Frank as well as international luminaries including Victor Papanek and Buckminster Fuller.

**Originally called "Teollisuus Ympäristö Tuotesuunnittelu"

The next set of tools is prototyping. This practice has spread far beyond its origins in preparing products for manufacture. Today we have not only rapid prototyping of things, using new tools such as 3D printers, but also a new generation of prototyping approaches that allow fast, collaborative creation of systems and services. With all of them comes the idea that the best way to learn is to do, and that rather than spending years perfecting a new service model or strategy the fastest way to improve it is to do it on a small scale, and for real. This has always been the way in some design practices, and architects such as Christopher Alexander* have long advocated this approach for buildings too—using mock-ups of structures to see whether they really do feel right. But these methods are fresh and radical in other settings, such as public services.

The third set of tools which are being creatively adapted come from systems mapping and thinking, which focuses attention to connections and causes. Systems thinking prompts us to ask the right question rather than taking questions at face value. What, for example, is the real problem of non-attendance at school? Is it a failure on the part of schools themselves, of families or of young people? Do the real causes lie in the fact that lessons are boring, or that popular culture devalues hard work?

Getting the questions sharply focused is the necessary condition for getting the answers right, and, in general, the more we can think systemically rather than in institutional and disciplinary silos the more likely it is that we will achieve results.

Sitra has applied design thinking in many fields, and helped make Finland one of the world's leaders in design thinking and practice. The Helsinki Design Lab Studio Model is a fascinating experiment that points the way forward. It uses a range of tools from design to achieve breakthroughs, first in thinking and then in action.

I like very much the principles it uses: one is a commitment to time. Many conferences feel dull and overlong but are actually too short to seriously think and consider complex problems. Too often they finish just when we're beginning to see things in a new way.

I like the idea of locking participants in, metaphorically if not literally. Many conferences like using 'open space' techniques in which it is always acceptable to leave. This can lead to creativity. But too often the result is superficiality, recycling opinions and ideas but without much progress. Helsinki Design Lab tries to counter this.

Helsinki Design Lab's activities are also interdisciplinary in just the right way. Working in a crosscutting manner requires time so that people are able to understand each other's language. Here the investment in just enough time spent together yields returns too.

And finally, I like the way that the Helsinki Design Lab recognises that effective innovation needs a client, and needs to understand the client's needs. In some cases the clients will be paying customers. In others they will be a part of government. Bringing them in upstream makes it more likely that the end result will be used and useful.

This particular model won't be the last word. We're now living through a period of intensive innovation in innovation practices, with everything from meetings to collaborative platforms, prototypes to funds, being adapted and played with to see what works best for turning ideas into reality.

Finland has shown itself to be particular good at exploring the future, both culturally and in terms of tools. This book is a great confirmation of just how well placed it is to think its way out of the profound challenges our world now faces.

John Maynard Keynes once wrote that governments hate to be well-informed because it makes the process of decision-making so much more complex. The same could be said of the best design methods. But our aspiration in all of this should be to avoid both simplicity and complexity. Instead we should follow the injunction of Oliver Wendell Holmes who once wrote:

"I wouldn't give a fig for the simplicity on this side of complexity; I would give my life for the simplicity on the far side of complexity."

Geoff Mulgan
CEO, NESTA
London, July 2011

Ignorance, as the cliché goes, is bliss. Modern society is now beginning to see—sometimes painfully—that the most critical challenges we face are also the ones which are most interconnected or systemic in nature. A blissful ignorance of Earth's ecology allowed humanity to enjoy decades of unprecedented development without much thought about its long-term consequences. Only recently have the negative impacts of this development been measured and broadly understood by science, yet lagging and conflicted decision-making has inhibited a serious and concerted response. By expanding our understanding of systemic problems, we can better appreciate the principles that govern them and the risks they pose to society.

Today we find ourselves in an awkward adolescence, disabused of a happy obliviousness to the difficulty of dealing with systemic issues, but still without tried and true expertise to definitively lead us away from oblivion. Will the 21st century be one of growth—of human health, happiness, and resilience—or will we face further hardships as the consequences of blissfully ignorant decisions continue to compound?

The answer lies in our ability to redesign decision-making at every level—from the individual to the institutional—to operate better in a time of uncertainty and continual change. At the institutional scale, the global financial crisis of 2008 or Japan's nuclear crisis in early 2011 have demonstrated that our institutions often have no choice but to act decisively in times of uncertainty. But how do we know that these decisions will effect positive change? What strategic tools will improve the agility of our most important institutions and enable them to respond quickly to problems at all scales?

Where previously the focus has been on improving inherited systems, today's challenge is to dramatically rethink existing configurations or even create new ones. But who will

design tomorrow's models? Where do those abilities reside and what tools are needed? Our ability to provide for our societies is being challenged by the fact that many of today's problems are structural in nature, with little or no precedent. What do you do when there is no model to copy, no precedent to improve upon? The radical financial changes sweeping Europe, for example, will not be answered by process improvements alone, rather they will require rethinking and redesign. These questions are the motivation for Sitra's work, which seeks to create new design tools to shape better decisions and ultimately deliver improved outcomes. This is what we call 'strategic design'.

By developing strategic design, we hope to advance society's ability to cope with complex issues, such as climate change and demographic shifts, by developing tools to assist institutions to better conceptualize and respond to 'wicked' challenges. The first fruit of this effort is the HDL Studio Model, a structured engagement designed to rapidly generate the sketch of systemic redesign by bringing together the right people to focus on a carefully defined problem, using a flexible process in a physical place that is conducive to collaboration.

In the course of one week the team immerse themselves in the problem, unpacking assumptions and taboos to understand root causes. This accelerated timeline is enabled by employing the 'third culture' of design and by bringing together a mix of domain experts and designers to work together intensively. Fundamental to the HDL Studio is an open approach that combines the expertise and experience of its participants, relevant research and observations in the field to produce a synthetic re-framing of the challenge at hand. Both hard and soft evidence is used, thereby avoiding the common trap of giving preference to the quantitative above all else, which is especially dangerous when working in areas of knowledge where reliable measurements do not yet exist or data is overwhelming.

Having broken down the issues to expose the ecosystem of the challenge, the Studio defines a strategic intent for improvement and sketches an architecture of solutions to get us there. These outcomes help frame a path forward by identifying new opportunities and specifying the first steps of work necessary to take advantage of those insights. By emphasizing

Both hard and soft evidence is used, thereby avoiding the common trap of giving preference to the quantitative above all else, which is especially dangerous when working in areas of knowledge where reliable measurements do not yet exist or data is overwhelming.

an iterative working style, the HDL Studio represents a model of problem solving that diverges from more common linear approaches that judge progress incrementally.

Yesterday's and today's decision-making works well when precedents exist and context is static. Decision-makers come to a consensus about the nature of a problem, ask an orga-nization to research and compare proven models, engineer the solution, and deliver it to end-users, who then have limited and slow, if any, mechanisms for direct feedback. Yet today's challenges are highly interconnected and dynamic, demanding new solutions for which our institutions are often ill-equipped and too slow. The HDL Studio Model is designed as a lightweight tool to enable organizations to quickly sketch new solutions matching their new challenges, thereby kick-starting the transformation process.

Increasingly society operates 'pre-factually.'[1] In such cases, analysing existing options may not provide the neces-sary insights needed to respond successfully because the challenge is one that has not been dealt with before and the facts do not exist yet. Although there has been intense focus on innovation in products and businesses, our understanding of innovation at the systems scale is still emerging. We find ourselves lacking sophisticated ways to articulate new ideas about systems and the ways they relate and interlock.

1—Paul Nakazawa, Lecturer in Architecture at the Harvard Graduate School of Design, uses this term to describe working in and respond-ing to a context where evidence is still devel-oping, information is incomplete, and debate around the factual foundation is ongoing.

Academies of learning, governmental struc-tures and professions are built around 'silos' of protected professional activity and expertise. These were immensely valuable during the period of aggressive development beginning with the Industrial Revolution. An intense focus on increasing specialization has yielded great advances in just about every category of human effort, especially science. By focusing knowledge-creation efforts into silos, society was able to excel at engineering answers to specific, discrete problems, but this came at the expense of an ability to consider the big picture. In these fissures between the silos—areas that we do not have a strong ability to describe, or even name, never mind procure—is where the grand challenges of today are found.

Society is lacking sophisticated ways to articulate new ideas about systems and the ways they relate and interlock.

This is particularly acute in government contexts that are often saddled with the most inertia. Governments spend billions annually on research and development in specific areas of content, such as technology and defence, but they tend to invest little in themselves—in developing new ways of tackling problems. Though facing the most pressing of 21st

century challenges, our government institutions often operate with 18th century principles. Today's challenge lies in rewriting assumptions inherited from previous eras of prosperity and creating ways of working across silos and other arbitrary boundaries—and quickly. The HDL Studio offers one model for filling in the gaps.

While we are pursuing strategic design as a way to frame challenges, define opportunities and steward their implementation, this book touches only briefly on stewardship. This is a reflection of Sitra's current experience in applying strategic design, which consists solely of early-stage efforts (such as the Studios) as the logical starting point. We have benefited greatly from the proximity of the social innovation community and others which are endeavouring to deal with the same issues. As some of our efforts come to fruition, (including the ongoing Low2No sustainable development project[1]) we look forward to publishing further material which shifts the focus from the refinement of strategic intentions to the stewardship of implementation.

1—For more information see www.low2no.org

"Tactics is knowing what to do when there is something to do, strategy is knowing what to do when there is nothing to do."
—Savielly Tartakower, chess Grandmaster

Strategic Design: Beyond Vision

Today there is no lack of vision in the world, but vision alone is hard to act on. The difficulty of winning political consensus on important issues such as education, healthcare, and fiscal policy, to name a few, means that these conversations often remain at a fairly abstract level with specific plans and proposals tucked away in piles of paper that few people ever read. Nevertheless, when consensus does come, action follows and therein lies the dangers of having strong vision but fuzzy intent: someone will make specific plans about what to do, but will the choices reflect the original vision? Strategic intent is the glue that translates the motivating force of a grand vision into principles that can be used to make choices on a more discrete level.[2]

Because vision is often tightly coupled with individual leadership, it can also be hard to recognize that we are really talking about the same thing. Even when individuals appear to be agreeing about a particular vision of change they may have different ideas about how to get there. For instance, we may buy into the notion that society should be diverse and well integrated, but how do we achieve that vision of integration? Where do we start? And most importantly, what does success look like?

Between the motivating force of grand visions and the comforting directness of specific plans lies an important middle ground: strategic intent. When working on something new, or in a new context, there inevitably comes a time when one must make a choice without the luxury of precedent or directive. In these moments when there is 'nothing to do' and no one to turn to, strategic intent is what guides action.

Developing strategic intent benefits from an understanding of what drives value within a given context. It is also helpful to be aware of existing barriers, as is devoting time to discover prime opportunities for creating new value. Ultimately this yields a more complete description of the problem, which then enables one to more readily develop actions that deliver positive impact.

Abraham Lincoln put it well when he suggested that if he were given six hours to chop down a tree he would spend the first four sharpening his axe. Vision, too, needs to be honed,

VISION
Why should we act?

INTENT
& What should be done?

PLAN
& How will we do it and who should be involved?

STEWARDSHIP
Feedback loops that guide the why, what, how, and who

2—In their 1989 Harvard Business Review article 'Strategic Intent', Gary Hamel and C.K. Prahalad offer a succinct description: "The goal of Strategic Intent is to fold the future back into the present… while [it] is clear about ends, it is flexible as to means." Although our interest is broader than innovation within corporations, many of their observations have set precedent and remain relevant to the discussion in this book.

and when done right the result is sharp strategic intent that is useful in chopping planning tasks down to size. Investing the time to articulate the ecosystem of the problem and create a balanced 'portfolio' of prioritized areas of action accelerates later choices by providing principles to guide decision-making on a more discrete level.

If we take seriously the cheeky example of Lincoln the lumberjack, how else might he have accomplished his goal? Without losing the vision of chopping down a dauntingly large tree, Lincoln the would-be chopper would have looked to what opportunities were available around him. He could have spent the first five hours and fifty-five minutes attempting to design and build a new chopping implement. But that is hugely risky when existing tools are known to work decently well and the investment required by new tools is certain to be huge.[1] Conversely, he could have immediately accepted the givens and started chopping right away with a dull axe. The danger with this option is that the task of chopping becomes so laborious that Lincoln tuckers out before being able to complete it. In this case, using an already available option (the axe) and putting his efforts into refining its effectiveness (honing) represents a shrewd balance of opportunism and ambition.

Described here is a way of working that is natural to many entrepreneurs, hackers, inventor-engineers, designers and tinkerers[2] of all sorts. Navigating the space between opportunity and ambition is familiar to anyone who works with clients, yet working under a brief defined by the client can be very difficult when the instructions are closer to vision than strategic intent. This is often the case, however, because robust strategy is difficult to develop *a priori*, before engaging specific ideas about services and artefacts that exist in time and space, and have human consequences.

1—The first mechanical 'tree-felling machine' was patented by Andreas Stihl in 1926, a full 64 years after Mr. Lincoln's untimely death.

2—Tinkering is increasingly entering education debates as an important skill for many to have. For one well-articulated argument see 'A New Culture of Learning' by Douglas Thomas and John Seely Brown.

Design

Investment into clarifying intent

Visible results

Linear approach

ROI

Time
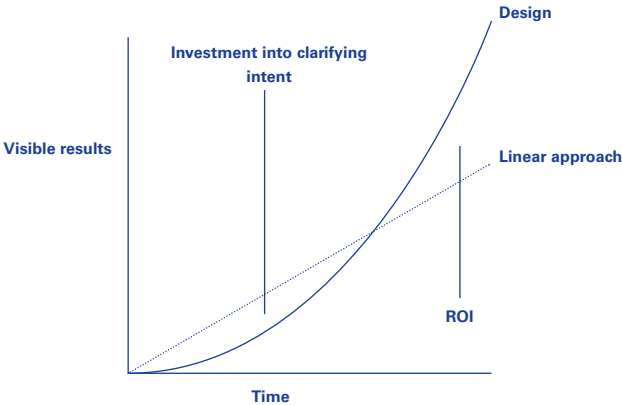
To cope with the compound uncertainty of lacking a clear strategy but being 'on the hook' for very specific and concrete decisions, many designers have developed ways of working to clarify inputs and outputs, problem and solution, opportunity and ambition, in tandem.

This nonlinear way of working often remains hidden inside a 'black box' and can therefore be mysterious. Through our work in strategic design we are attempting to demystify some of these ways of working so as to make them more accessible and useful in contexts outside traditional design tasks.

A Third Culture

This term was coined to describe the characteristics typical of children growing up between cultures[3] (for example a child of Finnish parents, growing up in Spain). The idea of a third culture that bridges differences can also be applied to institutional divides, such as our schools and universities, which are often divided into two distinct parts, the sciences and the humanities.[4] Taking a closer look at where departments of design and architecture physically sit reveals evidence of an ongoing struggle to make sense of what design has to offer.

Sometimes designers share a building with engineers, while other times they are collocated with fine arts. Only occasionally do the design departments exist on their own, separate from both the humanities and the sciences. Perhaps the difficulty is that design combines some aspects of both and therefore could legitimately be considered a Third Culture of knowledge.

As a way of working and thinking, design sits between the two poles of science, which observes the facts of the material world, and the humanities, which interprets the complexities of human experience. Design takes a middle path and is primarily concerned with appropriateness, understood as that fragile quality which is achieved when the best of human intentions are realized within the constraints of reality.[5] Design is a culture that blends the concerns of science and the humanities to search for outcomes that are balanced and opportunistic, grounded in the real world but driven by human aspirations. It is equally concerned with probing the limits of our current reality as it is with making new realities possible. Lately within the design professions,

3—"Third Culture Kids" is a term coined by Ruth Hill Useem in the 1960's to describe the characteristics of children who have grown up in a multicultural and mobile environment. "The third culture kid builds relationships to [multiple] cultures, while not having full ownership in any" from 'Third Culture Kids: Growing Up Among Worlds' by David C. Pollock and Ruth E. Van Reken

4—See C.P. Snow's Rede Lecture as published in 'The Two Cultures' and Immanuel Wallerstein's 'World Systems Analysis: An Introduction' for more on this understanding of human knowledge.

5—Cross, Nigel. 'Designerly Ways of Knowing'. p. 18

Design is equally concerned with probing the limits of our current reality as it is with making new realities possible.

1—Mulgan, Geoff. 'The Art of Public Strategy'. p. 111

2—Emily Campbell of the RSA discusses design as a fundamental skill for 'resourceful-ness and self-reliance' in the publication 'You Know More Than You Think You Do'.

3—Geddes, Norman Bel. 'Horizons'. p. 17

a quiet revolution has been growing: is design about making or thinking? We see this as a false dichotomy and that the separation of thinking and doing destroys an important feedback loop which enables self-learning within a project or programme*. Within architecture for example, persistent development from strategy to plans and through the stewardship of implementation is what leads to a good building. On their own, well drawn plans do not mean much. And during construction it is common for new questions to emerge that would have been impossible to anticipate in advance. This continuity is even more important in the higher-order challenges of strategic design. The fact is that even the best strategy evolves when put to the test in the real world.[1]

'Design thinking' is a buzzword that the market has picked up to characterize the skills necessary to create strategic intent. In this sense, the popularity of the term is perhaps more a symptom than a cure. It has become a pathway for corporations to seek better questions in a market culture where it is easier to buy clear answers. The growing body of 'design thinking' literature emphasizes design as a skill that everyone should have, but then what do we mean when we use the word 'designer'?

Formal education and professional title are often used as ways of identifying designers, but it's also possible to find individuals without any background or training in design who are very creative in solving problems and therefore might be said to operate like a designer.[2] Likewise, many who hold a degree in design are not particularly suited for systemic or strategic design pursuits.

Just as being musical does not necessarily mean you are a musician, there are differences between people who are 'designerly' and those who are experienced designers. Neither musicians nor designers ply their trade without clients and therefore the understanding of someone who is designerly is a necessary complement to the ability of a designer.

For the purposes of this book, 'designer' is not meant to be defined by professional title or words written on a diploma. We think of designers as people who exhibit the attitude, approach and abilities outlined below. Normal Bel Geddes puts it more eloquently: "No matter what he [sic] does, in work or play, in one location or another, [a designer] thinks in terms of design. It is natural to him."[3]

The remainder of this section takes a deeper look at the attitude, approach and abilities that enable successful strategic design. Our interests have overlaps with areas of organizational psychology, management, scenario planning and foresight, political science and many others. Each of these fields yield deep insights into the nitty-gritty of the issues and we encourage you to pursue that literature as well. The purpose of this book is not to pretend that design could or even should supplant these other fields, but to explore the qualitative differences that arise when choosing a middle path.

Becoming Strategic

The definition of design and its role in the world continues to evolve. Broadly speaking conventional definitions of design revolved around shaping objects and symbols, but more and more design is also expanding into shaping decisions; the latter is how we define strategic design. In an increasingly interconnected, complex and regulated world, the effectiveness of innovations at the discrete product or project level is becoming limited. In healthcare architecture, for example, creating significant innovations by focusing on buildings alone is virtually impossible due to the highly prescribed and regulated environment. Today's hospital solution is predetermined to such an extreme that the designer has little—or no—room to create new value in healthcare (or architecture for that matter) by working on the building alone. While the scale of our healthcare challenges require strategic improvements, our current systems of decision-making are often only able to entertain minor upgrades to existing elements and processes.

While it is easy to agree that the focus should always be on delivering better health, it can also be difficult to remember that the systems we live with, such as healthcare, are human constructions and their dynamics are the result of accumulated decisions. They can be redesigned. Doing so may entail a critical re-examination of the notion of 'best practice' to ascertain whether established wisdom is still wise in our current context.

The emergence of design as a specialized task can be traced to the rise of mass production. Before massive quanti-

> The purpose of this book is not to pretend that design could or even should supplant these other fields, but to explore the qualitative differences that arise when choosing a middle path.

ties of a product could roll off the production line, a plan or master object had to be created by someone with both the technical understanding of manufacturing and the aesthetic and cultural understanding of the marketplace—a role filled by early designers.[1] As the development of technology accelerated around the turn of the 20th century, a different kind of design need emerged: entirely new products demanded new identities. Designers balanced the functional requirements of technology with specific form and shape to express the spirit of the day. Especially in the wake of widespread access to electrical power, appliances such as toasters, refrigerators, radios and televisions became household fixtures and industrial designers helped domesticate these new categories of objects.

1—Sparke, Penny. 'Consultant Design: The History and Practice of the Designer in Industry'

> While the scale of our challenges require strategic improvements, our current systems of decision-making are often only able to entertain minor upgrades to existing elements and processes.

As industrial production increased with more and more kinds of products entering the market, some intrepid designers pioneered branding as a way to build coherence across large sets of objects and media. As corporations grew larger and operated across diverse contexts, the design of branding offered a way to retain a sense of unity among otherwise disparate actions. Eventually these branding efforts also created new notions of national and regional identity, with the industrial and commercial output of different countries offering a productised, packaged and tangible example of the way life is lived in a distant land. Even today it is hard to think of German design without conjuring up images of sleekly engineered precision, or to

1700s
Textile and ceramic patterns

1900s
Products

1930s
Brands

1950s
National identities

2000s
Services and interactions

Now
Systems and strategies

picture Nordic design without its subtle crafting of natural
materials and playful colours.

From the emergence of design as pattern making to
designing global brands, each step in this brief history[2] repre-
sents a move from design as giving shape to objects towards
using design to give shape to decisions. The career of Ray-
mond Loewy (1893-1986) traces this upstream movement of
the use of design rather succinctly. After launching his career
by creating the streamlined appearance of appliances, Loewy
conducted a comprehensive rebranding of the Shell Oil
corporation and was asked by US President John F. Kennedy
to redesign that most visible manifestation of international
statesmanship and soft power, the presidential jet.

More recently designers have begun focusing on the
choreography of services and interactions (such as in user
interfaces), and today a growing group of practitioners are
going one step further by using design to peer into large-scale
systems and developing strategies that enable us to affect
them in positive ways.[3] Strategic design is a way to specify
the intentions that we want to accomplish and steward
efforts towards the realisation of those aims. For the strategic
designer it's not a question of thinking or doing, but what to
think about and how to do.

2—Without attempting to produce a definitive
history of design, we have included an abbrevi-
ated timeline on the left. This is based on the
'maturity' of engagement between design
practice and these various roles throughout
the ages.

3—A small collection of examples are available
in the Case Studies section of the Helsinki
Design Lab website.

Sketching the Escalating Division of Knowledge

To test the extent to which silos of knowledge are growing in number and simultaneously becoming increasingly narrow, we produced this quick sketch comparing the number of subjects on offer at the University of Cambridge—one of the oldest institutions in the world. Referring to the university's own website we found listings of the subjects on offer today and during the middle ages. Although we had access to a four volume set that describes the full history of the university, we opted to maintain the spirit of a sketch and instead look for a more easily accessible source that could help quantify the growth trajectory. Diderot & d'Alembert's Encyclopédie was a natural choice. From each listing we gathered only the top two levels of hierarchy (as determined by the description of medieval Cambridge, which only had two).

The intent of this exercise is to provide a quick scale to the trend so that we could understand the quality of growth in addition to having an idea of the quantity. This implies that while the volume of human knowledge has grown, so has its partiality.

11th C.

Cambridge University

11 Areas

Arts
    Grammar
    Logic
    Rhetoric
    Arithmetic
    Music
    Geometry
    Astronomy
Divinity
Law
Medicine

18th C.

Diderot & d'Alembert's Encyclopédie

13 Areas

History
    Sacred
    Ecclesiastical
    Civil, Ancient, & Modern
    Natural
Philosophy
    General Metaphysics
    Science of God
    Science of Man
    Science of Nature
Poetry
    Profane
    Sacred

21st C.

Cambridge University

67 Areas

Arts and Humanities
    Faculty of Architecture and History of Art, Faculty of Asian and Middle Eastern Studies, Faculty of Classics, Faculty of Divinity, Faculty of English, Faculty of Modern and Medieval Languages, Faculty of Music, Faculty of Philosophy, Centre for Research in the Arts, Social Sciences and Humanities

Biological Sciences, including Veterinary Medicine
    Department of Biochemistry, Department of Experimental Psychology, Department of Genetics, Department of Pathology, Department of Pharmacology, Department of Physiology, Development and Neuroscience, Department of Plant Sciences, Department of Veterinary Medicine, Department of Zoology, Wellcome Trust/Cancer Research UK Gurdon Institute, Sainsbury Laboratory, Wellcome Trust Centre for Stem Cell Research, Cambridge Systems Biology Centre

Clinical Medicine
    Clinical Biochemistry, Clinical Neurosciences, Haematology, Medical Genetics, Medicine, Obstetrics & Gynaecology, Oncology, Paediatrics, Psychiatry, Public Health & Primary Care, Radiology, Surgery

Humanities and Social Sciences
    Faculty of Archaeology and Anthropology, Faculty of Economics, Faculty of Education, Faculty of History, Faculty of Law, Institute of Criminology, Faculty of Politics, Psychology, Sociology and International Studies, Department of Land Economy, Centre of Latin American Studies, Centre of African Studies, Centre of South Asian Studies, Development Studies Committee

Physical Sciences
    Department of Applied Mathematics and Theoretical Physics, Institute of Astronomy, Department of Chemistry, Department of Earth Sciences, Department of Geography (including the Scott Polar Research Institute), Department of Material Sciences and Metallurgy, Isaac Newton Institute for Mathematical Sciences, Department of Physics, Department of Pure Mathematics and Mathematical Statistics

Technology
    Engineering, Chemical Engineering & Biotechnology, Computer Laboratory, Judge Business School, Cambridge Programme for Sustainability Leadership

Mind the Gaps

Let's zoom out for a moment and reflect on the language that we use to talk about problem solving and how this terminology embeds certain assumptions into common ways of working. The words 'problem' and 'solution' often imply a tightly coupled one-to-one relationship between the two—almost as if every problem had an imaginary best solution, and likewise every solution could be matched with a single clear problem. This is an exaggeration, of course, but broadly speaking it is the model that drove the pursuit of knowledge in the 20th century: first understand the problem clearly, identify the solution, and then march towards it.

PROBLEM ——————• SOLUTION

If problems can be successfully considered in isolation, increasingly narrow definitions of problems and solutions are helpful. This drive towards specialization encouraged the construction of disciplinary silos that effectively 'own' groups of problems. Bounding specific problem and solution areas creates distinct cultures, jargon, practices and attitudes that naturally evolve within the community who spend most of their time focusing on those issues, further reinforcing the strength of the silo and thus raising the barrier to entry. This can happen at many different scales, occurring within professions themselves, different departments of an organization, and even team by team within a specific department.

The combined result of this mass specialization is akin to rendering an image in the pointillist style where dots are used in place of continuous brush strokes. From afar the pointillist painting is legible as a singular image, but step closer and you see the image is made up of thousands of dots of paint with many gaps between them. The deep specializations of contemporary society have allowed us to think that we are seeing the big picture, when in fact our knowledge is represented by thousands of isolated dots—silos of knowledge—with plenty of gaps in between.

Georges Seurat's 'La Parade', (1889)

If we extend the metaphor to include time and imagine the development of specializations in our universities, governments, organizations, it's as if the dots of the painting are growing increasingly small as they focus deeper and deeper on specific concerns. Adding more dots to maintain the quality of the image only creates... more gaps!

While we have become better at defining and tackling issues within individual 'dots,' the gaps between them—those spaces between deep silos of expertise—are where the challenges of the 21st century lie. We are barely able to name this

Detail of 'La Parade'

area without resorting to metaphors[1], let alone describe the territory richly or deliver replicable results on the challenges that lurk there. This is not to detract from the very real and truly important contributions that have come from intense specialization; rather we open this line of inquiry to examine the potential for, and necessity of, horizontal efforts as well.

To address a different kind of challenge one needs a different kind of approach. Part of the complexity of the most difficult issues today stems from their interconnectedness. In a culture dominated by specialization, this results in a frustrating lack of ability to describe these issues neatly. The linear approach of first fully defining a problem and then crafting a solution proves futile in situations where the problem is ill-defined and is likely to remain so due to lack of consensus, a dynamic context or sheer complexity. This is the difference between working with secrets, which are definitively knowable with the right insight or access, and mysteries, which always include unknown unknowns.[2]

> In a culture dominated by specialization, the interconnectedness of today's challenged results in a frustrating lack of ability to describe them neatly.

When working in mysterious territory, we gently reject the assumption that one first defines the problem and then creates a solution as separate elements to be addressed in sequence. We prefer to describe them as existing in a continuous feedback loop where quick iterations of framing the problem and sketching potential solutions create a virtuous cycle of learning. The hunch of a solution inspires new questions about the problem space and that is where the cycle begins again. The picture, as it were, is formed by seeing the dots, the gaps, and the overall relationships between the two in the same way that the human brain senses and makes sense of all simultaneously.

Innovation in mysterious situations requires an iterative approach, improving with each cycle of the feedback loop as ambition and opportunism are calibrated into a dynamic equilibrium. The bigger the challenges, the less likely one is to ever see perfect convergence between framing of the problem and implementation of solutions. Such challenges will always be asymptotic in nature, aiming for but never reaching perfection. Because of this, working on 'mysteries' and avoiding burn out requires a particular kind of attitude—one that sees the asymptote as a constant challenge rather than a frustration.

PROBLEM   SOLUTION

The Pursuit of Synthesis

In moments when deliberation among existing options proves unsatisfactory, strategic design employs synthesis to create new possibilities where none seemed to exist before. Under this methodology, analysis is not the platform on which decisions are made, but becomes a step used to inform the design of revised or totally new alternatives. As a capability that enhances innovation, strategic design is therefore most useful in contexts where the stated vision may be compelling but there is no clear pathway to progress.

In the spring of 2009 Sitra launched the Low2No Sustainable Design and Development competition which invited teams to propose a strategy for a low carbon complex of buildings to be built near the centre of Helsinki. Unlike typical architecture competitions, however, the teams taking part in Low2No were asked to pay particular attention to the expertise profile represented by their teams. The winners would create an ambitious proposal combining a strong architectural design with strategies for the financial and infrastructural models that would make their plan achievable. By supplementing the typical competition requirements with the request for a holistic strategy, Sitra required Low2No competitors to assemble integrated teams that could intelligently respond to the brief. In effect, Sitra used the rules of the competition to encourage the formation of new alliances that could fill in the existing gaps in the market: currently there are few firms that are single-handedly able to address the holistic nature of the climate challenge. New problems demand new solutions, and in the case of Low2No that also meant creating new partnerships of knowledge and ability.

Similar to the way that the rules of the Low2No competition encouraged a particular kind of self-organization within the community of trades who design and deliver the built environment, what follows below are loose guidelines for taking a messy pile of ideas, inputs and experiences and boiling them down to something coherent, intelligent and useful. This is the pursuit of synthesis.

Synthesis happens in different ways depending on context. A team of people becomes a synthetic whole when the abilities of the individuals build on one another to enable the team to do something that none of the individuals is capable of alone. This is what occurred during the HDL Studios described in the How-To section of this book*, where big sets of ideas and inputs are boiled down until they gel into a few

Quick iterations of framing the problem and sketching potential solutions create a virtuous cycle of learning.

New problems demand new solutions, and in the case of Low2No that also meant creating new partnerships of knowledge and ability.

strong recommendations. It also happens on a very practical level, such as when one makes specific choices about how to phrase a sentence or visualise an idea. The desire for clarity requires decisions to be made about which elements are given preference and which are downplayed or omitted without losing the richness of the original thought. When done well these are all acts of synthesis that recombine existing bits to build a new whole that is more than the sum of its parts.

Putting It All on the Table

Strong synthesis relies on having options to choose from such that the best of each may be borrowed to create something new, and the more 'ingredients' one has to choose from, the richer the result. Maintaining an optimism about new possibilities and a scepticism of the givens are powerful ways to remain open to new opportunities. Like a good detective, the strategic designer assumes that they don't know the full story and that something, or probably many things, are missing from the picture. In this sense there is a conscious desire to expand possibilities and question normative patterns of reasoning and perception. Seeking a diversity of new and different inputs helps complement whatever knowledge exists in a given area and contributes to the formation of a better big picture. Ultimately the designer seeks to understand the patterns governing the challenge at hand.

> Maintaining an optimism about new possibilities and a scepticism of the givens are powerful ways to remain open to new opportunities.

The available information may be broadened by regularly entering a phase of active expansion of your understanding of the problem and looking to new sources, such as searching for analogous cases where experience may be transferred from another professional domain (**what?**), culture (**who?**), or geographic context (**where?**). History often provides examples of previous attempts (**when?**) to solve similar or related issues, even if the exact problem is now being phrased differently. Regardless of the source, analysing qualitative differences (**how? why?**) is a way of interrogating the relationship between an idea and its context to understand the critical factors which might affect its transferability to a new context. It is best to avoid reinventing the wheel, but often the treads can make or break an idea's ability to gain traction in a new context.

These basic questions of who, what, when, where, and how are supplemented by introducing the notion of scale. Changing the scale at which you examine something is a way of understanding it as situated in or affected by its context, and, by extension, which questions are relevant or not to the project at hand. You can think of 'scale' as the level of zoom that you're using to look at something. Zooming out lets you see the big picture; zooming in brings details into focus. The high-level categories of 'macro' and 'micro,' such as we might use to describe economics, hint at the role of scalar difference, but the analogy of a map might be more useful because maps come in many more varieties than 'macro' and 'micro.'

Comparing a map of the world, a country and a city reveals very different choices about what information is relevant in each context. On the world map roads are typically omitted, whereas a city map without roads would be practically useless, and the map of a country typically includes only highways. Different principles govern which aspects become part of the picture or remain hidden at different scales, and from different perspectives. Whereas an engineering approach uses successively smaller scales to hammer out the details, designers switch between scales during the course of their work because looking at each scale brings up new questions. Sometimes the decisions one makes about a small-scale detail have large-scale impact[1], so—whilst intentions are transformed into specific plans—continually iterating through different scales helps to round out unexpected bumps.

Being conscious of scale enables the strategic designer to test concepts by thinking about their impact at or relevance to different scales. Information that is critical to frontline stakeholders might be invisible to national decision-makers, for instance, so using scalar thinking is a way to be sceptical of a situation, see it through the eyes of others, and target your inquiry to uncover the relationships between big and small. The goal in pursuing these various lines of questioning is to cast the net as wide as possible and gather the broadest set of inputs to create a diverse 'gene pool' for subsequent synthesis.

This often means getting out of the office and seeing things with your own eyes to understand the difference between the way things are supposed to work and how they actually work. In addition to the mental frames discussed here, recent developments in design ethnography and rapid

Sometimes the decisions one makes about a small-scale detail have large-scale impact.

1—For example, John Snow's discovery of the water-born nature of Cholera, and his ability to curb its spread in central London, came down to a single water pump. See 'The Visual Display of Quantitative Information' by Edward Tufte and 'The Ghost Map' by Steven Johnson.

prototyping provide more practical guidance. We've included some pointers in the bibliography[*].

Honing Intuition

Intuition can be seen as pattern recognition: the ability to instinctively recognize and understand a set of relationships without conscious analysis. This is a critical capacity that humans possess, enabling them to make sense of an otherwise endlessly complex world.

Having a broad variety of inputs is an important precondition for robust synthesis, but widely collecting insights, facts and data can be overwhelming if you constantly try to make sense of them. Instead, it can be helpful to work through conscious phases of expansion and contraction, leaning on intuition and analysis at different moments.

Starting with a hunch about what might be relevant, expansive phases of information gathering involve the rapid acquisition of new inputs. Resisting the urge to rigidly structure your findings enables you to endure a seemingly overwhelming pile of inputs, knowing that you will have the time to organize and structure the results. Upon reaching the point of diminishing returns within a particular line of inquiry, the strategic designer steps back to take stock and begin building a more structured mental model of how everything fits together. Doing so enables one to balance induction, where facts are discovered before articulating a position, and deduction which starts with a hypothesis and then searches for facts that validate it. Each are different ways of developing propositions and codifying meaning, and each have their own strengths. Iterating through both provides a way to hone your intuition about a given challenge.
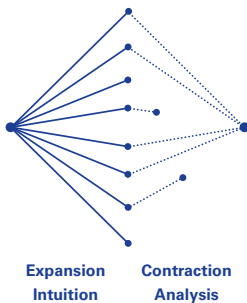
Phases of expansion and input gathering tend to happen quickly and are driven by intuition and hunches, whereas phases of categorization and contraction are led by analysis and will tend to require more deliberation. By working through multiple phases of expansion and contraction a balance may be struck between the speed of an intuitive approach and the rigour of an analytical one, with each technique reducing the risk of the other. This cyclical approach allows the iterations to happen quickly. Early cycles can be used to explore issues in a cursory way, enabling a more intel-

> It can be helpful to work through conscious phases of expansion and contraction, leaning on intuition and analysis at different moments.

Expansion   **Contraction**
Intuition   **Analysis**

ligent focus as specific bits of content prove to be interesting or useful.

For example, when researching food culture in Finland, you will want to know about production, handling, consumption, marketing and business models. What else? By identifying the various categories that are relevant to the issue of 'food culture in Finland' you can use these dimensions to guide your research. Once a little bit has been collected about each dimension there is usually a good opportunity to step back for a minute and begin making sense of how it all fits together, to assess the overall composition. During this contemplative pause some dimensions may need be downplayed or discarded; other dimensions may gain new prominence and or be added as needed. It is particularly important to cultivate an ability to disregard dimensions at this stage; traditional analytical approaches can often get stuck doggedly pursuing a red herring of an idea. Given that the iterative approach will generate a few dead-ends quite rapidly, it's necessary to learn from these dimensions but also disregard them. Build them up, yes, but also knock them down. This is what it means to iterate.

In early iterations of this cycle you might find that the categories you use to organize ideas will change dramatically, but over time the categories will stabilize as your intuition and analysis converge on an appropriate taxonomy that captures the important themes. Maintaining a gentle scepticism throughout this cyclical approach enables the strategic designer to unpack a given starting point into an expanded list of questions, opportunities and inspirations.

Applying intuition can be seen as lacking seriousness of purpose. On the contrary, to effectively apply intuition in the context of strategy requires that one fully invest themselves, living and breathing the issues well enough to have a basic sense of how things are connected or related.

Sketching

Sketching is how one quickly explores the relationships between details in a manner and medium that entertains multiple possibilities simultaneously. As a drawn form of analysis, it externalizes your ideas so that you can look at them anew. Doing so in an iterative manner helps to refine the connections between insights and opportunity.[1] This requires the ability to follow your intuition to get started, but

1—The quick iterative model has recently gained traction in areas outside of design as well, perhaps most notably in the popular software development methodologies described as 'agile'.

more importantly to learn quickly from your mistakes. These iterations and your evaluation of them enable a transition from intuition to tested strategic intent.

In this sense, the working approach of strategic design is akin to setting out to bake a cake—except that the world had never seen such a thing, there is no recipe to follow, and you are not even sure which ingredients are in your kitchen. Only by digging around in the pantry do you begin to discover useful ingredients, and through testing and speculation you begin to develop a sense of how your ingredients might work together in a recipe that yields a cake on the counter to match the idea in your head.

Once you've pulled a couple mediocre attempts from the oven you begin to understand the nuances of the emerging recipe and the importance of certain ingredients in proportion to each other. You might upgrade to a better blender that will help you fold a more consistent batter, or perhaps you splurge on organic cherries because you know they will perk up the recipe. The exact specifics of your solution evolve as you perfect the recipe and begin to understand which ingredients are key and which need less attention. By hunting and gathering ideas, trial and error of concepts and the careful calibration of relationships, you've found the recipe for an excellent cake.

A designer calls this process 'sketching.' The seductive beauty of wispy lines sketched by talented designers often gets all the attention, but at its core sketching is a way to develop relationships and details in parallel. Traditionally sketching is used to begin a design process by allowing different formal ideas to be explored in a quick and free-flowing way. The power of the sketch derives from the fact that it implicates an idea without requiring that every tiny detail be specified just yet. The written equivalent of a sketch is the bullet-point outline, but whereas an outline only makes sense when read from top to bottom a sketch is more open to interpretation and can be read in many different ways all at once. This inherent pliability of the sketch makes it positively fungible, able to be re-appropriated when conditions or context change.

The inherent pliability of sketches allow them to be positively re-appropriated when conditions or context change.

As students we were perplexed by the insistence of our drawing instructors who required hours of sketching and re-sketching the same figures and still life compositions, but the reason was to develop a sensitivity to scale and proportion—two ways of being specific about relativity. Sketching relationships

in diagrammatic form allows one to quickly explore different
configurations by drawing and redrawing. Strategic design
rarely lends itself to such literal translation onto the page,
but we can still diagram and sketch through problems by
giving ourselves the same freedom to identify key elements
and then work between scales in a nonlinear way to explore
their interdependencies. Working through 'what if' scenarios
in a spreadsheet, for instance, suffers from a lack of ability to
articulate relationships between systems.

The sketch allows for a momentary suspension of disbe-
lief, offering the freedom to fluidly move between developing
the overall idea, the essential elements and the relationships
between them. Drawing a good sketch of a human figure
involves capturing the dynamic form of the body in broad
strokes while also showing details of the musculature at key
moments. By simultaneously depicting aspects at multiple
scales, the act of sketching out an idea is a way to identify
what matters most and what can be addressed later on.

To use an example we are familiar with at Sitra, develop-
ing a strategy for Finland to reach carbon neutrality is not
possible if we think about the issue on one scale alone. To
truly make progress in this area multiple levels need to be
thought about in parallel and in concert. Structural instru-
ments like energy policy and building codes are certainly
important, and so is the availability of low-carbon consumer
choices such as attractive food options, not to mention the
marketing that will help them grow a customer base. Only
through the combined force of these and many other inter-
ventions will the particularly wicked issue of climate change
be addressed.

Under the banner of Low2No, Sitra is working on many
of these issues as we continue to refine our sketch of the
climate challenge. Every time we shift our focus from one
scale to another we gain a compound understanding of the
interaction between the two. For example, it's not just about
a carbon neutrality strategy, but the impact of a national
strategy on the built environment and its codes, regulations
and practices. It's not just about the availability of low-carbon
consumer choices, but how their accessibility and attractive-
ness are shaped and enabled by business models and national
and EU economic policy.

Handle with Care

The need to develop a coalition of organizations and individuals who work together to implement the proposals that come out of a process like an HDL Studio is one reason why stewardship is so important. This includes being realistic about what can be handed off and carried out by someone else independently, what should be done together, and what requires occasional tweaking on the difficult road through vision, intent, plans, implementation and, ultimately, achievement.

Without the broader stewardship arc, the design process is easily all about thinking and not doing—this is precisely what we see to be the difficulty with the 'design thinking' debate and its over-emphasis on helping people think differently. In the context of strategic design, ideas are important, but only when they lead to impact. Part of this is appreciating the quality with which an idea is executed and recognizing that quality of execution and quality of strategy are equally important.

It is common these days for one group to be involved in analysis of a problem and designing the solution (consultants) while a different group executes these ideas (contractors). But this disconnects an essential feedback loop.

In contrast, we are primarily concerned with the overlap or tether between the analysis of problems and the development of solutions. Bridging the gap between analysis and execution can be an unusual role within many organizations, though not to the practice of design. By being involved in stewardship across both is it possible to close the feedback loop between problem and solution, thereby giving the strategy a self-learning mechanism that creates a degree of intelligent flexibility.

In the context of strategic design, ideas are important, but only when they lead to impact.

Consultant & Contractor Relationship

Strategic Design Stewardship
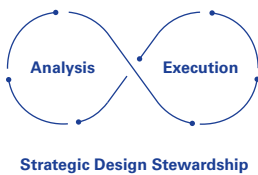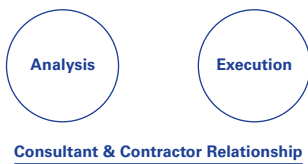
Staying Relevant

Gracefully managing transition points is often about making sure that both sides share a common understanding. For this reason we pay particular attention to hand-over moments where critical latent knowledge is most susceptible to being drained out of the effort.[1] This means going beyond the pale to make sure that not only is the content sound, but that its formatting and transmission also support the strategic objectives.

Impact is impaired when content cannot be successfully communicated or transmitted. In the past, printed reports have been the dominant tools for sharing strategy, but what good is a report that no one reads? Will another report even get the attention it may deserve in today's crowded media environment? For a number of reasons, these documents seem almost mandatory—or may even be a legal obligation, depending on your organization's status. Yet, after spending so much time and effort to craft a strong, synthetic strategy it does not make sense to assume that yesterday's communication materials are the best way to share it. This means becoming as strategic about media and communication as one is with content.

At the early stage of Helsinki Design Lab we focused on face to face conversations as our primary format for transferring the knowledge developed during the Studios. This obligated the Studio teams to articulate their message in a very digestible way that could focus short but intense discussions, something like an elevator pitch.[2] With the key messages communicated to our essential stakeholders through the 'final review'*, we then turned to video as a compelling way to expand the conversation to a broader audience in a format that is attractive and accessible enough to develop its own trajectory across the web. Only after these efforts are we now turning our attention to the written report (the studio recaps that follow shortly in this book) which will be useful as a continual touchpoint during the evolution of Sitra's work on the topics of ageing, education and sustainability.

1—Proposals and ideas are just the tip of the iceberg in terms of knowledge that is accrued during a project or programme. Choices about what was not done are as important as choices about what has been done. Maintaining the integrity of this 'latent' knowledge is one part of future-proofing strategy.

> Impact is impaired when content cannot be successfully communicated or transmitted.

2—"Elevator Pitch" is a term used to describe a convincing sales pitch that can be made for an idea in the compressed time frame of an elevator ride.

Helsinki
Design
Lab
-
Global
2010

A Quick Case Study in Applied Optimism

The popularity of some business books makes it enticing to offer a simple 'Strategic Design: 7 steps to success.' While this might attract attention, it may prove less useful to anyone attempting to genuinely practice strategic design or apply the HDL Studio Model. Rather, in this section we have looked at it as a flexible approach. In a way, this introduction has been itself strategic, resisting the urge to specify exact tactics and procedures. Nevertheless, underpinning this way of working is a set of abilities and an attitude that orchestrates them. To close this section and bring into play the abilities and attitude that are complementary to strategic design, we would like to transition from the heady, ambitious examples used above and focus on a small vignette from the autumn of 2010.

In September of that year we organized an event called Helsinki Design Lab Global which brought together over a hundred people from around the world to discuss the possibilities of design as a government capability. The final session of the three-day event was organized as a round table discussion and our hope was to use this as a forum for engaging all 120 individuals present. But how were we to avoid the typical scenario where a panel of speakers sitting on stage are physically and mentally separated from the audience?

We had an unusual audience consisting of people from government in equal share to designers, and the content was equally exploratory for everyone. Under these circumstances it is hard enough to get everyone in the same room, let alone try to coax them into the same conversation. To give ourselves a fair shot at success we were attempting to design an event format to fit our needs rather than allowing the existing conditions to shape our aims.

Our proposal was to forgo the stage at the front of the room altogether and hold the conversation in the round by forming a large circle of chairs with the moderator in the middle and the panelists sitting side by side with the rest of the guests. We also proposed specific configurations of lighting and sound, particular chairs, and changes to the standard catering regimen. In doing so we hoped to create an atmosphere of comfort and community that would support our objectives. Citing life safety concerns in the event of a fire, the venue insisted that we utilize their usual, time-tested set up with the panelists on stage and the audience in rank and file rows facing forward.

> We were attempting to design an event format to fit our needs rather than allowing the existing conditions to shape our aims.
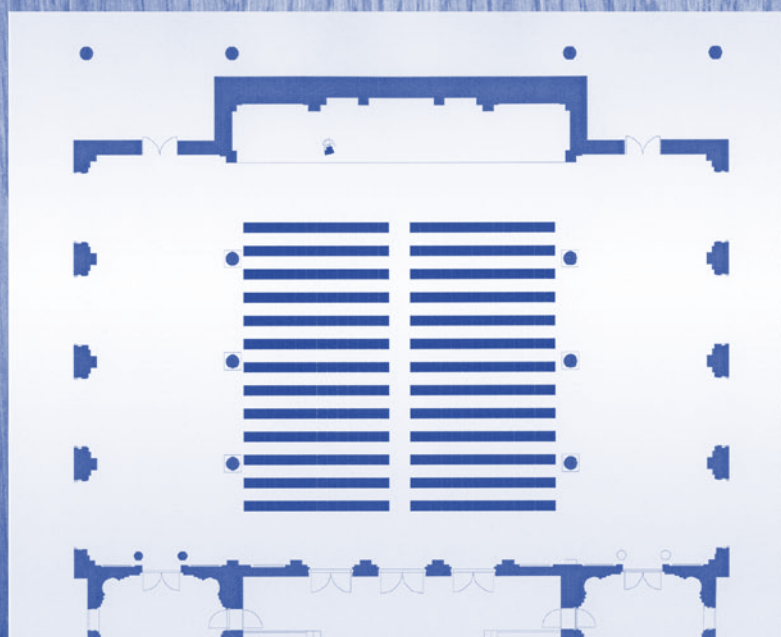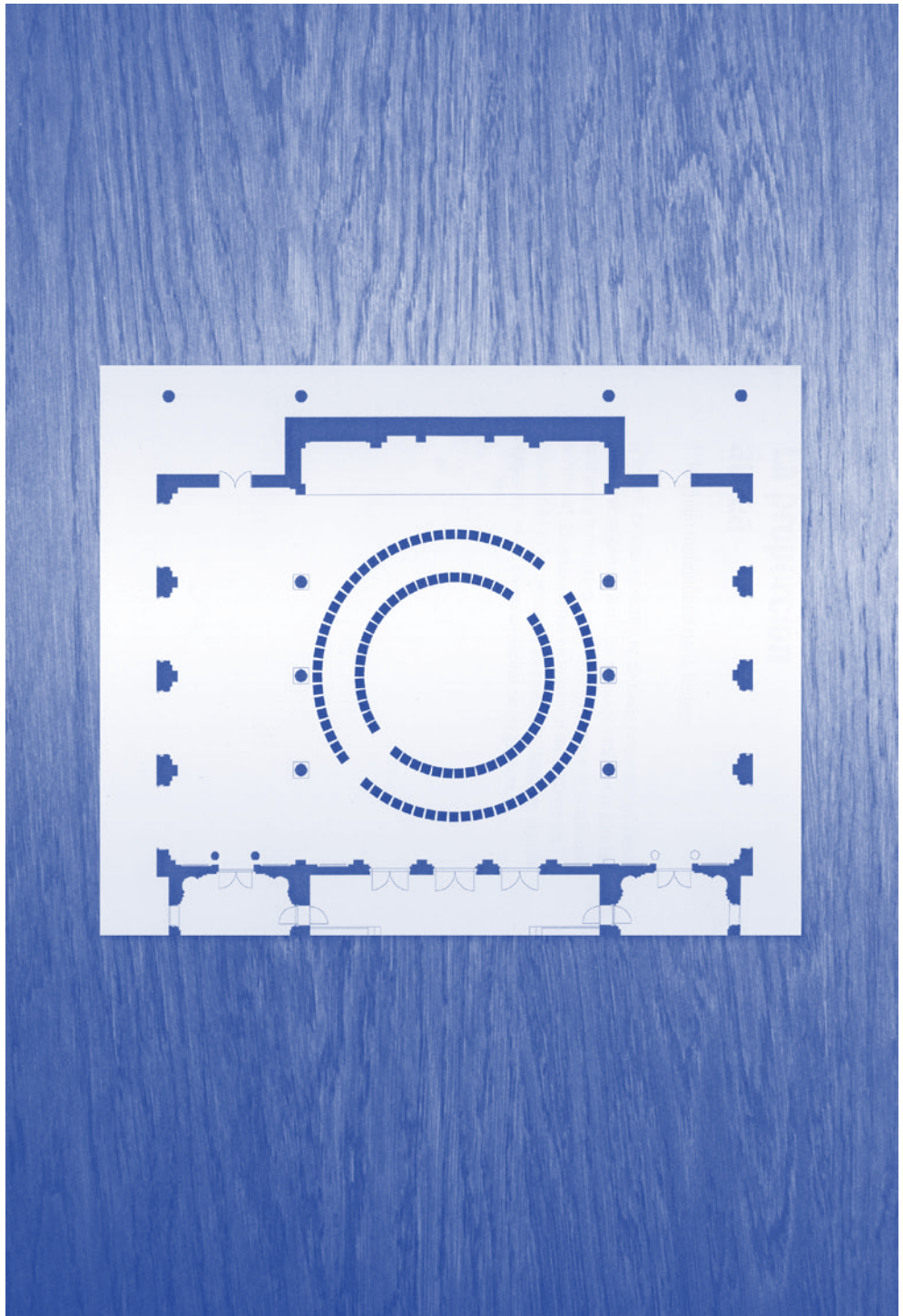
Through investigation, we learned that the chairs were locked together in sets of 15 and could not be unlocked because of concerns about congestion that would prevent people from exiting the room in an orderly fashion. With some more digging, we discovered that the fire concerns were based on an occupancy of 300 people, but we would be hosting less than half that number. We began sketching alternate design possibilities so that there would be backup options if the circle proved impossible. Confident that the initial rejection was rooted in reflex instead of analysis of the risks involved with our proposal, we scheduled another meeting with the venue and politely insisted that the security and safety manager also attend so that we could have a single conversation with all sides represented. Ceding this point would mean giving up on our goal of engaging all participants in the finale of our event, a result dramatically counter to the spirit we wanted to cultivate. It had to work!

Arriving with floor plans drawn to scale illustrating the ample room there was to manoeuvre around our proposed circle of chairs, and a willingness to carefully and considerately talk through the venue's concerns, we were able to come to an agreement that would give us the all-important circle while eliminating any concerns of fire safety on behalf of the venue.[1] It might sound like we have a deep attachment to circular shapes, but we tell this story because it's a way to illustrate what it means to fuss over the big picture and the details at the same time by being very careful to understand their interdependencies and the impact that both have on the overall success of your efforts.

Unpacking this apparent self-determination reveals a more satisfying description of the 'right' attitude for strategic design. It began with a sense of *empathy* that made the team sensitive to the needs of our guests, resulting in shifting our focus from formatting guests into an event, to shaping an event around guests and patterns of human behaviour. Empathy feeds *inquisitiveness* and the desire to know why things work the way that do—why do people get bored and disengage in most events? This includes an awareness that small and seemingly unrelated things can have a big impact— like the temperature of a room affecting a group's ability to

1—The answer had nothing to do with the chairs: it was about the risks. Rather than solve safety concerns through specific choices about seating configurations, we mitigated risk by having an additional security guard who could assist with crowd calming and ushering in the unlikely event of a fire.

concentrate or the mood in a meeting subtly starting to turn sour. All of this requires *observation* and a fundamental understanding of people, things and decisions as *situated in time and space* and therefore connected to and influenced by their context, environment and mental state of being. The difference between being aware of these issues and understanding them well enough to respond amounts to a difference in attitude.

Taking action informed by empathy and observation is a domain where only optimists may tread; optimism allows the existing condition to be interpreted as status quo rather than static fact. In contrast to the example of our event, the grand challenges to which strategic design is most applicable are characterized by inconclusive, incomplete or unavailable information. Being *comfortable with uncertainty* means one has to be able to suspend disbelief and maintain a trajectory through situations involving doubt and, inevitably, risk.

The combined effect of these traits is to enable balanced judgement in selecting relevant problems and pursuing viable solutions. By developing a team culture that fosters these characteristics, one creates an environment that has the ability to nurture a design process. It's OK if every individual does not meet all of these criteria—and you would have a dream team if they did—but everyone does need to share a common goal. The ability of each member to work in a team, and their commitment to doing do so earnestly, is non-negotiable. Without a culture of teamwork and an attitude that is able to take advantage of collaboration, positive overlaps of skill set, worldview and expertise are stifled. And it is precisely those overlaps which help innovation flourish.[2]

Overcoming the roadblocks along the way was enabled by abilities in integration, visualisation and stewardship which form the core of the strategic design skill set. In the appendix we have provided an additional matrix of abilities* that we look for when seeking talented strategic designers, but here we summarize the highlights.

Skillful integration is what illuminates the complex web of relationships—between people, organizations and things—that is necessary to synthesize a point of view and ultimately deliver well-calibrated solutions. Understanding how things do or might fit together is a key part of making sure the right questions are being asked, such as understanding the link between fire safety, seating options and the concerns of the

Optimism allows the existing condition to be interpreted as status quo rather than static fact.

2—Johnson, Steven. 'Where Good Ideas Come From'

security staff who were rightfully looking out for their own job.

Today, the challenges we face have reached a new level of complexity and volatility for which spreadsheets and other familiar analytical tools are insufficient. To see challenges in a new light we sometimes have to literally see them differently—no spreadsheet would have changed the mind of the security staff. This is why visualisation as a form of analysis rather than illustration is more effective when it is used as part of the thinking process, not applied after the fact to pretty up ideas that are fully formed. To deliver on the intention of having a circular ring of chairs required exploring the safety concerns through scale drawings that enabled our team to analyse different options and the risks inherent to each.

> To see challenges in a new light we sometimes have to literally see them differently.

Successful design does not end with good ideas. It also involves bringing people together to convert ideas into actions, which is the role of stewardship. Strategic designers are capable of contributing over the duration of a change process, providing regular feedback to identify, test, rework and deliver durable solutions. This is why we were not dismayed when we discovered that the plans were not perfect as we set up the chairs on the eve of the event. The advance team discovered that one giant ring was unwieldy in practice, but because we had a clear intent (to foster as intimate a discussion as possible among 120 people) an in-the-moment decision to split into two concentric rings was easy to make.

Although this episode has now been given far more attention than it deserves, we tell this story because it allows us to illustrate the interrelationship between the attitude, approach and abilities which together form a way of working. As a whole they enabled our team to navigate from vision to strategic intent, and then to execution of plans and stewardship of successful outcomes.

The next section provides a glimpse into what a similar process looks like in the context of three of society's greatest challenges: education, sustainability and ageing, the three mega-themes of the HDL Studios that Sitra conducted in the summer of 2010. Within each chapter we share the initial challenge, a view into how the week progressed and a summary of the outcomes. In these Studios the focus was on closing the gap between vision and intent in just one week's time, so please note that the outcomes are very much just sketches.

For another peek into the HDL Studios you can find brief
video summaries of each on our website:
www.helsinkidesignlab.org/videos/

We organized the first three HDL Studios on education, sustainability and ageing with two goals in mind: to advance Sitra's understanding of important topics relevant to the future of Finland, and to test and develop the Studio Model.[1] Included in this section is a comprehensive review of each Studio week. Additionally, the full challenge briefings for each Studio have been included as an appendix.

P54   Education Studio
P64   Sustainability Studio
P74   Ageing Studio

1—We selected these topics for two basic reasons, one to do with content and the other with resources. We chose topics that struck the right balance between international relevance and Sitra's national mandate. As such we omitted possible themes such as forestry which are important for Finland but less compelling from a broader global perspective. Financial and staffing resources were also a factor. Simply put, one topic would not have given us the confidence of replicability and five would have been unmanageable. These three studios and the three topics we selected offered a nice balance between mission, manageability and replicability.

→

Education
This floor

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Sustainability
This floor

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Ageing
Downstairs
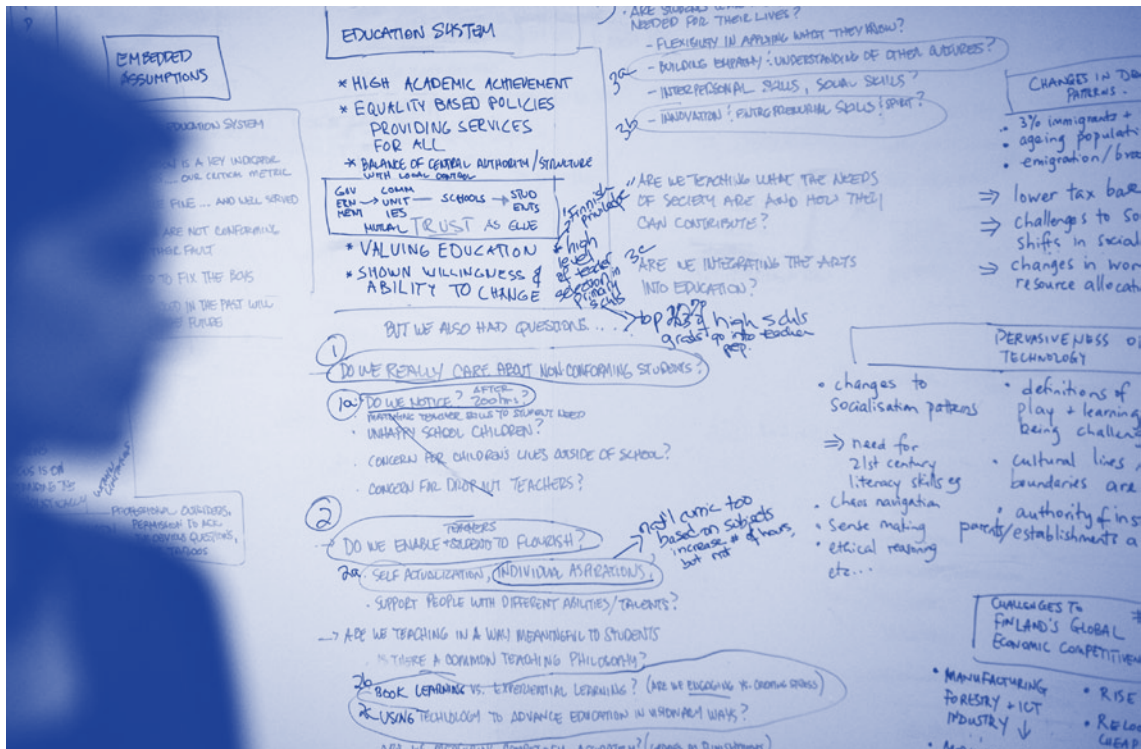
A successful education system in the future will be defined by how well it handles diversity and enables all students to partici-pate and thrive.

