Sofi Salonen (editor)

GRASPING THE FUTURE – A CHALLENGE FOR LEARNING AND INNOVATION

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Sofi Salonen
Finland Futures Research Centre
Turku School of Economics
sofi.salonen@tse.fi

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Finland Futures Research Centre
Turku School of Economics
Rehtorinpellonkatu 3, FI-20500 Turku
Korkeavuorenkatu 25 A 2, FI-00130 Helsinki
Pinninkatu 47, FI-33100 Tampere
Tel. +358 2 481 4530
Fax +358 2 481 4630
www.tse.fi/tutu
tutu-info@tse.fi, firstname.lastname@tse.fi

CONTENTS

FOREWORDS

On the occasion of the 10th annual international conference on futures studies, arranged by the Finland Futures Research Centre and Finland Futures Academy, we took deeper look into the futures of learning, and the implications they have for the current objective of building innovation systems. As before in conferences arranged by FFRC, the aim was to bring together actors from all over the society to try and find a mutual language for discussing the ongoing change: the ways research on learning is affecting the way we understand it today and what effects these new openings may have on the functioning of our societies tomorrow.

In order to grasp the vast subject of learning and innovation, Finland Futures Research Centre collaborated with the Finnish National Board of Education for expert knowledge on the latest in the behavioural sciences and the field of education, as well as with the event agency Wanha Satama for finding partners from the business world, who would bring along the practitioners view to learning and innovation. Moreover, the conference benefited from the generous collaboration with OECD's SERI's Schooling for Tomorrow- seminar in Helsinki, which coincided with our conference, providing us with international top experts both as keynote speakers and as commentators.

Structure of the Publication

The multidisciplinary nature of the conference resulted in a rich array of different angles to the themes of learning and innovation. This is reflected not only in the wide variety of themes but as a response to our attempt to extend the conversation beyond the academic circle, we have also included several reports that approach the theme from a regional development or a working life perspective. To bring some order into this mélange, we have roughly grouped the articles under two umbrella-like subgroups, where the guiding principle has been to try to bring together articles that could engage in a dialogue with one another.

The first part provides room for research about general learning and innovation contexts. The work of Tapio, Kohl, Tikkanen and Salonen examines the cultural evolution of the tertiary education in Finland, and presents four scenarios for the future. In the same chapter, Vironmäki in her article looks into the expectations placed on universities by the political agenda setting. The last chapter by Lenczuk binds the first part to the second by considering the didactic challenges present in foresight activities aimed at matching the education with the future job market.

The second part is devoted to work related aspects of learning and innovation. Marttinen presents the foresight model used by a Finnish regional governmental organization. Leonardo and Angelini explain the logic behind a widely used skill needs survey from the region of Piemonte in Italy. The final report in the publication by While introduces an array of foresighting practices applicable both in governments, businesses and higher education alike.

On behalf of the organizers, we hope these selected papers will on their part help open up the multi-faceted contexts in which the questions relating to the future of learning and innovation are not only part of the litany but concrete examples of the essence of all future oriented action: an attempt to shape our common future towards a more sustainable and fulfilling existence for all.

Helsinki, 2 November 2009

Sofi Salonen

PART I

RESEARCH ON LEARNING AND INNOVATIONS

1. UNIVERSITY CULTURE 1990–2020: A DELPHI STUDY IN FINLAND

Petri Tapio[a], Johanna Kohl[b], Sarianne Tikkanen[c] & Sofi Salonen[a]

[a] *Finland Futures Research Centre, Turku School of Economics, Finland*

[b] *Department of Social Science and Philosophy, University of Jyväskylä, Finland*

[c] *Department of Social Policy, University of Helsinki, Finland*

1.1. Introduction

External Pressures to Universities

Pressure to change the traditional autonomous role of universities[1] has increased during the last couple of decades. Calls to increase the return for investment have been placed also for previously more autonomous institutions: If tax-payers' money is allocated to academic research and higher education, efficiency should improve over the years. In other words, more output of Master's and Doctoral degrees and more scientific publications per monetary input should be achieved.. Simultaneously, university funding increasingly comes from other sources than the basic governmental budget allocated by the Ministry of Education Privately owned universities and increasing student fees are one solution, external funding for projects another. In terms of research, more and more project based funding is gathered from various foundations, European Union and national research funding organizations. These pools are a field of tough competition. As for education, employer-paid courses and seminars have increased. (Beckman, 1989; Hölttä and Malkki, 2000; Nowotny, 2005; Czinkota, 2006)

In addition to the quantitative output of degrees or publications, calls for retargeting the qualitative content of scientific work to societal purposes have been stated. Science[2] is one of the factors of production in the information society and a better utility value of education and research would serve the economy (Czinkota, 2006). The other side of the economic emphasis is represented by increasing calls for the responsibility of science. Scientific progress in certain areas of medical sciences and technology has raised a number of ethical questions whether some limits to academic freedom or economic profit hunt

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[1] We use the term university covering all institutions providing higher education. In our case country, Finland, these include 'traditional' universities, technical universities and polytechnics (also called 'applied universities').

