Ilari KARPPI*

OPEN INNOVATIONS AND LIVING LABS: PROMISES OR CHALLENGES TO REGIONAL RENEWAL

Abstract: The paper brings to the foreground modes and strategies of organising purposeful action that may be conductive to local and regional actors' successful coping in the more and more competitive environment. The paper is pragmatist by its approach in a sense that it emphasises preconditions and possibilities for making ideas work. However, to do this is a difficult task. In the maze of multifaceted information flows and revolutionary technologies for reaching them enterprises and public actors need to find and construct better structured information that really helps them to operate. The paper introduces two sets of case activities that build on open innovation and living lab approaches in their attempts to make the boundaries between organisations and their environment more permeable. Its findings support the structuralist idea that spatial attributes matter more than as a mere venue, platform, or even container of social action. The venues studied in the paper are unique: one of the oldest still remaining factory buildings in the innermost core of the city of Tampere and a re-used loghouse in a peri-urban landscape outside the city. They both serve now as true exploratory spaces with no functional or institutional lock-ins stemming from them to bond their present-day users.

Key words: industrial renewal, spaces of innovation, new work.

1. INTRODUCTION

This text scrutinises emergent Finnish innovation ecosystems by focusing on two processes in their peculiar environments. These processes utilise work methods that defy and cut across established organisational boundaries and *thoughts of the contents* of established organisational boundaries. One of them, a concept known as 'New Factory' in the old industrial core of the city of Tampere, is used as a tool to adjust local economy to a global structural transformation. The other one is

built on a large-scale urban research and development process *Urbi et Orbi*. This process takes place in the municipality of Lempäälä in the Tampere city region, being an ambitious attempt to solve the problem of empowering various stake-holders and other actors[1] in a process of reconstructing a well established town-scape laden with cultural values, personal attachments and other potential sources of a profound planning conflict.

New Factory accommodates a range of activities both designed as tools and evolved as potential approaches for a local economy's latest, knowledge-intensive industrial transformation. Some of them have an immediate link with the city hall and its local business development and employment policy interests. One of them, the HUB Tampere, is a member in an international, London-led network of related entrepreneurial spaces available for new kinds of businesses with a distinctive aspect of personal achievement and devotion to the fulfilment of youthful visions. What is common to virtually all of these activities is that they utilise work methods derived from the broad realm of open innovations ideology.

Urbi et Orbi highlights the power of a carefully balanced combination of detachment and team leadership. While it is a process for urban development and reconstruction of built environment, it also is simultaneously a knowledge-creating process with a proclaimed attempt to bring together different actor-specific approaches to the needs and eventual conflicts in community development. A high-level executive task force has been nominated to run the development process, and to make the necessary preparatory phases for public decision-making. A relatively limited task force immediately raises questions on the eventual decision-making biases that need to take into account as the group organises its work.

Both processes take place in peculiar locations specifically assigned to them with an assumption that place-specific attributes contribute to the character and outcome of activities carried out within them. Thus, the actual unfolding of the local economic renewal processes are viewed through at least partly emergent formation of an actor community re-using old industrial premises, now purposefully dubbed as the 'New' Factory. The planning and empowerment case, the *Urbi et Orbi*, is viewed through the activities carried out by an executive task force particularly organised for the reconstruction process. The task force meets weekly in premises exclusively reserved for two causes, to facilitate (1) meetings with specialists for in-depth discussions and (2) retreat from the daily work and organisational environments for the executive task force's own deliberations and considerations.

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[1] Including e.g. the local dwellers and their various associations as well as enterprises, but also offices and functions within the municipal governance structure, such as schools and their teachers, who do not normally participate in physical planning and urban development processes.

2. TRANSFORMATIONS IN QUESTION: SPACE AND SPACELESSNESS

The two cases discussed in this paper have their roots in transformations faced in Tampere Metropolitan Area in South West Finland. Tampere used to be the birthplace of the large-scale industrial revolution as it reached Finland in the early 19th century. From a modest beginning in 1779 – being explicitly founded as a city for industry and commerce – Tampere gradually grew to be the second-largest regional centre in Finland. The Metropolitan area now has a population of more than 350,000, of which approximately 215,000 live in the city of Tampere itself.

Developments have not been always smooth. Oil crises, restructuring and globalisation are among developments that have challenged traditional industries all around Europe and worldwide, and Tampere with its industrial heart having traditionally beaten in the rhythm of textiles and mechanical engineering is certainly no exception. In the late 1960s the local authorities started to promote new thinking in the city's industrial future with areas such as leisure-related services, research and higher education being put in more and more focal position. By the 1980s it was obvious that the attempt to break away from the traditional industrial path (with all its past success) had been an absolute necessity, and that remarkable success was reached in this respect.

But how obvious is it that such transformations turn out to be successful? For the first, a great deal of European cities with one original main industry or function, be it specialised industry or even seaside resort, have lost their relative importance in the course of history and socio-economic change (Clark, 2009). However, as Smith (1993, p. 55), building on the foundations of structuralist geography, notes, a continuity can be found linking the historical functioning of old industrial capitalism and the forms of flexibility reflected by the projects and processes built upon them.

Thus, even if the postmodern era is strongly associated with breaking of past spatial boundaries (Smith 1993, p. 57), building boundaries, or making space relevant can be seen as an equally quintessential feature of a postmodern world. The idea of how space, location and spatial continuity matters in changing circumstances is captured in an intriguing way by Forsberg *et al*. (2006, p. 164). They maintain that the Inner Scandinavian locations whose traditional productive role was focused on forest and agricultural products, now 'produce' also rural cultural landscapes and protected nature. A new relevance that can be attached to the spatial attributes may be found, but that may require a great deal of persistent work and even a degree of serendipity, of which location, a spatial attribute itself, is not unimportant.

Juha Kostiainen (2002) has studied extensively the developmental dynamism of Tampere and the various management and leadership measures taken in order to enable the preferred development. He has traced the transformation process of the industrial centre to a knowledge-creating one, a process that has required

particular leadership in an environment where representatives of traditional indus-
tries have been the key players in the local business lobby. At least partly due to
the excellent location of Tampere in the crossroads of the most important Finnish
transportation channels the transformation proved very soon to be successful.