Education Studio

Despite the reputed excellence of the Finnish education system, Finland, too, has its dropouts. Why? Are they simply failing in their studies or is the highly regarded system showing its cracks by failing to support these individuals? Dropouts are a leading indicator that reveals a significant challenge and opportunity for education: how to serve all students in an ever-changing, diversifying world. For all the effort and money spent on early intervention, special education, and counselling, not all students' learning needs are sufficiently met. Simply put, the main concern is to expand the learning environment to reach everyone, including those individuals who learn best in different ways, in different environments and with different skills, interests or intelligences.

With the expansion of the global economy comes a constant flow of money, goods and services between cities and across borders. International mobility and migration are redefining populations and diversifying communities while telecommunications, media and the internet continue to revolutionize how we perceive the world, consume information and interact with others. Taken together, this creates

Are dropouts simply failing in their studies or is Finland's highly regarded education system showing its cracks by failing to support these individuals?

Although current dropout rates are modest by international standards, Finland cannot afford to wait to see if this is an early indicator of a growing trend.

a dynamic culture of complexity that the children of today must learn to navigate if they are to succeed.

Education must leverage diversity and differences among individuals into opportunities for greater achievement. Its challenge is to adjust existing structures to better serve students of unique cultural backgrounds, talents and intelligences. A successful education system in the future will be defined by how well it handles diversity and enables all students to participate and thrive.

At the core of this challenge is the transition from a monolithic, institutional definition of education to a more holistic understanding of learning. Today's classrooms must evolve and expand into more comprehensive and adaptable learning environments, reaching more students more effectively. Furthermore, classrooms must be seen as only one of many venues for learning. Doing so will only increase the value education can deliver amid this emerging cultural and economic landscape. Education cannot afford to become complacent nor remain static.

Discrete skills such as reading, writing and arithmetic must now be complemented by fuzzy competencies such as the ability to deal with uncertainty, communicate across cultures and integrate disparate kinds of expertise. Students must learn to navigate faster-paced and more fluid work environments, where divergent thinking, creative problem solving and flexibility are not only valued but highly rewarded.

In the last century, education was developed to meet the curricular needs of the industrial age. Now that we have entered a different era, education systems have not yet fully adapted to the pressures and opportunities of the new economy and its more challenging emergent landscape. Students cannot only think of themselves as members of their community or nation, but must instead gain deep understanding of their responsibilities as global citizens.

Although current dropout rates are modest by international standards, Finland cannot afford to wait to see if this is an early indicator of a growing trend. There is a need for a genuine and fundamental shift away from a highly effective, but arguably brittle system toward one that can deliver world-leading education to a diversifying population. The consequences of inaction are real.

The opportunity for this Studio was to frame this transformation and identify the key dynamics within education that will help develop an improved system for today and the future—one that enables youth to keep pace in a changing world.
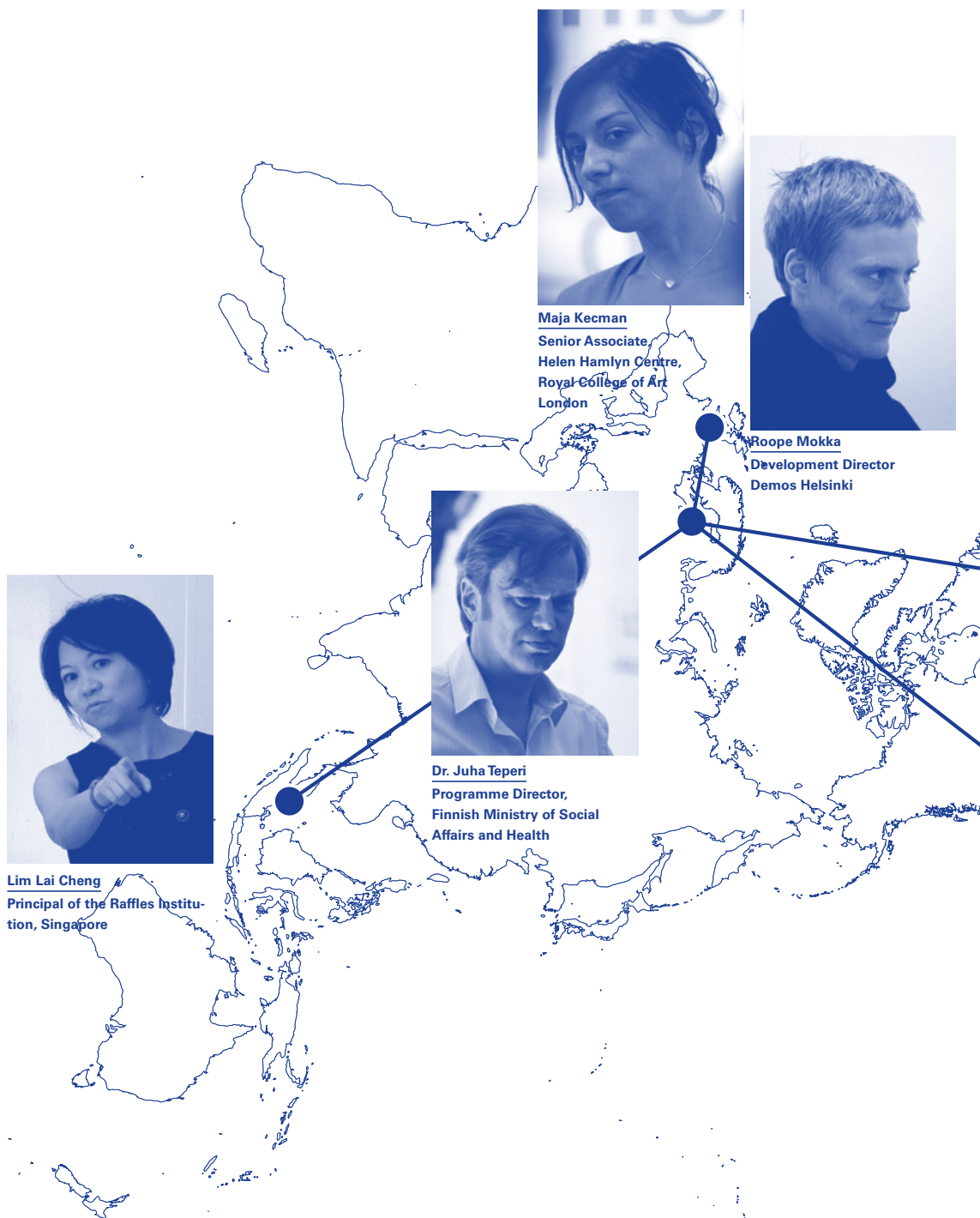
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Dr. Jane Holmes Bernstein
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Monday, May 3			Tuesday, May 4			Wednesday, May 5		
Diving in			**Field visits**			**Starting to Sketch**		
8:00	Kick off breakfast	Petri Pohjonen; Deputy Director Gen, OPH The Finnish National Board of Education	07:30	Ressu School visit		09:00	Day begins	
			07:45	Meeting with principal	Erja Hoven			
8:30	Welcome and "what does success look like?"	Marco Steinberg		visit 1-2 graders in their class setting (guest split into smaller groups)				
10:00	Introductions and first impressions	Studio team		walk around school				
11:00	Overview of Finland's macroeconomic and historical development	Pekka Ylä-Anttila, ETLA, The Research Institute of the Finnish Economy		visit 7-9 graders in the class setting (guest split into smaller groups)				
			10:30	Wrap up meeting with Principal				
12:00	Lunch in studio		11:30	Lunch with teaching staff		11:30	Working lunch w/ discussion of first ideas	Studio team with HDL hosts
13:00	Diversity within the education system	Mirja Talib, Adjunct Professor, University of Helsinki	12:30	Walk to the studio				
14:30	Youth culture and the internet - a police perspective	Marko Forss, Ylikonstaapeli / Internet Police, Helsinki Police department	13:00	Family and home life	Samuli Koiso-Kanttila, Raisa Cacciatore and Joonas Kekkonen from Väestöliitto (Family Federation)			
15:30	Coffee	Short walk	15:00	Youth Culture in Finland	Staff of Kulttuurisuunnittelija Allianssi			
16:00	Overview of Finnish decision making	Katju Holkeri, Head of Unit at Ministry of Finance, Ministry of Finance				16:00	Day ends w/ pin-up	
			16:00	Summarise visits	Studio team	18:00	Walk through Kamppi shopping center, a popular youth hangout	(Arranged at the request of studio team)
17:00	Day ends w/ pin-up							
19:30	Working dinner	Studio team with HDL hosts	19:30	Working dinner	Studio team with HDL hosts	19:30	Special dinner	Studio team with HDL hosts

Thursday, May 6			Friday, May 7		
Pulling things together			**Sharing**		
09:00	Day begins		9:00	Internal review	Studio team and HDL Hosts
			10:00	Phone interview with Pasi Sahlberg, Director-General of the Center for International Mobility	(Arranged at the request of studio team)
12:00	Lunch in studio		12:00	Lunch in studio	
14:00	Vuosaari Upper Comprehensive School Meet students aged 13-16 who are in a course for troubled youth	(Arranged at the request of studio team)	16:00	Studio review	Maruja Gutier-rez Diaz, Advi-sor to Director DG Education & Culture Timo Lankinen, Director Gen-eral, Finnish National Board of Education Jonna Sten-man, Senior Lead, Sitra
16:00	Day ends w/ Pin-up				
19:30	Working dinner	Studio team with HDL hosts	18:30	Closing Dinner	Studio team, HDL hosts, and review guests

Outcomes Summary

Through conversations with students, teachers, administrators and other stakeholders, the Studio discovered a number of embedded assumptions about the system itself and about the 'lost boys,' a revealing term used to describe dropouts. What the Studio observed as underpinning the current successes of Finland's students were strong policies based on equality that guarantee all students equal access to education; a high degree of autonomy afforded to individual educational institutions and teachers; and a particularly high level of trust between government, communities, schools and students.

But questions remained: does the education system care about the non-conforming students? Is there a concern for children's lives outside of school? Are schools teaching in a way that is meaningful to all students? Is technology used to advance education in visionary ways? Is the education system measuring competencies in accurate ways? Is there teacher and school accountability? Are kids getting enough physical exercise? Is there flexibility in applying what students learn and know? Is the system building empathy and understanding for other cultures?

The Studio suggested a series of seven priority shifts addressing key elements within the education ecology:

1. Equal access to education	>	Equal opportunity to develop individual talents and aspirations
2. Current social contract	>	Social contract that includes voices of all stakeholders (shared meaning)
3. Social welfare system v1.0	>	Social welfare system v2.0 (Integrated with personal agency and empowerment)
4. Administrative structures that are hierarchical and vertical	>	Ones that are inclusive, open and flexible. Empower all levels to interact and co-operate
5. Schools as institutions for acquisition of academic skills	>	Schools as agents of change that inspire and produce civic innovation creativity as well as holistic growth
6. Focus on the normative	>	Inclusion of all members of society. Schools to acknowledge and celebrate the whole range of abilities and talents.
7. Learning for academic achievement	>	Learning for expertise for life

As a set, these merge into the singular guiding principle of moving from 'Good to Great.'[1] The goal is to replace "I'm doing well in school" with "I love school and I'm doing great." Towards this goal, a set of three action areas were identified.

1. Open Public Discourse

Education is highly valued within Finnish culture, but the motivations for pursuing education are not always clear. More voices need to be included in the public discourse, and with them a broader set of priorities. In particular, children's own needs and desires are absent from this discourse, as is a shared understanding of the value of arts and athletics within the school establishment.

2. Strengthen International Networks and Collaboration

At a cultural level, Finnish society needs to develop a more active international presence. Within the education arena, Finland has a unique opportunity to use its Programme for International Student Assessment (PISA) status to take a leading international role by developing symposia, conferences and joint research that is multi-lateral. Exposure to other cultures and lifestyles builds awareness of other ways of living. This strengthens the personal and cultural core, enabling students and teachers to appreciate, promote and preserve their own culture.

3. The New Suomi School for the 21st Century

The Studio further sketched out the prototype of a new learning environment that could become the model for new schools in Finland. The emphasis was on experiential learning, collaboration, cultural skills and problem solving enabling children to grow into agile thinkers who can deftly handle new situations. Success in this area involves rethinking pedagogy, roles and infrastructure but also a proper framework for the pilot so that it offers a clear pathway to broader adoption if successful, thereby avoiding prototype paralysis.
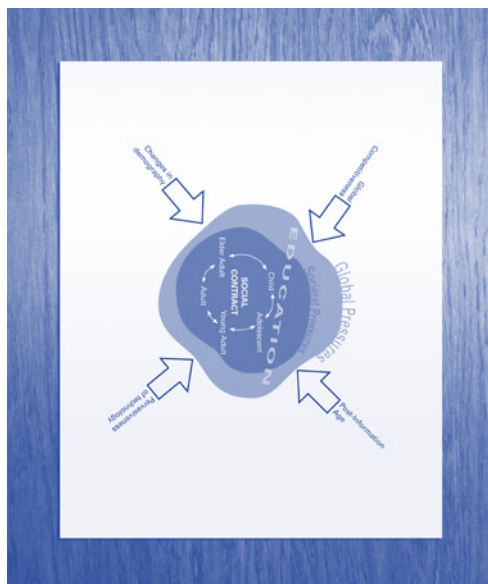
The studio proposed a way of thinking about the education system as being shaped by—and needing to respond to—a variety of pressures both global and national.
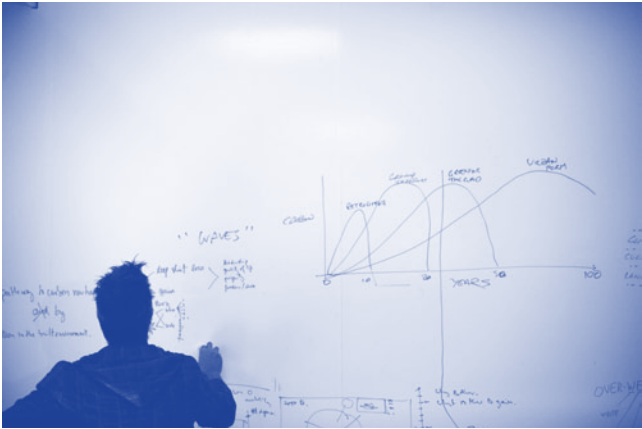
Sustainability
Studio

Finland can achieve carbon neutrality in the coming decades. In fact, relative to other nations, carbon neutrality is low-hanging fruit for Finland. Its massive carbon sink, growing use of low-carbon energy sources and effective policy implementation make the reduction a realistic and tenable goal. The opportunity for this Studio is to articulate this value proposition and to design a pathway to carbon neutrality for the near and long-term. This marks the first comprehensive effort to design a clean, green and smart development strategy for Finland.

Climate change is the symptom of a problem; the by-product of a market failure whose externalities will likely limit future growth. Unlike other problems faced by past societies such as war or famine, the invisible pathology of climate change has also been the engine of global prosperity.

Carbon emissions are our best metric of this failure. Evidence shows that emissions have increased along with economic growth since the industrial revolution. In the last two hundred years the global economy has grown six-fold, reflecting the tremendous momentum afforded by fossil-fuelled growth. The expediency of transforming fossils to energy

> Climate change is the symptom of a problem; the by-product of a market failure whose externalities will likely limit future growth.

The stage is set for the evolution of environmental policies into comprehensive economic and social transformations.

continues to provide the base material of the built environment and development worldwide.

Given the conflict between this deeply embedded system of growth and the urgency to reduce human impact on the earth's ecological systems, the defining challenge of this decade will be to decouple development from combustion. Economic growth, the built environment, municipal services, transportation, even agriculture, all rely on combustion, and our core systems of valuation require that the impacts of combustion be ignored. Thus, no single individual, firm or government can transform the practices that drive growth—it will require an architecture of solutions and actors.

The development of a widespread economic imperative for restricting carbon emissions seems unlikely in the near or medium term. As was demonstrated during the Copenhagen Climate Conference, a global binding pact on climate change will not happen soon. Enforcement is even more distant.

Addressing this challenge is not just about protecting ecological systems: it is about creating an opportunity. In the coming decades, a new frontier of competitiveness will open between nations—there will be buyers and sellers of the expertise, technology and models that thrive in a carbon-restricted economy.

With a decade of crises just behind us, and more on the horizon, the political and economic climate appears too conflicted to shoulder this scale of change. Yet signals from all sectors and most governments suggest that we have reached an inflection point, one that signals the onset of change. While a formal agreement was not reached at Copenhagen, the event revealed that the topic of climate change had now engaged not only the environmental ministries, but also heads of state.

The stage is set for the evolution of environmental policies into comprehensive economic and social transformations. For those who want to foster a productive natural environment, as well as ensure success in the impending regulatory environment and emerging markets, the time to act is now.

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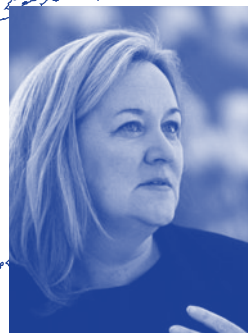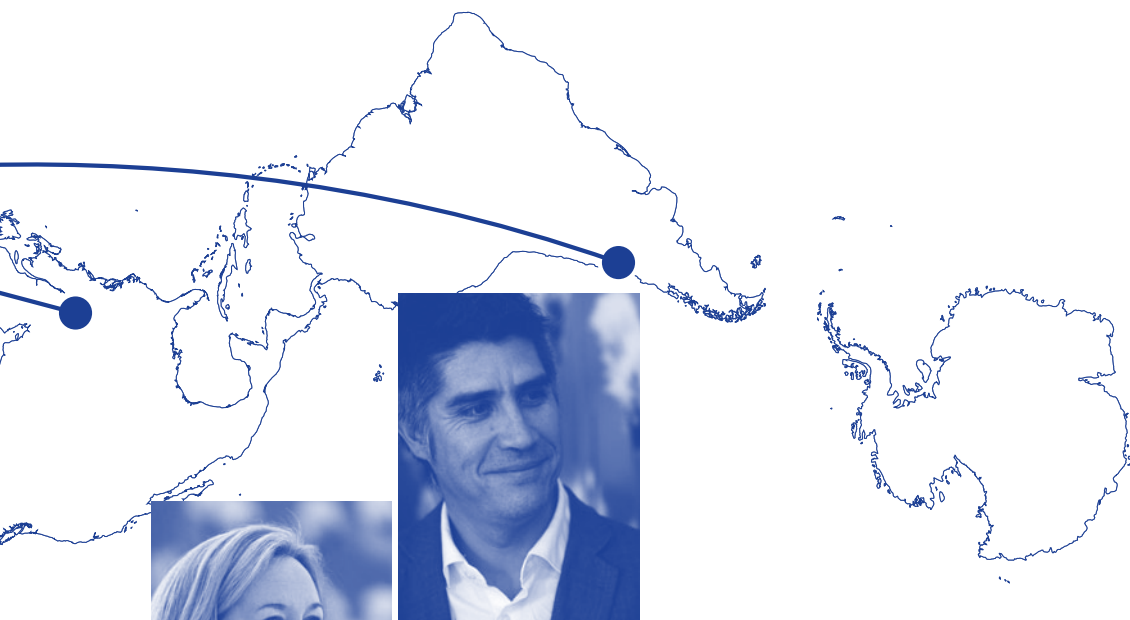
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and Technology

Monday, May 24			Tuesday, May 25			Wednesday, May 26		
Diving in			Field visits			Starting to Sketch		
8:00	Kick off breakfast		8:30	Energy efficiency, policy, and innovation in the Nordic region	Hans Nilsson, FourFact	09:00	Day begins	
8:30	Welcome and "what does success look like?"	Marco Steinberg	10:00	Visits to:				
10:00	Introductions and first impressions	Studio team		Mörrintupa Outdoor kindergarten				
11:00	Overview of Finland's macroeconomic and historical development	Pekka Ylä-Anttila, ETLA, The Research Institute of the Finnish Economy		Oranssi Co-Op Housing		11:00	Transportation planning in Helsinki	Olli-Pekka Poutanen, Director of the Traffic Planning Division, Helsinki City Planning Department
12:00	Lunch in studio		12:00	Packed Lunch		12:00	Lunch in studio	
13:00	The Government Sustainability plan	Oras Tynkkynen, MP	13:00	Helsinki City Planning office See the city on walk back to Studio	Markku Lahti, director of Strategic Urban Planning Division and Annukka Lindroos, Deputy Director of Town Planning Division	13:00	A global perspective of sustainability	US Ambassador to Finland Bruce Oreck
14:15	Coffee							
14:30	Planning approaches in Finland	Aija Staffans, Aalto University						
						16:00	Day ends w/ pin-up	
16:00	Day ends w/ pin-up		16:00	Summarise visits	Studio team	17:30	Climate Security	Nick Mabey, CEO E3G
19:00	Working dinner	Studio team with HDL hosts	19:30	Working dinner	Studio team with HDL hosts	19:00	Special dinner	Studio team with HDL hosts and Nick Mabey

Thursday, May 27			Friday, May 28		
Pulling things together			**Sharing**		
09:00	Day begins		9:00	Internal review	Studio team and HDL Hosts
12:00	Lunch in studio		12:00	Lunch in studio	
			13:00	Internal review	Studio team with HDL hosts
			16:00	Studio review	Mikko Kosonen, President, Sitra
					Jukka Noponen, Director of Energy programme, Sitra
					Peter Lund, professor of engineering physics and advanced energy systems Aalto University
16:00	Day ends w/ pin-up				Timo Mäkelä, Director of International Affairs, LIFE and Eco-innovation, DG Environment, European Commission
16:30	Cocktail hour	w/ Sitra Energy programme and ERA17 Ministerial working group on Energy-Smart Built Environment			Helena Säteri, Director General, Department of the Built Environment The Ministry of the Environment of Finland
19:30	Working dinner	Studio team with HDL hosts	18:30	Closing Dinner	

Outcomes Summary

Three main avenues to carbon neutrality in the built environment were identified by the Studio: reducing demand for carbon-intensive energy and behaviours, emphasizing the role of renewable energy sources, and making use of forests as a carbon sink. Here the goal was to pursue carbon neutrality under a holistic definition of sustainability. For instance, although nuclear power is currently a popular low-carbon choice, it continues to act as a counter-productive crutch to industry, prohibiting significant innovation in sustainable energy production and new market sectors.

Finland is one of the few countries featuring a strong central government with the ability to efficiently deliver welfare and quality of life. One of the main questions is how this can be taken advantage of in the quest to maintain current standards of living while reigning in carbon emissions.

To advance the conversation, the Studio identified three meta-themes which specify the qualities that are necessary for any responses to the current carbon challenge.

1. Diverse needs

Every person, building, and business has different needs, so blanket approaches to carbon neutrality that favour top-down implementation may not be productive. A more robust understanding of one's carbon tabulation is needed so that specific trade-offs may be leveraged—even at an individual level.

2. Urgency

Like most of the world, Finland is already behind its carbon emission targets for 2050. Yet there is a missing sense of urgency. Current environmental knowledge suggests that even five years is a long time to wait for action, thus creating a palpable sense of urgency is key to unlocking the scale of impact needed. Many necessary actions have a long cycle of returns which means they need to be pursued now.

3. Opportunity

A stick-based 'guilt' approach to sustainability is proving its limitations. New strategies need to take advantage of positive reinforcement. Market opportunities remain open for those willing to be the first mover.

Based on these meta-themes the Studio proposed a set of ten 'hunches' targeting a variety of scales in space, from local to national, and in time, from immediate results to 100-year return on investment.

In no specific order:

— War Cabinet of Mayors and Ministers: Bring together national and local decision makers in a war on carbon.
— Zero-Energy Homes for Key Gatekeepers: Enlist influential citizens from politics, business, sports and culture to lead the transition away from carbon.
— Cross-Finance Renewable Energy: Fund expansion of renewable sources through taxes levied on non-renewable energy.
— Densify Porously: Explore new city planning typologies that combine urban density with access to nature emulating the Finnish model (access to nature has intrinsic cultural importance in Finland).
— Emphasize Small-Scale Natural Areas: Let nature seep into cities in small pockets too.
— Adopt Mixed Use: Intensify the integration of living, working, shopping and leisure spaces to reduce travel needs.
— Invent Medium-Density Public Transport: enable the creation of products and services catering to public transportation for medium-density environments.
— Invent Cellular Infrastructure: Explore smart grids and other technologies to make lower density viable with a smaller carbon footprint.
— Performance-based Building Permits & Audits: Integrated and holistic 'carbon budgets' should inform building design, permit processes and usage.
— Integrate Urban Planning: Bring together quality of life, economics, density considerations, natural resource strategy, mobility, energy, building performance and land use to make more sophisticated planning decisions, based on rich, real-time data.
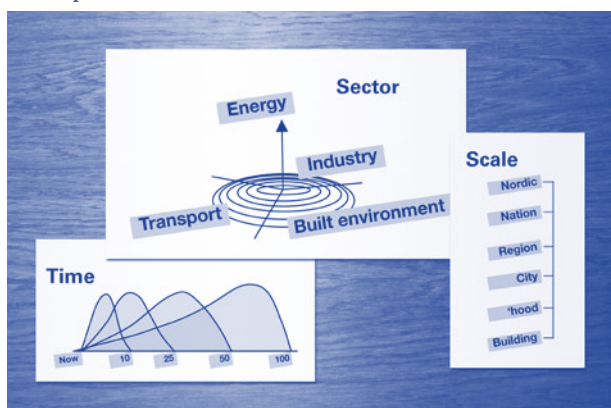
Each of the studio's ideas were described in terms of their balance across scale, sector, and timeline. The notion of 'waves' of change was introduced to offer a pragmatic way to handle the extreme inertia in the built environment. There are many things which require decades to come to fruition, but there are also actions that can be taken today. Both must be done in concert.

Ageing Studio

With Europe's most rapidly ageing population, Finland faces a daunting challenge in light of the imminent retirement of the Baby Boomer generation. The onset of sudden strains and intense pressures will draw increased attention to shortcomings of the existing welfare system. To make good on the social contract between generations, Finland must rethink how and why it delivers welfare services to the elderly, as well as redefine the general understanding of all life stages.

As the average age of many societies in the developed world steadily rises, the basic assumptions of daily life are being rewritten. This change affects not only the members of this ageing population, who are facing increasing competition within a constantly growing peer group, but also those individuals and communities who provide care and support for the elderly. As the Baby Boomers retire, every level of society will be affected—from the individual to the institutional—with particular attention focused on the interfaces between these different groups.

To make good on the social contract between generations, Finland must redefine the understanding of all life stages.

As the Baby Boomers retire, every level of society will be affected—from the individual to the institutional—with particular attention focused on the interfaces between these different groups.
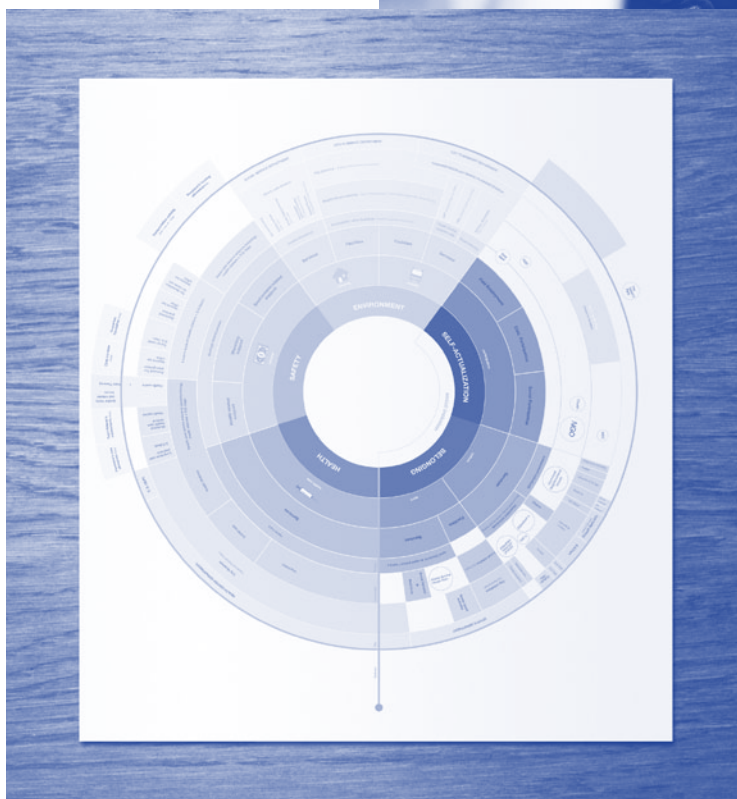
In advance of the studio week, the assistants prepared a mapping of key stakeholders from all sectors by placing the elderly in the center and radiating out through all strata of public and private services and relationships.

The coming of this 'Silver Wave' is coincident with broader structural changes occurring globally. Post-war welfare institutions are subject to additional stresses as they confront unfamiliar conditions such as expanding markets and competition, increasing diversity and fluidity, and new understandings of citizenship, participation and social relationships. Welfare systems will have to evolve along with the constituencies that they serve if both are to continue gracefully into the twenty-first century.

The Nordic welfare model has garnered attention because of its manifold successes. Tight integration into social fabrics and deep penetration into economic foundations make the Nordic model unique among welfare systems. But it is unclear if such a structured, embedded model is flexible enough to accommodate the onset of these structural challenges.

Models that prove too rigid or brittle will likely fail under mounting pressures. An agile response will require that the 'how' be as flexible as the 'who' is diverse and numerous. The basic terms of the discussion remain open for definition. For instance, 'old age' can be described in a multitude of ways: although a biological definition may be the easiest to evaluate, it can also be limiting.

Providing adequate care for the elderly, while also preserving their dignity, will be one of the pressing challenges for existing welfare systems. Handling the ageing challenge will yield broader insights for understanding how society at large cares for itself. Harnessing the untapped potential of the elderly as a value-producing segment of society, rethinking societal and institutional roles and responsibilities, and devising new ways to measure progress and set targets constitute key areas for future development.

This Studio was designed to recast ageing as an opportunity rather than as a problem. In doing so, changing the very understanding of 'elderly' is one important step towards a deep conversation about the future of our welfare systems and the population they support.

> 'Old age' can be described in a multitude of ways: although a biological definition may be the easiest to evaluate, it can also be limiting.

**This excerpt is taken from the Ageing Studio Challenge Briefing which is reprinted in the appendix. **

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Hannele Seeck
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Petri Lehto
Ministry of Employment and the Economy,
Helsinki
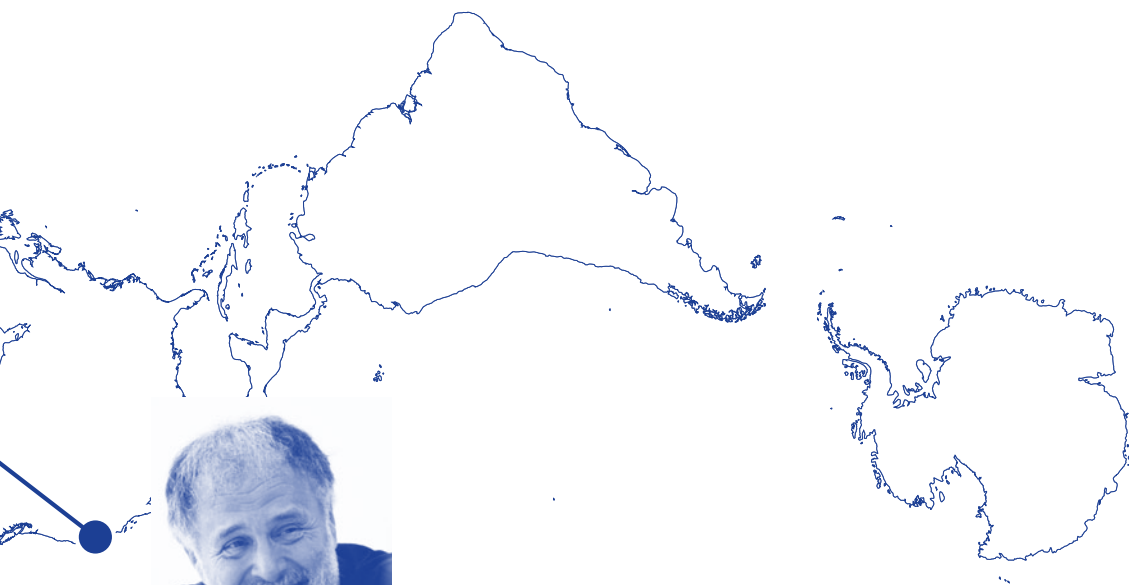
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and Business Administration,
Turku School of Economics

Monday, June 7			Tuesday, June 8			Wednesday, June 9		
Diving In			**Field Visits in Jyväskylä**			**Starting to Sketch**		
8:00	Kick off breakfast		8:00	Jyväskylä City Planning office	Ilkka Halinen, City Architect and Anne Sandelin, Town planner	09:00	Day begins	
8:30	Welcome and "what does success look like?"	Marco Steinberg	9.35	Visiting Sammonkoti, sheltered home	Kati Kallimo, Head of Services	10:00	Chat with a group of Helsinki seniors	
10:00	Introductions and first impressions	Studio team	9.45	Sammonkoti planning and building project	Essi Heimovaara-Kotonen, Project manager			
11:00	Overview of Finland's macroeconomic and historical development	Pekka Ylä-Anttila, ETLA, The Research Institute of the Finnish Economy	10.15	Tour and meeting with residents				
12:00	Lunch in studio		11:00	Lunch and discussion: Delivering integrated care	Pekka Utriainen, Deputy Mayor and Sirkka Keikkala, Chief Medical Officer, Central Hospital	12:30	Lunch Discussion	Riitta Aejmelaeus, Head Physician at Helsinki City Social Service Department
13:00	Overview of Finnish decision making	Katju Holkeri, Head of Unit at Ministry of Finance, Ministry of Finance						
14:25	Coffee break		14:05	Flight to Helsinki				
14:30	Reflections	Vappu Taipale, retired Minister of Social Welfare at the Ministry of Social Affairs and Health						
			16:00	Day ends w/ pin-up		16:00	Day ends w/ pin-up	
17.00	Working Dinner	Studio team with HDL hosts	19.30	Working Dinner	Studio team with HDL hosts	19:00	Special Dinner	Studio team with HDL hosts
20.15	Flight to Jyväskylä							

Thursday, June 10			Friday, June 11		
Pulling things together			**Sharing**		
09:00	Day begins		9:00	Internal review	Studio team and HDL Hosts
10:30	Elderly social issues	Olli Valtonen, Executive Director, Helsinki Missio			
12:00	Lunch in studio		12:00	Lunch in studio	
			16:00	Studio review	Paula Kokonen, Deputy Mayor, City of Helsinki
					Juha Kostiainen, Director, Public Administration Management Development Programme, Sitra
					Tapio Anttila, Vice President, Sitra
16:00	Day ends w/ pin-up				Pekka Timonen, Executive Director, WDC 2012 Helsinki
16:30	Cocktail hour with Sitra Public Leadership and Management Programme and their guests				Timo Vierelä, Planner, City of Helsinki, Department of Social Services
					Aleksi Neuvonen, Researcher, DEMOS Helsinki
19:30	Dinner	Studio team with HDL hosts	18:30	Closing Dinner	

Outcomes Summary

The profile of the coming generation of the aged in Finland will differ significantly from its predecessors. As a consequence of both accumulated wealth and an increased life expectancy, the retiring Baby Boomers will represent a sizeable concentration of individuals with high levels of time, health, money and wisdom. As a group, they look forward to the freedom and independence of their post-retirement lives. Against this backdrop, the Studio set out to articulate a new understanding of the ageing population based on three core tenets.

1. New Wealth and New Health

Measured by net wealth, 55–64 year-olds are the wealthiest age group in Finland. In 2004, their net wealth was approximately 1.5 times higher than the national average. The Studio team saw this as a great opportunity for society: the Baby Boomers will have the time and resources not only to demand new categories of products and services, but also to invest in and advise new businesses launched by younger generations, extending the active stages of their life and economic participation.

2. New Social Contract

Present-day professional culture pushes individuals to maximize productivity, often at the cost of their personal lives. This inhibits employees' ability to form social networks outside of work. This general underdevelopment of personal economies in society has far-reaching implications in terms of low levels of entrepreneurship and activism in Finland, whether as hobbies or volunteer work. Through interviews with retired citizens, the Studio team found a need to ignite deeper desire to contribute to society beyond professional roles. Thus, the need for a new social contract emphasizing individuals' participation in, and contribution to, society became evident.

3. Systemic, Institutional Innovation

Finland is an institutionally led culture with a strong public sector. Recognizing this, the Studio set out to sketch new solutions that would respect the role of institutions and support innovation at their core, while opening them up for greater engagement with society. Systemic, institutional innovation is needed beyond current 'problem/solution' service innovation and optimization.

Whole-life Solutionscape

Based on this framework, the Studio proposed a set of ten 'hunches' that constitute areas of opportunity which together offer a strategic impact. Importantly, these ideas span from birth to death and are not bracketed by typical 'elder' timelines.

They are presented here in a highly abbreviated format:

— Grey Gold: The elderly have massive investment and purchasing power; how might it be put to use to strengthen intergenerational ties and boost the economy?
— Eliminate formal retirement age: Allow individuals to choose when and at what rate they step out of working life.
— Develop a new social contract through a nation-wide co-creation event.
— Create an interdepartmental minister of Ageing & Volunteerism.
— Establish a National Wisdom Bank to enable informal knowledge transfer.
— Welfare to Co-care: Registered Nurses, advanced ICT, and other means to enable less rigid care structures that focus on active engagement.
— Mandate that co-creation be at the heart of new service development.
— Emphasize the importance of lifetime exercise.
— Honour Volunteering: To expand volunteerism in Finland, put it in the spotlight.
— Consider transitioning away from a traditional pension system towards a 40-year trust to encourage life-stage flexibility.

The studio worked across all life stages to develop an architecture of solutions that focuses on strengthening inter-generational relationships.

A typical day in studio

Strategic design as it is discussed in this book is a way of working that informs both thinking and doing. At Sitra our interest is in using strategic design in service to society, particularly as a capability of 21st century governments looking to increase their agility in the face of potentially transformative challenges. Helsinki Design Lab is Sitra's learning engine for the methods of strategic design, and HDL's first concrete output is the Studio Model. It is a specific process that benefits from the attitude, approach and abilities of strategic design. The following How-To sections attempt to describe the Studio in a way that makes it easy for you to adjust the model to your own needs and context. We hope it to be a flexible recipe.

The way that you organize a Studio will be shaped by the realities of your own organization and the resources available to you for this process. To make the best use of the following chapters, take a minute to think about what resources are available to you, how you might use them and how this relates to your aims for the Studio. At Sitra we are lucky to have access to stable funding, a wide network and a brand that helps us to connect with new people and organizations. We think of this funding, network and reputation as the key assets that enabled us to organize the HDL Studios in 2010. Your organization will have a different balance of these assets, which will naturally entail adjustments to the rules of thumb summarized below.

Having realistic expectations at the outset is essential. Success will look different based on the nature of your investment in the Studio in terms of time, effort and money. Given enough time to prepare and a reasonable budget, you can identify the right team, generate foresight and chart a course of action to deliver strategic improvement. The Studio is designed to deliver outcomes, but the experience itself is also capable of creating transformational learning opportunities on an individual level. When funding is limited or the preparatory timeline curtailed, the Studio is more likely
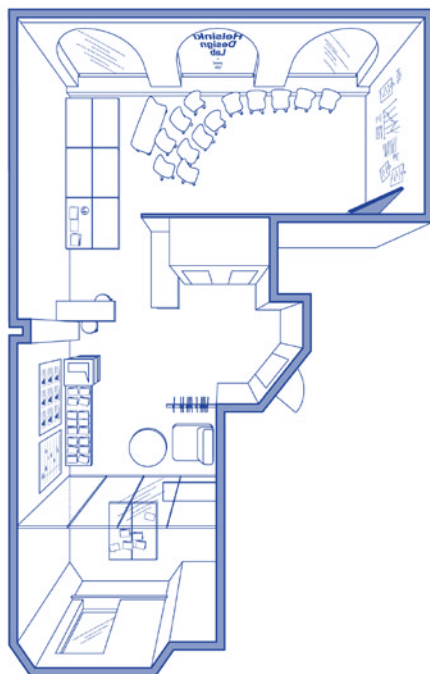
Presentation mode for the Final Review.
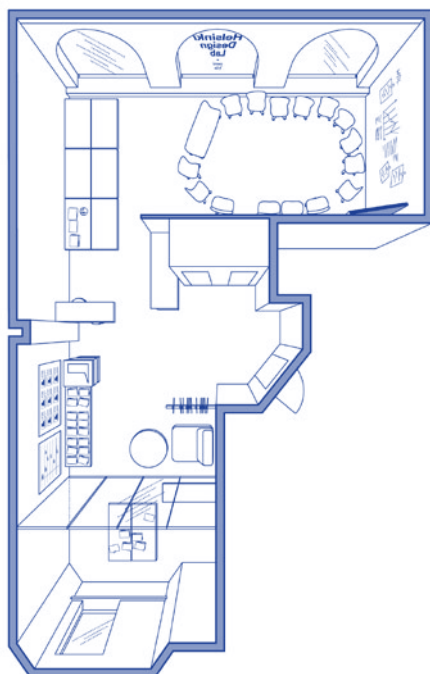
Discussion mode after the Final Review.

to be weighted towards creating an enhanced awareness of the approach while still providing a glimmer of the redesign potential, therefore preparing the ground for future efforts.

We put the model's flexibility to the test during our own Studio at the Umeå Institute of Design[1] in January 2011, which was conducted under much different conditions than the Studios we ran in Helsinki during 2010. With a budget of only €100, few established connections to Umeå and the province of Västerbotten, a pre-determined group of students as the Studio team, and limited time to prepare, we made big adjustments to the details without abandoning the core relationships—of people, process, problem and place*—that make the model work. We still made sure to frame the challenge carefully, adjusted the process to suit the situation, moved some furniture around to make our space more congenial, and lucked out with a team that had an inbuilt spirit of collaboration from the start. Within these parameters we relied on our limited network and the strength of the Studio Model to help us deliver something useful at the end of the week. A heightened awareness to the possibility of strategic redesign amongst the students and their audience of local government stakeholders was the main outcome of this Studio, and this is an important first step towards creating the possibility of systemic transformation.

Through exhilarating—and occasionally brutal—trial and error we have learned some rules of thumb. Successful application of the Studio Model requires the right people, a flexible process, a carefully defined problem, and a place that is conducive to collaboration— all applied with an open-minded spirit.

1—Situated in the northern Swedish city of Umeå, the Institute has become recognized as a leading design academy in the Nordic region. Sitra/HDL were pleased to be part of a week-long experiment called 'Prototyping the Future' that tested out new curricular areas, including strategic design.

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Your Role

Much of the power of the Studio outcomes derives from the fact that the Studio team is free to recommend whatever they feel is the most appropriate response to the challenge. For this reason the Studio team should be as independent as possible so that their recommendations are truly their own. Although you can play an active role in the Studio team, and in some cases this may be important, in our own HDL Studios we decided from the start that Sitra's role would be supportive rather than actively participative. However, just because you are not part of the Studio team does not mean that you are absent.

As the host of the Studio, there is plenty for you to do. The Studio team will be in a state of awe-inspiring frenzy most of the week, so your role is to stay two steps ahead and attend to any details that need attention. Your number one goal is to ensure that nothing breaks the Studio's momentum. In practical terms this means everything from monitoring the temperature of the room and discretely opening a window when it gets too stuffy, to making quick introductions when guest speakers arrive, being available to counsel the team when they hit a roadblock, and having the time to handle other needs as they come up.

You are likely to be called in as a sounding board as the Studio team works through the ever-multiplying issues at play. When this happens, your informed neutrality will be a key asset. Try to help the Studio determine what is most relevant without imposing your own point of view.

By playing a supportive role you also gain the freedom to focus on the relationship between the Studio team and your own organization. Take the opportunity, for instance, to build connections between the Studio team members and relevant parts of your organization who could benefit from their involvement at a later date, or invite your co-workers to drop by the Studio and see for themselves strategic design in action. Also ensure that you are orchestrating the ongoing documentation of the Studio.

Most importantly, you are there to keep track of the overall aim and goals of the Studio as it relates to a larger arc of work. How does the Studio as a self-contained engagement fit into the big picture of your project or programme to help your organization meet its objectives?

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Selecting a Challenge

The richness of the topic that you choose for the Studio is an essential part of determining the Studio's likelihood of generating something useful by the end of the week. A good topic is neither too small in scale, nor too grand. It is relevant to you, the talent you hope to attract and your organization's networks. Of these factors the question of scale is the hardest to determine, and in some ways the most important.

Topics that balance scale well take a big, general theme and connect it to a focused, specific entry point, allowing this connection to be traversed back and forth by the Studio team. This is why all of our challenge briefings have a title and subtitle, as you will discover in the next How-To. Your Studio will benefit from being able to work between scales, exploring the thematic issue through specific examples, and testing the relevance of specific possible solutions against the broader concerns of the big picture. Selecting something as broad as 'ageing' as a Studio topic, for instance, requires that the team spend an undue part of their week trying to define the term and what it includes. Conversely, something as narrow as 'cutting costs in the system of home visits to bedridden elderly citizens' is so specific that it may not really be a strategic issue.

Use these four criteria to select a theme and its specific entry point.

1	Is it important to your organization?	Our mandate is to improve Finland's international competitiveness, so we looked for topic that matter to the future of Finland
2	Is it relevant outside your immediate sphere?	To be able to attract world-class talent we need a problem that talent all over the world cares about and are working on
3	Can you build a network around the issue?	A quick reality check of how much effort would be required to discover and engage stakeholders for research, lectures, Studio members etc.
4	Is it a focused topic with big picture implications?	Avoid problems which are either too specific or too broad

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Criterion #1: Importance

Ideally the topic you select will be relevant to your entire organization, not just your team. Topics which matter to others in your organization will make it easier for you to lean on the full resources available to you in-house. This generally makes your life easier!

Criterion #2: Relevance

On a conceptual level, thinking about who the topic matters to is a way to test the broadness of your topic, and on a more practical level it impacts your ability to recruit Studio members. In line with Sitra's mission we selected Finland as our sphere and looked for topics that were simultaneously relevant to Finland and the world, even if Finland's interests in the themes are unique. For instance, although the forestry industry is fundamentally important to Finland, it is a theme with more narrow appeal outside this country and it would be harder to develop a diverse international team. You will want Studio members from outside your immediate sphere because they are best able to see the things that insiders are blind to by habit, but unless the Studio topic is relevant to these people you will have a hard time recruiting them.

Criterion #3: Networkability

Assessing your ability to build a network around the topic is a way of thinking about how much of an uphill battle it will be to prepare for the Studio. If you do not already have a strong network of stakeholders, or access to one, you can expect to spend significantly longer establishing these connections in your brief writing and Studio planning activities. This will naturally extend the timeline of that work and, in some cases, may prove to be insurmountable. In our experience with the HDL Ageing Studio, the necessity of building a network from scratch increased the ramp-up time for the Studio by a factor of about 1.5 as we acquired a basic understanding of the important issues sufficient enough to identify relevant stakeholders and build relationships with them.

Criterion #4: Scale

Rich topics occupy a sweet spot between being too broad or too specific. Whereas criteria 1-3 are primarily useful in determining how difficult your task will be as the organizer of a Studio, criterion 4 affects the outcomes. Topics which satisfy criterion 4 have a richness that results from their balanced scale. For example, new concepts for low-energy building are certainly relevant to Finland and many other

places, and Sitra has a strong network of expertise around this topic, but it's already a well-defined problem space that does not benefit much from the strategic rethinking that a Studio is designed to generate. On the other hand, situating energy usage issues alongside transportation, consumer behaviour, food, energy production and the other aspects which would make up a national sustainability policy for the built environment certainly does yield a problem space which is not only broad but also currently ill-defined. That's a rich challenge.

However, it is also possible to be too broad, which decreases the effectiveness of a Studio as the participants spend too much time grappling with the boundaries of the challenge. In the example above, 'Sustainability' is such a contentious word that it is interpreted differently by just about everyone. To give the Studio an anchor to their conversation we asked them to consider "carbon neutrality in the built environment." This bracketed the challenge by specifying the lens through which we wanted to consider sustainability (based on the best current knowledge of Sitra) and limiting the effort to the built environment (based on the importance of this aspect and the strength of our network in that area through the Low2No experience).

You will want to avoid topics which cannot stand on their own because they are too abstract. While we were deciding on the HDL Studio topics in 2010 the theme of 'measuring' and especially how to measure ambiguous conditions kept coming up. There is some interesting work to be done around how we measure and evaluate effort in any number of areas—from the economy to school performance—but on its own 'measuring' is too vague to motivate coherent discussion without requiring the participants to develop some applications to test the ideas, which would eat up precious time during the week. Good Studio topics ask the participants to respond to a specific problem couched within a big picture challenge.

While much of the work in the Studio will focus on developing a strategic framework that addresses the big picture ('carbon neutrality'), the role of the specific problem ('built environment') is not to be underestimated. It will act as a synecdoche, or stand in, that can be used to test ideas and ultimately enable decision making among the Studio team. To continue the example, strategies for achieving carbon neutrality can be pre-tested by considering how they might impact the built environment. Similarly, ideas about how to achieve a carbon-neutral built environment may be tested 'upstream' against the broader goal of 'national carbon neutrality' which will include aspects such as the energy use of industry, matters of employment, and cultural factors which are not part of the typical definition of 'built environment.'

Writing the Challenge Briefing

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The challenge briefing is a document that specifies the Studio challenge in greater detail. As the first step in the Studio's immersion into the problem and the culture it is situated within, the challenge briefing should be indicative rather than exhaustive, and it takes a position in order to bring focus rather than to persuade. With team members coming to the Studio from different perspectives, and probably different geographical or cultural contexts, the briefing also plays a role as a common touchstone or integrator.

Contents

A good briefing document frames an opportunity, describes the current reality and identifies a number of dimensions relevant to the challenge. These parts of the document represent a gradation of objectivity from a framing that is mostly provocative to the dimensions which are mostly objective. You might want to think of the challenge briefing as honing the Studio topic into a sharp but brittle form: it must be focused and clear, but not so strong as to be too hard for the Studio to crack into. This 'brittle' starting point enables the Studio team to move more quickly because they immediately have something to react to. If the briefing is too objective, it will not function in this way and there is a risk of spending too much of the Studio week simply trying to develop a consensus on the semantics of the topic.

The brief should cover three areas: an opportunity space that issues the challenge, background to put it into context, and key dimensions that dive into a handful of relevant facets of the challenge.

Writing the Opportunity Space is likely to prove the most demanding, as it must take the challenge of the Studio and translate it into positive opportunities at the global and local scales. In the case of our HDL Studios in 2010 this meant framing the challenge as a globally relevant issue with specific opportunities in Finland. This section unpacks the factors that contributed to the selection of the Studio theme and clarifies the relevance of the specific entry point. The opportunity space asks: what do we have to lose as the result of inaction and what do we have to gain[1] through strategic redesign?

1—This formulation is borrowed from Alejandro Aravena, Design Lead of our 2010 studio on sustainability.

The Studio also has to understand the current reality in the local context, especially the things which potentially re-enforce the status quo or prevent its transformation, which is the content of the background section. In addition to providing an executive summary of the key dimensions which come in the following section, the background illuminates the urgency of action on the Studio theme. In other words, it must answer the questions 'why this theme' and 'why is it important right now?'

During the course of researching the Studio topic, a pool of themes is likely to show up again and again. We call these the key dimensions of a problem and the challenge briefing includes overviews of 5-7 of the most important dimensions. Likely dimensions include such things as the historical evolution of the system in question; a survey of current actors, organizations, or systems; examples of other transformation attempts; cultural factors; or a focused look at one facet of the issue*. Selecting dimensions will require the writer to make a best guess about what might be relevant to the Studio as they develop an architecture of solutions. Rest assured that regardless of what dimensions are selected, the Studio team will always seek further inputs.

Style

A good briefing is more akin to investigative journalism than a peer-reviewed journal contribution. It should be succinct, accessible and written in an open-ended manner that invites the reader to question the text. In order to maintain a big picture perspective on the theme, it can be helpful for the writer to not be an expert on the topic (they will be by the time they finish!) or if the document is written collaboratively by a team. As a working document, it's more important to have a well-structured challenge briefing than a narrative that flows smoothly from beginning to end.

Format and Delivery

A briefing can only function as the common platform of understanding amongst the Studio team if everyone has read it before the Studio begins. This implicates both the formatting and the timeline for its delivery. Ideally the Studio team members do not just read the document but interrogate it, rip it apart (often physically) and reformulate it. Think about the ways in which page margins, paper stock and the binding encourage or inhibit interactions such as marking up the challenge briefing with notes in the margins.

Consider delivering an electronic copy of the briefing a month before the Studio and a printed copy about a week before. We prefer to design the challenge briefing as a small booklet that could easily be slipped into any bag and read in an hour or less. As we hoped, most of our Studio teams read it on their respective journeys to Helsinki.

The Briefest Brief

Any briefing document delivered in advance of the Studio week is useful, even if it is not as complete as what is described here. The briefest of briefings would include a one-page opportunity space, a couple of pages on background, and a bullet point list of key dimensions for the Studio to investigate on their own.

Let the Studio Tear Down and Rebuild

While it's worth the time and anguish to make sure you select a viable topic and compile a thorough challenge briefing, do not be surprised when the Studio rejects or alters your framing of the challenge. This happens in all of our studios and the discussions is richer because of it. Even though it can be difficult to watch months of hard-fought effort be re-arranged or downplayed in the span of a week, this is after all the purpose of inviting a group of experts to give their unvarnished advice. The Studio's revision to your statement of the challenge is testament to the seriousness with which the Studio has taken on the work, the importance of the chosen Studio topic and the success of the Challenge Briefing in enabling them to have a single discussion.

Section		Aim	Tone	Pages
Opportunity Space	Macro	Situate the challenge within its macro context	Provocative > Objective	1
	Local	Create urgency within the local context	Provocative > Objective	1-2
Background	State of the State	Raise questions about the status quo	Provocative = Objective	1-4
Dimensions	Dimensions of the problem	Briefly describe key aspects of the challenge in facts and figures	Provocative < Objective	5-50
	Future Scenarios (optional)	Provide loose estimates of basic facts about the local context / Index macro trends that may impact the challenge	Provocative > Objective	2-4
	Bibliography	Point to further sources of information		As needed
	End notes	Includes information about the host organization and the role of the Studio and what happens next		1-2

Building a Team

At one point during the first HDL Studio a member of the team pulled us aside and remarked that they felt like they were participating in an Agatha Christie novel: a group of people pulled together out of thin air—why are they here and what will they do now? The reason Studio teams are assembled on a per-Studio basis is that challenges have diverse needs and top talents that can address those various aspects seldom exist as a pre-built team. Whether you are recruiting within your organization or outside it, let these criteria be your guide.

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The Right Mix

A good team is balanced along the axes of age, gender, geographical origin and domains of expertise. Seeking such a balance will naturally push you to expand the size of the team, but our experience confirms that 8-10 people is the best size for this kind of work. Anything smaller and it will limit the balance of the group, any larger and it will be hard to hold a single conversation. Of these eight, two should be strategic designers—one who takes the role of Design Lead and the other as a second opinion.

The Right Expertise

While the challenge briefing is under development you will begin to understand which issues are relevant to the challenge and in what proportion. Parallel with researching and writing our own challenge briefings we create expertise profiles for each Studio. These are running lists that identify what we consider to be key perspectives for each Studio topic, which then allow us to target specific skill-sets and experience profiles. As you prepare, it is a good idea to keep this list posted in a public place and regularly review its contents to ensure that it represents the current state of your knowledge of the challenge.

For instance, in the Studio on Sustainability we knew that building physics, transit and policy would be key areas. These were quite predictable before we even started. We also sought some perspectives that might at first be unexpected. The thought behind this is simple: if you only include the regular suspects you will only get regular results. By the same token, the notion of an 'X-factor' can go too far. For instance, although juggling is certainly an unexpected perspective for a

conversation about sustainability, it is probably not the most relevant. The X-factor works best with someone who has a demonstrated commitment to the Studio theme even if their everyday work does not overlap with it 100%. One's expertise often stretches beyond the words on their business card.

The Right People

Individuals are multifaceted and play many roles in their lives. The totality of an individual's experience and identity should be considered when building the team. It might be difficult to balance factors such as age and gender while looking for individuals with a particular expertise, but the results of doing so are worth the effort. It is also worth underscoring the importance of including one or two younger members on the team. Beyond adding a youthful energy, including upcoming leaders in the Studio is an investment in the future of society's ability to think holistically.

Having team members who come from different cultural backgrounds and generations builds a useful edge of ignorance into the team. Being an outsider can be helpful because it gives an individual the freedom to see the peculiarities of the situation and ask questions that members of the culture or generation under consideration are blind to.

The Right Attitude

While one might be able to judge an individual's expertise by browsing a CV and reading some of their publications, it is very difficult to assess whether an individual will work well as part of a team until you share a conversation. Meeting in person is always preferred, but a phone call is a good start, or a recommendation from a trusted friend.

One useful indicator of an individual's ability to function well in a Studio is significant experience in other cultures, whether geographical or professional. Given a choice between an expert in astrophysics and an expert in astrophysics with a previous background in agriculture, our bet is on the latter. There is something about having lived or worked in multiple cultures and contexts that prepares an individual for the kind of lateral thinking that is required in an HDL Studio.

Design Lead

Being a leader means knowing when to listen and when to ask for help, and being able to break deadlocks by making a confident decision. We recruit strategic designers who exhibit these qualities and are comfortable working in a subject area on which they do not necessarily possess any specific expertise. The Design Lead's job is to keep the Studio focused and moving. In some cases this includes stepping in to make decisions when differing opinions amongst the Studio team are inhibiting the synthetic process. In this manner, the Design Lead role is more active than that of a facilitator.

In contrast to a facilitator, the designers are part of the team rather than outside of it. They are expected to bring their expertise and experience to the table by actively contributing like everyone else. This includes guiding the synthesis process as well as being able to comment on the cultural and social consequences of material decisions.

The background of these individuals will be varied and there is no particular field of design that is more likely to attract those who exhibit the qualities we have mentioned here. Currently, even the world's best design schools are not yet educating designers specifically for this kind of work.

Broadly speaking, the best designers for this role will have the ability to conceive of and critique systems, a deep understanding of material culture, and be able to respectfully lead the conversation during the week.

Incentives

Depending on who you recruit for the Studio, the question of incentives is likely to come up. Although we paid the participants in our 2010 Studios and believe that it is an essential part of respecting the time of your Studio members, you are likely to find that the opportunity to approach issues from a new angle and to experience a new way of working is itself very attractive when offered to the right individuals.

Rules of Thumb

Here are some rules of thumb that we used when thinking about the mix of the team and how to select the right individuals:

Keep it Small

With too few people there is a danger that the conversation will not be robust enough, but with too many people in the room it is difficult to have a single conversation. Based on experience, a team of eight is optimal. Some things work in large groups, but strategy sessions are not one of them. Eight is also small enough for you to fit into a small minibus for site visits and although this seems like a small thing, the logistics required to smoothly pull off an HDL Studio are not to be underestimated.

Avoid Duplicates

The Studio team will be working quickly, which means that the collective expertise and experience in the room is the team's largest asset. Although team members may have some overlaps in their interests, it is best if each member is the master of their own domain and can offer serious, focused expertise in their field. Each member becomes a 'representative' of their expertise and there is not much room for redundancy.

Look for the Best

When it comes to selecting individuals, start at the top of the field. High-quality input may not quite guarantee high-quality output, but it is certainly a prerequisite and a decent indicator. Recruiting talented participants will not only help you attract other high-quality people, but it will also raise the profile of the Studio, smoothing engagement with stakeholders and making outputs more likely to 'stick'.

Consider the Whole Person

It makes no difference whether someone is the top expert on the planet on subject XYZ unless they are able to relate to others and convey their ideas in an open, productive manner. For this reason, look for people who are at the top of their field, know their material inside and out, but are also naturally curious about the world around them and are able to sociably entertain models that conflict with—or even contradict—their own.

Be (a bit) Local

One of the great strengths of the HDL Studio format is that it offers a very fast and focused infusion of outsiders who are empowered by their ignorance of the local culture to touch taboos. To take advantage of this we set a rule of thumb for ourselves that two of the Studio members would be locals so there would always be 'cultural ambassadors' in the core team.

Design is the Glue

The pair of strategic designers work as synthesizers amongst a group of peers. It is their job to ensure that the conversation is balanced and holistic. When recruiting the two designers for each Studio we look for one highly-seasoned professional for the Design Lead role alongside one who is closer to the beginning of their career so as to also make our recruiting an investment in future design capability.
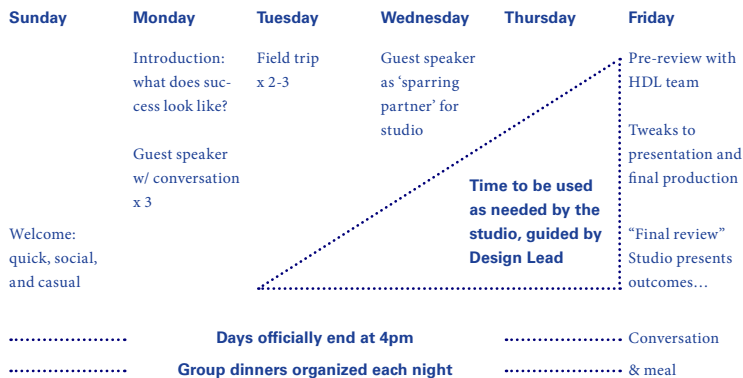
Organizing a Week

The flip side of assembling a talented group of people is that they tend to be incredibly busy, meaning that you will be lucky to get a solid week of their time. A week is just barely enough time to properly conduct a Studio. Setting aside a five days for an engagement like this might seem like a luxury, but it is actually a fundamental requirement. While it is certainly possible to apply the Studio methodology over a longer period of time (academic architecture and design studios usually last a couple months), every hour you shave off a full week will impact the outcomes. The accelerated schedule ensures that a mood of urgency keeps things moving. Remember, this is a sketch of the problem and an attempt to find ways of addressing it—the outcomes of the Studio are meant to be a solid starting point for what comes afterwards.

