PERSONAL KNOWLEDGE MANAGEMENT FOR BUILDING INDIVIDUAL FORESIGHT CAPABILITIES: OUTPUTS OF THE LNELS PROJECT TOWARD EUROPEAN FORESIGHT

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Abstract
The paper provides a conceptual model and learning context of the FTA initiative that focused on ‘preferable futures’ proposing a social technology related way to help both policy makers and citizens to better realise the Lisbon objectives and challenges of the European knowledge society. The analysis and outputs are targeted at knowledgeable individuals who have commitment to enhance their strategic capabilities performing foresight activities at European or national levels.

A set of three frameworks of the developmental project is analysed, extending arguments to think, debate, and shape that which is understood as Knowledge Society, Entrepreneurial Foresight Basics, and Cases of Personal KM for Individual foresight. Adjustment of methods of research, networking, and collaboration used in Europe are considered in interrelation with PKM process for both the ‘foresight job at hand’ and for achieving objectives of foresight intelligence against a background of European/Latvian realities.

In the KM process, the values relevant to the EU and Lisbon strategy may be promoted and embedded in cultural settings. Some opportunities and barriers for research on KM in foresight are identified. The paper argues that PKM-to-strategic foresight might constitute an element in FTA activities aimed at bridging delivery gaps in European and national Lisbon policies.

Keywords:
The Lisbon process, strategic thinking, individual foresight, knowledge management
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FTA ASSUMPTIONS: METHODS AND APPROACHES IN THE CONTEXT OF ACHIEVING OUTCOMES

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1 Rationale

In 2003, the Forward Studies Unit, an independent research body in Riga, launched a developmental project entitled: “Latvia towards Knowledge Societies of Europe: new options for entrepreneurship and employment achieving the goals of the Lisbon strategy” (LNELS). In that year, a national referendum on the membership of Latvia in the European Union took place, and the next year Latvia joined Europe.

The LNELS initiative arose from knowledge that a set of ideas, beliefs, and ways of behaviour of a "particular foresight community" (individuals as well as organisations) had been recognised at the international level alongside the emergence of the European Research Area (ERA) meeting the Lisbon objectives.

Foresight, one of strategic policy intelligence (SPI) processes and instruments, can bring about a social technology. In 2000, a vision of the European Knowledge Society (KS) was promoted by the Lisbon European Council: a dynamic and most competitive knowledge economy with social inclusion, better and high job creation, and sustainable development. This vision is compatible with the need for knowledge society & skills foresight. A reasonable assumption also provides that a field of individual foresight capabilities should be addressed dealing with FTA in KS. In this context the individual through causing change may be characterised as the evolving identity of European citizens who have commitment and the will to act as an entrepreneurs for the realization of the Lisbon objectives.

Latvia belongs to those countries in which FTA and foresight culture is a challenge to the embedded ways of science and society. LNELS has been projected to look into emerging realities and futures, and to contribute to foresight capacity building of individuals living in Latvia and gaining knowledge of the Lisbon process.

In the exploratory and problem solving context, LNELS should have been framed applying an innovative, in fact transdisciplinary approach (studies on KS, eventually learning experience and outcomes of European research projects, conferences/workshops and other activities).

LNELS aims to explore theoretical issues and offer conceptual solutions, and also to suggest practical ways of how to promote entrepreneurship in RTD activities providing options to individuals/individual knowledge workers (IKW) to reach to knowledge-intensive employment related to the forward-looking intelligence and, namely, to foresight on technology and social issues. Organizational and personal knowledge management (KM) aspects are also addressed both theoretically and practically exercising foresight techniques.

The Latvian Council of Science (LCS) funded the project in 2004 and provided support to transfer the research outcomes to international community. During the set up phase a plan had been elaborated on how the scarce financial resources could be mobilized for research management and implementation. (2000 EUR allocated to LNELS per year from the national program “Science”) The main emphasis has been placed on virtual learning, exploring and networking, and on self-organizing to engage with online activities of foresight allowed by ongoing projects in the European Union. In 2003 - 2004, the LNELS interdisciplinary team was comprised of experienced researchers and consultants, including Dr. oec. Tatjana Volkova (the Rector of Banking Institution of Higher Education in Riga, the Chair of Council of Universities' Rectors of Latvia), Janis Strauchmanis (Professor of the Riga Technical University, the Chairman of Board of Latvian Union of Scientists), Dr. Phys. Arnolds Ubelis (Head of the EU’s FP6 National Contact Points in Latvia, the University of Latvia) and Dr. Arturs Puga (Forward Studies Unit) - the project leader and coordinator.
2 A mode of development and learning context

