

Towards a Sustainable Well-being Society

**Building blocks for a new
socioeconomic model**

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Abstract

The socio-economic model of industrialised societies is quickly becoming unsustainable economically, socially and ecologically, as well as in terms of individual well-being. Moreover, there are various rigidities which make structural adaptation difficult. This discussion paper is an attempt to lay out a path toward a more sustainable society. It introduces several principles of sustainable well-being that meet the key sustainability challenges of advanced societies. Taken together, these principles form a vision of a sustainable well-being society. In addition, the paper analyses the changing role of government in the transition towards sustainability. It concludes by arguing that Finland and the other Nordic countries have specific cultural and institutional advantages in this transition.

Thus, Finland could become a forerunner in sustainable development and well-being. It could adopt a well-being oriented national vision that builds on the strengths of the Finnish society and provides several sustainability advantages. This would mean a stronger focus on the environment and the nature of well-being in the Finnish policy discourse. The paper was written by Timo Hämäläinen but it has benefited from the generous comments of Mikko Kosonen, Paula Laine, Jukka Noponen, Eeva Hellström, Matti Aistrich, Martti Hetemäki, Anne Kovalainen, Kirsi Sormunen, Erkki Virtanen, Geoff Mulgan, Anders Wijkman, Dimitri Zenghelis, Tomas Ries, Vesa-Matti Lahti, Pekka Salmi, and Teppo Turkki.

Sitra is an independent think-and-do tank under the Finnish parliament that operates on the yields of its endowment capital. According to the Sitra law, Sitra promotes the stable and balanced development, qualitative and quantitative economic growth, and international competitiveness and cooperation of Finland. In the spirit of the law, this discussion paper is mainly written for the Finnish policy discourse. However, the analysis is general enough to facilitate a meaningful dialogue with other advanced western societies. Certain ideas presented in the paper might be of interest to even wider audiences around the world. The paper is intended to mark the beginning of a longer term commitment of Sitra to develop and pilot the sustainable well-being approach further. As part of that development, Sitra intends to publish new and updated versions of this discussion paper, along with more specialised studies on its core ideas.

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1. Introduction

The industrialised world is going through a historical transformation. The current financial, economic and sovereign debt crises are a part of a deeper and longer-term structural crisis of the 20th century societal paradigm.¹ The structural crisis marks the beginning of the end for the energy- and material-intensive mass-production and -consumption model that spread throughout the industrialised world during the past century. This economic model benefited from the opening of the world trade and the development of welfare state institutions which channeled resources to individuals with higher propensity to consume. They created new demand for the growing production capacity. However, the accumulating problems of this maturing societal model have become increasingly evident since the late 1960s when the baby-boomers first rebelled against the established values of industrialised societies.

The problems of the established societal paradigm stem from various sources, such as the accelerated structural change in national and local economies, ageing of population, unsustainable use of natural resources, changing skill requirements of new technologies, decision making and governance problems in the face of higher uncertainty and growing economic and regulatory complexity, changing values and demand patterns of citizens, as well as outdated institutional rules. These problems have made the current societal model of industrialised countries unsustainable economically, environmentally, socially, and in terms of individual well-being.

The accumulating problems of industrialised societies have reinforced the interest in sustainable development (SD).² However, the current discourse on SD is still largely based on the work of the Brundtland Commission in the late 1980s. It defined SD as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”.³ Although the Commission offered no definition of needs, they did refer to basic material necessities, such as food, water, and shelter. In the subsequent SD work, this has led to an emphasis on economic and equity issues besides the environmental concerns. The lack of clear definition of needs has made the concept of SD rather difficult to implement in practice.

A more holistic understanding of human needs and well-being can create new possibilities for more focused and effective SD policies. Today, many people feel that SD policies and

sustainable life styles tend to restrict their freedom of choice and well-being. A broader perspective to human needs and well-being opens up new policy and behavioral options that can achieve the same sustainability benefits while maintaining or improving individual well-being. This is possible if the restrictions of individual freedoms and resource use are compensated by improvements in the other determinants of individual well-being.⁴ Such improvements in individual well-being can be an effective motivator for sustainable behavior.

The traditional perspective to sustainable development emphasises a society's resilience against downside risks. If we open up this perspective to a more holistic view of well-being it leads to a more positive concept of *sustainable well-being*. This new concept means that societies should aim to foster (all) well-being needs of the present generation without compromising the ability of future generations to meet their needs. Thus, SD policies should build on a deep understanding of the various determinants of human well-being in the changing natural and socio-economic environment. Such policies require an intelligent balancing of the tradeoffs among the various determinants of well-being.

As a result, the traditional economic, social and ecological sustainability considerations of SD need to be supplemented with the *subjective well-being* and *responsibility of individuals*. The last two dimensions must be included because (a) there are new well-being challenges in advanced societies and (b) sustainability cannot be reached without responsible behavioral changes.

The following *Figure 1* introduces the overall framework for our analysis by laying out the key elements of sustainable well-being. In this framework, the natural environment provides the foundation and absolute boundary conditions for all human activities. The economy and public administration are only instruments, and the civil society an important resource and context, for pursuing well-being - the ultimate goal. The different parts of this framework interact and the sustainability problems typically stem from their contradictions and negative spillovers. These interactions can be seen, for example, in the powerful impacts of firms' strategies and operating practices on individual well-being, public administration, and the environment; or in the effects of consumer choices on firms, the environment, and the demand for public services.



Figure 1. Sustainable well-being

Adopted from: Eeva Hellström, *Sustainable Economy Forum*

Most of the sustainability problems are fairly well understood. There is also a growing consensus that ecological sustainability must receive a very high policy priority among the various sustainability challenges. However, there is much less consensus about the appropriate solutions to these challenges. Experts are specialised in different sustainability problems and they rarely attempt to integrate their potential solutions to form a more holistic and coherent vision of a sustainable societal model. For example, the natural environment is often seen as something that lies outside of the economy, as something to which the economy sometimes “spills over” and creates “externalities”. Hence, decision making tends to rely on established, narrow, and reactive models which cannot provide sustainable and complementary solutions in the rapidly changing circumstances. This paper attempts to take a more holistic perspective to the sustainability challenges and opportunities of advanced societies. In particular, it will frame the analysis of the present crises from two new perspectives – *the historical transformation and complexity* of advanced societies.

The growing uncertainty, specialisation, interdependence, and complexity associated with current transformation has increased decision making problems at the level of individuals, organisations and societies.⁵ The old mental frames, social theories and decision making processes are often insufficient in the face of these new challenges. As a result, individuals are suffering from growing life management problems, organisations are turning away from hierarchical planning and experimentation with new governance solutions, and governments are

puzzled with the “wicked” sustainability problems and economic crises they have to deal with.⁶ The confusion of decision makers reduces their ability to take determined preventive action in the face of great sustainability problems. As the *Stern Report* underlined, this is a big risk that can prove to be very costly for humanity.⁷

The decision making problems are exacerbated by the reductionist worldview that has dominated industrialised societies since the Enlightenment. This view is often criticised for its “machine model” of the society which emphasises static, linear phenomena in the state of equilibrium.⁸ It tends to assume rational decision making and perfect information, seeks universal laws and theories, focuses on individual agents, issues and levels of analysis (atoms, diseases, problems, individuals, firms, states, etc.), and believes in planning and top-down control. The reductionist worldview tends to be instrumental and often forgets about the ultimate goals of a system’s activities. The critics argue that such a narrowly focused analysis does not fit very well with many complex problems of today’s highly uncertain and interdependent societies. In particular, it is not able to capture the important interactions, spillovers, feedback loops, and the emergent and non-linear processes among their various actors.

The critique of the reductionist worldview has sparked many interesting fields of research that have adopted more realistic assumptions of human and natural systems. One of the most interesting of these is the *complex systems* approach. It provides a new holistic, evolutionary, and multi-level perspective to how advanced economies and societies work. This perspective emphasises the uncertain and emergent nature of social systems and phenomena. It focuses on non-linear and self-organising processes that are far from equilibrium, path-dependent, and fundamentally unpredictable. In complex systems, novelty arises from the evolutionary process of experimentation, selection and growth. Micro-level behavior at one analytical level can accumulate into macro-level consequences at higher systemic levels. Complex systems can be found at different analytical levels, such as climate systems, societies, economies, financial markets, human beings, and organs.

This paper will take a long-term historical and systemic perspective to the current societal transformation. Our time perspective will be a few decades into the future. The paper will seek new opportunities for sustainable development and well-being in the fundamentally changed environment. The search will focus on potential *building blocks*, or *principles*, for a more sustainable society. These principles have been chosen because they have a positive impact on several dimensions of sustainability at the same time. However, it must be stressed

that good sustainable solutions do not have to have such multiple impacts. They can very well contribute to one dimension of sustainability and have no impact on the others. The principles presented in this paper will not, naturally, cover all aspects of life and society. There are also be many sustainable institutions and practices in the current societal model which will stand the test of time.

We hope that, over time and with further development, the proposed principles can form the nucleus of a new vision that could inspire decision makers to move towards a better and more sustainable society - both at individual and organisational levels. Such a vision will necessarily be fuzzy. The world is changing too rapidly for anything better. However, some guiding principles and a fuzzy vision is better than nothing. Structural changes cannot be effective without the direction that they can provide. A shared vision can encourage the various actors at different parts of the society to develop coherent and complementary strategies and policies which are well-attuned to their own specific contexts but move the society as a whole towards sustainability.

The transition towards a more sustainable societal model will not be easy. Various kinds of rigidities and inertia lie in the road to a better society. For example, short-term decision making, lack of open societal dialogue, rigid mental frames, binding social ties, vested economic interests, political power struggles, and the sheer difficulty of coordinating change in complex societal systems create roadblocks that may stifle structural renewal processes. Thus, a successful transformation to sustainability will not only require a vision of the future societal model but also the ability to overcome such adjustment rigidities. This paper will present a new *stewardship role* for the government that tries to overcome such systemic adjustment rigidities.

The paper will also argue that *Finland could become a forerunner of sustainable well-being*, a new societal paradigm that combines the different dimensions of sustainability. Despite some structural weaknesses, Finland ranks high in international comparisons of many sustainability factors. It has a good starting point to be among the first nations to develop truly sustainable and complementary solutions for different parts of the society. The relatively small size of the society would also help in integrating the various solutions. The role of a forerunner would have many benefits.

Forerunner societies are likely to be the first to gain the increasing economic returns and well-being benefits from systemic adaptation to the new technological, economic and ecological environment. Historical evidence shows that coun-

tries who first systemically embraced the complementary technological, organisational and institutional innovations in the past industrial revolutions were also the ones that prospered in the following decades.⁹ Later, their well-adapted technological, organisational, and institutional innovations are likely to spread around the world in different varieties as other nations take advantage of these innovations and adapt them to their own local cultures and circumstances. The geographical spread of large hierarchical organisations in the early 20th century and welfare state institutions in the late 20th century are good examples.¹⁰

The economic balance of the world is gradually shifting towards East as the fast-growing Asian economies have replaced the old industrialised countries of the West as the engines of the world economy. These rapidly growing developing economies are also aiming for higher well-being. Without a new model of sustainable well-being, they are likely to follow the energy and raw material intensive industrialisation path of the West. Hence, the development of new, more sustainable solutions is an urgent global priority. Indeed, it is the moral responsibility of the West to take the lead in the development of such solutions. This is a big opportunity for Finland and the other Nordic countries who already lead in many sustainability rankings. Despite cultural and contextual differences, innovative new solutions can spread around the world in various local adaptations and promote sustainable development - like the core ideas of the welfare society did during the postwar decades.

The paper is divided into five parts. The second part will focus on the key sustainability challenges of industrialised societies and the humankind more generally. The third section will discuss the principles, or building blocks, for a sustainable, advanced society. If implemented, each of the proposed principles would have a positive impact on multiple dimensions of sustainability. Their implementation will not be unproblematic, however. It will require a lot of political courage, new policy approaches and capabilities, as well as fundamental systemic changes in the society. The fourth part will analyse the new stewardship role of government that is required for facilitating such systemic changes. Finally, the fifth part will argue that Finland could become a forerunner in the transition toward a society of sustainable well-being.

2. Sustainability challenges

A vision for a sustainable socio-economic system must provide solutions to the key sustainability problems of contemporary societies. This section will discuss the “wicked” well-being, cultural, demographic, environmental, economic, and institutional problems of industrialised societies. The following section will introduce some potential solutions to these problems.

2.1 New well-being problems

The most important well-being problems in the postwar welfare states were the Beveridgian “five giants”: “Want, Disease, Ignorance, Squalor and Idleness”. The basic physiological, health and safety needs are still important to all people and there has been a worrying trend of increasing social polarisation in industrialised countries during recent years. However, the postwar economic growth and the development of welfare states has allowed the majority of people in advanced societies to satisfy their basic needs fairly well. This has increased the relative importance of social and psychological needs - such as the Maslowian “love and belonging”, “social and self-esteem” and “self-actualisation” as well as Antonovsky’s “meaningfulness”, “manageability” and “comprehensibility” of life¹¹ - which cannot very easily be met with mass-produced material goods. At the same time, the pressure on social and psychological needs has grown due to the increased uncertainty, complexity, individualism, normlessness, materialism, and hurry in everyday life.¹²

The growing affluence and freedoms of individuals together with the increasing influence of markets in everyday life has created a new, but often unconscious, “problem of choice” for individuals who have to make numerous choices each day that affect their own well-being as well as that of other people.¹³ Human beings have to face these choices with a limited mental capacity, rationality and will-power. Hence, they often make choices that have unintended and undesired consequences for well-being. The problem of choice does not only affect the wealthy part of the population. For example, obesity, depression, substance abuse, life management problems and environmentally unsustainable behavior are common throughout the society.