In this short window of time, the Studio members have to meet and get to know each other, acclimatise to your local culture and context, and soak up the specifics of the Studio challenge. They also need some time to work together towards developing a holistic, integrated framework for thinking about the challenge and then document it in a way that will spur conversation at the final review. With only a week to accomplish all of this, you will have to make every minute count.

Day by Day
We structure the first half of the week so that the Studio team has some time to develop their own rhythm without spinning their wheels, but leave the second half fuzzy with the understanding that the final review on Friday is a fixed target.

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
	Introduction: what does success look like?	Field trip x 2-3	Guest speaker as 'sparring partner' for studio		Pre-review with HDL team
	Guest speaker w/ conversation x 3				Tweaks to presentation and final production
			Time to be used as needed by the studio, guided by Design Lead		
Welcome: quick, social, and casual					"Final review" Studio presents outcomes…

····················· **Days officially end at 4pm**   ···················· Conversation

····················· **Group dinners organized each night**   ···················· & meal

Sunday:
Settling In

If possible, gather the team for a casual, quick meal to welcome everyone and give them a chance to get to know one another. In our case we had people flying in from overseas, so this get-together was an early dinner that ended with plenty of time for everyone to catch up on sleep before the busy week. If it's not possible to do this immediately before the Studio, try to find another opportunity for the team to meet socially as far as one month in advance of the Studio week.

Monday:
Getting to Know the System

To help put the team at ease, start off with a session discussing 'what success looks like'. This and introductions easily take up the morning of Monday. To give the personal introductions a bit of structure we ask each person to share a question that they have after reading the challenge briefing. Monday morning is also the right time for the Design Lead of the Studio to share with everyone some thoughts about how they want to handle the design process during the next five days. The point of this chat is to give the team some reassurance that although it might feel quite chaotic at times, there is a logic to the madness.

Monday afternoon ramps up with a series of lectures intended to give the Studio a solid overview of the context that they are working in. This is conveyed through a series of three or four thirty-minute lectures, each followed by a discussion period of about an hour. For example, the education Studio had speakers talk about the socioeconomic development of Finland, Finnish bureaucracy, classroom education, teacher education and policing and prevention related to at-risk youth, which are all-important aspects when thinking about addressing the dropout rates in Finland. The best speakers are ones who can talk with the Studio rather than at them, so be sure to spend the time to properly vet your speakers.

By the end of Monday the team's heads will be spinning, so it is important to give them time to digest. We end Monday with a lightning quick summarizing discussion just to get some ideas on the whiteboard and then head out for a team dinner where discussion can continue in a less formal setting.

Tuesday:
Seeing the Reality
on the Ground

With some sense of how things are supposed to work—as conveyed by the top-down viewpoints of Monday—Tuesday is about getting out of the Studio to see the first-hand realities in two or three visits. It will be tempting to cram the day with more, but remember that it's better to have time for proper discussion at each visit than it is to breeze through.

To continue using the education Studio as an example, this included visits to a primary and secondary school offering participants the opportunity to talk to administrators, teachers and students, as well as see the premises and observe active classrooms. Later in the day they visited a youth culture NGO.

Tuesday ends with a download session back in the Studio where everyone shares their insights from the day and the group begins to assess emerging themes and questions. This is where the Studio assistants start to become crucial: their role is to field questions that come up during this session. More on the role of the assistants in the Soft Infrastructure How-To*.

Wednesday:
Beginning to Sketch

Wednesday is when the Studio has the first real opportunity to begin synthesizing their experiences, findings and expertise. The only thing we schedule for Wednesday is a late lunch with the hosts (us) to give the team an opportunity to get feedback on the way that their hypotheses are developing. Before and after lunch the team is likely to be spending lots of time scribbling things on the whiteboard, erasing them and looking puzzled.

Even though it is early in the week, we encourage our Studio teams to formulate a working theory or proposition. This is not intended to be final or comprehensive, but it should help the participants begin to organize their thoughts while reinforcing the need for ideas to be concise in preparation for Friday's presentation. We have often found ourselves saying to the Studio, "Imagine you had to present in an hour, what would you say?"

Thursday:
Pulling Things Together

Friday:
Sharing

By Wednesday, the back office will be buzzing with activity, attempting to arrange meetings and researching the Studio's questions from the previous days. The Studio is probably requesting meetings with additional stakeholders or wishing to spend additional time with people they met on Monday or Tuesday. This is a good time to take an inventory and set to work arranging these visits or meetings for the following afternoon.

Continuing the intense synthesis development that began the day before, Thursday is probably hectic in the morning, reaching the point of maximum chaos just before lunch. By that point the looming deadline is about 24 hours away and there is likely to be palpable apprehension in the room. This is a moment that the Design Lead should be prepared for, as they might have to do some heavy lifting to translate between various points of view and help the team organise their ideas into one thesis.

Thursday afternoon is a good time for the group to divide and conquer. Once the big picture is starting to gel, the teams often split into smaller groups of two and focus on specific hunches or concepts which later feed back into the single group presentation. For this reason, the end of Thursday can be the quietest point in the Studio as the team members are deep in flow.

Your role as host is to remind the Studio that they are human. Ask if people want coffee, remind them that there is an outside and it can be lovely to go for a short walk, and ignore any claims by the Studio that they are not hungry. Order in lunch, set it in the corner of the Studio space, and watch the sandwiches disappear.

If at all possible it is best to have the final review session near the end of Friday. This gives the team an extra bit of time to tune and represent their ideas—which they will be very thankful for. Friday morning is a good time to re-assess the work from Thursday and make any last-minute changes. As the host of the Studio, you can gently provoke this by asking the Studio to present an abbreviated 'dry run' of their presentation first thing in the morning.

As quickly as possible, the team needs to transition to producing the documentation of their ideas and doing whatever preparations they need to be able to present them articulately. This is a time for the Design Lead to help the group divvy up presentation responsibilities and orchestrate the presentation in a way that does not lose the richness of the synthetic framework. In a practical sense this includes deciding who will present the different aspects of the synthesis, putting together a narrative arc, individuals producing diagrams or data visualisations with the help of the Studio assistants, and each person spending some time to collect their thoughts.

About one hour before the final-review guests are set to arrive you will want to begin cleaning up the Studio space. Be careful not to erase all the traces of intense work throughout the week, but removing stray coffee cups and hanging up coats and bags is a nice way to make the room more present-able. This activity also sends an important signal to the team that they need to wrap it up soon.

Next is the final review, a particular kind of discussion between the Studio and your invited stakeholders. Because designing this engagement is a task in and of itself, the Final Review has its own How-To* which follows.

Evenings

One week disappears very quickly during such an intense experience, and if you have done a good job at recruiting, the team will consist of conscientious people who dedicate the full strength of their mental facilities to the Studio challenge. As a mental 'steam valve' we set the hours of the Studio as 09:00 to 16:00. This gives everyone a chance to relax or nap before a group dinner at about 19:00. If the team—or part of it—decides to stay late that is OK too.

We prefer to pre-book dinners for each night of the week with the agreement that Studio members can opt-out if they need to rest. However, in our experience the majority of din-ners were with the full Studio teams and this proved to be a very important venue for fleshing out ideas and developing the team's social bond. With only four days to really develop the bulk of the work, the Monday-Thursday meals represent a total of about eight hours of conversation—essentially another full day's work. If your Studio arrangement does not allow you to entice everyone to meet in the evenings, slightly longer Studio hours are recommended.

Because of the compressed schedule, dinners and lunches become important opportunities to downshift into a more casual mode that allows work to continue in a social context, layering on new opportunities for consideration as well as offering the team the chance to get to know each other better.

Expected Studio Outcomes

The Studio experience will produce outcomes on three levels. The direct outcomes are specific deliverables such as a framework for strategic improvement and a set of ten opportunities. Indirectly the Studio can be thought of as a vehicle to build momentum and influence within your network by providing an engagement with meaningful content. Finally, because the week will be an intense experience, our observations are that one of the substantial outcomes is a personal transformation that comes from hands-on experience with a new way of working. Participants generally leave the Studio with an invigorated sense of the possibility of working in a cross-silo team and a deeper understanding of systemic challenges.

The Studio's target at the end of the week is twofold:

1. Articulate a clear vision or framework for strategic improvement describing the ecology of the problem.
2. Propose an architecture of solutions that highlights the top ten opportunities to help move closer to the vision.

Today's challenges are as much about vision as they are about designing the transition to accomplish that vision. As such, the opportunities are the critical hinge between the way things are now and how things could be. Together these two outcomes form a bridge between current realities and a projective[1] future, reinforcing the importance of stewardship and integration within strategic design.

The collection of opportunities are likely to be well-informed guesses more than detailed proposals, but articulating them—even as hunches—is a way to avoid the generalities and abstractions that strategic conversations often get lost in. The specificity of the hunches, supported by sketches and diagrams, act as an arbiter between the Studio and their final review guests to help avoid situations where individuals are using the same words but talking about different things.

Framework for Strategic Improvement
A strategic framework is the result of breaking down the initial challenge, putting everything on the table, and then re-assembling it in a synthetic manner. These are the Studio's high-level thoughts that plot the course of the conversation

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1—Imagining new configurations after analysing existing ones, and 'projecting' these new ideas into the world with compelling and descriptive imagery and narrative.

**Framework
for Strategic
Improvement**

—**Ecology of the   Identify systemic
   problem   flaws**

—**Architecture of   Highlight systemic
   solutions   opportunities &
                          Define stewardship
                          pathway**

Questions to ask of each opportunity:

—**Who can make this happen?**
—**What scale does the work start at?**
—**What scale is the potential impact at?**
—**What is the scale and nature of investment
   needed to get started, and to achieve
   success?**
—**How long will it take for the impact to be
   realized?**

1—**The Gatekeeper concept comes out of
research that DEMOS Helsinki conducted
for Sitra. See http://www.demos.fi/files/
FFRC2009_Neuvonen_REVISED.pdf**

during the final review and they tend to be best articulated as a set of themes that identify trouble spots and point to opportunities. While it is important to root the strategic framework in specific examples of problems the Studio observed in the existing system, the emphasis should be put primarily on the architecture of solutions as a pathway to improvement. From a practical point of view this often means that the Studio explains the framework by collecting their thoughts into a handful of thematic areas (3-7). Qualitative in nature, these themes form the bedrock upon which an architecture of solutions can be built.

Opportunities

The opportunities are individual building blocks that together form an architecture of solutions. These solution-oriented actions should be coordinated to operate on the same timeline and at multiple scales with the goal of creating a well-balanced portfolio amongst the ten ideas that make strategic opportunities actionable today. The studio's success at crafting this portfolio is directly related to their experience. Studios comprised of less experienced individuals tend to lack a realistic understanding of plausible causality between hunches and their potential impacts. Experienced studio members, however, are better able to evaluate the causality of hunches and their anticipated impact and can therefore make better decisions about which to choose and which to jettison.

To give some structure to the process it can be helpful to think of the hunches along two axes: scale of the proposition and the timeline of its impact. For our purposes, the scale of the proposition refers to the extent to which it can be realized unilaterally. For instance, in the HDL Sustainability Studio one of the hunches was a suggestion that key 'gatekeepers'[1] be given zero-energy summer cottages as a way of capitalising on their status as influential individuals to spark widespread interest and attention towards more sustainable lifestyle choices. The hurdles in this proposition have to do with securing funding and building relationships with the right gatekeepers, but in the speculative realm of the Studio we can put these considerations aside for a moment. If the money and a few willing partners can be found it is pretty easy to execute because it involves relatively few groups of people. By contrast, another one of the Studio's hunches was to bridge the gap between national and local decision making by creating a low carbon 'war cabinet of mayors and ministers.' Securing the political consensus needed to create such

a high level entity requires the buy-in of many people across multiple parties. We could therefore consider this idea to be a large-scale proposition.

The scale of the effort required to implement an idea can also be compared to the scale of its potential impact. While implementing the hunch about zero-energy homes for gatekeepers[1] would tangibly translate into the design and construction of a limited number of houses, the scale of the impact vis-à-vis positive perceptions of sustainable lifestyle choices is potentially much larger.

Considering the timeline is a way to factor in the inertia that is inherent to all systems[2] and to maintain the focus on strategic issues by recognizing that some of them have more inertia than others. To honour the nature of these hunches as part of a sketch you might prefer to use a relative time scale. Both the zero-energy homes for gatekeepers and a 'cabinet for the war on carbon' can happen relatively quickly, whereas the Studio's suggestion that Finland densify parts of its urban areas requires persistent effort by many people over a generation or more. Useful time scales might be: today, next year, three years, ten years, a generation, one hundred years.

2—Meadows, Donella H. 'Thinking in Systems: A Primer'. p. 39

Be Selective

Remember, this is a sketch of the problem and an attempt to find ways of addressing it—the outcomes of the Studio are intended to be a solid starting point, so while the thinking must be articulate and compelling, it does not have to be exhaustive or rock solid just yet.

Whether it is 10, 11, or 20, pick a number of hunches and use this as a target. Working within an artificial numerical constraint will introduce a useful degree of rigor to the selection process. The act of making these tough choices is an important part of the synthesis process, gently forcing the Studio to take a position on what is important and in which order. Particularly when working with governmental decision-makers this kind of clarity is important. It can be difficult to get someone in a busy position to sit still for long enough to talk about a couple of ideas, let alone more than that.

Opportunities big and small

Framework

Architecture of solutions

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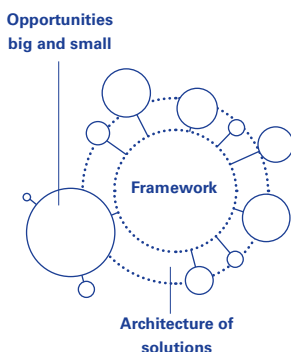
The Final Review

Presenting the Studio's outcomes in a review setting gives the team a chance to receive feedback on their work and gives you, as the host, a way to attract stakeholders who will be important to any subsequent implementation efforts. It is about enhancing the robustness of the strategic framework and beginning to explore next steps.

The 'final review' as a format is based on a concept common to academic design studios. The culmination of the design school semester is a final review where students present their projects to a panel of 4-6 professors who offer a critique of the work, discussing the highlights as well as openly identifying areas of necessary improvement. This discussion is where the ideas of the semester are teased out, compared and tested and it is where ideas gain their full richness. In the case of the Studio Model the team is working as a single unit, but using the same template of presenting to a panel of informed guests, followed by a group discussion.

Review Guests

Months before the Studio starts you want to start securing a group of about five guests who have a deep understanding of the big picture, or key parts of it, and are positioned to become champions of the work. At Sitra we look at issues on a national level, which means we recruit Studio critics who see the challenge from a local, national and EU-wide perspective. Having an audience that is both committed to the topic and acutely aware of the nature of the challenge is very important because it positions them to be good critics, and ultimately good champions. In general it helps if the review guests are seasoned so that they can respond with experience, yet are open-minded to having their own wisdom challenged.

Start Strong

Once everyone has arrived and settled in, it is time for the host to give a very brief introduction that orients the guests towards the Studio and its intended goals. The purpose of this is to manage expectations by explaining the nature of a sketch and its emphasis on getting the relationships right, rather than nailing each of the details with 100% accuracy.

Following this introduction, the Studio gives a presentation of 30 minutes or less, typically with the Design Lead in the role of MC and the other team members making specific

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contributions. In our experience, it works well if the Design Lead begins the presentation by explaining the strategic framework, the team members speak about each of the action areas, and then the Design Lead comes back at the end for the wrap-up.

The presentation needs to share how the Studio defines the challenge, what opportunities they see, what barriers they perceive, and then outline a collection of possible actions that coalesce into a 'road map' of strategic improvement. This is the synthesized outcome of their week together and it may be accompanied by slides, videos, whiteboard drawings, hand-outs or any other medium the Studio team see fit to use.

Focus on the Conversation

The formal presentation might be thought of as a menu of possible conversations which the guests can then choose from. As the presentation concludes, the group transitions into discussion. This is a moment where the specific nature of the physical space is very important. Once the formal presentation is over, the presenters should sit down so that a conversation among peers can flow easily. Pedestals, presenter's tables or other barriers in between the Studio team and their invited guests create a formal interaction that is too rigid. The more seamlessly you can transition from presentation to conversation the better.

The worst mistake you can make after a presentation is to leave too little time for discussion, reducing any emergent dialogue to platitudes and clarifications. Since the collaborative evolution of ideas during conversation is the focus in these review sessions, be sure to leave ample time to discuss. We try to make room for 60-90 after the review, which is just about enough to process some of the new knowledge which has been shared by the team.

The best review discussions are lively and conversational. Prep your guests by asking them to avoid prepared remarks and to engage the presentation material, the studio team, and each other.

Shift Gears

After a good stretch of discussion following the presentation, it can be useful to transition again from the review to a meal that allows the conversation to continue in a more casual setting, encouraging everyone to open up a bit. This is often when some of the more fringe—and therefore most interesting—opportunities are revisited.

In the case of our 2010 Studios we catered dinner in the Studio space itself to make the transition as easy as possible. This gave the Studio team, the invited guests and the HDL/

Sitra team members time to celebrate an incredible week of effort, but it also functioned as a real working dinner wherein the review conversations were revisited and continued. Perhaps most importantly, moving from the review to dinner allowed us to spend more time together, stewing on the ideas without resorting to an awkwardly long meeting. Using exactly the same space for both formal and informal discussion usefully ensures that the Studio's ideas remain in focus, as if they were hanging in the air while the context is shifted around them.

Sharing a meal in the studio space, surrounded by the work of the studio team, is a useful way to extend the conversation while avoiding fatigue.

Combining the final review with a meal allows you to dedicate a total of four to five hours of intense conversation around the work of the Studio team. Especially when dealing with strategic questions that are often complicated and messy, having a solid bit of time to properly talk through things is important. The danger of a short conversation without enough opportunity for back and forth is that the participants use the same words without ever sharing a common understanding. It is a fact that understanding takes time, and that is what the review/meal pairing is designed to deliver as painlessly as possible.

Sample Schedule

—Months before review: identify and confirm guests
—Weeks before review: set up dinner and other logistics
—Friday 10:00: presentation 'dry run' with Studio team and HDL to test the story and work out the bugs
—15:00 move studio table and arrange chairs for review
—15:45 guests arrive
—16:00 presentation starts
—16:30 presentation concludes and conversation begins
—17:45 conversation slows down as people get hungry
—17:50 a short toast before sitting down to dinner
—18:00 dinner begins and the conversation continues, lasting as long as the table likes
—Afterwards: follow up with thank you emails and begin exploring next steps

Physical Infrastructure

"The Delegates all… walked to the Carpenters Hall, where they took a View of the Room, and of the Chamber… The General Cry was, that this was a good Room."

—John Adams on September 5th, 1774 describing in his diary the very first decision at the first meeting of the Continental Congress of the United States. Before getting down to the 'small' matters of bootstrapping a new government they first made sure to identify the right room.

Working collaboratively in an integrated way does not always come easily and working long hours can be emotionally and physically draining. For these reasons, the environment of the Studio is very important. Getting this right creates an atmosphere of hospitality that enables the Studio team to focus on the quality of their work and their deliverables instead of being bothered by the lack of creature comforts or missing tools. If your participants are not happy and comfortable, then they are not functioning at their highest levels. Too often this is overlooked by people who organise and host events, yet it is the most basic of considerations.

To get the most out of a week together the Studio team must be well cared for and well supported. Although creature comforts might seem like a frivolous concern for a serious Studio, a little bit of effort in this area goes a long way. Concern for the comfort of your team will come up again and again in the next two How-Tos, but here we are primarily concerned with the physical space.

In the best cases you will have the ability to select a space specifically for your Studio, but even if you have to work with what is available in your own building it is necessary to spend a bit of time thinking about how to make the room comfortable and pleasant to be in for long stretches of time.

The Studio will serve as a temporary office for the team and should really feel like the kind of place that has been lived in. We used the HDL Studio space as an office for a month leading up to the first Studio as a way to 'road test' the experience, ensuring that all of the little details were taken care of and that it already felt lived-in when the first team

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stepped inside. Spare toilet paper? Check. Printer? Yup. Well-placed stash of marker pens? All present and correct.

Location & Quality

The Studio should be held in a place that feels connected to the challenge and that offers the potential for pleasant and refreshing breaks. For instance, organising a Studio on home-lessness and then hosting the team in a conference centre at a golf course feels disconnected and counter-productive. For our 2010 Studios we found a space in the centre of Helsinki. Being located on the second floor and having large windows allowed the team to feel connected to the life of the city with-out having constant distractions. The team could also pop by for a coffee at the café downstairs when they were feeling stuck, or take a quick stroll through the adjacent park. Con-sider issues such as the amount of daylight and the possibility of natural ventilation.

For a Studio team of eight people plus 1-2 research assis-tants you will want to have at least 80 square metres. While you can make it work with less room—a Studio could be run out of a conference room if it had to be—the investment in a little extra space will enable multiple things to happen at the same time, such as different brainstorms happening simulta-neously. This kind of parallel processing is really productive, and keeping everyone in the same space is essential because it maintains the ambient connectivity of the Studio members, ensuring that the collective intelligence is always accessible.

Room to Relax

If possible, provide a corner of the space which has casual seating and is private enough to make a quick phone call. The Studio team all have their own lives and even if they have made a commitment to participate in the Studio, outside life has a way of creeping in. Make it easy to step out of the con-versation for a moment without leaving the Studio altogether.

Coffee & Chit-chat

Equally as important as being able to have a moment of privacy is the ability to socialise. We set up a small kitchen with coffee, tea and a pantry full of snacks that naturally encouraged the Studio team to chat in small groups or one-on-one.

Furniture

Whether enabled by wheels, fold-ups or some other means, it is best if the Studio furniture can be reconfigured to support one big conversation, multiple small groups, presentations with an audience or a casual lunch. Do not fall prey to the myth that particular types of seating, such as beanbag chairs, are more supportive of open-minded thinking than others. What matters is that the Studio have a diversity of seating options. In the HDL Studio we observed the order of preference starting with task chairs and followed by the window sill, sofa and stools in that order—not a single person demanded a bean bag.

Equipment & Supplies

The general principle is to cover basic physical and digital media needs so that no time is wasted struggling to get ideas into the flow of conversation. Cater to the Studio team's needs rather than be proscriptive about how they express themselves. This means being prepared for the person who works best with Post-its and the one who draws on the whiteboard and the one who prefers PowerPoint.

If having a hammer makes you see everything as a nail, what does that say about designers if they see the flimsy, sticky little piece of paper called a Post-it note as the answer to every workshop or brainstorm? There is going to be a lot of list making, sorting of ideas, relationship-mapping, sketching and diagramming activity going on during the Studio, and much of it is better suited to a larger format than a sticky note can support, even the big ones.

Whiteboards are critical because they are naturally large-format. The larger your whiteboard surface, the better. The necessity to erase and redraw as conversation evolves is a useful quirk, as the re-inscription of ideas gives them an opportunity to develop in new ways either in substance, as they are brought back into the consciousness of the group, or in representation as they are literally re-presented through rewriting or redrawing. In addition to copious whiteboard surfaces and—yes—even some Post-its, you might want to have a map depicting the corner of the world relevant to your Studio topic, especially if team members have come from overseas.

Beyond the physical media, digital presentations are a necessity. Not only is it a likely candidate for the final presentation that the Studio makes to its stakeholders, but guest speakers, or even the Studio team themselves will prob-

ably want to collectively refer to a digital document at some point. If at all possible, avoid relying on a projector due to the sleep-inducing effects of turning out the lights. Using a large-format flat screen and keeping the lights on helps set a tone that is more conversational and allows the Studio to fluidly move between using different kinds of analogue and digital media without fuss.

Do not forget to have a printer, preferably a fast laser printer that is located in the Studio space itself and not down the hall.

Info Point

Dedicate part of one wall, preferably near the entrance or the kitchen, for posting the latest schedule of the week, short biographies of everyone that the Studio will be meeting, and essential details such as the password for the wireless network. We learned the hard way that it is very difficult to control a schedule that involves a lot of moving parts. People change their arrival time or become unavailable and things sometimes run late. For this reason, the printed schedule that we handed out at the beginning of the week was just an overview, and we kept the latest schedule posted on a large format wall calendar that was updated as needed in the old fashioned way: with a marker.
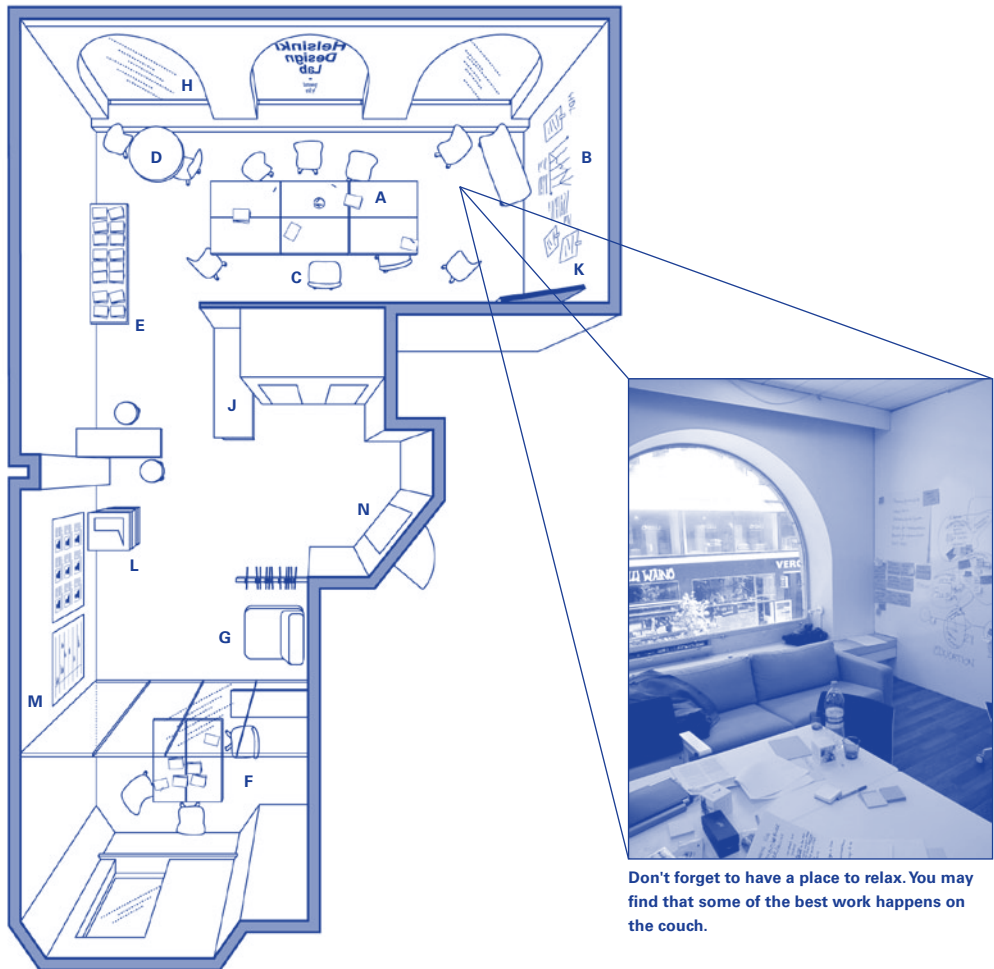
Don't forget to have a place to relax. You may find that some of the best work happens on the couch.

A. Large table
B. Whiteboard wall
C. Easy-to-move chairs
D. Assistants' corner
E. Report table
F. Back office
G. Quiet corner for personal phone calls
H. Big windows with natural ventilation
J. Kitchen (with stocked pantry)
K. Large digital screen
L. Printer with wireless access
M. Info wall with poster introducing everyone who is part of the studio week and a day by day calendar
N. Quick access to central Helsinki

Soft Infrastructure

If the physical space, equipment and supplies form the hardware of the Studio, there are also bits of software necessary to make it run. This involves a number of support roles that should be coordinated ahead of time.

Studio Assistants

The role of 1-3 Studio assistants is primarily to field questions that come up during the course of the Studio's conversation so that the Studio itself does not lose momentum. As the Studio is shaping their strategic framework, the assistants are able to track down details to answer questions, arrange appointments with people that the Studio are interested in meeting, or to more carefully document ideas that the Studio has sketched out. This allows the assistants to work in parallel with the Studio itself without introducing serious interruptions.

If possible the assistants should be available before the Studio week actually begins to field questions and do preparatory research. Mailing the Challenge Briefing to the Studio participants in advance is a good way to get thoughts flowing before the team convenes for the actual week. As questions come up in response to the Challenge Briefing the Studio assistants can collect and respond to them in advance via email so that the team is able to hit the ground running.

During the week it is important for the Studio assistants to be as available as possible. This means arriving at the Studio before the team and staying until after they leave. In our experience it worked well to have the assistants working in a semi-private corner of the same space where they were within earshot of the Studio team but could converse quietly and make phone calls when needed without disturbing anyone. The best Studio assistants are able to judge the tone of the room and are careful not to interrupt at a point when it could break the flow of conversation.

Creating an input/output system to keep track of which questions have been asked, which are being worked on, and which have already been answered will help ease the chaos of the week. Whether it is web-based or an old-fashioned list on the whiteboard does not matter so long as the system is dead simple to use, posted in a highly visible place within the Studio, and kept up to date. Immediately adjacent to the Studio assistant's desk we set up the 'report table' where the

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Sample output from the assistants in response to a question from one of the studio members. We use a simple template that structures the document as: Initial Question, Synopsis, Findings, Source.

assistants curated a selection of reports, their own research summaries and other documents during the course of the week. This gives the Studio team a single go-to source for their research needs as well as enabling anyone walking by to have a glance over a diverse range of sources, potentially making interesting connections. Seeing the contents of the 'report table' expand over the course of the week provides a nice visual reminder of the intense pace that everyone was working at.

Tech Back-up

Primary concerns from a technology point of view are easy to use file sharing and wireless networking. Before the Studio begins, identify the person who will help with any set-up needs ahead of time and coordinate with them so that they are prepared if and when a bevy of urgent requests come up on the first day of the Studio. Have the file sharing and wire-less networking login details available in written form before the Studio arrives.

Odds & Ends

Having someone tasked with cleaning the Studio and making sure that everything is stocked is not to be under-estimated. With 8-10 people dedicating all of their focus to the work at hand, you will quickly find that there is a pile of cups and food containers that need some attention before the Studio turns into a waste heap. There is always a need for odds and ends such as batteries, more paper for the printer, or another bar of soap for the bathrooms, so it is good to have someone identified ahead of time to handle these necessities.

Cultivating Atmosphere

Attention to the details of the Studio experience is a way for you as the host to cultivate an atmosphere of hospitality, enabling the team to do their best. It also conveys to the Studio your respect and appreciation for their work. Our goal when conducting a Studio is to take care of things in a subtle way so that the Studio members feel well-cared for without the details calling too much attention to themselves. Since these ineffable qualities can be hard to describe in abstract terms, this section is a series of vignettes that attempt to articulate what we mean by cultivating a distinct atmosphere and the benefits that this yields. In this regard, one of the tricky things is to craft situations with care without forcing anything, which will only alienate your guests. Perhaps due to the necessity of eating, we tend to treat food and meals as natural opportunities to subtly handle the details with special care.

Give Ownership to the Studio

An hour before the first day of the Studio begins we schedule a meeting with the Design Lead in the Studio space so that they can acclimatise themselves to their office-away-from-home and mentally prepare for the hectic week ahead. In addition to a basic run-through of logistics, this meeting is when we hand the key to the Studio over to the Design Lead as a symbolic gesture. The intention is that having a key allows the Studio to assume ownership of the space, treating it and the Studio challenge truly as their own.

Make it Memorable

Although we plan dinners each night of the week, we take extra special care with one of the meals, typically on Wednesday night. In 2010 everyone was able to rest after a full day in the Studio before gathering at a private home on the outskirts of Helsinki to have drinks in the garden. After sunset the gathering moved inside where we enjoyed an excellent meal in an intimate dinning room. The motivation for all of the choreography around dinner is to foster the chemistry of the group by enabling them to share a special experience—hopefully one that will serve as a lasting reminder of their time in the Studio. Moments that give the team a chance to bond socially are an investment in the team's ability to collaborate fluidly.

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Be Casual but Serious

To find a suitable venue for our 2010 Studios we started with three of Helsinki's best cafes and radiated out from there until we found spaces to consider. The reason for this is simple: the Studio needs to get out every now and then, and a short walk to the cafe for a snack and some caffeine is a wonderful way to punctuate the day without dramatically breaking the flow. Being able to step out and recharge every now and then helps create a relaxed atmosphere. Just because the content is serious stuff does not mean it has to be stuffy, nor does it mean going too far in the opposite direction to create an atmosphere of enforced fun.

Eat Right

Brain work can be deceptively exhausting. Although it might not seem taxing, it is easy for a group of people who are working hard and fast to forget about their stomachs and exhaust themselves. For this reason, you might have to make polite inquiries around lunch time or see if the Studio is hungry for lunch or a snack in the middle of the afternoon. Meals don't have to be fancy but they do have to be tasty, nutritious and filling. To avoid sending your team into a food coma it is a good idea to avoid heavy midday meals. We paid extra attention to provide local foods that would give visitors a sample of Finland's best.

	Months before	1 Month before	Weeks before	Week before
PROBLEM		Challenge briefing done	Electronic copy of challenge briefing sent to studio	Paper copy of challenge briefing delivered to studio members
PEOPLE	Building network around studio theme Identifying expertise profile for studio	All guest presentations and field visits confirmed		
PEOPLE	All studio members and support staff recruited and confirmed	Meeting and vetting potential field visits and guest lecturers		
PLACE		Studio location confirmed and final furnishings and equipment being secured	Studio assistants work in the studio for 1-2 weeks beforehand so that the space feels lived-in	Double check all equipment and supplies
PROCESS	Matching possible studio topics to the vision and trajectory of the organization			
PROCESS	Meeting with internal and external stakeholders to build awareness		Studio assistants are working on initial questions that studio members ask about the challenge briefing	All-hands meeting with host team to review details for studio week

Planning Guide

To work without rushing you will want to begin your earliest preparations 6-9 months in advance of the studio week. Provided here is the rough schedule that we use.

	Studio week (Mon. Tue. Wed. Thur. Fri.)	Week after	Weeks after	Months after
PROBLEM				
PEOPLE			Check-ins with studio team and guests to get feedback.	
			Check-ins with stakeholders to explore continued collaboration around studio outcomes.	Collaboration with key stakeholders to develop the studio's sketches into viable projects
PLACE		Studio assistants are in studio for 1-2 weeks while documenting the work		
PROCESS	Introduction to how things are 'supposed to work' / Field trips to see on-the-ground reality / Starting to sketch / Ongoing synthesis / Studio presents its strategic framework and architecture of solutions to invited guests	All-hands meeting to review Studio week and collect internal feedback		

This book is really more of an 'opening chapter' in a broader story about the potential value of strategic design to government, the public sector and to public life. As you have seen, its particular focus is in distilling the essence of the Helsinki Design Lab Studio Model, an approach that is beginning to quietly enrich Sitra's activities.

I was fortunate enough to be involved in several of 2010's Studios, as a guest and stakeholder at the 'Final Review' stage described here.

There, I began to see how strategic design might help transform the at times elusive world of policy-making and governance. The tone of the studio conversations were different somehow, with previously impossible challenges suddenly being transformed in a more positive light, with a sense of agility and constructive suggestion. Though proposals were often sketchy and incomplete, I felt that the terrain had shifted; moving from convoluted issues with many reasons for a quick 'no', to a balanced portfolio of practical yet imaginative proposals as to what could be done instead.

In our book Fast Strategy[1], Yves Doz and I described the value of strategic agility in possessing "an ongoing capability for real-time strategic sensitivity, quick collective commitments, and fast and strong resource redeployment". The combination of these approaches—in conjunction with, it must be said, design-led innovation—has radically transformed entire business sectors in recent years.

Yet recent business history is also littered with examples of firms answering the wrong questions or of proving incapable of responding to rapidly changing ecosystems and the structural challenges of digitalisation, globalisation, and deregulation. In many cases these firms were weighed down by inertia and uncertainty.

Increasingly, governments in developed nations are also facing structural challenges. As globalisation makes states more interdependent, the internal ties that have bound them together in the past have been loosened by shifts in demographics, resources, culture and values, changing the landscape considerably. The ability to make long-term investments to address these changes—and perhaps the biggest change of all, to our climate—is actually threatened

1—Doz, Yves L., and Mikko Kosonen. *Fast Strategy: How Strategic Agility Will Help You Stay Ahead of the Game.*

as a result, suggesting that government may need to strategically redesign itself. In the case of Finland, the success of the so-called 'Nordic Model' is now facing a kind of inertia of its own, due not least to the challenges posed to the Studios described in this book.

Yet government is not the mobile phone business nor is it Facebook. The Nordic Model will not continue to thrive by simply installing a web front-end while outsourcing its back-end.

For government is more complex than business. Sometimes this complexity can feel like a particularly frustrating inertia to all of us, yet perhaps the consequence of introducing greater agility is that there is a simultaneous need for 'slow government' too, particularly at times of great change. This, in the spirit of the slow food movement, which values the richness and care of craft, responsibility, sustainable local solutions and human-centred practices.

Either way, it's this ability to shift scale and pace—to bring agility to the public sector, whilst engaging in the richness and depth of public representation—that makes strategic design necessary and valuable.

The various characteristics of design articulated in this book—including its ability to quickly develop multiple perspectives, to understand people, communities and societies, and to blend strategic intent with a focus on the quality of execution, for example—presents us with a potentially valuable tool for addressing the future with sensitivity and ambition. It allows us to identify the *punainen lanka*, or red thread, that connects the critical dimensions to redesign our systems of delivery.

Finally, as a leader of an organisation oriented towards the future, perhaps the thing that speaks to me most clearly and most personally here is that strategic design is a practice predicated on optimism—on a firm belief that current conditions are changeable for the better, that the present can be transformed into multiple positive futures. Like Sitra, design is also necessarily oriented towards the future, and we hope to learn much from its inherent ability to pull off the artful balancing acts intrinsic to good design.

Whilst strategic design is pragmatically grounded through its focus on generating plausible prototypes of new approaches, systems and services, it is also offers an alternative to the common kind of decision making based on analytics—that today's living conditions are necessarily the determinant of tomorrow's.

We must deeply and imaginatively research the past and present in order to project into the future. As a practical capability, with real clients attached, design is drawn to working from this position.

Yet we must also suspend disbelief that the present is necessarily the only guide to the future, or that existing methods will continue to serve us well. It is design's ability to project new configurations that sets it apart from many analytical methods. In fact, I share the authors' assertion that the complex systemic challenges we face today actually necessitate frameworks that are intrinsically capable of generating and testing entirely new approaches, and learning from their introduction to existing structures. Again, design is inherently drawn to working from this position too.

For Sitra, strategic design enables us to explore this delicate combination of pragmatism with imagination: research through prototyping, learning from execution, communication through tangible projects, strategic intent with iterative action, systems thinking and human-centredness, all underscored by an optimistic belief in progressive change.

Having folded strategic design into our organization as a core capability, Sitra is committed to continuing to both develop this work and share its story. In this spirit, I encourage you to also join the story at helsinkidesignlab.org, and share your own experiences. The map is still developing around us, and we rely as much on the dispatches from our friends in the growing international network around Helsinki Design Lab as on our own efforts.

Government is too important for it to fail through inertia, or lack of attention, of insight, of belief. In fact, we hope that strategic design can help shed new light on the value of public life, and help reorient public institutions, services and structures towards the future with optimism. We owe it to ourselves to sketch out this story together.

Mikko Kosonen
President, Sitra
Helsinki, July 2011

Who's really Failing?

Dropouts as lead users for education in a diverse world

An HDL Challenge Briefing

Version 1.0
Internal use only

Helsinki Design Lab
–
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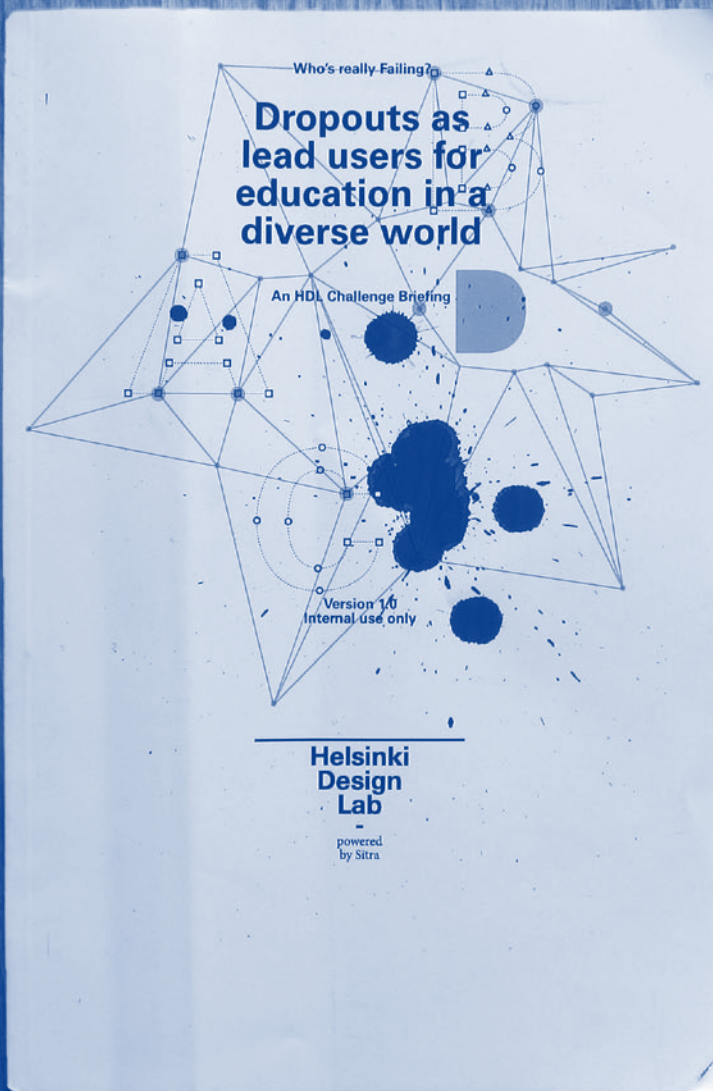
What follows is a complete re-printing of the Challenge Briefing issued to the Education Studio. For more about the studio and its outcomes see > PP 54-63.

For more about the style, role, and format of Challenge Briefings see > PP 97-99

With the rise of the global economy comes a constant flow of money, goods and services between cities and across borders. International mobility and migration are redefining populations and diversifying communities while telecommunications, media, and the internet continue to revolutionize how we perceive the world, consume information and interact with others. Taken together, this creates a dynamic culture of complexity that the children of today must learn to navigate if they are to succeed.

Education must leverage diversity and differences among individuals into opportunities for greater achievement. Its challenge is to adjust existing structures to better serve students of unique cultural backgrounds, talents, and intelligences. A successful education system in the future will be defined by how well it handles diversity and promotes all students to participate and thrive.

At the core of this challenge is the transition from a monolithic, institutional definition of education to a more holistic understanding of learning. Today's classrooms must evolve and expand into more comprehensive and adaptable learning environments, reaching more students more effectively. Furthermore, classrooms must be seen as only one of many venues for learning. Doing so will only increase the value education can deliver amid this emerging cultural and economic landscape. Education cannot afford to become complacent nor remain static.

Discrete skills such as reading, writing and arithmetic must now be complimented by fuzzy competencies such as the ability to deal with uncertainty, communicate across cultures, and integrate disparate kinds of expertise. Students must learn to navigate faster-paced and more fluid work environments, where creative problem solving and flexibility are not only valued but highly rewarded.

The dynamics of change and diversification have complicated the pathways to employment and success in life. In the last century, education was developed to meet students' curricular needs for the industrial age. Now that we have entered a new era, education systems have not yet to fully adapted to the pressures of the new economy and an emerging, more challenging market.

OPPORTUNITY SPACE

Finland must transform its education system for the twenty-first century. Doing so is not only necessary, but it would place Finland in the lead among nations in its ability to train and prepare its entire population to be even more competitive in the global marketplace and within a changing world.

Education in Finland already has a proven record of success. Decades of continuous reforms have resulted in universal literacy, top rankings in international student achievement test scores, and a population with increasingly higher levels of educational attainment. By law, education in Finland is free and accessible to everyone. Teachers are highly trained, fairly compensated, and highly respected within society at large. And yet, not all students in Finland thrive in the existing system. A significant number of students drop out of school year after year. Some never continue onto secondary school and others leave school before completing their degree or qualifications. Collectively, dropouts become symbols of failure, perceived as social outcasts and a drain on the economy.

Finland's dropouts may actually be the catalyst for reform in education. Dropouts are a leading indicator that reveals the ultimate challenge and opportunity for education—how to become more relevant in the ever-changing, diversifying world. For all the effort and money spent on early intervention, special education, and counselling, not all students' learning needs are sufficiently met. Simply put, the main concern is to expand the learning environment to reach everyone, including those individuals who learn best in different ways, in different environments, and with different skills, interests or intelligences.

Although current dropout rates are modest by international standards, Finland cannot afford to wait to see if this is an early indicator of a growing trend. There is need for a genuine and fundamental shift because the larger consequences for society are real. The current education system was developed for a young nation with a small and homogenous population. It was designed for the last structural transformation from an agricultural to industrial economy in which traditional skills and conventional methods were valued.

The government's latest five-year Development Plan for Education and Research recognizes the many challenges facing the current education system under the pressures of the post-industrial era. It is a candid and comprehensive survey, delineating many topics in education that deserve greater scrutiny and need improvement. However, the report merely outlines and names near-term targets and abstract goals. What is truly needed is a clear pathway for education and what it must do to must to take on present challenges and address long-term solutions.

The opportunity for this studio is to frame this transformation and identify the key dynamics within education toward developing an improved system for today and the future. To do this, the studio will define more relevant and more comprehensive learning environments for all students. If Finland wants to guarantee that its youth are able to keep pace in a changing world and become active participants and competitive players on the global stage, the time to act is now.

BACKGROUND

Dropping out conjures such powerful images that it is easy to accept the term without question, but what is a dropout and what are they dropping out from? While the typical definition of dropout focuses on a student discontinuing their studies, the ultimate concern is one of the individual's ability to live a happy life balanced with their duty to contribution to society. Widespread education enables a more-able workforce which in turn bolsters the local economy and its ability to compete on the global stage. While some students drop out of school, others seem to fall into it, prolonging their time as a student and delaying a full entry into the productive economy. In 2007, 43% of Finland's students took six years to complete a university bachelors degree of three years full time study, according to the OCED. These twin concerns of the micro, individual level and the macro, societal scale will both shape the dropout challenge.

Education Makes Economic Sense

Finland's participation in the global economy requires balancing domestic objectives within the larger, more complex dynamics of the competitive international marketplace. Despite its relatively small size with only 5.3 million inhabitants, Finland continues to be a global player, having earned international respect for successes in its mobile communications, high-tech, and design industries. However, the long-term survival and prosperity of Finland rests on how well the goods and services it produces can remain innovative and competitive in the new and changing economy.
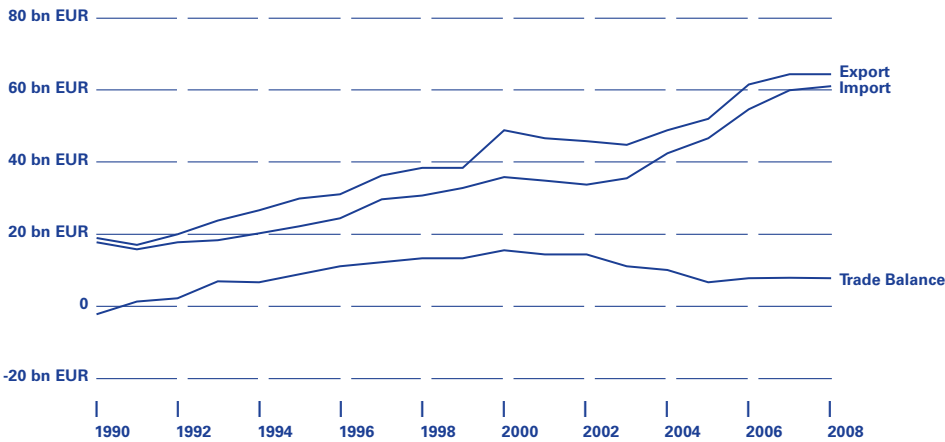
Imports, Exports and Trade Balance 1990-2008
*The figures of the time series have been converted from FIM into euro by a fixed rate.

Source
Tulli-Finnish
customs
statistics

To meet this challenge, Finland's education system must be able to produce a constant supply of skilled and high-value workers. Finland has a long tradition investing in the social capital of its youth—its greatest renewable

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resource—and has shown a strong commitment to building and maintaining an excellent education system. Confirmation of many of these efforts has captured international attention and praise, as measured in Finnish students' superior performance in international standardized tests, the high rate of secondary school graduates, and the increasing population of university degree holders.

≡ **No post comprehensive qualification**   ‖‖ **Upper-secondary or tertiary**
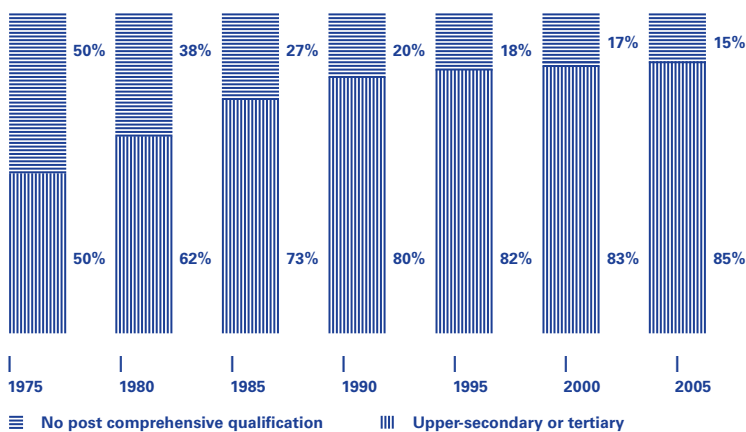
Share of completers of post comprehensive qualifications 25-34 year olds in 1975-2005

There is a strong argument that by continuing to develop the quality of education for all its citizens, Finland is simultaneously securing its economic survival and future prosperity. Internal pressures include a rise in immigration and a diversifying population, an increasing demand for new skills, tightening budgets requiring government agencies to do more with fewer resources, and a rapidly ageing population. A more educated workforce promotes a rise in GDP by means of higher valued production, more frequent innovation, greater efficiency in business and manufacturing, and a larger population of skilled labour. A stronger economy, in turn, safeguards the ongoing and larger project of Finland, a nation determined to protect and provide for all its citizens, promoting greater equality and opportunity for everyone.
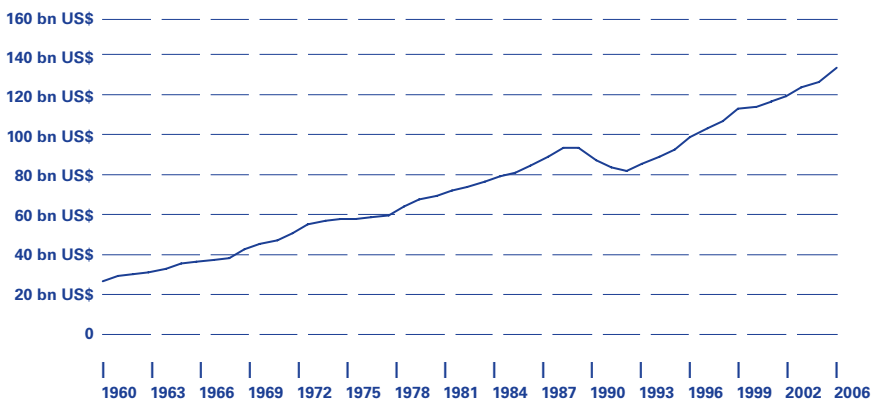
Total GDP (constant exchange rate US$), Finland 1960-2006

Finnish Core Values

In Finland, equality lies at the heart of government policies and social programs. In keeping with certain core values shared by its Nordic neighbours, every individual in Finland has a fundamental and universal right to government assistance in the form of universal health care, housing assistance, parental work-leave benefits, free education, disability and unemployment insurance, and retirement pensions. Seen from this perspective, each person, at every stage in life, is provided equal access to a reasonable and decent standard of living.

Education is the cornerstone to this promise in the Finnish welfare model, the principle means by which all young people, over an extended period of time, are prepared for life and work. School is where they develop the skills required to enter the labour market and become active and competitive participants in a changing society. Education—and equal access to it—also forms the basis of Finnish identity and culture. For this reason, education is an essential and equalizing institution. It is free and available to all young people, regardless of economic background, race, religion or gender.

The number of non-native speakers has increased in Finnish schools in the past several years.

Year	2005	2006	2007	2008	
	students	students	students	students	share
comprehensive level	15,737	16,279	16,398	17,156	3.10%
upper secondary level	12,655	13,849	14,926	16,633	4.30%
tertiary level	10,647	12,154	13,836	15,576	5.30%

In Finland, alongside the principle of equality stands the equally important notion of equity. At its most basic, Finland has embraced the principles of inclusion, supporting the rights and needs of minorities for the betterment of society. For education, this is evident in various policies. A national core curriculum establishes uniform standards for all students nationwide. Instruction in one's mother tongue is guaranteed in Finnish or Swedish, the two national languages. Other minorities in Finland, including the Sami, the Roma, and new immigrant arrivals have rights for educational instruction in their native languages as well. Special education is offered to students needing additional support and with an emphasis on early intervention. Most often, this takes place in the classroom, with the help of special assistants, as means to preserve the cohesive class unit. School health clinics, counsellors, and government aid ensure that students' physical, emotional and financial needs are also met.

Finland embraced a more international outlook when it joined the Europe Union in 1995. Suddenly, Finland's borders with its European neighbours disappeared as a larger pool of immigrant workers were able to enter the country and its labour market. The advantages of attracting new

2008 Foreign Exchange Students	8,800
Europe	84.40%
Asia	9.30%
North America	3.00%

2008 International Degree Students	12,600
University students	3.80%
Polytechnic students	5.00%

and cheaper labour did not come without its challenges, as Finland continues to absorb these new workers and their families into Finnish society. Inclusion is another dimension of Finnish cultural values toward equality and equity. It is a also a plays into a longer-term strategy, to become more international and remain competitive.

- ➢ Immigration has tripled in Finland the last thirty years, to just under 30,000
- ➢ In 2008, Somalis rank second, after Russians, in the number naturalized citizens

Further evidence of Finland's international strategy is seen in the effort to attract more international students to Finnish universities. In doing so, Finland hopes to lure greater foreign expertise and talent to its research institutions.

Another distinguishing feature in Finland is the high level of autonomy in local government at the municipal level. While the Ministry of Education establishes the goals for students at the highest level and for the entire nation, it is largely up to the local authorities and schools to decide how to implement these goals and by what methods. While 57% of education budgets are provided by the national government, the remaining 43% is raised through local taxation. Rural areas, especially those that have lower tax bases, can rely on a government redistribution of tax revenues in order to close any wide gaps between them and the wealthier, more urban municipalities.

In Finland, autonomy at the local level translates into a sense of shared responsibility and trust in government. It allows for independence and flexibility within the education system. Municipalities determine how to allocate the budget to meet local education needs. Local administrators decide for themselves how to monitor and assess school performance within their districts. National school inspections no longer exist, so comparisons between schools are never made public and no administrator fears the threat or consequences of public shame.

PISA: Measured Success & Conventional Metrics

Despite a decentralized system of independently operating schools, Finnish students uniformly excel. In the most celebrated example, Finland ranks at the very top among fifteen year-olds in the Program for International Student Assessment (PISA). In 2006, Finland's students collectively outperformed all other OECD countries in science and mathematics, and all but one country in reading. Variation between regions in Finland was the smallest of all participating nations. Speculation and consideration why this is the case, year after year, has many wondering what is the secret ingredient in Finnish schools and the education system.

> *The successful performance of Finnish students seems to be attributable to a web of interrelated factors having to do with comprehensive pedagogy, students' own interests and leisure activities, the structure of the education system, teacher education, school practices and, in the end, Finnish culture.*
> *The Finnish Success in Pisa – And Some Reasons Behind It*

Success did not happen overnight, but rather over a forty-year period of education reform. Today, the Ministry of Education proudly points to the current structure of its education system, the extensive services it offers its students, and the high quality of its teachers.

Ironically, for a nation whose education system has moved away from a system of standardized testing, Finnish students continue to outperform nearly all their peers. There are aspects of the PISA exam that favour Fin-

land's education system and its students, adding caution and scepticism to the praise and international attention Finland has received.

- ➢ The exam is conducted at the optimal moment in education for Finnish students. At age fifteen, students are at a peak, in their final year of comprehensive school. Most experts agree that Finland's scores would likely fall if the test were offered one year later, after the transition to secondary school.
- ➢ Absence of high-stakes testing in Finland removes the anxiety over test taking. Some suggest that students are excited for the test, seeing it as an opportunity to become part of something special.
- ➢ Extremely high reading scores in Finland contribute to higher test scores in the math and science domains.
- ➢ PISA tests only three core domains which may align with Finnish students' strengths and obscure weaknesses found elsewhere.

Dropouts: Outcasts or Disruptive Innovators?

Finland's attitude toward equality and equity resonate with the wider notion that Finland is a culture that values and cultivates consensus. Finnish society is extremely homogenous—in race, religion, income and education background. This homogeneity or predominant level of "sameness" in Finland places even greater scrutiny on those individuals who fall outside the norm and the mainstream. These outsiders who appear at the extremes, and in Finland, they include the very rich or very poor, racial minorities, and in the case of this briefing, the dropouts.

From a cultural perspective, dropouts are individuals who have fallen outside the mainstream and beyond the reach of the paternalistic state. They are symbols of failure in the system as well as future burdens on society and the state. Educators see them as lost youth, stragglers lacking motivation, ability—or both. Law enforcement officials see them as truants, loiterers and idlers on city streets and town squares. Economists see them as holes in the tax base, contributing less than their graduate counterparts and creating added stress on the near-exhausted pension funds. Health care and social workers see them as preventable patients adding costs to an already burdened system and more likely to suffer from poor physical health, addiction, domestic troubles, and depression.

Despite Finland's record for success in education, the simple truth is not all students keep pace in the current system, as designed. The Finnish education system establishes a carefully prescribed path from primary to secondary and then onto higher education. Deviations from this path, however small, may appear all the more significant simply because Finland is a small and homogenous country whose education system is already so highly regarded. Yet, for a country so committed to equity and shared responsibility, Finland's population of young dropouts is the easily identified "crack" in an otherwise pristine façade. Understanding dropouts as

"lead users" re-frames the question from "why are these kids failing?" to "what can we learn from these students about learning in Finland?"

Early 1900's	Autonomy, Independence and Nationalism
	Education was a means to assert a Finnish national identity and political autonomy. The focus on Finnish-language education was understood as a way forward toward full independence from its imperial neighbours.
1950/60's	Post World War II: Economic Recovery, Expansion and the Rise of Industry
	Education was necessary to prepare a new labour force with the practical skills required in industry and the technical expertise for government. Education helped lay the groundwork for Finland's economic recovery and the creation and development of the welfare state.
1970's	Expansion and Maturation of the Welfare System
	Reforms within the structure and curriculum of the education system built upon the fundamental guarantees of the welfare state. Consolidation of basic education into more uniform comprehensive schools, removal of tracks and dead-end routes, creation of more formalized secondary education paths, and expansion of higher education all together began to fulfill the promises of equality and equity within Finnish society.
1990's	Recession and Reinvigoration and Realignment
	Finland's entry into the European Monetary Union and the collapse of the Soviet Union brought new and untested challenges to the Finnish economy. A severe recession required the government to make cuts to many social programs. Meanwhile, funding for higher education and research was increased, the polytechnic university system was created, and the Bologna Accords were adopted—all in order to ensure Finland's place in the post-industrial European and global economy.

KEY DIMENSIONS

Provided below are a number of key dimensions to the education challenge. This list is by no means exhaustive and exploration of additional dimensions is encouraged.

D1 – The Education System

The Education system in Finland is an ongoing project. It developed over time and has undergone significant reforms that continue to alter its structure, content, and methodologies. Despite more recent changes, the root or core mission of education has not been altered: to provide knowledge and skills for all young people, and in doing so, to cultivate active citizens and engaged participants in Finnish society. However, as Finland faces new challenges within its borders and from abroad, the education system must be renewed in order to remain current to meet these challenges—social, economic, and cultural.