As an indication, highly appealing to local decision-makers one can take the
demographic changes. Tampere with the entire city region has grown continuous-
ly irrespective of the business cycles or fluctuations in the overall mobility rates.
The city region seems to 'respond' similarly to economic growth and downturns:
the region's population has grown in a surprisingly constant rate (cf. Kultalahti,
2001), constituting thus one rather persistent fundament for those in charge of
preparing land-use decisions to adjust to demand from the new dwellers, or es-
timating the availability of future workforce. These two aspects are among the
forces that keep the region's development in a highly dynamic state and provide
even some immediate buffers in the face of downturns. They may even extend the
period when important parts of the market can remain viable and relatively intact.

One part of the local dynamism is birth and development of practices that fa-
vour interaction across established organisational boundaries. Openness and par-
ticipation are generally seen as defining features of highly industrialised, post-in-
dustrial or technologically and institutionally sophisticated societies. For instance,
their legislations commonly stipulate that all those whose environment or living
conditions are to be effected with construction or related anthropogenic transfor-
mations with notable environmental impacts assume participation and/or other
forms of public involvement where members of the community can have their say
on processes in the making. However, these norms are relatively vague in a sense
that what is required as an absolute minimum is easy to reach. To really involve
citizens and their opinions in decision-making requires much more profound work
in organisations and their operational practices, and this brings us back to the cul-
tural aspects of how to open the decision-making processes.

Openness has been a high-profile catchword in the development of organisa-
tions and their working practices since beginning of the current millennium. Since
2003 and the *Open Innovation: New Imperative for Creating and Profiting from
Technology* by Henry Chesbrough we have operated with the idea of opened-up
innovation interfaces and innovation processes that are not to be confined within
organisational boundaries (cf. Huizingh, 2011). New technology has emerged to
break the boundaries of states and spheres of civilisations, challenging thus the
regimes that seek to limit the individuals' access to information. Consequently,
the boundaries of organisations cannot remain watertight. Humans, irrespective
of their age, education, gender or social status, are more mobile than ever before,
which means that information and knowledge as well as sentiments and dislikes
as personal attributes are in a continuous circulation, both in terms of geography
and in organisational spaces. We live in an environment marked by openness and
permeability of various kinds of boundaries.

Another idea that has caught the minds of businesspeople and increasingly those in administration is a living lab (cf. Arnkil *et al*., 2010). In the core of living lab thinking is an arrangement to involve end users in the development process of typically industrial products. More recently the approach has gained more and more leverage in the field of social innovation and, hence, among institutions with human-oriented functions such as governance and service provision, private or public. Interaction that takes place in a societal setting whose key aspects are represented by intelligent actors is particularly worthwhile for learning, as seen against a setting where much of the interaction culminates on the processing of the technical capacities of a however 'intelligent' product (cf. Nooteboom, 2001, p. 156). Learning, in turn, is an elementary ingredient in the process of finding innovative ways of coping in new situations.

3. ELEMENTS OF A 'POST-NEW ECONOMY'

A phenomenon widely enthused about in the late 1990s as a 'New Economy' has profoundly transformed our systems of production, work and the very relationship between them. However, instead of a history of some 15 years the transformation has been with us for more than 30 or even 50 years, depending on how one emphasises its various aspects.

If the increasing service-intensity is seen as the transformation's key driving force, it is well grounded to speak about a process having started in some parts of the world right after the immediate reconstruction that followed the Second World War. In this instance it is noteworthy that the leading post-war economy, the US, did not even face the need to mend war damages with respective investments. Thus, even if the nation's newly acquired role with intense global military presence and the subsequent cold war armaments race entailed massive public spending,[2] individual consumers with their ever-expandable demand for goods and experiences became new driving forces. The 19th century coal, steel or railway barons of the industrial age were to be overtaken by new ones with most visionary ideas for developing retailing or turning what once was centralised computing into a ubiquitous world of interaction, snooping and gossiping.

So, one can maintain that the institutional foundations for the new economic order that now *may* have crossed the threshold to its mature state are rather firmly embedded in the economic system, including a great deal of the technological standards and practices that reflect the different aspects of transformation. Also serious

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[2] The European Recovery Program (or 'Marshall Aid') given to West European governments and to confine the eventual Soviet influence beyond the Iron Curtain and praised for the eloquence of its design in achieving this goal by Janis (1982) can be added to this category.

blind alleys that seriously bridle the scope of potential developments can already be identified. They can be so commonplace elements of our daily environments that they virtually are beyond our recognition *as* blind alleys. Typical of such blind alleys is that something originally deemed as a solution turns out to be a problem (cf. Info box 1). However, a blind alley may also emerge in the midst of a widely-spread awareness and agreement on expected technological or societal development.

> **Info box 1. On standards and blind alleys: the case of MIDI**
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> Jaron Lanier (2011, pp. 7–19) gives an excellent example of a premature choice of a technology that, after reaching a status of a de facto standard, turned out to be a fatal lock-in: the MIDI standard as an early tool for turning musical notes into a digital form. The problem with the MIDI, as angrily noted by Lanier, is that it does this digitalisation with a dramatically limited capacity given the potentials of music itself. The real 'damage' done by the MIDI is that having once reached the status of a standard method for 'giving voice' to a variety of digital equipment, the chosen path was virtually cemented by hardware manufacturers. Their adoption of the MIDI standard rendered no commercially viable platforms for competing and possibly musically more versatile approaches for processing notes and tunes.

One trend of societal development that has been visible for a long time but that obviously has escaped our full understanding is the post-industrial transformation 'from a factory to the studio' (Virtanen, 1987). This phrase was commonplace in the late 1980s, so there should have been time to understand and get adjusted to its content (cf. Reich, 1992; Sennett, 2002). However, large swathes of the industries have already left the modern logic of mass production and are resuming the practices that once prevailed in traditional craft production (e.g. Sennett, 2009). This transforms the entire logic of how value added in the more and more knowledge, innovation and solutions-led production turns into enhanced employment.

Maturation of the once novel and celebrated New Economy is thus well visible with due consequences. As a sign of newly found vulnerabilities technology companies have been forced to close entire facilities within a few years of their initiation (cf. Reich, 2001). This is exactly what happened to the Jyväskylä unit of Nokia in Central Finland – a unit that only focused on research, development and analysis of new service concepts.[3] The Jyväskylä case matches well developments

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[3] In the same vein, faced by the dire market for its Symbian operating system powered handsets, Nokia informed in the fall of 2011 that it is compelled to close its facilities at Cluj, Romania, newly built there to add the corporation's production capacity by replacing the handset production terminated in Bochum, Germany. In October 2011 Fiat, the Italian automobile manufacturer informed about its organisational restructuring, carried out in order to add the CEO's agility for firing as rapidly as possible anyone whose capacity would not be immediately needed in the production (Sylvers, 2011).

within a 'cultural circuit of capital' as noted by Olds and Thrift (2005, p. 272). Such a circuit allows an increasingly free and rapid flow of knowledge throughout corporate networks. Unfortunately, in an economy as fluid as the one shown by the Jyväskylä case, localities may be made redundant in an equally free and rapid fashion if they fail to add right kind of value to the circuit.