The growing choice in everyday life has also led to more harried life styles. The more affluent and freer individuals have taken advantage of their new opportunities and engaged in a growing number of activities, both at work and at leisure time. However, due to two strictly fixed resources, i.e. time (24/7) and mental capacity, they often feel stressed out in trying to fit all these activities together in daily life and have less time for their important social relationships.

The increased uncertainty, complexity and pace of everyday life have created a “complexity gap” between the mental demands and the mental capacities of individuals.¹⁴ Bridging this gap is very important for the individuals’ social and psychological well-being. Recent trends, such as “downshifting”, “cocooning” (building a safe “home nest”) and even rising fundamentalism, exemplify the various personal strategies with which people try to deal with the growing complexity gap. Besides individuals, the complexity gap is a major challenge to corporations and governments.¹⁵ We will return to this theme in section 3.11.

The cognitive and psychological burden of everyday life has grown and people are still struggling to learn how to live a good and balanced life in the changed world.¹⁶ The youth are particularly vulnerable in this situation with their limited life experience. Problems with life management loom large behind many sad stories of young people who gradually accumulate various disadvantages and ultimately become socially excluded. Unfortunately, the traditional welfare state often reacts only when an individual’s problems have become a serious and intertwined cluster that is difficult to solve.

2.2 Materialistic consumer culture

The current consumer culture and its powerful marketing machinery promote hedonistic consumption as the main source of individual well-being. People work long hours to build their careers and reach their materialistic goals, which are supposed to bring happiness. However, research shows that materialism does not bring happiness. In fact, the more materialistic people tend to be unhappier.¹⁷ The new acquisitions often bring only fleeting joy and the extra time spent at work is not available for building and maintaining social relationships which are highly important for personal well-being. Moreover, the consumption culture creates cluttered homes where people have to invest considerable time, effort and money for cleaning up, maintaining, repairing and storing their goods. Material consumption has very little to offer for the satisfaction of social and psychological needs. Good social relationships, meaningfulness, understanding and empowerment in everyday life cannot be bought from a store.

The culture of mass consumption is a major reason for the current environmental problems. However, consumers rarely notice the full impact of their daily consumption choices. The globalisation of value-adding systems has made it more difficult for consumers to know how the products they consume are produced and what kinds of social and environmental impacts their production has on local communities across the globe. Hence, even responsible consumers find it hard to follow their ethical norms in today's markets.

The transformation to a more sustainable societal model will ultimately depend on the adjustment of cultural frames, values, and norms. A shift towards more sustainable behavior and life styles cannot happen without the support of new cultural paradigm.¹⁸ New policies and institutions will not be developed if the culture does not support them. Neither will individuals adopt more sustainable behavioral patterns.

2.3 Climate change and dependence on non-renewable resources

The mass-production, mass-consumption paradigm was based on the assumption of unlimited, cheap fossil fuels and natural resources, and the capacity of earth to cope with the consequences of their extensive use. These assumptions were first challenged by the 1972 report of the Club of Rome and the two oil crises of the 1970s and 80s. More recently, the ecological unsustainability of the prevailing paradigm has been underlined by the rising prices of energy, foodstuffs and raw materials in the world markets as well as the growing scientific consensus about the climate change and the role of fossil fuel use in creating it.

Many governments have agreed to keep the average global temperature rise below two degrees over the pre-industrial average in order to avoid the dangerous consequences of exceeding this limit. However, latest evidence shows that this target will be missed with the current development trend.¹⁹ It suggests that the world could be 4 - 6 degrees warmer by 2100. In that situation, the food production capacity would be up to 50% lower.²⁰ The availability of drinking water would also be significantly lower than today. A sea level rise of about one meter would already make the current living environment of hundreds of millions of people inhabitable. Even with intense technological development, a 4 - 6 degrees warmer planet is unlikely to be able to support the current size of population. Poorer nations and communities are likely to suffer the most.²¹

The growing global scarcity of food and many natural resources has created a new international problem as some countries are

strategically acquiring arable land and other natural resources from foreign countries. Rising food and natural resource prices may increase geo-political tensions around these resources in the future.

Despite major challenges in reaching international agreements, governments are slowly beginning to respond to the climate change, decreasing biodiversity and growing waste mountains by creating new regulation that forces consumers and producers to internalise more of their environmental costs. The era of cheap energy, foodstuffs and raw materials is over. The growing environmental problems demand drastic changes in life styles and production methods. In the past, these problems used to be questions of ethics and ideology. Now they have become an existential challenge for the humanity. They must receive a top priority in policy making.

2.4 Ageing societies

The people of industrialised countries are ageing rapidly as people have fewer children than before and are living longer due to better health care and improved living conditions. The pension, social and health care systems of these societies are facing growing cost pressures as the dependency ratio between the non-working (dependent) and working parts of the population increases. This creates pressure on public sector finances and the welfare state institutions that were created in a very different demographic situation. However, changing these systems to secure their financial sustainability has proved very difficult. At the same time, the numbers of active and relatively healthy retired persons is growing. There is a clear contradiction between the improved capabilities and social and mental well-being needs of these active seniors and the established societal structures that do not encourage and support their full participation and meaningful contribution to the society at later age.

2.5 Sluggish economies, productivity growth and public debt

Sustainable well-being requires a competitive and healthy economy that provides adequate employment and investment opportunities as well as sufficient tax revenues for the public sector. It also demands fiscal discipline so that public sector deficits do not exceed the long term capacity of governments to maintain financial stability. Since the 1970s weaker economic growth rates associated with the maturing socio-economic paradigm have put increasing pressure on government finances. Many industrialised countries have

responded to these economic challenges by increasing their public borrowing. The growing debt service costs have gradually become a fiscal problem for many countries. The current economic recession turned the situation into a sovereign debt crisis in the Euro-zone.

In the financial crisis of 2008, many governments and central banks quickly adopted Keynesian stimulus policies to fight the recession. These policies may have saved the world from a replay of the 1930s depression but they did not solve the underlying structural problems of the economies. After a few years of aggressive stimulus, these problems are still unsolved, major industrial economies are sluggish, and the public sector debt has reached crisis levels in many European countries, the United States and Japan. As a result, many countries have introduced fiscal austerity policies to cut their budget deficits, and economic growth has become a top priority in policy making.

At the macro-level, economic output depends on the amount of productive factors used and the productivity with which they are used. In advanced societies with limited population growth, productivity growth plays a key role in long term economic growth. The productivity growth has been slowing down in the leading industrialised countries (G7) from 2.9 % in the 1970s, to 1.8 % in 2001 - 07, and further to 1.1 % in 2007 - 11. In the same period, the productivity growth in the whole OECD area has been flat at 1.5 % per annum until the current economic crisis which pushed it down to 0.9 % in 2007 - 11.²² There are different views among economists whether this slowdown is a longer term trend or just a temporary phase before the current organisational and institutional adjustments allow the new technologies to have their full impact on productivity.²³ In any case, the vitality of industrialised economies depends crucially on their future productivity growth.

2.6 Structural adjustment to globalisation

The globalisation of economic and cultural activities has increased the interdependence of societies and created new challenges and opportunities for policy makers. The globalisation of production systems and the integration of new developing economies into the global economy have improved living standards in the old industrialised countries and raised hundreds of millions of people from poverty in developing countries. At the same time, however, the increasing global competition led to major structural adjustment problems in advanced economies and local communities, growing unemployment and social inequalities, and increasing competition for international investments and expertise.

The economic performance of many industrialised economies and regions has suffered as they have lost their locational advantages to rapidly developing economies and their traditional export clusters have internationalised their production activities. This has led to a gradual decline of established business ecosystems and weakening of the domestic industrial base in many industrialised countries. The disintegration of traditional clusters has resulted in growing unemployment, geographical polarisation among regions, deteriorating trade balances and slow economic growth. The higher economic uncertainty and unemployment has built social tensions and fed animosity towards immigrants. Many governments have adopted short-term, cost- and price-oriented strategies to improve their economy's competitiveness. These strategies are not likely to offer a sustainable competitive advantage in the long-term.

Many developing countries have not been able to fully take advantage of their natural resources and economic globalisation in upgrading their national economies. The multinational enterprises have often sought lower resource and labor costs from their investments into these countries. They have not been very eager to bring in their higher value-added activities or utilise the diverse local assets and capabilities to the extent that the long-term development of the host country would require.²⁴

2.7 Adapting skills to new technologies

The information and communication technologies have been the new *general purpose* technologies of the new production paradigm. The early generations of ICTs in the 1960s and 1970s were developed to manage the growing transaction- and co-ordination-intensity of the increasingly specialised and inter-dependent economies. The demand for the new ICTs was also enlarged by the more differentiated demand patterns which called for "flexible specialisation" in production.²⁵ A wide range of differentiated products could only be produced economically with the new ICT-intensive flexible manufacturing systems. The rapidly falling prices of microprocessor technologies expanded the market for these new technologies.

The widespread use of the new ICTs has been a major source of productivity growth and offers a real possibility to decouple the use of material resources from economic growth and well-being. The new ICTs have also supported people in their everyday life and social relationships. However, the information technology revolution has also had a powerful impact on the types skills demanded from the labor force. There has been a clear shift in demand from unskilled to skilled labor, from manual "blue-collar" to knowledge-intensive "white-collar" jobs, and

from ordinary workers to “superstars”. Combined with the globalisation of production, the new technologies have put growing competitive pressure on the low- and semi-skilled workers in advanced societies. This has resulted in growing structural unemployment and poor income growth for these people, and growing income and social differences in these countries.

With increasingly powerful ICTs, the automation of more complex human tasks is likely to continue in the future. Computers have started to do many things that only human beings could do in the past. In particular, conscious mental processes seem to be more prone to automation than the unconscious ones. As a result, the demand for labor has fallen particularly in the middle of the skill-distribution.²⁶

2.8 New governance challenges

The rapid transformation of the world economy and industrialised societies has created new governance challenges for national governments. These challenges are related to both their changing societal role vis-à-vis other governance arrangements and new demands on public sector management.

The economic role of government has traditionally been defined with *market failures*. Government interventions have been targeted specifically to overcome the failures of the market economy to take sufficient care of important social tasks such as education, public safety and infrastructure. The globalisation of markets and growing differentiation of demand patterns has made the scope of many market failures either more or less extensive than before. Some traditional tasks of national governments can now be more effectively undertaken by local governments and civic associations (e.g. provision highly specialised infrastructure or training) or multinational institutions (e.g. trade and market regulation, external security).²⁷

Ideally, the new governance arrangements would match the extent of the governance challenges.²⁸ Many national governments are now trying to readjust their roles relative to the private and civil sectors as well as towards local governments and multi-national institutions. These adjustments tend to be very difficult politically because they usually require shifts in political power and resources. Moreover, they would often require the development of entirely new organisational and institutional capabilities. The insufficient international institutions for the governance of global financial markets are a good example.

The 20th century mass-production model was based on large hierarchical organisations that could maximise the economies of scale in production. This organisational model was first developed in the corporate sector but later diffused also to the

public sector service production. In the past few decades, the rigid hierarchies have been challenged by the growing individualisation and differentiation of consumer preferences and demand patterns in the increasingly affluent societies. The higher uncertainty, interdependence and complexity associated with the current transformation (e.g. “wicked” systemic problems) have further added to their governance costs. Rigid hierarchical planning and mass production do not fit well with the new environment.

In the 1970s and 1980s, the accumulating structural problems of industrialised economies created room for a new market-oriented paradigm of economic governance which promoted deregulation and emphasised the role of shareholders and efficient financial markets in business management. This model was soon institutionalised into business school curricula and stock market regulation in the leading industrialised countries.²⁹ Initially, the deregulation and increased competition inspired by this paradigm increased economic efficiency and productivity. However, further along the way, the short-term profit orientation of the new corporate governance model contributed to the many excesses that led to today’s financial and economic crises, and still continues to create social, environmental and well-being problems around the world. Focusing on the interests of only one stakeholder tends to create unintended negative spillovers for the others.

Successful systemic adjustments are not possible without good coordination among the systems’ interdependent elements. With complex and dynamic policy problems that involve numerous private, civil and public sector actors, systemic coordination is unlikely to take place entirely through the market mechanism. Other coordination mechanisms are also needed. However, as argued above, hierarchical top-down planning does not work in these situations either. In the absence of strong coordinating ideologies, governments have responded to them by “muddling through”. They have delegated policy making to experts in various government units and special committees. These tend to produce policy proposals that take a rather narrow “silo” perspective to policy issues. The proposals are then lobbied by special interests and often gain little commitment from other stakeholders and parts of the government. This results in uncoordinated policies and lackluster policy implementation at the systemic level.

2.9 Institutional and democratic crisis

The globalisation of economic activities, environmental challenges, and changing technologies and values create contradictions with the established institutional rules. Some parts

of the old legislation and regulation become outdated and must be abolished, while other parts need to be reformed, and the entirely new challenges call for fresh new rules. Old policy regimes face a similar adjustment challenge. The changing techno-economic and natural environments as well as the new well-being needs of individuals require a fundamental rethink of the established policy premises and principles. Similar to earlier industrial revolutions, the current transformation will necessitate a comprehensive re-evaluation of the role and duties of government in the society.

The growing problems of the representative democracy make the institutional and policy changes difficult. Participation in general elections has dropped in most industrialised countries during the past few decades and the membership in traditional political parties has declined. At the same time, the support for extreme political parties has grown in many countries. There are many reasons behind these trends.