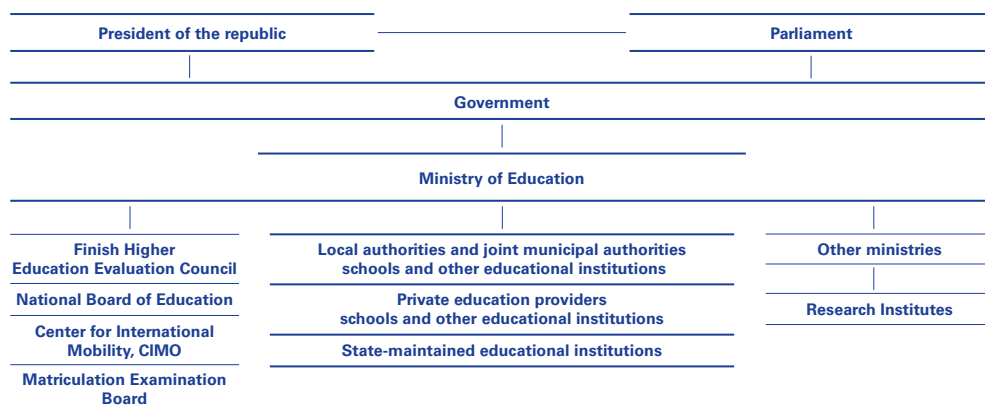### D1.1 Structure of the Education System

The hierarchy behind the structure of the education system in Finland separates the roles of the national and local government into two equally important partners. At the upper level, the central government defines the overall structure and goals for education nationwide, while at the lower level, municipalities and local authorities implement the schemes.
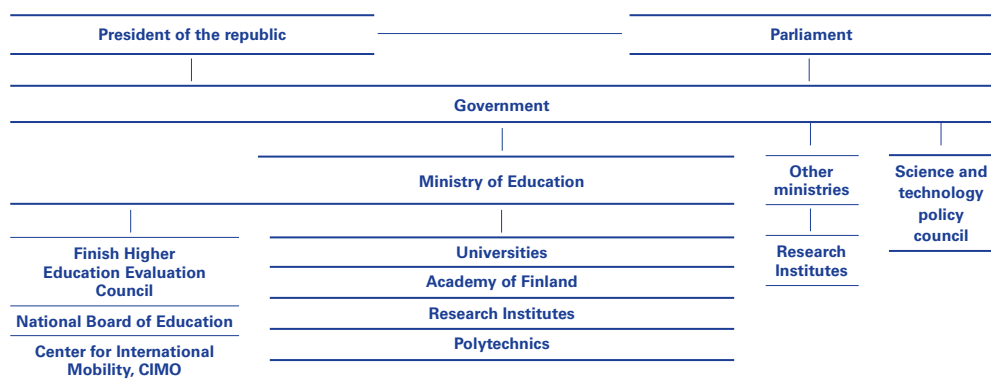
The Ministry of Education sets the general objectives of education and drafts the legislation for the national government. Beneath it, the Finnish National Board of Education writes the national core curriculum for basic and secondary education, a regulatory framework that sets the main objectives and working guidelines for education programs. It outlines the curricular goals, study contents, and evaluation criteria. At the more general level, it defines broad "cross-curricular themes" as well as the principles and objectives for student support. At the more detailed level, it determines the minimum number of class-hours required by subject.

Locally, municipalities are responsible for the practical arrangements of the school curriculum based on the larger framework and guidelines of the national core curriculum. Each school establishes its own program of study based on the national requirements while also accommodating local needs, issues and concerns. Within the school, teachers are given the responsibility to choose their own methods and materials in developing their own specific lesson plans.

Administration of basic and upper secondary education

President of the republic — Parliament

Government

Ministry of Education

Finish Higher Education Evaluation Council

National Board of Education

Center for International Mobility, CIMO

Matriculation Examination Board

Local authorities and joint municipal authorities schools and other educational institutions

Private education providers schools and other educational institutions

State-maintained educational institutions

Other ministries

Research Institutes

Administration of the higher education system and research

President of the republic — Parliament

Government

Ministry of Education

Finish Higher Education Evaluation Council

National Board of Education

Center for International Mobility, CIMO

Universities

Academy of Finland

Research Institutes

Polytechnics

Other ministries

Research Institutes

Science and technology policy council

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D1.2 Student Pathways

0
1
2 Day Care   Ministry of
   (Pre-primary   Education is
3   education)   not respon-
4   sible
5
6
7 Pre-school   Ministry of
             Education is
8 Primary   not respon-
   education /   sible
9 Single
10 structure
11   Compulsory full-time education
12
13
14
15
16
17 Additional   Upper   Upper   Combined
   year   secondary   secondary   school and
18   general   vocational   workplace
19   courses
20 University   Technical
   (Tertiary   college
21   education)
22
23
24
25   (≥3 years Compulsory work experience)

Organisation of the education system in Finland, 2008/09

Education in Finland is divided into three categories: Basic education, secondary education, and tertiary or higher education. At all three levels, education is guaranteed by the government: it is free and it is made accessible to everyone.

Pre-Primary Education: Daycare and Preschool

Day care for young children between the ages one and six is voluntary, but with government subsidies available. It is offered by some municipalities and at private day care centres by region. Over 60% of one to six year-olds in Finland take part.

Pre-primary education is free for all children in the year preceding compulsory education. It is voluntary, but around 96% of all Finnish six year-olds participate. Local authorities are responsible for arranging pre-primary education, following guidelines set by the Ministry of Education and the Early Childhood Education and Care group within the National Institute for Health and Welfare. In some municipalities, pre-primary education takes place at comprehensive school, but not in all cases.

Basic Education: comprehensive school

Basic education in Finland is compulsory and takes place in comprehensive schools. Students begin first grade at age six or seven and leave with a certificate of completion at the end of ninth grade at age fifteen or sixteen. Students typically learn many different subjects from class teachers in the first six years of comprehensive school and specific course material from subject teachers in grades seven to nine. A small percentage of students elect to enrol in a "tenth grade" either under academic probation or else for an additional year of preparation for secondary school.

Secondary Education: General & vocational upper secondary schools

Secondary school is divided into two categories: general upper secondary school and vocational upper secondary school. Although students must apply to secondary school, every student is guaranteed a place of study. Tuition is free, but some of the costs for learning materials and travel become the responsibility of the student.

General upper secondary school is the more academic route. Students are not organized into grades, but instead are required to fulfil a minimum seventy-five course credits, which is the equivalent of three years' full-time study. After completion of the curriculum, most graduates of general upper secondary school will take the national matriculation examination, a cultural rite of passage in Finland. Passing the examination guarantees a student a place of study at university.

Vocational upper secondary school is the more practical skill-focused route, which requires both classroom and on-the-job learning. The curriculum, drafted in cooperation with business and industry, lasts three years' full-time study and prepares students for one of fifty-three different vocational qualifications within 119 different study programs. After completion of the curriculum, students may earn a certificate of qualifications upon demonstrating mastery in a given skill or trade.

Tertiary Education: University & Polytechnic

Higher Education in Finland is divided into two sectors: Universities and polytechnic institutes. Tuition is free, and various forms of financial aid are available to meet students' living expenses.

Universities in Finland offer bachelors, masters, and post-doctorate degrees. It is the more academic path in higher education with a long tradition. The first university in Finland was founded by Queen Christina of Sweden in Turku in 1640. Today, universities operate as "independent corporations" under public law, or "foundations" under private law, designed to "educate students to serve the country and humanity" through research.

Polytechnics, also known as institutes of technology or universities of applied science, were created in Finland in the 1990's. They are the product of the consolidation of vocational colleges into multidisciplinary institutions of higher learning, with closer ties to industry and as a means to foster regional economic development. Their creation, for the first time, allowed graduates from vocational school the opportunity to earn higher degrees. Polytechnic institutes offer bachelors and advanced degrees based on applied research.
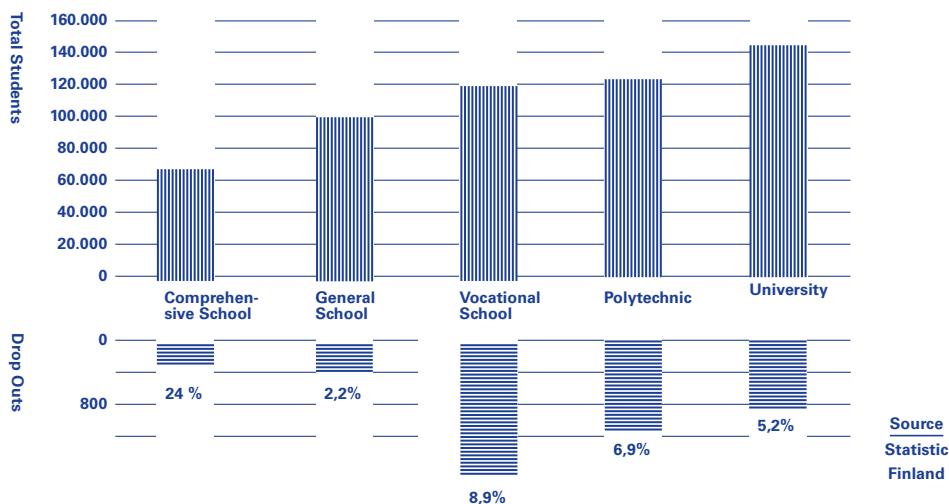
Total number of students and drop outs per sector of education 2007/2008

D1.3 Transitions and Applications

There are two primary transition points in the Finnish Education system: the first, between comprehensive and upper secondary school, and second, between secondary and tertiary education.

Students nearing the completion of comprehensive school must choose between general or vocational upper secondary school. Career counselling helps students weigh the options for their next move. Applying to either general or vocational upper secondary school follows a single joint application process. Students are able to file applications to multiple institutions electronically, all at once, including a list of schools by ordered preference. Some schools may also require an aptitude tests and an entrance examination, in addition to the application and academic transcript. Any student who wishes to continue onto secondary school is guaranteed a place of study; however, selectivity varies between schools, and not every student is promised admissions to a specific school or school program.

There is a similar process for the transition between upper secondary and tertiary education. Although it is not a prescribed path, the "academic" route is from general upper secondary school to a university while the more "practical" route is from vocational upper secondary school to a polytechnic. Universities admit students independently, with differing sets of criteria based on the school and individual academic program. In addition to the application, students' records in the matriculation examination and at secondary school are often required. Polytechnics admit students through a consolidated, online joint application system, requiring applicants to submit a list of schools and degree programs by ordered preference.

D1.4 Teachers: Quality and Training

The quality of education in Finland is often largely attributed to the quality of its teachers. As a profession, teachers maintain high status and widespread respect among the general population. Despite modest compensation, becoming a teacher is highly competitive process. Applications to education programs at university often require entrance exams, face-to-face interviews, and occasionally psychological and performance-based evaluations. The acceptance rate of in education programs is around one in ten, adding to a certain level of prestige. Teacher-training programs are research based and known for their rigor, covering theory and pedagogy in lectures on campus and practical experience in classroom "laboratory" settings. Prospective teachers earn a master's degree in five years. Continuing education for teachers is encouraged with a guaranteed minimum three paid training days per year.

D1.5 Student Services & Special Education

There is a strong social responsibility component evident within Finland's education system. Part of this is supporting a student's ability to learn, in the form of free tuition, free school meals, routine medical exams and transportation assistance for long-distance commutes. Another dimension is access and availability to special needs education and remedial instruction. With an emphasis on early detection and intervention for students with learning disabilities, the goal is to include special needs students in the mainstream, wherever possible. For those students who need additional or more focused attention, placement in specific special needs classes or special needs schools is another option. For other non-learning-related needs, the education system is expected to draw on the wide network of social services in order to meet and protect each student's physical and emotional well-being.

D1.6 Pre-school

Although compulsory education does not begin until a child reaches age seven, all children in Finland are offered free pre-primary education from the municipality and in conjunction with either daycare centres or

the local comprehensive schools. The emphasis is on play, group participation, and basic preparation for comprehensive school, the following year. The programs are offered at a minimum seven hundred hours per year, but no more than four hours per day. Many children in pre-primary education also participate in day care.

D1.7 Education Budget + Financing

Funds for all education sectors as well as student financial aid are expected to rise in the next proposed budget.

	2009	2010	
	Budget	Budget proposal	Year over year change
	million €	million €	%
General education	813	843	4
vocational training and education	638	665	4
Adult education	475	502	6
Higher education and research	2,574	2,595	1
Student financial aid	871	890	2

Compared to other nations, in 2006 Finland spent less money per student and only slightly more as a % of GDP than the OECD average.

2006	Annual Expenditure per student (USD)		Expenditure as % GDP	
	Finland	OECD average	Finland	OECD average
Primary Education	5,900	6,400	2.4%	2.5%
secondary Education	7,500	8,000	1.4%	1.2%
Tertiary Education	12,800	12,300	1.7%	1.4%
All Education	8,000	7,800	5.8%	5.7%

*Tertiary Education Includes R & D

Financial Aid is available for students in upper secondary and Higher Education. Kela, the Social Insurance Institution of Finland, administers student aid. In 2008, 241,600 students benefitted from student financial aid in following forms:

Study Grants	**440.7 million EUR**
Housing Supplements	**241.9 million EUR**
State Guarantees for Student Loans	**23 million EUR**
Student Loan Interest Allowance and Subsidies	**1.7 million EUR**
Student Loan Tax Deductions	
Meal Subsidies	**24.1 million EUR**

D2 – The Youth Population

The teenage years are a period of transition and experimentation. Social peer pressure, physical and emotional changes, a desire to fit in and the simultaneous pull to assert one's independence—all these contribute and complicate a teenager's ability to navigate one's course in school and in life. Teenagers are examined here in the context of the family, health, and society in order to gauge how young people fit into the greater social context, how they view the world, and how they see themselves within it.

D2.1 Population At A Glance

The population of Finland is 5.3 million
➤ 59,530 births in 2008
➤ 21.8% of population is under the age 19
➤ 10.3% of the population is between the ages 7-16 [Primary Education]
➤ 3.8% of the population is between the ages 17-19 [secondary Education]

Finland is getting older
➤ In twenty years (2030), the population of Finland is projected to increase 8.8%
➤ The younger population under the age fifteen will increase 6.3%
➤ The elderly population above the age sixty-five will increase 61.6%

Finland is becoming more diverse
➤ Since the year 2000…
➤ Foreign nationals living in Finland increased 55% to 143,000 foreigners
➤ Immigration increased 72% to 29,000 new immigrants
➤ Naturalized citizenship increased 124% to 6,700 new citizens

In the early 1990's, only 1% of the population in Finland was a foreigner. Today, that number is closer to 3%.

Rank, by country of origin	Foreign nationals	Immigrants	New citizens	Asylum Applicants
1	Russia	Russia	Russia	Iraq
2	Estonia	China	Somalia	Somalia
3	Sweden	India	Iraq	Afghanistan
4	Somalia	Somalia	Iran	Russia
5	China	Ukraine	Sweden	Iran

Finland's student population reflects this increasing diversity

Mother tongue other than Finnish, Swedish or Sami (2008)	Number of students	% share of student population
Primary Education	17.200	3,10%
Upper secondary Education	16.600	4,30%
Tertiary Education	15.600	5,30%

Finland is becoming more educated
➢ In 2008, 65.5% of the population had a degree or educational qualifications
➢ 1.25 million students are enrolled in education leading to a qualification or degree
➢ 22% population is currently a student

Distribution of Students, by school type (2008)	Number Students	Percent Total
Comprehensive school	561.000	51,00%
General upper secondary school	114.200	10,40%
Vocational upper secondary school	127.300	11,60%
University	164.100	14,90%
Polytechnic institutes	132.500	12,10%
TOTAL	1.099.100	100,00%

D2.2 Families

The family is still the dominant social unit in Finland; however, contemporary family life has changed from the traditional nuclear family model.

There are 1.4 million families in Finland
- 38.3% of the population is married
- 42% of families include at least one child under the age eighteen

In size of families is shrinking
- In 2008, the average family size was 2.81 down from 3.72 in 1950
- 24% of children under the age eighteen are only children

The single-child family is becoming more common

Among families with children under the age 18…	61.7% married couples
	18.3% cohabitating / unmarried
	17.4% single mothers
	2.6% single fathers

Among families with children under the age 18…	43% one child only
	38% two children
	5% four or more children

Family structure in Finland has changed over the past century, with an increase in divorce
- In 2008, there were 31,000 marriages and 13,400 divorces
- 20% of families with children under the age eighteen are single-parent homes
- There are 54,000 "reconstituted" or combined families in Finland 10% of all children under the age eighteen belong to a "reconstituted family"
- Finland supports working parents with maternity/paternity leave benefits and childcare allowances.
- More young children are spending more time in childcare settings.
- In 2008, 63% of all one to six year-olds are enrolled in daycare, and 56,600 children, nearly the entire eligible age group, are enrolled in pre-primary education

D2.3 Health

Similar to other developed nations, the Finnish population is becoming a more sedentary and physically less active one with notable health consequences.

- In 2008, 77% of all men and 74% of all women (between the ages 15-25) reportedly exercised two to three times per week
- Still, 20% of all men and 17% of all women are considered overweight
- And 6-10% of pre-primary education students are considered overweight

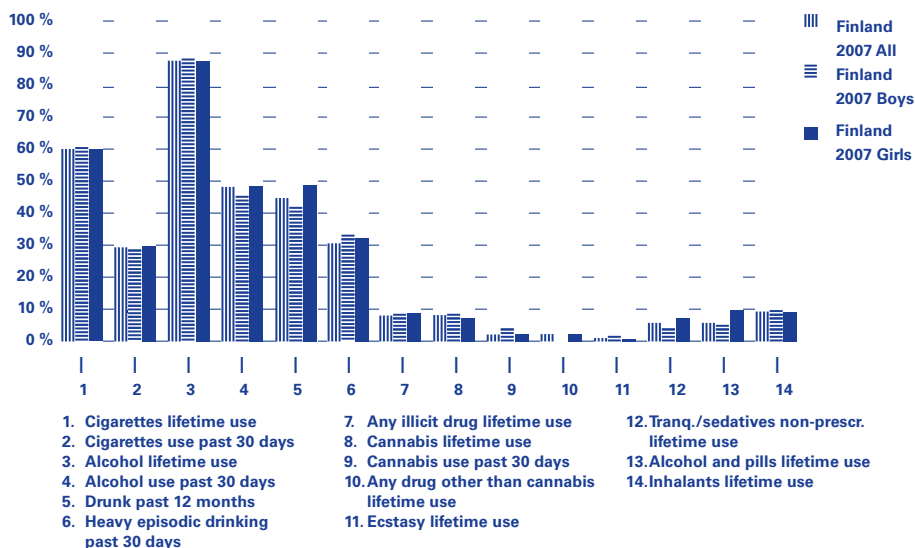The most recent school Health Promotion Survey 2008 reveals health habits and perceptions among Finnish teenagers.

Among 8th and 9th Grade students in 2008...	
Health	17% believed themselves to be in poor health
	16% saw themselves as overweight
	30% ate junk food at least twice weekly
Sleep + Fatigue	25% went to sleep after 11pm
	15% reported fatigue during school hours
Stress	31% reported frequent headaches
	38% reported burdensome school workload
	12% reported school "burnout"
	10-13% reported moderate or serious depression

Adolescence is the period during which most young Finns experience their first encounter with alcohol, tobacco and drugs.

Even as smoking and experimentation has declined among young people...		
In 2005...	7.3% 14 year-olds	...smoked cigarettes daily
	23.3% 16 year-olds	
	33.9% 18 year-olds	

Finns reportedly get drunk more often than other Europeans, even though they drink alcohol less frequently. Finnish teens' first episode of drunkenness, on average, is at thirteen to fourteen years old, for both boys and girls.

- 20% of young people report getting drunk almost every week
- 45% of 15-16 year-olds are reported to have been drunk in the previous twelve months
- Drug use in Finland is also in decline.
- Among 16-18 year-olds in 2005, 7% of boys and 6% of girls experimented with drugs, most commonly with marijuana.
- On average, girls reach sexual maturity shortly before age thirteen. Boys follow one to two years later.
- Unwanted teenage pregnancies are not common
- 19% of 8th and 9th graders in comprehensive schools complain they received inadequate information in health courses on topics related to sexual health

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- 1. Cigarettes lifetime use
- 2. Cigarettes use past 30 days
- 3. Alcohol lifetime use
- 4. Alcohol use past 30 days
- 5. Drunk past 12 months
- 6. Heavy episodic drinking past 30 days
- 7. Any illicit drug lifetime use
- 8. Cannabis lifetime use
- 9. Cannabis use past 30 days
- 10. Any drug other than cannabis lifetime use
- 11. Ecstasy lifetime use
- 12. Tranq./sedatives non-prescr. lifetime use
- 13. Alcohol and pills lifetime use
- 14. Inhalants lifetime use

*The figures of the time series have been converted from FIM into euro by a fixed rate.

D2.4 Pressures

Teenagers experience a great deal of emotional and physical change over a relatively brief period of time. Many of these changes are intensified by the external pressures of daily life in contemporary culture. For teenagers, pressures exist in many different forms—social pressure among one's peers, academic pressure in school, and even economic pressure to make ends meet.

Social Pressure

Bullying in school has attracted significant attention in Finland in recent years, especially in the aftermath of two separate school shootings in 2007 and 2008. More attention is now being given to mental health and how to prevent social exclusion among young people. Bullying, in the form of physical and verbal intimidation between students takes place in and outside the classroom and even online, now known as "cyber-bullying."

In 2008…	8% of students in 8th and 9th Grade admitted being bullied
	10% of boys were bullied once per week
	6% of girls were bullied once per week
Boys typically face more physical harassment	
Girls typically face more verbal cruelty, including gossip	

KiVa school is a national bullying prevention program launched in Finland's comprehensive schools. Students in grades one through four participate in classroom learning sessions. Teachers and parents receive anti-bullying information and materials to heighten awareness and prevention.

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Academic Pressure

Even though Finnish students typically attend fewer hours in class and have less homework than their European counterparts, academic anxiety persists. Students fear the social stigma believed to accompany failure to succeed.

 ➢ Matriculation examination: 7% failed nationwide in 2007

Economic Pressure

Young people are not entirely insulated from the pressures felt in wake the global economic crisis and the increasingly competitive job market. Higher degrees are understood to improve one's employment prospects and potential earnings; however extending one's education beyond the average length of time needed to complete a degree or qualification may also have negative effects on one's late entry into adulthood.

The job market is tight, especially for younger job-seekers:

Unemployment (Dec 2009)	All 15-64	Youth 15-24
Total	8,30%	20,30%
Men	9,00%	22,40%
Women	7,60%	18,40%

Despite financial aid, an increasing number of students eighteen and older are employed seek part-time work while pursuing an educational qualification or degree:

Education by sector (2007)	Students	Employed students	% Students	% Increase (2006-2007)
Upper secondary general education	48.359	15.286	31,6	1,8
Vocational education	212.322	131.862	62,1	3,5
Polytechnic education	133.264	77.925	58,5	2,7
University education	176.298	107.427	60,9	1,8
Total	570.243	332.500	58,3	2,7

Government assistance to Finnish students (in the form of tuition, housing, meals, healthcare, etc.) is generous. The benefits and lifestyle it affords an individual can have the unwanted consequences

Students are taking longer to complete their degrees

Completed lower and higher university degrees in 4 years	32,50%
… in 8 years	63,80%
Completed first polytechnic degree in 4 years	39,40%
… in 7 years	69,70%

Young people are waiting longer before starting a family:

Year	1981-85	2007
Mean Age for Marriage:		
Men	26,2	30,6
Women	24,2	28,5
Mean age of mother at first birth:	25,4	28

D2.5 Cultural Institutions of Finnish Youth Experience

Religious confirmation, the matriculation examination, and mandatory military service are three institutions of Finnish culture that unify broad segments of the youth population. Each one falls under a different aspect of national culture and identity—religion, education and military—and yet all three serve a meaningful purpose in creating a common and shared experience for many Finnish youth, lasting well into adulthood.

Confirmation

Religion plays a relatively minor role in contemporary life in Finland, and yet 80.7% of entire nation identify themselves as members of the Evangelical Lutheran Church of Finland. Confirmation is the religious a rite of passage for a young Christian to declare one's faith in the church and marks his or her entry into adulthood and full membership into the local parish. Families typically celebrate a child's Confirmation much like a baptism, graduation, or a wedding.

Confirmation training in Finland precedes the religious ceremony and is open to everyone, no matter one's family background. Finland boasts the highest rate of participation for all countries where the Lutheran denomination is observed, with 89% of all fifteen year-olds electing to participate. The curriculum is left largely to local parishes, but it requires eighty hours of religious instruction and lasts a minimum six months. For most young Finns, it is the lure of the seven-day camp experience, typically held in the summer during the school vacation that is the primary motivation

for enrolment. Confirmation training camp is widely known to be a deep bonding experience among teenagers, regardless of religious devotion or intent to pursue an active relationship with the church in the future.

Matriculation

The matriculation examination is the culmination point at the completion of the general upper secondary school curriculum. The examination is administered in four parts over a six-hour time period and is offered twice per calendar year. Students elect four different academic subjects in advance, one of which must include a test of one's "mother tongue." A passing mark, especially with honours, guarantees the student a place at university. A failing grade in any one test subject is an automatic failure for the entire exam.

Matriculation is a second cultural rite of passage among Finnish youth, on par with a high school graduation elsewhere around the world. It is part of a long tradition inherited from Sweden and predates the Finland's own independence by sixty-five years. The examination has been updated to fit the contemporary curriculum and is no longer a general education test requiring mastery of Latin. Matriculation is steeped is still steeped in old customs, from the Latin grades awarded to the symbolic white student cap given to each successful young scholar. On Vappu, the May 1st holiday that signals the beginning of summer each year, the parks and avenues across Finland are filled with graduates proudly sporting their white caps at picnics and in public, a status symbol worn atop one's head for all to see.

Conscription

All men are required to complete military service in Finland by law. Many view conscription as a cultural badge of honour. It is a duty to the state, to those who sacrificed their lives in World War II, and to those who rebuilt and protected the nation in its aftermath. Young men are drafted at nineteen and must complete their 6-12 month obligation before reaching twenty-nine. Most elect to complete their service in their early twenties, often before enrolling in higher education. Eighty percent of conscripts elect the military option while less than 10% choose civilian service. Another 10% are declared unfit, based on physical or emotional criteria, and are dismissed from service at the start.

In practice, the military offers conscripts thorough physical training, leadership opportunities, and exposure to specialized technical skills. In addition, many young men see their successful completion of service, with discharge report in hand, as an added benefit when applying for work or higher education degree programs. Deep friendships and a wide social network of contacts and associates typically form during military service. These bonds often endure long after a conscript's return to civilian life.

D3 – The Dropouts
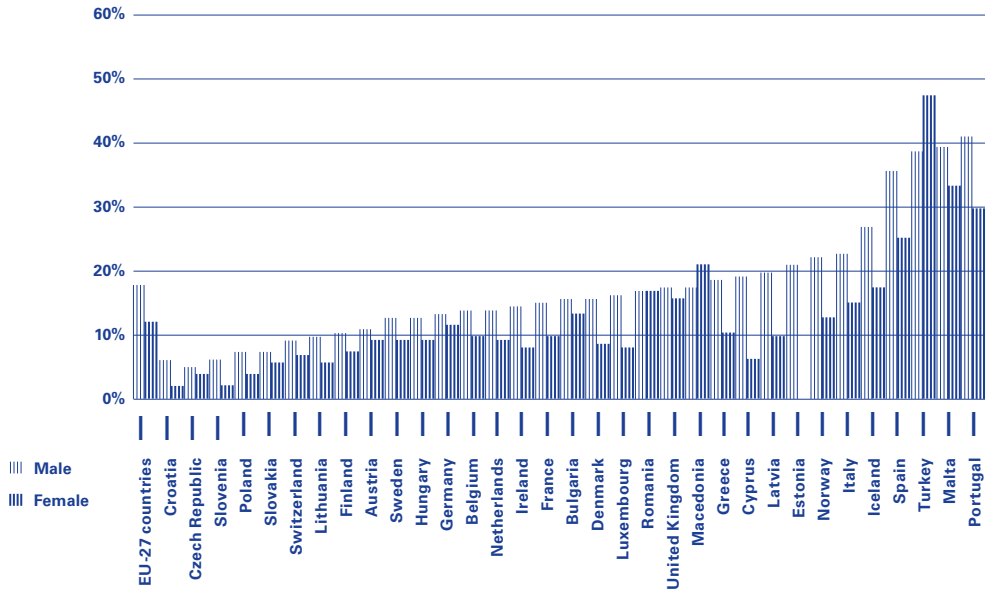
Percentage of the population aged 18-24 with at most a lower secondary education and not currently in further educational training in 2007.

IIII **Male**

IIII **Female**

The perils of early discontinuation in education are usually argued from an economic, social or public health perspective. It is important to try and identify who the dropouts are, how many there are, and at what stage they leave education. A large portion elects to discontinue their education after completing a degree and before starting a next one while another portion drops out of education mid-stream. Dropouts are best understood against the backdrop of a changing economic and social landscape within Finland. Some of the data begins to reveal inequalities and discrepancies within Finnish education. These inequalities point to conditions latent within the system that contribute to early discontinuation.

It may be important to consider why a dropout bias persists in Finland and to ask if it really is necessary for all Finnish students to pursue higher education or even to complete formal secondary education. Might there be room to consider alternative, non-traditional paths for young people to become active participants in the Finnish labour market and in Finnish society?

D3.1 Discontinuation

Dropouts fall into two sub-categories: Those who opt not to continue to the next level of education and those who leave school before completing their degree or qualifications.

Each year, about 12,500 young people are in danger of remaining outside the public education system. They complete basic education with poor grades, dropout from basic education, do not apply for upper secondary education or drop out during the first year. There are an increasing number of students who have completed basic education but who lack the knowledge and skills required in future society, the world of work and a high-quality life. Problems can be seen in their insecurity in selecting the educational route or field and in dropout rates.
From Education and Research 2007-2015: Development Plan

Nearly all children in Finland complete the compulsory nine years of comprehensive school. In 2008 a large majority, or 92.5% of all students, continued directly to upper secondary school. 3,600 students (or 5.6%) elected not to continue to the next level of education. 1,300 students (or 2.0%) enrolled in an additional tenth grade in comprehensive school, a "second chance" to master a poor or failing subject and have more time to prepare for upper secondary school.

	Students	%
Completers of 9th grade of comprehensive school	64,740	100
Continued studies in year of graduation		
In upper secondary general education	32,740	50.6
In upper secondary vocational education	27,100	41.9
In 10th grade of comprehensive school	1,300	2
Did not continue	3,600	5.6
Source: Statistics Finland, Education Statistics		

There is a significantly larger fall-off or discontinuation among students at the completion of general upper secondary school. Even among the achievers, or the 32,900 students who passed the matriculation examination in 2008, a majority of them did not continue directly onto higher education.

	Students	%
Completers of the matriculation examination	32,900	100%
Continued studies in year of graduation		
...In upper secondary vocational school	1,400	4.2%
...In polytechnic education	6,000	18.5%
...In university education	6,300	19.1%
...Did not continue studies	19,200	58.2%

There are a variety of reasons students may choose not to continue directly onto higher education. One segment of this group simply wants a break, especially after all the preparation for the matriculation examination. Some will travel while others will take the time to weigh academic or

employment options. A second large segment of young men will elect to fulfil their military service requirement before pursuing higher education or work. A third group will use the time to prepare for or retake university or polytechnic entrance exams, especially those who previously missed the cutoff for an especially competitive program or a highly selective school.

Even as vocational upper secondary school has steadily increased in popularity among graduates of comprehensive schools over recent years, this sector also saw the largest proportion of students who discontinued their studies. More students in vocational upper secondary school, polytechnic institutes, and universities quit school than switched to a different sector. However, trends show that more students transfer into the practical and applied qualifications programs than shift to the general or more academic programs.

Sector of education (academic year 2006/2007)	Students	Discontinued in own sector of education	Changed sector of education	Discontinued completely
General upper secondary school	4,800	4.20%	2.10%	2.00%
Vocational upper secondary school	27,200	10.20%	1.00%	9.20%
Polytechnic education	12,000	9.00%	2.30%	6.80%
University education	9,900	5.60%	0.80%	4.80%
Total	53,900	7.30%	1.50%	5.80%

D3.2 Economics and Dropouts

One of the primary incentives behind the policy to decrease and eliminate the number of dropouts is an economic rationale.

More education translates into higher earnings

Earnings by Level of Education, 2007	EUR/month
Primary Education	2.392
Secondary Education	2.431
Undergraduate Tertiary Education	3.243
Graduate Tertiary Education	3.972
Post-graduate Tertiary Education	4.462

Higher incomes not only have added benefits for individuals or families, they also serve to bolster the national balance sheet with added revenue in taxes.

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More education is correlated with higher levels of employment, as evidenced in the immediate transition to working life, by level of education…

One year after completing A degree or qualification, By level of education in 2007	Employed	Unemployed	Full-time student
General upper secondary school	44,10%	1,90%	38,40%
Upper secondary vocational school	74,50%	9,30%	7,10%
Polytechnic Degree (Bachelors)	88,70%	4,50%	3,40%
University Degree (Bachelors)	74,30%	1,60%	22,50%
University Degree (Masters)	87,70%	3,70%	4,60%
Licentiate Degree	86,00%	3,20%	7,50%
Doctorate Degree	87,40%	1,60%	1,60%

…and later in life, among 25-29 year olds, by level of education.

Unemployed, by level of education (2007)	Finland	EU-27
Primary Education	17,10%	15,20%
upper secondary Education	8,50%	8,20%
Higher Education	4,40%	6,30%

Unemployment insurance benefits are not available to young dropouts in Finland. A person must be at least eighteen years old and show proof that he or she has worked for ten months within the preceding two years in order to be eligible for a government stipend.

D3.3 Health and Dropouts

The Finnish National Institute for Health and Welfare (KTL), in its 2006 summary Health in Finland draws a connection between poor school performance and discontinuation with poor health and health habits later in life.

➢ Higher rates of smoking
➢ Higher rates of binge drinking
➢ Poor oral hygiene

The differentiation of health behaviour in adolescents begins at ages thirteen to sixteen, at the latest. Those who finish their schooling early and those who opt for a vocational training path, drink more often and, in general, lead a less healthy life than their age peers who continue to upper secondary school [Health in Finland, 117]

D3.4 Equality but not Equal

There are more opportunities for education in Finland today than in the past. The creation of comprehensive schools, upper secondary vocational schools, and the polytechnics removed the "track system" and "dead end" paths that used to exist not long ago. However, discrepancies that arise due to variations among schools and unequal access continue to persist.

All school-aged children are guaranteed a place in school; however, the application system favours students with greater means. Children from families of parents with higher levels of education, that can afford tutors or supplementary learning materials, and that are able to commute greater distances beyond the nearest school possess certain advantages over others. Although equal in principle, Finland's education system is structured in two tiers. Vocational upper secondary school is viewed as the second or lesser option when compared to the academic route. A vocational education is seen to offer more limited prospects for higher education and mediocre job opportunities. The higher status general upper secondary school allows for greater flexibility to enter either university or a polytechnic education.

Some students who graduate from general upper secondary school enrol in a vocational program afterwards. Known as the "double degree," students use it to improve their applications to more selective higher education degree programs.

Government Financial Aid grants and subsidies do not take into account one's family's ability to support a student. The system does not differentiate cost of living expenses between more and less expensive regions in the country, meaning that acceptance to a top choice academic program could result in greater economic hardship. Lower-income students often rely more heavily on government-backed loans for their education, taking on greater risk in the face of uncertain employment prospects years later, after graduation.

A discrepancy between gender-based performance appears to be on the rise in Finland. When comparing male and female students in terms of enrolment in higher education, rates of continuation, matriculation examination results, and degrees earned, the data shows that Finnish males are falling behind and dropping out of school at higher rates.

	All	Male	Female
Completers of 9th grade of comprehensive school (2008)	**64.700**	**33.000**	**31.700**
Continued studies in year of graduation			
In upper secondary general education	**50%**	**42%**	**59%**
In upper secondary vocational education	**42%**	**50%**	**33%**
In 10th grade of comprehensive school	**2%**	**2%**	**2%**
Did not continue studies	**6%**	**6%**	**6%**

"Direct transition to further studies of completers of the 9th grade of comprehensive school" and "Direct transition to further studies of passers of the matriculation examination"

	All	Male	Female
Passers of the matriculation examination (2008)	**32.900**	**14.100**	**18.800**
Continued studies in year of graduation			
In upper secondary vocational education	**4%**	**2%**	**6%**
In polytechnic education	**19%**	**17%**	**19%**
In university education	**19%**	**22%**	**17%**
Did not continue studies	**58%**	**59%**	**58%**

Students with learning disabilities already face greater challenges in education, and the overall number of students in special education has increased over the last decade. Boys outnumber girls in special education by a ratio of nearly 2:1.

Comprehensive school	Students	% Students	% Boys	% Girls
Transferred to Special Education (2008)	**47.300**	**8,40%**	**68,10%**	**31,90%**
Part-time Special Education (2007)	**126.300**	**22,10%**	**60,60%**	**39,40%**

D3.5 Celebrity Dropouts

The cultural discourse celebrates winners. Famous dropouts, to name category, are most often individuals who strike out on a different path. They become fascinating subjects esteemed for their courage, determination, and willingness to be unconventional. Many are in creative fields, such as artists or musicians, or have unpredictable and demanding workloads, such as actors or athletes. Some are so driven by an entrepreneurial spirit they even become global leaders in industry and business.

Sir Richard Branson, British billionaire and founder of the Virgin Group, is a celebrated high school dropout who took a different path toward success. He launched his first venture, a student magazine at age sixteen, and has since gone on to create global empire with businesses in media, retail, financial services, mobile telecommunications, and the airline industry. Branson is celebrated for his flamboyance in marketing the Virgin brand, his willingness to take big financial risks, and his appetite to compete against larger and more powerful business interests. Branson is listed as the 261st richest person according to Forbes magazine's 2009 list of billionaires, with an estimated net worth of approximately US$2.5 billion.

D4 – Differentiated Learning:
The Brain & Learning Environments

Intelligence, maturity, aptitude, skills, learning styles, study habits—these are a few of the characteristics assessed in education and applied in the classroom setting. The brain lies at the centre of these cognitive functions and behaviour and plays an important role in how a person learns. For this reason, it is important to consider the role brain research plays in classrooms for educators. New findings in neuroscience continue to reveal a wealth of information regarding how the brain the functions, its structure, and how it continues to develop through adolescence.

Parallel to this flood of scientific research are new techniques for handling different types of learners based on the notion of different and multiple intelligences. In full recognition that each individual does not possess the same level of intelligence or aptitude for every skill, educators are still focusing on how best to connect with all the different kinds of learners.

As for dropouts, they may be seen to fall into two categories: Common losers and rare winners. Academically unfit, undisciplined, or unmotivated on the one hand, or else too smart and too driven to be constrained by school's regulations and limitations. In both cases, traditional learning environments do not appear to serve either extreme well. Rather than concede and admit that education cannot reach each individual or compromise standards to serve a lowest common denominator, why not consider how education can be made more flexible and create differentiated learning environments for all individuals and all types of learners, no matter how eccentric or extreme.

D4.1 The Brain

In the 2006 PISA results, fifteen year-old girls in Finland out-scored boys in reading by fifty-one test points. In fact, in all OECD countries, girls scored higher than boys, with an average spread of thirty-eight points. Finland's fifty-one point spread was the second largest among all PISA countries (after Greece), which prompts two questions: Is this difference a matter of culture and environment or are the brains of boys and girls different?

Some will argue one side, that the test results reflect a simple fact that girls read more than boys and are culturally predisposed to do so. In Finland, this is evident whether one looks for statistical evidence in library usage or observes children's leisure habits in the field. Others will argue that there are physiological differences in the brain and brain development of boys and girls. These differences begin to explain why girls develop a capacity for language and speech at a younger age.

Dr. Leonard Sax falls into the latter category and attracted widespread attention for advocating single-sex education in U.S. public schools. He

supports his argument based on a view that boys and girls learn differently because their brains develop differently. He draws from a wide array of scientific research that may give reason as to why boys and girls observe, behave, and communicate in fundamentally distinctive ways. According to Sax, boys and girls should be taught separately, using prescribed techniques geared toward each gender's innate strengths.

Brain-based education is the common term used for the adaptation of scientific brain research directly to the classroom. Over the last twenty years, the tools used to study the brain, especially functional magnetic resonance imaging (fMRI), have significantly improved. Neuroscientists have been able to map the brain with greater accuracy, higher resolution, and under different conditions and stimuli. This has led to an increase in published findings regarding the anatomy and development of the brain. In recent years, many popular magazine articles and books in the mainstream press have circulated "best practices" for the classroom based on the latest scientific "evidence." Critics have cautioned that these amount to unauthorised oversimplifications of controlled scientific methods. Discoveries at the neurological and anatomical level, they argue, cannot necessarily be applied at the behavioural level for students.

In 2007, the OECD published "Understanding the Brain: The Birth of a Learning Science," acknowledging the importance of brain research for education. It is a primer for educators to consider how brain science may one day affect classroom pedagogy, based on more recent discoveries in the physiology and development of the brain.

Scientists are investing more to learn about brain development among adolescents, with a heavy focus on the prefrontal cortex, the area responsible for "executive function." It is the locus for decision-making, planning, complex thought, and weighing risks versus rewards. The onset of puberty delivers a tremendous growth spurt within it, followed by a prolonged period of "pruning" through adolescence until the age of twenty. Mood swings and impulsive, thrill-seeking behaviour occur with greater frequency during this time in part, because the brain has yet to fully develop. As young people's brains' mature, these traits subside.

D4.2 Differentiated Intelligence

Intelligence, what it is, and how it is measured is an area of research filled with competing theories and applications for learning. Traditional views of intelligence saw it as something fixed, a quantity that could be measured, predicted and even compared based on the size, shape or weight of a person's brain. The IQ test evolved from this tradition, holding to the belief that intelligence was static, that a person was born with a finite capacity that would not change with age or experience.

More recent theories of cognitive development believe intelligence to be more nuanced and more fluid. Traditional metrics and evaluations failed to recognize other forms of cognition such as analytic, creative, and practical forms of intelligence. A leading, alternative model for intelligence is Howard Gardner's theory of Multiple Intelligences (MI), which understands intelligence as something far more complex than what can be measured in an IQ test. MI views intelligence as "a series of relatively separate faculties, with only loose and non-predictable relations with one another." Gardner identifies eight distinct intelligences:

1. Linguistic
2. Logic-Mathematical
3. Musical
4. Spatial
5. Bodily Kinesthetic
6. Interpersonal
7. Intra-personal
8. Naturalist

Each individual possesses a unique and dynamic intelligence profile or a combination of intelligences that change over time. Intelligence, he believes, is culturally defined, expressed through actions and develops with experience.

Multiple Intelligences theory demands a different approach to assess students in the classroom. Students who are thought to under-perform in the traditional setting may actually be deprived of the learning opportunities they need to more fully express the intelligences they possess. MI requires a much less rigid view toward learning and requires greater flexibility for different modes of learning, in different environments, and for all types of learners.

D4.3 Differentiated Learning Environments

Not all students are suited to learn best in the traditional classroom, seated at a desk, reciting a lesson, observing a demonstration, or following along in a textbook. Just as one may entertain the possibility of different types of intelligence—and even the idea of Multiple Intelligences—one may also appreciate that there are different types of learners, each one suited to a different learning environment.

Some students thrive in a classroom. Some students learn better in smaller groups, in a more collaborative atmosphere, drawing on others' ideas and input. Still others learn best one-on-one or even with a book, all by oneself. Students who find inspiration in art or music class may not necessarily be the ones who look forward to sports or organized games in physical education.

There are those who learn well when following a teacher's lesson plan adhering to a pace set by the group. There are others learn better following an individualized plan, more slowly or more rapidly, at one's own pace.

Finding the right fit or the optimal learning environment is crucial to sustain the interest and motivation of students for the learning process. Forcing students to endure a lesson in a way that cannot be absorbed, due to the environment or mode in which is being taught, is a waste of valuable resources and precious time.

A non-definitive list of schooling options
➤ Home-schooling
➤ Private schools
➤ Single-sex schools
➤ Religious/Parochial schools
➤ Magnet schools (arts, math/science, language immersion)
➤ Boarding schools
➤ Military academies
➤ Alternative schools (Montessori, Waldorf)
➤ _____?

D5 – Culture of Youth

Teenage culture in Finland is an entertainment free-for-all, a mix of messages and media, advertising and content, speed and information. Culture today is built around communication, interactivity, and virtual reality—static and moving words and images. The media is embedded in consumer culture, a driving force behind materialism, celebrity, and reality TV.

D5.1 TV

TV Saturation

Television endures as the primary mass-media outlet for entertainment and information in Finland.

➢ 92% of Finnish households own at least one television
➢ 37% of Finnish households own at least two televisions
➢ 10% of Finnish households own at least three televisions
➢ Average family size in Finland: 2.8

TV Consumption

Television reaches nearly the entire youth population. In 2009, among Finnish youth between the ages 10-24 years 823,000 or 85% watched television weekly.

| Daily use	10-24 year-olds
Total	1h 32min
Men	1h 18min
Women	1h 43min

Source
Finnpanel

TV Content

Besides the popularity of nationally televised special events, major sporting championships, and breaking news, Finnish youth are hooked on a heavy dose of Finnish and imported versions of reality TV, comedies and drama.

Top Television Shows among youth 10-24 year-olds, by genre		
Finnish Reality TV	**Reality TV (US)**	**Drama/Comedy (US)**
Duudsonit (The Dudesons)	The Amazing Race	House
Dilli (The Apprentice)	American Idol	The Simpsons
Big Brother	Hell's Kitchen	Gossip Girl
Talent Suomi (Finland's Got Talent)	Survivor	CSI
Huippumalli haussa (Finland's Next Top Model)	Wipeout	Desperate Housewives

Source
Finnpanel

Home PC
Internet connection
Broadband
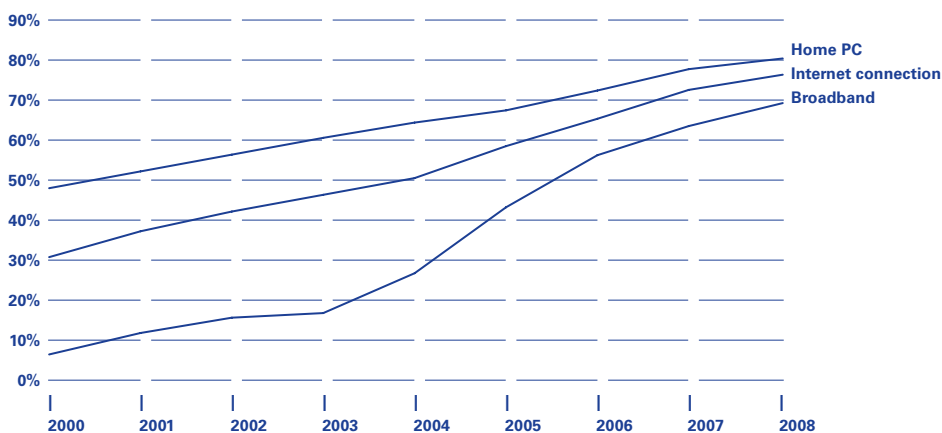
Frequency of information technology equipment in housholds, 2000-2008

D5.2 Internet

Internet use among teenagers (age 15-19) is universal, having reached 99% saturation in 2007. Access is widely available throughout the day on computers at home, in the classroom and public libraries, and on hand-held mobile devices.

High-speed internet is a legal right in Finland. Legislation passed in June 2009 requires internet service providers must guarantee bandwidth at a minimum 1 MBps with the goal set for 100 MBps by 2015.

The most common uses for the internet include e-mail, online research, shopping and banking. Many of the social and more interactive tasks skew heavily toward younger ages.

% Internet Users, by task	16-29 yrs	30-49 yrs	50-74 yrs
Instant messaging	69%	28%	12%
Downloading music	64%	37%	16%
Chatting online	54%	26%	11%
On-line gaming	31%	8%	4%

D5.3 Social Networking & Virtual Experience

Social networks draw a large audience among Finnish teenagers. IRC-Galleria, which grew from a modest photo-sharing website, is now the most widely used online social network in Finland. Much like Facebook, users post photos, add comments, chat with a network of friends and make new friends on line. Its popularity and reach makes IRC-Galleria the largest form of "youth media" in the country, surpassing print, radio and television.

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- 74% of 15-24 year use the site on a weekly basis
- 500,000 registered users spend thirty minutes, on average, daily
- 40% of these users are under the age 18

(Source: Sulake Corporation Oy)

Habbo, another Finnish website creation, takes social networking into the virtual realm, and is a network aimed directly at teenagers. Registered users create online characters to interact with others and make friends in a virtual hotel environment—at the pool, in a café, or in privately created rooms. In the Habbo Hotel, they can chat, play games, join clubs, and buy goods to use in this virtual world. There is corporate advertising in the Habbo environment, on billboards in the virtual landscape. Users can buy virtual goods and furnishings paid for with Habbo credits which are backed by real currency.

- 162 million users worldwide, in 31 different local communities
- 65% of Habbo users are 13-16 years old
- Average visit is forty-three minutes per session

(Source: Sulake Corporation Oy)

Popularity of these online communities has attracted the attention of youth workers and government programs aimed to protect the safety and welfare young people from cyber-bullying, sexual harassment, and potentially harmful real-world encounters.

Netari is an initiative that places youth workers online, inside the same virtual communities where they can best reach their target audience. Using the existing platforms of IRC-Galleria and Habbo, they organize educational outreach programs and sponsor virtual gatherings, parties, and events.

The Helsinki Police has also adopted this strategy, bringing community outreach and a police presence to the virtual street. Three detectives have created genuine police profiles on IRC-Galleria and Facebook so they can participate in the online space. They can post comments in raucous chatrooms to quiet escalating situations of cyber-bullying and intimidation. They can assist troubled teens by putting them in contact with social workers and informing their parents. In some instances, they have received useful tips online for help solving real crimes in the city.

D5.4 Video Games

Video gaming is a growth entertainment industry and a popular pastime in Finland, especially among its youth. Games now cross many platforms—the personal computer, the dedicated game console, the internet and mobile devices. Gamers are drawn to the screen for entertainment, social interaction, escape and relaxation. Concerns surrounding video games include additive or excessive use and the graphic depictions of vio-

lence. Some question possible detrimental effects gaming may have on young people's health, sociability, and performance in school.

Video gamers in Finland tend to be younger and male. The average age of the Finnish "active gamer" is thirty years-old. Thirty-six percent of the population under thirty is an active gamer.

Reported time spent playing games, weekly	
<1 hour	14%
1-5 hours	50%
6-10 hours	24%
11-15 hours	6%
>15 hours	6%

Demographic Breakdown	
16-19	38%
20-24	43%
25-29	29%
30-39	25%
40-49	20%
50+	4%
Male	25%
Female	13%
Parent	31%
Non-Parent	14%

Title	Category	Circulation	% under 19
Soundi	Music		
Cosmopolitan (Finnish)	Fashion	256000	41%
Image	Fashion		
Suosikki	teen culture	207000	67%
Demi	teen culture		
Pelti	Gaming		
Urheilulehti	Sports		

D5.5 Media, Sports & Celebrity

Media consumption is rapidly moving closer to online platforms and away from traditional paper media. Popular magazines still capture a significant portion of Finnish youth.

Professional sports and sports coverage is an area of great interest among young Finns, especially among young men.

Ice hockey is extremely popular in Finland, which currently ranks fourth in the International Hockey Federation. The May 4th, 2009 world championship game against Canada was the third most watched television event in Finland for all of that year. Finnish hockey fans keep close tabs on Finns playing overseas in other professional leagues such as in the NHL.

Finland's national football team has yet to qualify for a place in the World Cup or European Cup championship, and still the sport remains popular, with a domestic professional league that includes fourteen clubs.

Auto-racing, including both Formula One and Rally Car, is an international sport where Finnish athletes rank at the top, attracting a large and enthusiastic following. The annual Rally Finland, held each summer in Central Finland near Jyväskylä, attracts half a million spectators, making it the largest organized public event in all the Nordic countries.

Celebrity

Celebrity, and the nature of fame, has evolved as media and media consumption have changed. Finland has embraced the global media market. The films, television shows, popular music, tabloid magazines, and even books available in Finland today are part of a much broader cultural landscape. Celebrities in Finland are often the same people who are celebrities elsewhere—in England, the United States, or even in China. Reality television and the rise of YouTube, for better or worse, have rewritten many of the rules of what is expected of a person in order to become famous. The lines between fame and infamy are blurring as the fascination and the desire for celebrity status is increasingly high.

This is a generation that sees the online space not as a separate place you go but as a continuation of their existence. The worrisome stuff…has to do with a broader cultural framing that gets played out online—and online in a magnified way. Because if you think of a lot of the internet—it scales everything….A certain kind of celebrity culture has been perpetuated through the online space because you think you have access. And the fact is, it's not a question of "Fifteen minutes of fame" online, it's a question of being "famous amongst fifteen."

Danah Boyd, "Internet Famous" from Digital Nation (Frontline, PBS)

D6 – Finland Education Scorecard:

	FINLAND	OECD
Average class size (primary education)	19,8	21,4
Student-Teacher ratio (primary education)	15:01	16:01
Student-Teacher ratio (secondary education)	13.1:1	13:01
Hours in Classroom per year, Age 15	856	921
Computers per class/student		1:13
GDP share of education	5,80%	5,70%
Teacher Starting Salary	28,201USD	28,687USD
Teacher Salary after 15 years	36,578USD	39,007USD
Average Duration of Tertiary Studies	4.85 years	4.11 years

FUTURES OF FINLAND

There's no way to predict the future, but by using scenarios we can make an educated guess. In the following pages is a brief glimpse of what Finland may look like in 2020 and 2050. As a projection, this is meant to act as a rough guide for what we may reasonably expect.

Finland 2020 – At a Glance

Population[1]

- 5.6 million, evenly distributed between women and men
- Age distribution (in years)

0-14:	17%
15-64:	60%
65 +:	23%

- Population by age and gender 2020, projection 2009[1]
- Natural population growth: 9,900.
- Net immigration: 20,000 (immigration: 36,000 persons, emigration: 16,000 persons).
- Emigration mainly to EU and other European countries, North America and Asia.
- Over one million Finns live or have settled abroad.
- Some 1.1 million live in the Helsinki area, which includes Espoo and Vantaa.
- City populations:

Helsinki	620,000
Espoo	280,000
Tampere	230,000
Vantaa	220,000
Turku	180,000
Oulu	150,000
Jyväskylä	140,000

- Some 80% of the population live in cities
- Commuting times and distance have continued to rise and the country's average is now approximately 18 kilometres. Due to the distances, the majority of commuters use private cars.
- Life expectancy: men 79 years, women 84 years.
- Employment rate: 72%; unemployment rate: 6%.
- Foreigners 4%, most from Russia, Estonia, Sweden and Somalia; 25% of Helsinki region dwellers have an immigrant background.
- Religion: Lutheran 75%; Orthodox 1%; Other 2%; some 22% do not belong to a religious group.
- Languages: Finnish speaking 89%; Swedish speakers 5%; foreign language speakers 6%.
- Major health challenges: alcohol abuse, obesity and memory-related illnesses.

▷ Education: 29% of young Finns have a university of other tertiary qualification; the share of women with a university degree or equivalent is much higher than men.

Economy

▷ Finland is highly integrated in the global economy; international trade is a third of GDP.
▷ Finns take approximately 6.8 million trips abroad, of which business trips account for some 20%.
▷ Economic structure (employed persons by industry):
    35% public and other services
    18% trade, hotels and restaurants
    18% financial and business services
    12% manufacturing
    7% transport and communications
    7% construction
    3% agriculture and forestry

1. Most of these figures are based on the estimations of Statistics Finland
2. Statistics Finland

Finland 2020 – Slow recovery from 2010

The traditional investment-intensive industry has slowly diminished in Finland. Instead of electronics, machinery, and pulp and paper, the main exports are products from knowledge and innovation-intensive businesses, like biosciences, design, textiles, IT and education. Many companies are geographically scattered around the world according to the availability of skilled labour. Although Finland has succeeded quite well in transforming its economic production after the 2010 recession, the national economy is now only slowly recovering its balance and annual GDP growth is 1-2%. In cities, there are large empty business properties awaiting alternative uses.

The service sector is still the major employer. Municipal services have been further privatised and the demand for services has grown. The ageing population needs more health services and to accommodate the need for nurses, educated nurses from Asia are brought to Finland. Finnish nursing schools offer programmes for nursing students from outside the EU that qualify for jobs in EU member countries. Since depleting natural resources have raised the prices of consumption goods, demand for other kinds of commodities has increased: IT, cultural services, maintenance, tailoring and dressmaking, especially from recycled materials, and design.

Politically, social democratic values are back after all the free market and liberalism 'hype' around the change of the millennium, especially equality. Although the economic situation has been tough, keeping up the welfare system has been the priority of most political parties. The social security system has been transformed, and instead of a complicated system of various social benefits all citizens receive basic income. Since basic income does not depend on other income, there is less of a poverty trap there used to be, and self-employment becomes more attractive and common. This has led to a significant attitude change and empowerment of the unemployed; there is a notable increase in small-scale businesses, handicrafts shops and community arts projects. The Internet and social media have the main role in channelling the activities of civil society.

The continuous economic insecurity has increased the role of traditions and conservative values of the citizens. Most Finns are still members of the evangelical Lutheran church, although participation in weekly services continues to decrease. New types of religious activity are on the rise, e.g. Volunteering in church charities and awareness-raising campaigns on Christian values, e.g. 'no to abortion'. This has also influenced the political spectrum; the Christian Democratic Party, which used to be quite small in 2010, has gained more seats in parliament, and the centre-right wing parties have turned more to the right. Similarly Muslim communities have grown culturally and politically louder, and now there are more conflicts between religious and ethnical groups than there have been for decades. However, conservative, fundamental religious and racist views have stayed in the minority compared to the liberal majority.

Immigration, both legal and illegal, has increased. The foreign work-force is more in demand: low-income blue-collar jobs are populated by foreign workers from Africa and Asia, whereas highly-educated special-ists are employed from all over the world—although most still come from neighbouring countries. Illegal immigrants arrive especially from central and southern Asia, due to the increased political instability in the regions. Russian is the most commonly spoken foreign language in the Helsinki region and there have been discussions about abolishing the status of Swed-ish as the second official language. One or two new orthodox churches and mosques have been built in the metropolitan area.

The average level of income has decreased in Finland due to several years of economic stagnation and slow growth; further, differences in income distribution have decreased slightly compared to 2010. The higher middle class has somewhat decreased in numbers and changes in taxation have favoured citizens with low income.

Finland 2050 – At a glance

Population

- 6.1 million, evenly distributed between women and men
- Age distribution (in years)
    - 0-14:   16%
    - 15-64:   57%
    - 65 +:   28%
- Natural population growth: -4.000 persons
  Immigration: 28.000 persons
  Emigration: 13.000 persons
  Net immigration: 15.000 persons
- Some 1.3 million live in the Helsinki area, which includes Espoo and Vantaa. Other major cities: Tampere, Turku & Oulu.
- Population in major cities (Helsinki area, Tampere, Turku & Jyväskylä): 35%.
- Working population decreasing; number of retired persons remains constant; employment rate: 75%; unemployment rate: 6%.
- Population by age and gender 2050, projection 2009.
- 85% of the population live in cities.
- Life expectancy: men 83 years, women 87 years.
- Foreigners 10%, most from Russia, Estonia, Sweden and Somalia; 30% of Helsinki region dwellers have an immigrant background.
- Religion: Lutheran 65%; Orthodox 3%; other 4%; some 28% do not belong to a religious group.
- Languages: Finnish speaking 85%; Swedish speakers 4%; foreign language speakers 11%.

Economy

- Economic structure (employed persons by industry):
    - 30% Public and other services
    - 12% Trade, hotels and restaurants
    - 18% Financial and business services
    - 17% Manufacturing
    - 8% Transport and communications
    - 8% Construction
    - 7% Agriculture and forestry

Finland 2050 – Immaterial individualism

Globalization has taken new forms compared to 2010, since the costs of travel and transportation have been raised to compensate for the environmental impacts. Global trade in goods has diminished but global exchange continues strongly via highly developed virtual channels. Many products have become immaterial: newspapers, books, music and games, for example, are sold only via the Internet in electronic format.

The world economy has managed to accommodate the economic setbacks caused by the impacts of climate change and most EU countries have positive GDP growth. China has taken the lead in the world market, and the economic centre of the world has moved to Asia. Finland has succeeded to have 3-6% GDP growth for the last decade. The main exports are biomedicines and intelligent textiles; both successes rely on the intelligent use of wood fibres and cellulose, resources that Finnish forests produce plenty of.

Finland gains advantage within the EU from its close location to Russia. Contacts and exchange with Russia have increased significantly compared to the beginning of the century. Most Finnish exports are sold to Russia. Many Finns work in Russian companies and commute daily from Helsinki to St. Petersburg with fast, environmentally friendly trains that cover the distance in ninety minutes —a journey that took over three hours with the new fast train connection opened in 2010.

The service sector continues to be the main employer, although the public sector has diminished. Some of the universality principles of a welfare state have been altered; for example, citizens are now encouraged to take better care of their health and well-being by providing better pensions and social benefits to those who commit themselves to certain health programmes related to obesity, coronary diseases, alcohol overuse, etc. Services and medical innovations related to keeping people healthy form a notable part of business sector.

There have been radical changes in production and consumption patterns globally, due to environmental concerns. All citizens now have a natural resource consumption quota, which limits the amount of natural resources they can consume per year. Excess quotas can be sold, and the trade in quotas is managed by the Stock Exchange. The introduction of a personal quota system has caused a redistribution of income: less wealthy people who have consumed fewer natural resources are in a position to sell part of their quotas and increase their consumption, whereas wealthy people who want to maintain at least part of their previous lifestyle have been forced to buy quotas. Personal mitigation strategies have reflected the values of individuals—the diversification of lifestyles has decreased in material respects but increased in immaterial ones.

Environmental taxes and personal quota systems have significantly reduced both business and personal travelling compared to 2010. The attractiveness of travelling has, however, not disappeared and thus there are new ways to travel and experience other cultures. Trips, once made, are longer in time and concentrate in one place. Advanced virtual technologies allow people to travel for several months and continue working from abroad. New exchange programmes for manual and service sector workers have been created: A group of Finnish teachers, for example, may exchange jobs with their Irish colleagues for months or even years.