2.1 Approach, processes and objectives

The multidimensional nature of the LNELS initiative required to take an innovative approach to scope the project, to plan phases/timing and manage activities. The project team decided to avoid a strictly planned way, taking into account a novelty of the Lisbon objectives as well as cautiousness about technology foresight in Latvian RTD community. The deliberate approach is consistent with the defined objectives, and it forms and maintains coincidence of integrative, exploratory, interactive, participative, experimental, and skills building processes:

Integrative – incorporating new interacting aspects and actors into research and arranging and combining things so that they form an evolving unit of likely complexity.

Exploratory – learning, examining and discussing in-depth issues from acquiring knowledge to applying and disseminating knowledge using FTA and other methods.

Interactive – involving people communicating with each other, looking at and reacting to other ideas, sharing information and knowledge.

Participative – encompassing dialogues/consultations/discussions and other activities amongst a wide spectrum of stakeholders and collaborators shaping the future.

Experimental – looking for, designing and trying new frameworks, tools and techniques.

Skills building – identifying needs and critical skills deficiencies, proposing and shaping opportunities to reach designed objectives.

Following the developmental way LNELS uses ideas, conceptual findings and results of each of its phases/activities as inputs to progress toward the project goals. This offers a set of opportunities translated into the following objectives:

- to learn, prove and enhance individual and organizational capabilities needed for foresight exercises;
- to focus research on foresight development in Latvia;
- to enter in depth into foresight activities at European/regional level;
- to identify and deal with futures issues addressing Latvia in the EU.

Knowledge mapped in deliverables has been derived from these opportunities. Researchers, collaborators and stakeholders of Latvia and other countries contributed to raising awareness about issues and processes designed within LNELS.

2.2 The KSF motive and phases

Exciting items could be stored about the pre-start and launch stages of projects analysing external factors which played roles as enablers and drivers of initiation. In the LNELS case we would like to mention an inspiration of the Lisbon strategy, the novelty and wealth of European projects e.g. FOREN and EUFORIA, and the outcomes of conferences held in Brugge (Unity and diversity: the contribution of the social sciences and the humanities to the ERA), Seville (The role of foresight in the selection of research policy priorities), Ioannina (Foresight in the Enlarged European Research and Innovation Area), 2001-2003.

The LNELS research has been made in phases. The coincidence of processes allows for extending phases and working, eventually, on tasks of two or more phases.
Phase 1. **Set Up.** Scoping workshops. Identification of research priorities. Setting up virtual learning place. Publishing information about the project in scientific bulletins and newspapers. Presenting the project’s way online along with information on European foresight research and activities aimed at Lisbon objectives. Mapping stakeholders and collaborators.

Phase 2. **Scanning and Research in Panels.** Background intelligence gathering. Environmental scanning. Managing the knowledge repository. Designing Panels. Foresighting on identified issues with focus on the mid-term horizon, combining methods e.g. LNELS workshops, indicators analysis, brainstorming, strategic conversations, participation in European foresight exercises.


Phase 5. **Developing and testing a new Knowledge Platform comparing with LNELS objectives.** Participation in European foresight projects and activities. Exploring and designing a case of personal KM for building Individual Foresight capabilities. Adaptation of the research outputs to the needs and realities of Latvian FTA.

Phase 6. **Looking at the post-Lisbon process.** Follow up research of the initiative is planned to the end of 2010.

LNELS allows for inputs into the building of Knowledge Society Foresight (KSF) set up for use by the KSF EUFORIA initiative. Designed in two parts to meet the Lisbon objectives, the project was implemented within the European Foundation’s work programme ‘Analysing and anticipating change to support socio-economic progress 2001-2004’. Outcome of the first part - Handbook of Knowledge Society Foresight (HKSF) suggests that a useful way of thinking about the KS should include the intersection of several related trends (European Foundation 2003, p. 5) This concept has been adapted to the LNELS project in order to create the general frame that might be used for understanding the KS in the early twenty-first century (Table 1).