[2] We use the term science in the activity sense meaning both research and education and the third mission activities (i.e. civil service) of the universities.

should be placed by environmental and other legislation. (Verbitskaya, 2002; Yearley 2004; Nowotny, 2005)

External Influence and Environmental Sciences

There is more in the ethical discussion than just hindering the progress of science. It is about the values and more practical goals of the construction of knowledge. These values and goals need not to be economic. Indeed, the environmental research and education provide information for practical and strategic tools for environmental protection, as stated above. Cost-benefit and cost-efficiency analyses are only some criteria for choices. How to take into account the diverse values, theories and interests? How to 'import' and 'export' relevant environmental policy aspects into and from research and education? (Tapio, 1996; Sarewitz, 2004; Yearley, 2004; Lövbrand and Öberg, 2005; Tapio and Willamo, 2008)

Four basic ways of viewing the relations between the environmental sciences and society may be outlined (Table 1; see also Jasanoff, 1990; Heiskanen, 1999; 2006; Nowotny et al., 2001; Oreskes, 2004; Yearley, 2004; Lövbrand and Öberg, 2005; Pohl, 2007): First, science and society may be seen as categories mutually exclusive and isolated. Second, environmental science can be regarded as an agent changing the society towards more environmentally sound practices. Third, environmental science may be considered a subcontractor of studies that gives direct input to decision-making (Quevauviller et al., 2005). Fourth, the borderlines between science and society are seen to diminish so that scientifically relevant knowledge is created not only by scientists but also by other actors, such as politicians, administration, mass media, lay-people, indigenous people, etc. (Brown, 2002; Sarewitz, 2004; Heiskanen 2006; Coburn, 2007; Pohl, 2007; Kohl, 2008). In the last view, the whole issue becomes very complex and case-specific; who is producing knowledge, who takes part in policy-making; who is on the demand side and who on the supply side?

It seems that the demand and supply sides have become more complex: we have different roles in different contexts and knowledge is weakly or strongly context-dependend (Nowotny et al., 2001; Yearley, 2004; Kohl, 2008). This is where a core challenge hides in sustainable development: from segregation to integration where room exists both for specialists and generalists. The challenge calls for cross-sectoral functions, interdisciplinary connections and networked education where all parts of sustainable development are taken into account. Legitimizing knowledge in expertise has been losing ground to a variety of expert roles (Bauman 1987).

Table 1.1 *Four possibilities in the target setting and information flow of the environmental science – policy interface.*

ROLE OF ENVIRONMENTAL SCIENCE	ENVIRONMENTAL POLICY TARGET SETTING	DIRECTION OF INFORMATION FLOW
Outsider	Outside science	No information flow
Agent of societal change	From science to society	From science to society
Subcontractor	From society to science	From science to society
Changing role	Complex, context dependent	Complex, context dependent

Internal Pressures

Above, we reviewed the external pressures of universities in general towards a more open and interactive role with the rest of the society and, in particular, the discussion regarding environmental sciences. It seems that there has been an evolution from traditional autonomy towards increasing mixture of contextual case-specific roles. This seems to be the case especially in Western Europe and applies well to our case, namely Finland. According to Karran (2007) Finland has maintained academic freedom well because of the constitutional autonomy of universities.[3] However, the criteria were based more on formal legislation and less on non-formal socio-economic relations, such as actual freedom of speech as well as budgetary and external funding. It seems that the latter has changed as will be shown in the results section. Leaving this discussion aside for a moment, we now move on to the internal pressures of universities which seem to be less often discussed within environmental sciences.