Globalisation has shifted traditional political power to faceless international markets and supranational institutions such as the EU and WTO. There are no well-functioning democratic institutions at the supra-national level. Political decision makers appear powerless in the face of the historical transformation that has raised societal uncertainty and complexity to new heights. Powerful vested interests make structural changes very difficult. The mounting fiscal problems force governments to prioritise economic policies over other policy areas, and the austerity policies are highly unpopular. The electoral cycle leads to short-term policies at the expense of long-term strategies and investments for sustainable development. The fact that public sector budgets do not separate consumption expenditures from capital expenditures aggravates the problem of political short-sightedness.

In addition, traditional political parties have often lost touch with people's changing everyday life and needs. Old mass ideologies, rhetoric's and policy approaches do not anymore attract the increasingly individualised people. Recurrent political scandals and opaque policy making processes create additional distrust to politicians. They cannot offer a coherent, convincing, and inspiring vision of a future society that could energise citizens and provide hope in the rapid structural adjustment. All these trends lie behind the problems of representative democracy.

3. Principles for sustainable society

Part two of this paper laid out the key sustainability challenges of industrialised countries. This part of the paper will lay out ten principles for a sustainable society and well-being which respond to these challenges. If adopted, each of these principles will have a positive impact on several dimensions of sustainability and well-being.

3.1 Renewing our understanding of well-being

The current sustainability challenges cannot be solved without changing the established societal structures and institutions. Extrapolating old solutions to the future will not suffice. However, the frequent demands for structural change are useless as long as the overall direction of change is unclear, as it is in many societies today.³⁰ The guidelines for sustainable change cannot be derived from the established truths and institutions. Instead, we need to return to the eternal question of “what is good life”? As one philosopher has argued, the determinants of happiness change over time, and during major transformations people need to redefine what good life is.³¹ Once the goal is clearer, the necessary changes are much easier to identify.

Despite active well-being research and indicator development, there is currently no generally accepted, holistic and up-to-date framework of well-being available. The research that is relevant for understanding the different aspects of well-being is dispersed among various specialised disciplines. At the same time, the policy discourse centers around the welfare state and traditional deprivation problems. The new problems with mental well-being are not part of the mainstream discourse.

As discussed before, the subjective well-being of individuals is under pressure in today’s uncertain, complex, information-intensive and hurried societies. Hence, there is a need to develop a more holistic understanding of well-being, and this understanding must be integrated with the other dimensions of sustainable development. Such a broader framework of well-being must combine the traditional material and objective factors of well-being with its more mental and subjective dimensions: available resources and capabilities; relevant aspects of living

environments; everyday activities and experiences; as well as the basic physiological and material, social and psychological needs of individuals.³² An improved understanding of well-being has multiple sustainability benefits:

- It informs individuals in everyday choices that affect their long-term well-being. An improved understanding of the (non-material) social and psychological aspects of well-being is likely to decrease the role of material consumption in culture.
- It allows organisations to improve their working environments as well as policy makers to develop better living environments, policies, and institutional rules.
- It helps governments to develop better well-being indicators and focus their scarce resources on activities and policies which provide the biggest well-being benefits for citizens.
- It helps firms to develop better products and services with higher value-added since ultimately value stems from their contributions to well-being. The potential market for such products is the entire population of the world since well-being is the ultimate driver of consumption demand.
- It supports the development of more effective incentives for ecologically and socially sustainable behavior.³³
- The opportunities for developing high value-added innovations with world-class well-being knowledge attract domestic and foreign corporate investments; while the high quality of living environments attracts talented employees.

The new well-being needs have not had their full impact on the economy and policy making, yet. Markets are now offering highly differentiated products and services but many of the social and psychological needs in today’s advanced societies are still not met with appropriate offerings. The rapid growth of social media, digital peer-to-peer networks, household and life management services, as well as magazines and TV-programs that focus on the everyday life and well-being suggests that the new needs can drive societal development in the future.

The growing importance of the social and psychological needs has already shaped the dominant values in advanced societies. *TheWorld Values Survey* concludes:

*“The unprecedented wealth that has accumulated in advanced societies during the past generation means that an increasing share of the population has grown up taking survival for granted. Thus, priorities have shifted from an overwhelming emphasis on economic and physical security toward an increasing emphasis on subjective well-being, self-expression and quality of life.”*³⁴

The changing needs and values of people are not reflected in the policy discourse of many industrialised societies, which still tends to focus mainly on the basic needs and deprivation problems.³⁵

In conclusion, a deeper and broader understanding of well-being in everyday life can support all dimensions of sustainability. It is the hard core around which sustainable societies can be built. Finland has many unique assets for building a sustainable well-being vision and agenda. Besides offering people vital hope amidst of the current crises, such a vision can provide the necessary direction for the society's structural change processes.

3.2 Empowering individuals and communities

The rapid transformation of economies and societies has led to growing social polarisation and divergence among individuals, communities and regions. The changing demand for different types of skills in the working life has created both structural unemployment and skills bottlenecks in certain sectors and occupations. At the same time, the growing uncertainty, complexity and choice have created life management problems for the citizens of advanced societies regardless of their socio-economic and educational background. In addition, the short-term profit-orientation, high-pressure performance measurement, and emphasis on external monetary incentives have tended to make the working life more stressful and meaningless.³⁶ As a result, many people feel powerless and disempowered. They need new kinds of skills, support and empowerment to live better lives in today's challenging society.

In the past, the support for everyday life was often available in the neighborhood or local community from family members, relatives, friends or neighbors. The local communities not only provided the necessary domestic help, they also built and maintained the local public goods and common pool resources, such as roads, mills, and irrigation systems, as well as forests, fisheries and pastures. During the postwar decades, however, industrialised societies became more individualised, mobile

and market-oriented. The role of the public sector grew and it took responsibility for many public goods and services previously provided by local communities and cooperative networks. As a result, the role of local community based solutions became marginalised relative to markets and the public sector, and the latter took over the provision of many public goods and common pool resources (such as knowledge, roads, parks, security, etc.).

However, there is a growing need for more customised public goods and services in today's highly specialised, differentiated, and individualised society. People are also seeking opportunities for meaningful participation, cooperation and co-production that would better meet their social needs. Welfare states have difficulties in adjusting their “universal services” to these new needs. “One size” does not anymore “fit all” in the production of public goods and services. The fiscal problems of governments also leave more room for local initiative and community based solutions. Moreover, people have today both the will and the skills to directly participate in the development and production of local public goods and services which shape their living environments. In the future, the community based solutions can play an increasingly prominent role in societal governance.

There are various benefits in the more participatory and community based governance arrangements (peer-to-peer networks, co-operatives, public-private-people partnerships, etc.) in today's society. They:

- build on local assets and knowledge instead of focusing on problems (“asset based” approach),
- develop individual skills, strong relationships, trust and social cohesion,
- make citizens active subjects and enlist their internal motivation and energy,
- encourage local experimentation and innovation (new combinations of diverse knowledge),
- promote well-being by satisfying participants' social and psychological needs,³⁷
- provide effective and cost-efficient local governance solutions to collective goods problems, and
- strengthen democracy by adding an active local and participatory layer to it.

As a result, the new governance approaches empower communities and individuals and prevent many social problems.

Governments can support and empower community based solutions by providing places, platforms and resources for dialogue, cooperation and experimentation. They can also open public sector processes and activities for citizen participation and co-development. Governments can offer underutilised public resources, such as data, expertise and buildings, to interested individuals and communities who can use them for the common good. Finally, they can evaluate and diffuse the best results of local experiments.

Governments can also empower individuals directly by providing or promoting customised, human-centric services. Many personal or household services, such as financial and other advisors, cleaners and carpenters, make the complex everyday life easier to comprehend and manage. Sometimes electronic self-services may also be an efficient way to customise services to individual needs.³⁸ In more challenging situations, service customisation may require close cooperation among the various service providers and the customer.³⁹

The Danish *flexicurity* model in labor market policy provides a good example of the benefits of customised service production.⁴⁰ This system combines flexible rules for hiring and firing with high unemployment benefits and active labor market policies that provide tailored retraining and life-long learning opportunities. A well-functioning flexicurity system can provide multiple benefits:

- It improves the employment security and skills of individuals.
- It supports the flexibility of employers in the increasingly uncertain environment.
- And, it reduces unemployment and facilitates a quick reallocation of human resources in the economy.

The European Union promotes flexicurity among its member countries as a good response to the rapidly changing socio-economic environment and labor markets. The model needs to be adapted to the local conditions of each country to achieve its full potential. Its mutually supporting characteristics can contribute to sustainable development by improving individual well-being, economic efficiency and productivity (better use of human resources), and social inclusion.

Customised services are particularly important when a person suffers from serious self-control and life management prob-

lems. At best, they can prevent the accumulation of personal health, social, financial, etc. problems which can lead to social exclusion.⁴¹ Stopping social exclusion processes early can save the society lots of resources in traditional welfare services. Customised services may appear to cost more than standardised services but that is not usually the case when their effectiveness and total costs are taken into account. Some experts argue that a human-centric and customised approach can often save 50 percent, and in individual cases as much as 80 percent, of service costs.⁴²

Finally, in working life, organisational practices, incentives and leadership play an important role in empowering individuals. The motivation, energy and commitment of employees depends on how well they can satisfy their various human needs at work (e.g. social esteem and belonging, self-actualisation, meaningfulness, manageability, comprehensibility) and whether the leadership can encourage and support them in appropriate ways by building on their internal motivators and preferences. Complex organisational structures, rigid organisational practices and long working-hours can seriously complicate everyday life. On the other hand, flexible work arrangements and an understandable organisational vision, strategy and structure can improve employees' sense of coherence and well-being. The level of organisational well-being and employee empowerment has powerful economic implications. The differences in creativity and productivity between empowered and disempowered employees are enormous. Furthermore, empowered employees are much less likely to suffer from mental health problems which have become a leading cause of absenteeism and sickness pensions in today's working life.

3.3 Realising the potential of the elderly

Industrialised societies are greying rapidly as the postwar Baby Boomers are getting old. The ageing population is often viewed as an impending threat to economic performance and fiscal stability. The European Commission predicts that, with current welfare institutions, most of the increase in public spending between 2010 and 2060 will be age-related – on pensions, healthcare and long-term care – rising by 4.1 percentage points to around 29% of GDP. Reducing these costs will not be easy with traditional measures, by raising taxes of the working generation or slashing the pensions and benefits of the retirees. The traditional solutions risk weakening the social cohesion and creating a conflict between generations.⁴³

A more sustainable solution must fundamentally reframe the role of old people in the society. Today's and tomorrow's elderly cannot anymore be viewed as passive clients of the welfare

state. Instead, they are *wealthier, healthier, better educated* and *more active* than the previous generations of their age. Their ability to contribute to society does not end at the current retirement age. Moreover, the sudden loss of important work-related social relationships and opportunity for meaningful contribution is often a cause for major personal crisis. There is a clear need for a more flexible retirement age that would allow individuals to decide when and at what rate they step out of working life. The elderly are a heterogeneous group who require a customised approach and services.⁴⁴ The lengthening of working careers should go hand in hand with the increased longevity.⁴⁵

Today's increasingly capable elderly must be seen as an asset for sustainable development and well-being. They have plenty of *time, wealth, knowhow, skills* and *wisdom* that can benefit the society. Organisations can use their broad experience and tacit knowledge for mentoring the younger generation of workers. A mixed age working group is often more productive when different types of capabilities are required. In most sectors, the older workers maintain their productiveness nowadays for much longer than is usually expected.⁴⁶

The elderly can use their spare time for helping their children, relatives, friends or other elderly in household and caring activities. This supports the everyday life and well-being of families, reduces public welfare costs, and also improves the well-being of the care-giving elderly.⁴⁷ They can also do important volunteer work in the civic sector. This creates new social relationships and provides meaning to everyday life, both very important for personal well-being.

The intergenerational solidarity works both ways. Today's younger generations increasingly need to take care of their old parents, besides their own children. Both types of intergenerational solidarity tend to require *geographical proximity*. This puts special demands on the housing supply that should accommodate the needs of many generations and types of households in the same building or in close geographical proximity.⁴⁸ At best, such intergenerational help and care can alleviate the life management stress of families with small children, the loneliness of the elderly, and the fiscal pressures on the welfare state.

Today's elderly have more wealth than ever before. Their investments can provide a major boost for the economy if properly allocated. Many of them can support their children through financial straits or emergencies. In the future, the sharing economy could benefit from the plentiful idle assets of the elderly if they decided to offer them for others to use.

The greying of the society may not only demand a cultural shift to accommodate it, it may also drive this shift. A society with a growing share of old people can be more content with being rather than always *doing* something. Such a society may value a more meditative, quiet and less hurried life. The long and varied experiences of the elderly also help them to better understand the world around them. They have accumulated wisdom from many economic and social cycles.⁴⁹ In addition, the elderly who work part-time or are already retired have more time for their important social relationships. These trends would not only satisfy the psychological and social needs of the elderly, and improve their well-being, they would also change the general cultural norms away from the hurried and self-centered consumption culture.

3.4 Developing coherent, sociable, and low-carbon living environments

The design of physical living environments is an important determinant of sustainable well-being because it shapes the complexity, sociability, and ecological footprint of everyday life. We will discuss each of these impacts in turn.