Local consumption and production has increased, and the farming and forestry sectors have grown in importance. There are groups of people, living on basic income, who have moved back to the countryside to live in self-sufficient communities. These communities who have embraced "poverty as a lifestyle," use local trading and exchange systems in addition to the regular currency.

Economic diversification has increased compared to 2010. The lower middle classes are mainly educated but have low incomes and form the largest group of citizens. The highest income group has also increased in number, since the salaries for the most skilled specialists have grown and are now competitive with the rest of the world.

The Asian influence is also seen in religious life as well as in economics; many who were previously Lutherans have converted to Buddhism and Taoism. The share of Lutherans has also decreased due to the Muslim and Orthodox immigrants.

Alternative trends: What else could happen by 2050?

Mass Immigration

In 2050 the world is suffering from the consequences of climate change. Draughts and extreme weather conditions have caused famine and loss of human life in many poor regions. Immigration has increased within the EU from southern Europe, which suffers from draught and a lack of drinking water, to northern Europe. Also, immigration from Africa to Europe has intensified. Finland has received two waves of immigrants, first from northern Africa in the 2030's and recently in the 2040's from southern Europe. Some 20% of the population of Finland are now foreigners. English has become the second official language in the EU and it is commonly spoken in most workplaces in Finland. Most immigrants, therefore, manage to find their place in job market. Catholic and Muslim influences on the Finnish culture increase.

Food Scarcity

Megatrends such as climate change, biodiversity, environmental degradation and population growth compile a situation where food security becomes an even more critical issue over the developing world. Bioenergy production, especially in the western world, adds to the problem by overtaking a share of the fields used for food production. By 2020, surplus food production in industrialised countries has diminished to close to zero. Between the 2020's and 2050's, severe droughts, floods and storms attributable to climate change also cause disruptions to the food security of citizens in the western world. Finland struggles with the same problem but has an advantage of relatively rich water resources for irrigation (if needed) and space for farming expansions. Nevertheless, food security is a serious issue and the share of food expenses rises notably in private households. Professional farming becomes an attractive profession. Also, small scale supplementary farming gains popularity among lot owners. Respect for close-to-nature professions and know-how such as farming, fishing and hunting rises.

Extreme Privatisation

There is severe economic hardship in funding state and municipal operations. The Finnish welfare state model demonstrating strong and high-quality public services leading to equal opportunities in education, healthcare and social structures continues to deteriorate. To a certain extent, more efficient processes are able to maintain the service level; gradually, however, private options in healthcare and education, for example, attract families that are better-off. Public authorities are not able to ensure the quality of public services due to budget limitations resulting from a political unwillingness to raise taxes. By 2050, there are more or less separate private and public lines of public services such as education and healthcare. This

slowly leads to the practice whereby social and professional opportunities are inherited from the parents for the largest part of the population. Shifting between the classes is only possible for the most talented individuals.

Brain Sweatshop

Recovery measures for the 2010 economic depression fail and the western economies prove to be unsustainable. A prolonged slowdown of the global economy leads to the domino effect of collapsing western economies, which kills western capitalism. Chinese capitalism is the new form of international trade and business. Western countries try to keep the research and educational level high to compete with the Chinese but it is not quite successful. Finland, as well as other European countries, become a cheap 'brain sweatshop' for Asian investors and leaders. The educated Finnish working force mainly produces semi-demanding design and engineering solutions and services that can be easily electronically transferred form one place to another. The most talented individuals move to Asia for better career opportunities. Western Europe becomes something like India was for Westerners at the beginning of the millennium. Less educated young Finns find it difficult to accommodate themselves to working life. There is a very high level of youth unemployment, which becomes very expensive for the government at the time. Also, a critical mass of frustrated youths becomes violent, paralysing many societal traditions and structures.

Generation Change

By the end of the 2040's, most of the baby boomer's generation have passed away. Along with them disappears the hegemony of a generation who has had a notable impact in society, and who have held widely accepted common values and beliefs. The relatively homogenous Finnish identity deteriorates and is replaced by subcultures and "value shopping." People identify themselves more and more through subcultures and peer groups, such as music style fan groups and other entertainment fan groups (e.g. manga); professional groups; hobby groups; life-situations (e.g. Young families); or political passions. People tend to switch these 'reference groups' very fast. International companies and brands can establish a central position as the symbol of certain groups. There is no uniform value basis or leading institutions in society, but rather a puzzle of multiple pieces that interact. The life circles of different groups become more isolated and a nationwide common experience of 'being Finnish' does not exist – it is not even yearned for except in marginal groups.

End Of Party Politics

The turn-out of voters in elections continues to decrease, as well as the membership of political parties. Traditional parties lose their legitimacy and single-issue movements become more active players in political decision making. There are a variety of issues attracting a critical mass to estab-

lish a movement, such as "no to abortion," "more nurses for the elderly," "no to nuclear power," etc. Political structures are reorganised and new ways for direct democracy, like interactive planning procedures, are introduced. For example, "open source wiki-applications" are used in city and budget planning.

Church In Crisis

The Lutheran Church enters into a legitimacy crisis, since it does not manage to follow the liberal public opinion regarding, gay marriages or women priests, for example. Roughly half of the population are still members of the church, but the trend is declining. Even fewer people practice the religion. The Lutheran state-church system is abolished. In schools, religious education is replaced by ethics and philosophy. Other forms of Christian churches as well as other religious groups (including traditional animistic religions) gain moderate popularity, but the major winners are atheistic trends. In general, religion is becoming less and less significant in society.

Climate Conflicts

Climate change reinforces existing drivers of conflict and therefore threatens achieved development across many countries. Geopolitical tension also increases due to the diminishing availability of natural resources. International cooperation drifts in a lock-up situation and nations turn inwards. Finland finds itself in a situation resembling the situation in the 1960's, 1970's and early 1980's when geopolitical tensions were higher and when economic activities were heavily regulated and guided by the government. Industrial production relies on domestic raw materials. Competition between countries is fierce and various protectionist measures such as high tolls on imports are introduced. The highest earning people suffer a notable drop in their incomes and the overall income level declines. The level of income distribution decreases, since government interventions secure jobs and income for most citizens. The majority of people turn to traditional values of 'home, church and the fatherland'.

Bibliography

Aho, Erkki and Kari Pitkänen and Pasi Sahlberg. Policy Development and Reform Principles of Basic and Secondary Education in Finland since 1968.
Washington, DC: The World Bank, 2006.
> http://siteresources.worldbank.org/EDUCATION/Resour ces/278200-1099079877269/547664-1099079967208/Education_ in_Finland_May06.pdf

Airas-Hyödynmaa, Maija and Leena Balme, eds. Across the Borders: The Internationalisation of Finnish Higher Education.
Helsinki: Centre for International Mobility CIMO, 2009.
> http://www.cimo.fi/dman/Document.phx/~public/ Julkaisut+ja+tilastot/english/across-web.pdf

Asplund, Rita ed. Education and Wage Inequality in Europe.
Helsinki: ETLA, 2006.

Christensen, Clayton M. and Michael B. Horn and Curtis W. Johnson. Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns. New York: McGraw Hill, 2008.

Conscript 2009: A Guide for Preparing for Military Service.
Helsinki: The Finnish Defence Forces, 2009.
> http://www.mil.fi/varusmies/conscript_2009.pdf

Education and Research 2007-2012: Development Plan.
Helsinki: Ministry of Education, 2009.
> http://www.minedu.fi/OPM/Julkaisut/2008/Koulutus_ja_tutki- mus_2007_2012._Kehittamisuunnitelma?lang=en

Education and Science in Finland.
Helsinki: Ministry of Education, 2006."
> http://www.minedu.fi/export/sites/ default/OPM/Julkaisut/2006/liitteet/eng_ opm15.pdf

Education at a Glance 2009: OECD Indicators.
Paris: OECD, 2009.
> www.oecd.org/edu/eag2009

The Finnish Government's Child and Youth Policy Programme 2007-2011.
Helsinki: Ministry of Education, 2008.
> http://www.minedu.fi/OPM/Julkaisut/2007/ Lapsi-_ja_nuorisopolitiikan_ kehittamisohjelma_2007-2011?lang=fi&extra_locale=en

Government at a Glance 2009 :Country Note: Finland.
Paris: OECD, 2009.
> www.oecd.org/gov/indicators/govataglance

Grubb, Norten and Hanna Marit Jahr, Josef Neumuller, and Simon Field, eds. Equity in Education Thematic Review: Finland.
Paris: OECD, 2005.
> http://www.oecd.org/dataoecd/50/15/38692775.pdf

Hautamaki, Jarkko and others. PISA06 Finland: Analyses, Reflections and Explanations.
Helsinki: Ministry of Education, 2008.
> http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2008/
liitteet/opm44.pdf?lang=en

Hibell, Björn and others. The 2007 ESPAD Report: Substance Abuse Amongs Students in 35 European Countries.
Stockholm: The Swedish Council for Information on Alcohol and Other Drugs (CAN), 2009.
> http://www.espad.org/espad-reports

Key Data on Education in Europe 2009.
Brussels: Eurydice, July 2009.
> http://www.eurydice.org

Koskinen, Seppo and Arpo Aromaa, Jussi Huttunen and Juha Teperi, eds.
Health in Finland.
Helsinki: National Public Health Institute KTL, 2006
> http://www.ktl.fi/hif/hif.pdf

Kupiainen, Sirkku and Jarkko Hautamäki and Tommi Karjalainen, eds.
The Finnish Education System and PISA.
Helsinki: Ministry of Education, 2009.
> http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2009/
liitteet/opm46.pdf

Kuusela, Jorma. Thematic Approaches To Equality And Equity In Basic Education.
Helsinki: Finnish National Board of Education, 2006.
> http://www.oph.fi/english/publica-
tions/2008/thematic_approaches_to_
equality_and_equity_in_basic_education

Leijola, Liisa. The Education System in Finland – Development and Equality. Helsinki: ETLA, 2004.

Luopa, Pauliina and Minna Pietikäinen and Jukka Jokela. Kouluterveysky-
sely 1998–2007: Nuorten hyvinvoinnin kehitys ja alueelliset erot. Helsinki:
STAKES, 2008.
> http://info.stakes.fi/kouluterveyskysely/FI/tulokset/valtak.htm

National Core Curriculum for Basic Education 2004.
Helsinki: Finnish National Board of Education, 2004.
> http://www.oph.fi/english/publications/2009/national_core_
curricula_for_basci_education

National Core Curriculum for Upper Secondary Schools 2003. Helsinki:
Finnish National Board of Education, 2004.
> http://www.oph.fi/instancedata/prime_
product_julkaisu/oph/embeds/47678_
core_curricula_upper_secondary_education.pdf

National Summary Sheets On Education Systems In Europe And Ongoing
Reforms: Finland. Brussels: Eurydice, August 2009.
> http://www.eurydice.org

Niemelä, Kati. Confirmation Training in Finland. Tempere: Church
Research Institute Finland, 2004.
> http://www.evl.fi/kkh/to/kkn/rippikoulu/Finland_confirmation_
training.doc

Pietikäinen, Minna and others. Monitoring Health Inequalities in Adoles-
cence: The Finnish School Health Promotion Study.
Helsinki: STAKES, 2008.

Robson, Matthew. "How Teenagers Consumer Media." Morgan Stanley
Research 10 July 2009.
> http://media.ft.com/cms/c3852b2e-6f9a-11de-bfc5-00144feabdc0.pdf

Sahlberg, Pasi. "Raising The Bar: How Finland Responds to the Twin Chal-
lenge of Secondary Education?" Profesorado. Revista de currículum y for-
mación del profesorado, 10.1 (2006).
> http://www.ugr.es/local/recfpro/Rev101ART4ing.pdf

Statistical Yearbook of Finland 2009.
Helsinki: Statistics of Finland, 2009.
> http://pxweb2.stat.fi/Sahkoiset_julkaisut/vuosikirja2009/alku.asp

Statistical Yearbook on Social Welfare and Health Care 2008.
Helsinki: STAKES, 2009.
> http://www.stakes.fi/tilastot/tilastotiedotteet/2009/julkaisut/sos-
teri2009.pdf

Strategy for the Internationalisation of Higher Education Institutions in Finland 2009–2015.
Helsinki: Ministry of Education, 2009.
> http://www.minedu.fi/OPM/Julkaisut/2009/Korkeakoulujen_ kansainvalistymisstrategia_2009_2015.html?lang=en

Understanding the Brain: Towards a New Learning Science.
Paris: OECD, 2002.

Välijärvi, Jouni and others. The Finnish Success in PISA – And Some Reasons Behind It: 2 PISA 2003. Jyväskyla: Institute for Education Research, University of Jyväskyla, 2007.
> http://ktl.jyu.fi/img/portal/8302/PISA_2003_screen.pdf

Video Gamers in Europe – 2008. Prepared for the Interactive Software Federation of Europe (ISFE) by Nielsen Games, 2008.
> http://www.isfe-eu.org

Yearbook of Alcohol and Drug Statistics 2008.
Helsinki: STAKES, 2009.
Youth Work and Youth Policy in Finland.
Helsinki: Ministry of Education.
> http://www.minedu.fi/export/sites/default/OPM/Nuoriso/Liit- teet/YOUTH_WORK_AND_YOUTH_POLICY.pdf

Youth in Europe: A Statistical Portrait.
Luxembourg: Eurostat, 2009.
> http://epp.eurostat.ec.europa.eu

Interviews

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End notes

Prepared by Ezra Block
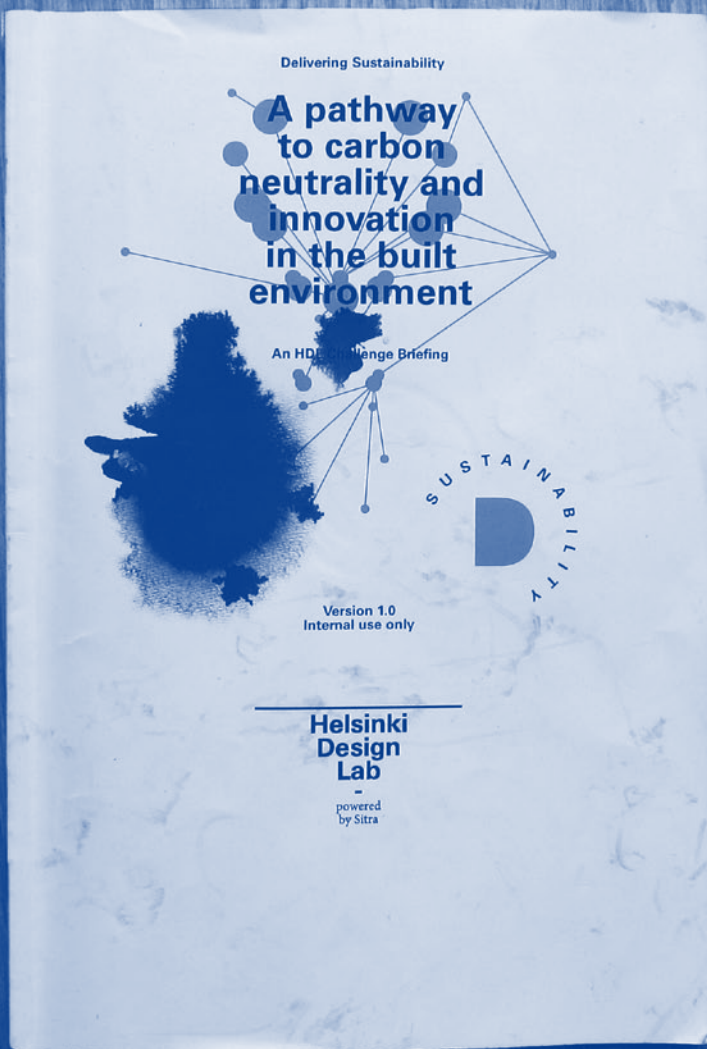With Bryan Boyer, Justin W. Cook, & Marco Steinberg of Sitra

The Futures of Finland was prepared by Gaia Consulting Group of Finland and Switzerland.

This challenge briefing has been prepared in advance of the Helsinki Design Lab Studio on Education held on May 3rd through the 7th in Helsinki, Finland.

Sitra, the Finnish Innovation Fund, is responsible for organizing the Helsinki Design Lab in cooperation with other key partners. Sitra is an independent, publicly funded body which, under the supervision of the Finnish Parliament, promotes the welfare of Finnish society. Since its establishment, Sitra's duty has been to promote stable and balanced development in Finland, the qualitative and quantitative growth of its economy, and its international competitiveness and co-operation. Our activities are governed by a vision of a successful and skilled Finland. We have always operated with a strong belief in the future and in the ability of innovation to benefit society.

HDL is a continuation of Sitra's long-term activities in making design a key driver in building the Finnish society and the innovation system. Sitra's first design-related event was held in 1968, when it sponsored the Industrial, Environment and Product Design Seminar (HDL1968).

Sitra will sponsor three studios during the summer of 2010 which each bring a group of six to eight top international designers and key experts to spend an intensive week in Finland "charretting" on a given studio topic. With access to key decision makers relevant to their area of inquiry, these teams will be charged with developing a strategic road map and a top ten list of possible action items.

What follows is a complete re-printing of the Challenge Briefing issued to the Sustainability Studio. For more about the studio and its outcomes see > PP 64-73.

For more about the style, role, and format of Challenge Briefings see > PP 97-99

Climate change is the symptom of a problem; the byproduct of a market failure whose externalities will likely limit future growth. Unlike other problems faced by past societies such as war or famine, the invisible pathology of climate change has also been the engine of global prosperity.

Carbon emissions are our best metric of this failure. Evidence shows that emissions have increased along with economic growth since the industrial revolution. In the last two hundred years the global economy has grown six-fold. This growth, and the unprecedented rate of convergence between developing and developed nations, reflects the tremendous momentum afforded by fossil-fueled growth. The expediency of transforming fossils to energy continues to provide the base material of the built environment and development worldwide.

Given the conflict between this deeply embedded system of growth and the urgency to reduce human impact on the earth's ecological systems, the defining challenge of this decade will be to decouple development from combustion.

Economic growth, the built environment, municipal services, transportation, even agriculture, all rely on combustion, and our core systems of valuation require that the impacts of combustion be ignored. Thus, no individual, firm or government can transform the practices that drive growth—it will require an architecture of solutions and actors.

The development of a widespread economic imperative for restricting carbon emissions seems unlikely in the near or medium terms. As was demonstrated during the Copenhagen Climate Conference, a global binding pact on climate change will not happen soon. Enforcement is even more distant.

Addressing this challenge is not just about protecting ecological systems: it is about creating an opportunity. In the coming decades, a new frontier of competitiveness will open between nations—there will be buyers and sellers of the expertise, technology, and models that thrive in a carbon-restricted economy.

With a decade of crises just behind us, and more on the horizon, the political and economic climate appears too conflicted to shoulder this scale of change. Yet signals from all sectors and most governments suggest that we have reached an inflection point, one that signals the onset of change. While a formal agreement was not reached at Copenhagen, the event revealed that the topic of climate change had now engaged not only the environmental ministries, but also heads of state.

The stage is set for the evolution of environmental policies into comprehensive economic and social transformations. For those who want to foster a productive natural environment, as well as ensure success in the impending regulatory environment and emerging markets, the time to act is now.

OPPORTUNITY SPACE

Finland can achieve carbon neutrality in the coming decades. In fact, relative to other nations, carbon neutrality is low hanging fruit for Finland and only requires a 50 percent carbon emissions reduction. Its massive carbon sink, growing use of low carbon energy sources, and effective policy implementation make the reduction a realistic and tenable goal that would place Finland among a select league of nations leading this change.

In a carbon-restricted global economy and a strong regulatory environment, the first nations to bind emissions reductions to economic growth will enjoy a substantial competitive advantage over other nations still working toward compliance.

Although the technical challenge of energy efficiency is a central concern of business and government, the question now concerning Finland is how to achieve a low or no carbon economy and to continue to prosper socially, economically and environmentally.

In recognition of this new reality, the Prime Minister's Office recently released a foresight report outlining an 80 percent emissions reduction target by 2050—a target aligned with many OECD countries and dependent upon international cooperation. While the report signals a potential direction for Finland's long-term policy planning, the details of how the country will transform itself and of who will lead the effort remain unanswered.

A transformation of such a scale will require Finnish businesses to engage emerging markets and spark new ones. The central government and municipalities will need to lead with strategic policy interventions, smart investment, forestry practices that improve carbon sink capacity, as well as low carbon retrofitting and development for the built environment.

The Finnish government is extremely adept at transforming goals and objectives into public policies and legislation, but they tend to result in short-term achievements. One such example is Finland's compliance under the EU emissions trading scheme. The government does not have a record of success in long-term energy and environmental policy planning and implementation.

In order to gain a First-Mover advantage, the government will need to set more aggressive targets that build on-the-ground momentum via a path of higher risk at a potentially greater cost. Yet, in an era of crisis, expensive risk taking is likely to be politically unpopular.

Nonetheless, Finland will act to address climate change. As has been its custom, the government will most likely move forward in lockstep with the EU. A necessary first step will be capturing and re-presenting the strategic advantage that comes with leadership in carbon neutrality at a national

scale. Overcoming "fast no's," deflating conformist arguments, and building transformational momentum will happen only with a shared understanding of value.

The opportunity for this studio is to make this value proposition and to design a pathway to carbon neutrality for the near and long-term. Such insight into the value and mechanism of carbon neutrality will help release the full potential of the public and private sectors in Finland. The work of this studio will help protect the natural environment and catalyse a new community to become global exporters of climate neutral know-how.

This marks the first comprehensive effort to design a clean, green and smart development strategy for Finland—not in 2020—not in 2050—but now.

Why Carbon?
Why not design a pathway to maximum energy efficiency?

Improving energy efficiency has been a focus of the public and private sectors in Finland since the Energy Crisis of the 1970's. In fact, Sitra initiated an early energy program in response to the crisis given Finland's particular vulnerability caused by the scarcity of domestic energy sources. This program sparked a revision of Finland's building codes, which specified greater energy efficiency and helped the country to move towards a more diversified fuel supply.

Since, Finland has become a leader in energy efficiency and technology. Its energy plants, among the most efficient in the world, use combined heat and power, district heating and even district cooling. Energy efficiency has become a vital part of the national energy policy and the impacts of these measures are reflected in the decline of Finland's energy intensity by 23% between 1994 and 2006. This decline has occurred despite an increase in total final consumption, by nearly a third, from 1985 to 2005.

Finland's effective energy audit system provides detailed information to its end users. This system is paired with voluntary agreements that have had a significant impact on energy efficiency at many scales. A 2006 Ministry of Employment and the Economy study revealed that the audit/agreement system was exceeding expectations in terms of improving energy efficiency. Government and private sector investments in the energy audit system are continuing.

At its core, energy efficiency is a technical challenge that can be addressed through effective policies, measures, and investments. Finland has shown great strength and leadership in driving cost effective improvements in energy efficiency and all signals from government and the energy industry suggest that this trend will continue.

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There is always room to improve efficiency, and Finland is no exception. Energy efficiency in the built environment and transportation are two sectors where there is still much work to be done. In addition, Finland relies heavily on the EU for guidance on long-term energy policies and measures, even though it has a proven record of effective implementation of directives. In order to achieve the next level of efficiency gains, Finland will need a comprehensive long-term strategy that is bundled with broader public policy objectives (i.e. mitigating climate change).

Why not design a sustainability strategy for Finland?

A sustainability strategy for Finland would provide the means for the economy and government to value social, economic and environmental returns without prejudice. This is the underlying goal of sustainable development.

Relative to other nations, Finland has succeeded in promoting and delivering high social, economic and environmental returns through policy. For instance, the Ministry of Environment has built and implemented an advanced Baltic ecosystem protection plan that utilises hundreds of regular measurements to inform regulation. The government has used effective social welfare systems to ensure high rates of education, employment and productivity that place Finland among the leading nations in the Human Development Index (12th, ahead of the United States and behind Norway (1), Iceland (3) and Sweden (7) in 2009).

These examples suggest that the Finnish system of governance (and more broadly, the Nordic Model) and its economy have already delivered on many of the key metrics for sustainable development.

However, the management and reduction of green house gas emissions, especially carbon dioxide has yet to be addressed by social, economic or environmental policies. Evidence points to a steep increase in Finland's total carbon emissions and carbon intensity per capita, in spite of a pledge to maintain carbon emissions constant at 1990 levels.

With the EU set to agree on ever increasing reduction directives for carbon, Finland needs a well-calibrated and actionable de-carbonization strategy that can intervene productively in its economy and deliver real reductions.

Sustainability captures a central challenge of our time, but carbon is operable and provides focus where sustainability has been inadequate.
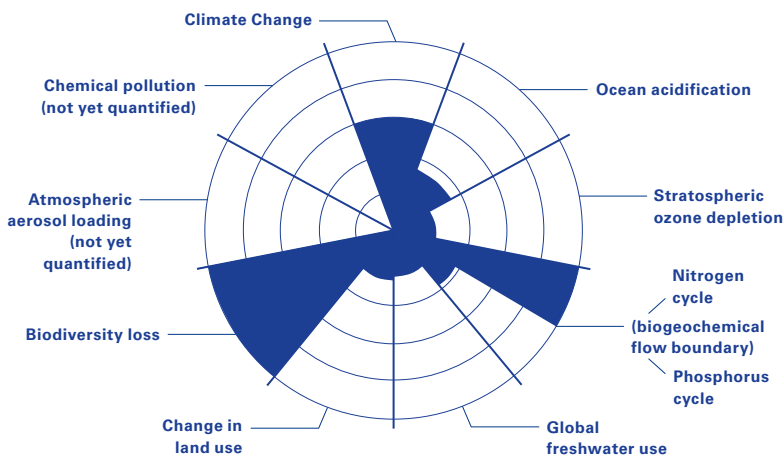
The Systemic Nature of the Climate Change Challenge

Some Key Challenges To Decarbonization

➤ The decarbonization of a nation is a massive challenge. Each potential area of activity has the depth and complexity to consume the resources of those working to spark change. Focusing on the principal factors that determine carbon emissions will be of critical importance. Below is a partial list of challenges that serve as a primer for a broader discussion of what must be done to achieve carbon neutrality:

➤ Government Protection: Overcoming preferential treatment of energy intensive industries via subsidies, exemption and special status (metals, engineering, manufacturing, forest and chemical industries modernised Finland's economy in the twentieth century and raised the standard of living).

➤ Decoupling Growth & Emissions: Finland's national carbon sink capacity is roughly equal to its 1968 carbon emissions level (33 Mt CO_2/a). A reversal to 1968 GDP levels is not a feasible mitigation approach—a transitional strategy is needed to push down Finland's emissions curve while allowing growth to continue. Binding emissions reductions to economic growth should be the long-term goal.

	1968	2008	Percentage Increase
GDP (Billions of USD)	8,8	271,3	3000%
GDPP (USD)	9.490	28.560	200%

The World Bank provides a picture of the strength of Finland's economy at the projected time of carbon neutrality, compared to present day:

➢ Evidence: Transitioning to a low carbon economy will require evidence of economic, social and environmental benefits for business leaders, politicians and the community. Finns consider themselves as leaders in energy efficiency. This sentiment has been mapped onto the challenge of climate change, affecting the ambition of leadership across sectors.

➢ Policy: Any durable climate change policies will need to blend "carrots" and "sticks" so as to spur new economic activity while ensuring regulatory compliance. With little time to prototype new solutions, impact needs to occur rapidly. The government will need market-based instruments as well as policies to level the field, allowing the entry of new technologies and new approaches.

➢ Mobility: Reversing/redirecting the rapidly increasing personal automobile use (up 60% 1980-2000), while public transport usage rates remains flat.

➢ Energy Efficiency: Finland has already invested significant capital to achieve high levels of efficiency in its energy production and built environment. The low hanging fruit of energy efficiency models available to other countries, those which make quick gains at low costs, is not viable in the Finnish context. Additionally, the turnover of the country's existing capital stock will take time, as many of the investments are recent. Achieving a dramatic reduction in carbon emissions will principally require systemic change; incremental improvement to Finland's energy production systems and usage will achieve limited gains.

➢ Durability: Because political guidance and accountability are indispensable to sustainability, changes to policy and incentive systems must be made durable enough to survive many political cycles.

➢ Consumption: The EU is moving toward product-based climate change mitigation policies that will account for the energy and natural resources used throughout the product's life cycle. The implementation of a labelling system tracing the footprint of goods sold into the European market (One-third of the global market) back to the point of manufacture is likely. Strategies such as "eco-labelling" will help mitigate so-called carbon leakage, and have the potential to force real change outside of Europe.

➢ Density: Changes to land use (primarily with regard to sprawl), which have increased transportation emissions and formed lose urban dwelling efficiencies, have put downward pressure on Finland's national carbon sink and upward pressure on carbon emissions.

➢ Funding Change: Great ideas can provoke change, but without stable funding streams, such changes are likely to be fleeting. The demand for

different scales of funding will include everything from small subsidies (to encourage micro-generation and improved insulation for homeowners), to large investments in energy production facilities. Finance must go hand-in-hand with de-carbonization strategies.

"The OECD Environmental Outlook to 2030 projected that, if we continue on a business as usual path, global greenhouse gas emissions will grow by over 50 percent by 2050...This pace of change is ten times greater than that experienced since the last Ice Age."
-OECD Secretary-General Angel Gurria, 10 October 2008

"Clearly in financial terms, in human terms, in ecological terms the challenge that climate change poses will require much greater investment... So you could justifiably say, not enough was offered in Copenhagen. With the scientific community saying that we need to reduce global emissions by 50% by mid-century, that in order to achieve that, industrialised countries probably need to reduce their emissions by 80% by mid-century, I don't think that Copenhagen or indeed Mexico is going to be the last word on climate change."
-UNFCCC Executive Secretary Yvo de Boer, 20 January 2010

State Of The State

Some key questions for this studio: What is Finland doing to tackle climate change? How well is it performing according to its current policies? Where must it go from here?

Within the EU, climate change policies in Finland are generally perceived as lagging behind leading European states. For instance, in spite of government developed and implemented energy efficiency regulations for buildings in the 1970's (cutting edge at the time) these regulations have only been marginally improved since their inception as a response to the Energy Crisis.

In 2002, the EU issued a Directive on the energy performance in buildings, prompting many countries to reappraise the intent of existing building codes that focused largely on calculating component-based insulation performance. Most countries, including some of the newest member states, adopted regulations based on total energy use—commonly associated with primary energy. This fundamentally new, integrative approach incorporates aspects such as orientation of the building, lighting and heating/cooling systems.

Although Finland opted to meet the minimum requirements of this Directive, the Ministry of the Environment has set a 2012 target for implementing new building codes based on an energy performance value that is calculated from all energy delivered to a building.

While there are many policy options on the table, few have been adopted by the central government. An October 2009 Deutsche Bank (DBCCA) survey of worldwide climate change policies cites three targets in Finland:

➤ Kyoto Protocol: 0% change in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements.

➤ EU Renewable Directive 2001/77/EC: 31.5% of gross electricity generation from renewable sources by 2010 (2008 renewable energy share was 28% suggesting Finland is on track to meet its target (Statistics Finland); DBCCA found no likely penalties for non-compliance even though the directive requires the Commission to begin infringement proceedings if the Member State does not meet its target).

➤ EU Directive 2009/28/EC: 38% of gross final energy consumption from renewable sources by 2020.

While the overall rate of policy adoption in Finland is comparable to those of other EU states, all three of these policies originated from external sources. The lack of internally driven policies is indicative of the extent to which Finland has looked externally for guidance on how to direct its climate change activities.

However, these Directives have instigated the internal development of measures aimed at reaching compliance. The EU Renewable Energy Source (RES) Directives resulted in supportive policy actions that are highly rated by the DBCCA. These include tax exemptions, investment subsidies, feed-in tariffs for wind and national grid access for all users and plants.

The Prime Minister's Foresight report and the 2008 Long-term Climate and Energy Strategy have provided new focus for the conversation in Finland. However, for all of the policy papers and reports, few systemic impacts have been made. Comprehensive public policies, investments and activity in the public and private sectors remain at inadequate levels to achieve an 80 percent emissions reduction.

While Finland has clearly begun to address climate change, it is helpful to compare its activities to those of its neighbours. While Sweden and Germany, like Finland, are subject to the same EU directives, and Norway is not, all three countries have enacted aggressive, internally generated national policies:

Country	National (Internal) Policies	% reduction 2007-2020
Finland	None	13,6
Sweden	Integrated climate & energy policy (regulates CO_2 outside EU-ETS*; carbon neutral by 2050)	48,4
Germany	4 policies with robust penalties that are likely to be enforced	34,4
Norway	30% reduction by 2020; carbon neutral by 2030 (with global agreement)	40

Though the EC has been successful in establishing an EU-wide climate change response, member states continue exhibit divergent levels of ambition. As the table illustrates, Finland's neighbouring countries are within reach of a 50 percent reduction by 2030 if the DBCCA projections are accurate. In the case of Finland, the country must halve its 2008 carbon emission levels to achieve carbon neutrality with its current carbon sink capacity.

The EU Emissions Trading System (ETS) covers less than half of total GHG emissions. Sectors such as buildings, transport, agriculture, waste and industrial plants fall outside of the ETS; Member States are responsible for their development and enforcement.

DIMENSIONS OF THE PROBLEM

Provided below are a number of key dimensions to the sustainability challenge. This list is by no means exhaustive and you are encouraged to introduce further dimensions.
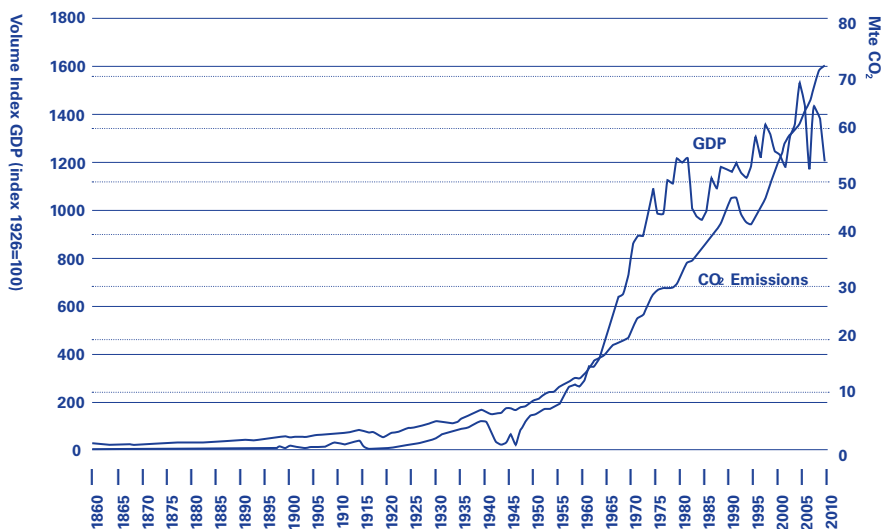
D1 – Carbon
D1.1 Greenhouse Gas Sources

Among EU Member States, Finland was a latecomer to industrialization. During the decades between independence from Russia in 1917 and the structural shift to an industrialised economy in the 1950's, the country was largely agrarian. Its rapid economic rise during the 1960's and 70's
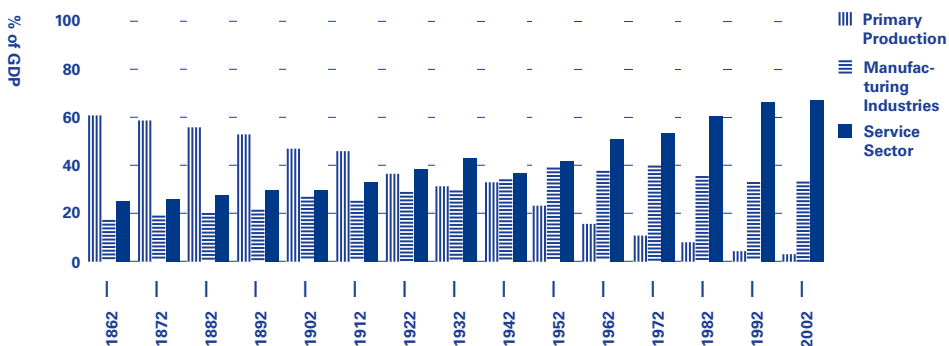
Structural Change in the Economy 1860-2007

GDP and CO2 Emissions 1860-2008

to become one of Europe's richest countries produced a parallel rise in its greenhouse gas (GHG) emissions. Now, Finland's per capita GHG are among the highest in Europe, in spite of having one of the lowest emissions levels per total primary energy unit.

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The relationship between GHG emissions and Finland's GDP has been somewhat volatile over the last few decades, mainly due to large fluctuations in annual emissions levels. Since the deep recession of the early 1990's, the economy has been growing faster than emissions. In 2007, the CO2/GDP ratio was about 20% below the 1990 level, indicating that carbon intensity lessened while the economy grew after the Kyoto base year.

In 2008, Finland produced just over seventy million tonnes of CO2 equivalent emissions, down about 10% from the year before. The majority share of GHG emissions—around 85%—is CO2 from fossil fuel and peat based energy production. CO2 emissions have continued to grow compared to 1990 levels while other GHG emissions have declined. NO2 and methane emissions dropped by 13% and 30% respectively in 2007 compared to the 1990 level.

Finland's Greenhouse Gas Emissions 1990-2007
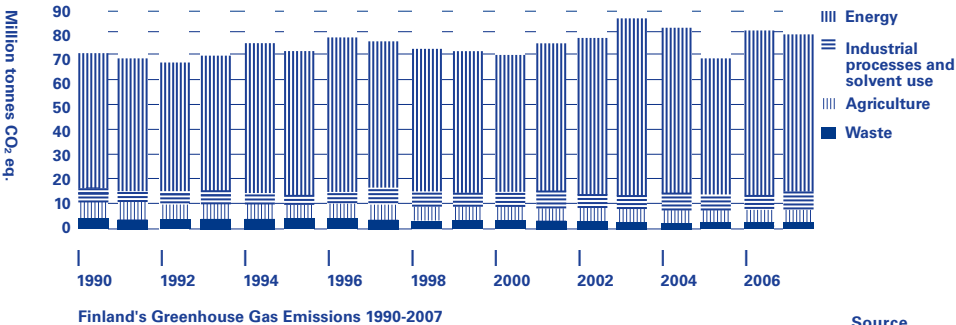
Source
Statistics
Finland

The energy sector is responsible for the largest share of emissions, a figure of about 80%. In Finland's accounting system, the energy sector includes emissions from all fuels used in transportation and energy production, transmission, and consumption. Long distances between settlements, fossil fuel-based energy production, and many energy intensive industries make transportation and industry the most carbon intensive sectors in Finland.
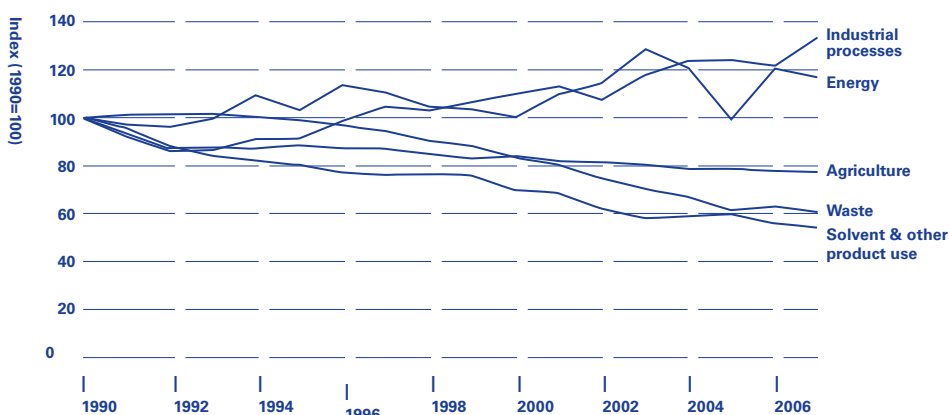

Finland's GHG Emissions by Sector 2007
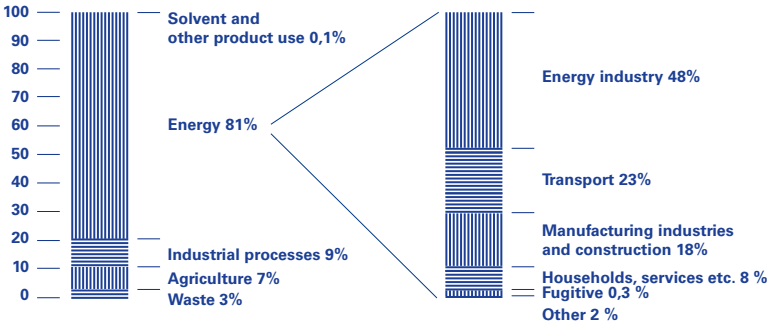
Source
Statistics
Finland; Prime
Minister's
Office

Industry still dominates Finland's economy, delivering as much as 40% of GDP. GHG emissions from industrial processes accounted for 10% of overall emissions in 2008. Since 1990, industrial emissions have increased by about 140%, making it the fastest developing emissions sector in Finland, even as the industry's share of the economy is diminishing.

Most industrial emissions are composed of CO_2 output from iron and steel production. While emissions in this sector have increased, by international standards many industrial processes in Finland are already very energy efficient. The metal industry estimates that even with the inclusion of mining activities, emissions per ton of steel are half the European average.

The concrete sector is also an emissions intensive industry. Currently, the sector produces carbon and concrete in near equal amounts. According to the Foresight Report, realistic estimates of emission reductions for the concrete industry amount to 1%, even with the implementation of efficiency technologies. Replacing concrete with climate neutral construction materials is a more probable GHG emission reduction pathway.

Greenhouse Gas Emissions by Sector 1990-2007

Finland's Kyoto Protocol emissions target is to stabilise emissions at the 1990 level during the 2008-2012 commitment period. However, over the last decade, GHG emissions have hovered around 10% above this commitment level. Industry is partly to blame for this, but carbon emissions from energy production and consumption drive much of this growth.

Year to year volatility in the country's total GHG emissions is a product of its diversified fuel mix. In general, an unusually wet Nordic rainy season will cause a rise in hydropower sold into the Nord Pool market. Under these conditions, Finland is able to import more electricity, reducing output of fossil fuel-based condensing power plants. Economic pressures on Finland's industries, the number of heating days, and variability in renewable energy production can also have a significant emissions impact.
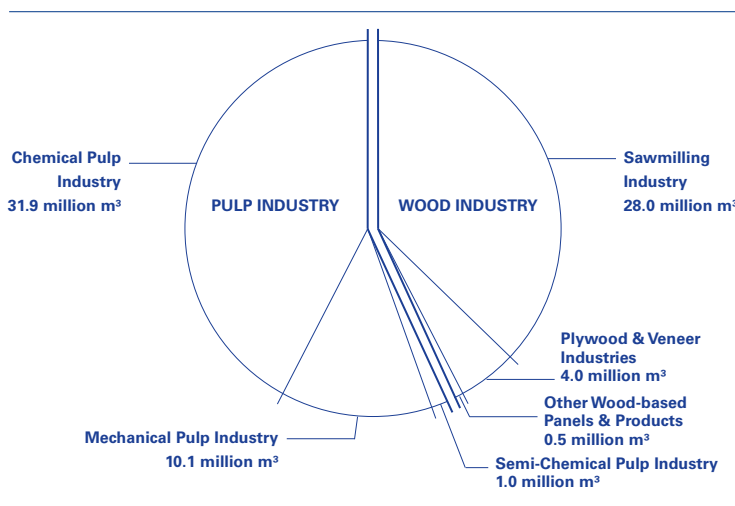
D1.2 Carbon Sink

Finland's forests are its largest carbon sink pool. In 2008, it is estimated that the country's forests removed almost forty-two million tonnes of CO2 from the atmosphere. Despite a decrease in total forest area, carbon sink capacity has been growing over the last century as forest management practices have improved.

Carbon Emissions & Forest Carbon Sinks 1920-2000
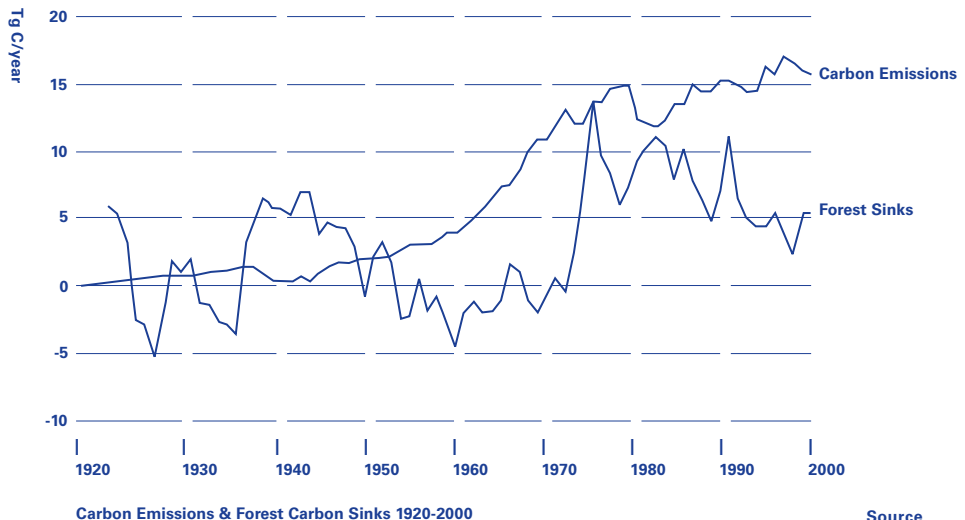
During the 1920's and 30's, and the rebuilding years after World War II, Finland's Forests were a source of carbon because harvests (drain) outpaced growth. Forest growth and the subsequent increase in carbon stocks have been particularly strong since the 1970's. This is mostly due to an increased tree volume per hectare of land and because growth has exceeded drain. During the 1990's, the average carbon sink of forestland was 35% of Finland's carbon emissions.

With most of Finland's forests under commercial management, the industry's activities have a significant impact on carbon sink capacity and duration of carbon sequestration. The majority of the industry produces pulp and paper products. Compared to durable goods, such as wood panels and other building materials, pulp and paper products have a very short carbon sequestration period. The Finnish Forest Research Institute (Metla) estimates that as much as a hundred million tonnes of CO2 are temporarily sequestered in wood products in Finland. This is equivalent of over 140% of Finland's GHG emissions in 2008.
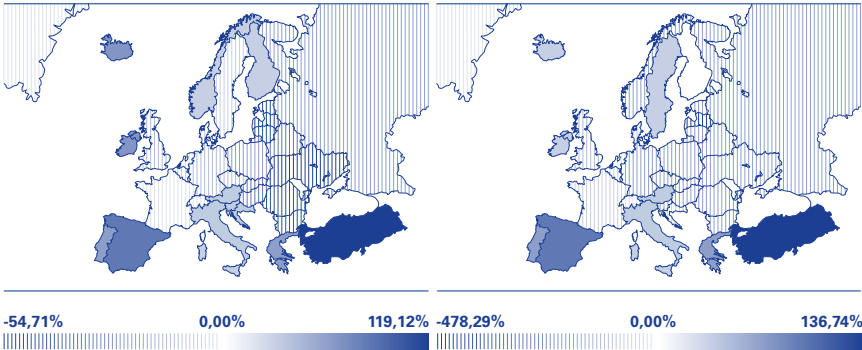
Roundwood Consumption by Industry & Use 2007

Soil and peat are another important driver of Finland's carbon sink capacity. Soils vary between being an emission source and a sink for a variety of reasons, but year-to-year changes in climate generally has the greatest impact. Peat lands contain Finland's largest carbon stock and peat production's share of emissions was about 2% in 2008.
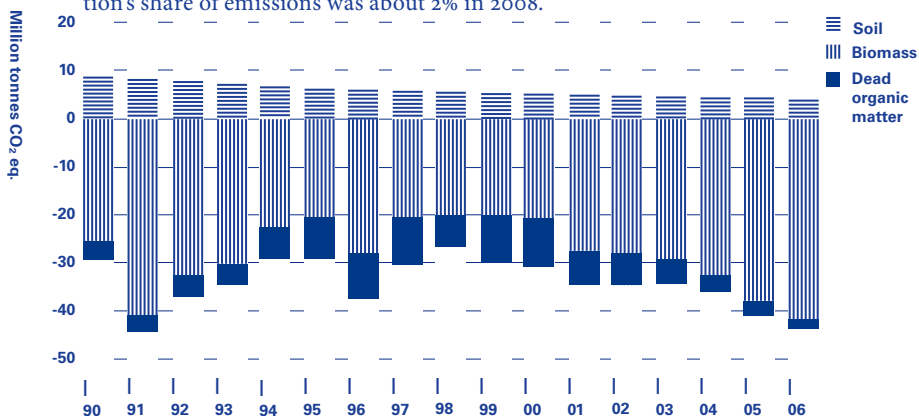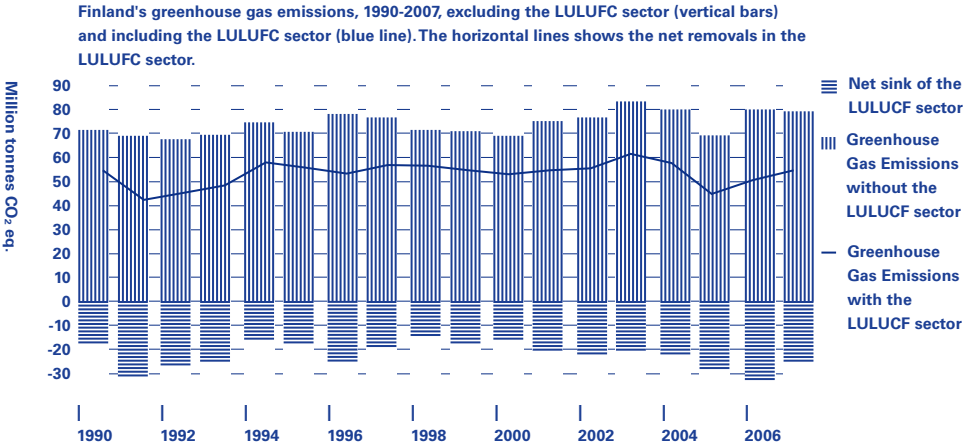
Negative values indicate carbon dioxide removals, positive values indicate emissions.

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The Land Use, Land-Use Change and Forestry (LULUCF) mechanism under the Kyoto Protocol outlines provisions for countries to include some of the net changes in national carbon sink capacity towards their final emissions levels. For Finland, LULUCF acts as a net sink as carbon removals are much higher than any emissions from the sector and removals have grown by over 120% since the Kyoto base year. Under the UN Framework Convention on Climate Change, emissions removals from the LULUCF sector can be reported in their entirety.

-54,71%   0,00%   119,12%   -478,29%   0,00%   136,74%

Total Change in Emissions of Annex I Countries with & without LULUCF 1990-2007

Finland's greenhouse gas emissions, 1990-2007, excluding the LULUFC sector (vertical bars) and including the LULUFC sector (blue line). The horizontal lines shows the net removals in the LULUFC sector.

Net sink of the LULUCF sector

Greenhouse Gas Emissions without the LULUCF sector

Greenhouse Gas Emissions with the LULUCF sector

Carbon sink potential of LULUCF sector 1990-2007

From a more global perspective, Finland's removals from the LULUCF sector give it a substantial advantage in meeting its Kyoto commitment levels. Among Annex I countries, Finland's LULUCF was the fourteenth largest net sink in 2007, only second to Norway, and ahead of its Nordic neighbours and most of Europe.

While the LULUCF sector removals (and carbon sink capacity) are useful in determining a national carbon footprint, carbon sinks are unstable

over time. Research has shown increasing temperatures generally result in increased emissions from soils and forests, suggesting that Finland's carbon sink capacity will decline under pressure from global warming. In addition, they are potentially reversible due to human activity such as misguided policies, poor management and over-harvesting.

Even with robust management and careful monitoring, carbon sinks may have limited impact on a country's true carbon footprint. With the bulk of Finland's carbon stocks processed into nondurable goods, the true value of its carbon sink is unclear.

D1.3 Foresight Report

The Government Foresight Report on Long-term Climate and Energy Policy is a recent and significant development in the government's approach to the de-carbonization challenge. The document assembles research on the potential to limit climate change and the costs, impacts and efficacy of climate policy. It suggests that Finland could become a leader in climate protection, but does not call for this directly.

The report includes four model pathways to move Finland toward a low carbon future:

➤ Pathway A is an "Efficiency Revolution" where Finland's economic structure transitions to become dominated by services and advances in energy efficiency lead to a 50 percent reduction in final energy consumption. All remaining energy is supplied with renewable sources and nuclear energy production is ended.

➤ Pathway B is a "Sustainable Daily Mile" strategy where Finland's population becomes centralised in a few urban centres, transportation is dramatically reduced and services replace consumption. Energy is provided by increased nuclear power production and the share of renewable energy is increased to two-thirds of the final energy consumption.

➤ Pathway C is an effort to "Be Self-sufficient" where Finland's population remains dispersed and highly efficient single-family homes produce their own energy. The current fleet size of light-duty vehicles remains stable but zero-emission vehicles replace emitters. The share of renewable energy is increased to four-fifths of final demand and industry creates its own energy with bio-refineries.

➤ Pathway D assumes that "Technology is the Key" and leverages a highly networked population and technological advances to reduce emissions. Rural areas are de-populated by moving the population to suburban and urban areas in southern Finland. Zero-emission vehicles and a high-speed train network meet increasing transportation demands. Fossil fuel-based energy production remains high, necessitating the development and implementation of carbon capture and storage. Nuclear power production is increased dramatically to keep pace with rising demand.

It is predicted that both Pathway A and D will result in an approximately 90% GHG emissions reduction by 2050 and the average economic growth will continue at 1.7% and 1.8% respectively. Pathway B and C will result in an 80% reduction compared to Kyoto base year levels and economic growth with continue at 1.8% and 1.2% respectively.

The Report is intended be used as a baseline for communication between the Government and Parliament. The Prime Minister's Office will set the overarching climate agenda, but implementation will be the responsibility of the different ministries.

GHG Emissions Reductions by Pathway in 2050

At its core, the Report is also a consensus-building tool. For a government and society that is founded on the principle of distributed risk, consensus is the critical first step to any change effort. Thus, the report attempts to provide multiple pathways toward a still prosperous future without explicitly picking any losers.

D2 – The Built Environment
D2.1 Land Use

Finland is a sparsely populated country were most Finns live near the coasts or in a few urban centres in the interior of the country. For much of Finland's history, its population has lived in small, thinly distributed settlements. The structural shift during the middle of the twentieth century from an agrarian to industrial economy reorganised this settlement pattern, and Finland slowly began to urbanise. Since the 1950's Finland's population has coalesced in the southern and western regions along the coast, near rivers and inland lakes. The north and east of Finland, especially north of the Arctic Circle gradually became depopulated as residents moved toward centres of economic activity.

The Finnish migration toward the cities continues. In 1960, 56% of the population lived in built-up areas that equaled about 1.6% of Finland's total land area. By 2008, almost 84% of the population lived in these built-up areas, a 50% increase. Finland's cities have also grown in area by 50% to accommodate their new residents, suggesting that densification has not been the key mechanism for housing delivery.

A closer analysis reveals that while Finns are moving toward the cities, they are settling in the expanding suburban periphery. The Helsinki metropolitan region is the epicentre of this suburbanization. Since the 1960's, the population of Helsinki has increased by about 27% while neighbouring Espoo has increased by over 325%. Despite Espoo's explosive growth, Helsinki's density is still nearly 3.5 times that of Espoo.

This relatively recent trend is common to all of Finland's largest cities. During the deep recession of the early 1990's, cities began to grow at a faster rate than the suburbs. Finland's rapid return to economic prosperity sparked a suburban population growth rate that has exceeded growth in the urban cores. In spite of this trend, urban density has again begun to slowly increase, after the decline of the 1980's.

D2.2 Building Stock

Of the total heated building area in Finland in 2008, almost half was composed of residential and nearly forty percent was office and commercial space. Of the residential share, there were 1.1 million detached houses, over 380,000 attached houses, and over 1.2 million dwellings in apartment blocks. Only 10% of Finland's housing was built before 1940. Since 1970, the number of dwellings has increased by over 93%, most of which occurred between the 1970 and 1990.
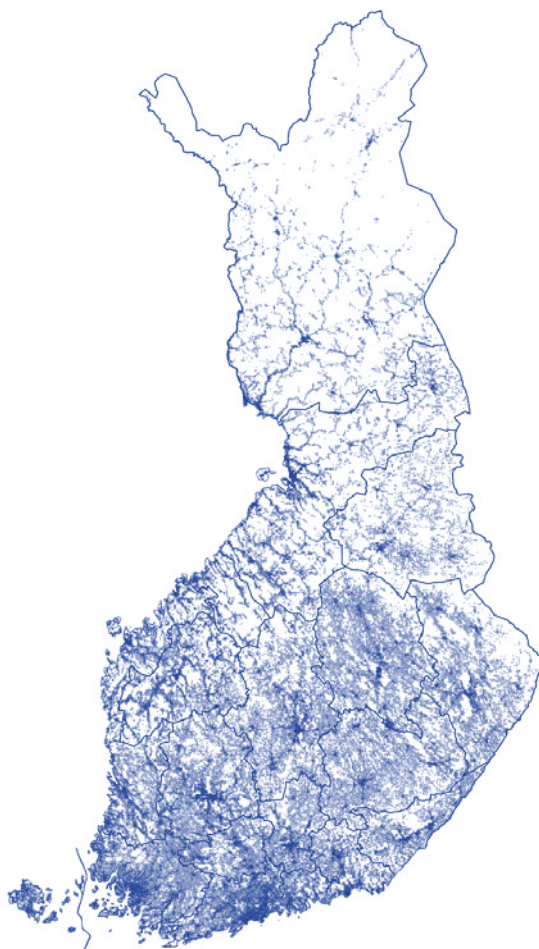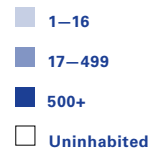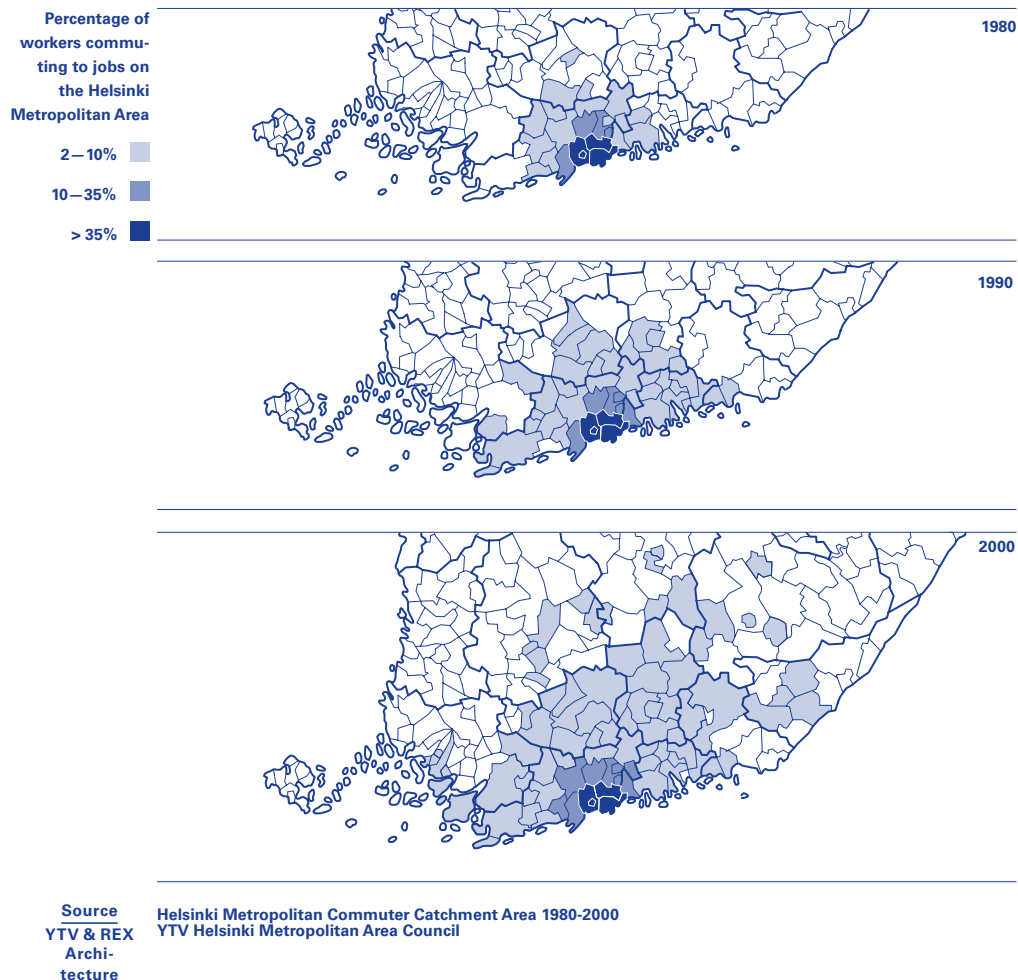
Population Density Finland 2008
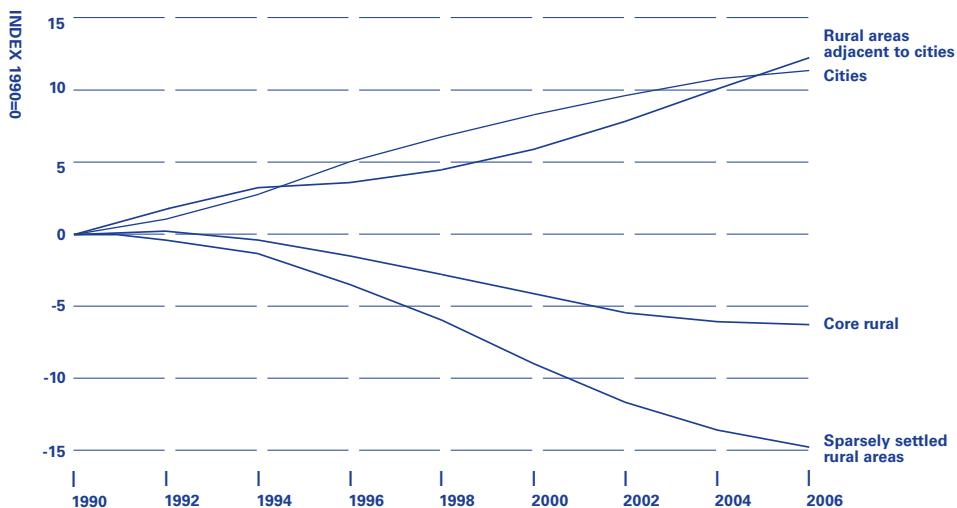
Regional divisions as on 1 January 2008

Floor area per dwelling has also increased along with the number of buildings, approaching 80 m² per unit, up by 55% since 1960. In 1960, floor area per person was 14 m². By 2008, this figure had grown to almost 39 m2 per person.
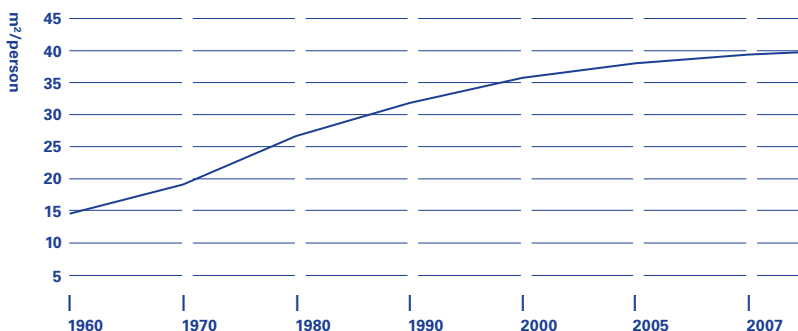
In general, construction materials and methods are uniform in Finland: 84% of buildings are wood framed and 15% are stone construction.