Although allowing everybody to speak out their own views has been an important norm in science since Merton's declaration of "universalism", an internal hierarchy among scientists seems to have reduced only in recent decades (Yearly, 2004). Indeed, one of the megatrends in Western societies has been the increased citizen participation in planning and decision-making (Naisbitt, 1982; Bell, 1997), and universities have not been immune to this development. Claims and steps towards the democratization of the decision-making processes within universities have been stated. The stakeholders that should be taken into account vary according to the authors. Some would have a leading group of senior professors instead of a single chancellor of the university, as has been made in the business manner of Nottingham University (Boyett, 1996); some wish more power to the faculty professors over deans in the U.S.A. (Willing et al., 2004); some emphasize each professor's and each department's right to decide upon own use of funding and school of thought in Canada, the USA and Sweden (Egron-Polak, 2002; Goldfarb and Henrekson, 2003); some report backlashes of gender equity in Sri Lanka (Gunawardena et al., 2006).

But if all this would be fixed would it be enough? In some countries the democratization has gone further incorporating other groups than professors in department boards, faculty councils and university

3 Karran (2007) attributed the highest levels of university autonomy in 23 European Union countries to Finland, Slovenia, Czech Republic, Hungary and Spain. The lowest levels were observed in the UK, Netherlands, Denmark, Malta and Sweden.

senates. For example, the University of Helsinki has a decision system of three levels, where on each level the professors, other staff and the students all have votes. The highest decision-making body is the University Senate consisting of five professors, two other teachers, two other staff members, four students and an invited outsider. The empowerment was carried out in the early 1990's after the students conquered the administrative building of the university while frustrated in a series of inconclusive negotiations. However, University of Helsinki was the last Finnish university that acknowledged students to participate in decision-making.[4]

Table 1.2 Summary of external and internal pressures to universities.

EXTERNAL PRESSURES	INTERNAL PRESSURES
Business interests Production of competent labour From innovations to products	Decentralisation of academic freedom Budget plans Freedom of opinion
Governmental interests Production of competent labour Increasing efficiency	Staff empowerment From chancellors to professors From professors to department boards
Ideological interests Demand for politically correct research and education Demand for critical approach	Student empowerment Access to department boards, university senate and the like From the object to the subject of education and learning
Environmental interests Sceince-based products harming the environment Discovery of non-visible environmental problems Mitigation of environmental problems	

The external and internal pressures are crystallized in Table 2. They are drawn together in the theoretical framework of the study consisting of four different university cultures based on Beckman's (1989) categories (see next section). The results section presents views of the future development of the university culture expressed by environmental professionals in Finland. We conclude by making a Strengths-Weakness-Opportunities-Threats (SWOT) analysis of the different university cultures with regard to innovation capacity.

4 This integration diminished student protests in Finland but a formal position in decision-making bodies does not necessarily diminish student activism as the South-African case demonstrates. Koen et al (2006) report that student representatives may also lack trust and be considered as a part of the administration rather than real student representation.

1.2. Four University Cultures

Definitions

In sum, there is discussion both on the external pressures on the goals of the universities and on the internal pressures to increase participation in the university decision-making and to promote the freedom of individual thinking. The *problematique* can be roughly illustrated by two axes, where the vertical axis describes the degree of university autonomy in its own goal setting, and the horizontal axis describes the degree of internal openness (i.e. participatory democracy and individual freedom) within the organization. Four fields of the university culture emerge as described in an archetype manner by Beckman (1989; modified a little in Figure 1).

A university culture having a great autonomy in goal setting and on the other hand being internally hierarchical (or authoritarian) can be illustratively labeled as the *Temple* of knowledge. If there is more external influence and the internal hierarchy remains, the university culture may be called the *Factory* that efficiently produces experts and expertise to the needs of the rest of society. A university culture being under great external influence but internally more open can be labeled the *Bazaar*, a flexible marketplace where diverse demand and supply meet on a bottom-up basis. Finally, an internally open and externally autonomous university culture can be called the *Oasis* of free critical thinking. (Beckman, 1989; Luostarinen and Väliverronen, 1991; Eronen and Tapio, 1997)[5]

Actors within University Cultures

Various actors in the science – society interface have different roles within the four university culture archetypes. At least the following stakeholders may be considered: Professors, other teachers, non-teaching staff and students all act within the university. Governmental administration, business and the wider public act outside the university but may (or may not) have an interest in the activities within (Table 3).

5 Recently, Stevens et al. (2008) have created an almost similar classification, including Sieve (similar to the Factory), Incubator (somewhat similar to the Oasis), Temple (equivalent to the Temple) and Hub (equivalent to the Bazaar).