The reduction of the complexity gap in advanced societies requires more coherent and simpler living environments that alleviate the mental burden of individuals. Nature is the quintessential example of a coherent environment. Evolution makes sure that all elements of nature fall in their appropriate places. As a result, several studies have shown the positive effects of access to nature on health and subjective well-being.⁵⁰ The built environment can also support social and psychological well-being by fostering social interaction in the form of public parks, pedestrian streets, plazas, etc.; and by minimising the unnecessary mental dissonance such as noise, distracting lights, poor street signage, and architectural style contradictions.⁵¹

The limited mental capacities and complex lives of individuals should also be taken into account in the development of new technologies, products and processes. An intuitive and simple user-interface reduces the complexity of everyday life. The recent success of Apple's new products is largely based on this. The empowering effect of customised personal and household services is based on the time, effort and mental energy that they save for their users by reducing the complexity of everyday life.⁵²

Housing and commuting activities account for a major part of the CO₂ emissions in industrialised countries.⁵³ Everyday housing and commuting patterns are essentially shaped by

the planning of our built environment and infrastructure. Thus, a very important way to reduce the carbon footprint is to develop physical living environments that make it easy to cut down CO₂ emissions. The first step in sustainable design is the planning of land-use for housing and traffic infrastructure. Another important step is the planning of individual houses and commuting choices. Policy makers can influence zoning practices directly and households' specific choices through construction regulations and various incentives. The policy incentives play a particularly important role in both sustainable household choices and business development in the transition phase to a more sustainable socio-economic model, when green housing and traffic solutions do not have similar scale economies as the established solutions. Examples such incentives include the hybrid car incentive scheme in the UK and the solar power feed-in tariff in Germany.

3.5 Building new business ecosystems

During the past few decades, the governments of industrialised countries have tried to limit their economic role to good macroeconomic management, reduction of traditional market failures and the provision of good framework conditions for firms. This "hands off"-approach to economic development followed the failures of traditional industrial policies in the 1970s and 1980s when governments attempted to promote industrial development by picking "national champion" firms for special government support. However, the globalisation of production systems and the rapid structural change in advanced economies have now challenged the current approach to industrial development. It worked quite well with the established industrial clusters before the current phase of globalisation, but it has had much less success in creating new growth areas that could substitute for the recently lost economic activities.

The complex adaptive systems view of the economy suggests certain principles for nurturing new growth areas in national economies. The increased uncertainty and complexity of the economy underline the importance of exploration and innovation over the efficient and path-dependent exploitation of existing resources. The evolutionary policy model of "experimentation", "selection" and "growth/diffusion" seems to be more appropriate for this kind of environment than top down planning, path-dependent cluster development, or a pure free-market approach. It can combine decentralised experimentation with dynamic system-level coordination. We will return to this policy making approach in section 4.3.

Small-scale experiments with potential new business ecosystems can test their viability without creating major macro-level risks. Concrete experiments can inspire various stakeholders, facilitate their interaction and mutual understanding, as well as commit them to a shared development process.

The most promising results from such experiments need to be identified and selected for further development. The less successful experiments must be quickly abandoned. This requires a knowledgeable and systematic multi-stakeholder approach to evaluation and strategic choice. Such an approach uses the best available knowledge to minimise all unnecessary risks due to ignorance. The subsequent development and scaling up of the most successful experiments demands the commitment of the key stakeholders that can influence their success. If the selected business area is knowledge-intensive and involves "increasing returns", the timing of the strategic choice is critical.⁵⁴ The first mover advantages (learning and network economies, positive feedback, lock-ins and path-dependencies) related to such business areas make an early entry crucial for long-term competitive success. Another key success factor is the attractiveness of the new ecosystem for important complementary resources that can strengthen its offering for the customers. The competition among the three smart phone ecosystems (iPhone, Android and Microsoft/Nokia) is a good example.

The complex and multi-level nature of emerging business ecosystems requires close cooperation among the various firms, policy makers and third sector organisations influencing the system's success. The bottom-up experiments and development activities need to be matched with a system-level support and steering capacity. This capacity will require close private-public cooperation among the key stakeholders in the ecosystem.

Policy makers can support the emergence of new growth areas and ecosystems at different stages of their development. First, they can foster novel experiments by creating platforms for rich interactions among experts with diverse backgrounds and knowledge sets. Radical new insights and inventions tend to emerge in cooperative contexts where individuals can combine their specialised but synergistic knowledge in rich dialogue. The most fertile areas for new combinations are likely to be at the edge of, or between, the existing areas strong expertise. The new combinations improve the adaptive capacity of the ecosystem by providing new growth options and diversifying its knowledge base.

Second, policy makers can facilitate the identification of promising experiments by supporting their planning and evaluation processes. Well-planned experimental set ups and systematic

evaluation processes help to screen the best experiments for strategic choice and further development. The strategic choice needs to gain the commitment of the key stakeholders because the development of an ecosystem involves “systems failures” which cannot be overcome without their contribution. It is particularly important that there are already promising firms in the new business area that can form the nucleus of the emergent ecosystem.

Third, individual firms suffer from externalities and public goods problems if they try to develop the system alone. They do not get all the benefits from the potential success of the system even if they pay most of the expenses in creating it.⁵⁵ At the same time, the following companies do not have to bear the risks and upfront costs of the forerunner in a new business area.⁵⁶ Thus, governments can play an important network facilitating role in creating an appropriate “niche” for the new business ecosystem to develop. In order to be sustainable, the ecosystem must have adequate flows of resources and knowledge both among its members and across its borders.

Some industrialising countries have been successful in developing new business ecosystems in internationally established sectors.⁵⁷ These approaches have combined a smart mix of international business intelligence, comprehensive analysis of potential domestic advantages, capabilities and entrepreneurial talent, strategic policy choices for specific new business areas, and long-term private-public-people cooperation to develop the local potential into a world class business. These initiatives have involved calculated risk-taking but, at the same time, they have minimised the “dumb risks” of ignorance. They have used sophisticated analysis of local strengths and international market opportunities and involved the private sector with its superior market and business knowledge right from the beginning. Many industrialised countries already have several of these policy instruments in their portfolio but have not been able to combine them in a systematic way around specific business opportunities.

The current policy approaches to new business development tend to focus on individual firms, while the new approaches attempt to build competitive business ecosystems. The evolutionary and systemic approach is a promising way to develop competitiveness in a highly complex economy where firms’ success is intimately intertwined with the complementary resources and capabilities of their operating environments. In addition, it builds on a balanced stakeholder view of the firm that creates cooperative relationships, shared value and individual well-being.

3.6 Pursuing resource efficiency and non-material growth

The structural upgrading of the economy can also lead to improved ecological sustainability if it focuses on intangible value-added. A growing share of firms and other organisations attempt to decrease their costs by improving the *eco- or resource efficiency* of their activities. This means producing and delivering more valuable goods and services with less waste, pollution and natural resources. Resource efficiency has become increasingly important for firms because it not only reduces their ecological footprint, but also improves their reputation, value-added, productivity, competitiveness, and profits.

According to the World Business Council for Sustainable Development⁵⁸, resource efficiency involves the:

- reduced material and energy intensity of goods or services,
- maximum use of renewable resources,
- increased recyclability of materials,
- greater durability of products,
- reduced dispersion of toxic materials, and the
- increased service intensity of production.

The public discourse on resource efficiency tends to emphasise technological innovation, firms as the main agent of change, and trust in market-based solutions. However, public policy makers can take an active role too by reducing subsidies from environmentally harmful raw materials and energy sources, mainly fossil fuels.⁵⁹ Consumers can also influence firms by choosing products and services that minimise resource use throughout product lifecycle. The positive impacts of improved resource efficiency are easily lost if they lead to increasing consumption and production elsewhere (rebound effect). A shift in consumption culture and production patterns is needed to avoid this.

The growing share of services in advanced economies can reduce the material- and energy-intensity of growth. The “servitisation” of the economy is driven by the growing specialisation, complexity and uncertainty of economic activities. They increase the economy’s *transaction and governance costs* relative to production costs as the number of interdependent value-adding activities and transactions grows and the behavior of production networks becomes more unpredictable. This trend can be clearly seen, for example, in the steadily rising share of transaction and coordination costs

as well as management-related labor force in the U.S. economy since the late 19th century.⁶⁰

The growing transaction and governance costs have given rise to new services that focus on economising them. First, there are various new and established services that attempt to *reduce the transaction costs* of highly specialised and uncertain economies such as: search engines (Google, Yahoo, etc.), trading platforms (eBay, Amazon, etc.), financial intermediaries and companies, insurance and warranty firms, rating agencies, and product and market information providers. The more complex and uncertain the economy, the less perfect is the information of market participants, and the more demand there is for these kinds of services.

Second, the growing affluence, choice, specialisation, complexity and uncertainty of the economy and society create increasing governance problems at individual, organisational and societal levels. At the individual level, it has led to hurried lives and growing life management problems as people are trying to manage their ever-more complex lives with limited mental capacity and time.⁶¹ As we have argued before, the satisfaction of basic human needs and the growing life management problems emphasise the role of social and psychological needs in subjective well-being. For example, the rapid growth of social media and new well-being services is based on these needs, which are often difficult to satisfy with material consumption.⁶² These examples are likely to be just the tip of the iceberg. Well-being research suggests that there is huge hidden demand for *personal, household and community services* that could strengthen social relationships, reduce the mental burden of everyday life, support life management, and provide meaningful opportunities for contribution and participation. The ageing of the society is likely to further increase the demand for such services.

The growing specialisation, complexity and uncertainty of the economy have also challenged the governance capacity of organisations. They have responded to this challenge by focusing on their core activities and using more *external services* outside of their main business, such as maintenance, repair, technical support, training, consulting, integration and implementation, and customisation. These same services have become an important source of revenue for many service and manufacturing firms.⁶³

The digitalisation of services provides another opportunity for non-material growth. *Digital services* are growing in both consumer and business markets. Many of the above complementary services can be delivered digitally. However, the opportunities of the new ICTs are still poorly utilised in many sectors as

the old organisational and institutional norms and structures do not sufficiently support their use. The new technological paradigm calls for complementary organisational, social, institutional and systemic innovations.⁶⁴

Very high levels of systemic complexity and uncertainty tend to favor services over the purchase of physical goods.⁶⁵ Such *substitution services* can provide all the same governance benefits as using external services. In addition, they save the direct financial and personnel costs of owning and using the good. Software as a Service and Cloud computing are good examples of such services. Rolls Royce's service offering "power by the hour", or problem free aircraft engine time, is another example from a more traditional industry. In this example, Rolls Royce retains the ownership of the engines and makes sure that they function without problems in the customer's aircraft.

Substitution services are also gaining market share in consumer markets. There are signs that a growing number of people in the leading societies are getting tired of the mass consumption culture. Particularly the younger generations that never experienced the material scarcity of their parents' childhood are increasingly willing to shift to a "sharing economy" or "collaborative consumption" of sharing, borrowing, renting, recycling, etc. where they do not anymore need to own the goods they use.⁶⁶ Relying on the sharing economy has become much easier with the new web-based services that help to match demand and supply and build the necessary trust among the market participants.

The shift toward *non-ownership*, or substituting ownership with the increasing use of services, provides the same use-values as purchased goods plus many additional sustainability benefits:

- It saves material resources and energy by making their use more efficient.
- It encourages the development of high-quality and long-lasting products because service providers demand them.
- It reduces the time, mental energy and financial costs of purchasing, maintaining, storing and repairing one's assets and belongings.
- And, it creates valuable social networks and capital.

3.7 Embracing all stakeholders of the firm

The current corporate governance model, which emphasises short term profits and shareholder value maximisation, does not support sustainable development in the best possible way. Leading management scholars recognised the need for a more balanced corporate governance model already before the current financial and economic crises.⁶⁷ The most promising candidate for a new corporate governance paradigm is the *stakeholder model* that attempts to balance the interests of the firm's key stakeholders more carefully. The systemic complementarities within production systems, the growing transparency of firms' activities, and the increased mobility and power of their key stakeholders - customers, employees, suppliers, investors, civil activists, regulators and policy makers - make the firms' *attractiveness* to stakeholders a key source of competitive advantage.⁶⁸

The key proponents of the shareholder value model argue that the stakeholder model cannot work well because the management of the firm can always explain poor performance with the attention paid to other stakeholders' interests. According to them, there needs to be a single goal (profit) with which the performance of management can be evaluated.⁶⁹ However, this assumes that the other stakeholders can be treated as the firm pleases without them pulling back their support. This assumption is no longer valid in today's transparent economy with highly mobile assets and powerful stakeholders.

In a highly specialised and networked economy, no firm can gain long term success without the support of its key stakeholders. The stakeholder model supports the trust and long-term cooperation needed in competitive business ecosystems. Stakeholder-oriented firms attempt to develop "shared value" where profits and the common good can be realised simultaneously.⁷⁰ Moreover, firms pursuing the stakeholder approach pay more attention to the external effects of their activities, and try to maximise the positive spillovers while minimising the negative ones.

The stakeholder model requires more corporate sensitivity towards the needs of individuals and local communities with which they interact. The creation of shared value requires human-centric and highly contextualised operating practices with all stakeholders. Such practices respect the worth of each individual and stakeholder community and attempt to support their well-being in all encounters. They treat individuals as active subjects, able and willing to contribute to shared solutions and production processes. A localised asset- and competence-based stakeholder model can empower local communities and make global business activities more sustainable.⁷¹

Besides empowering individuals and local communities, a localised stakeholder model can support innovation and product improvements by diversifying and deepening the firm's knowledge base. It can support social and ecological sustainability by creating local employment, developing local skills and capabilities, improving the transparency of production processes, reducing transportation needs, and supporting the development of closed circular processes of energy, matter and waste. Resource efficiency is an increasingly appealing opportunity for cost savings and environmental benefits. Finally, the more decentralised local production processes support better informed decision making and improve resilience to external shocks in the increasingly uncertain and complex world.