As a response to KSF, an international conference “Knowledge Society and implementation of the Lisbon strategy in Europe and Latvia” took place in Riga at the Banking Institute of Higher Education, on 14-15 October 2004. It was initially shaped within LNELS and co-organized by a multi-stakeholders group. The conference also provided a space for FTA activities and the first Latvian foresight workshop was conducted, which included participants from four countries.
Knowledge collectively produced in the conference and workshop helped in exploring

- trends and challenges in Latvia’s way toward the knowledge society in the Lisbon process;
- the entrepreneurship process in the country;
- a new knowledge platform for learning foresight and reflection on future trends in the LNELS context.

The studying of methods and experience of KSF appeared as a research theme in Latvian FTA activities. This resulted in an overview publication at the European Foresight Monitoring Network. (Puga, A 2006)

### 2.3 Envisioning futures

The LNELS team maintains both innovative and simple understanding of the project context. Europeans have one general situation in which envisaging is in progress. Capabilities of foresight ought to be developed and creatively applied shaping activities at all levels. The EU is pursuing the objectives of the Lisbon process while citizens engaged in foresight activities are learning and conducting this process. LNELS refers to:

*The Lisbon Strategy is a commitment to bring about economic, social and environmental renewal in the EU. In March 2000, the European Council in Lisbon set out a ten-year strategy to make the EU the world’s most dynamic and competitive economy. Under the strategy, a stronger economy will drive job creation alongside social and environmental policies that ensure sustainable development and social inclusion.* (European Commission, Lisbon Strategy 2000)
(...)

But turning these objectives into action and results means forging a new, dynamic Partnership for European Renewal. (...) Our partnership must therefore reach beyond our Ministries and capitals to capture the imagination of Europe’s homes, schools and factories. We can do this by rallying our Social Partners and civil society behind the idea of European renewal. Helping Europe to change, 10 February 2005, by José Manuel Barroso. (European Commission, Press Room 2005).

The Lisbon concept may be perceived as a participatory, slightly structured developing system manifested in policy areas. Mr. Philippe Busquin indicated to its genesis:

... our policy proposal for the European Research Area, when we made it in early 2000, had itself some of the key features of an exercise in foresight; and I would like to tell you why I think so.

Foresight is about thinking, debating and shaping the future. This involves, first, the building and sharing of a vision, that is to say, developing future scenarios on the basis of which we can shape the policy decisions we are to take today. Second, the debate of our vision with all stakeholders, including the policy makers themselves, who often are left just at the "receiving end" of the foresight process. And third, proposing new instruments for action, in order to underpin our vision with a sound strategy showing, in essence, that our conclusions can give way to a well planned policy that can actually be implemented to achieve our goals. (Busquin, P 2002)

For the debate to occur, citizens are to be motivated and willing to converse. Europeans should be knowledgeable in the development of the Lisbon strategy and know how to apply its knowledge potential to everyday activities. Bottom-up knowledge for performance might be no less significant than top-down policy making. These were considerations and assumptions derived from the LNELS research in phases 1-3. (Puga, A 2004a, 2004b)

2.4 An understanding of entrepreneurship for preferable futures

Strategic Policy Intelligence that includes foresight might be learned collectively. For the Lisbon objectives, entrepreneurship is often qualified as a key. LNELS uses the novel and simple concept that entrepreneurship

• is the mindset and process of creating and developing economic activity by blending risk-taking, creativity and/or innovation with sound management, within a new or an existing organisation;

• can occur in any sector and type of business. It applies to the self-employed and to firms of any size throughout the various stages of the business life-cycle, from pre-start to growth, transfer or exit and re-start;

• is relevant for firms in all sectors, technological or traditional, for small and large firms and for different ownership structures, such as family businesses, firms quoted on the stock exchange, social economy enterprises or non-profit-driven organisations, which often have significant economic activities. (CEC 2003)

In terms of LNELS, an assumption provides that the IKW is committed and willing to act in entrepreneurial manner to be knowledgeable in foresight exercises – an aspect of sustainable culture in 21st century. (Puga, T and Puga, A 2004)
For this research, it was a task to understand what sort of futures the architects of the Lisbon process were thinking about. We find it to be ‘preferable futures’. In a generic foresight process framework, Joseph Voros described five alternative futures classes: potential, possible, plausible, probable, and preferable. (Voros, J 2003) The vision of the Lisbon objectives coincides with the concept of ‘preferable futures’ concerned about what we want to be happen, derived from value judgments, and positioned in classes of possible, plausible and probable futures. The process of entrepreneurship, that encompasses both the European and Latvian environment as well as the activities of the citizens for learning and applying foresight, shapes futures which we want to be developed, facilitated and enhanced.