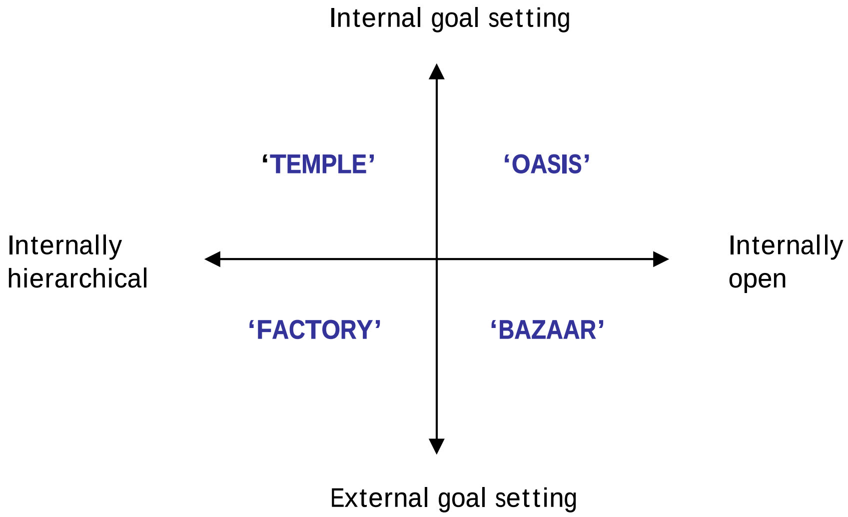

Figure 1.1 *Four university cultures (modified from Beckman, 1989; Eronen and Tapio, 1997).*

In the Temple, the central actor is the professor of a scientific discipline, who defines the goals, organizes the curriculum and research program. The professor acts like a bishop having the best access to the truth based on scholarly superiority. Lecturers are like priests guiding the students, the congregants, on the pathway to good life. Graduation is a ritual equivalent to confirmation. Other employees, the vergers, run the facilities. External actors are more or less taken for granted and there is not much interaction: the government guarantees the facilities and a constantly rising budget, business has the role of a tax-payer and the wider public is regarded as pagans not knowing the truth.

In the Oasis, the university hierarchy has been abolished towards maximum equality. Within university all actors, including students, are considered colleagues and members of the scientific community. In this think tank everything can and is questioned and the curriculum as well as the research agenda is constantly critically reflected and rephrased. The government works as the patron supporting his/her artists and paying the bills. Business has the self evident role of the tax payer in the Oasis, too. The wider public serves as the audience.

In the Factory, university is a fordist production unit in the service sector. The tasks of the university are imported from the government, the industrial investor, expecting profit for the investment. The professor is reduced to a controller calculating input and output. Others form either the productive labor (teachers and researchers) or the service staff keeping the machinery in order (other staff). Students are raw material which is manufactured to new products to the labor market. Business and the wider public are the consumers of employees and research results.

Table 1.3 *Actor roles and information flow (dashed arrows) between the actors in the four university cultures.*

UNIVERSITY CULTURE	TEMPLE	OASIS	FACTORY	BAZAAR
Internal actors				
Professor	Bishop	Colleague	Controller	Manager
Teacher & researcher	Priest	Colleague	Labor	Entrepreneur
Other employee	Verger	Colleague	Service staff	Facilitator
Student	Congregant	Colleague	Raw material	Client
MSc	Confirmed	Colleague	Product	Client
External actors				
Government	Patron saint	Patron	Investor	Client
Business	Tax payer	Tax payer	Consumer	Client
Wider public	Pagan	Audience	Consumer	Consumer

In the Bazaar, everything is constantly under negotiation. The professor acts like a manager having a team of teachers and researchers who are similar to entrepreneurs acquiring external funding from a variety of sources and negotiating courses with the clients – business and the administration. Students are regarded as clients, too, mostly concerning courses where the number of students in the course, the demand, is crucial to the funding decisions of supply. Other staff has the role of transforming the equipment, methods and university administration to adapt to the current market situation. The wider public is also seen as a client, whose wishes and interests should be taken into account. The Bazaar kind of initiative can be seen, for example, in the league of the traditional and the technical universities of Manchester (Wolfenden, 1995). The authors' home institute, Finland Futures Research Centre is also a typical Bazaar acquiring over 80% of funding from external sources.

1.3. A Delphi Study on the Prospects in Finland

Our case study focuses on the future of the university culture in Finland from the viewpoint of environmental experts. Is the university moving from an autonomous and hierarchical *Temple* of knowledge to an open *Bazaar*, where all the research projects and courses are constantly negotiable depending on the client's wishes and ability to pay? Or has university been an autonomous, open and communicative *Oasis* of free thinking, now turning into a *Factory* characterized by increasing external bureaucratic control and an accelerating rate of producing degrees, study credits, publications and index citations? In this paper, we show the results of a Delphi study of the development of the university culture in Finland between 1990 and 2005 and prospects for the development up to 2020 with regard to the four hypothetical university cultures.