With their top-trained professionals these facilities have in fact started to resemble traditional industries while their personnel, gloriously redefined in the 1990s as 'human resources' are being given a much traditional, 19th century role of an 'employee', if not a 'worker' (cf. Jacques, 1996). At least their hiring and firing seems to follow a logic that regards them as cost factors rather than sources of corporate value. It is little wonder that the response especially among the younger, knowledge-workers (*sic*) has been to resort to entrepreneurship as a means to take firmer control of the terms of their own participation in the workings of the economy.

In a true behaviourist fashion this virtual necessity with its due consequences – more and more individuals actually becoming entrepreneurs and demonstrably acting as ones – seems to be on the verge of turning into a more persistent cultural pattern. Based on recent surveys on the willingness to business-startups, the Finns appear to be in a process of transforming a preferred culture of working as a wage-earner to one boosted more and more by an entrepreneurial spirit. A 2011 survey shows that since 2008 the largest cohort to start a new enterprise in Finland is made of those under 30 years of age (Hänninen and Leino, 2011, p. 36). However, their favourite industries often differ radically from the ones favoured by the older cohorts and the entrepreneurs of the previous and gradually retiring generation.

There is another kind of functional or even cultural transformation going on, one with potential industrial policy consequences and certainly one reflected by the creative communities case described in next chapter. Based on the findings of another recent study (Paakkunainen, 2007, p. 172), it is interesting to note that the young Finns regard especially small business incubators or business parks with a clear and tangible profile as particularly appealing and risk-reducing test grounds for their entrepreneurial idea. Moreover, the study reveals, in the young potential entrepreneurs' minds the time is ripe for another change. Innovation centres for small enterprises should brush aside the predominance of large science parks as the key innovation-led industrial policy instruments since the early 1980s.

In the same time the model that originally was born in the early Silicon Valley technology industries has found its way to the Nordic labour markets, whose institutional setup has traditionally differed remarkably from the North American, general Anglo Saxon or particular Techie-Californian model. As it has been traditionally the case with the tribelike labour markets in particular business civilisations such as the Silicon Valley, also the Finnish young professionals seem to be putting more and more weight to work with socially rewarding circle of like-minded people in socially rewarding organisational and physical setting. Very

often the physical setting can be a piece of brownfield or urban fallow,[4] miles away from an imaginably flashy techno-infrastructure and more and more often the organisation seems to be replaced with open structures of cooperation – if not a direct and ideological antithesis for a standard organisational form.

The new entrepreneurial culture may be a manifestation of another persistent transformation of the society. It is possible to interpret the spawning of new start-ups as an emergent process, or even a cultural undercurrent, of breaking the traditional organisations from below. Should this be the case, the due break-up of large-scale organisations can be seen as certain de-materialisation. At least the functioning of the current economy is to a greater and greater extent distanced if not entirely separated from its material foundations. For centuries and almost until the end of the 20th century, in the heated pursuit of functionalist explanation for anything, also the financial market was seen in this light. The function that financial markets would stand for the public authorities, in return to favourably governed rules-based regulation and generally stable environment, was to be a 'thermometer of economy'.

In the genuine spirit of the post-war Keynesian hegemony in economics, planning of and, later on, governance over the necessary conditions with the help of the readings from this thermometer was essentially about building the material base of economic growth. Now, with that material link of planning and building actual contexts for enterprises having largely vanished, the entire cultural set-up is different. In this environment, or in contemporary terms ecosystem of diverse but yet interconnected actors it would be extremely difficult to speak about broader societal 'functions' that would be given to the financial markets outside the immediate sphere of interests of those utilising the markets for their own avail. Since the 1980s financial markets have started to rule rather than reflect.

This change of roles is highly important in the face of our understanding of the philosophical foundations of the great transformation. However, it is also highly symptomatic of how the institutions and the wider societal setup of development in individual localities evolve (cf. Karppi, 2012). Yet, it may be difficult to indicate, particularly in advance, before anything tangible and with real effect has taken place. De-materialisation takes many other forms as well, often increasing the ephemeral features in economy. One of these forms is the increasing knowledge intensity, capacities to communicate and thus an enhanced emphasis of the human

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[4] Urban fallow is an element of urban morphology. Fallows are typically 'created' as the urban structure transforms with old users or occupants of a given property leave for a new location but no new user readily fits in the premises that are thus left dormant at least temporarily. This flexible process makes spaces and locations available for a wide variety of user-groups, and may facilitate openings for serendipitous development and innovative use of urban space. Urban fallows have been most often discussed in the context of old industrial premises and, hence, large urban scale (e.g. Conzen, 2004, p. 106), but also in more provincial or smaller-scale context (e.g. Hynynen and Kolehmainen, 2011, p. 15).

capital in the economy. It has also introduced economic developers with issues such as tolerance, creativity, recreation, or cultural amenities seeping in the core of how where and even *why* profitable business can be made (cf. Clark, 2007).

4. ELEMENTS OF A PRO-HUMAN ECONOMY: CREATIVE COMMUNITIES

These developments effectively challenge the existing ideas of what (and how) science should know what is relevant in the new circumstances. One of the changing areas of what and how to know is about an individual, the key-driver of knowledge-based economy. Focusing on an individual, however, reveals a major breach in the reasoning on a de-materialised economy. However much we wish to emphasise the cultural context of knowledge-creation, we cannot escape the fact that knowledge-creation and the entire processes that bring to the foreground an individual with her/his motivations and search for fulfilment takes place in a fundamentally material environment of tissues, receptors, transmitters and due cerebral structures that constitute the crux of the central nervous system (cf. Pinker, 2006; Flanagan, 2009).

Despite this obvious contradiction, the immaterial aspects have a firm foothold as the drivers of societal development are discussed and debated. Various markers such as indexes that seek to illustrate the stock of 'creativity' or 'knowledge' within a given territorial unit are produced to help those that are in charge of development to benchmark their success or even relative positions. They certainly reify a complex setting of societal development if anything ever does, with a consequence that even if internationally applicable comparative data exists to facilitate the construction of creativity or knowledge intensity indexes, they cannot capture the multidimensionality of the issue at stake (cf. Andersen *et al*., 2010; Karppi and Takala, 2007).