3.8 Investing in human capital

Several researchers have argued that the more complex and uncertain living environments demand new types of knowledge and skills.⁷² In particular, the need for broad individual knowledge base, cross-disciplinary cognitive frames and "combinative capabilities" is growing. There is an increasing demand for "generalists" and "synthesising minds".⁷³ The increasingly differentiated knowledge base in advanced societies requires meta-cognitive skills which enable individuals to identify, combine and synthesise relevant knowledge from different sources, and cooperate with others in doing so.⁷⁴ People need more holistic, relational and contextual "systems intelligence" to successfully cope with today's complex and ever-changing world.⁷⁵ Unfortunately, developing such intelligence is not easy due to the many problems of learning processes in complex systems.⁷⁶

A broad individual knowledge base and cognitive frame are necessary but not sufficient in today's highly specialised working life and knowledge society. Specialised knowledge and expertise are highly valued in the highly networked working life.⁷⁷ The highly specialised and complex nature of modern societies also tends to create challenges in everyday life which require specialised knowledge and skills. Consider, for example, the problems with using advanced information technologies. Many individuals, particularly from the older generations, feel helpless in the face of such problems. At the same time, the productivity of workers increasingly depends on the effective utilisation of information technologies.⁷⁸ Hence, an ideal individual knowledge base is likely to be "T-shaped" – broad but also deep in some specific area.

The changing skill requirements of the economy, society and everyday life put great adjustment pressures on established education and training systems. People need different types of knowledge and skills than before; and the skills demanded in the labor markets are likely to change during their life course. At the same time, new information technologies provide ample opportunities for new pedagogical approaches. As a result, there is an urgent need for upgrading the education and training systems as well as broadening them towards life-long learning. Investments in human capital are the key to sustainable well-being in a complex and uncertain knowledge society.

3.9 Improving economic competitiveness

Industrialised economies are open systems and their position in international production systems has an important impact on the performance of national economies. If firms from a particular country have a significant position in economic activities where the level of productivity is both high and rapidly increasing, its standard of living is likely to develop more favorably than if its firms specialised in price- and cost-sensitive sectors, which tend to be more labor-intensive and involve mature technologies. The nature and sectorial composition of a nation's industrial activities is a crucial determinant of the level and growth of its aggregate productivity, and hence living standards.

This underlines the importance of international competitiveness for economic sustainability.⁷⁹ In open industrialised economies, sustainable well-being is increasingly dependent on the resources and goods acquired from international markets. Due to economic specialisation and institutional rigidities, such economies are particularly vulnerable to the loss of competitiveness in their internationally exposed sectors. If lower prices cannot be used to restore competitiveness for institutional or economic reasons, the loss of international competitiveness will lead to unemployment, idle physical resources, loss of tax revenues, lower factor prices and wages, and ultimately to a lower standard of living.

Even if price and cost cuts can be used to restore the competitiveness of local firms in the short term, they are not a sustainable policy strategy for an advanced society in the long term. They expose the national economy to constant price and cost competition from the countries that are catching up with lower labor and factor costs. Moreover, price competition from an advanced society tends to distort the economic development processes in less developed countries. Such a strategy focuses the attention of policy makers and corporate strate-

gists on prices and costs and may decrease firms' incentives to innovate; while the more durable sources of competitive advantage stem from the superior value-added of products and services. In the long term, this is detrimental to the country's capacity to produce higher value-added products and services needed maintain its high level of well-being.

The competitiveness is a systemic phenomenon. The competitiveness of firms not only depends on their firm-specific advantages but also on the advantages offered by their operating environments, and the efficiency with which these advantages are combined.⁸⁰

The key determinants of national competitiveness include:⁸¹

- productive resources (labor, human capital, capital, knowledge, natural resources)
- technologies (innovation and diffusion)
- organisational efficiency (allocation, technical, coordination, adaptive)
- product market characteristics (demand patterns, competition)
- international business activities (trade, foreign investments, cross-border alliances)
- institutional framework (laws, regulations and cultural norms), and
- the government role and policies.

The first five of these factors form the techno-economic core of the economy. The last two represent the "framework conditions" of economic activity. All of these competitiveness factors are tightly interdependent in ways that depend on national circumstances. It is the continuous upgrading and development of these factors that produces sustainable competitive advantage and a vibrant economy.

The nature of the key competitiveness factors is changing in the current paradigm shift of the world economy. The key productive resources have become more advanced and man-made, information and communications technologies have become the new general purpose technologies, organisations have shifted from top down hierarchical arrangements towards cooperative networks, and product markets have splintered into more and more specialised niches. At the same time, international competition has increased and international business

activities have moved from traditional trade (based on comparative advantage) towards foreign direct investments and cooperative cross-border alliances. Today, the two big challenges for competitiveness and sustainable well-being are the ability of the business sector to renew itself and the structural adjustment of the postwar institutional framework and government role. We will return to this challenge in section four.

3.10 Learning a more sustainable culture

Ultimately, the development of a sustainable society depends on collective learning processes through which the shared mental frames, values and behavioral norms change. If these mental structures do not change, there will not be new types of decisions that change the society. Hence, a cultural paradigm shift is needed for sustainable well-being.⁸² The various sustainability problems presented in this paper emphasise the importance of:

- systemic approach to phenomena instead of reductionist analysis,
- mental well-being instead of further material possessions,
- personal time and sense of coherence instead of overcrowded and hurried life,
- human-centric “pull” instead of production-oriented “push”,
- envisioning and experimentation instead of top down planning and implementation,
- high quality products and good service instead of low prices and planned obsolescence,
- close cooperation and social relationships instead of fierce competition and arm’s-length transactions,
- conservation of nature and commons instead of their free exploitation,
- civil participation, local communities and commons based solutions as an alternative to global markets and public sector arrangements, and
- seeing old people as active participants and contributors to society, and not as a problem for public finances.

In stable conditions, shared cultural values tend to change very slowly. However, the current economic and ecological crises create an opportunity for more rapid value change.⁸³ Many people are worried about the mounting economic and environmental problems and face real difficulties in managing their everyday lives. This creates cognitive dissonance in their minds, which prepares the ground for a cultural value shift. As a species, we have not, yet, learnt to live good and balanced lives in the new environment - “we are all like strangers in a new land”.⁸⁴ Speeding up the learning processes is an urgent challenge. In particular, we need to better understand the long-term and external effects of our daily choices. Psychological and well-being research suggests that short-sightedness and selfishness of individual choices is a major problem in today’s societies.⁸⁵ Individual choices tend to accumulate into major societal problems over time and among large groups of people. The obesity and environmental problems are good examples, but there are many others. We should learn to better adapt our daily lives with the needs of our own body and mind, other people, and the nature. The value-orientations of the Finnish and other Nordic welfare societies are already fairly well-aligned with sustainable well-being. We will discuss this in section 5.

3.11 Strengthening resilience

As we have discussed above, the growing uncertainty, specialisation, interdependence, and complexity of socio-economic systems has challenged the established governance arrangements at different levels of the society (individual, organisations, governments, and supranational institutions). Combined with a strong pursuit of efficiency, these trends have made various systems more fragile and prone to unexpected major shocks and crises - “black swans” and “X-events”.⁸⁶ The fragility of highly interdependent and complex societal systems has recently been emphasised by the financial crisis, Arab Spring, Fukushima nuclear disaster, various pandemics, 9/10 terrorist attack, and widespread electric power grid failures. Some researchers suggest that the human-kind has reached a *bifurcation point* where further progress requires the development of new cultures and governance structures that are better adapted to the increased complexity of the world. Failure to do so would lead to a major crisis or even collapse.⁸⁷

The increasing prevalence of black swans and X-events suggests that *resilience* - the capacity of a system to bounce back, or even benefit, from an unexpected shock - is increasingly important for sustainability in today’s unpredictable world.

Although these systemic shocks cannot be forecast, some complexity scientists suggest they can still be anticipated. In particular, they argue that the size of complexity gap between a system and its governance arrangements, or between the system and its environment, is an indicator of the system's propensity for an X-event. These events result from a "complexity overload".⁸⁸

There are two ways to improve the resilience of societal systems in the face of increased uncertainty and complexity. The first approach builds on the *Law of requisite variety* and attempts to narrow the structural complexity gap. The second approach tries to improve management processes in order to make them more foresighted and adaptable.

The structural approach attempts to either simplify the system and reduce the cognitive burden of individual decision makers, or make the overall governance structure more sophisticated and complex, i.e. a better match with the increased complexity of the system. Some of the following examples of this approach have already been discussed earlier in this paper: experimentation, decentralised and modularised structures, creating more behavioral options, open data and innovation, participatory methods ("co-doing"), cooperative networks, redundancy, and latent counter-mechanisms (e.g. for emergency food supply).⁸⁹ More complex and adaptive governance structures can also be developed by creating working environments and cooperation arenas that support intensive communication among experts with intermediate levels of knowledge diversity. Such boundary-crossing organisational arrangements increase the diversity of the system by fostering radical new insights and inventions. They bring the system closer to the "edge of chaos" where it is most adaptable.⁹⁰

The second approach to improving system resilience develops management processes that are better attuned to the increasingly complex and uncertain environment. It attempts to achieve continuous incremental adaptation that could prevent the accumulation of rigidities and contradictions that ultimately lead to major shocks. The first part of this approach is to avoid over-stabilising systems.⁹¹ Regular modest failures, stressors, and volatility are welcome because they create *cognitive dissonance* that is a prerequisite for the collective reflection and learning processes which can lead to adaptation. The modest failures also tend to motivate adaptation,⁹² diversify the available knowledge and capabilities, and release resources for redeployment. Moreover, the second approach involves the development of a more holistic understanding of the system(s); their interdependencies and feedback loops (across levels, sectors, and the time periods), fragilities and thresholds for major shifts, and

potential consequences of shocks.⁹³

In addition, resilient management processes include foresight, assessment, and rapid feedback systems that provide early signals of accumulating systemic risks and opportunities. A system's resilience is also improved by trust, dialogue, cooperation, and tolerance for dissent among its participants.⁹⁴ At the level of individuals, resilience and well-being call for a strong sense of coherence – the comprehensibility, manageability, and meaningfulness of life.⁹⁵ Resilience can be improved with a "barbell strategy": playing it safe in areas of potential major negative X-events, and taking a lot of small risks in others with potential positive X-events.⁹⁶

Improving the resilience of systems is not easy politically. The above measures tend to carry an efficiency cost while their benefits usually materialise only in the long term. Moreover, their successful implementation is highly context-dependent. Thus, successful improvements in resilience typically require "translational leaders" who can skillfully tie together and mobilise complex networks of actors across system levels and organisational boundaries.⁹⁷

Natural evolution produces the most resilient systems. Hence, it is no surprise that resilient systems and governance approaches tend to mimic evolutionary processes. The following sections will discuss a new government role that takes advantage of the evolutionary approach.

4. Transition towards sustainability

There is a broad consensus among economists that the two main duties of governments are to increase the overall *efficiency of the economy* and reduce the *social inequities* among citizens. The first duty stems from specific market failures which prevent the market economy from achieving its full potential and efficiency without government intervention. The economists see environmental sustainability problems as part of the economic efficiency challenge (spillovers, externalities, public goods problem, tragedy of the commons). The second duty relates to the traditional welfare state functions that make market outcomes socially more tolerable by providing basic education, health care, social security, etc. As a positive side effect, many of these latter government tasks also tend to improve economic efficiency. In recent years, the growing global competition and mounting fiscal problems have put more policy emphasis on the economic efficiency (competitiveness and growth) enhancing role of governments. At the same time, new policy challenges have made the old governance arrangements of industrialised societies less efficient (see Part 2).

There are three different schools of thought about the appropriate economic (efficiency-enhancing) role of government. These are the neoclassical economists, macroeconomists, and a third, rather heterogeneous, group of scholars who can be called “macro-organisational” economists.⁹⁸ All three groups derive the government role from the existence of market failures. It is only their assessment of the relevant types of failures and their pervasiveness that differs.

The growing uncertainty, specialisation, complexity, knowledge-intensity, and globalisation of the world economy have increased the pervasiveness of market failures and government failures.⁹⁹ As a result, policy makers must pay careful attention to all of these failures in policy making. Moreover, they will have to cooperate closely with firms and the civil society in order to facilitate the best possible organisational arrangement for each governance task and context. This calls for a new *stewardship* role of government.

4.1 Stewardship role of government

Different kinds of organisational arrangements have evolved over time to deal with the various problems (e.g. market failures) of human societies: e.g. tribal bands, villages, families, markets, firms, networks, associations, and various levels of government. Each of these organisational alternatives has its own strengths and weaknesses that depend on the particular organisational task and context. Many of them can operate at different geographical scopes: local, national, and international. Most market failures have been successfully overcome by many of these organisational arrangements in different historical time periods and socio-economic environments. Thus, the existence of a market failure does not automatically call for a government intervention. Finding out the potentially most efficient mix of organisational arrangements to solve a particular governance problem is always an empirical question that demands systematic analysis.¹⁰⁰

During economic history, the changing nature of market failures has led to changes in organisational arrangements. As markets have expanded and societies become more complex, the pervasiveness and geographical scope of market failures has increased, which has required stronger and geographically more extensive organisational arrangements. During the past century, this has increased the role of government in economic organisation and expanded the geographical scope of its activities. Major economic crises and the two world wars have also contributed to this trend.