Views on the development of the university culture were asked for as a part of a wider Delphi study on the future of environmental and sustainability education (Tapio et al., 2007). The Delphi method is an expert view based method of envisioning the future of a complex issue. Key characteristics of the Delphi method are: at least two rounds of inquiry, feedback from previous rounds, anonymity of statements and the goal that the best argument should win (Linstone and Turoff, 1975; Ziglio, 1996; Kuusi, 1999; Tapio, 2003).

The Delphi method is not a survey aiming at finding average opinions or differences in opinion between statistically representative groups. It is rather an expert based method aiming at making sense of alternative scenarios for the future (Ziglio, 1996; Kuusi, 1999; Tapio, 2003). Thus, the choice of respondents is crucial to the understanding of the results (Kuusi, 1999; Cuhls, 2000). In this study, special attention was given to reach a wide range of expertise, which was contemplated in two meetings within the research group and two meetings of the project board. The panelists' educational background included natural sciences, social sciences, engineering and interdisciplinary education. The participants represented various educational, research, administrative, business, media and a non-governmental organizations. There were eleven women and twelve men in the panel, and the junior panelist was below 30 and the senior over 60 years old. There were professors as well as students, directors as well as lower post experts.

There were two Delphi rounds: the first round was conducted having semi-structured face to face interviews on the future of environmental education and the second round with a paper and pen questionnaire including feedback from the first round. The environmental experts expressed their views on the position of the Finnish university culture in 1990, 2005 as well as of the probable and preferred future in 2020 in the scheme of Fig. 1. Twenty-two out of 23 respondents answered to this question in the first round and fourteen out of 18 respondents in the second round.

We grouped the cases by hierarchical cluster analysis (Fig. 1; Table 1) on both rounds. Cluster analysis does not require random sampling unless it is used to verify a theory (Dubes and Jain, 1979).[6] In the first round, seven clusters were formed. These were reported to the respondents as seven arrows in Fig. 1 in the second round questionnaire. On the second round, the respondents could change their opinion if other responses had convinced them. They were also asked to mark the first round cluster which described the development they considered the least preferred.

We used the Furthest Neighbor method for the grouping and the normal Euclidean distance as the measure of dissimilarity (see Everitt et al., 2001). Six clusters were chosen based on the hierarchical tree output of the SPSS12.0 software. Choosing five clusters would have grouped Clusters 1 and 2 together. Choosing seven clusters would have disconnected one outlier from Cluster 3. Furthermore, there is a limit to the number of illustrative scenarios and seven is often considered a maximum (Robinson, 1990; Tapio, 2003).

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6 The interviews were carried out in 2006, but we labeled the year 2005 as the current situation, because it was the last full year, and the three dates form a linear scale. The respondents were exposed to a blank form of the four university cultures (Fig. 1), where they filled in the years. The figure consisted of an interval scale of 7x7 matrix including the zero point of both axes, and three cells towards each direction. The panelists filled in a cell for each date. We then organized the material in six variables: internal and external openness of the university in 1990, 2005 and 2020. Four respondents responded incompletely in both rounds and were therefore left out from the cluster analysis. Views of the probable and preferred development were treated as two separate cases, thus the fourteen complete responses totaled 28 cases. Since the values of the past development variables were equal in both cases, the 1990 and 2005 values were weighted by 0.5. This way the past weighed as much as the future development in the analysis.

1.4. Six Future Images of the University Culture

Each cluster regarded the situation in 1990 as the Temple and considered that the development between 1990 and 2005 was characterized by increasing external influence and internal openness. This is supported by the mean values of the whole material (Table 4) and is in line with the literature review of our study.

Table 1.4 *Mean values and standard deviation (SD) of the degree of autonomy and internal openness in universities by year according to Finnish environmental experts.*

TIME	DEGREE OF AUTONOMY		DEGREE OF INTERNAL OPENNESS		OVERALL INTERPRETATION
	Mean	SD	Mean	SD	
1990	1.50	0.70	-1.50	0.52	Temple
2005	0.30	1.08	-0.33	1.08	Temple/Factory
2020 probable	-0.93	1.18	0.20	1.05	Bazaar/Factory
2020 preferred	-0.27	1.84	1.93	0.57	Bazaar/Oasis

[a] Interval scale from -3.0 to +3.0; n_{1990}=28, n_{2005}=30, $n_{2020probable}$=15, $n_{2020preferred}$=15.