Understanding the actual solutions that make up the place-specific operation environments requires understanding of factors that enable the 'creative' or 'knowledge intensive' environments being brought about. The answer of the age of science and scientific rationalism was to create a wide array of science parks and business incubators to secure the cognitive basis for high technology industries. They can, however, be also seen as descendants in the extensive institutional tradition of catching and harnessing the spirit of the age as a source of particular *meaning* in developmental processes. As it is noted in a recent paper (Karppi, 2012), the role they play is not too different from the ones played by the church, the university and the design of healthy environments at earlier stages of urban development.

Yet, institutional evolution traced in this text does not stop in science parks and the model of knowledge creation they represent. Ideas of a creative class and urban amenities that are thought to be particularly appealing to the broad,

liberal and tolerant minds have become serious tools in the pursuit of new elements of growth. As Polanyi and Prosch (1977, pp. 3–5) emphasise, meaning necessarily goes together with intellectual freedom. Creativity, urban amenities and search for personal (intellectual) freedom can be easily seen as postmodern tools (if no goals) of institutional development. Often, in actual locations, they mingle with extensive industrial traditions and even their physical premises that may have remarkable cultural significance for the localities in question (Karppi and Pihlajamaa, 2010).

Science-led rationalist pursuit of success regarded science parks and their agglomerations of technological excellence as its apogee. This had its obvious reflections in public development policies carried out in cities and communities participating in a particular form of knowledge-based competition, measured in a way in their capability to serve as incubators for creative industries. Their next stage is, however, much more complex. It is often built on strong entrepreneurial spirit and a combination of a sense of community, broad social networks and a youthful ideal of autonomous individuals who only get involved in activities (business included) they find worth the effort. Yet, to be developed towards a full-fledged, growth-generating market-led activity the entrepreneurial ideals and knowledge of the core substances must be typically complemented with venture capital, the sources of which need to be particularly introduced to the entrepreneurs (cf. Rasila, 2004). This venture-to-capital (V2C) may come from institutional or individual actors willing and capable to take and bear the risks associated with a startup having left behind its early stages of development and standing on a threshold to a potential growth cycle.

This ethical stance distinguishes the current entrepreneurial culture from the rationalist age that primarily focused on the technical and technically innovative qualities as the source of the competitive edge *per se*. Now they are more and more regarded as elementary assets for backing up the young professionals' yearning for autonomy and liberty. This yearning, in turn, can be seen as an escape from the claustrophobic boundaries of formal organisations and regular wage-labour (Jacques, 1996; Sennett, 2002), but also, as a more than slight reminiscence of the traditional Marxist explanation. As Polanyi and Prosch, 1977, p. 13) remind by this way of thinking, as new technologies (or other innovations, *Author's note*) emerge, pressures mount to change the order of property in favour of new classes, this time the one possessing the new, postmodern or personal liberty-maximising entrepreneurial spirit.

In more general terms it thus appears that the evolution of local preconditions for development reveals active individuals more and more as drivers for change. Simultaneously, how meaning is experienced in particular situations can be derived to a lesser and lesser extent from broad cultural platforms shared in a similar form by nation or even civilisation-wide communities. These platforms have been traditionally constructed by institutions such as religion (church) or science and

knowledge-creation (universities). They have become gradually replaced by individuals' moral choices on commitments within business and employment (cf. the 'virtual onion model' as referred by Gallivan and Srite, 2005, p. 301). Cast in the context familiar to organisational designers and urban planners alike this poses a veritable challenge.

To a great extent this is a question of how to deal with the various manifestations of active citizenship as sources of experienced, tangible meaningfulness. Particularly as emphasised by pragmatist thinkers (e.g. Flanagan, 2009), each developmental situation is marked if not even imprinted by a plethora of first-person sensations. In an economy whose key developmental driver is creativity and related unique factors that stem from the human experiences this inductive dynamic experience often turns into solutions with the help of tacit knowledge well before exact measurement can 'verify' their viability or 'explain' them through pre-existing theoretical frameworks (cf. Polanyi and Prosch, 1977, p. 32). As we have a centuries-long tradition of rationalist or 'scientific' and necessarily a top-down project of human development with societal governance fitted to match the needs of building nations, welfare-states, Keynesian demand-side macroeconomic regulation, military-economic complexes, Socialism or the EU, the need of re-think the terms of development are remarkable.

Development requires financial resources, and today more and more of these resources are to be derived from the financial markets where they are managed by institutional investors. While channelling the necessary resources to any value-adding and return-providing system the investors also appraise the conditions for continuity and predictability in their recipients' surrounding societal setting, hoping to find ones proficient in securing uninterrupted evolution in societal processes. Thus the kind of inductive turn should thus take place without noteworthy breaches in the surface of societal development, which means that it needs to be worked towards a veritable productive force in the same time that it remains conductive to self-fulfilment in actual individuals' work and life in general. Moreover, as humans in all their individuality are necessarily social beings, the task is essentially about designing platforms for individuals' meaningful associations in working life and community development processes alike.

5. FROM OLD TO NEW FACTORY: REVOLUTIONISING THE WORKING LIFE

Given the long industrial history of Tampere, a particularly interesting concept for creating a new platform for dynamic renewal of work and value added in the society is an innovation called New Factory. More than a mere concept or physical settings for forms of production that can be embedded in the increasingly knowledge and service intensive society it is possible to emphasise features that

have the potential to effect the cultural and institutional basis of entire working life towards *new work*.

The New Factory is – in its all aptly postmodern glare – physically located in the oldest still remaining industrial construction standing restored in the heart of Tampere. The TR 1, a six-storey Factory Building 1, was constructed in 1838 at the Finlayson district that in the early 19th century comprised a lion's share of the planned city area. Finlayson with its cotton industry started the Finnish industrial revolution and the new large-scale production with all its technical and organisational innovativeness. Now the New Factory may more or less harness the historical premises to do again the trick of reworking the institutional order for work and entrepreneurship. This time the task includes dismantling the rigid organisations and industrial relations and to identify and design models of knowledge-centred industrial production.

New Factory is no single organisation but rather a cluster of various activities and communities, and the necessary organisational forms to run them. Thus, there are firms that manage publicly funded enterprise development programmes carried out in the premises and there are newly established start-ups having been originated trough these programmes, but this superficial description does little to illustrate the multifaceted character of activities carried out in the New Factory.