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The heating sources of Finland's building stock are diverse, but district heating has become the dominant share with half of all buildings connected to a municipal system. For buildings that are outside district service areas, heat pumps are gaining share for economic and environmental concerns.
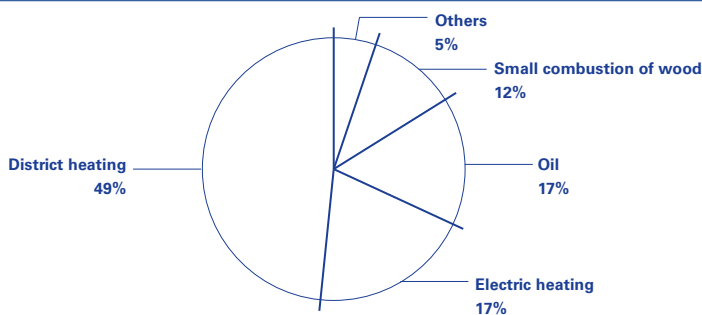
Percentage of workers commuting to jobs on the Helsinki Metropolitan Area

2—10%

10—35%

> 35%

1980

1990

2000

227

15 —

10 —

5 —

0 —

-5 —

-10 —

-15 —

Rural areas
adjacent to cities

Cities

Core rural

Sparsely settled
rural areas

| 1990 | 1992 | 1994 | 1996 | 1998 | 2000 | 2002 | 2004 | 2006 |

Relative Change in Population by Region

m²/person

45 —
40 —
35 —
30 —
25 —
20 —
15 —
10 —
5 —

| 1960 | 1970 | 1980 | 1990 | 2000 | 2005 | 2007 |

Development of Floor Space 1960-2008

Others
5%

Small combustion of wood
12%

Oil
17%

District heating
49%

Electric heating
17%

Heating Energy in Residential, Commercial and Public Buildings 2007

Nearly three-quarters of district heating networks are connected to combined heat and power (CHP) plants. Government estimates indicate that the potential for CHP conversion of Finland's heating networks is nearly exhausted. The bulk of these CHP plants use coal and natural gas as

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their primary fuel; this is especially prevalent in Helsinki and other coastal cities. Inland CHP plants tend to be powered by peat, but efforts are being made to transition to wood fuel and other forest industry by-products.
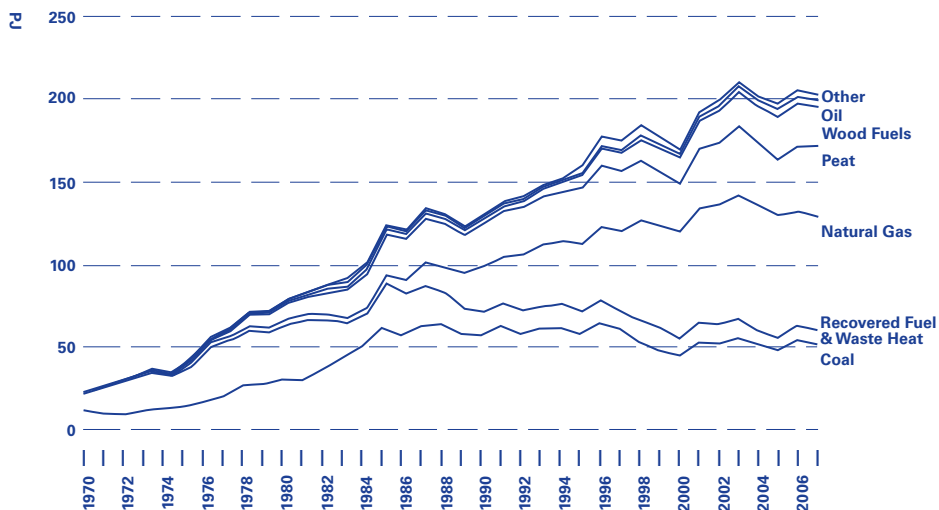
Fuels Used in District Heating & CHP 1970-2007

D2.3 Energy Efficiency

Building age is the greatest determinate of the energy efficiency of Finland's building stock. In general, buildings constructed during the rapid urbanization of the 1950's, 60's and early 70's are the least efficient buildings of any decade either before or after. In fact, apartment buildings built at the turn of the 20th century and during the 1940's are, as a class, the most efficient in the country. Those built during the 1970's energy crisis are among the least efficient.

Delivered District Heat to Apartment Buildings by Decade
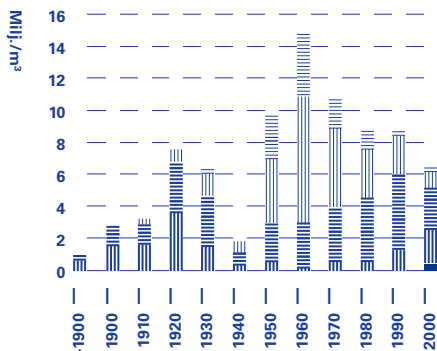
Delivered District Heat to Non-residential Buildings by Decade

kWh/m³
- < 30
- 30-40
- 40-50
- 50-60
- > 60
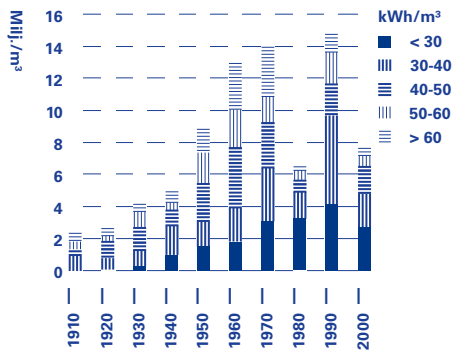
Delivered District Heat Energy by Decade of Construction

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Because of Finland's climate, the country's building stock has one of the highest space heating demands in Europe. As such, building codes have a strong focus on thermal insulation and recent improvements have resulted in a 20-30% improvement in insulation levels in new buildings.

Despite these improvements, an International Energy Agency (IEA) analysis reveals that Finland's building code standards are not as aggressive as those of its neighbours:

Country	Overall U-Value*	Average U-Value
Denmark	0,77	0,77
Finland	0,91	1,01
Norway	0,7	0,8
Sweden	0,72	0,72

*Overall U-values are calculated in order to compare across countries. It sums the U-values from the ceiling, wall, and floor, and adds 20% of window value.

In most cases, Finland's U-value reference figures have been overstated; they provide the builder with a 20% cushion depending on how they choose to comply with the standard. This cushion effectively increases the U-value for the building by 20%, making full compliance with the target U-value voluntary. Under progressive regulations in other countries, the builder is given the option of over-complying in some areas and under-complying in others to meet an overall energy standard for the building.
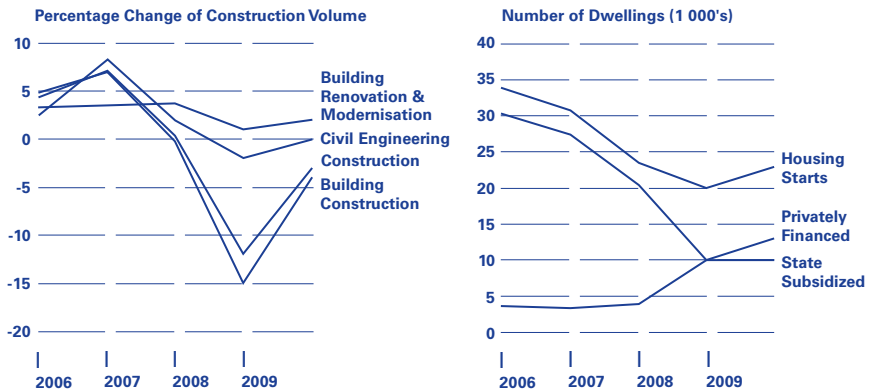
D2.4 GHG Emissions

Heating is the biggest source of carbon emissions for housing and the service sector, accounting for nearly 7% of total emissions. Because of Finland's diversified fuel mix and climactic variation between the and north and south areas of the country, emissions vary widely from region to region. For instance, because the bulk of Helsinki's energy production, district heating and district cooling are generated from fossil fuels, the carbon footprint of the city's residents may still surpass the levels of suburban residents who commute long distances to work. In addition, the number of heating days in northern Finland can be double what is typical in Helsinki.

However, since building code improvements were implemented in the 1970's, total energy consumption per unit of heated space has dropped nearly 40%. The widespread transition from oil-based heating to district and electric heating has also produced a significant emissions reduction for both the service and residential sectors.

D2.5 Renovation & New Construction

Not unlike the rest of the world, the Finnish construction industry has been under considerable pressure from the economic crisis. Volumes trended down strongly in 2009, but renovation is set to grow in 2010 due in part to government subsidies.

Percentage Change of Construction Volume

10
5
0
-5
-10
-15
-20

Building Renovation & Modernisation
Civil Engineering Construction
Building Construction

2006   2007   2008   2009

Number of Dwellings (1 000's)

40
35
30
25
20
15
10
5
0

Housing Starts
Privately Financed
State Subsidized

2006   2007   2008   2009

Housing has remained relatively stable through the crisis; volume is bolstered by state subsidised construction. Housing demand in Finland began to rise in the 1990's and but declined during the mid-decade recession. As Finland began to return to economic prosperity, household income outpaced new housing starts, leading to a rise in prices that continues today.

Pricing increases and demand tends to be concentrated in Finland's expanding cities. But, the number of growth centres is Finland is diminishing as the population migrates toward jobs. Over the past two decades, much of this growth has been concentrated in the Helsinki Metropolitan area, Turku, Tampere, Jyväskylä and Oulu.

Single-family housing continues to outpace the construction of apartments. Almost 307,000 detached houses were built between 1980 and 2008, while only about 11,500 apartment buildings were constructed.

D2.6 Physical Density

Finland's overall density is among the lowest in Europe. As stated above, a majority share (over 80%) lives in built-up urban areas and this figure is projected to rise.

The density of these areas is on average seven hundred inhabitants/km², but this number has been on the decline since the 1990's as the suburban periphery has grown in population. The Ministry of the Environment
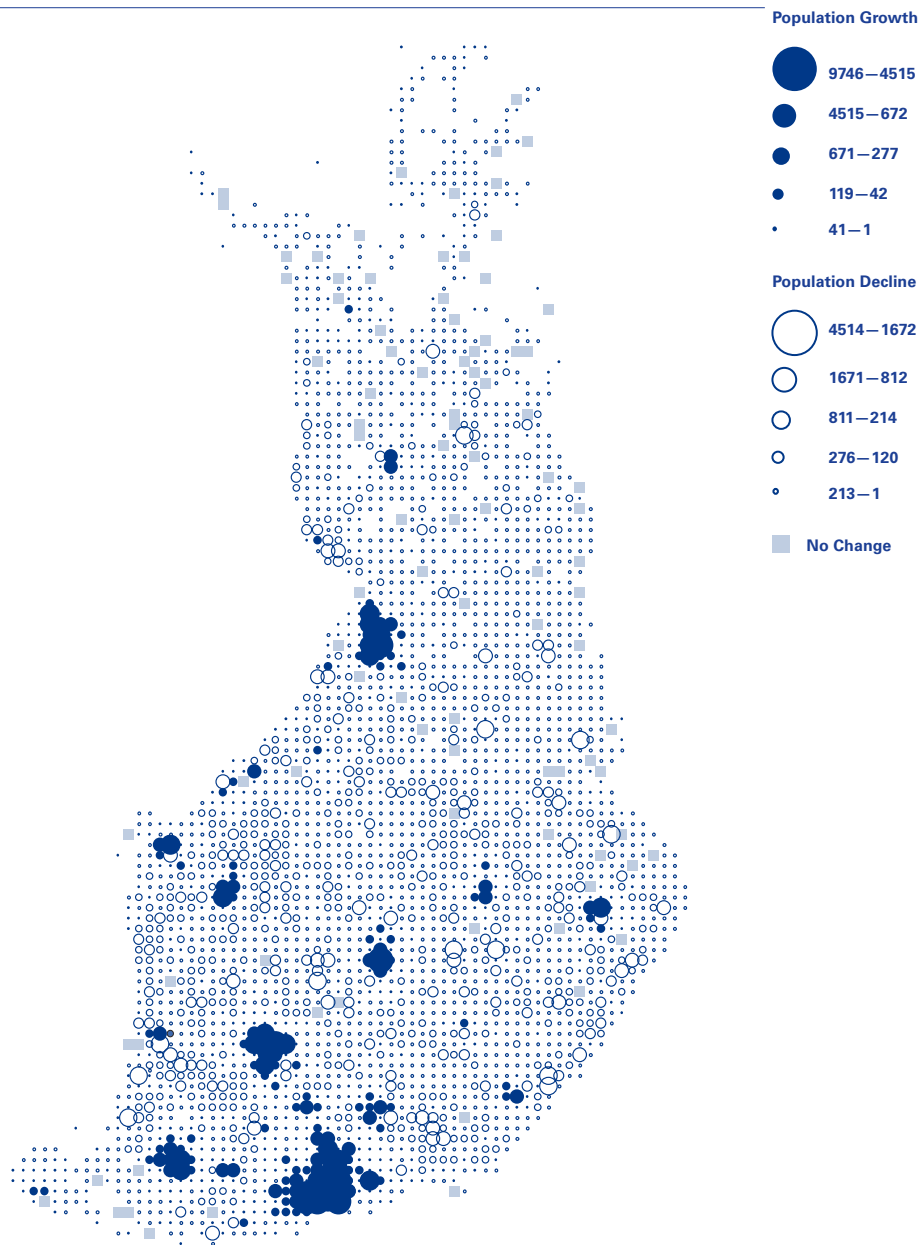
Population Change 2000-2007 in 100 km2 Grid

estimates that Finland's built-up area is low compared to the other Nordic countries and less than half the density of similar areas in Sweden and Norway. The Ministry cites unmitigated sprawl as the chief factor causing this disparity:

Population Density in Built-up Areas, 1980-2007

Inhabitants per km²

1000
900
800
700
600
500
400
300
200
100
0

1980   1985   1990   1995   2000   2005   2007

Average Daily Commuting Distance, 1980-2005

km

14
12
10
8
6
4
2
0

1980   1985   1990   1995   2000   2005
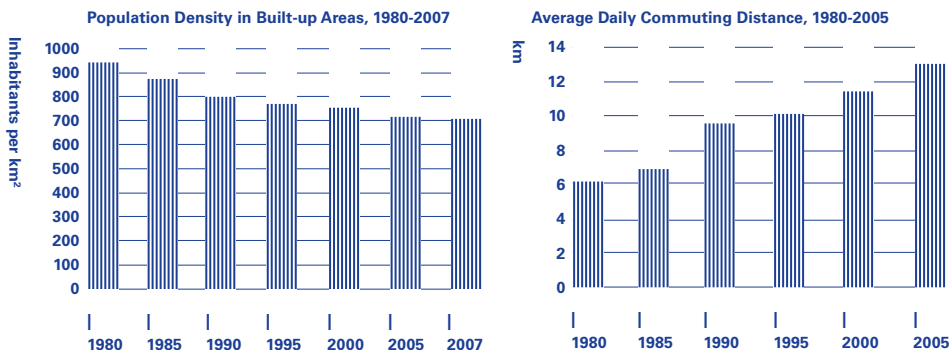
Population Density & Commuting Trends 1980-2007

Finland became urbanised relatively late and the urbanization process is still continuing…Often there is no distinct boundary between urban and rural areas…In many cases there are few tight restrictions on construction close to urban areas. This has led to a dispersed and fragmented urban structure. Urban areas have typically expanded inexorably outwards, leading to the creation of unstructured, low-density built-up areas. These low-density districts of built-up areas cover some 30-35% of the land surface of the country's urban areas—even in the main growth centres. Arranging services for those low-density urban areas is very difficult. Many of these households need more than one car to manage their daily lives… (Finland's Fifth National Communication under the United Nations Framework Convention on Climate Change 53)

Finland's urban cores tend to be composed of low-rise construction, with tall buildings a rarity. With few exceptions, Helsinki is has limited its height to six or seven stories on average. Though areas outside of Helsinki have now seen the construction of high-rise apartment buildings, these projects have generated controversy.

Less than three hundred buildings (0.02% of building stock) are ten or more floors in Finland; of this number, only two hundred are residential. In Finland 76% of all buildings are single-family detached houses or summer cottages. Despite this figure, by 2008, approximately 53% of Finns lived in some form of apartment.

D2.7 City Planning

Finland has a highly structured master plan delivery system. Based on national and municipal objectives, master plans have been drafted for most of Finland's inhabited areas. From these master plans, professionals working for the municipal governments will draft plans that specify strict guidelines for building use, massing, occupancy levels—even paint colours. The need for such detailed planning at the municipal level has resulted in the creation of exceptionally large planning departments in all of Finland's largest cities. The City of Helsinki for example, has over two hundred architects and engineers in its planning department.

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NATIONAL LAND USE GUIDELINES
Approved by
Council of State

REGIONAL LAND USE PLAN
Drawn up & approved by Regional Council
Confirmed by Ministry of the Environment

JOINT MASTER PLAN
Approved by joint local
authority body
Confirmed by Ministry
of the Environment

LOCAL MASTER PLAN
Prepared & approved by local authority

LOCAL DETAILED PLAN
Prepared & approved by local authority

Land Use Planning System

Senior planners and architects are given substantial latitude to shape both the development priorities and character of areas under their purview. Often, under this highly centralised control system master planned areas are built-out rapidly,. The result is evident in some recently constructed areas of Finland's cities that appear quite homogenous.

D2.8 Mixed-Use

Currently, mixed-use development (as is commonly understood in North America and much of Europe) is illegal under Finland's land-use regulations. There are a few notable exceptions such as Helsinki's Kamppi shopping and multi-modal transit centre. However, exceptions are granted only after a lengthy appeal process that is a legal exemption for the land in question. These exempted plots are then adopted into the city's detailed master plan.

The biggest obstacle to mixed-use development is the coexistence of different owners on multiple floors in one building. In other words, two-dimensional mixed-use development is possible while three-dimensional is not.

D3 – Energy

D3.1 Energy Policy

In the past, the Finnish government has focused on securing a cheap and reliable energy supply for industry and domestic consumers, relying heavily on Russia and other Baltic states to provide fossil fuels. Since joining the EU, it began to adopt and integrate its policies with Europe. As the EU developed a more robust and comprehensive energy policy framework, Finland turned over much of its policy leadership to Brussels. Today, most energy policy is tightly coordinated with EU recommendations and directives.

Finland's energy markets have been liberalised since the Energy Market Act of 1995. In 1998, it became a partner in the Nord Pool electricity market (Nordic Power Exchange); the largest power derivatives exchange market in the EU and largest physical power market in the world.

Energy policy in Finland is organised into five principal institutions:

▷ Ministry of Employment and the Economy (MEE) is the principle authority. Within the MEE, the Energy Department directs activities through three subdivisions (Energy Management & Nuclear Energy Division, Renewables & Energy Efficiency Division, and Energy Market Division). MEE works with the Ministry of the Environment to address GHG and climate change issues.
▷ TEKES (Finnish Funding Agency for Technology & Innovation) finances R&D in the private and public sectors with public funds.
▷ VTT (Technical Research Centre of Finland) focuses on energy technology and how energy is used in transportation and industry.
▷ MOTIVA OY is a government-affiliated agency that "promotes the sustainable use of energy and materials." It is a key organization in developing and measuring voluntary energy efficiency commitments in Finland through energy audits and information dissemination.

Finland's energy objectives as stated in its Climate and Energy Strategy, will function as the government's road map until 2020. The Strategy describes policies and measures that will bring Finland into compliance with the EU's climate and energy targets. According to an IEA analysis, the specific objectives are:

▷ Restructuring energy production to meet GHG reduction targets.
▷ Promotion of free energy markets.
▷ Promotion of energy efficiency and conservation.
▷ Promotion of bio-energy and other domestic fuels.
▷ Maintaining high technological standards.
▷ Ensuring a diversified fuel mix.
▷ Ensuring security of supply.

(Energy Policies of IEA Countries, Finland 2007 Review 21-2)

Finland is still greatly dependent on energy imports, especially with regard to electricity demands. This dependence is evident in Finland's natural gas network, which is physically linked only to Russia. Net electricity imports from neighbouring nations can reach 15-20% of total final consumption. In addition, over 80% of oil imports typically come from Russia.

Finland's dependence on energy imports has made supply security a high priority policy objective. This dependence is also responsible for recent growth in renewables as a way to meet the government's self-sufficiency objectives.

National energy policy is also a product of Finland's Kyoto emissions targets for the first commitment period (2008-12). Finland committed to stabilise its emissions at 1990 levels through a set of policies and mandates, but mostly (75%) with emissions offsets. Over the last decade, Finland's emissions have remained above its target despite these measures. While the surplus emissions are a concern, closer analysis reveals an important characteristic of the government's response to the challenges of energy and climate change: greater political comfort with short term initiatives and certainty. An IEA critique states:

> *We are pleased to note the link between energy policy goals and objectives, and policies and measures that address these goals. However, the government initiatives are generally focused on those that can bring short-term benefits. For, example, in the area of climate change, much of the government's efforts are placed on the European Union's trading scheme for greenhouse gasses, the EU-ETS, a policy that brings clearly defined, short-term benefits. Less attention is paid to the longer term, such as to implementing policies and measures in the building and transport sectors, areas where consumption is growing. Efficiency improvements and emissions reductions in these sectors will require steady policy treatment as results are slower to emerge and less easy to quantify. (Energy Policies of IEA Countries, Finland 2007 Review 27-8)*
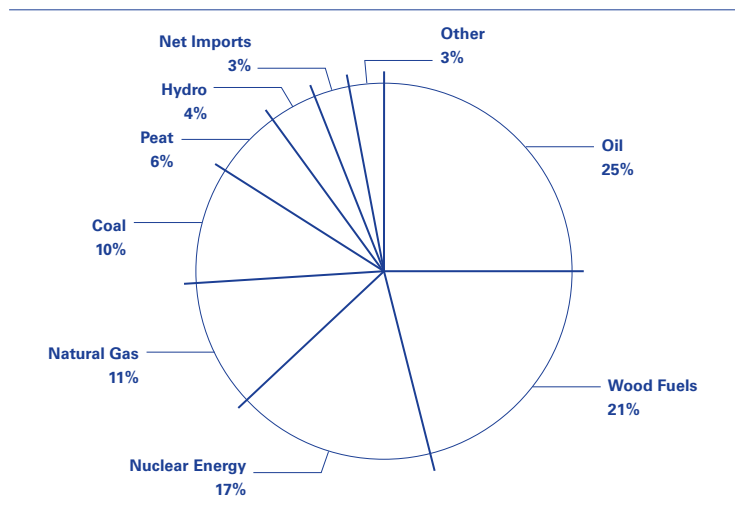
A focus on short-term gains can be interpreted as evidence of a lack of political will. More likely, it reflects the government's long tradition of deploying cost-effective solutions that minimise or distribute risk and whose impacts are measurable. However, complex challenges like climate change, long time frames and ambiguity will be constant factors.

D3.2 Consumption

Until the 1960's, Finland relied on hydropower and wood resources to fuel much of its energy production. But as consumption increased to meet a growing economy and an expanding population, the limits of domestic energy sources were reached initiating increased levels of oil imports to meet this demand. A natural gas pipeline to Russia was constructed in 1973

and Finland's first nuclear power plant was commissioned in 1977. The use of peat fuel sources also began to rise in the 1970's.

Finland's existing energy supply mix is relatively well diversified. Since the mid-80's, oil consumption, the largest fuel share, has been relatively stable (25% in 2008). Wood fuels are next with 21%, followed by nuclear at 17%. Overall, fossil fuels still account for at least 52% of total consumption (if peat is included). Renewable energy sources (RES) reached 28% in 2008 with the greatest growth in the wind and hydropower sectors.
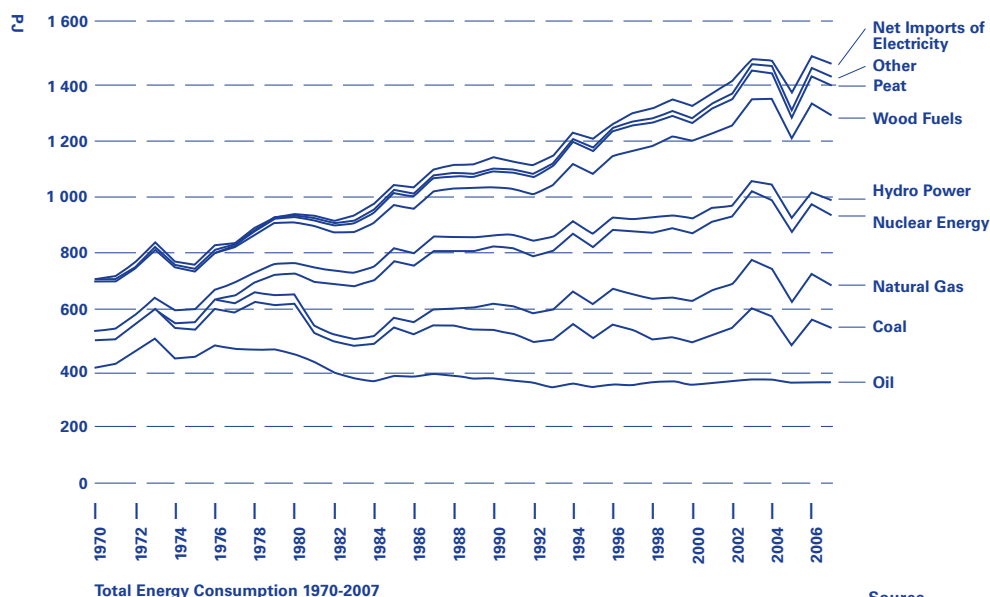

Net Imports 3%
Hydro 4%
Peat 6%
Coal 10%
Natural Gas 11%
Nuclear Energy 17%
Other 3%
Oil 25%
Wood Fuels 21%

Total Energy Consumption 2008

The predominance of fossil fuels has resulted in significant carbon emissions from energy production in Finland. Yet carbon emissions per primary energy unit are less than many European countries due to Finland's diversified fuel mix, which includes low or no emission sources.

Industry is the largest consumer of energy. The sector was responsible for nearly half of Finland's total final consumption (TFC). The transportation and residential sectors each consumed about 20% of TFC; the commercial and other sectors were responsible for the rest. These shares have been stable over the last few decades, although both industrial and commercial sectors have grown, especially during the last ten years. No one sector has achieved a reduction in TFC.

Use of biofuels, hydro and wind continues to grow at a national scale, and many of Finland's ubiquitous summer cottages are powered by solar and heated with wood, suggesting broad-based public familiarity with RES. This familiarity is not insignificant as the argument for the efficacy of RES should be self-evident for Finns. Familiarity gives proponents of renewables a special advantage nationally where the RES share has consistently approached 30% over the last decade. In Europe, the average share of renewables is around 9%.

PJ

1 600

1 400

1 200

1 000

800

600

400

200

0

1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006

Net Imports of Electricity
Other
Peat
Wood Fuels

Hydro Power
Nuclear Energy

Natural Gas

Coal

Oil

Total Energy Consumption 1970-2007

Finland has consistently had an energy import dependency greater than 50% (see table) in its modern history. Current projections show dependency trending down in the coming decades as the share of renewables increases and plants achieve greater efficiency gains.

Energy Profiles 2005 (Appendix 1: Model-based Analysis of the 2008 EU Policy Package on Climate Change and Renewables):

| Country	Import Dependency (%)	Share of Renewable Energy Sources (%)	CO2 Emissions (Mt; Energy Related)	GHGs Emissions Index (1990=100)
EU27	52,4	8,7	3947	93,4
Finland	54,7	28,8	54.1*	95.3*
Sweden	37,2	42,5	48,5	99
Denmark	-51,6	15,5	48,9	94,6
Germany	61,6	5,9	804,8	80,9

*This emissions figure is misleading. In 2004 and 2006, Finland's carbon emissions were on average 10 Mt CO_2 equivalent higher because its condensing power plants burned less coal than normal due to a very wet rainy season and increased hydro production.
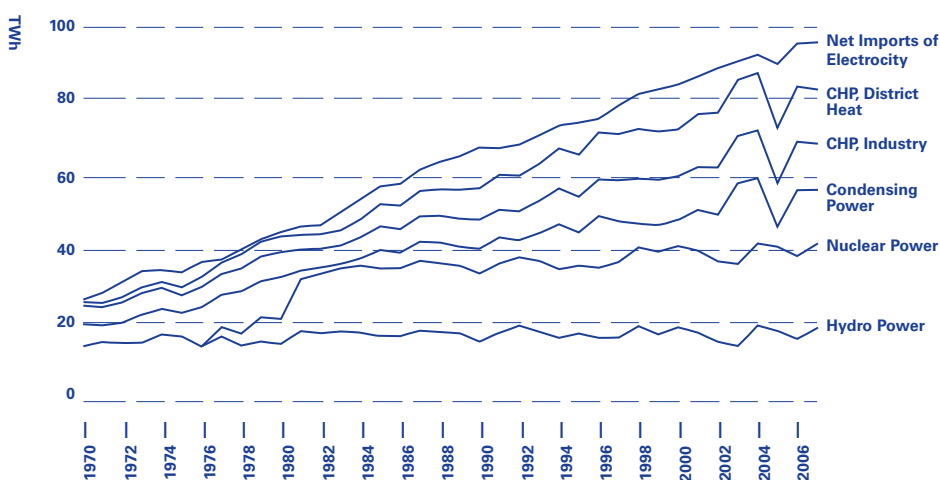
D3.3 Electricity Supply & Consumption:

Over the last three decades, nuclear power became the largest source of electricity production in Finland. With the construction of a new nuclear reactor Olkiluoto 3 (the first in an IEA European country in eight years) to

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be completed in 2012, nuclear power usage will increase, further enhancing supply security and decreasing carbon intensity. Olkiluoto 3, once operational, should produce a 33% increase in nuclear capacity.

The share of fossil fuels has grown in recent decades to meet increasing demand from households and industry. Overall, fossil fuels account for about a third of electricity production. Among renewables, hydropower is the dominant source, but inconsistent due to seasonal variation in the climate. Carbon neutral fuels such as wood chips and concentrated liquor (e.g. Black liquor) make up a significant share of energy production. Wind power p rovides less than 1% of electricity, but its share grew by 38% between 2007 and 2008.
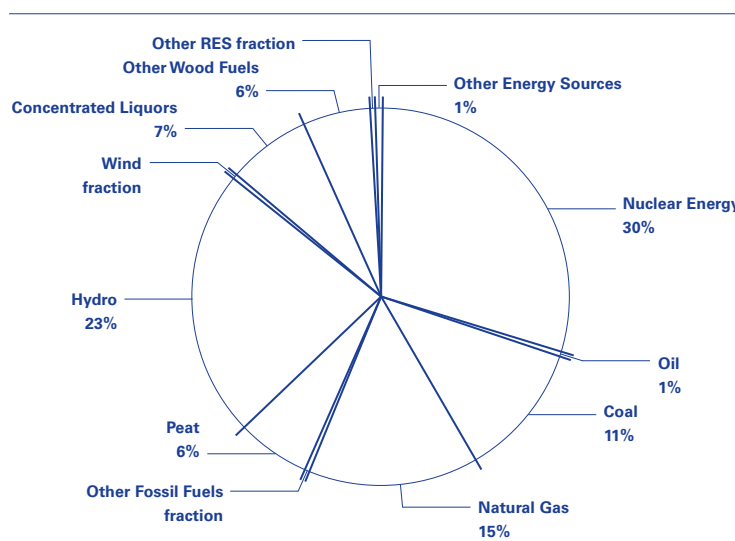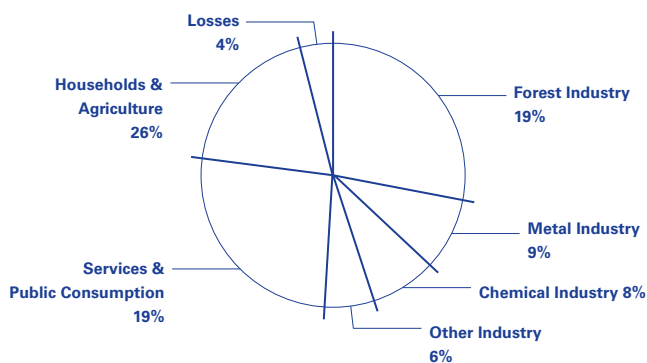

Production of Electricity by Fuel 2008

Electricity Supply 1970-2007

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As with TFC, overall electricity consumption is dominated by industry, accounting for 53% of overall consumption in 2008, with 28% going to the forest industry alone. However, according to preliminary data, 2008 saw a sharp decline in industrial electricity consumption brought on by a slow-down in industrial output. GDP also declined to 1% from the 4% in 2007, helping to push down consumption.
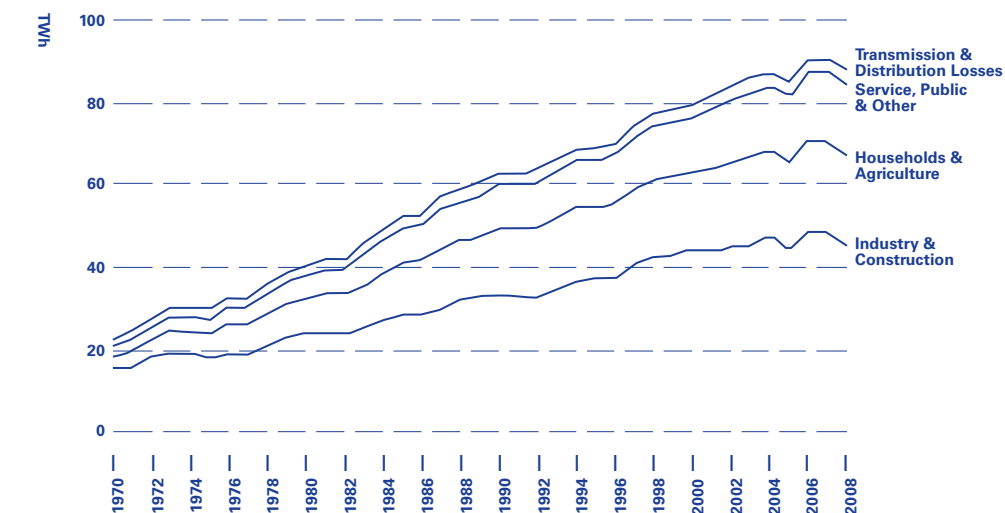
Further analysis of 2008 reveals an electricity production system that is in flux and is highly susceptible to climatic variation. The exceptionally mild, wet winter of 2008 reduced space heating and district heating loads by 2% from the year before and increased hydropower production. In addition, combustion of wood chippings increased by 50% over the year before while black liquor combustion declined. These dynamics combined produced a record year for the share of renewables in electricity production (28%) and a 13% decline in carbon emissions from energy production. With industrial output down, Finland's total carbon emissions were just below its 1990 levels.

While Finland has achieved compliance with its Kyoto target in 2008, reductions were achieved through special circumstances rather than structural shifts in its energy production and consumption. With the exception of the forest industry, consumption is still projected to increase across sectors.

Losses 4%
Households & Agriculture 26%
Forest Industry 19%
Metal Industry 9%
Services & Public Consumption 19%
Chemical Industry 8%
Other Industry 6%

Total Electricity Consumption by Sector 2008

TWh

100 —

80 —

60 —

40 —

20 —

0 —

1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008

Transmission &
Distribution Losses
Service, Public
& Other

Households &
Agriculture

Industry &
Construction

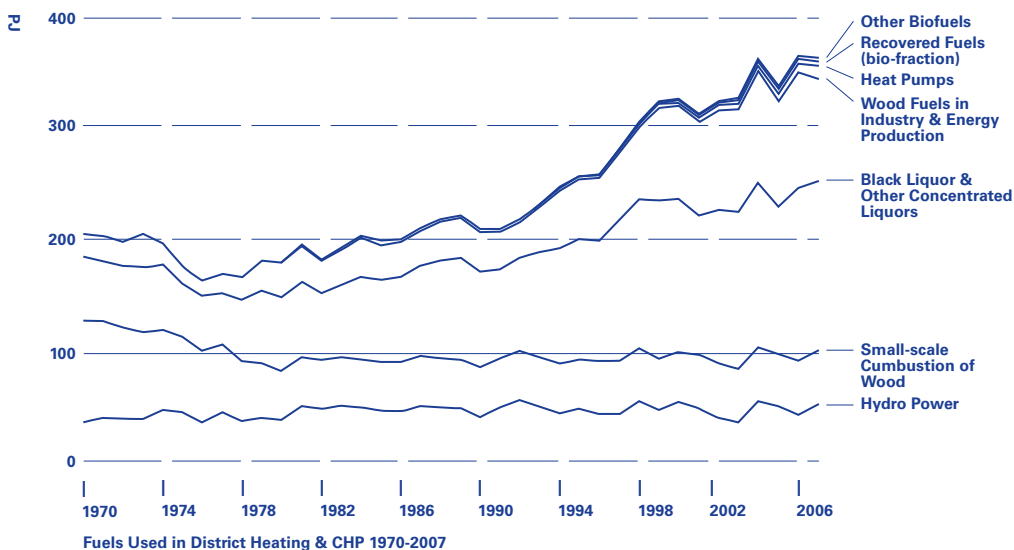**Electricity Consumption by Sector 1970-2008**

D3.4 Renewables

The 2005 National Energy and Climate Strategy outlines four major
objectives for RES development in Finland:
1. The share of RES should increase by 25% in 2015 and by 40% in 2025
   to achieve one third of primary energy supply.
2. Biofuels, including forestry chips, biomass, biogas, etc. should grow
   by 65% in 2015 and by 80% in 2025 when compared to 2003 levels.
3. The share of RES in the electricity supply should reach 31.5% in 2010.
4. Biofuels should reach 5.75% of road transportation fuels by 2010.

The IEA finds that Finland generally takes a cost-effective approach to
developing its RES, investing around eighty-five million euros per year in
a variety of projects. Yet, Finland continues to lag behind many other IEA
countries in the development and implementation of feed-in tariffs and cer-
tification schemes. Currently, there are policies under consideration that by
2012 will put feed-in tariffs into practice.

Finland is ranked fourth highest among IEA countries for share of RES
in its total primary energy supply, behind Norway, New Zealand and Swe-
den which have substantial hydropower sources. Finland's energy supply
has the highest share of biomass among any of the IEA countries.

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400 ···

Other Biofuels
Recovered Fuels
(bio-fraction)
Heat Pumps
Wood Fuels in
Industry & Energy
Production

300 ···

Black Liquor &
Other Concentrated
Liquors

200 ···

100 ···

Small-scale
Cumbustion of
Wood
Hydro Power

0 ···

| 1970 | 1974 | 1978 | 1982 | 1986 | 1990 | 1994 | 1998 | 2002 | 2006 |

Fuels Used in District Heating & CHP 1970-2007

Renewables have additional capacity for development in Finland. An IEA summary of recent studies outlines development potential in three areas:

> *Hydro. According to a report prepared by Finnish Energy Industries for MEE, there is a total additional potential of 9.7 TWh annually. However, most of that potential is located in places that are either protected from development, uneconomic to develop, or both. The total economic potential in unprotected areas is about 1 TWh annually.*

> *Biomass. Additional techno-economic potential has been estimated at upwards of to 30 TWh annually of fuel energy in 2020 on the basis of analysis by Pöyry Energy, the Ministry of Agriculture and Forestry, and the Ministry of Employment and the Economy. The additional biomass would be used mainly as wood chips in CHP plants, equivalent to 15 TWh annually. Possibilities to increase the use of biomass are closely connected to the forestry and forest industry sector, meaning that changes in forest industry production have large influences on biomass potential.*

> *Wind power. The theoretical potential in Finland is large (though less than in Denmark or Norway) even though factors such as high global demand that has increased costs and freezing seas complicate both off-shore and wind projects in general. Nevertheless, according to Pöyry Energy for MEE, the tenable potential for wind in Finland ranges up to 6 TWh annually through 2020. (Energy Policies of IEA Countries, Finland 2007 Review 66)*

Recently, Helsingin Energia, the municipally owned power company that supplies Helsinki with electricity and district services, announced its goal to achieve carbon neutrality by 2050. This is a substantial challenge as

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the share of fossil fuels in its procurement mix is substantial: 57% natural gas, 26% coal, 10% nuclear power, 6% RES, and 1% oil in 2008. While the details of its decarbonization plan are still unclear, the company has suggested that a potential investment of approximately three billion euros. Initial efforts will likely include the replacement of older coal burning condensing plants, located in Helsinki's periphery, with new wood chip fired plants.

D3.5 ICT-Smart City Potential

Finland is regarded as a leading centre for information and communications technology (ICT) innovation, and by most measures, the world's most ICT-dependent country. Nokia, representing 2.2% of GDP, drives much of this innovation by investing as much as a third of Finland's total R&D volume into ICT. As a result, ICT is a central focus of the service and technology sectors that are producing a workforce geared toward meeting growing tech demand.

Given projections from a recent study by the Global e-Sustainability Initiative sighting a potential 15% reduction in global emissions from ICT-driven energy efficiency gains, Finland is well positioned to build capacity in emerging markets and make progress on emissions targets by retooling its tech sectors to focus on climate change over communications equipment.

Firms such as GE, IBM and Siemens are piloting ICT-driven Smart Cities approaches in Seoul, Delhi, Zagreb, Stockholm, London, New York, and San Francisco among others.

From the CommonCurrent blog comes this summary of areas of activity and some of the firms involved. Others are added from the Smart 2020 Project:

> ⊳ Healthcare process integration: Ericsson
> ⊳ Traffic congestion monitoring and pricing systems: IBM, Capita Group ⊳ Water (leakage detection, purification): IBM, Siemens
> ⊳ Buildings (sense-and-respond monitoring): Johnson Controls, Siemens, IBM
> ⊳ Public transportation and logistics: PwC, Samsung, Cisco
> ⊳ Telecommuting, shared offices and TelePresence: Cisco, Hewlett-Packard, Sun
> ⊳ Home & office appliances with smart grid energy applications: GE, AT&T, Whirlpool
> ⊳ Smart grids: GE, Schneider Electric, SAP, Oracle, ABB
> ⊳ Energy monitoring/management tools: Google
> ⊳ Urban data centres: Google, Hewlett-Packard, Cisco
> ⊳ Carbon inventories and carbon accounting: Microsoft, Oracle

The breadth of the issues listed not only reveals complexity of reaching a 15% reduction by employing ICT systems, but also illustrates the scale of potential opportunities.

D4 – Transportation
D4.1 Transportation Profile

Energy consumption in the Finnish transportation sector has been growing over the last two decades. Oil consumption has increased by 19% since 1995 and transport consumption remains high relative to other EU states. Growing consumption of goods, suburbanization, increased vehicle ownership, and consumer preference for larger vehicle engines have driven up the energy curve in the transport sector. Meanwhile, the use of public transportation has remained unchanged since the 1990's.
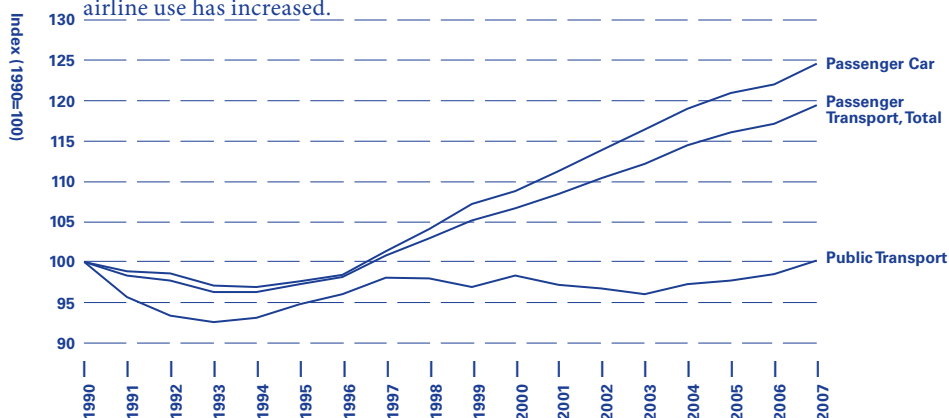
Currently, transportation policies in Finland are focused on improving energy efficiency and to some extent, carbon emissions:
  ▷ Coordinating transportation systems with sustainable land use (promoting public transportation options, cycling and waking; further investment in transportation information systems)
  ▷ Voluntary agreements with commercial carriers
  ▷ "Ecodriving"
  ▷ Coordination with the EU (manufacturers and taxes)

As is the case with climate, Finland has looked to the EU for transportation policy direction. With the Ministry of Transportation and Communication's Transport 2030 plan released in 2007, new legislation should begin to exceed EU directives and help Finland better incorporate the sector as part of its overall climate change mitigation strategy.
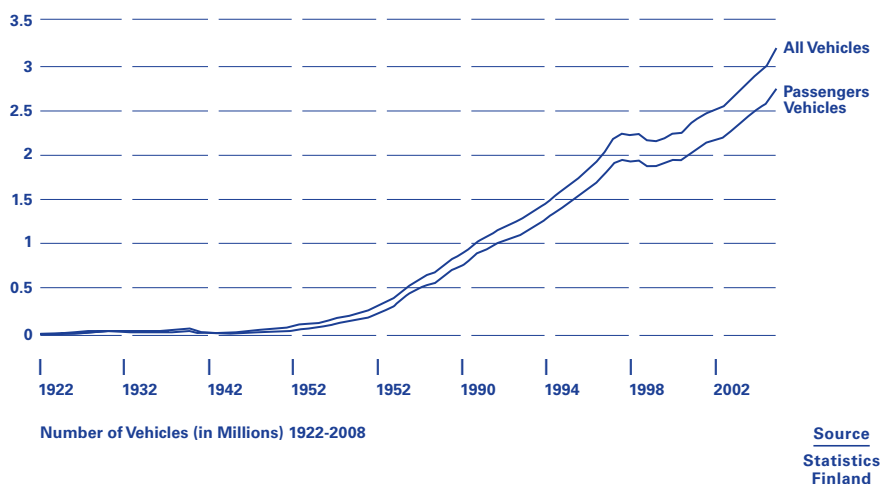
D4.2 Passenger Transport

Finland's domestic transportation has been increasing despite many Finns moving into built-up areas. Since 1990 passenger-kilometres has increased by as much as 19%. Passenger cars make up 82% of transport, an increase of about a quarter since 1990. While overall use of public transportation remained flat, there has been a decline in bus use while rail and airline use has increased.

Passenger-kilometres in Domestic Transport 1990-2008

All Vehicles

Passengers
Vehicles

1922	1932	1942	1952	1952	1990	1994	1998	2002

Number of Vehicles (in Millions) 1922-2008

Finland averages about one car per two people, a figure that is above the OECD and EU average. Car travel is evenly divided between leisure and business travel. The stock of passenger vehicles is increasing by about 2.8% per year.

Vehicle traffic and congestion is increasingly problematic in Finland's cities, especially Helsinki. Closer analysis reveals Helsinki's mobility density profile to be closer to North America than its European neighbours. The pace of new vehicle registrations suggests the further aggravation of the conditions on Helsinki's roadways.
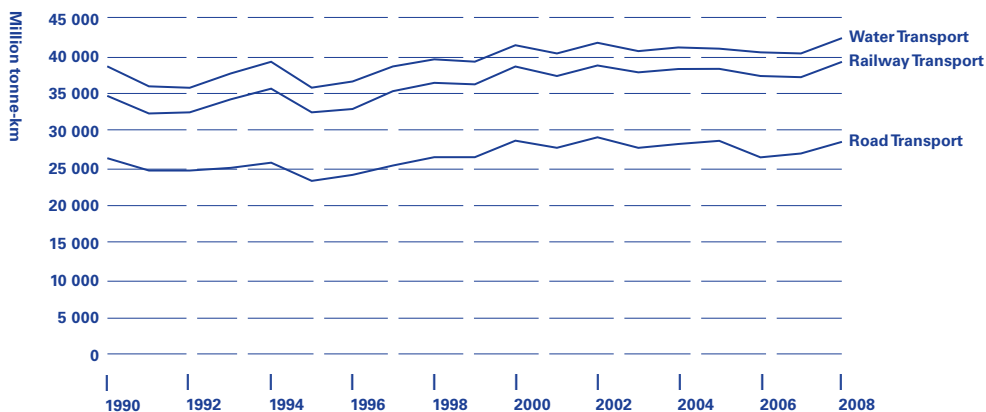
D4.3 Freight transport

Finland's heavy industries have generated the largest share of economic output since industrialization. As such, the transportation of raw materials and products has a substantial impact of the country's overall transport profile. This is compounded by the long distances and dispersedly distributed industrial centres in Finland.

Currently, 89% of all freight is transported by roadway in Finland, with rail transport a distant second at 7%. With the decline of paper and pulp industry, freight transport may become more centralised as the electronics and engineering sectors gain prominence in the economy, leading to a change in the existing transportation percentages. High added value products such as electronics are typically transported internationally from Finland via air-freight.
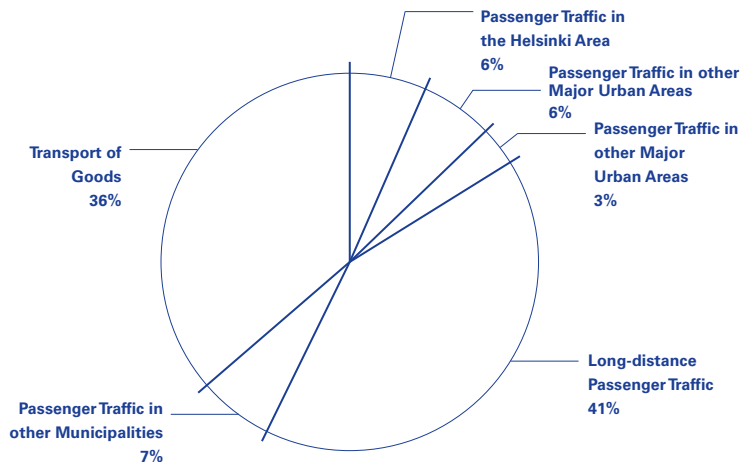
D4.4 Transportation Emissions

Finland's total transportation generated carbon emissions total about 20%. Along with energy consumption, emissions have increased 15% since 1997. Passenger cars are the largest factor, accounting for around half of all transportation-based carbon emissions.

The Ministry of Transport and Communications has made carbon emission reductions a central policy focus for the near and long terms. Much is to be done to achieve substantial emissions reductions. Currently, the Finnish fleet averages 80 g/km of CO_2 emissions, a level above the existing EU average of 165 g/km, and far above the EU 2012 target of 120 g/km.

Million tonne-km

45 000
40 000 — Water Transport
35 000 — Railway Transport
30 000
25 000 — Road Transport
20 000
15 000
10 000
5 000
0

1990 1992 1994 1996 1998 2000 2002 2004 2006 2008

Ton-kilometres in Domestic Goods Transport 1990-2008

Passenger Traffic in
the Helsinki Area
6%

Passenger Traffic in other
Major Urban Areas
6%

Passenger Traffic in
other Major
Urban Areas
3%

Transport of
Goods
36%

Long-distance
Passenger Traffic
41%

Passenger Traffic in
other Municipalities
7%

Distribution of CO$_2$ Emissions from Transport by Type 2002

Source

Kalenoja, H, et al. "Potential for Reducing Carbon Dioxide Emissions from Transport in Finland" Tempere University of Technology, Traffic and Transport Studies 48 (2002)

The Government Foresight Report suggests several broad approaches to emissions reductions. These include: improving efficiency through new vehicle technologies; reducing the transportation demand; further promotion of public transportation and low or no carbon mobility; and the introduction of policy measures. A larger challenge will involve the transformation of Finland's built environment to support low carbon mobility, which is likely to yield greater reductions.

D5 – Cultural Drivers
D5.1 The Lagging Memory of Leadership

Finland's leadership in energy efficiency technologies and strong stewardship of the use of natural resources and the preservation of the environment has created a public perception of excellence in environmental issues. This perception is part of the national psyche and plays an important part in how the nation faces the climate change challenge: Because of a sense of accomplishments, the Finnish government has taken a light-handed approach to the transforming its policy instruments, economy and priorities to address GHG emissions and a shifting global landscape.

Evidence is both direct and indirect. In many areas of policy development (especially energy and climate), Finland has relied on EU directives and model policies to drive its own policy objectives. Other countries that are the perceived leaders in addressing climate change (such as Denmark and Sweden), have vigorously transformed their national objectives as the danger and opportunity of climate change have grown. In its own Foresight Report, the Finnish government identifies five other countries already implementing a carbon neutrality pathway (Maldives, Costa Rica, Norway, New Zealand, and Sweden).

There is indirect evidence of Finland's self-perception regarding these issues. Many citizens recall a time (during the Energy Crisis) when Finland was at the forefront of providing energy models, efficiency policy, and technology know-how to countries struggling to change their energy consumption practices. Current criticisms centre on Finland's perceived alignment with more conservative EU member states with regard to environmental and energy legislation. Some policy concessions suggest that Finland's energy intensive industry retains some level of influence over the country's political will.

Finns operate by consensus. Many of the challenges of the last century such as employment, social safety nets, or healthcare have been tamed by governmental and civil consensus. This is the fundamental precondition to the efficacy of the Nordic Model. But a consensus-driven political mechanism also bears some risks. Risk must be minimised or distributed, making state-driven initiatives toward an alternative future, such as a decarbonized economy, often seemingly inviable.
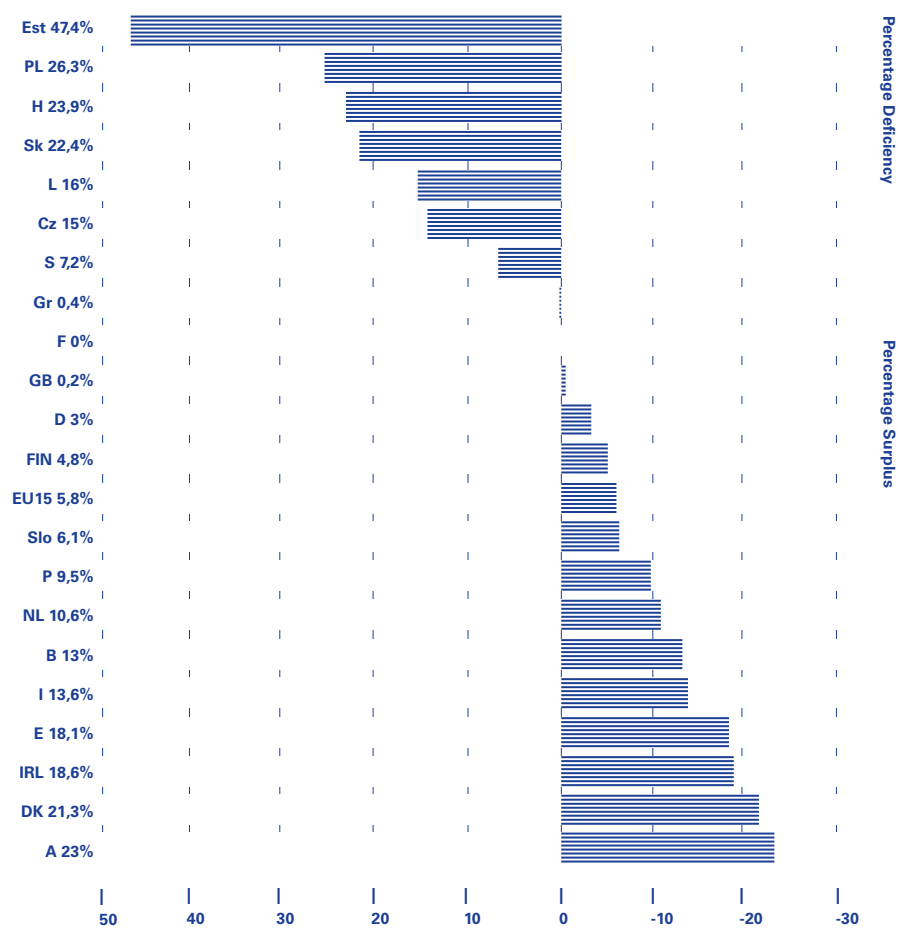
Now Finland finds itself in a state of flux. Though it was once a leader, Finland has to confront the reality that it now has a long way to go in order to catch up to its neighbours. This involves transforming its habits and economy in response to global demands, providing the services required by foreign economies and governments. With a global perspective comes the demand for competitive national, economic, and even urban contexts.

Policy planning in Finland is beginning to grapple with unprecedented time frames. The Foresight Report looks to 2050. The transportation policy framework stretches to 2030. Some energy planning scenarios are even being investigated to 2100.

The challenge will be how to deal with the "here and now" once policy objectives for the next generation are confirmed. Institutions and global connectedness in general makes it relatively easy to see and adopt what other leading countries are doing. The challenge will be to transform existing institutions and instruments to meet new objectives.

D5.2 Kyoto…That Was Easy!

At the time, and perhaps until very recently, the political atmosphere in Finland was protective of heavy industry (paper, metal, chemicals, etc.), geared toward ensuring cheap energy. This together with some natural advantages (large carbon sink, low population) did not force the Finnish

Est 47,4%	**Percentage Deficiency**
PL 26,3%	
H 23,9%	
Sk 22,4%	
L 16%	
Cz 15%	
S 7,2%	
Gr 0,4%	
F 0%	
GB 0,2%	**Percentage Surplus**
D 3%	
FIN 4,8%	
EU15 5,8%	
Slo 6,1%	
P 9,5%	
NL 10,6%	
B 13%	
I 13,6%	
E 18,1%	
IRL 18,6%	
DK 21,3%	
A 23%	

50   40   30   20   10   0   -10   -20   -30

EU Member State Kyoto Target Deviation Projection 2001-12 (Fichtner)

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government to make any emission reductions below 1990 levels for its Kyoto target. In other words, Finland would continue "business-as-usual" so long as its emissions levels were consistent with 1990 levels.

As with most Kyoto signatories, this commitment has proven difficult. The DBCCA remarked in its detailed assessment that:

In 2006, Finland's emissions were 13% higher than base-year level, well above its target for the period. Projections show that with existing policies emissions will increase to 20% above base-year by 2010. Finland hopes to reach a level 1% below base-year through use of Kyoto Protocol mechanisms and carbon sink activities.

The analysis goes on to point out that the European Environment Agency reported in 2008 that Finland was one of six EU states that are furthest from reaching their Kyoto targets. The Fichtner table reveals that even Member States with aggressive climate policy profiles, such as Denmark, are unlikely to meet their targets (by as much as 23).

D5.3 Security

Political and business leaders in Finland should question apprehension about further loss in its past position of technical leadership. If one looks to China's rapidly rising capacity for technical innovation, than the answer is "yes," especially given the difficulty of regaining leadership once it is lost. China's research and development investment has increased 20% each year for twenty years to 70 billion USD. The 863 Program alone has increased energy research investment nearly fifty-fold from 1991-2005.

To keep this in perspective, Finland is still a world leader in R&D investment: 3.5% of GDP in 2007 compared to 2.7% in the US and 1.3% in China (UNESCO Institute for Statistics). Investing additional resources would probably not be prudent or cost-effective for Finland. But investment occurring outside of the dominant states will reduce the impact of internal investment. Finland's investments will need to be highly calibrated to the challenges and opportunities of the time.

Finland also faces a significant security risk with regard to its energy supply. The city of Helsinki provides an instructive example. In 2008, 83% of Helsinki's electricity, heating and cooling was generated from fossil fuels, mostly procured from Russia. Finland's indigenous energy sources are limited and its current energy production system is not enabled to capitalise on its natural resources such as wind, biofuels and hydropower (to the extent that greater capacity is available). For several decades, Finland's energy policies have focused on ensuring security of supply, but imported fossil fuels continue to be a large energy source, especially in the country's most economically active, urban areas.