Views on the future development up to 2020 varied a lot in the Delphi study, especially concerning the openness towards external influence (Table 3). The clusters can be displayed in three groups based on the end points (Fig.2):

Towards Bazaar – Respondents in Clusters 1-3 saw that the future of university culture would be organized in the Bazaar mode. The views of the current state of affairs slightly differed, ranging from the Temple to the Factory. Cluster 1 is close to the Factory and Cluster 3 close to the Oasis whereas Cluster 2 is a stronger version of the Bazaar culture.

Towards Factory – As the other clusters, Cluster 4 begun from the Temple but proceeded towards the Factory more clearly than the others. The respondents thought that the Factory culture would prevail and even strengthen in the future. Cluster 4 included responses of the probable future only.

Towards Oasis – Clusters 5 and 6 departed from the Temple culture and regarded the current situation still as the Temple. Both envisioned the future as the Oasis, although Cluster 5 in a weaker form. Most responses in Cluster 6 described the preferred development, whereas Cluster 5 included only responses of the probable development.

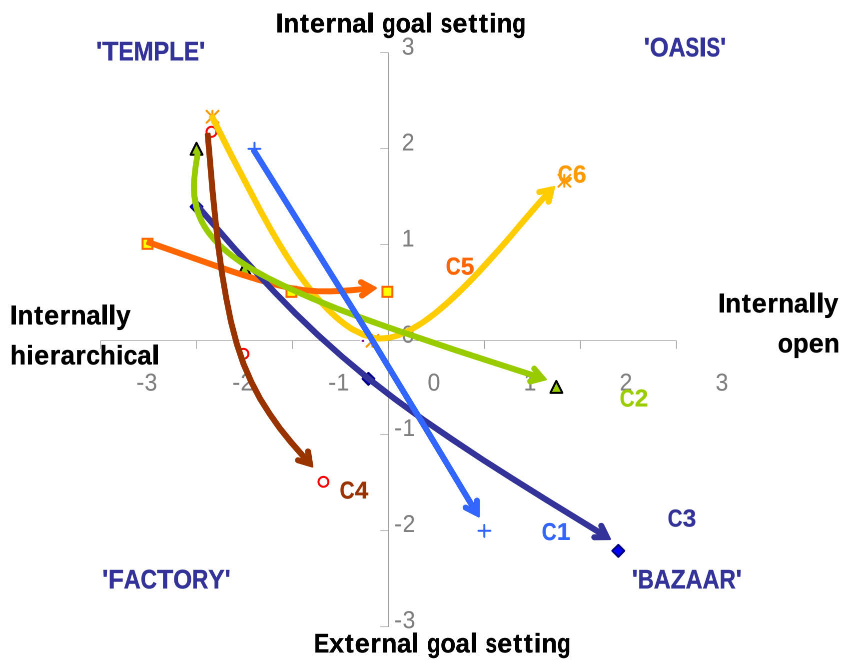

Figure 1.2 *Out of the Temple but in which direction? Beckman's four university cultures filled with six clusters (C1...C6) of views of the development in Finland. The initial point of each arrow corresponds the year of 1990, the middle point 2005 and the end point 2020.*

1.5. Summary of Results

The traditional autonomy of universities has recently been questioned. The universities have been criticized for economic inefficiency, long study times, poor response to the needs of employers, poor societal applicability of results, negligence of values and a high dependence on government funding without any guarantees for the investment to pay off. Universities are also subject to increasing ethical concern with regard to environmental problems, animal ethics, medical ethics and military ethics. (Vincent-Lancrin, 2004; Leshner, 2005; Yearley, 2004; Nowotny, 2005)

When the externally autonomous but internally hierarchical Temple has been pushed towards the business rationale of the Bazaar, external autonomy has been reduced but internal openness has perhaps not increased accordingly. The mean values of our material suggest that the current state of affairs in Finland is on the borderline of the Temple and the Factory. Beckman seems to have been right in his forecast made already in 1989, that the strive for reducing inefficiency in the Factory manner in fact reduces efficiency owing to increasing bureaucracy and non-motivating control. In order to achieve a real Bazaar, more degrees of freedom should be maintained on the department and individual level.

On the other hand, we invite the reader to ponder whether the Bazaar is a preferred goal for the university (see Beckman, 1989; Eronen and Tapio, 1997; Leshner, 2005). After all, academic freedom is still highly valued which is indicated by the fact that two clusters envisioned the Oasis as the future mode.