The New Factory calls itself a combination of four novel 'engine rooms' built on open innovation ideology and designed to meet the needs of students, self-employed entrepreneurs, researchers and developers. These roles are understood as flexible and overlapping, which means that facilities targeted, for instance, to growth entrepreneurs or researchers, or active and curious citizens, can be used interchangeably as situations and needs alter. To all user groups the New Factory professes to offer an interface with clear open innovation or co-design approach. For entrepreneurs and entire business entities this means customer and user-driven development processes.

For university and polytechnic students finishing their respective degree programmes this means an opportunity to get attached to real industrial, service or governance development processes and a due fast lane to high quality employment or entrepreneurship. For the City of Tampere and the city region this means a tool for dynamic industrial renewal. Entrepreneurship is a key aspect in the New Factory setup, as the entire concept reflects to a great extent Ronald Burt's (1995) idea of structural holes. These holes refer to discontinuities in the social texture of actors and networks that provide opportunities to the entrepreneurial spirits, as also recognised in a New Factory brochure quite explicitly:

> The world is full of holes, needs that are not being met. No one can fill these holes and solve the problems of the world alone. The best innovations are born through a combination of different kinds of people and knowledge. The problem is that this knowledge is spread around the world randomly, and the people are disconnected from each other (http://uusitehdas.fi/sites/uusitehdas.fi/files/new_factory_brochure.pdf).

What this means in practice is that even in the era marked by overcoming the distanced with sophisticated means of communication, there is a need of a variety of 'glues' to keep the communicating and knowledge-creating processes from dissipating. In other words what is called for is a certain flavour of a community, even a virtual one, to weave a texture bridge gaps between territorial and disciplinary gaps in the knowledge-creating fabric.

A diverting feature in the production systems is famously described by Friedman (2007), whose 'flat' world reveals itself in processes where even services (private or public) can be cut into two basic components. The first and the more and more marginal of them is the one that absolutely requires a real-time contact with a customer. This is and will remain the local and culturally specific component of service provision. The second one comprises of elements that can be productised, standardised and delivered beyond a distance to the place where the actual (and local) event of providing the service takes place. The elements of the second component are necessarily global by their nature. They can be produced in a cost-efficient way with the help of tools that make possible for instance the development of computer program platforms on which the local service production and provision events are built. In manufacturing this split into components has been a traditional standard feature in the value chain management.

But even if this split of services and production processes into components is technically possible, economically feasible and actually taking place, it is not necessarily even close to what is regarded as desirable as the feature of working life. Especially as we speak about young, highly educated and ambitious professionals, the last thing that many of them wish to engage themselves in is to combine and adapt standardised (global) solutions with a minimal personal (local) involvement in the actual outcome in a given process,

This is where activities such as the Suuntaamo or HUB Tampere located in the New Factory of TR 1 come into the view. Suuntaamo, formally the Suuntaamo Tampere Central Region Living Lab aims at an entity where complementary actors operating in research and production cooperate with customers to create and gain from synergies available from their shared ecosystem (Suuntaamo, 2011). Thus, integrating and strengthening the common fabric that binds together different actors[5] is the catchword here. Such an integration yields from the basic research and the original identification of the impetus for any activity to the actual users who are inevitably needed if that activity or its due outcome is to have any

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[5] Also the agencies that contribute to the funding of these activities come from a large and varied body of actors. For instance the Suuntaamo was established as a part of Tampere Regional Centre of Expertise Programme. The financing agencies include the European Regional Development Fund and the Centre for Economic Development, Transport and the Environment. Among the sponsors of the New Factory activities taking place at the Demola or HUB Tampere are also the City of Tampere through its varying thematic programmes, Tampere Regional Council and a large variety of enterprises that assign innovation teams and feed ideas for their further processing.

viability as a marketed product or legitimacy as a public service. The contrast is thus sharp to the process-slicing production philosophy described above as global.

Another, and potentially an even more extreme experience of the modern working life and particularly modern entrepreneurship as a pursuit of meaningfulness can be found from the same property. HUB Tampere is part of the international initiative of building new innovative places around the world where, as the community itself defines, entrepreneurs, innovators and changemakers can meet and work together to tackle the world's most pressing social, cultural and environmental challenges (HUB Tampere, 2011). If the process-slicing model subjects local action to the terms set on the global scale, the HUB with its accompanying activities, such as the Dream City project, hosted by Demola, one of the New Factory engine rooms (cf. Dream City, 2011), works the other way round. It is a combination of unique local communities, joined together by a shared global mindset and common guidelines to produce not only a sense of broader international togetherness but certain connecting features such as re-use of old industrial premises as the venues for the novel ideas.

6. ELEMENTS OF POST-RATIONAL PLANNING: REDEFINING THE URBAN CORE

The process of reconstructing the central business district of the Lempäälä municipality (pop. 20,000) at the southern fringe of Tampere metropolitan area has been already discussed in this journal (Karppi and Takala, 2008). As a few years have passed, the actual planning stage, identified in the previous text (Karppi and Takala, 2008) as one of the truly defining momentums of the visionary process carried out with a great deal of stakeholders and decision-makers, is now firmly on its way. Moreover, it is a subject of a profound research and planning technique development process, planned to be implemented between the years 2011 and 2015. As the lengthy time span suggests, only part of the process will be linked to practical or locally specific outcomes. Much of it will be guided by a genuine drive for new knowledge with a focus on planning theory or issues such as domestication of techniques applied by the planners.

The actual planning stage started in late 2010, and during the spring and summer of 2011 the outline of the process for running and managing the visionary work for setting the agenda and implementation scheme found its shape. In the fall of 2011 the process was named as *Urbi et Orbi* – for the city and the entire world. The process is highly research-intensive, which means that until now there are remarkably more questions and assumptions concerning the future process than actual findings and answers. However, what is already on its place is an officially appointed high-level project organisation and its executive group with the

necessary capacity to carry out the planning preparation as effectively as it imaginably can be in the democratic decision-making environment.

In a nutshell *Urbi et Orbi* is meant to be a process that firmly believes in the intrinsic quality of the planning process now on its way. It seeks to use experiences derived from a local case with unique benchmark value for the benefit of the global community of urban designers and regional developers. The endeavour to introduce new techniques and planning methods for the professionals and decision-makers starts with existing technical solutions such as the Smartboard or standard social media platforms. The reason for this is to lower the user-threshold by resorting to tools relatively easily recognisable by individuals with different backgrounds, and, hence, easily domesticated for use in this particular context. Moreover, as science and technology studies reveal, the entire history of techniques and technologies planned for one particular use show a tendency of functional spillovers to other uses (Feenberg, 2010). Experiences range from the adolescent telephone of the 19th century to early data network services such as the French Minitel of the 1980s. The entire planning process is thus built on creativity that stems from individuals and their experiences of what constitutes the community, its sense of place and potentials, but that needs particular interfaces for having an effect in the executive planning team's work.