D6: Governance
D6.1 Finland's Policies & Measures

Current climate policy in Finland is developed within the framework of two treaties: the Kyoto Protocol (legally binding) and the United Nations Framework Convention on Climate Change (UNFCCC). As an EU Member State, Finland is bound to climate and energy Directives issued by the EC. This two treaty/EU framework generally results in two phases of obligations: the 2008-2012 first commitment period of the Kyoto Protocol and the post 2012 period that is largely driven by the EU's 20 20 by 2020 Climate and Energy Package.

The Kyoto Protocol was the first international treaty to which Finland responded with a national climate policy. Under the EU burden sharing agreement, upon parliamentary ratification of the Kyoto Protocol in 2002, Finland pledged to stabilise its GHG emissions at its 1990 levels during the period of 2008-2012 (about seventy-one million tonnes of CO_2 eq. per year). Much of the necessary reductions can be achieved through emissions offsets under the EU-ETS scheme.

In 2003, the Ministerial Working Group on Climate Change and Energy was established to coordinate the activities that lead to the 2009 Foresight Report. Representatives from the ministries constituted the group that commissioned a series of studies of Finland and its climate and energy challenges. The Report suggests four scenarios for how Finland might achieve an 80% reduction in GHG emissions, but does specify binding targets or policies.

Other than ratification of the Kyoto Protocol, little substantial policy work has been done in Finland on climate change until very recently. The 2009 Making the Climate Count report from the Finnish Environment Institute (SYKE) sums up the state of affairs:

In previous decades little has been achieved to promote climate issues in other areas. Following an increasing emphasis on climate issues in the twenty-first century, especially during 2007-2008, the Finnish Government and municipalities began to pay more attention to climate change as well as to measures that could be taken to mitigate climate change and to address its implications in different sectors. In 2008, the Government began preparing a new long-term climate and energy strategy and the Prime Minister's Office coordinated a number of background studies for a forthcoming foresight report on climate and energy policy. Through the recent activities, the climate issue is increasingly becoming a horizontal challenge for public governance in Finland. (Making Climate Count: Climate Policy Integration and Coherence in Finland 7)

Stakeholder involvement and support for preparation and implementation:
Climate Forum of the Ministry of the Environment, expert organizations, universities, NGO´s and others

Kyoto Protocol Implementation
Statistics Finland, Energy Market Authority

Ministry of the Environment, Ministry of Employment and the Economy,
Ministry of Transport and Communications, Ministry of Finance,
Ministry for Foreign Affairs, Ministry of Agriculture and Forestry

Interministerial Working Group
International Climate Policy

High-level Working Group of Government Officials
Domestic Climate Policy

International Climate Policy
Government, Parliament
Cabinet Committee on EU Affairs
Ministry of the Environment

Domestic Climate Policy
Government, Parliament
Ministerial Working Group on
Climate Change and Energy
Ministry of Employment and the Economy

EUROPEAN UNION
Council of the European Union
(Environment, Energy, Transport etc.)
Working Party on Intl. Environment/Climate

Commission of European Communities,
European Parliament
Climate Change Committee
Monitoring Mechanism

UNFCCC, KYOTO PROTOCOL

Source
Finland's Fifth National Communication under the United Nations Framework Convention on Climate Change

Institutional Arrangements Concerning Climate Policy and its Implementation

With climate change taking a more central role in public policy discussions, more ministries and agencies have an interest in forthcoming regulations. This has, and will continue to significantly alter the policy and governance landscape in Finland. In addition, the upcoming 2011 parliamentary elections suggest that climate change may potentially become a core issue in the new government. Many in Finland expect this new government to invigorate the climate policy debate.

Detailed information on Finland's current policies, projected GHG abatement impact and the various groups, ministries and agencies working on climate change in Finland are outlined in Finland's Fifth National Communication under the United Nations Framework Convention on Climate Change.

D6.2 The EU

The EU is driving much of Finland's climate change policy formulation, especially for the post 2012-2020 period. As required, Finland's communication to the UNFCCC outlines its climate policy obligations as an EU Member State:

The EU legislative Climate and Energy Package adopted by the European Parliament in December 2008 forms the framework for the EU's climate policy after 2012. Under this Climate and Energy Package the European Union is committed to reducing its greenhouse gas emissions by 20 per cent by 2020 from the 1990 level, or by 30 per cent if a global and comprehensive agreement is reached. The majority of the reduction will be reached within the EU emissions trading scheme (EU ETS). Emissions from sectors not included in the EU ETS—such as transport, housing, agriculture and waste—will be cut by 10 per cent from the 2005 level by 2020 within the EU as a whole. Finland's reduction obligation for sectors not covered by the EU ETS is 16 per cent. It is up to each Member State to decide how these targets not covered by the EU ETS will be achieved. A Member State that fails to meet its targets will be penalised with a further 8 per cent emission reduction obligation.

The Climate and Energy Package also requires Finland to increase its use of renewable energy sources to 38 per cent of final energy consumption by 2020 and the share of biofuels in gasoline and diesel to 10 per cent by 2020 (Finland's Fifth National Communication under the United Nations Framework Convention on Climate Change 99).

As is stated above, a majority share of the EU's Climate and Energy Package targets can be achieved through emissions trading and offsets. While this scheme helps states achieve climate impact reductions in a cost-effective manner, it will not likely result in the urban, economic and industrial transformations that will be necessary to achieve lasting, accountable reductions.

However, the EU ETS is not without merit in a supranational sense. It can help achieve impact other countries through two instruments: The Joint Implementation (JI) and Clean Development Mechanism (CDM). The JI and CDM are projects in other Kyoto Annex I or developing countries that cost-effectively reduce emissions. These reductions generate tradable emissions credits that can be used by the sponsor country to meet national emissions commitments. Finland can use JI and CDM-based credits to "reduce" up to a maximum of 10% of its emissions under the EU ETS.

Finland's domestic implementation of EU-wide policies is carried out under the umbrella arrangement: Common and Coordinated Policies and Measures (CCPMs). The major program include the EU burden sharing agreement under Article 4 of the Kyoto Protocol (Decision 2002/358/EC), the EU ETS (Directive 2003/87/EC), and the EU's 20 20 by 2020 Climate and Energy Package and its Decision of the Monitoring Mechanism (Decision 280/2004/EC).

D6.3 Domestic Scales of Governance

Finland's Parliament and Government are the primary decision makers for issues of climate change and policy. The Parliament is responsible for shaping Finland's international relations and commitments, especially with regard to the EU. It is responsible for determining how to implement its international commitments according to the constitution.

The Ministry of the Environment leads much the government's response to climate change and is the administrative body responsible for dealing with the UNFCCC. All ministries have some role in addressing climate change, although only the Ministry of Foreign Affairs, Ministry of Agriculture and Forestry, Ministry of Transport and Communications and Ministry of the Environment formulate climate-related policy.

The responsibilities and policy areas of ministries related to climate issues

Ministry	Responsibility in climate policy	Policy areas that have links to climate issues
Prime Minister's Office	Coordination of government programmes	
Ministry of Foreign Affairs	CDM projects	Development aid; Trade policy; Foreign relations; Extended security policy
Ministry of Justice		General guidance of legislative preparation
Ministry of Internal Affairs		Rescue services; Guidance of provincial planning: particularly the provincial plans and the regional development programmes of provinces
Ministry of Defence		Public procurement (26%)*: procurement and use policies of equipment, energy consumption; Security policy
Ministry of Finance		State finances (budget proposals and guidelines for the ministries); Guidance of public procurement at state level; Energy taxes and support; Other taxation and general support policies; Municipal structure
Ministry of Education		Educational policy; Research and science policy; Public procurement (17%)*
Ministry of Agriculture and Forestry	Main responsibility in the adaptation to climate change	Agriculture and forestry; Water supply and the use of water resources
Ministry of Transport and Communications	Transport	Transport infrastructure; Transport and communication services; Public procurement (22%)*
Ministry of Employment and Economy	Main responsibility for climate change mitigation, energy, industry, services, households, markets, technology development	Energy policy; Emissions trading, Industrial policy; Technology and innovation policy; Monitoring and guidance of public procurement
Ministry of Social Affairs and Health		Environmental health
Ministry of the Environment	Main responsibility for international climate change negotiations, JI projects, community structure, construction, waste	Guidance of land use and construction; General guidance of sustainable development; Environmental legislation, permits, wastes

* Share of the total value of all public procurement

Finland's regions and municipalities also play a significant role in addressing climate change at the sub-legislative level. Land use, transportation, waste processing, and energy production are often directly controlled at the municipal level and thus can have a significant impact in Finland's

GHG emissions. For instance, Helsingin Energia, Helsinki's municipally owned energy corporation provides the city with all of its electricity and district services under the city's indirect leadership.

Five Finnish municipalities have initiated a carbon neutrality project called Carbon Neutral Municipalities (CANEMU) that will attempt to achieve emission reductions ahead of EU targets. The project will provide prototype solutions for the near (two to five years) and long (six to twenty years) terms in the municipalities of Mynämäki (8,000 inhabitants), Uusikaupunki (16,000 inhabitants), Kuhmoinen (2,700 inhabitants), Padasjoki (3,600 inhabitants) and Parikkala (6,100 inhabitants). The Finnish Environment Institute (SYKE) will coordinate implementation through voluntary agreements and demonstration-based business practices. Its first phase began in 2008 in collaboration with TEKES and Uusikaupunki is already projecting a 30% GHG emissions reduction by 2014.

> *City and sub-national regional leaders are generally best suited to design strategies to address their infrastructure needs, land use, geography, and economic profiles. Central governments, in turn, can set out the broad goals and frameworks to encourage action in the right areas; they can also provide needed funding or other incentives for city initiatives. Together they could work closer together to develop and exchange information about possible policy responses, to experiment with new solutions, to share experience and broaden and replicate successful initiatives. (Gurría, Angel. "Competitive Cities and Climate Change." 2nd Annual Meeting of the OECD Roundtable on Urban Strategy of Mayors and Ministers, Milan. 10 Oct. 2008.)*

Some cities, such as Tempere, are acting more aggressively at local levels to achieve GHG reductions. This activity, although independent of national interventions, is often in collaboration with international partner networks. Tempere has now integrated climate change-driven strategies into all of its activities following its participation in the Peer Review for European Sustainable Urban Development project in 2004. Tempere's climate initiative is self-directed, but the national government is providing some outcome-based program financing.

FUTURES OF FINLAND

There's no way to predict the future, but by using scenarios we can make an educated guess. In the following pages is a brief glimpse of what Finland may look like in 2020 and 2050. As a projection, this is meant to act as a rough guide for what we may reasonably expect.

Finland 2020 – At a Glance

Population[1]

➤ 5.6 million, evenly distributed between women and men
➤ Age distribution (in years)

0-14:	17%
15-64:	60%
65 +:	23%

➤ Population by age and gender 2020, projection 2009[1]
➤ Natural population growth: 9,900.
➤ Net immigration: 20,000 (immigration: 36,000 persons, emigration: 16,000 persons).
➤ Emigration mainly to EU and other European countries, North America and Asia.
➤ Over one million Finns live or have settled abroad.
➤ Some 1.1 million live in the Helsinki area, which includes Espoo and Vantaa.
➤ City populations:

Helsinki	620,000
Espoo	280,000
Tampere	230,000
Vantaa	220,000
Turku	180,000
Oulu	150,000
Jyväskylä	140,000

➤ Some 80% of the population live in cities
➤ Commuting times and distance have continued to rise and the country's average is now approximately 18 kilometres. Due to the distances, the majority of commuters use private cars.
➤ Life expectancy: men 79 years, women 84 years.
➤ Employment rate: 72%; unemployment rate: 6%.
➤ Foreigners 4%, most from Russia, Estonia, Sweden and Somalia; 25% of Helsinki region dwellers have an immigrant background.
➤ Religion: Lutheran 75%; Orthodox 1%; Other 2%; some 22% do not belong to a religious group.
➤ Languages: Finnish speaking 89%; Swedish speakers 5%; foreign language speakers 6%.
➤ Major health challenges: alcohol abuse, obesity and memory-related illnesses.

➢ Education: 29% of young Finns have a university of other tertiary qualification; the share of women with a university degree or equivalent is much higher than men.

Economy

➢ Finland is highly integrated in the global economy; international trade is a third of GDP.
➢ Finns take approximately 6.8 million trips abroad, of which business trips account for some 20%.
➢ Economic structure (employed persons by industry):
    35% public and other services
    18% trade, hotels and restaurants
    18% financial and business services
    12% manufacturing
    7% transport and communications
    7% construction
    3% agriculture and forestry

1. Most of these figures are based on the estimations of Statistics Finland
2. Statistics Finland

Finland 2020 – Slow recovery from 2010

The traditional investment-intensive industry has slowly diminished in Finland. Instead of electronics, machinery, and pulp and paper, the main exports are products from knowledge and innovation-intensive businesses, like biosciences, design, textiles, IT and education. Many companies are geographically scattered around the world according to the availability of skilled labour. Although Finland has succeeded quite well in transforming its economic production after the 2010 recession, the national economy is now only slowly recovering its balance and annual GDP growth is 1-2%. In cities, there are large empty business properties awaiting alternative uses.

The service sector is still the major employer. Municipal services have been further privatised and the demand for services has grown. The ageing population needs more health services and to accommodate the need for nurses, educated nurses from Asia are brought to Finland. Finnish nursing schools offer programmes for nursing students from outside the EU that qualify for jobs in EU member countries. Since depleting natural resources have raised the prices of consumption goods, demand for other kinds of commodities has increased: IT, cultural services, maintenance, tailoring and dressmaking, especially from recycled materials, and design.

Politically, social democratic values are back after all the free market and liberalism 'hype' around the change of the millennium, especially equality. Although the economic situation has been tough, keeping up the welfare system has been the priority of most political parties. The social security system has been transformed, and instead of a complicated system of various social benefits all citizens receive basic income. Since basic income does not depend on other income, there is less of a poverty trap there used to be, and self-employment becomes more attractive and common. This has led to a significant attitude change and empowerment of the unemployed; there is a notable increase in small-scale businesses, handicrafts shops and community arts projects. The Internet and social media have the main role in channelling the activities of civil society.

The continuous economic insecurity has increased the role of traditions and conservative values of the citizens. Most Finns are still members of the evangelical Lutheran church, although participation in weekly services continues to decrease. New types of religious activity are on the rise, e.g. Volunteering in church charities and awareness-raising campaigns on Christian values, e.g. 'no to abortion'. This has also influenced the political spectrum; the Christian Democratic Party, which used to be quite small in 2010, has gained more seats in parliament, and the centre-right wing parties have turned more to the right. Similarly Muslim communities have grown culturally and politically louder, and now there are more conflicts between religious and ethnical groups than there have been for decades. However, conservative, fundamental religious and racist views have stayed in the minority compared to the liberal majority.

Immigration, both legal and illegal, has increased. The foreign work-force is more in demand: low-income blue-collar jobs are populated by foreign workers from Africa and Asia, whereas highly-educated special-ists are employed from all over the world—although most still come from neighbouring countries. Illegal immigrants arrive especially from central and southern Asia, due to the increased political instability in the regions. Russian is the most commonly spoken foreign language in the Helsinki region and there have been discussions about abolishing the status of Swed-ish as the second official language. One or two new orthodox churches and mosques have been built in the metropolitan area.

The average level of income has decreased in Finland due to several years of economic stagnation and slow growth; further, differences in income distribution have decreased slightly compared to 2010. The higher middle class has somewhat decreased in numbers and changes in taxation have favoured citizens with low income.

Finland 2050 – At a glance

Population

- 6.1 million, evenly distributed between women and men
- Age distribution (in years)
    - 0-14:   16%
    - 15-64:   57%
    - 65 +:   28%
- Natural population growth: -4.000 persons
  Immigration: 28.000 persons
  Emigration: 13.000 persons
  Net immigration: 15.000 persons
- Some 1.3 million live in the Helsinki area, which includes Espoo and Vantaa. Other major cities: Tampere, Turku & Oulu.
- Population in major cities (Helsinki area, Tampere, Turku & Jyväskylä): 35%.
- Working population decreasing; number of retired persons remains constant; employment rate: 75%; unemployment rate: 6%.
- Population by age and gender 2050, projection 2009.
- 85% of the population live in cities.
- Life expectancy: men 83 years, women 87 years.
- Foreigners 10%, most from Russia, Estonia, Sweden and Somalia; 30% of Helsinki region dwellers have an immigrant background.
- Religion: Lutheran 65%; Orthodox 3%; other 4%; some 28% do not belong to a religious group.
- Languages: Finnish speaking 85%; Swedish speakers 4%; foreign language speakers 11%.

Economy

- Economic structure (employed persons by industry):
    - 30% Public and other services
    - 12% Trade, hotels and restaurants
    - 18% Financial and business services
    - 17% Manufacturing
    - 8% Transport and communications
    - 8% Construction
    - 7% Agriculture and forestry

Finland 2050 – Immaterial individualism

Globalization has taken new forms compared to 2010, since the costs of travel and transportation have been raised to compensate for the environmental impacts. Global trade in goods has diminished but global exchange continues strongly via highly developed virtual channels. Many products have become immaterial: newspapers, books, music and games, for example, are sold only via the Internet in electronic format.

The world economy has managed to accommodate the economic setbacks caused by the impacts of climate change and most EU countries have positive GDP growth. China has taken the lead in the world market, and the economic centre of the world has moved to Asia. Finland has succeeded to have 3-6% GDP growth for the last decade. The main exports are biomedicines and intelligent textiles; both successes rely on the intelligent use of wood fibres and cellulose, resources that Finnish forests produce plenty of.

Finland gains advantage within the EU from its close location to Russia. Contacts and exchange with Russia have increased significantly compared to the beginning of the century. Most Finnish exports are sold to Russia. Many Finns work in Russian companies and commute daily from Helsinki to St. Petersburg with fast, environmentally friendly trains that cover the distance in ninety minutes —a journey that took over three hours with the new fast train connection opened in 2010.

The service sector continues to be the main employer, although the public sector has diminished. Some of the universality principles of a welfare state have been altered; for example, citizens are now encouraged to take better care of their health and well-being by providing better pensions and social benefits to those who commit themselves to certain health programmes related to obesity, coronary diseases, alcohol overuse, etc. Services and medical innovations related to keeping people healthy form a notable part of business sector.

There have been radical changes in production and consumption patterns globally, due to environmental concerns. All citizens now have a natural resource consumption quota, which limits the amount of natural resources they can consume per year. Excess quotas can be sold, and the trade in quotas is managed by the Stock Exchange. The introduction of a personal quota system has caused a redistribution of income: less wealthy people who have consumed fewer natural resources are in a position to sell part of their quotas and increase their consumption, whereas wealthy people who want to maintain at least part of their previous lifestyle have been forced to buy quotas. Personal mitigation strategies have reflected the values of individuals—the diversification of lifestyles has decreased in material respects but increased in immaterial ones.

Environmental taxes and personal quota systems have significantly reduced both business and personal travelling compared to 2010. The attractiveness of travelling has, however, not disappeared and thus there are new ways to travel and experience other cultures. Trips, once made, are longer in time and concentrate in one place. Advanced virtual technologies allow people to travel for several months and continue working from abroad. New exchange programmes for manual and service sector workers have been created: A group of Finnish teachers, for example, may exchange jobs with their Irish colleagues for months or even years.

Local consumption and production has increased, and the farming and forestry sectors have grown in importance. There are groups of people, living on basic income, who have moved back to the countryside to live in self-sufficient communities. These communities who have embraced "poverty as a lifestyle," use local trading and exchange systems in addition to the regular currency.

Economic diversification has increased compared to 2010. The lower middle classes are mainly educated but have low incomes and form the largest group of citizens. The highest income group has also increased in number, since the salaries for the most skilled specialists have grown and are now competitive with the rest of the world.

The Asian influence is also seen in religious life as well as in economics; many who were previously Lutherans have converted to Buddhism and Taoism. The share of Lutherans has also decreased due to the Muslim and Orthodox immigrants.

Alternative trends: What else could happen by 2050?

Mass Immigration

In 2050 the world is suffering from the consequences of climate change. Draughts and extreme weather conditions have caused famine and loss of human life in many poor regions. Immigration has increased within the EU from southern Europe, which suffers from draught and a lack of drinking water, to northern Europe. Also, immigration from Africa to Europe has intensified. Finland has received two waves of immigrants, first from northern Africa in the 2030's and recently in the 2040's from southern Europe. Some 20% of the population of Finland are now foreigners. English has become the second official language in the EU and it is commonly spoken in most workplaces in Finland. Most immigrants, therefore, manage to find their place in job market. Catholic and Muslim influences on the Finnish culture increase.

Food Scarcity

Megatrends such as climate change, biodiversity, environmental degradation and population growth compile a situation where food security becomes an even more critical issue over the developing world. Bioenergy production, especially in the western world, adds to the problem by overtaking a share of the fields used for food production. By 2020, surplus food production in industrialised countries has diminished to close to zero. Between the 2020's and 2050's, severe droughts, floods and storms attributable to climate change also cause disruptions to the food security of citizens in the western world. Finland struggles with the same problem but has an advantage of relatively rich water resources for irrigation (if needed) and space for farming expansions. Nevertheless, food security is a serious issue and the share of food expenses rises notably in private households. Professional farming becomes an attractive profession. Also, small scale supplementary farming gains popularity among lot owners. Respect for close-to-nature professions and know-how such as farming, fishing and hunting rises.

Extreme Privatisation

There is severe economic hardship in funding state and municipal operations. The Finnish welfare state model demonstrating strong and high-quality public services leading to equal opportunities in education, healthcare and social structures continues to deteriorate. To a certain extent, more efficient processes are able to maintain the service level; gradually, however, private options in healthcare and education, for example, attract families that are better-off. Public authorities are not able to ensure the quality of public services due to budget limitations resulting from a political unwillingness to raise taxes. By 2050, there are more or less separate private and public lines of public services such as education and healthcare. This

slowly leads to the practice whereby social and professional opportunities are inherited from the parents for the largest part of the population. Shifting between the classes is only possible for the most talented individuals.

Brain Sweatshop

Recovery measures for the 2010 economic depression fail and the western economies prove to be unsustainable. A prolonged slowdown of the global economy leads to the domino effect of collapsing western economies, which kills western capitalism. Chinese capitalism is the new form of international trade and business. Western countries try to keep the research and educational level high to compete with the Chinese but it is not quite successful. Finland, as well as other European countries, become a cheap 'brain sweatshop' for Asian investors and leaders. The educated Finnish working force mainly produces semi-demanding design and engineering solutions and services that can be easily electronically transferred form one place to another. The most talented individuals move to Asia for better career opportunities. Western Europe becomes something like India was for Westerners at the beginning of the millennium. Less educated young Finns find it difficult to accommodate themselves to working life. There is a very high level of youth unemployment, which becomes very expensive for the government at the time. Also, a critical mass of frustrated youths becomes violent, paralysing many societal traditions and structures.

Generation Change

By the end of the 2040's, most of the baby boomer's generation have passed away. Along with them disappears the hegemony of a generation who has had a notable impact in society, and who have held widely accepted common values and beliefs. The relatively homogenous Finnish identity deteriorates and is replaced by subcultures and "value shopping." People identify themselves more and more through subcultures and peer groups, such as music style fan groups and other entertainment fan groups (e.g. manga); professional groups; hobby groups; life-situations (e.g. Young families); or political passions. People tend to switch these 'reference groups' very fast. International companies and brands can establish a central position as the symbol of certain groups. There is no uniform value basis or leading institutions in society, but rather a puzzle of multiple pieces that interact. The life circles of different groups become more isolated and a nationwide common experience of 'being Finnish' does not exist – it is not even yearned for except in marginal groups.

End Of Party Politics

The turn-out of voters in elections continues to decrease, as well as the membership of political parties. Traditional parties lose their legitimacy and single-issue movements become more active players in political decision making. There are a variety of issues attracting a critical mass to estab-

lish a movement, such as "no to abortion," "more nurses for the elderly," "no to nuclear power," etc. Political structures are reorganised and new ways for direct democracy, like interactive planning procedures, are introduced. For example, "open source wiki-applications" are used in city and budget planning.

Church In Crisis

The Lutheran Church enters into a legitimacy crisis, since it does not manage to follow the liberal public opinion regarding, gay marriages or women priests, for example. Roughly half of the population are still members of the church, but the trend is declining. Even fewer people practice the religion. The Lutheran state-church system is abolished. In schools, religious education is replaced by ethics and philosophy. Other forms of Christian churches as well as other religious groups (including traditional animistic religions) gain moderate popularity, but the major winners are atheistic trends. In general, religion is becoming less and less significant in society.

Climate Conflicts

Climate change reinforces existing drivers of conflict and therefore threatens achieved development across many countries. Geopolitical tension also increases due to the diminishing availability of natural resources. International cooperation drifts in a lock-up situation and nations turn inwards. Finland finds itself in a situation resembling the situation in the 1960's, 1970's and early 1980's when geopolitical tensions were higher and when economic activities were heavily regulated and guided by the government. Industrial production relies on domestic raw materials. Competition between countries is fierce and various protectionist measures such as high tolls on imports are introduced. The highest earning people suffer a notable drop in their incomes and the overall income level declines. The level of income distribution decreases, since government interventions secure jobs and income for most citizens. The majority of people turn to traditional values of 'home, church and the fatherland'.

Delivering Sustainability Bibliography

20 20 by 2020: Europe's Climate Change Opportunity. Commission of the European Communities, 23 Jan. 2008. Web. 11 Jan. 2010.

Finland 2007 Review. Paris: OECD/IEA, 2007. Print.

Finland's Fifth National Communication under the United Nations Framework Convention on Climate Change. Rep. Helsinki: Ministry of the Environment and Statistics Finland, 2009. Print.

Global Climate Change Policy Tracker: An Investor's Assessment. Publication. DB Climate Change Advisors, Oct. 2009. Web. 01 Mar. 2010.

Government Foresight Report on Long-term Climate and Energy Policy: Towards a Low-carbon Finland. Vol. 30/2009. Helsinki: Prime Minister's Office, 2009. Print.

Statistical Yearbook of Finland 2009. 2nd Revised ed. Vol. 104. Helsinki: Statistics Finland, 2009. Pdf.

Sources for scenarios

Ympäristön tila Suomessa 2008:
> ➢ http://www.ymparisto.fi/download.asp?contentid=98319&lan=fi

Työmatkojen pituus kaksinkertaistunut 20 vuodessa (s.10)
Työmatkan pituus:
> ➢ http://www.findikaattori.fi/70/
> ➢ http://pxweb2.stat.fi/Dialog/varval.asp?ma=tyoma_tau_101_
> fi&path=../database/StatFin/lii/tyoma/&lang=3&multilang=fi

Väestörakenne tähän asti:
> ➢ http://www.stat.fi/tup/suoluk/suoluk_vaesto.html#Vaestorakenne

Väestöennuste:
> ➢ http://www.stat.fi/tup/suoluk/suoluk_vaesto.html#Vaestoennuste

Population by age and gender 2050, projection 2009:
> ➢ http://www.stat.fi/til/vaenn/2009/vaenn_2009_2009-09-30_
> kuv_003_en.html

Väestöennuste 2009–2060:
> ➢ http://www.stat.fi/til/vaenn/2009/vaenn_2009_2009-09-30_
> tie_001_fi.html
Työministeriö (2007). Osaamisen ja täystyöllisyyden Suomi.
Työvoima 2025.

➤ http://www.mol.fi/mol/fi/99_pdf/fi/06_tyoministerio/06_
julkaisut/06_tutkimus/tpt325.pdf

OPH (2009). Koulutus ja työvoiman kysyntä 2020.
Tulevaisuuden työpaikat – osaajia tarvitaan.
➤ http://www.oph.fi/instancedata/prime_product_julkaisu/oph/
embeds/46470_koulutus_ja_tyovoiman_kysynta_2020.pdf
(262s.)

Suomi vuonna 2050 – visioita tulevaisuudesta (2008).
➤ http://www.minedu.fi/export/sites/default/OPM/Tapahtumakal-
enteri/2008/10/Ennakointiseminaari/Vanhanen.pdf

TEM (2009). Suomen aluestrategia 2020, kalvosarja.
➤ http://www.tem.fi/files/24519/Suomen_aluestrategia_2020_-
Veijo_Kavonius.pdf

Kaupunkiväestön tieto:
➤ http://www.kunnat.net/k_peruslistasivu.
asp?path=1;29;374;36984;148786

VNK (2009). Yhdessä ja erikseen – Maailma ja Suomi 2010-luvulla.
Toimintaympäristökuvaus ministeriöiden
tulevaisuuskatsausten taustaksi.
➤ http://www.vnk.fi/julkaisukansio/2009/j33-yhdessa-ja-erikseen/
pdf/fi.pdf (158s.)

Skenaarioita sosiaalimenoista.
Terveyden edistämisen vaikutukset ja analyysimallin esittely.
➤ http://www.stm.fi/c/document_library/get_file?folderId=39503&
name=DLFE-7307.pdf

EVA (2009) Evan Globaalit skenaariot: Tulevaisuuden pelikentät.
➤ http://www.eva.fi/index.php?m=2&show=373

End notes

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This challenge briefing has been prepared in advance of the Helsinki Design Lab Studio on Sustainability held on May 24th through the 28th in Helsinki, Finland.

Sitra, the Finnish Innovation Fund, is responsible for organizing the Helsinki Design Lab in cooperation with other key partners. Sitra is an independent, publicly funded body which, under the supervision of the Finnish Parliament, promotes the welfare of Finnish society. Since its establishment, Sitra's duty has been to promote stable and balanced development in Finland, the qualitative and quantitative growth of its economy, and its international competitiveness and co-operation. Our activities are governed by a vision of a successful and skilled Finland. We have always operated with a strong belief in the future and in the ability of innovation to benefit society.

HDL is a continuation of Sitra's long-term activities in making design a key driver in building the Finnish society and the innovation system. Sitra's first design-related event was held in 1968, when it sponsored the Industrial, Environment and Product Design Seminar (HDL1968).

Sitra will sponsor three studios during the summer of 2010 which each bring a group of six to eight top international designers and key experts to spend an intensive week in Finland "charretting" on a given studio topic. With access to key decision makers relevant to their area of inquiry, these teams will be charged with developing a strategic road map and a top ten list of possible action items.

Extending Well-Being

Rethinking welfare for an ageing society

An HDL Challenge Briefing

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What follows is a complete re-printing of the Challenge Briefing issued to the Ageing Studio. For more about the studio and its outcomes see > PP 74-83.

For more about the style, role, and format of Challenge Briefings see > PP 97-99

As the average age of many societies in the developed world steadily rises, the basic assumptions of daily life are being rewritten. This change affects not only the members of this ageing population, who are facing increasing competition with a constantly growing peer group, but also by those individuals and communities who provide care and support for the elderly. As Baby Boomers retire, every level of society will be affected—from the individual to the institutional—with particular attention focused on the interfaces between these different groups.

The coming of this "Silver Wave" is coincident with broader structural changes occurring globally. Post-war welfare institutions are subject to additional stresses as they confront unfamiliar conditions such as expanding markets and competition, increasing diversity and fluidity, and new understandings of citizenship, participation, and social relationships. Welfare systems will have to evolve along with the constituencies that they serve if both are to continue with dignity into the twenty-first century.

The Nordic Model has garnered particular attention because of its manifold successes. Tight integration into social fabrics and deep penetration into economic foundations make the Nordic Model unique among welfare systems. It is unclear if such a structured, embedded model is flexible enough to accommodate the onset of these structural challenges.

Models that prove too rigid or brittle will likely fail under mounting pressures. An agile response will require that the "how" be as flexible as the "who" is diverse and numerous. Success suggests three major shifts:

- Broadening the emphasis of care beyond institutions;
- Repositioning our understanding of the elderly as a norm rather than the exception;
- Intensifying our attention to social wellness in addition to biomedical health.

The future of social welfare systems—their scope, structure, and form—is in flux as societies continually struggle to provide for the well-being of all its citizens. This state of flux is particularly important as the Silver Wave fundamentally shifts the dependency ratio, a term used to describe the balance between productive and dependent members of society.

Providing adequate care for the elderly, while also preserving their dignity, will be one of the earliest challenges for existing welfare systems. Handling the ageing challenge will yield broader insights for understanding how society at large cares for itself. Harnessing the untapped potential of the elderly as a value-producing segment of society, rethinking societal and institutional roles and responsibilities, and devising new ways to measure progress and set targets constitute key areas for future development.

The basic terms of the discussion remain open for definition. For instance, "old age" can be described in a multitude of ways: although a biological definition may be the easiest to evaluate, it can also be limiting. To recast ageing as an opportunity rather than as a problem—to change the very understanding of "elderly" is where we must start any conversation about the future of these welfare systems and the populations they support.

OPPORTUNITY SPACE

With one of Europe's most rapidly ageing populations, Finland faces a daunting challenge in light of the imminent retirement of the Baby Boomer generation. The onset of sudden strains and intense pressures specific to Finland will draw increased attention to shortcomings of the existing welfare system.

However, the challenges put forward by this condition present Finland with a unique opportunity of unprecedented scale: Given its long history of fostering innovation and growth, Finland is in a perfect position to capitalize on the pressures created by this challenge and channel them towards the production of new areas of expertise and prospects for growth.

The imperative to act quickly and the impetus to respond fully to the challenge ahead will inevitably create substantial momentum toward changing how Finland provides for the welfare of its citizens. If this momentum can generate more than a simple solution to the immediate problem, the opportunity to restructure the welfare system will generate new benefits for Finnish society as well as constitute valuable strategies that can be used by other nations with similar ageing populations.

Finnish society, and its elderly population in particular, are key assets in this challenge. As a nation that values strong family bonds, one important element for enhanced social approaches to care is already in place. A powerful cultural work ethic also offers the opportunity to shift labour out of a binary notion of career and retirement to a "downshift" model of phased transition. This stepped phasing would ease the overall impact of Finland's dependency ratio in a culture whose tendency for consensus-based action often results in a reluctance to act until the establishment of a proven path.

Because the social contract underlying the Finnish welfare system (a contract common to other Nordic welfare states) ties generations around service providing structures, the overall health of the Finnish welfare state is heavily contingent upon the balance between its productive and dependent members of society.

The social contract will be tested as the dependency ratio rapidly increases, doubling within the next thirty years. The magnitude of coming pressure threatens to render traditional operations ineffective; practices such as targeting tax raises on the actively working populations is financially impossible, while lowering the scope of welfare services is socially unpalatable, and increasing immigration, improving efficiency, and other quick fixes seem unlikely.

If Finland hopes to successfully counter these pressures while exploiting the opportunities presented by this challenge, it must first find a way

to hedge risk with competitive growth. Finland must embrace a strategy for capitalizing on the opportunities presented by its ageing population in a manner that is more social than institutional in nature; it must invest in the renewal and redefinition of the social contract between generations.

In order to create value potential, Finland must rethink how and why it delivers welfare services to the elderly, as well as redefine a general understanding of the term "elderly." This will necessitate innovation in the broadest understandings of the role of the elderly within society. It will require evaluation and adaption of how the elderly population is integrated into all aspects of their surroundings such as, their position in the overall social fabric, the character of their consumer presence, their location within the built environment, and the means of their political participation.

Finnish society must find a way to embrace the notion of a healthy, productive, independent, and connected old age for its citizens as a means to change the very way that ageing is understood. Improvements to the elder care system must involve the full participation of all levels of society so as to provide a more robust societal support network. The elderly must be reintegrated into the rest of society in such a way as to preserve their dignity without adding additional strains on the welfare system.

THE CHALLENGE: FINLAND AT THE FOREFRONT

While the coming retirement of the Baby Boomers is a global occurrence affecting countries worldwide, the event is of particular significance in Finland, a country where a large segment of the population is projected to age rapidly over the next twenty years. Finland's integrated, comprehensive welfare system will be the first to experience meaningful pressure from the worldwide increase of the elderly population. Here in Finland, the magnitude of the pressure will strain the welfare system more seriously than elsewhere.

Awareness of this mounting pressure is spreading throughout Finnish society. Currently, the problem is discussed in essential economic terms: Retiring Baby Boomers will create a sustainability gap in the national budget if the dynamics of the situation are not changed. Proposed solutions are often accordingly framed in economic terms.

The most serious strategies for addressing the situation generally involve one or more of the following three propositions: tax increases, reduction of the scope or quality of services, and an increase in systemic efficiency.

Such proposals have yet to produce realistic responses to the situation because they are either economically unfeasible (i.e. Increasing the welfare burden of the working population) or socially unacceptable (i.e. Challenging the provision for universal welfare coverage). Other proposals, such as increasing the immigration rate or encouraging rapid economic growth, remain implausible quick fixes for the challenge at hand.

As a result, Finland continues to lack a meaningful strategy of significant momentum to address the issue raised by the presence of a rapidly ageing population. The challenge facing Finland, and this studio, is to develop a feasible strategy that dramatically re-frames the dimensions of the problem so as to reveal previously unseen opportunities. Such a strategy has the potential to mobilize society and provide the tremendous force necessary for positive change.

Harnessing The Momentum

Underlying the economic principles that describe the state of the Finnish welfare system is the social contract between generations. This contract, which lies at the root of both the challenge and the solution, dictates the terms of the very relationship that will be strained by the retirement of the Baby Boom generation.

This social contract should be the first point of consideration for the development of any strategy designed to address the support of Finland's rapidly ageing population. Potential strategies will have to account for both

participants in the relationship: the working population that is currently supporting the welfare system, and the retiring population that is becoming dependent on it.

To dramatize the problem, the dynamic between the welfare system and its beneficiaries will have to be altered radically. Balancing the inputs and outputs that feed the current system is one option, but Finland may also seek to redefine the entire system in such a way as to create a new relationship that encompasses a satisfactory balance.

At the most elemental, such a redefinition must create new value if it is to produce a balanced system. Turning to the elderly—the fastest growing segment of the population—as the potential source of this new value is the most logical. The elderly cannot be considered a negative variable in the welfare system, a criteria that compels basic structures to be altered so that ageing individuals become a positive contributing segment of the community.

Finding A Strategy For Producing Value

The untapped potential value of the elderly population in Finland is both economic and social in nature. The elderly should be given the opportunity to capitalize on their value potential rather than simply be cared for by the welfare system.

Strategies such as raising the retirement age or extending functional capacity to delay retirement are too simplistic. The challenge demands the creation of a more nuanced strategy that recognizes and capitalizes on types of value that are not immediately quantifiable in economic terms. This strategy must engage a range of different components and scales of Finnish society, and address different structures and constituencies through a variety of understandings and frameworks.

A rich, multifaceted strategy should begin by addressing some of the following structural concerns:

The strategy must strike a balance between social and medical approaches to understanding and interacting with the elderly. Integration of these two ways of thinking and acting will correctly frame the challenge by combining qualitative understandings of the elderly situation with more analytical, medical ones.

▷ The strategy must also find a balance between social and institutional proposals. Concentrating the focus only on institutional actions will prove too inflexible and costly. A purely social focus will lead to a thin, unrealistic solution. The strategy must consider distributed, subtle, social solutions in addition to centralized, clear, institutional ones.

➤ The strategy must also engage all parties with the political system. If the strategy is to succeed, various constituencies must be able to partake in its creation and implementation. Political notions of citizenship, rights, privacy, individuality, family, social network, and disciplinary structure will need to be addressed. Encouraged by the need to redefine the means and modes of democratic participation, dramatic government overhauls are currently underway. Any successful strategy must consider how the working and elderly populations will position themselves and participate within the political system of the future.

➤ The strategy must involve other groups into the discussion. Beyond considering the elderly and working populations and the government that runs the welfare system, the strategy must foster meaningful connections with private enterprise, volunteer groups, the church, and other groups that hold prominent positions within society, groups which have in the past been often overlooked or undervalued in the discussion. The potential for meaningful contribution by these groups is increasing as welfare structures open up.

➤ The strategy must operate at scales that range beyond the typical rigid landscapes of systemic care. Finland requires a strategy that captures how the elderly fit into the larger urban ecosystem, that recognizes that well-being is defined by surrounding environments, contexts, mobility, infrastructure, networks, and communication.

➤ A successful response to this challenge will require coming to terms with the reality of old age moving from the exception to the norm. As society ages with the Silver Wave, issues typically reserved for "the elderly" will move beyond the confines of a single population. Increasing the well-being of the elderly could dramatically redraw the fundamental balance of the social welfare system. Such a change would counteract the coming wave and lay the groundwork for a more sustainable care system that would involve institutional, social, and individual models in a cooperative and productive balance.

KEY DIMENSIONS

Provided below are a number of key dimensions to the ageing challenge. This list is by no means exhaustive and exploration of additional dimensions is encouraged.

D1—The Looming Wave

The Baby Boom generation is approaching retirement age. In Finland, as the retirement population surges, a significant shift in the demographic balance will have profound effects on the structure of the Finnish welfare system.
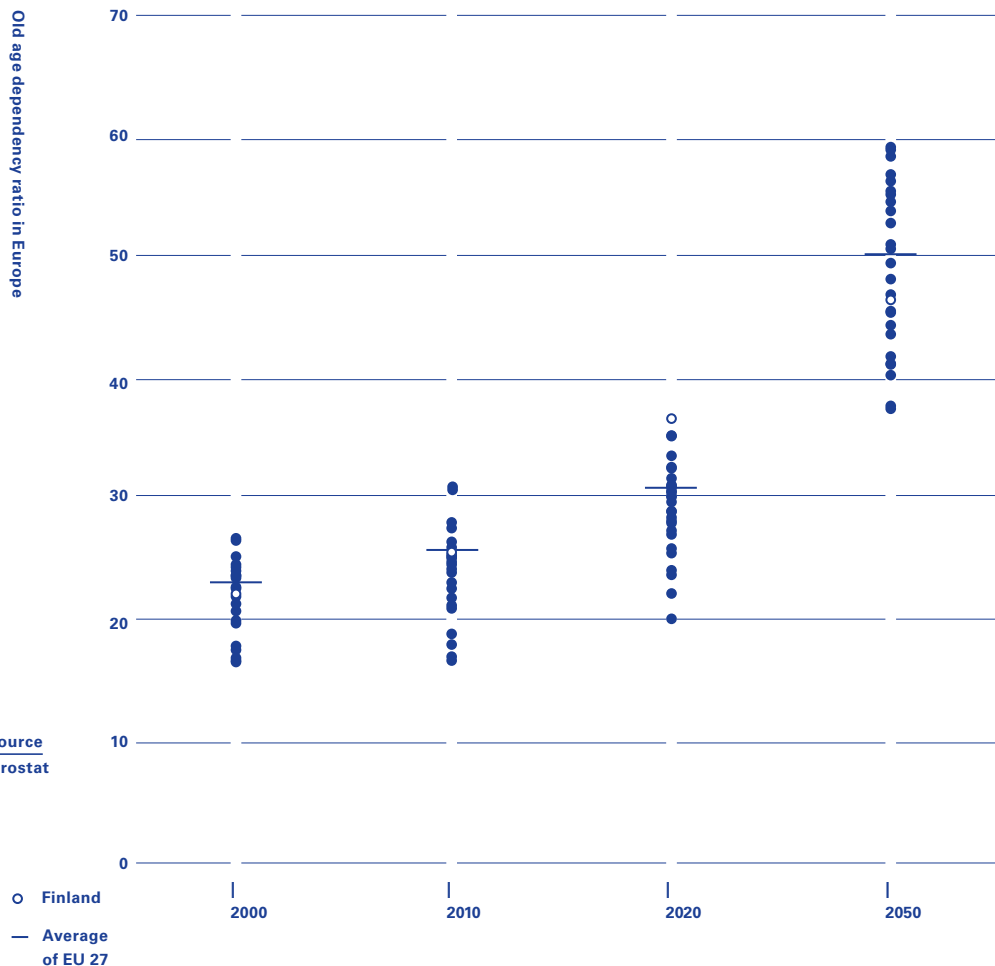

Population of Finland by percentage that each age cohort represents. 2009 based on actual data; 2020 and 2050 based on projections.

Source
Statistics
Finland

The estimated increase in the number of individuals over sixty-five will rise from 16% of the overall population to 26% by 2030. At the same time, the proportion of the population under fifteen will decrease from 17% to 15.5% by 2040. This represents the effective doubling of the dependency ratio by 2030. (Statistics Finland)

The retirement of the Baby Boomers will produce a critical imbalance between the number of working and non-working citizens. This imbalance will in turn produce a sustainability gap in the national budget. While it is unrealistic to propose a particular figure that could close this gap, it remains clear that if everything is held constant, the retirement of the Baby Boomers will create long-term systemic deficits regardless of which under-lying assumptions are made.

70

60

50

40

30

20

10

0

○ Finland

— Average
of EU 27

| | | | |
2000   2010   2020   2050

2010-2050 based on projections.

Average net contribution per capita in Finland by age

Net social contribution

20k EUR

10k EUR

Net social cost

-10k EUR

-20k EUR

-30k EUR

-40k EUR

| | | | | | | | | | |
0-4   10-14   20-24   30-34   30-34   50-54   60-64   70-74   80-84   >90
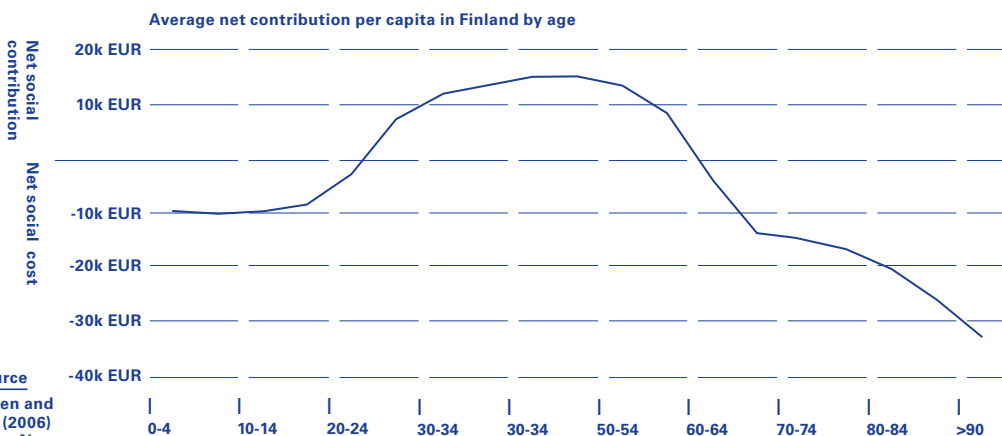
The difference between tax payments (of
various kinds) and the value of transfers and
individual services received.

D1.1 Origins Of The Wave

The Silver Wave is a particularly large population for a certain genera-
tion. This imbalance is a consequence of the confluence of a number of fac-
tors: extremely high fertility rates after World War II, steadily increasing
life expectancy, and dramatically declining infant mortality rates. Addi-
tionally, the fertility rate has remained below the replacement rate for more
than a generation, so more people are exiting the workforce than entering it.

At the end of World War II, the number of births in Finland reached
a historical high. September 1945 saw an all-time record of 12,000 births
in a single month, while 1947 set a record with 108,168 total births. At that
time, the national fertility rate was 3.5 births per woman and has dropped
to 1.8 births per woman, a figure that has been constant for the past three
decades.

Life expectancy at birth and total fertility rate in Finland, 1960-2050
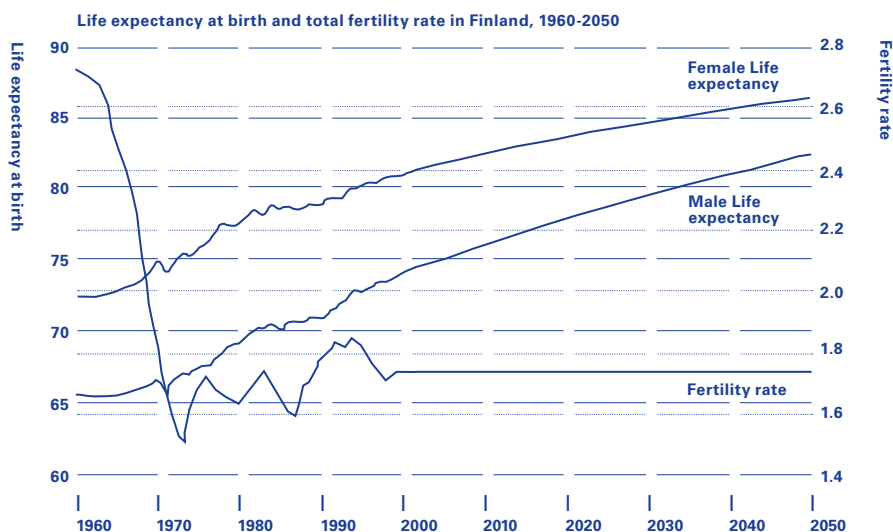
Data from 2001-2050 is projected

Since World War II, the life expectancy of Finnish citizens has been on
the rise. After national independence, life expectancies for men and women
have risen from 43/49 to 76/83 years of age, and represent one consequence
of a dramatic increase in the Finnish standard of living. With its history
of innovation, Finland has managed to address life-threatening problems
such as a very high incidence of cardiovascular disease (especially among
men). During the post-war and post-independence period, Finland has also
significantly reduced its infant mortality rate, which is currently one of the
lowest in the world at under 0.5%. (Statistics Finland)

D1.2 Previous Effects Of The Silver Wave

Combined, these demographic trends have created a significant "surge" in the graph of population size versus age. As the Silver Wave ages, it moves along the graph, placing stress on various aspects of the Finnish welfare system. Although the ageing of the Silver Wave population presents a significant strain to the Finnish welfare system, retirement is not the first time that the system has felt the effects of the Baby Boom generation's size.

As the Baby Boomers entered the workforce in the 1960's and 70's, they also created substantial pressures. Internal migration in Finland increased dramatically as the population moved to towns and urban centres in search of work. This trend reached a high point in 1974, when over 275,000 people (nearly 6% of the country's total population) changed municipalities. (Statistics Finland)

The labour market was unable to accommodate such a significant influx of people, so emigration from Finland also increased dramatically over this time period: hundreds of thousands of people left Finland for Sweden. As a result, in the mid-1970's, Finland experienced its first population reduction in over three decades (since 1940). Though emigration later ceased, Finland has experienced lower immigration rates than other European markets as the Baby Boomer population continues to provide a constant source of readily employable labour. (Statistics Finland)

D1.3 Who Are The Baby Boomers?

Eventful historical developments that occurred at critical times for the Baby Boomers seem to bind them as a generation. The radical social changes of the 1950's and 60's have cast them as a generation of change or upheaval. Their generation also benefited from increasing access to education, expanding labour markets, migration towards urban centres, and social mobility.

The Baby Boom generation is often seen to be in opposition of the more conservative values of preceding generations. They are the first generation to embrace the openness and mobility of an increasingly global society; they lived through the expressive revolutions of the twentieth century.

Baby Boomers are also defined by conspicuous consumption. They have lived primarily in times of economic growth, full employment, and increasing materialism. The Baby Boom generation grew up in world defined by the engine of consumption, and as a result they have been able to successfully exploit the agency that is attached to consumer choice.

Finally, it is worth noting that the Baby Boomers are the first children of the social welfare system. The Finnish welfare system developed lockstep with the Baby Boomers, the first generation to receive child benefits; the

first group of dependents of the social contract between generations that defines the Nordic Model. The fates of the Baby Boom generation and the social welfare system have been tied together since their inception, and will continue to be intertwined well into the future.

D1.4 Preparing For The Wave
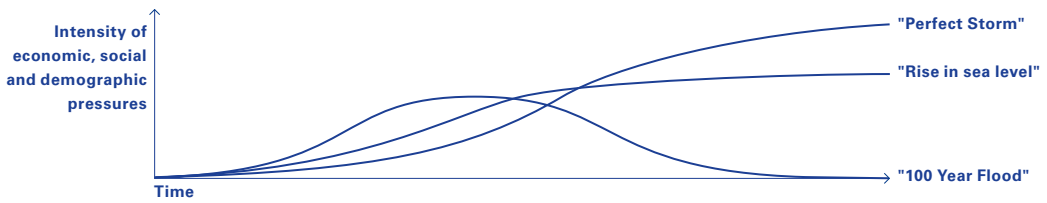
The following three descriptive models are conceptual starting points for considering the pressures that the Silver Wave will put on the welfare system.

The hundred-year flood: The Silver Wave can be likened to a coming flood, a finite surging and receding of demographic, financial, and social pressures. In this situation, is it better to prepare for a one-year flood, a ten-year flood, or a hundred-year flood? With short-term preparation, in the case of the one-year flood, one risks being swept away by a larger swell. Preparation for the hundred-year flood creates risks of bankruptcy through excessive expenditure. Should the Silver Wave be considered a temporary challenge to the welfare system—however long in duration—that will eventually recede? How can solutions be scaled up and down accordingly?

The Rise in Sea Level: If the surge is not temporary, it may be likened to a permanent rise in sea level. The changes demanded by such an event would imply the occurrence of deep and permanent paradigm shifts. Is it constructive to view the ageing issue as demanding a permanent paradigm shift that will irrevocably alter the structure of the welfare system? If so, how does one prepare a system for such a dramatic structural realignment?

The Perfect Storm: Perhaps the Silver Wave represents the incredibly unlikely confluence of a number of different powerful variables, one that may be compared to a perfect storm descending upon the Nordic Model. While it may be unreasonable and even impossible to adequately prepare for such a scenario, the severity of its potential effects demand that it be considered and that preparations be made. Is it meaningful to cast the challenges of the Finnish welfare state in such a drastic light? (One where the only option is to prepare for the total replacement of the welfare system?) If so, how does one design a new system and still retain aspects of existing system?

D2—The Welfare Landscape

For the elderly in Finland, the welfare system is a complex landscape of services, relationships, and physical places. As individuals move beyond retirement age, the features of this landscape will define ever greater portions of their journey—from where one lives, to what one eats, to defining how and with whom time is spent.

Individual paths through this landscape are unique; each journey is determined by a constant interaction between the elderly individual and the available options provided by the welfare system. Like individual health, pathways through this landscape are often complex and non-linear.

Individual

Income   **Employee Pension, National Pension, Housing Allowance, Care Allowance**

ASSISTANCE

Advice	- Advisory Center	
Community Help	- Private - Volunteers - Neighbors - Family	
Government Help	- Home Care - Home Service	- Home Nursing - Meals-on Wheel - Transportation - Security & Coping - Clothing & Cleaning - Social Participation
Preventive Home Visit		
Day Service	- Stimulation - Exercise - Social Interaction	

HEALTH CARE

- Health Center
- Home Nursing
- Service Housing Nursing
- Special Dementia Service

HOUSING

live in an institution	- short term care - long term care - part time care	- nursing home - a bed in a health center - a bed in a specialized health facility
live in service housing	- individual service flat - service flat cluster - service block	- may be intensive care (24hr) - special group homes for dementia patients

live at home	- live with others
	- renovation grants
	- informal care support
	- live alone
	  dementia is a real problem here:
	  75-84: 10,7%
	  >85: 35,0%
		- live in cooperative
		- live with family

D2.1 Defining The Landscape

The defining features of this welfare landscape map onto the features of the real landscapes of Finland in which it is embedded. This landscape is described by the structures and properties of the built environment, the infrastructural network, the social fabric, and the product and service delivery systems of Finland.

Therefore, understanding the structures and properties of the urban, suburban, and rural ecosystems of Finland is the key to engaging the welfare landscape. In order to begin strategically rethinking the welfare system of Finland, one must begin by considering the designs of the various environments in which it is situated.

Based on the conclusions of a Social Services Needs Assessment—a basic right, conducted by a panel of experts at age sixty-five or older—as an elderly person begins his journey across this landscape, he faces a bewildering array of possibilities as to how his life will be framed and choreographed during the ageing process.

D2.2 Physical Environments

The question of where to live is perhaps the most fundamental decision affecting the elderly and the infrastructure systems connected to these environments. The primary options of living at home, in service housing, or in an institution are each located within different urban, suburban, or rural contexts. Together, these factors determine an elderly person's surroundings and their mobility options.

Live at Home

The option to remain at home is currently the one favoured encouraged by the Finnish government. As stated by the Ministry of Social Affairs and Health's National Framework for High-Quality Services for Older People, the nationwide goal for 2012 is to have 91%-92% of persons over the age of seventy-five living at home. As of 2006, the reported figure nearly met the goal as a recorded 90.1% figure (Facts about Social and Health Care).

Living at home is defined as living outside of the welfare state's physical care infrastructure (composed of institutions such as retirement homes and hospitals). Home living is characterized by independent living within one's own apartment, with a family member or within an informal cooperative.

Persons unable or unwilling to live at home, even when a supporting network of home care and support services is available, will likely opt for a residence where care and services are more explicitly and tightly integrated into the design of the living environment. There are a number of different types of such facilities, whose entry is generally contingent upon the

specifics of the potential resident's physical and mental condition, or the functional capacity.

Residence within such a facility generally becomes more expensive, complex, and restrictive as the individual's independence declines. As of 2005, 6.9% of the Finnish population over sixty-five was dependent on institutional care and services; this figure is the smallest among the Nordic countries, with Sweden at 7.0%, and Norway, with 11.7% (Facts about Social and Health Care).

Service Housing

An elderly person residing outside the home may chose between two primary types of care facilities: Service housing (or sheltered housing), is one type of residence in which a full suite of care and services are available (on demand); in some cases such care is provided on a 24-hour basis in those facilities that offer more intensive care. Service housing exists as individual, clusters, or entire blocks of such apartments.

As of 2007, approximately 29,300 people sixty-five and over lived in ordinary service housing, while 2.3% lived in 24-hour service housing (Statistical Yearbook). This percentage has steadily increased, having more than doubled from 2000 to 2007 (Statistical Yearbook. During the past decade, this 24-hour type of institutional care is the only one to have experienced an increase in Finland. It is also a relatively new form of care that yet to be officially defined.

Institutional Housing

An elderly person in need of the most complex or comprehensive integrated care may chose to live in an institutional environment. Such institutions offer part-time, short-term, or long-term care, and include nursing homes, general health centres, and specialized health facilities. An individual that typically enters such a facility due to specific medical and social conditions that demand a very particular forms of institutional care.

For example, most nursing homes and health centres have a significant long-term population that is suffering from dementia, which is very prevalent amongst the oldest of the ageing population (10.7% of those over seventy-five and 35% of those over eighty in Finland (Health in Finland)). As of 2005, 45% of the patients in nursing homes, and over 53% of the long-term patients in health centres, suffered from dementia (Statistical Yearbook). These residents live within special parts of the institutions that have been designed to accommodate the particular needs associated with dementia.

D2.3 Social And Service Networks

An elderly person also faces an array of options concerning the social fabric and service networks they will be connected to—who provides the care and services for their well-being? The primary support sources are provided by institutional systems, from independent social networks, or a hybrid situation such as a home care system. These systems will determine an elderly person's social context and service environment. These options are combined with the different physical environments above for a range of possible permutations.

Home Care

An elderly person who lives independently is still able to receive a range of different services and nursing care through the home care system. Care available at home ranges from yearly preventive visits to daily procedural visits. As of 2004, 10.6% of people over sixty-five living outside of institutions received some form of daily assistance within the home (with 3.6% receiving 24-hour care), while 74.8% received little to no help at all (Health in Finland 55, figures reported on the male population, but those for women are similar, though slightly lower). Assistance fall into a number of different categories, which are based on the type and scope of services provided.

The government has typically made a distinction between home services and home nursing (which are now merging under the umbrella concept of home care) primarily based on the level of the qualifications of the service providers. "Nursing" may include technical medical assistance and mental or physical rehabilitation, while "Services" might include meals-on-wheels, transportation, or laundry and cleaning services. In addition to these services, there are other "day services" that include programmemed activities aimed at encouraging social interaction or exercise.

Social Networks and Informal Care

In addition to governmental home care services, an elderly person living alone or with family might receive more informal types of assistance from their surrounding community and social network. Assistance at varying levels of formality might be provided by family members, the community, volunteers, or even private organizations. If an elderly person lives with others or has caretakers, care services may be financed by the government through informal care allowances. For those elderly living at home, the government offers different types of assistance in order to encourage independence and self-sufficiency.

In addition to different types of direct assistance, the government tries provide access to indirect assistance in the form of renovation grants, which may be applied to home modifications that are better adapted to accommodate physical needs, or informal care support allowances for family mem-

bers or others who are assisting in the care of an elderly person living at home. As of 2007, approximately 3.9% of the population above seventy-five was receiving informal care support, and this number is currently increasing with a government target of 5-6% by 2012 (Statistical Yearbook).

Institutional Care

In institutional facilities, care and services are part of a total environment design; A resident will receive the care and services they need, most of the time on-site. At health centres and specialized facilities that operate like hospitals, daily medical care structures dominate a resident's routine, with less emphasis placed on engaging the social components of an elderly resident's life. The services in such facilities are usually determined to first address direct medical concerns, with softer, social criteria as secondary concerns. Depression and loss of appetite are the sorts of general health decline experienced by residents, conditions which may be the result of general complaints from residents in such facilities. These complaints may include stifling routines, inconsistent caregivers, and isolation from meaningful social networks.

In a typical nursing home, while residents have individual rooms and receive individual care, they also spend their time in common spaces, dine together, cohabiting and sharing services with those of similar functional capacity. Medical care is integrated into daily routines accordingly: residents are encouraged to choose and prepare their own meals, determine their own schedules, and participate in activities as they choose; residents with dementia often live in more controlled environments with more structured care.

It is the general philosophy of the more progressive facilities to use care and service delivery as an opportunity to encourage independence and self-sufficiency in the residents. At such institutions, nurses are encouraged to propose their own small innovations in helping residents improve their functioning, increase daily enjoyment, and maintain their independence, daily routines, habits and level of comfort in a manner similar to what they experienced at home. These procedures are then shared among nurses for bottom-up development, while simultaneous top-down procedures are implemented.