1.6. SWOT Analysis of Each University Culture

Finally, rather than declaring a single university culture more desirable than other we would like to bring about that each culture has its benefits and pitfalls from the environmental point of view. These are gathered in Fig. 3 using the *Strengths-Weaknesses-Opportunities-Threats* (SWOT) analysis.

TEMPLE		OASIS	
Strength The ones who know best make the decisions.	**Opportunity** Knowledge economy.	**Strength** Free flow of ideas leading to new solutions.	**Opportunity** Innovation economy.
Weakness Lack of reflection of development outside own scientific field.	**Threat** 'Ivory tower' exclusion. Lack of funding.	**Weakness** Re-inventing the wheel.	**Threat** 'Ivory tower' exclusion. Lack of funding.
FACTORY		**BAZAAR**	
Strength Efficient use of resources.	**Opportunity** Diminishing critique of using public funding.	**Strength** Increased funding from external sources.	**Opportunity** Applied sciences more valued.
Weakness Increasing bureaucratic control.	**Threat** Losing academic freedom and therefore novelty of ideas.	**Weakness** Losing knowledge of scholar history.	**Threat** Losing independence. Classified research.

Figure 1.3 The SWOT analysis of the four university cultures.

From the viewpoint of environmental innovations, there are some things to keep in mind. First, environmental problems have usually been discovered by rather independent researchers or research groups, not by government authorities, business nor the wider public. Second, new ideas seldom arise from the establishment but require an open mind and contemplation. These features would suggest the superiority of the Oasis.

However, environmental problems are no longer new issues on the societal agenda. Governments are making progress, green business has become more popular and citizen awareness has awoken. This situation calls for new alliances, new forms of environmental research and education design, new funding instruments as well as new ideas. Best practices seem to emerge in the borderline between the Oasis and the Bazaar. For example, a university department, a private firm, an administrative office and a non-governmental organization might construct a common course or a research project, a Bazaar activity. However, one should maintain an open and critical mind in the Oasis manner in order to prevent business to dictate the research results.

All in all, the university culture is under a change in a way that is relevant to environmental research and higher education. Quo vadis? We leave the final answer to the reader. It is clear that the answer is related to the changing role, diverse requirements and expectations of universities posed by other actors. And this is closely interdependent with the role of knowledge and expertise in the society in general.

1.7. Acknowledgements

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2. TROUBLE AHEAD? UNIVERSITIES' THIRD TASK AND BUSINESS EDUCATION

Emma Vironmäki
Centre for Research and Education, Turku School of Economics, Finland

2.1. Introduction

In Finland, there is an ongoing discussion about the "third task" of universities. The first two tasks, traditionally, are research and education based on research. The third task is societal relevance or impact. In plain language: Every academic discipline within every university should start considering on which areas they can contribute to society[7]. In university-level business education, which is the focus in this paper, the third task traditionally lies within contacts with business and industry.

This paper is based on my doctoral dissertation (Vironmäki 2007), which deals with Finnish higher business education and specifically marketing as an academic discipline; its emergence, history and inner controversies. Primary material in the thesis consisted of narrative interviews with 31 Finnish marketing academics, most of them professors. Hence, the arguments presented in this paper focus on academic business studies rather than the whole academia or higher education, and are based on the interviews, literature and my own observations.

In what follows, I will first discuss Finnish higher education, then characteristics of business studies between practice and theory and thirdly Finnish academic practices and their implications for the third task. I will also present a synthesis of the marketing professors' viewpoints of dealing with the issue of theoretical and practical relevance - a kind of an ideal model for managing the relationships between academic community, business, and an individual scholar. Towards the end of this paper, I will summarize current key problems that might complicate succeeding in the third task.

2.2. Finnish Higher Education

Finnish universities are Humboldtian research universities, meaning that they unite research and teaching (e.g. Schlieben-Lange 2004). Hence, academic work, and, further, universities' central activities, in their traditional sense consist of research and teaching based on research. Teaching can also be considered the most manifest function of universities. Nevertheless, according to Pirttilä & Eriksson-Piela

7 Actually, it has been said that the third task is the original first task as universities were established to educate practitioners, not researchers (Välimaa 2004a, 43-44; also Vironmäki 2007, 44).

(2004, 12-13), teaching and research in Finnish universities are diverging from each other. This can be seen in everyday life of academic institutions as the growing amount of short-term project researchers who do not participate in teaching, as well as establishing of research units who do not have direct link to universities' teaching activities.