Urbi et Orbi is organised as a knowledge-creating process with capacity to analyse and apply data collected, as it is put in the project memorandum, 'with living lab approach, from a user-centred open innovation ecosystem'. How this will be achieved is part of the research process, but at the project planning stage these fundamentals were nonetheless formulated and attached to the executive group agenda. What this means in practice is that a tool and a mechanism will be needed that allows a real-time, life-size simulation of the planning context, where numerous interconnected sources of information feed the executive group with planning data, all made relevant by the fact that they reflect the different aspects of a common target area.

The key feature of this living lab – and the feature that differentiates it from the standard living lab solutions that aims at co-development of co-design of a limited (product) entity – is that this living lab will operate with a vision for a future community. It thus needs to open continuously re-forming perspectives for potential futures of the community, using maps and narrated storylines, digital landscape images and particular elements deemed as meaningful parts seen to define the sense of the community. All these elements are meant to constitute an arena for debating and eventual sensemaking among the community members with their stakeholder and pressure groups as well as the democratically elected local decision-makers on the one hand, and the executive planning group with their scientific and practical advisers.

One crucial feature of the *Urbi et Orbi* team is its willingness to learn from its own work practices. Because of this the living lab approach will be yielded to

an ethnographic analysis of the team itself, the process beginning in the spring of 2012. The main aim with this practice is to increase and deepen the team members' own understanding of *how* they actually achieve the outcomes that they do, and what may be the easily unrecognised pitfalls of resorting to sophisticated technological tools that seem to open the entire planning and developmental palette in an actual, or even 'real' forms.

For all this the process may – and actually needs to – combine the results of recent and ongoing basic research carried out by the members of a large consortium[6] and innovation processes carried out for this particular planning process, implemented as partnerships of public actors, enterprises and individuals. Built on local excellence, tested in a real urban development case – the central area of Lempäälä municipality – the *Urbi et Orbi* has charged itself with an aim of processing globally relevant expertise that will be further analysed and developed with a network of international partner institutions. The final and objective measure for producing relevant outcomes that meet the planning challenges the *Urbi et Orbi* team is committed itself to an explicit attempt to productise the tested solutions to exportable urban planning and community development services.

The process itself is designed to consist of four main research components: (1) developing a creative and interactive process for visionary urban and community design; (2) creating a model for the political, economic and judicial process to implement the visionary planning; (3) designing the necessary technical applications required for the visionary process; and (4) integrating the visionary work to the requirements of sustainable development with new ecosystem services. The tasks are extremely demanding, and the projected time-span required for the entire process will be necessarily several years, starting in the November of 2011.

Effective fieldwork requires favourable conditions for the analysis. In the context of this research these conditions have been translated into suitable living-lab arrangements created in the actual location in Lempäälä. The executive group has organised its work as a visionary team that meets weekly, typically on Friday afternoons which also enables the participants to have a kind of weekly debriefing session from the community development perspective. While this team is charged to re-think the entire lead idea of an existing and well established centre of a growing municipality, it has developed a particular team identity that stems from an ancient past. The name of the entire process, the *Hääkivi* ('Wedding Stone'), refers to the location of an Iron Age cemetery in the vicinity of where the team meets. The visionary work for the renewal of the municipal core into a location

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[6] Cooperation of this consortium is to be funded through Strategic Centre for Science, Technology and Innovation of the Built Environment in Finland (Rym-SHOK), a national research and development programme. The consortium will comprise Lempäälä Development as its coordinating enterprise, University of Tampere and VTT Technical Research Centre of Finland as the lead research institutions and a number of other enterprises that participate in the planning process or facilitate case studies in urban planning and construction, their legal, social and environmental aspects included.

of high-quality housing and workplaces within a 10-minute train connection to downtown Tampere and with a clear local identity and attractor potential in a major Finnish metropolitan area takes thus place in a location with quite a different but highly peculiar local attachment.

For the understanding of the dimensions of what large-scale transformations are all about this kind of homebase has its obvious advantages. The same can be said of the fact that the team that thinks development in highly urban terms meets in a traditional-looking loghouse that only comprises one large meeting-room and stands on an idyllic lakeside location, detached from the central agglomeration but within a sight to it. The premises are modest but functional by their composition, serving one goal above anything else. In these premises those responsible of the development process can retire from the ordinary daily activities and concentrate on nurturing the vision, conferring constantly with specialists on urban design, democratic governance and participation, human-centred technology and ecology. Moreover, all that is processed in these premises is also stored on the walls of a large discussion space with armchairs in a horseshoe formation. The premises thus form an essential part of the institutional memory required in a long-term process such as nurturing the physical as well as aesthetic, and possibly even the spiritual form of a community.

7. CONCLUSIONS: PROMISES OR CHALLENGES?

The most peculiar feature in the processes and their interplay with the physical locations studied in this paper is the scope that those involved in the processes give to their respective activities. Measures taken in these processes go far beyond the ordinary business or municipal development operations. The New Factory not only churns out firms with new kinds of products but entire entrepreneurial communities and new kinds of approaches to working life, participation into the operations of the corporate sector, or ways of life with entrepreneurship as one of its important aspects. Due to its administrative bearings the *Hääkivi* process has to focus on the developmental challenges of one municipality. However, those involved on it have committed to analytical processing of experiences and innovations reached during its visionary work, and opening the process for external, even global, scrutiny and learning.

The business community and the municipal executive group clearly strive for developing leading edges for the contexts of where their respective activities take place. Moreover, the very setup of these activities – for instance the international reference network of the HUB Tampere or the *Urbi et Orbi* consortium to support the Lempäälä executive group in its urban planning and community development task – clearly aim at verification of their pursued excellence in the face of relevant

international comparisons. In the case of the HUB the final verification is given by the unlimited market that either elevates or dooms its community members by their achievements. For the verification of the achievements reached through the *Hääkivi* community the *Urbi et Orbi* group has invited esteemed researchers on planning theory or science and technology studies to participate in the analysis of the capacities such as innovativeness, promotion of democratic participation or cost efficiency reached through the way how the process was carried out.