In nursing homes, where common spaces are open to residents, a dining facility might be open to the public, allowing guests and residents to dine together, and be designed like a restaurant so as to encourage some level of integration between the institution and the surrounding community. Residents may also receive taxi subsidies or participate in group activities, such as shopping or museum visits.

Such principals and practices reflect a general attempt at making the nursing home experience in Finland as similar to home living and home

care as much as possible. It is generally believed that home care is the ideal solution for an elderly person. Hope of returning home at some point, however wishful, is one of the driving sentiments in the nursing home environment.

Hybrid Care

Sheltered housing (both daily and 24-hour) combine the independence and social network connections supported by home care with the inclusive, structured environments of nursing homes and other similar institutions. It provides a suite of inclusive services in an environment that is intended to be more reminiscent of a resident's previous house or apartment and feel less like an institution, and as such is more integrated with the surrounding built and social environments.

This hybrid condition takes on the form of differentiated groups of appropriate apartments clustered by care needs and embedded in a flexible service network. Services and experiences are in line with those of home care, with residents receiving a customized suite of services in an independent apartment that is both tailored to individual needs and well-integrated with the surrounding area. This relatively new type of elder care environment remains somewhat loosely defined, and is still developing as a service and care archetype.

D2.4 Cities

Combining concerns of housing and services as well as mobility, civic participation is the question of larger settlement patterns. How gracefully do our cities age and how easily can they accommodate an ageing population? The paired trends of urbanization and societal ageing put increased pressure on cities as a key site of innovation opportunity. Conceived in 2005, The World Health Organization's Age Friendly Cities programme seeks to foster global attention to these issues by providing a set of key indicators ranging from the built environment to political engagement.

D2.5 Developments In Care Systems

In Helsinki, nursing home services and structures are being altered as medical and social care become more tightly integrated at the administrative levels. As a result, nursing homes are expanding and becoming more versatile service centres that are more closely integrated with home care and home service organizations and infrastructures.

One objective is to formalize aspects of the expanding home care network while impart some level of flexibility and customisation to the institutional care system. In general, the home care system, which includes services and nursing, is seen as the ideal model, one that more institutional systems should try to emulate.

D2.6 Excessive Institutionalization

The long-term care of patients within health centres and specialized health facilities has been of particular concern in recent years due to its perception as an inefficient and source of major financial strain within the elder care system. In 2007, over 10,000 patients in long-term care in health centres and specialized health facilities required over 6.5 million care days during the course of one year (Facts about Social and Health Care).

There is concern that the abundance of available beds in these facilities is actually a negative factor detracting from the level of care an elderly person may expect. An individual entering an institution in need of only minor care, may rapidly deteriorate and eventually require long-term institutional care when or if they become isolated and restricted within the system,.

D3—Beyond Functional Capacity

Contemporary research suggests that an elderly person's well-being can be judged by two major indicators, one related to medical issues and one to social issues:

1. The condition of their musculoskeletal system.
2. The robustness of their social networks.

Current government policy in Finland echoes these assumptions: the primary objectives of the government in providing care for the elderly are to increase the functional capacity of the elderly, maintain their independence, and promote their involvement in society. (National Framework for High-Quality Services for Older People)

In order to maintain functional capacity, independence, and involvement, care must address both medical and social issues. Care for the elderly therefore straddles the line between two traditionally distinct disciplines. Health and social services are often separated in Finland, in terms of philosophical underpinnings, to training regimes, to the service structures of administrative policies.

The difficulty of the situation is generally recognized at most levels of the welfare service structure. For example, Helsinki is currently in the process of trying to combine their Health and Social Services departments into one coherent unit. Yet, if Finland is to achieve its goals with regard to elder care, it will have to do more than simply close this divide. The states will have to provide more sophisticated services without further isolating the elderly within an institutionalized regime, and do so under a tighter budget.

Finland's current strategy has been to promote extended home care as the major mode of caring for the elderly. From the ministries to local health centres, there is an increasing acceptance of home care as a panacea that can potentially integrate medical and social care, decrease isolation and promote independence, and still remain the more cost-effective alternative to other forms of care:

"…support for independent living in the community is supposed to be the cornerstone of future old age policy…outpatient and housing services must be developed in such a way that older people can continue to live independently in their own homes as long as possible…effective housing and planning policy can help to reduce the need for services…it is imperative to have better coordination and integration of social welfare and healthcare services. Private services are needed alongside the existing range of public services, and better coordination is needed between service providers." (Health in Finland 145)

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But while home care has been generally accepted as the solution to the elder care problem, there remains an absence of adequate frameworks and measures with which to design, analyse, and evaluate a meaningful home care structure. As a measure, functional capacity does not adequately address the needs of those individuals it hopes to describe, especially when those individuals are well-integrated into society.

How useful is it to know whether a person can shop for themselves (a primary measure of capacity) if a family member accompanies them? There is consensus that educating families is essential to the home care process, but how is this process best handled? There are attempts being made at expanding home care services from the institutional side, but if society is not expanding its attitudes and habits to meet these services, can home care really represent a shift of responsibility from institutions into new territory?

"More research is needed into the implications of population ageing to (sic) different institutions in society and to the operation of society as a whole. More knowledge is needed about how service needs can be prevented by supporting old people's functional capacity. Improved service impact also calls for research into outcomes and effectiveness." (Health in Finland 145)

Perhaps it is time to move beyond the acceptance of home care as the quick solution to the elder care problem and instead, start to outline comprehensive strategies that ensure well-being without increasing institutional demands. Criteria such as "functional capacity" must be revised or replaced in light of a new care regime. Clearer definitions of independence and societal involvement must be articulated if they are to become the tangible objectives of a concrete system. Social and medical care cannot simply be combined or hybridized, but must be completely rethought to encompass agents and processes that are beyond their current scope.

Two anecdotes seem to illustrate the need to move beyond the rhetoric of home care advocacy in order to begin the design of a non-institutional elder care system:

In an interview, a head physician of Helsinki's Social services department was asked to explain the major problems facing an elderly person. The answer was both physical (movement) and social (loneliness) in nature. As an example, malnutrition was a particular case that encompassed both problems. If someone is alone, they will not eat; If someone does not eat, they become weak; If someone becomes weak, they cannot be with other people comfortably. And, a viscous cycle begins. When I inquired about a proposed solution, I was told that involving family members was the answer. I was eloquently told that, "If every elderly person would receive a protein drink instead of a bouquet of flowers from their family, many problems would be solved." I followed by asking how families could be informed

and educated, and attain the tools and the incentives to be involved more adequately. Essentially, could the way to prepare society to better integrate the elderly. There was no good answer...

In interviews with nurses at an elderly home near Helsinki, we discussed the essentials of caring for the elderly. Everyone shared the belief that fighting loneliness and increasing independence were the key elements to elderly care. Family involvement and integration into society were also critical. When I asked about the home care system, as an alternative to the institutionalized nursing home system, I was initially told that integration was occurring between the two and that everything would be fine. But when asked which was better, I received mixed answers. One nurse defined independence (as a general goal) as being able to accomplish tasks independently or with the assistance of a care professional, and by another as the feeling of self-motivation, which might be easier at home, alone. While fighting loneliness with integration was key, one nurse felt that the elderly were less lonely and better integrated when with their families, while another suggested that the elderly would prefer the company of their peers in a nursing home environment. While common goals were shared, the means and criteria for achieving those goals were discordant.

D4—Structure and Organization of the Welfare System

All Finnish citizens are entitled to equal access to the social welfare system. Adequate social and healthcare, along with income security, are a basic right of each Finnish citizen. The robust social welfare system that provides for these entitlements is complex by nature, spanning every scale of government, using significant finances and other resources, and interfacing with many actors throughout the social fabric. Any attempt to reform such a complex system must first consider its existing form and modes of operation.

D4.1 Welfare And Income Security

The Finnish welfare system is composed to two main components: welfare services and income security. The welfare services division is generally divided between health and social welfare services that are differentiated throughout the system and over time. The income security division manages both the pension system and the insurance system.

D4.2 The Ministry Level

Operation of the Finnish social welfare system is divided between two tiers: the administering 'Ministry' level and the secondary 'Municipality' level.

The administering tier, which is composed of The Ministry of Social Affairs and Health and attendant Agencies such as STAKES and KTL, acts with parliament to define the overall political agenda concerning social welfare, which the agencies subsequently presents to the lower tier as social welfare provision principals and guidelines. This tier is also tasked with outlining the agenda as social and healthcare policy, preparing the legislation and reforms required to implement the policy, guiding and monitoring certain aspects of the development, funding, implementation, and coordination activities conducted by the lower tier.

The Ministry is responsible for drafting statutory rules for each municipal agency; these guidelines have been "equalized" for each individual municipality by way of the Basic Services Budget System.

D4.3 The Municipal Level

As of 2009, the welfare system consisted of approximately 348 municipalities in various structural agreements and arrangements with each other. The municipal tier is responsible for the actual delivery of social welfare services. It is at this level that the recipients of social welfare directly engage with the welfare system.

The municipalities must abide to the statutory requirements passed down from the Ministry level, but have broad discretion in determining the precise type and scope of services they provide; they are free to design, implement, and operate the various welfare delivery systems as they see fit.

Municipalities may deliver welfare services independently or in conjunction with other municipalities. Additional procurements may be attained from other municipalities or public and private service providers. Some municipalities may opt to privatize their own operations through the establishment of a limited-liability company.

D4.4 Issues Of Scale And Structure

The complex municipal system in Finland is a product of the powerful cultural impulse toward local self-governance. However, the scale of local governance is not always conducive to the effective management of broader issues such as social welfare, which often rely on economies of scale to function fluidly. As a result, many municipalities chose to collaborate in order to more effectively provide or procure welfare services.

The current arrangement of ministries at the national level is locked into the so-called "silo" mode of operation. Policies are created within single ministries and steered vertically by them. As a result, there is little meaningful lateral interaction between ministries, a organisational structure that increases the complexity of large programmes like social welfare, which—by definition—span multiple silos.

D4.5 Service Delivery System

For the provision of health and social services, Finland is broken down into twenty-one hospital districts. Every municipality is a member of one of these districts. District health centres and hospitals are the primary sites for citizens to receive health and social services, primarily in the form of outpatient (health centres) and specialty services (hospitals). Private care facilities (especially for specialized care), as well as secular and religious associations and volunteer groups may provide supplementary services.

For the elderly, municipalities manage nursing homes, sheltered housing, and sophisticated networks of home care services. They also provide the funding for informal care outside of the institutional system. The elderly are entitled to comprehensive care, which encompasses preventive home visits, coordinated social activities, sophisticated institutional medical care, and monthly income grants.

The pension delivery system, which is organized according to its own districts, offices, and service centres, is superimposed over the welfare services system.

D4.6 Paying For Welfare

Funding of the social welfare delivery system is divided between its two tiers and the recipients themselves. As of 2005, the municipalities were responsible for approximately 65% of the cost, with the central government funding approximately 25%, and client fees covering the remaining 10%.

In total, Finland spends approximately €43.4 billion, about 25% of GDP, on social welfare. (Facts about Social Welfare and Health Care in Finland 2007) Approximately 30% of total social expenditure goes directly into municipal social and healthcare services. The bulk (about 60%) of total social expenditures is used to finance Finland's comprehensive pension and insurance schemes.

Social Expenditure Distribution
Source: "Characteristics of the Social Security System in Finland"

D4.7 The Cost Of "Old Age"

"Old Age" currently accounts for approximately 30% of total social welfare expenditure (Facts about Social Welfare and Health Care in Finland 2007). "Old age pensioners" currently number close to one million, a figure predicted to double by 2060. (Statistics Finland Population Project 2009-2060) Elderly care comprises one of the most complex, costly, and critical facets of the social welfare system in Finland.

D5—Government Initiatives and Reforms

Currently, there is considerable desire for reform at all levels of the welfare system, from the highest levels of government to the most local corners of the care network. There are many systemic changes now in various stages of design and implementation, from legislative actions to municipal pilot programmes to local initiatives.

Such reforms are relevant to this studio because they represent the most meaningful attempts at producing the kind of results necessary for the improved welfare of the elderly population in Finland.

The nature of these reforms differ depending on which part of the welfare system they are targeting. They include "bottom-up" reforms aimed at improving the horizontal functioning of the municipal system, "top-down" reforms focused on vertical structures of the national government, and "local" reforms that target particular structures within the finer grain of the welfare system.

D5.1 Bottom-Up Reform: Municipal Mergers

At the municipal level, regional oversight mergers and innovative care cooperatives are attempting to bridge perceived gaps in horizontal communications and inefficiencies in delivery networks. Such mergers are an attempt to counteract the fragmentation that occurs at the finer scale of municipal agencies, as compared to the necessarily large scale of social and medical care delivery.

The Kainuu regional governance experiment is one of a number of such experiments in improving organization, structure, and communication at the municipal level of the welfare system. Others examples include the current integration of Health and Social Services in Helsinki and Sitra's ongoing Municipal Programme.

The Kainuu Region
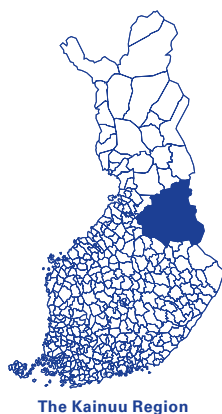
D5.2 Top-Down Reform: Fighting 'Siloing' In The Ministries

At the ministry level, government reforms driven by "performance management" and "information steering" are attempting to overhaul the operation of the upper tiers of the welfare system. Such ministerial reforms are tasked with breaking down communication barriers that hamper effectiveness.

In an attempt to combat the ineffective "siloing" of programmes that results from intensive vertical control within ministries, these reforms embrace value- and result-based approaches, rather than procedural and hierarchal ones. For

example, under the Performance Management System, programmes are developed by policy area, across different ministries rather than by one particular ministry. Under the OECD Public Management Review, ministries are required to develop strategies for increasing lateral interaction and networking with other parts of the government.

D5.3 Local Reform: Supporting Small-Scale Innovation

At the smallest scale of local service provisions, pilot programmes, which include hospital redesign, administrative restructuring, and family education, seek to improve the citizen's experience of the welfare state. Such programmes support innovative approaches to welfare service delivery by sponsoring small-scale, prototypical solutions intended to address larger systemic problems.

The Pareto programme at the Aalto University School of Science and Technology is one example of how architectural and urban design thinking may be applied to address the question of elder care facilities. The programme is developing prototypical solutions for problems in the built environment of the welfare system. Some solutions include the development of mobile technologies for home care, the conversion of a standard hospital into a more holistic wellness centre, and the unification of different care facilities into a single health campus.

The Finnish Well-being Centre develops and promotes a system for elder care that incorporates services, knowledge, and architecture into a comprehensive design package. In Finland, these prototype systems are currently in use; Japan, which faces the second most rapidly ageing population in the world, is also developing similar systems.

D5.4 The Kainuu Regional Experiment

Municipalities are the main organisational node for the provision of welfare services in Finland. The municipalities are responsible for the design, provision, and oversight of all aspects of health and social care services.

Out of Finland's 348 municipalities, 248 had populations of less than 10,000 in 2008 (StatsFi). In order to counter the problems of scale inherent in providing complex welfare services to such small, decentralized populations, many municipalities may work in collaboration with other municipalities for the deliver of services, while others purchase necessary services directly from another municipality, private provider, or public organization.

"There is a wide variety of cooperation between municipalities in both the provision of basic services and regional development. Inter-municipal cooperation is often the most appropriate and economically sound

approach for carrying out municipal tasks. The aim is to achieve economic and above all functional benefits so that universal access to high-quality services can be secured. At the moment, there are 228 regional joint municipal authorities producing services for more than one municipality. Health care and education are by far the most common basic services provided by these organs, even though there is also regional cooperation between municipalities in other basic services." (OECD PUBLIC MANAGEMENT REVIEW, FINLAND—64)

The demand for municipalities to find joint solutions to welfare service provision problems will increase dramatically in the coming years. The shift in Finland's dependency ratio, in conjunction with internal migration drains from certain areas of the country, will leave some municipalities insufficiently prepared to provide adequate welfare services.

The region of Kainuu faces a particularly rapid ageing of its population, reporting a projected 6% population decrease by 2030 (Statistics Finland Population Project 2009-2060). As a result, the employment outlook in Kainuu is dismal, and core public services are under threat.

Because it falls within the 20,000 population figure, which the government considers ideal for effective welfare service delivery, Kainuu is currently acting as a bellwether for the other municipalities with regard to the coming service delivery problems. In response to this critical situation, the region of Kainuu, with the aid of the national government, has opted to try a new centralized regional government and service structure for two terms.

"The experiment increases regional authority and cooperation between municipalities and other actors…The highest decision-making of the region has been centralized into one organ, the Joint Authority of the Kainuu Region, consisting of fifty-nine members. It was elected through a direct public election process. A centralized arrangement of basic public services enables securing the service quality, availability and economy in Kainuu in the long term, despite the threatening population forecasts. At the same time, the citizens living in the eight Kainuu municipalities will have equal opportunity to receive basic public services." (Kainuu Region Driving Development)

Welfare services and funding are arranged at the regional level in an attempt to improve quality, availability, and cost-effectiveness. This restructuring of government at the regional level will have significant effects on the way welfare services are delivered:

"The social and healthcare services have been divided into three levels based on the customer's service needs: services which the residents of Kainuu need almost daily are offered as local services; these include home care services…Services that are needed less often are provided on a regional scale…Services requiring special expertise that are needed

rarely are offered as centralized regional services. The customers can freely, regardless of their home town, select any treatment point." (Kainuu Region Driving Development)

Although the final evaluations of the experiment will not be available until after its conclusion, initial results suggest that the necessary structures are in place and operating. The initial restructuring has yielded meaningful changes to the service system in the form of cost savings and expenditure cuts. Understandings have been forged between different municipalities. Still, these changes have been met with resistance by some actors entrenched within the current hierarchical system. Complete evaluations will be closely watched as the Kainuu experiment draws to a close. (OECD PUBLIC MANAGEMENT REVIEW, FINLAND 55-56)

D6 - Evolution of the Welfare System

		Happening in Finland	Happening in Scandanavia
	1937	National Pension Act	
In the 1940's the notion of public welfare, and with it public health, emerges.	1943	New health legislation mandates municipal and provincial health officers	
	1943	General Hospitals Act	
	1944	A law is passed mandating that each municipality have a free maternity and child health clinic, a major development	
	1945	Only 4.1 doctors per 10,000 people	
	1956	By now, there are 1,500 maternity/child health clinics in Finland	
	1948	Tuberculosis Act passed - with earlier vaccination programmes and improved living conditions, curbs the epidemic	Sweden reforms national pension system
	1948	Reform of the National Pension Act	
	1948	Introduction of family allowance	
	1949	Introduction of maternity grants	
Hospital development begins in the 1950's. It will occupy the bulk of healthcare spending through the 1960's. From 1950-69, the number of hospitals triples.	1950	General Hospital Construction Act	1950's: Sweden introduces concepts of Income Security, balancing gender roles
An imbalance between hospital care and outpatient care emerges because of this spending priority, as well as cost allocation and a shortage of doctors.	1956	National pension reformed to be means-tested and flat-rate, pay-as-you-go is introduced	1956: Danish government reforms take a big first step towards 'full old-age pension'
	1956	Social Assistance Act	
	1956	Hospitals Act	
Control of hospitals is transferred from the state to municipalities.	1956-1957	Pension expenditure increases 2.5x	
The primary concern of the 1960's was the development of extensive healthcare services.	1960	Three new medical faculties are established (initiated in 1960, completed in 1972)	Denmark introduces full universal protection under the national sickness insurance scheme
Towards the end of the 60's, even with the development of hospitals, there was little improvement in public health beyond dealing with tuberculosis and infant mortality.	1961	Earnings-related Pension Acts	
	1961	Finland joins EFTA	
	1963	Sickness Insurance Act creates a national sickness insurance system specifically to address outpatient care	
By the end of the 60's, Finland still had the third lowest density of medical doctors in Europe (after Turkey and Albania), and the life expectancy of the Finnish male is the lowest in Europe.	1969	Finland joins OECD	

	Year	Event	
The Primary Healthcare act of the 1970's is a significant attempt at shifting attention to preventive and outpatient care.	1971	**Labour market organizations sign an agreement on workplace healthcare services**	
Municipalities (or groups of) are required to establish health centres	1972	**Primary Healthcare Act passed, it becomes a significant attempt at shifting attention to preventive and outpatient care**	
Municipal care is centralized	1973	**Children's Day-Care Act**	
Costs are shared between central and local governments	1974	**Free-trade agreement with the EEC**	
Central and local groups must submit annual 5-year action plans	1975	**Bed spaces are transferred from mental hospitals to mental health clinics, which increase their capacity by 89% (initiated in 1975, completed in 1987)**	
The number of doctors working in primary health triples in a few years	1978	**Occupational Health Care Act passed**	
1984 reforms of the Social Welfare Act, together with the earlier Primary Healthcare and Children's Day-Care Acts, were the foundations for the growing Finnish welfare state.	1980-85	**National pension reform**	
	1984	**Reform of Social Welfare Act-Increased cooperation between public health and social welfare # Creation of informal care allowance system for elderly care # Social assistance is replaced by income support # New state subsidy system**	
Elder care is particularly effected by the creation of informal care allowances and the strengthening of outpatient services for the elderly.	1985	**Child Home Care Allowance Act**	
	1986	**Health for All by 2000 Programme#Develop primary healthcare # Expand dental services#strengthen outpatient services for the elderly#modernize psychiatric healthcare#intensify rehabilitation**	
In 1993, the recession hit Finland at the same time as the government launched a major effort to decentralize the health and social services systems.	1990	**Survivor's pension reformed to include widowers**	
	1991	**Major reorganization into 21 hospital districts with compulsory membership for all municipalities**	
Though there were cuts in expenditures in some health and social services areas - notably for the elderly, disabled, and families with children - as a result of the recession, by the end of the decade numbers had returned.	1991	**Reform of rehabilitation legislation**	
To deal with the recession, geriatric care is transitioned from a health issue to a primarily social one, and is reduced in both scope and content.	1993	**Decentralizing reform of the state subsidy system#State distributes funds through a needs-based estimating formula rather than expenditures#Central health administration is restructured#Move from statutory guidance to information guidance#STAKES is formed**	
	1995	**State and local government retirement ages raised from 63 to 65**	
The decentralization effort is not hindered dramatically by the recession, and goes on to define the contemporary state of the Finnish welfare system.	1999	**Finland joins the EU**	
	1999	**Finland joins the EMU**	**Sweden introduces a new pension system to replace the old, which was experiencing rising costs in the face of an ageing population**
	2000	**Basic social rights are written into the new Finnish constitution**	

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FUTURES OF FINLAND

There's no way to predict the future, but by using scenarios we can make an educated guess. In the following pages is a brief glimpse of what Finland may look like in 2020 and 2050. As a projection, this is meant to act as a rough guide for what we may reasonably expect.

Finland 2020 – At a Glance

Population[1]

- 5.6 million, evenly distributed between women and men
- Age distribution (in years)

0-14:	17%
15-64:	60%
65 +:	23%

- Population by age and gender 2020, projection 2009[1]
- Natural population growth: 9,900.
- Net immigration: 20,000 (immigration: 36,000 persons, emigration: 16,000 persons).
- Emigration mainly to EU and other European countries, North America and Asia.
- Over one million Finns live or have settled abroad.
- Some 1.1 million live in the Helsinki area, which includes Espoo and Vantaa.
- City populations:

Helsinki	620,000
Espoo	280,000
Tampere	230,000
Vantaa	220,000
Turku	180,000
Oulu	150,000
Jyväskylä	140,000

- Some 80% of the population live in cities
- Commuting times and distance have continued to rise and the country's average is now approximately 18 kilometres. Due to the distances, the majority of commuters use private cars.
- Life expectancy: men 79 years, women 84 years.
- Employment rate: 72%; unemployment rate: 6%.
- Foreigners 4%, most from Russia, Estonia, Sweden and Somalia; 25% of Helsinki region dwellers have an immigrant background.
- Religion: Lutheran 75%; Orthodox 1%; Other 2%; some 22% do not belong to a religious group.
- Languages: Finnish speaking 89%; Swedish speakers 5%; foreign language speakers 6%.
- Major health challenges: alcohol abuse, obesity and memory-related illnesses.

- ➢ Education: 29% of young Finns have a university of other tertiary qualification; the share of women with a university degree or equivalent is much higher than men.

Economy

- ➢ Finland is highly integrated in the global economy; international trade is a third of GDP.
- ➢ Finns take approximately 6.8 million trips abroad, of which business trips account for some 20%.
- ➢ Economic structure (employed persons by industry):
    - 35% public and other services
    - 18% trade, hotels and restaurants
    - 18% financial and business services
    - 12% manufacturing
    - 7% transport and communications
    - 7% construction
    - 3% agriculture and forestry

Finland 2020 – Slow recovery from 2010

The traditional investment-intensive industry has slowly diminished in Finland. Instead of electronics, machinery, and pulp and paper, the main exports are products from knowledge and innovation-intensive businesses, like biosciences, design, textiles, IT and education. Many companies are geographically scattered around the world according to the availability of skilled labour. Although Finland has succeeded quite well in transforming its economic production after the 2010 recession, the national economy is now only slowly recovering its balance and annual GDP growth is 1-2%. In cities, there are large empty business properties awaiting alternative uses.

The service sector is still the major employer. Municipal services have been further privatised and the demand for services has grown. The ageing population needs more health services and to accommodate the need for nurses, educated nurses from Asia are brought to Finland. Finnish nursing schools offer programmes for nursing students from outside the EU that qualify for jobs in EU member countries. Since depleting natural resources have raised the prices of consumption goods, demand for other kinds of commodities has increased: IT, cultural services, maintenance, tailoring and dressmaking, especially from recycled materials, and design.

Politically, social democratic values are back after all the free market and liberalism 'hype' around the change of the millennium, especially equality. Although the economic situation has been tough, keeping up the welfare system has been the priority of most political parties. The social security system has been transformed, and instead of a complicated system of various social benefits all citizens receive basic income. Since basic income does not depend on other income, there is less of a poverty trap there used to be, and self-employment becomes more attractive and common. This has led to a significant attitude change and empowerment of the unemployed; there is a notable increase in small-scale businesses, handicrafts shops and community arts projects. The Internet and social media have the main role in channelling the activities of civil society.

The continuous economic insecurity has increased the role of traditions and conservative values of the citizens. Most Finns are still members of the evangelical Lutheran church, although participation in weekly services continues to decrease. New types of religious activity are on the rise, e.g. Volunteering in church charities and awareness-raising campaigns on Christian values, e.g. 'no to abortion'. This has also influenced the political spectrum; the Christian Democratic Party, which used to be quite small in 2010, has gained more seats in parliament, and the centre-right wing parties have turned more to the right. Similarly Muslim communities have grown culturally and politically louder, and now there are more conflicts between religious and ethnical groups than there have been for decades. However, conservative, fundamental religious and racist views have stayed in the minority compared to the liberal majority.

Immigration, both legal and illegal, has increased. The foreign work-force is more in demand: low-income blue-collar jobs are populated by foreign workers from Africa and Asia, whereas highly-educated special-ists are employed from all over the world—although most still come from neighbouring countries. Illegal immigrants arrive especially from central and southern Asia, due to the increased political instability in the regions. Russian is the most commonly spoken foreign language in the Helsinki region and there have been discussions about abolishing the status of Swed-ish as the second official language. One or two new orthodox churches and mosques have been built in the metropolitan area.

The average level of income has decreased in Finland due to several years of economic stagnation and slow growth; further, differences in income distribution have decreased slightly compared to 2010. The higher middle class has somewhat decreased in numbers and changes in taxation have favoured citizens with low income.

Finland 2050 – At a glance

Population

> - 6.1 million, evenly distributed between women and men
> - Age distribution (in years)
>   - 0-14:   16%
>   - 15-64:   57%
>   - 65 +:   28%
> - Natural population growth: -4.000 persons
>   Immigration: 28.000 persons
>   Emigration: 13.000 persons
>   Net immigration: 15.000 persons
> - Some 1.3 million live in the Helsinki area, which includes Espoo and Vantaa. Other major cities: Tampere, Turku & Oulu.
> - Population in major cities (Helsinki area, Tampere, Turku & Jyväskylä): 35%.
> - Working population decreasing; number of retired persons remains constant; employment rate: 75%; unemployment rate: 6%.
> - Population by age and gender 2050, projection 2009.
> - 85% of the population live in cities.
> - Life expectancy: men 83 years, women 87 years.
> - Foreigners 10%, most from Russia, Estonia, Sweden and Somalia; 30% of Helsinki region dwellers have an immigrant background.
> - Religion: Lutheran 65%; Orthodox 3%; other 4%; some 28% do not belong to a religious group.
> - Languages: Finnish speaking 85%; Swedish speakers 4%; foreign language speakers 11%.

Economy

> - Economic structure (employed persons by industry):
>   - 30% Public and other services
>   - 12% Trade, hotels and restaurants
>   - 18% Financial and business services
>   - 17% Manufacturing
>   - 8%   Transport and communications
>   - 8%   Construction
>   - 7%   Agriculture and forestry

Finland 2050 – Immaterial individualism

Globalization has taken new forms compared to 2010, since the costs of travel and transportation have been raised to compensate for the environmental impacts. Global trade in goods has diminished but global exchange continues strongly via highly developed virtual channels. Many products have become immaterial: newspapers, books, music and games, for example, are sold only via the Internet in electronic format.

The world economy has managed to accommodate the economic setbacks caused by the impacts of climate change and most EU countries have positive GDP growth. China has taken the lead in the world market, and the economic centre of the world has moved to Asia. Finland has succeeded to have 3-6% GDP growth for the last decade. The main exports are biomedicines and intelligent textiles; both successes rely on the intelligent use of wood fibres and cellulose, resources that Finnish forests produce plenty of.

Finland gains advantage within the EU from its close location to Russia. Contacts and exchange with Russia have increased significantly compared to the beginning of the century. Most Finnish exports are sold to Russia. Many Finns work in Russian companies and commute daily from Helsinki to St. Petersburg with fast, environmentally friendly trains that cover the distance in ninety minutes —a journey that took over three hours with the new fast train connection opened in 2010.

The service sector continues to be the main employer, although the public sector has diminished. Some of the universality principles of a welfare state have been altered; for example, citizens are now encouraged to take better care of their health and well-being by providing better pensions and social benefits to those who commit themselves to certain health programmes related to obesity, coronary diseases, alcohol overuse, etc. Services and medical innovations related to keeping people healthy form a notable part of business sector.

There have been radical changes in production and consumption patterns globally, due to environmental concerns. All citizens now have a natural resource consumption quota, which limits the amount of natural resources they can consume per year. Excess quotas can be sold, and the trade in quotas is managed by the Stock Exchange. The introduction of a personal quota system has caused a redistribution of income: less wealthy people who have consumed fewer natural resources are in a position to sell part of their quotas and increase their consumption, whereas wealthy people who want to maintain at least part of their previous lifestyle have been forced to buy quotas. Personal mitigation strategies have reflected the values of individuals—the diversification of lifestyles has decreased in material respects but increased in immaterial ones.

Environmental taxes and personal quota systems have significantly reduced both business and personal travelling compared to 2010. The attractiveness of travelling has, however, not disappeared and thus there are new ways to travel and experience other cultures. Trips, once made, are longer in time and concentrate in one place. Advanced virtual technologies allow people to travel for several months and continue working from abroad. New exchange programmes for manual and service sector workers have been created: A group of Finnish teachers, for example, may exchange jobs with their Irish colleagues for months or even years.

Local consumption and production has increased, and the farming and forestry sectors have grown in importance. There are groups of people, living on basic income, who have moved back to the countryside to live in self-sufficient communities. These communities who have embraced "poverty as a lifestyle," use local trading and exchange systems in addition to the regular currency.

Economic diversification has increased compared to 2010. The lower middle classes are mainly educated but have low incomes and form the largest group of citizens. The highest income group has also increased in number, since the salaries for the most skilled specialists have grown and are now competitive with the rest of the world.

The Asian influence is also seen in religious life as well as in economics; many who were previously Lutherans have converted to Buddhism and Taoism. The share of Lutherans has also decreased due to the Muslim and Orthodox immigrants.

Alternative trends: What else could happen by 2050?

Mass Immigration

In 2050 the world is suffering from the consequences of climate change. Draughts and extreme weather conditions have caused famine and loss of human life in many poor regions. Immigration has increased within the EU from southern Europe, which suffers from draught and a lack of drinking water, to northern Europe. Also, immigration from Africa to Europe has intensified. Finland has received two waves of immigrants, first from northern Africa in the 2030's and recently in the 2040's from southern Europe. Some 20% of the population of Finland are now foreigners. English has become the second official language in the EU and it is commonly spoken in most workplaces in Finland. Most immigrants, therefore, manage to find their place in job market. Catholic and Muslim influences on the Finnish culture increase.

Food Scarcity

Megatrends such as climate change, biodiversity, environmental degradation and population growth compile a situation where food security becomes an even more critical issue over the developing world. Bioenergy production, especially in the western world, adds to the problem by overtaking a share of the fields used for food production. By 2020, surplus food production in industrialised countries has diminished to close to zero. Between the 2020's and 2050's, severe droughts, floods and storms attributable to climate change also cause disruptions to the food security of citizens in the western world. Finland struggles with the same problem but has an advantage of relatively rich water resources for irrigation (if needed) and space for farming expansions. Nevertheless, food security is a serious issue and the share of food expenses rises notably in private households. Professional farming becomes an attractive profession. Also, small scale supplementary farming gains popularity among lot owners. Respect for close-to-nature professions and know-how such as farming, fishing and hunting rises.

Extreme Privatisation

There is severe economic hardship in funding state and municipal operations. The Finnish welfare state model demonstrating strong and high-quality public services leading to equal opportunities in education, healthcare and social structures continues to deteriorate. To a certain extent, more efficient processes are able to maintain the service level; gradually, however, private options in healthcare and education, for example, attract families that are better-off. Public authorities are not able to ensure the quality of public services due to budget limitations resulting from a political unwillingness to raise taxes. By 2050, there are more or less separate private and public lines of public services such as education and healthcare. This

slowly leads to the practice whereby social and professional opportunities are inherited from the parents for the largest part of the population. Shifting between the classes is only possible for the most talented individuals.

Brain Sweatshop

Recovery measures for the 2010 economic depression fail and the western economies prove to be unsustainable. A prolonged slowdown of the global economy leads to the domino effect of collapsing western economies, which kills western capitalism. Chinese capitalism is the new form of international trade and business. Western countries try to keep the research and educational level high to compete with the Chinese but it is not quite successful. Finland, as well as other European countries, become a cheap 'brain sweatshop' for Asian investors and leaders. The educated Finnish working force mainly produces semi-demanding design and engineering solutions and services that can be easily electronically transferred form one place to another. The most talented individuals move to Asia for better career opportunities. Western Europe becomes something like India was for Westerners at the beginning of the millennium. Less educated young Finns find it difficult to accommodate themselves to working life. There is a very high level of youth unemployment, which becomes very expensive for the government at the time. Also, a critical mass of frustrated youths becomes violent, paralysing many societal traditions and structures.

Generation Change

By the end of the 2040's, most of the baby boomer's generation have passed away. Along with them disappears the hegemony of a generation who has had a notable impact in society, and who have held widely accepted common values and beliefs. The relatively homogenous Finnish identity deteriorates and is replaced by subcultures and "value shopping." People identify themselves more and more through subcultures and peer groups, such as music style fan groups and other entertainment fan groups (e.g. manga); professional groups; hobby groups; life-situations (e.g. Young families); or political passions. People tend to switch these 'reference groups' very fast. International companies and brands can establish a central position as the symbol of certain groups. There is no uniform value basis or leading institutions in society, but rather a puzzle of multiple pieces that interact. The life circles of different groups become more isolated and a nationwide common experience of 'being Finnish' does not exist – it is not even yearned for except in marginal groups.

End Of Party Politics

The turn-out of voters in elections continues to decrease, as well as the membership of political parties. Traditional parties lose their legitimacy and single-issue movements become more active players in political decision making. There are a variety of issues attracting a critical mass to estab-

lish a movement, such as "no to abortion," "more nurses for the elderly," "no to nuclear power," etc. Political structures are reorganised and new ways for direct democracy, like interactive planning procedures, are introduced. For example, "open source wiki-applications" are used in city and budget planning.

Church In Crisis

The Lutheran Church enters into a legitimacy crisis, since it does not manage to follow the liberal public opinion regarding, gay marriages or women priests, for example. Roughly half of the population are still members of the church, but the trend is declining. Even fewer people practice the religion. The Lutheran state-church system is abolished. In schools, religious education is replaced by ethics and philosophy. Other forms of Christian churches as well as other religious groups (including traditional animistic religions) gain moderate popularity, but the major winners are atheistic trends. In general, religion is becoming less and less significant in society.

Climate Conflicts

Climate change reinforces existing drivers of conflict and therefore threatens achieved development across many countries. Geopolitical tension also increases due to the diminishing availability of natural resources. International cooperation drifts in a lock-up situation and nations turn inwards. Finland finds itself in a situation resembling the situation in the 1960's, 1970's and early 1980's when geopolitical tensions were higher and when economic activities were heavily regulated and guided by the government. Industrial production relies on domestic raw materials. Competition between countries is fierce and various protectionist measures such as high tolls on imports are introduced. The highest earning people suffer a notable drop in their incomes and the overall income level declines. The level of income distribution decreases, since government interventions secure jobs and income for most citizens. The majority of people turn to traditional values of 'home, church and the fatherland'.

Bibliography

Pamphlets (PDF and hardcopy)

Public Services by Design: A New Route to Public Sector Innovation. London: Design Council, 2009.

Andersen, Torben M., et al. The Nordic Model: Embracing Globalization and Sharing Risks. Helsinki: The Research Institute of the Finnish Economy & Taloustieto Oy, 2007.

Finland. Ministry of Social Affairs and Health. Characteristics of the Social Security System in Finland. Helsinki: Ministry of Social Affairs and Health, 2007.

Niemelä, Heikki and Kari Salminen. Social Security in Finland. Helsinki: Vammalan Kirjapaino Oy, 2006.

Population Projection 2009-2060. Helsinki: Statistics Finland, 2009.

Untitled Pamphlet Describing the Joint Authority of the Kainuu Region. (no further information on publication)

OECD Public Management Review: Finland. Public Management Department, Ministry of Finance, 2009. (unpublished , no further information)

Ageing and Employment Policies: Finland. OECD.

Finland. Ministry of Social Affairs and Health. National Reports on Strategies for Social Protection and Social inclusion – Finland. Helsinki: Ministry of Social Affairs and Health, 2006.

Finland. Ministry of Social Affairs and Health. Statutory Social and Health Services in Finland. Helsinki: Ministry of Social Affairs and Health, 2006.

Finland. Prime Minister's Office. Ageing report: Overall Assessment of the Effects of Ageing and the Adequacy of Preparation for Demographic Changes. Helsinki: Prime Minister's Office Publications, 2009.

Finland. Ministry of Social Affairs and Health. National Framework for High-Quality Services for Older People. Helsinki: Ministry of Social Affairs and Health, 2008.

Finland. Ministry of Social Affairs and Health. Strategies for Social Protection 2015 –Towards a Socially and Economically Sustainable Society. Helsinki: Ministry of Social Affairs and Health, 2006.

Dietz, Thomas, Elinor Ostrom, and Paul C. Stern. "The Struggle to Govern the Commons." Science Vol 302, 12 Dec. 2003: 1907-1912.

Sabel, Charles F. "Design, Deliberation, and Democracy: On the New Pragmatism of Firms and Public Institutions." Presented to the conference on Liberal Institutions, Economic Constitutional Rights, and the Role of Organizations, European University Institute, Florence. December 15-16, 1995.

Sabel, Charles, and AnnaLee Saxenian. Fugitive Success: Finland's Economic Future. Helsinki: Sitra, 2008.

Sabel, Charles F., and Jonathan Zeitlin. "Learning from Difference: The New Architecture of Experimentalist Governance in the EU." European Law Journal Vol. 14, No. 3, May 2008: 271–327.

Sabel, Charles F. "Globalisation, New Public Services, Local Democracy: What's the Connection?" Local Governance and Drivers of Growth. OECD, 2005.

Facts about Social Welfare and Health Care in Finland 2007. Helsinki: STAKES, 2007.

Statistical Yearbook on Social Welfare and Health Care 2008. Helsinki: STAKES, 2008.

Wismar, Matthias, et al., eds. The Effectiveness of Health Impact Assessment - Scope and Limitations of Supporting Decision-Making in Europe. Denmark: World Health Organization, 2007.

Global Age-Friendly Cities: A Guide. Geneva: World Health Organization, 2007.

Diamond, Patrick. Conundrums of Reform. London: Policy Network, 2006.

Finland. Ministry of Education and Ministry of Employment and the Economy. Evaluation of the Finnish National Innovation System: Policy Report. Helsinki: Taloustieto Oy, 2009.

Aromaa, Arpo, and Seppo Koskinen, eds. Health and Functional Capacity in Finland – Baseline Results of the Health 2000 HealthExamination Survey. Helsinki: KTL-National Public Health Institute, Department of Health and Functional Capacity, 2004.

Jaeger, Birgit, and Ari Salminen. "Social Security in Denmark, Finland, and Other Nordic Countries: The Welfare State is Still Alive." Transformations in Social Security Systems. Eds. IIAS Working Group on Social Security Systems. Amsterdam: IIAS, 1997. 43-58.

Koskinen, Seppo, et al. Health in Finland. Finland: National Public Health Institute KTL, National Research and Development Centre for Welfare and Health STAKES, and Ministry of Social Affairs and Health, 2006.

Siisiäinen, Martti, Petri Kinnunen, and Elina Hietanen eds. The Third Sector in Finland: Review to Research of the Finnish Third Sector. Helsinki: The Finnish Federation for Social Welfare and Health, University of Lapland, 2000.

Nylund, Marianne. Varieties of Mutual Support and Voluntary Action: A Study of Finnish Self-Help Groups and Volunteers. Helsinki: The Finnish Federation for Social Welfare and Health, 2000.

Teperi, Juha et al. The Finnish Health Care System: A Value-Based Perspective. Helsinki: Sitra, 2009.

Websites

Leppo, Kimmo. "Health Care and Long-Term Care – A View from Finland." Global Report on Ageing – Fall 2006, Long Term Care. 1 Sep. 2006. AARP International.
> ‣ http://www.aarpinternational.org/gra_sub/gra_sub_show.htm?doc_id=547073

Hoikkala, Tommi,Pasi Falk, and J.P. Roos. The Baby Boomer Turns Fifty: A Contribution to the Sociology of Generations, A Research Plan. May, 1997.
> ‣ http://www.alli.fi/nuorisotutkimus/hoikkala/boomerssuunnit.htm

Heiskanen, Ilkka, and Ritva Mitchell. "Cultural Policy Profile: Finland." Compendium of Cultural Policies and Trends in Europe, 10th Ed. 2009.
> ‣ http://www.culturalpolicies.net/web/finland.php#>

Hughes, Kaarina. "Loppukiri Housing Community - The dream came true." 18 Nov. 2006. Helsingin Loppukiri Seniroiyhteisö.
> ‣ http://www.loppukiri.fi/yhteystiedot.htm#1>

"Portal: My Health – Elderly." Health-EU: The Public Health Portal of the European Union.
> ‣ http://ec.europa.eu/health-eu/my_health/elderly/index_en.htm

"Elderly Care in Sweden." Sweden.se: The Official Gateway to Sweden.
> ‣ http://www.sweden.se/eng/Home/Work/Swedish_model/Residence_based_benefits/Elderly-care/Facts/Elderly-care-in-Sweden/

"Programmeme: Speeches." Finland-Japan Joint Seminar on Well-Being in Aging Society. October 13-14, 2009.
> ‣ http://www.jafi09.com/

"Portal: Old People Services." Ministry of Social Affairs and Health. Updated 24.02.2009.
> ‣ http://www.stm.fi/en/social_and_health_services/old_people

"Municipal Programme." Sitra.
> ‣ http://www.sitra.fi/en/Programmes/municipal_programmeme/municipal_programmeme.htm

"Social Security Programmes Throughout the World: Europe, 2008 – Finland." U.S. Social Security Administration – Office of Retirement and Disability Policy. 2008.

> ➤ http://www.socialsecurity.gov/policy/docs/progdesc/ssptw/2008-2009/europe/finland.html#top

"Sociobarometre 2001." The Finnish Federation for Social Welfare and Health.

> ➤ http://www.stkl.fi/sbm2001_eng_www/baro2001_ENGtiiv-istelma.htm

Interviews

Kevela, Antti. Sitra Office. Personal Interview. 29 Sep. 2009.

Stenman, Jonna. Sitra Office. Personal Interview. 29 Sep. 2009.

Luhtala, Arto. Ministry of Finance. Personal Interview. 30 Sep. 2009.

Hämäläinen, Timo. Sitra Office. Personal Interview. 30 Sep. 2009.

Aarva, Kim. City of Helsinki Social Services Department. Personal Interview. 01 Oct. 2009.

Pajunen, Maritta. City of Helsinki Social Services Department. Personal Interview. 01 Oct. 2009.

Salin, Olli. City of Helsinki Social Services Department. Personal Interview. 01 Oct. 2009.

Teperi, Juha. Ministry of Social Affairs and Health. 02 Oct. 2009.

Kostiainen, Juha and Jonna Stenman. Sitra Office. Personal Interview. 17 Nov. 2009.

Aejmelaeus, Riitta. City of Helsinki Social Services Department. Personal Interview. 17 Nov. 2009. Ylä-Anttila, Pekka. Etlatieto. Personal Interview. 17 Nov. 2009.

Autio, Antti. Project Pareto Helsinki University of Technology. Personal Interview. 18 Nov. 2009.

Tulenheimo, Martti. Personal Interview. 19 Nov. 2009.

Holkeri, Katu. Ministry of Finance. Personal Interview. 20 Nov. 2009.

Pollock, Eric. Personal Interview. 20 Nov. 2009.

Old Age Home Interviews

Lindblom, Minna. Nursing Home. Personal Interview. 19 Nov. 2009. Included interviews with: Jaanna, another nurse, two other administrators, 3 clients, and others…

Translator: Tuija Kokko

End notes

This challenge briefing has been prepared in advance of the Helsinki Design Lab Studio on Ageing held on June 7th through the 11th in Helsinki, Finland.

Sitra, the Finnish Innovation Fund, is responsible for organizing the Helsinki Design Lab in cooperation with other key partners. Sitra is an independent, publicly funded body which, under the supervision of the Finnish Parliament, promotes the welfare of Finnish society. Since its establishment, Sitra's duty has been to promote stable and balanced development in Finland, the qualitative and quantitative growth of its economy, and its international competitiveness and co-operation. Our activities are governed by a vision of a successful and skilled Finland. We have always operated with a strong belief in the future and in the ability of innovation to benefit society.

HDL is a continuation of Sitra's long-term activities in making design a key driver in building the Finnish society and the innovation system. Sitra's first design-related event was held in 1968, when it sponsored the Industrial, Environment and Product Design Seminar (HDL1968).

Sitra will sponsor three studios during the summer of 2010 which each bring a group of six to eight top international designers and key experts to spend an intensive week in Finland "charretting" on a given studio topic. With access to key decision makers relevant to their area of inquiry, these teams will be charged with developing a strategic road map and a top ten list of possible action items.

Look Again

We are bound by our own experiences and patterns of behaviour. New experiences help create new insights by allowing you to see what was previously undetected. This can happen in many ways, for example by empathetically seeing things from someone else's perspective or seeing them in a new way, such as the visualising of data in a different manner. The Studio Model itself gently pushes its participants into a new pattern of behaviour by introducing new perspectives, new knowledge and new experience.

Draw Insights and Ideas

The specific choices involved in committing ideas to the page is a way to confront their complexity. Occasionally what seems like a simple thought is incredibly difficult to draw because the act of making marks on the page forces one to answer questions that words alone are able to avoid. That is a good thing: after working through the drawing you will have a refined understanding! Drawing is especially powerful as a way to develop a more robust consensus amongst a group of individuals who may be using the exact same words but thinking about different variations of an idea.

Unpack Issues

Putting everything on the table is one way of opening our minds to new possibilities. This involves asking the usual questions of who, what, when, where, why and how in an attempt to try to analyse a problem or explore a solution from all angles. Often what seems like a simple concept is packed with complexity when carefully examined.

Work Between Scales

Understanding insights and propositions as situated within S,M,L,XL contexts in time and space enables the strategic designer to also think about the way decisions at one particular scale have an affect on, or are affected by, decisions at other scales. Being cognisant of scale is a practical way to be sensitive to the interconnectivity of our world.

Examine Boundary Conditions

The complex challenges that a Studio confronts are in some sense endless, so one cannot examine all aspects of every issue. Rather, one has to be able to identify key boundary conditions where something starts, ends or has a point of inflection. Observing and understanding extreme conditions is a way to peer into a parallel reality where innovation often happens at a faster rate out of simple necessity. Only the innovative survive at the extremes.

Build and Rebuild Taxonomies

Humans have attempted to structure their understanding of the world since ancient times. Taking a pile of items and finding order in their coexistence is one way of searching for meaning by focusing on the relationships between things. Different taxonomies create different alignments and leave open different gaps. Building and rebuilding these structures is a way to be diligent about seeing all aspects of an issue and discovering areas that need more attention.

Find the Right Simplifiers

By their nature, complex challenges cannot be simplified. But solutions need to be simple to be robust, adoptable and replicable. Thus the challenge in strategic design is to find the right simplifiers. Think about the idea of democracy: it is a simple enough concept that everyone gets a say in the fate of their community, but the social, juridical and political systems that make democracy function are incredibly complex in nature.

Dig for Roots

Pursuing strategic improvements always involves looking for root causes. By understanding first principles one is able to reformulate the needs and see status quo solutions in a fresh light, exposing new opportunities. When digging for roots you continually asks yourself if you have discovered the primary causes or if there are still deeper drivers.

Some Important Abilities of the Strategic Designer

We are often asked for advice in identifying strategic designers, for instance as Studio leads. We look for individuals who work at the intersections: individuals who are well skilled in their particular trade but have experience, fascinations, and interests in other fields—and apply this mindset to their work. Whether industrial design, graphic design, architecture, or any another field, we are looking for a demonstrated ability to integrate various forms of knowledge, to steward a project from conception through high quality implementation, and to use visualisation to help see new possibilities. Included below is an incomplete list of additional abilities and habits that help us identify a strategic designer.

Embrace Constraints
Understanding what constraints exist within a given area can be very helpful as a strategic designer seeks opportunities for redesign. It is a way to help you choose your battles. By being flexible enough to accept given constraints on less important issues you reserve energy and effort for those areas that have the potential to deliver real value.

Be Persistent
Once the issues have been unpacked, root causes discovered, and propositions iterated to refinement, the strategic designer will have a strong understanding of what aspects of their proposition are critical and which are less important. Reap the rewards of this investment in having a strong understanding of the problem space by defending propositions that have a high potential for return on investment. In other words, do not give up when you know you are onto something.

Iterate
Strategic designers do not treat ideas as precious. Rather, they develop propositions through continual cycles of exploration and refinement, allowing for the testing of variants. Often times working under an artificial time constraint and holding oneself to an arbitrary number of iterations can generate a momentum that leads to new and better ideas.

Translate
Translating between different perspectives and assumptions enables the strategic designer to act as the intermediary between disparate ideas, viewpoints and even goals. Being able to translate in this manner is an essential precondition for being able to integrate many things.

Make Propositions
Design has the highest return on investment when used to make sense of new conditions or take action in a new context. In these situations there is seldom much precedent to rely on and the ability to make propositions is a key way in which to drive the conversation forward. In abstract conversations, asking 'what if?' can become a powerful mechanism for consensus as it enables intangible ideas to be evaluated through concrete expressions.

Leverage Intuition
To benefit from iterative work, the cycles have to happen with a certain degree of urgency. Working in this way often means using your intuition to make decisions that are not able to be fully vetted out. Remember that subsequent iterations act as a check and balance to reduce the risk of intuitive decisions that may prove to be wrong.

Model and Prototype
Hand in hand with iteration is the notion of using it to test assumptions and propositions. A strategic designer explores ways to de-risk propositions by testing them through partial prototyping or by modelling and simulation. This includes the use of scenarios, games, and role playing, as well as limited roll-outs of systems in the familiar style of alpha, beta, or 1.0, 2.0 etc. These mechanisms create virtuous cycles of self learning. The sooner one begins making models or prototypes, the better.

Glossary/Index

Pin-up
A meeting where work that is still in progress is pinned up on the wall so that a project team may have a group discussion about it. Pin-ups often happen on a daily basis during intense design phases.
—p 109-110

Place, the importance of
—p 121-125, 132

Plans
The description of a detailed course of action that includes roles, responsibilities, timelines, and other practical details. The best plans reflect vision percolated through strategic intent and are subject to continual reality checks.
—p 23-24, 26, 28, 35, 40, 48

See also: vision, intent

Pre-factual
—p 21

Prototyping
—p 16, 139

Recruiting
—p 101-105

Return on investment
—p 24, 73

Scale
—p 19, 21, 27, 31, 35, 38-39, 67, 72-73, 93, 94-95, 114-115

Service design
—p 24, 28-29, 82

Silo
Refers to the division of labor into functional groups that often have little or no horizontal connection between each other—like the silo structures that store various sorts of dry goods. This works wonderfully when problems can be cleanly subdivided, and less so when interdependencies exist.
—p 16, 21-22, 30, 31

Sketching
The quick and dirty exploration of an idea, often using visual techniques. Sketches allow the relationships between part and whole to be explored when details are still fuzzy.
—p 20, 37-39, 46, 109, 114-115

Stewardship
Good strategies rarely remain unchanged when pressed into action. Stewardship is a role of ongoing involvement over the duration of an initiative to assist with corrective feedback, troubleshooting, and course correction.
—p 22, 23, 26, 40, 47-48

Strategic design
Traditional definitions of design often focus on creating a solution for a specific need—be it a product, a building, or a service. Strategic design is the adaptation of principles from traditional design to "big picture" systemic challenges like health care, education, and climate change. It is the use of design method and mindset to redefine how problems are approached, identify opportunities for action, and help deliver more complete and resilient solutions.
—p 19-41

Strategic intent
If vision specifies why action should be taken, intent narrows in on what exactly should be done. Strategic intent specifies a course of action in terms of methods and desired outcomes. While it might include some key details, for the most part these remain fuzzy and adaptable to future evolutions of the context. Nevertheless, strategic intent acts as a shared touchpoint that helps a team to make individual decisions that align towards a common vision.
—p 23-24

See also: vision, plan

Studio
May refer to a team of people (p 101-105), a design process as described in this book (p 87-89), or a physical place (p 121-125).

Synthesis
The act of combining multiple elements to create one thing. In contrast to cutting and pasting things together, synthesis results in more than the sum of its parts.
—p 6

Third culture kids
—p 25

Time management
—p 107-111

Uncertainty, Comfort with
—p 19, 25, 47, 57, 137

Vision
The best vision statements answer the simple question "why?" By describing an opportunity and offering a general direction of change, strong vision makes the status quo fungible.
—p 23-24, 113

See also: intent, plan

Visualisation
Literally "making visible", the strategic implications of visualisation come when used as an analytical tool, not merely to illustrate fully formed thoughts *ex post facto*. This includes sketching, data visualisation, and mapping.
—p 47-48

See 24, 30, 40, 44-45, 64, 73, 76, 83, 96, 112, 115, 116 for examples

Welfare system
—p 62, 74-83, 273-323

Wicked problems
—p 20, 32

Protip: why bother with page numbers? For quicker searching, download a free copy of this book and use the 'find' command. http://helsinkidesignlab.org/instudio/

Bibliography

Additional works of interest

Adams, John. "John Adams diary 22, 4 September - 9 November 1774." Adams Family Papers. http://www.massh-ist.org/digitaladams/aea/cfm/doc.cfm?id=D22&mode=popupsm&pop=D22_1 (accessed July 4, 2011).

Campbell, Emily. "You Know More Than You Think You Do: Design as Resourcefulness & Self-reliance." Design & Soci-ety. www.thersa.org/__data/assets/pdf_file/0006/215457/RSA_designandsociety_pam-phlet.pdf (accessed July 4, 2011).

Cross, Nigel. Designerly Ways of Knowing. Basel: Birkhäuser, 2007.

Geddes, Norman Bel. Horizons. Boston: Little, Brown, and Company, 1932.

Hamel, Gary and Prahalad, C.K. "Strategic Intent." Harvard Business Review May-Jun. 1989: 63-76. Print.

Johnson, Steven. Where Good Ideas Come From: the Natural History of Innovation. New York: Riverhead Books, 2010.

Kaskinen, Tuuli, Outi Kuittinen, Aleksi Neuvonen, and Roope Mokka. "Gatekeepers: Chang-ing Consumers' Behaviour in Energy Consumption." Demos Helsinki. www.demos.fi/files/FFRC2009_Neuvonen_REVISED.pdf (accessed July 4, 2011).

Meadows, Donella H., and Diana Wright. Thinking in Systems: A Primer. White River Junction, VT: Chelsea Green, 2008.

Pollock, David C., and Ruth E. Reken. Third Culture Kids: Growing Up Among Worlds. Boston: Nicholas Brealey, 2009.

Snow, C. P. The Two Cultures. Cambridge: Cambridge Univer-sity Press, 1998.

Sparke, Penny. Consultant Design: The History and Practice of the Designer in Industry. London: Pembridge Press, 1983.

University of Cambridge. "Department Directory." Schools, Faculties & Depart-ments. http://www.cam.ac.uk/deptdirectory/ (accessed July 4, 2011).

University of Cambridge. "The Medieval University." A brief history of the Univer-sity. http://www.cam.ac.uk/univ/history/medieval.html (accessed July 4, 2011).

Wallerstein, Immanuel Mau-rice. World-systems Analysis: An Introduction. Durham: Duke University Press, 2004.

Barber, Michael. Instruction to Deliver: Fighting to Transform Britain's Public Services. Lon-don: Methuen, 2008.

Bason, Christian. Leading Public Sector Innovation: Co-creating for a Better Society. Bristol, UK: Policy Press, 2010.

Brand, Stewart. How Buildings Learn: What Happens After They're Built. New York: Pen-guin Books, 1994.

Fletcher, Alan. The Art of Looking Sideways . London: Phaidon, 2001.

Johnson, Steven. The Ghost Map: The Story of London's Most Terrifying Epidemic--and How it Changed Science, Cities, and the Modern World. New York: Riverhead Books, 2006.

Latour, Bruno, and Peter Weibel. Making Rhings Public: Atmospheres of Democracy. Cambridge, MA: MIT Press, 2005.

Mulgan, Geoff. The Art of Pub-lic Strategy: Mobilizing Power and Knowledge for the Com-mon Good. New York: Oxford University Press, 2009.

Stickdorn, Marc, and Jakob Schneider. This Is Service Design Thinking: Basics, Tools, Cases. Amsterdam: BIS Pub-lishers, 2010.

Thomas, Douglas, and John Seely Brown. A New Culture of Learning: Cultivating the Imagination for a World of Constant Change. Lexington: CreateSpace, 2011.

Tufte, Edward R. Envisioning Information. Cheshire, CO: Graphics Press, 1990.

Tufte, Edward R.. The Visual Display of Quantitative Infor-mation. Cheshire, CO: Graphics Press, 2001.

Additional links to design ethnography resources are available on our website at www.helsinkidesignlab.org/dossiers/design-ethnography

Thank You

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About Sitra

In 1967, Finland rewarded itself with a gift for the 50th anniversary of its independence: a fund was established with a mission to build for the future.

Sitra is an independent fund operating under the supervision of the Finnish Parliament, which seeks to promote stable and balanced development in Finland, qualitative and quantitative growth of the economy, and international competitiveness and cooperation. Our operations are funded out of the returns from our endowment capital and business funding.

Sitra searches for new understandings of well-being. Through foresight activities we anticipate societal changes and attempt to address them proactively. In our investments and pilot projects we promote new operating models and stimulate businesses aimed at sustainable well-being.

The aim of this work is to help Finland prosper as a global pioneer in systemic changes that foster well-being. A systemic change is a broad, far-reaching change of the kind that simultaneously affects the structures and practices of society and the everyday life of its citizens. Sitra is an enabler of such changes—as visionary and implementer. We are building a successful Finland for tomorrow.

www.sitra.fi

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His previously experiences include: Professor at the Harvard Design School (1999-2009); advising governments on SME & design funding strategies; and running his own design & architecture practice. He received his BFA and BArch from Rhode Island School of Design and his MArch with Distinction from the Harvard Design School.

This book is also available online at www.helsinkidesignlab.org/instudio/

Thank you for reading this book.

What enables effective cross-cutting collaboration?

How do we develop better strategies?

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How might we build a carbon neutral nation?

What is strategic design?

What is an architecture of solutions?

What's the link between vision and action?

How can we sketch public policy?

How could we rethink education?

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Geoff Mulgan,
CEO of NESTA,
National Endowment for Science,
Technology and the Arts (London)

Mikko Kosonen,
President of Sitra,
The Finnish Innovation Fund
(Helsinki)

"We're now living through a period of intensive innovation in innovation practice itself, with everything from meetings to collaborative platforms, prototypes to funds, being adapted and played with to see what works best in turning ideas into reality. While the particular approach of the HDL Studio Model won't be the last word, it is a fascinating experiment that points the way forward."

"I share the authors' assertion that the complex systemic challenges we face today require frameworks that are capable of generating and testing entirely new approaches, and learning from their introduction to existing structures. For Sitra, strategic design enables us to explore this delicate combination of pragmatism with imagination; strategic intent with iterative action, systems thinking and human-centredness, all underscored by an optimistic belief in progressive change."

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