The research added value (intangibles and tangibles) of thinking, debating and shaping the future would enter into foresight at national and supranational level. Foresight inputs and outputs effect through the virtuous circle of foresight, contribute to renewal processes in the implementation space. (UNIDO 2005, pp. 34-39)

3 Instrumentals

3.1 An integrated look across areas and issues

In phases 1-3, efforts were aimed at gaining an understanding of the changing landscape of Latvian society toward European KS in the pre-accession period (2002-2004). Environmental scanning was applied for this task combining analysis of statistical information and literature review, interviews, strategic conversations, brainstorming - face-to-face meetings and in virtual space via Internet, in-depth materials of international research projects and workshops related to the LNELS research domain, research in the project panels. European and Latvian experiences of the first years on the Lisbon track have been studied by scanning activities. The stakeholders mapping provided a lot of information on futures of foresight exercises in Latvia. Main observations and conceptual assumptions obtained by these methods were presented in articles, reports and e-publications delivered to Latvian and the international research community. These constitute input to next phases of LNELS, eventually to the end of 2010.

During the process of identifying main trends and challenges in the context of the Lisbon strategy and its implementation a set of 14 research panels has been established for learning and processing knowledge on the topic - the job at hand.
In the second part of 2004 (phase 4) a new dimension of international collaboration with researchers of European and other countries has been added to the LNELS project. In the Lisbon context envisaging a knowledge based economy, special attention has been addressed to understanding and applying processes related to KM. The joining of the LNELS researchers to virtual activities of KnowledgeBoard (European Commission’s funded Special Support Action within the IST FP6 framework) became one of most significant issues for the developmental project. Knowledge Management and Foresight along with Entrepreneurship form a cornerstone on what the multidimensional framework of LNELS has created, developed, and adapted to the changing realities.

The LNELS toolkit includes methods used exclusively to this initiative and those learned and applied by the research team when they participated in foresight activities at the European/regional level while corresponding to the project topic (2003-2006). In the foresight field, amongst the methods were

- qualitative: scanning, literature review, interviews, strategic conversation, expert panels, brainstorming, conferences, seminars, genius forecasting, role playing/acting, essays,
- semi-qualitative: stakeholders/collaborators mapping, Delphi, system/structural analysis,
- quantitative: indicators, cross impact analysis, benchmarking, and other methods.

This classification referred to as the Foresight Diamond (EFMN 2005; Popper, R 2005) A more detailed analysis on the used methods would be presented in a overview paper on this subject.

By foresight and other methods combining, the project frameworks were set up and embedded in the research culture. The framing was an instrumental way of addressing objectives and processes (section 2.1).

The LNELS initiative employs three frameworks. The first, adapted from the KSF EUFORIA project (section 2.2), provides an overall picture about KS, Lisbon objectives, and all the actors involved in foresight process. The second one, Entrepreneurial Foresight Basics (EFB), that supports a process of collective strategic thinking with the integrated look across areas and issues, will be featured in section 4.2. EFB was a result of the work of 14 panels executed by a few experts. The third frame residing in the knowledge management realm was eventually set up and exploited to meet needs of individual foresight activities.

### 3.2 A framework combining approaches to KSF, KM & PKM, and IF

The Handbook of Knowledge Society Foresight identified one of underpinning KS trends with KM that arises as a specific issue in the 21st century. (European Foundation 2003, p. 5) LNELS supports an initial hypothesis that Europeans may bring to bear a new KM paradigm. In a knowledge based economy, this evolves from ‘efforts to create learning organisations and institute various forms of knowledge management, to enable improved the use of data resources, information assets and expertise’. (European Foundation 2004a, p.3) The KSF
EUFORIA results enable and facilitate research on organisational KM and personal KM in the domain of foresight activities.

ICT changes the way we learn and think, work and relate to each other in physical, virtual and mental space. Application of social technologies should also be adequately placed in KS development. In societal perspective, this task is more difficult in those New Member States which suffered from Leninism-Stalinism in teaching and learning the social sciences, and faced inertia of authoritarianism and the resistance to entrepreneurship in mindset and activity. Foresight provides a kind of process and instrument to meet these challenges. Research activities have led to an understanding that ‘above all else, Foresight is a social technology’ (Keenan, M 2005) The type of knowledge arising from foresight might be used for RTD and other policies, innovation, learning, education and transformation of culture as a whole.