While there is evidence more convincing than just a sincere willingness to hope for the best that the new ways of thinking about entrepreneurship or executive work in a municipal development process have lead to new forms and actual practices of work, it is obvious that the challenges are remarkable. As the *Urbi et Orbi* consortium noted in its own risk analysis made as it prepared for its task, the pronounced avant-gardism embedded in its own visionary process may breed obstacles that emerge at the interfaces between the inner groups or the process stakeholders and their environment. The challenge is only steepened by the fact that a great deal of this environment consists of elected members of local council and the local dwellers who facilitate the entire exercises both politically and financially, as voters and as taxpayers.

This is a worthwhile concern. Giving form to novel, and even innovative environments seems to be pressurised by the traditional and rationalistic approach that regarded reports and plans as the primary contents of planning work (Healey and Thomas, 1991, p. 195). Thus, the risk scenario identified by the *Urbi et Orbi* team may well be generalisable to all process that work on the interface between the creative capacities and the required legitimacy, the vital aspect of responsible policymaking. New concepts and approaches have emerged, including the Urban Design Management (Ahlava and Edelman, 2008), but not even such a major philosophical turn as the breakthrough of postmodernism in planning theory succeeded in changing much of the way how (Finnish) large-scale urban structures were actually planned (cf. Ylä-Anttila, 2010, p. 38). Thus, the cases discussed in this paper might well be analysed with an eye on their potentials for breeding the necessary eclecticism and a more relaxed and unprejudiced approach to the way how planning tasks are commissioned and development processes are managed.

Business cycles change and technological breakthroughs may render some tools once regarded as essential for development obsolete, and technological lock-ins may lead the entire developmental path to a blind alley. Moreover, elections bring new decision-makers to the view, and original innovators grow older and retire, or are headhunted as the fame of their personal achievements gets about. There is a plethora of culprits for losing the *raison d'être* for what was the original idea for finding new ways within business or governance. The forms that are dominant today are dominant for the simple reason that the basically Darwinist process of survival of the fittest has, in a silent and resilient way over time given them their particular legitimacy and primacy over most if not all alternative forms.

Thus, working on the interface between the aspirations and ambitions so elementary in the novel and alternative ways of pursuing success and the plausibly grounded institutional inertia present in the mainstream of doing business and governing may be a true question of life and death. Open innovations and real-time living lab settings that allow a remarkably intimate contact between various stakeholders in processes that utilise these approaches may also set free forces the traditional forms of organising action have sought to keep in check. At best this may lead to a major blooming of ideas and new practices. In a recognisably Aristotelian sense, of which Paul Virilio (2007, p. 91) has reminded us, the novel forms of doing business and governing may also collide with the traditional ones with a magnitude of a violent accident that forces the markets or organisations reveal their true character. It is also possible that they reveal aspects that normally are carefully hidden behind all this normality of daily routines. Thus, they may teach us a great deal about the institutional order that surrounds us and that we have simply accustomed to take for granted in the absence of any palpable alternatives.

Finally, however bland this may sound after all having been said here, the following needs to be emphasised. Trying to capitalise the promises held by the new ways of fitting business and governance in their current and probably also future environments may not be easy. The sheer multitude of new ways necessarily breeds major challenges. Persistent co-evolution and possibly at some stage co-design (or even *co-regulation*) is needed, and not at any rate something that ought to be avoided.[7] Problems may well emerge if the new forms of promoting openness and extended intimacy between different stakeholders and their ideas are developed towards the prevailing institutional models of how human interaction is arranged in a societal setting – the traditional organisational forms. Rearranging this setting is like a piece of 'mental brownfield development' with the market-based exchange and the idea of organisations with their traditional, formally defined boundaries constituting the structures that hold the potential for innovative re-use.

There is still also a practical argument that is to be made, namely that the spatial context in which action takes place does matter (cf. e.g. Sack, 1997, p. 13). This quasi-truism of structuralist geography is hardly a revolutionary idea, and forward-looking real-estate developers have acted upon it for quite some time. To give only one example Luukko (2010) sheds light on University Properties of Finland, an enterprise that manages most of Finnish university properties, whose head of research and development has in different occasions underscored the idea of promoting creativity and producing physical settings conductive to it as a mutually interconnected process. But how may this development take place in premises

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[7] As could well happen in the name of maintaining and safeguarding an organisation's autonomy, manoeuvrability, or (however narrowly understood) integrity.

originally designed for purposes now made obsolete, and taken into new uses by pathfinders of new entrepreneurial tribes or creative spirits within public sector? This is an empirical question well worth of further scrutiny.

REFERENCES

AHLAVA, A. and EDELMAN, H. (2008), *Urban Design Management. A Guide to Good Practice* (translated from *Urban Design Management. Opas käytäntöön*, 2007), London: Taylor and Francis.

ANDERSEN, K. V., HANSEN, H. K., ISAKSEN, A. and RAUNIO, M. (2010), 'Nordic City Regions in the Creative Class Debate – Putting the Creative Class Thesis to a Test', *Industry and Innovation*, 17 (2), pp. 215–240.

ARNKIL, R., JÄRVENSIVU, A., KOSKI, P. and PIIRAINEN, T. (2010), *Exploring Quadruple Helix. Outlining User-oriented Innovation Models*, Tampere: University of Tampere, Institute for Social Research, Work Research Centre.

BURT, R. (1995), *Structural Holes. The Social Structure of Competition*, Second printing, Cambridge, MA: Harvard University Press.

CHESBROUGH, H. (2003), *Open Innovation: New Imperative for Creating and Profiting from Technology*, Boston, MA: Harvard Business School Press.

CLARK, T. N. (2007), 'Making Culture into Magic: How Can It Bring Tourists and Residents?', *International Review of Public Administration*, 12 (1), pp. 13–25.

CLARK, P. (2009), *European Cities and Towns 400–2000*, Oxford: Oxford University Press.

CONZEN, M. R. G. (2004), *Thinking about Urban Form. Papers on Urban Morphology, 1932–1998*, ed. by M. P. CONZEN, Bern: Peter Lang A.G.

DREAM CITY (2011), http://thedreamcity.com/

FEENBERG, A. (2010), *Between Reason and Experience. Essays in Technology and Modernity*, Cambridge, MA: The MIT Press.

FLANAGAN, O. (2009), *The Really Hard Problem. Meaning in a Material World*, Cambridge, MA: The MIT Press.

FORSBERG, G., GRIMSRUD, G. M., JAKOBSEN, L., JANSDOTTER, M. and STUBBERUD, K. V. (2006), *Gränsfall. Platsens betydelse för omställning och utveckling i en gränsregion. Border case. Place and the Restructuring and Development of a Border Region*, Stockholm: Nordregio.