The current socio-economic transformation is, again, changing the relative advantages of different organisational alternatives. Both market imperfections and government failures have grown due to the increasing knowledge-intensity, globalisation, specialisation and complexity of economic activities, growing differentiation of demand patterns, and rapid structural transformation. The improved communication technologies and growing competition have probably had an opposite effect.¹⁰¹ Since many organisational determinants have changed, a reassessment of the government role is justified.

In recent years, the most important organisational trends that have affected the role of national governments in industrialised countries are the following:

- The growing importance of inter-firm networks and third sector (community based) arrangements as a response to the increasing demand for public goods and services and the differentiation of individual and organisational preferences for them.

- The growing emphasis on devolution among different levels of government.¹⁰² This trend stems from the need to decentralise public sector decision making in the face of growing cultural and economic diversity and the spatial differentiation of preferences for public goods and services, such as education and training, business services, and industrial infrastructure.
- The internationalisation of private, public, and third sector activities which reflects the globalisation of economic activities and market failures such as climate change, global security threats, etc.

The rapid techno-economic transformation is changing the optimal mix of organisational arrangements in industrialised societies. A new, more sustainable balance among the various organisational alternatives is not likely to emerge from the autonomous activities of economic agents. Governments are the only institution that has both the interest and capabilities to promote the efficiency of the whole economic system. This stewardship role does not involve the micro-management of economic activities. Instead, it includes the provision of efficiency- and competitiveness-enhancing framework conditions for private and third sector actors and the improvement of public sector organisational efficiency.¹⁰³

The best mix of private, public and third sector organisational arrangements in the economy reflect the relative strengths and weaknesses of the different organisational and institutional alternatives for a specific governance problem in particular socio-economic context. Thus, there are no rules of thumb in economic organisation.¹⁰⁴ Governments should carry out regular comparative organisational analyses in different sub-systems of their society in order to find out whether changes in relative organisational capabilities or environments call for policy adjustments.¹⁰⁵

In the stewardship role, the government engages in continuous long-term dialogue, experiments, and cooperation with selected frontrunners and key stakeholders in order to develop or renew a particular activity system. This is a demanding role for the government. It requires a broader knowledge base and new kinds of leadership capabilities from policy makers. The government duties associated with the stewardship role will be elaborated in section 4.3 below.

4.2 System failures and adjustment rigidities

Part three of this paper introduced some principles, or building blocks, for a sustainable society. Implementing them in

practice is not easy. It requires major systemic changes in the society. These changes tend to be prevented by various system failures and adjustment rigidities. Moreover, the rapid transformation and growing specialisation of societies have made systemic changes more complex. Such “wicked problems” pose a major challenge for democratic decision making and public sector governance.¹⁰⁶

The *economic rationale* for the stewardship role of government stems from new types of governance failures in systemic change processes. These “transformational and structural system failures” in policy making have been identified in the transition management research that focuses on real cases of systemic change.¹⁰⁷

Transformational system failures:

- Lack of strategic intelligence capacity (foresight, evaluation, benchmarking, etc.)
- Lack of shared reflexive processes (dialogue among key stakeholders)
- Lack of shared vision about the direction and goal of the transformation process
- Lack of coherence in policy portfolio and local activities
- Lack of understanding and foresight about user needs and well-being
- Lack of vertical, horizontal, and timing coordination among interdependent policy measures
- Lack of experiments and policy options
- Lack of political courage to make the required decisions

Structural system failures:

- Lack of appropriate physical or knowledge infrastructure
- Absence or shortcomings in formal or informal institutional rules (laws, regulations, standards, norms, values)
- Strong social ties that bind (lock-in) to old structures, or too weak ties for interaction and knowledge exchange
- Lack of appropriate capabilities or resources for adaptation or utilising opportunities

Many of these system failures stem from the mental rigidities and diverging interests of the individual actors involved. Established cognitive frames, values, and norms tend to filter and constrain attention, perspectives and issues that enter into public discourse. In addition, carrying out systemic changes requires commitment, trust and cooperation from all key stakeholders. Such cooperation can be blocked by specialised beliefs, values and preferences, diverse organisational backgrounds and contextual demands, established economic or power interests, as well as lack of political courage and willpower.¹⁰⁸

The system failures and rigidities pose a formidable challenge to all major reforms. Some leading firms have successfully met a similar challenge of systemic change and development with “platform leadership” and “ecosystem orchestration” strategies.¹⁰⁹ Such strategies have involved e.g. the:

- development and communication of a shared *vision* for platform evolution.
- building *consensus* among a small group of influential firms for the vision and new initiatives.
- identification and targeting of *system bottlenecks*.
- distribution of tools and *enabling technologies* to help outside firms develop complements fitting the vision.
- highlighting business opportunities and helping leading firms to stimulate the market in different areas, and
- facilitating *multi-firm initiatives* to reduce system bottlenecks and promote new standards, interfaces, and applications.

These system-level strategies not only made it technically easy for other complementary actors to join the systemic solution, they also made it attractive to do so.

4.3 Evolutionary policy making

There are problems, however, that may prevent individual organisations from taking the stewardship role in the system development. This role involves *public good characteristics* that can make it unprofitable for any individual organisation even if its benefits for the whole system of actors would be considerable.¹¹⁰ In such situations, the systemic change processes may require some third sector association or the government to take the stewardship role. In some cases, the government

may be the only institution that has a system-wide perspective and responsibility as well as sufficient resources to undertake the role of facilitating and coordinating the activities of various interdependent private, public and civic actors.

The stewardship role of government represents an *evolutionary approach* to policy making. This approach combines *strategic intelligence* activities with the evolutionary approach of *niche creation, variation, selection and growth*.¹¹¹ The evolutionary policy approach is decentralised, participatory, cooperative, creative, contextualised, and flexible, and thus consistent with the implications of complexity science and the demands of today's ever-more complex and uncertain societies. It is not only more efficient in information processing, collective learning and dealing with uncertainty, it can also overcome the systemic rigidities discussed above.

We will introduce the main steps of this approach below. These steps are sometimes taken in a slightly different order than presented here. Moreover, any particular change process is likely to require several cycles in which the experience gained from the previous cycles is integrated into the process. Our analysis will draw extensively on the *Dutch transition management* research that focuses on real cases of systemic change.¹¹²

The first phase of evolutionary policy making is *strategic intelligence* which involves foresight activities, evaluation studies, benchmarking, cost-benefit analysis, and strategic research. Strategic intelligence activities are needed at multiple levels of the society. The central government needs the intelligence capacity in order to monitor the society's changing environment and the performance of its various subsystems. These subsystems need to have their own strategic intelligence activities for similar purposes. Information about the changes in the system's environment and performance is critical to decision makers' *strategic sensitivity*. The results from strategic intelligence activities can create a *cognitive dissonance* (unpleasant feeling of contradiction and stress) in their minds, which prepares the ground for systemic change processes.¹¹³

Once a new systemic problem or challenge has been identified, strategic intelligence activities can focus on providing deeper insight into the system's intricacies. An *integrated systems analysis* provides a better understanding of the complexity of the system, its subsystems, causal connections, feedback loops, nature of main actors, and so forth. It can also guide the selection of participants for the systemic change process. The participants should include a majority of *entrepreneurial frontrunners* and *visionaries* who can look beyond their own specialty or operating area. However, there is also a need for open-minded representatives of the established regime in or-

der to facilitate the later scaling up and diffusion of the new solutions.¹¹⁴ It is important to involve all key stakeholders from the beginning of the change process.

The next stage is the creation of a *transition arena*, a safe space that offers protection for small groups of actors, or niche players, that attempt to develop a new system. The transition arena is a network of actors who engage in shared dialogues and learning processes that produce new insights about the systemic change process.¹¹⁵ The integrated system analysis works as the baseline for these dialogues. It provides a common ground for its various participants, and enough information for informed discussions. The dialogues need to have experienced facilitators who synthesise the discussions and work towards a shared understanding of the challenge. The transition arena must also be supported by high level political actors, but not be dictated by them. In general, some 15 - 20 frontrunners can effectively participate in a transition arena.¹¹⁶

The following stage in the systemic change process involves the co-operative development of a *sustainability vision, pathways, and transition agenda*. A systemic change calls for a shared vision that can inspire and guide individuals and organisations in their local decision making without constraining their freedom to use their own initiative and knowledge about their particular circumstances. A shared vision can provide the overall direction that helps the various actors to adjust their activities with the system's overall development path. As a result, the numerous grassroots choices will reinforce and complement each other at the systemic level. The vision can be somewhat "fuzzy" and evolve over time as more experience and information accumulates.

A particular sustainability vision can involve multiple alternative transition pathways with their own specific sustainability goals. The shared vision and chosen pathways guide the choice of practical *experiments* in which the new systemic solutions are developed and tested. The experiments represent small scale (and risk) possible solutions to a system's problems. The results from the experiments are then monitored, evaluated, and compared to find out what works and what doesn't. The lessons from the experiments can then be used change the shared vision and change agenda. It is important to choose mutually coherent experiments that reinforce each other and contribute to systemic change and sustainability in a significant and measurable ways. The policy makers need to provide the transition arenas and experiments with sufficient resources, such as finance, knowledge, competences, lobby mechanisms, exemptions to rules and laws, as well as physical spaces. They can stimulate the creation of new systemic solutions, or niche regimes, by developing new coalitions and networks

around the experiments and the systemic change agenda.¹¹⁷

Successful experiments do not yield the desired system-level benefits unless they are identified and *scaled up* to change the established mainstream activities of the system.¹¹⁸ This requires a *strategic choice* and commitment of all key stakeholders to a long-term development and implementation process. The policy makers can facilitate and support this cooperative development process in which system failures and bottlenecks are removed one-by-one as they appear. This stewardship role of government requires a holistic (multi-level, multi-sector) and reflexive perspective to policy making in which the shared vision, prevailing status and performance of the system drives the content of policy making. The system-level objectives should be flexible and adjustable to facilitate reactions to changing circumstances.

The transition management research suggests that a principle of *radical change in incremental steps or learning by doing* can be more successful than once-and-for-all radical change. The latter approach can seriously disrupt the established system, create a political backlash, and lead to a maximal resistance. An incremental change process allows a more orderly learning and adjustment process where the interests of the losers in the change process can also be accommodated. The gradual policy approach also provides enough time for the building and strengthening of the necessary social movements and political coalitions that can promote systemic change in political and societal fora.

The evolutionary policy making model provides effective means to overcome the rigidities that often prevent systemic changes. The strategic intelligence activities, cross-sectorial dialogues and envisioning processes, and practical experiments help to overcome the mental inertia of key stakeholders. The transition arena and the experiments provide safe niches that allow the participants to develop new solutions sheltered from the practices, interdependencies, and historical legacy the mainstream system. Finally, the entire cooperative learning and change process facilitates the convergence of the initially diverse interests of the participating stakeholders on a shared vision, action and sustainability goals. A gradual development of mutual trust in long term cooperation and the fair treatment of all stakeholders (incl. compensation of losers) are crucial in melding the interests together.

5. Finland as a forerunner in sustainable well-being

This paper has analysed some of the key sustainability challenges of industrialised countries. In this last section of the paper, we will argue that a shift towards sustainable well-being is not only necessary, but also possible and desirable. Advanced welfare societies, such as Finland and the other Nordic countries, already have many sustainable solutions in their societies. Moreover, their cultural values support the new policy principles and governance solutions presented in this paper very well. These principles and solutions provide a general idea of the direction to which these societies can move as they renew their socio-economic structures and institutions towards sustainability. Most the principles should also be of interest to other Western European countries that share cultural value-orientations with the Nordic group.¹¹⁹

5.1 Economic, social, and cultural advantages of Nordic countries

The Nordic welfare societies have successfully combined high economic efficiency and competitiveness with social cohesion and a fair distribution of income.¹²⁰ Their well-developed social security systems - including generous unemployment benefits, income transfers, and public welfare services - as well as high investments in human capital - especially in child and elderly care, education, research and development, and active labor market policies - have facilitated structural change towards an increasingly global, high value-added and knowledge-intensive economies. The Nordic countries have embraced free trade, factor mobility and competitive markets, and pursued a high degree of specialisation in their export industries. The Nordic model of economic competitiveness and social cohesion is supported by strong labor market organisations. The “coordinated capitalism” of these countries is based on a widely shared culture of trust.¹²¹

The good economic performance of the Nordic countries rests on well-functioning physical and communications infrastructure and an efficient institutional framework. Trust-based so-

cial norms, transparent policy making processes, and reliable judicial systems minimise corruption and rent-seeking by special interest groups. Well-defined and secure property rights further reduce the transaction costs in the economy.¹²² The development of human capital is supported by high health care and educational standards.

The Nordic welfare societies have enjoyed relatively strong economic and productivity growth, technological dynamism, high employment rates, structural upgrading towards higher value-added economy, high social equity, mobility, and cohesion, together with high quality of life. Until recently, they have also showed great economic and societal adaptability as well as resilience to adverse shocks. However, these societies are now facing the fundamental sustainability challenges described in this paper.