About what is Knowledge, we can provide the following operational definitions referring to those used by Karl M. Wiig:

(1) the content of understanding and action patterns that govern sensemaking, decision making, execution, and monitoring. (2) Knowledge consists of facts, perspectives and concepts, mental reference models, truth and beliefs, judgements and expectations, methodologies, and know-how. (3) Knowledge is used to interpret information about a particular circumstance or case to handle situation. Knowledge is about what the facts and information means in the context of the situation. (4) Knowledge is possessed and represented in many conceptual levels, in many forms, many types, and many domains. (Wiig, K M 2004, pp. 336-337.)

As regards approaches to knowledge processes and KM/PKM we can find a lot of concepts and definitions and also participate in discussions about different stands on what knowledge management means for us.

The LNELS research conceptualizes that “Knowledge Management is the collection of processes that govern the creation, dissemination, and leveraging of knowledge to fulfil organisational objectives” (The Gurteen Knowledge Website 2006) and “KM is planned and ongoing management of activities and processes for leveraging knowledge to enhance competitiveness through better use and creation of individual and collective knowledge resources” (CEN 2004b, p.11) We find an excellent KM understanding from Australia where KM is seen as “a trans disciplinary approach to achieving organisational outcomes and learning, through maximising the use of knowledge. It involves the design, review and implementation of both social and technological activities and processes to improve creating, sharing and applying or using knowledge.” (Naismith, L 2005)

Foresight & KM research is not a new phenomenon. At the launch of the EU’s FP6 Günter Clar indicated to joint efforts toward the Lisbon objectives:

Foresight is a vital tool for improving knowledge management. Strengthening job prospects and stimulating social and economic mobilisation, it is key to the Lisbon process and to the development of the European Research Area. (Clar, G 2002)

A new approach to these objectives has been used by eFORESEE (Exchange of foresight relevant experiences for small European and enlargement countries). The project ran two pilot projects in each of three accession countries (Malta - the themes of tourism and cultural heritage, and aquaculture, Cyprus - environmental management and agriculture, and Estonia - IT, materials science and nanotechnology; biotechnology was a common theme for all three). Topics included knowledge management and foresight as a tool for the accession countries. “The Creation of Collective Knowledge about the Future” was a proposed KM definition of
foresight, and “Tools for the Management of Conversations about the Future” was used to describe a KM approach to designing foresight initiatives. The Five ‘First’ Principles were underlined. A KM interpretation of the role of the Foresight Practitioner is that (s)he should:
1. Understand what conversations are important in complex socio-economic systems. 
2. Stimulate these conversations to ensure that they occur. 
3. Know who should be involved and ensure that they participate. 
4. Support and structure these conversations so they achieve greatest impact. 
5. Creatively adapt foresight methodologies to suit each foresight mission. (Crehan, P 2002)

The eFORESEE project contributed to research on foresight process by looking at it from the point of view of KM perspective. The approach was aimed at understanding of the inherent complexity of ‘foresight’ that should be a continuous process embedded in culture. This was also intended for understanding foresight activities, based on knowledge, as a means for developing organisational intelligence at higher levels of socio-economic organisation. (eFORESEE 2004)

Knowledge management practices are mostly focused on organisational level. To address issues of KS for leveraging competitiveness through better use and creation of individual and collective knowledge resources, a research aspect on PKM appears on foresight agenda.

The LNELS project uses the understanding of PKM elaborated in the European Guide to Good Practice in Knowledge Management.

**Personal KM:** A set of concepts, disciplines and tools for organizing often previously unstructured knowledge, to help individuals take responsibility for what they know and who they know. (CET 2004b, p.12)

KM only makes sense if knowledge is important for the job at hand and when the individual possesses and/or needs knowledge to reach his or her objectives. (CET 2004a, p.14)

European foresight projects, e.g. EUFORIA have dealt with a key question about what knowledge can be codified in looking for data available for measuring prerequisites of the KS and its advancement. The two kinds of knowledge – explicit and tacit tend to co-evolve because they are rather the outermost points of a continuum allowing for a dynamic shift between the two types. The nature of tacit knowledge ‘renders it hard to fathom and measure’. (European Foundation 2004a, p.10) Tacit issues are of significant importance for PKM. When we consider the way knowledge is processed and the quality of inputs in foresight exercises, often tasks of knowledge evaluation, and methods of assessing or “measuring” of implicit knowledge come to the agenda.