FRIEDMAN, T. (2007), *Litteä maailma. 2000-luvun lyhyt historia* (translated from *The World is Flat. A Brief History of the Twenty-first Century* [updated and expanded], 2006), Helsinki: Otava.

GALLIVAN, M. and SRITE, M. (2005), 'Information Technology and Culture: Identifying Fragmentary and Holistic Perspectives on Culture', *Information and Organization*, 15, pp. 295–338.

HÄNNINEN A., and LEINO, J. (2011), 'Mistä jatkajia yrittäjien työlle?' (Who to continue entrepreneurs' work?), Suomen Asiakastieto, *Majakka*, 1, pp. 30–39.

HEALEY, P. and THOMAS, H. (1991), 'Knowledge, Skills and Their Validation: Knowing Why, As Well As Knowing What and How', [in:] THOMAS, H. and HEALEY, P. (eds.), *Dilemmas of Planning Practice*, Aldershot: Avebury Technical, pp. 193–199.

HUB Tampere (2011), http://hubtampere.wordpress.com/in-english/.

HUIZINGH, E. K. R. E. (2011), 'Open Innovation: State of the Art and Future Perspectives', *Technovation*, 31, pp. 2–9.

HYNYNEN, A. and KOLEHMAINEN, J. (2011), 'Keskikokoinen metapolis? Näköaloja osaamisvetoiseen kehittämiseen Seinäjoella' (Mid-size metapolis? Perspectives to Knowledge-driven Development in the City of Seinäjoki), *University of Tampere Sente Working Papers*, 32.

JACQUES, R. (1996), *Manufacturing the Employee. Management Knowledge from the 19th to 21st Centuries*, London: Sage.

JANIS, I. L. (1982), *Groupthink. Psychological Studies of Policy Decisions and Fiascoes*, Second Edition, New York: Houghton Mifflin.

KARPPI, I. (2012), 'Towards Associative Meaningfulness. A Community Development Close-up. Forthcoming', [in:] TODISCO, E., KULTALAHTI, J. and KULTALAHTI, O. (eds.), *Dynamics of Globalisation: Methodological, Economic and Social Aspects*, Rome: la Sapienza University.

KARPPI, I. and PIHLAJAMAA, P. (2010), 'Venues of Industrial Renewal', [in:] RANTANEN, K. (ed.), *Living Industrial Past*, Museum Centre Vapriikki, Tampere Museums Publications 110, Finnish Labour Museum Werstas,1, Tampere, pp. 90–109.

KARPPI, I. and TAKALA, A. (2007), 'North-European Bio-locations: Different Paths to Success', *Structural Change in Europe [Cities and Regions Facing up to Change]*, 5, pp. 74–79.

KARPPI, I. and TAKALA, A. (2008), 'Overwhelmed by Globalization? Revival of a Small Town Central Business District and the Sense of Locality', *European Spatial Research and Policy*, 15, pp. 99–54.

KOSTIAINEN, J. (2002), *Urban Economic Development Policy in the Network Society*, Tampere: Tekniikan akateemisten liitto TEK.

KULTALAHTI, O. (2001), 'From Heavy Industries to a High-Tech Centre: Mobility of Educated Labour in Tampere', *Espace, Populations, Societes*, 3, pp. 297–309.

LANIER, J. (2011), *You Are Not a Gadget. A Manifesto* [with updated material], London: Penguin.

LUUKKO, T. (2010), 'Täydellinen tila synnyttää uutta' (Perfect space regenerates), *Rajapinta*, 3. http:/rajapinta.tut.fi/text/artikkelit/2010/3/Taydellinen_tila_synnittaa_uutta.

NOOTEBOOM, B. (2001), *Learning and Innovation in Organizations and Economies*, Oxford: Oxford University Press.

OLDS, K. and THRIFT, N. (2005), 'Cultures on the Brink: Reengineering the Soul of Capitalism – on a Global Scale', [in:] ONG, A. and COLLIER, S. (eds.), *Global Assemblages. Technology, Politics, and Ethics as Anthropological Problems*, Oxford: Blackwell Publishing, pp. 270–290.

PAAKKUNAINEN, K. (2007), *Alkaisinko yrittäjäksi? Tutkimus nuorten yrittäjyyspoliittisista kirjoituksista ja asenteista* (Becoming an entrepreneur? Youth's essays and attitudes on entrepreneurial policy), Helsinki: Yksityisyrittäjäin säätiö, Kerhokeskus – koulutyön tuki ry & Nuorisotutkimusverkosto.

PINKER, S. (2006), 'The Biology of Fiction', [in:] WELLS, R. H. and McFADDEN, J. (eds.), *Human Nature. Fact and Fiction*, London: Continuum, pp. 27–39.

POLANYI, M. and PROSCH, H. (1977), *Meaning*, Chicago: University of Chicago Press.

RASILA, T. (2004), *Venture-to-Capital. A New Framework for Growth Venturing and Professional Ownership*, Tampere, Tampere University of Technology.

REICH, R. B. (1992), *The Work of Nations. Preparing Ourselves for the 21st Century Capitalism*, New York: Vintage.

REICH, R. B. (2001), *The Future of Success*, London: William Heinemann.

SACK, R. D. (1997), *Homo Geographicus. A Framework for Action, Awareness and Moral Concern*, Baltimore: Johns Hopkins University Press.

SENNETT, R. (2002), *Työn uusi järjestys. Miten uusi kapitalismia kuluttaa ihmisen luonnetta*, (translated from *The Corrosion of Character*, 1999), Tampere: Vastapaino.

SENNETT, R. (2009), *The Craftsman*, London: Penguin.

SMITH, S. J. (1993), 'Social Landscapes: Continuity and Change', [in:] JOHNSTON, R. J. (ed.), *The Challenge for Geography. A Changing World: A Changing Discipline*, Oxford: Blackwell, pp. 54–75.

SUUNTAAMO (2011), http://www.openlivinglabs.eu/livinglab/suuntaamo-tampere-central-region-living-lab.

SYLVERS, E. (2011), 'Fiat Turns Its Back on Italian Employer Group', *International Herald Tribune*, 4th October.

VIRILIO, P. (2007), *The Original Accident* (translated from *L'accident original*, 2005), Cambridge: Polity.

VIRTANEN, M. (1987), *Tehtaasta studioon* (From factory to studio), Helsinki: Hanki ja Jää.

YLÄ-ANTTILA, K. (2010), *Verkosto kaupunkirakenteen analyysin ja suunnittelun välineenä* (Network as a tool for analysing and planning urban form), Tampere: Tampere University of Technology.