The transition towards sustainable well-being requires fundamental changes in life styles, public policies, and institutional structures. Such changes must be supported by cultural beliefs, values, and norms in order to be sustainable. Fortunately, Finland and the other Nordic welfare societies have cultural value-orientations that support a shift towards the sustainable solutions sketched in this paper. First of all, their value systems emphasise *intellectual autonomy*, *equality*, and *harmony*. Intellectual autonomy includes independent reflective capacity, holistic worldview, curiosity, and creativity. Equality refers to the care for natural environment and the well-being of others. It also emphasises social justice, responsibility, helpfulness, and honesty. Harmony, in turn, underlines the importance of adapting oneself to the social and natural world. It puts a high value on world peace, conservation and unity with nature, and the acceptance of one’s part in the world.¹²³

Secondly, the Nordic welfare societies also share an emphasis on *secular-rational* and *self-expression* values. The secular-rational value orientation rejects religious, authoritarian, absolutist, and traditional family values; while accepting divorce, abortion, euthanasia, and suicide. The self-expression values, in turn, underline subjective well-being, self-actualisation, and quality of life. This value-orientation is typical in affluent societies which have already satisfied their economic and physical security needs. Such societies tend to move from materialistic to post-materialistic values which give high priority to environmental protection, tolerance of diversity, interpersonal trust, and rising demands for participation in decision making in economic and political life.¹²⁴

These values not only support the key characteristics of the Nordic welfare societies but also the new sustainability principles discussed above:

- Subjective well-being and ecological sustainability as the key societal goals
- Diverse knowledge and skills, empowerment, and personal responsibility
- Coherent and sociable living environments
- Decentralised, open, and participatory governance structures
- Cooperation, coordination, and stakeholder approach
- Creativity, innovation, and structural renewal
- Strategically agile and enabling government
- Evolutionary policy making and customised public goods and services
- Strong and participatory democracy
- Resilience in unanticipated shocks

The above value-orientations are a good starting point in the transition towards sustainable well-being. However, the Nordic countries also have geographical, economic, and social differences that require closer policy analysis. In the remainder of this paper, we will focus on Finland.

5.2 Broadening the Finnish policy framework

The Finnish policy approach has traditionally focused on the economy and the welfare state. As a result, it has achieved good results in both economic and social sustainability. We will briefly review them below.

The economic competitiveness of Finland is still very good though it has declined somewhat since the beginning of the Millennium when it was ranked to the top of WEF and IMD competitiveness charts. In 2012, Finland was the 3rd most competitive nation (of 144) by the WEF and the 17th most competitive (of 59) by the IMD.¹²⁵ Although these rankings do not predict future economic performance, they do reflect many underlying competitive strengths in the Finnish economy. It has a strong basic infrastructure and a world class school and

R&D-systems. The Finnish labor force is among the best educated in the world. Although Finland's trade and current account balances have weakened in recent years, this reflects the rising production costs and the structural change in forest and telecommunications industries rather than a fundamental competitive weakness of the Finnish economy. The quality of Finnish export products is the second highest in the world after the Swiss.¹²⁶ The current structural adjustment problems provide an opportunity to diversify the economic base by directing the released resources and capabilities to new business opportunities.

The welfare state institutions have guaranteed a high level of social cohesion in Finland. Despite some negative tendencies in recent years, income differences and poverty are still very low by international standards.¹²⁷ Public social and health care systems work well and support a healthy work force. Social tensions between the poor and rich people, workers and management, young and old, as well as women and men are among the lowest in Europe.¹²⁸ Finns have the highest trust in other people and the second highest in public institutions in Europe.¹²⁹ The Finnish public sector is the one of the three least corrupted in the world.¹³⁰ Finland has a stable multi-party democracy, though the political activity of Finns has declined in recent decades. Finnish media is the most free in the world.

A strong focus on the two instrumental subsystems of the society - the economy and the welfare state - is based on a long-lasting consensus on the nature of well-being (or welfare since the Finnish language only has one word for well-being). The Finnish well-being paradigm was born in the early 1960s when Finland was still a poor country.¹³¹ It emphasises the material basic needs, deprivation problems, and objective and easily measurable factors. This welfare-oriented view of well-being has dominated the Finnish public discourse so strongly in recent decades that policy makers have felt no need to discuss this ultimate goal of policy making, but have rather focused their attention on the instruments with which it could be promoted. As a result, the new well-being needs of citizens in a rapidly changing society have received very little serious reflection.

The strong emphasis on the economy and the welfare state has also assigned the civil society to a minor role in policy making. The Finnish welfare discourse revolves around private and public sector solutions. The great importance of social relationships, cooperative arrangements, and the large Finnish civil society for personal and social well-being receives scant attention in policy making.

The ecological sustainability concerns have not been a key part of the Finnish welfare model, either. This is also an area where Finland does not rank high in global comparisons¹³² – mostly due to energy intensive industrial structure, cold climate, and logistics needs due to large geographical area. Despite a rather early adoption of the sustainability discourse by the Finnish government, this perspective has so far had fairly little influence in practical policy making. Short-term economic and welfare considerations often tend to carry more weight when important policy tradeoffs are resolved.



Figure 2. Moving towards sustainable well-being

There is still one more challenge on the road to sustainable well-being in Finland. That is the diminished adaptive capacity of the Finnish economy and society. In recent years, they have increasingly been characterised by path-dependency, incremental innovation, and systemic rigidities.¹³³ Finland needs a widely shared strategic vision that could guide, coordinate, and energise the various change efforts at different levels of the society.¹³⁴ Moreover, it must support and encourage a culture of constructive public debate in order to build the diversity and resilience for a more complex and uncertain world. At the same time, there is a parallel need for more consensus-oriented arenas for dialogue on complex policy challenges. Feeding into such public discourses, policy makers should develop more sophisticated strategic intelligence capabilities (foresight, evaluation, research) and social innovation experiments. In the end, the transition capacity of the Finnish society depends on new governance innovations that can more

effectively deal with the increased dynamism and complexity of policy challenges.

5.3 National well-being advantage

In conclusion, a sustainable well-being society must incorporate the above considerations into the mainstream policy framework (see Figure 2). Sustainable well-being can be achieved with a deeper and more holistic understanding well-being, active civil society, internationally competitive economy, and an effective public sector - all functioning within the planetary boundaries. Finland has several strengths in these areas. In particular, the Finnish values, advanced welfare institutions, and high quality of life provide a strong basis for developing a national competitive advantage on sophisticated understanding of well-being.

In the 2012 *European quality of life survey*, Finland ranked second after Denmark both in happiness and the perceived quality of life. The same survey revealed that the citizens of these two countries were also the most successful in balancing work and family life. As we saw before, the Finns value subjective well-being very high, and the high trust culture reduces the uncertainties of everyday life. The Finnish welfare state provides equal educational and health care opportunities for all. The high quality of Finnish education and health care systems is known worldwide. The well-educated and reliable public authorities maintain well-functioning institutions and safe infrastructures. There is also plenty of space and nature for everyone to enjoy. The Finns have a very close relationship with nature, an important determinant of personal well-being.¹³⁵ So far, these and other national well-being advantages have not been strategically leveraged or fully utilised to make a quicker transition towards sustainable well-being.

As discussed in section 3.1., a national vision that builds on a sophisticated understanding of well-being has several advantages:

- It helps individuals, organisations, and policy makers to make better decisions and develop better living environments. This includes targeting scarce public resources in a way that most effectively promotes the well-being of citizens.
- It supports and motivates sustainable life styles changes.
- It helps firms to develop more competitive products and services with higher value-added and large international markets.

- It attracts international investors and experts looking for world-class well-being knowledge, innovation networks, and living environments.

The economic benefits of a national well-being advantage would particularly be attractive. With high costs and living standards, Finland can only succeed with a high value-added strategy in international competition. Since all value ultimately stems from contributions to individual well-being, it makes a sophisticated understanding of well-being necessary for the economic strategies of high cost countries. Instead of trying to export the existing welfare services, a well-being oriented national vision would focus on the development of a superior understanding of the changing well-being needs of individuals and communities. This understanding could be used to create improved and more sustainable products, services, policies, institutions, and living environments. This human-centric approach would create a new high value-added advantage for Finland in the rapidly changing international division of labor.

This paper has argued that Finland should aim to become a forerunner in sustainable well-being. This role does not only mean a quick adaptation of the Finnish society to the environmental and socio-economic challenges of the world. It also means taking a more proactive international role in developing and adopting the multinational solutions required for sustainable well-being. With a forerunner's reputation and insights, Finland can gain a strong international position that facilitates its success in the new sustainable paradigm.

- ¹ See Freeman and Perez (1988), Freeman and Louca (2002) and Perez (2002) for comprehensive analyses of long socioeconomic waves, historical transformations and the current paradigm shift in industrialised societies.
- ² The following two paragraphs build on the insightful article of Rauschmayer, Omann and Fruhmann (2011).
- ³ WCED (1987).
- ⁴ The satisfaction of many human needs does not require very much natural resources. The growing importance of social and psychological needs in affluent societies is an important trend from the sustainability perspective.
- ⁵ The Millenium Project, a global network of futures institutions, argues that decision makers are suffering from “information overload and choice proliferation. The number and complexity of choices seems to be growing beyond our abilities to analyse, synthesise, and make decisions. The acceleration of change reduces the time from recognition of the need to make a decision to completion of all the steps to make the right decision. Many of the world’s decision making processes are inefficient, slow, and ill informed” (State of the Future 2012). The decision making problems in modern societies have also been highlighted by Schwartz (2005), IBM (2010) and HBR (2011).
- ⁶ For example, the Secretary General of the OECD has set up a new expert group - “New Approaches to Economic Challenges”- to think about the challenges that the current socio-economic transformation poses to industrialised societies and their economic policies. The task of the group is to “revisit and assess” whether the “analytical frameworks and economic models” used by policy makers and their advisors “need to be adapted to the reality of a post-crisis world” (OECD 2011).
- ⁷ Stern (2006).
- ⁸ See e.g. Beinhocker (2007) and Hollingsworth and Muller (2008).
- ⁹ See e.g. Freeman and Perez (1988), Chandler (1990), and Kogut and Parkinson (1993).
- ¹⁰ Kogut and Parkinson (1993) and Scott (1985).
- ¹¹ Maslow (1970) and Antonovsky (1987).
- ¹² O’Hara (2007), Bartolini (forthcoming).
- ¹³ Schwartz (2005), Offer (2006), Abbott (2013)
- ¹⁴ The term “complexity gap” comes from John Casti (2012) who builds on Ross Ashby’s (1958) “Law of requisite variety”. According to this law, the complexity (or variety) of the controller, or governance mechanism, must equal the complexity (variety) of the system for the latter to remain in control. The everyday life of an individual can also be considered as such a system. It has become much more complex in recent decades without a corresponding rise in the mental capacity of individuals. Hence, the “complexity gap” in individual minds has grown (see Beer 1973).
- ¹⁵ In a recent global survey of CEOs, they identified complexity as their number one challenge (IBM 2010). Complexity also featured as the Harvard Business review cover story in Fall 2011. The current EURO crisis has provided ample evidence of the complexity gap in public policy making.
- ¹⁶ O’Hara (2007) and O’Hara and Lyon (forthcoming).
- ¹⁷ See Kasser (2002). Bartolini (forthcoming) argues that the weakening of social relationships in modern societies can drive people to work and consume more, which tends to further weaken their social relationships. Since social relationships are highly important for well-being, the causality between materialism and unhappiness can work both ways.
- ¹⁸ See (Hämäläinen 2007).
- ¹⁹ IEA 2012 Energy technology perspectives
- ²⁰ For example, National Research Council: Climate Stabilisation Targets: Emissions, Concentrations, and Impacts Over Decades to Millennia (2011) (5-15% decrease of crops per 1C increase in temperature)
- ²¹ World Bank (2012), Turn down the heat: Why a 4°C Warmer World Must be Avoided, November.
- ²² Annual compounded growth of labor productivity, OECD statistics, www.oecd.org.
- ²³ Economist (2013).
- ²⁴ See Doz and Wilson (2012)
- ²⁵ Piore and Sabel (1984).
- ²⁶ Arthur (2011) and Brynjolfsson and McAfee (2013).
- ²⁷ See Hämäläinen (2003) for an extensive analysis of the changing nature of market failures and governance arrangements.
- ²⁸ The theory of Fiscal federalism (Oates 1972) in economics states that the scope of governance arrangement should generally correspond to its beneficiaries. Those who benefit from it should also bear the costs: “The taxing or regulating area must match the benefit area” (Olson 1979).