Considerations regarding foresight practice bring strategic policy intelligence in line with conclusions of European experts from a wide range of disciplines, e.g. those outlined in the EU IST workshop – Knowledge Anywhere Anytime for 2005 – 2010:

*We must envisage a knowledge space that can accommodate both ‘permanent’, scholarly, historic informational sources of knowledge and more transient, often tacit knowledge which resides in complex multi-lingual, multi-disciplinary, multi-cultural, political, organisational and interpersonal settings.* (IST web 2004)

KM encompasses both human and technological aspects. For LNELS this is a multidisciplinary research field that can be explored and understood in its complexity only through effective co-operation and sharing of knowledge among different experts, collaborating across different
disciplines and striving for integration. The evolving knowledge universe (of the past, the present, and the future) exists in terms of the KS framework.

We propose that individual foresight (IF) is an element of strategic thinking of a European citizen interacting with social technologies and looking for/applying/using opportunities of the new kind of KS. European foresight uses advanced scientific knowledge for practical purposes. Andy Hines in a review on the Australian Foresight Institute’s works states:

*foresight is an individual cognitive characteristic that affects the behaviors of planning, goal-setting, and decision-making. Factors like social learning, enculturation, and education, can act to enhance or deaden this capacity. Yes, the foresight capacity is one we can help cultivate, and education plays a key role in this cultivation.* (Hines, A 2004, p. 2)

LNELS is raising an issue: ‘What is an attitude of individual foresight of a Latvian/European towards opportunities to share knowledge and to exercise participatory foresight skills?’ The research tends to point to revealing ways and capacity building to ensure participation of a (entrepreneurial) citizen in foresight exercises at European/national/regional levels. This is a bottom-up approach encompassing a lot of things and aimed at knowledge which emerges from a particular context of application with its own distinct theoretical structures, research methods and practices, regarded to be transdisciplinary.

### 3.3 Working with communities

New options for entrepreneurship and employment refer to both the new kind of Individual Knowledge Workers (IKW) and the workplace in which the knowledge worker can perform his or her activities, job, implement strategies, processes, goals of an organization, enterprise, community, society etc. The author takes the position that the main idea of PKM for building foresight capabilities might be expressed as to ‘work with communities’. Here is the right place to mention Robert S. Houghton’s Communities Resolving Our Problems: “The term community applies to a community of one (the community of interacting thoughts in one’s own head) and to the communities of larger numbers of interacting people (within a classroom, work team, or state or nation, etc.).” (CROP 2006) In the LNELS context, the “community of one” means both the commitment and research unit of a citizen who has chosen the PKM mode to enhance his/her own capabilities on some designed track.

Following this approach, knowledge and individual foresight on the job at hand/achieving strategic objectives have been processed in a “community of one” interacting with other communities (of one and one+) on the platform of his/her experience and continuous learning, while applying knowledge on use of preferred technologies, including social ones and ICT. For projects with scarce financial resources, e.g. LNELS, practicing PKM (with all its complexity and cooperation and knowledge sharing between experts) seems to be of particular importance (gradually!) enhancing effectiveness of problem solving and ensuring commitment and satisfaction at the individual and organizational levels.

People, processes and technology are in a set of connected things that work together for the purpose of PKM. In scoping LNELS, it was proposed that to work with communities means design, explore and drive collaborative processes of researchers and stakeholders aiming at foresight studies, networking, mutual learning, creating and sharing knowledge, enhancing social capital, and shaping preferred futures.
4 Exercising PKM skills for IF

4.1 A case (framework) of PKM for IF

According the model of LNELS, PKM for IF encompasses:

1. Assets and processes
   - a set of ideas, concepts, approaches, methodologies, and frameworks;
   - understanding of and skills in disciplines and research areas that are to be integrated in producing knowledge and applied into transdisciplinary work.

   In this set:
   - Ideas means beliefs, opinions, and principles, intentions and purposes, understanding of something, often something that is not expressed directly (tacit), thoughts on how to do/deal with something.
   - Understanding - the ability to understand things, based on evolving knowledge (explicit and tacit) about a particular subject, process, or situation. Understanding is in process aligned with skills development.
   - Skills - the ability to do something well, as a result of learning, training, and experience.
   - Transdisciplinary work – see Roderick J. Lawrence’s definition included in Guidelines für die transdisziplinäre Forschung, td-net Network for transdisciplinarity in sciences and humanities. (Td-net 2006)

Interdisciplinarity can be considered as the mixing together of disciplines, whereas transdisciplinarity implies a fusion of disciplinary knowledge with the know-how of lay-people that creates a new hybrid which is different from any specific constituent part [5]. This interpretation means that transdisciplinarity is not an automated process that stems from the bringing together of people from different disciplines or professions. In addition, it requires an ingredient that some have called “transcendence”. This implies the giving up of sovereignty over knowledge, the generation of new insight and knowledge by collaboration, and the capacity to consider the know-how of professionals and lay-people. Collectively, transdisciplinary contributions enable the cross-fertilisation of ideas and knowledge from different contributors that leads to an enlarged vision of a subject, as well as new explanatory theories [6]. Transdisciplinarity is a way of achieving innovative goals, enriched understanding and a synergy of new methods." (Lawrence 2004, 488f). Source: Lawrence, R. J. (2004). "Housing and health: from interdisciplinary principles to transdisciplinary research and practice." Futures 36: 487-502.

2. Tools
   - for searching and capturing information, and creating, organizing and sharing knowledge.
   - knowledge repositories and databases that help individuals take responsibility for what they know and who they know.

3. Designed objectives & defined goals. These require
   - knowledge to perform the job at hand.
   - knowledge owned to reach his/her objectives in the present and/or the future.
Working with communities, we exercise PKM skills, and all parts of the integrated PKM mechanism often is in progress. For IF that means to be in continuing invention becoming both more effective instrument in purposeful producing processes.

### 4.2 Entrepreneurial Foresight Basics

LNELS has identified a set of trends, fields of inquiry, issues and areas (interrelated and interdependent) which form a certain framework that could be advised in exploration and decision-making dealing with futures within the Lisbon context. The learning nature of the framework was emphasised by naming it ‘Entrepreneurial Foresight Basics’ (EFB). The case of PKM for IF has been developed exploring, learning and analysing EFB. The latter constitutes 14 objects (something we plan to achieve/we have a particular feeling about it/ purposes of doing something) which meet likely a well-developed set of both functional requirements and interacting components for a specific domain. The scope of 14 domains may incorporate other frameworks and objects.

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<td>Values</td>
<td>Lisbon process in Member States</td>
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<td>Sustainable development</td>
<td>Knowledge management</td>
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Table 2. EFB

The knowledge repository of EFB has been gradually established; it contains selected information (in English or Latvian) related to these 14 areas. The EFB repository is open for everyone collaborating with the LNELS project or learning or sharing knowledge on related domains and issues. EFB evolves as a “virtual workplace/office” available for IKW around the clock and from anywhere in the world ensuring knowledge for the job at hand. Google Desktop Search, Internet Explorer, Mozilla Firefox, Skype, OpenOffice, Local Website archive, Blogger, a set of emails, online dictionaries are a few examples of PKM tools. Applying blogging techniques IKW can share in a moment thoughts, clues, presentations, information links whom he/she is interacting to and to his/her own “community of one”. The LNELS knowledge repository can be used for emerging activities of national/regional foresight in Latvia. So EFB provides with information, methodological support and learning opportunities a national agriculture foresight within European SCAR foresight activities aimed at assessing the outlook of European agriculture by 2015-2020.

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In 2004, Entrepreneurial Foresight Network, one of the central tools in EFB setting, was launched. It followed conversations with the EUFORIA researchers in the EU foresight conference in Dublin. EFN, mainly through blogging and emails, plays a role of interface that helps in both creating knowledge for entrepreneurial foresight and for working with communities in the world. EFN provides a communication context of interrelated 14 domains of EFB. It streamlines activities of IKWL. The blogged information/pieces of explicit knowledge (useful for the person in their field of expertise) leads the author to start communications with individuals, organisations, communities. In cases of mutual understanding, communication through emails enables the exchange of opinions on relevant issues, theories and techniques, conferences, research activities etc. People from different sectors and fields of interests of Europe, US and other countries have participated in conversations, shared their knowledge and contributed to the EFN world.