- ²⁹ Sumatra Ghoshal (2005) provides an interesting analysis of the emergence of this new model of corporate governance. In his in-depth study of the emergence of this model, he could not find any other reason for its sole emphasis on shareholder value except that it allowed the development of elegant mathematical models.
- ³⁰ See e.g. Penttilä and Rehn (2012).
- ³¹ Georg Henrik von Wright (1981)
- ³² A more holistic discourse about well-being was developed in an international research project of Sitra, the Finnish Innovation Fund, and the New Economics Foundation (Hämäläinen and Michaelson forthcoming). Other broader frameworks of well-being have been published by, for example, the OECD (2012) and the United Nations (2011). Richard Layard from London School of Economics has argued for integrating mental well-being as the sixth “Giant” to the traditional Beveridgian welfare concerns.
- ³³ The 2012 Behave and Peersome conferences in Helsinki focused on behavioral changes that improve energy efficiency. The most successful projects of behavioral change had built in personal well-being incentives besides the more traditional information provision. These incentives were often related to the social and psychological needs of individuals rather than their material needs. Similarly, the Scottish experiences of “asset based” community development suggest that the most successful community improvement projects involve direct personal well-being benefits besides the more altruistic goals (GCPH 2012).
- ³⁴ See Ronald Inglehart and Chris Welzel at: <http://www.worldvaluessurvey.org/>.
- ³⁵ Anthony Giddens (2007) argues that this deprivation oriented well-being frame is “as outdated as the industrial order within which it was developed”: “The classical welfare state developed in a society where scarcity was the main social problem... But in many circumstances in post-industrial societies we are dealing not with problems of scarcity of resources, but with issues of lifestyle.”
- ³⁶ See Ryan and Deci (2000) for a discussion of external incentives and motivation.
- ³⁷ These include: love and belonging, self- and social esteem, self-actualisation, meaningfulness, and manageability of life.
- ³⁸ Examples from banking industry show that a vast majority of customers would not be willing to switch their banking services back to physical banking branches. They find it very convenient to manage their daily payment traffic through internet branches whenever they have a free time slot and in the privacy and comfort of their own homes.
- ³⁹ For example, Sabel, Saxenian, Hautamäki, Miettinen and Kristensen (2010) argue that Finland’s high scores in international comparisons of student achievement (PISA tests) are based on the customised support services provided to Finnish pupils with learning difficulties. These services involve multiple professionals, such as teachers, nurses, and social workers, as well as parents and the pupils themselves. The Dutch ATC-Youth program for supporting youngsters with multiple programs and the District Care for serving the elderly people are based on a similar human-centric and customised approach (Loorbach and Rotmans 2009).
- ⁴⁰ See Räisänen and Schmid (2008) and European Commission (2007).
- ⁴¹ Life management problems loom large behind the processes where an individual accumulates problems that ultimately lead to social exclusion (Rönkä 1999; Lämsä 2009).
- ⁴² Seddon (2013)
- ⁴³ See Eurofound (2012).
- ⁴⁴ See Boyer, Cook and Steinberg (2011); Penttilä and Rehn (2012).
- ⁴⁵ See Andersen, Holmström, Honkapohja, Korkman, Söderström and Vartiainen (2007).
- ⁴⁶ Turkki (2013).
- ⁴⁷ Helliwell (forthcoming) and Eurofound (2012).
- ⁴⁸ More than six million Americans now live with their children, a number that has increased by more than 50% between 2000 and 2010, according to Census Bureau (Lee 2013). The economic crisis is likely to have accelerated this trend.
- ⁴⁹ Lee (2013)
- ⁵⁰ Basu, Kaplan and Kaplan (forthcoming).
- ⁵¹ The positive effects of music on health, well-being and mental healing suggest that coherent environments and experiences are more generally important for mental well-being. Like nature, music can provide well-structured and coherent experiences.
- ⁵² Zuboff and Maximin (2012) argue that such a “support economy” could form a new paradigm that would replace the current mass production paradigm.
- ⁵³ For example in Finland, see: www.co2-raportti.fi.
- ⁵⁴ Arthur (1994).

- ⁵⁵ See Schienstock and Hämäläinen (2001) for a discussion of networking failures and “network facilitating policies”.
- ⁵⁶ See Hausmann and Rodrik (2006).
- ⁵⁷ See, e.g. Rodrik (2007), Sabel, Fernandez-Arias, Hausmann, Rodriguez-Clare and Stein (2012).
- ⁵⁸ WBCSD (2000).
- ⁵⁹ Global Subsidie Initiative, 2012: Globally, subsidies to fossil fuels may be on the order of US\$ 600 billion per year, of which the GSI estimates about US\$ 100 billion is provided to producers. Nobody knows the real number, however, because there is no international framework for regularly monitoring fossil-fuel subsidies.
- ⁶⁰ See Wallis and North (1986) and Radner (1992).
- ⁶¹ Schwartz (2005) and Giddens (2007).
- ⁶² Social and psychological needs of consumers are equally important for firms producing material goods. The recent success of Apple’s products is a good example. The simplicity and ease-of-use of its products helps people to decrease the complexity and mental burden of their everyday life.
- ⁶³ See Cusumano (2010).
- ⁶⁴ See Lehti, Rouvinen and Ylä-Anttila (2012) for a comprehensive analysis of Finland’s opportunities in the digital economy.
- ⁶⁵ Cusumano (2010).
- ⁶⁶ See Botsman and Rogers (2010) and the web page of NESTA (http://www.nesta.org.uk/news_and_features/collaborative_consumption) for a comprehensive introduction to this trend.
- ⁶⁷ The late Sumatra Ghoshal of London Business School, one of the world’s leading management scholars in recent decades, wrote a devastating critique of the shareholder value model in 2005. In his in-depth study of the origins of this model, he could not find any other reason for the dominant position of the shareholder in this model than the fact that the mathematics of the model would not work without assuming a single pre-eminent stakeholder. In 2007, the main theme of the biggest and most important gathering of management scholars in the world – the Academy of Management conference - was “Doing Well by Doing Good”. The conference theme reflected the worry of the leading management scholars about the prevailing corporate governance model.
- ⁶⁸ More generally, “pull” strategies are replacing “push” strategies in highly specialised and complex production systems and societies. As discussed elsewhere in this paper, corporate strategists and public policy makers attempt to build attractive platforms and ecosystems that provide the participants with complementary resources and knowledge, network economies and increasing returns (Arthur 1994; Hagel III, Seely Brown and Davison 2010; Cusumano 2010).
- ⁶⁹ For example, professor Michael Jensen from Harvard University at the Academy of Management meeting 2007 in Philadelphia.
- ⁷⁰ See Kramer and Porter (2011).
- ⁷¹ The Scottish experiments with the “asset based” model demonstrate the power of multi-stakeholder cooperation in community development. Doz and Wilson (2012) describe how multinational enterprises could improve their contribution to sustainable development by cooperating more closely with their host country stakeholders.
- ⁷² See e.g. Rogers (1995), O’Hara (2007), Gardner (2006) and Saarinen and Hämäläinen (2010).
- ⁷³ Kogut and Zander (1992), Laszlo (1987) and Gardner (2006).
- ⁷⁴ Hakkarainen, Palonen, Paavola and Lehtinen (2004) and Adler and Heckscher (2007).
- ⁷⁵ Saarinen and Hämäläinen (2010)
- ⁷⁶ Stermann (1994)
- ⁷⁷ For example, knowledge-intensive inter-personal networks, or “collaborative communities”, in and among high-tech firms require contributions that reflect deep disciplinary expertise (Adler and Heckscher 2007).
- ⁷⁸ Brynjolfsson and McAfee (2012).
- ⁷⁹ In the early 1990s, there was a brief debate about the relevance of the competitiveness concept. In this debate, Paul Krugman (1994) argued that competitiveness is a “dangerous obsession”. He denied the argument that “a country’s economic fortunes are largely determined by its success in the world markets”. John Dunning (1995) disagreed with Krugman and pointed out that his argument against the relevance of the competitiveness concept was based on the traditional trade theory whose assumptions (e.g. efficient markets, international immobility of resources and no idle resources) were not realistic in today’s world economy. The growing international mobility of investments and human resources emphasises the absolute advantage (i.e. competitive advantage) rather than the comparative advantage of the traditional trade theories. Productive activities tend to move to the most opportune locations in the world. In a global economy, a country needs to be the best location for a particular economic activity in order to attract it.

- ⁸⁰ The OLI-theory of foreign direct investment and multinational corporations focuses on firms' "ownership-specific" advantages, their "location-specific" advantages, and the "internalisation" advantages that stem from their international production networks (Dunning and Lundan 2008). This theory underlines the systemic nature of competitive advantage.
- ⁸¹ This framework is a synthesis of various studies of economic competitiveness and growth in many different fields of social research (see Hämäläinen 2003). Michael Porter (1990) has provided a somewhat similar framework that was inductively derived from a limited number of country case studies.
- ⁸² See Hämäläinen (2007).
- ⁸³ Schwartz (2011).
- ⁸⁴ O'Hara (2007).
- ⁸⁵ See e.g. Baumeister and Tierney (2011), Steel (2011) and Gerhard (2011).
- ⁸⁶ See Taleb (2012) and Casti (2012).
- ⁸⁷ See Laszlo (1987; 2008), Tainter (1988), and Wilber (2000).
- ⁸⁸ See Casti (2012) for the theoretical argument and practical examples.
- ⁸⁹ See Taleb (2012), Zolli and Healy (2012) and Casti (2012).
- ⁹⁰ See Hollinsworth (2006) and Zolli and Healy (2012).
- ⁹¹ Taleb (2012).
- ⁹² Hämäläinen (2007).
- ⁹³ Zolli and Healy (2012).
- ⁹⁴ Zolli and Healy (2012).
- ⁹⁵ Antonovsky (1987) and Lindström and Ericsson (2005).
- ⁹⁶ Taleb (2012)
- ⁹⁷ Zolli and Healy (2012).
- ⁹⁸ Neoclassical economists have the strongest belief in the efficiency of the market mechanism. Following Adam Smith, they acknowledge only three categories of market failures: internal and external security, poor property rights, and basic education and commercial infrastructure. The second group is macroeconomists. Inspired by the work of John Maynard Keynes, they add large cyclical variations in employment, inflation, balance of payments and economic growth to the list of market imperfections that warrant government intervention. The third group of scholars is more varied. It includes new institutional economists, development economists, industrial organisation economists, information economists, labor economists, environmental economists, international trade and investment scholars, and industrial policy researchers. Common to all of them is the belief that market imperfections are more pervasive and important than the neoclassical and macroeconomic theories would suggest. They focus inter alia on anti-competitive behavior, excessive government intervention, transaction and coordination costs, public goods characteristics, high uncertainty, externalities and spillovers, scale, scope and learning economies, and structural adjustment rigidities (Dunning 1992).
- ⁹⁹ Stiglitz (1989), Hämäläinen (2003).
- ¹⁰⁰ Coase (1990), Hämäläinen (2003).
- ¹⁰¹ See Hämäläinen (2003) for an extensive analysis of the impact of the current socio-economic transformation on the various market and government failures.
- ¹⁰² Rodríguez-Pose and Gill (2003)
- ¹⁰³ Dunning called this government role "macro-organisational"; while Jessop used the word "meta-governance" (Dunning 1992; Jessop 2002).
- ¹⁰⁴ Coase (1990).
- ¹⁰⁵ See Hämäläinen (2003) and Andersen, Holmström, Honkapohja, Korkman, Söderström and Vartiainen (2007).
- ¹⁰⁶ Head (2010).
- ¹⁰⁷ See Weber and Rohracher (2012).
- ¹⁰⁸ See Hämäläinen (2007) and Doz and Kosonen (2008).
- ¹⁰⁹ See Cusumano (2010) for an analysis of "platform leadership" and Wallin and Su (2010) for "ecosystem orchestration". The Intel case is from Cusumano (2010, 51).
- ¹¹⁰ Schienstock and Hämäläinen (2001) used the term "network facilitation failure" about this problem.

- ¹¹¹ In recent years, different variations of this model have been successfully applied in private corporations (Cusumano 2010), public services (Sabel, Saxenian, Hautamäki, Miettinen and Kristensen 2010; NESTA 2011), ecosystem management (Gunderson 2012), and in the transition processes of socio-economic systems, such as energy, waste, and health care systems (Rotmans and Loorbach 2010; Loorbach and Rotmans 2009).
- ¹¹² In particular, the following analysis draws on Rotmans and Loorbach (2010) and Loorbach and Rotmans (2010).
- ¹¹³ Hämäläinen (2007) and Rotmans and Loorbach (2010).
- ¹¹⁴ Rotmans and Loorbach (2010) and Loorbach and Rotmans (2010).
- ¹¹⁵ Hagel III, Seely Brown and Davison (2010, 18) use the term “creation space” for “environments that effectively integrate teams within a broader learning ecology”.
- ¹¹⁶ Rotmans and Loorbach (2009); see also, World Bank (1993) and Hämäläinen (2008).
- ¹¹⁷ Rotmans and Loorbach (2009); Loorbach and Rotmans (2009)
- ¹¹⁸ Mulgan (2009); Loorbach and Rotmans (2009)
- ¹¹⁹ See Schwartz (2011) and World Values Survey (2009, www.worldvaluessurvey.org).
- ¹²⁰ See Anderson, Holmström, Korkman, Söderström, and Vartainen (2007).
- ¹²¹ Hall and Soskice (2001).
- ¹²² North (1990), Anderson, Holmström, Korkman, Söderström, and Vartainen (2007), and Berggren and Trägårdh (2011).
- ¹²³ Schwartz (2011).
- ¹²⁴ World Value Survey (2013).
- ¹²⁵ Rouvinen (2012a,b)
- ¹²⁶ See Sabel and Saxenian (2008) and Haaparanta (2013).
- ¹²⁷ See Raunio and Saari (2013) and EQLS (2012).
- ¹²⁸ EQLS (2012, Table 32).
- ¹²⁹ EQLS (2012, Tables 30 and 31).
- ¹³⁰ See Transparency international: <http://www.transparency.org/cpi2012/results#myAnchor1>.
- ¹³¹ Kuusi (1962).
- ¹³² For example: www.footprintnetwork.org
- ¹³³ Sabel and Saxenian (2008) pointed out the risks of Finland’s incremental and path-dependent corporate strategies and innovation policies already before the current restructuring wave in the forest and telecommunications clusters. The incremental nature of the Finnish innovation policy was also underlined in the External Evaluation of the Strategic Centres for Science, Technology and Innovation (MEE 2013), and a recent presentation by professor Jan Rotmans (2013) who evaluated Finnish innovation activities for Tekes. Finally, the European Commission (2013) analysed the declining competitiveness of Finnish products in export markets and called for new measures to improve the economic impact of Finnish R&D-investments. It was concerned about the inability of Finland to renew its industrial structure.
- ¹³⁴ Hämäläinen (2008) and Penttilä and Rehn (2012).
- ¹³⁵ Basu, Kaplan and Kaplan (forthcoming).

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