Along with general tools for IF, the specific foresight techniques were used applying ‘soft’ and ‘hard’ methods in foresight exercises and activities – for example, exercising EFB-knowledge in a European foresight workshop aiming at achieving FTA relevant objectives.

4.3 Success and failures

Use of the PKM

(1) enabled and facilitated

- participation of LNELS researchers in European foresight initiatives and projects (related to the Lisbon agenda), e.g. Blueprints for Foresight Actions in the Regions, FISTERA, European Foresight Monitoring Network, ForSociety, The Mutual Learning Platform;
- learning online, in collaboration with researchers of Europe and other continents;
- questioning, structured discussions and informal conversations, knowledge sharing with researchers and stakeholders at international conferences and workshops (attended about ten foresight conferences/workshops at EU level);
- approaches, methods, methodological frameworks relevant to FTA for national research needs;
- publication, posting and dissemination of Latvian research outcomes at web sites of EC’s supported projects;
- launching research activities on foresight & PKM in Latvian RTD institutions (e.g. the Riga Technical University, the Latvian Academy of Agriculture and Forestry Sciences);
- international recognition of LNELS as a pilot foresight initiative in Latvia;
- understanding that PKM for IF is a prospective area for lifelong learning.

(2) discovered shortcomings and bottlenecks

- PKM for IF is a process that requires a high mobilization of resources e.g. personal commitment, time and quality management, an open mind for ideas and knowledge conversations, work (unpaid);
- benefits of synergies between foresight and KM are not surfaced in reports of foresight exercises;
- mutual learning and combined efforts of foresight and KM professionals are needed exercising foresight skills.
- foresight activities and relevant PKM processes might be initiated only inside a community/organization when one was mature and committed to it.

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5 Policy implications
The LNELS process, sharing knowledge and discussions on the project outcomes including the issue of PKM for building IF capabilities contribute to Latvians/Europeans’ understanding in the following interrelated areas:

- Know why and who the Lisbon strategy is for,
- Know how the Lisbon process works,
- Know thyself,
- Know how ‘community of one’ in a community of many is gaining knowledge and increasing foresight intelligence ‘from and for the Lisbon process’.

Meeting objectives of KS, foresight activities can be widely developed in a purposeful way necessary for strategic development and planning, and for policy making processes. Models/cases of PKM for IF may constitute input in the mechanisms effective in-depth study of policy deployment and policy interpretation at different levels.

The learning and application of Entrepreneurial Foresight Basics may contribute to searching for solutions at the individual level realising the research team/community of practice/government department or/and many other activities. Knowledge derived from exploiting a foresight & KM approach in transdisciplinary work can be targeted at development of ‘systems of intangibles’ and their frameworks identifying challenges and addressing complex issues of futures. In the new stage of the revised Lisbon strategy, this related to FTA approach has potential in enhancing knowledge aimed at bridging gaps between policy making, policy understanding, and effective policy implementation.

The LNELS experience raises a question to researchers/policy makers about some Lisbon issues in New Member States:

- What can we say about purposeful and systemic research within the RTD community focused on knowledge development about the Lisbon process (in Latvia and other countries) ?
- Why scarce resources (financial, human, managerial) were allocated to foresight exercises focused on understanding the Lisbon objectives for the individual (a bottom-up approach) looking at the mid-term horizon? (Literature analysis and web scanning did not discover a lot of examples of good practice);
- In practical terms, how to improve the situation so that knowledgeable individuals e.g. from government offices and universities would be willing to have conversations regarding learning the Lisbon strategy? (We are informed about the low interest in sharing knowledge, changing experience on the results of implementation of Lisbon Strategy in Latvia during years 2004 – 2006.)
- What KS challenges have been posed to political leadership in the Lisbon context?
- How to inspire national political leaders, government institutions, and S&T policy makers to became champions/supporters of technology foresight programs at national level? (Ones might use both official and personal opportunities to lead society toward objectives of the knowledge economy.)

The movement toward KS depends on policies of European institutions, on national governments, and on a majority of European citizens consciously enabling and using knowledge on possible ways pointed out and supported by the EU policies. Organisational and personal KM
deal with intangibles and values, and assets gained in KM way might increase opportunities of participatory research, dialogue and reflection for assessing, development, and planning ongoing issues of the Lisbon strategy as well as the post-Lisbon European policies. ‘Preferable futures’ should be adequately addressed.

References

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