Since 1995, when polytechnics[8] were introduced, the Finnish system of higher education has consisted of two parallel tracks: Polytechnics and Universities. As an example of statistics: in 2001, 83 percent of the relevant age cohort was offered a starting place in higher education (Välimaa 2004b, 116). Hence, it can be seen that education is highly recognized in Finland[9]. Higher education is also free of charge and open for anybody who succeeds in the entrance tests.

Also university-level business education in Finland has grown rapidly during the past thirty years, and there are currently 10 universities with a curriculum in business studies, along with three business schools. Hence, rationalization of the university network in general and also in higher business education[10] is an ongoing discussion in Finland.

In accordance with university and polytechnics laws, the former should be engaged with education based on research and the latter should provide students with practical skills for working life. Even though this division of labor sounds simple enough at face value, the introduction of polytechnics to higher education has rather confused both students and employers: What is it that one learns in university compared with an exam from polytechnics?[11] Part of the confusion stems from the fact that polytechnics are climbing up on the theoretical ladder by stressing the importance of research and by introducing post-graduate exams[12]. Simultaneously, both universities and business schools seek relevance from (also by university students) much-desired contacts with business and industry: also known as the third task of universities. How, then, do theory and practice meet in university-level business education?

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8 A polytechnic can also be understood as technical university. In Collins English Dictionary, however, it is defined (in Britain, and the same definition applies in Finland) as 'a college offering advanced (...), especially vocational courses in many fields at and below degree standard.' See also Tomlinson (2001, 594)

9 Even though high education level is a positive indicator for any society, the Finnish model has also led to a situation where practically every area of human activity is brought into the lap of formal (higher) education, newcomers including various fields within culture. Yet, many such professions, for instance music producers, are traditionally self-learned ones and possibilities to formally educate such professionals have raised some doubts within the practitioners themselves.

10 There are currently around 70 units providing higher education in business, which is perhaps too many in a country with population around 5 million.

11 A few polytechnics were in 2006 threatened with closing since they did not fulfil their criteria for "international standard research". Hence, the confusion of the polytechnics' role seems to predominate in the political level as well.

12 And introducing their new English name: University of Applied Sciences.

2.3. Business Schools: Between Theory and Practice

There are a few structural and cultural problems in managing the relationships between academia and the surrounding society, which will be discussed later. In what follows, I will shortly ponder on the different aspects of practice and theory in university-level business education. These observations are based on my thesis (Vironmäki 2007) and hence focus on one specific sub-field of business education, marketing.

Historically, marketing has developed from collecting practical evidence from different business transactions and writing textbooks about them. After the great depression and Second World War, emphasis started to move from textbooks for practitioners towards more scientific approaches. The emerging science of business borrowed theories and approaches at first from economics, and later – with the introduction of consumer behavior – from psychology and other behavioral sciences. The "scientification" process of marketing is recalled by a professor Howard Westing as follows:

> *Our research, at that time, began to be quite arcane, quite esoteric. We were not as interested as before in studying business problems. We were more interested in finding a data base somewhere, and processing the daylights out of it.*

And further:

> *It's not hard to understand why this happened because it coincided with the period when universities were putting greater emphasis on publication. And, our journals, perhaps mistakenly, took the position that since articles of this kind sounded scholarly, they were deserving of publication* (Westing in Hunt 1983, 40).

Even though these remarks stem from early 1980s, a few less scientific journals, such as the Economist and Harvard Business Review have discussed similar issues only a few years ago. An article in HBR was titled "How business schools lost their way" (Bennis & O'Toole 2005) and the authors argued that business schools produce graduates with limited skills for work life in business. This, according to them, is a consequence of being too scientific and emphasizing mathematical methods[13]. Business school professors have no real-life experience, they argued, and there is no pragmatic writing as academics write for each other. In other words, people in the academy are not engaged in the same profession businesspeople practice.

Also Finnish marketing professors expressed similar concerns: *You cannot teach theory without practical experience* said one, and another argued that practical work experience – even in a form of short consulting jobs – should be obligatory for marketing academics, since for many that would be the only connection with the surrounding world. On the other hand:

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13 They call it 'physics envy' and argue it includes methods that blind rather than illuminate.

If there is something that taxpayers should control in universities, it is that these can concentrate on important research questions and participate in social discussion where the focus is a bit further away than the present day. Marketing professor

In Finland, universities are traditionally considered venues with not only highest possible education based on research, but also places where freedom of enquiry prevails, where outside interests do not dictate what to do, where young people are cultivated with *Bildung* – general upbringing, not hands-on skills. Hence, those in favor of a more "traditional" university culture yearn for possibilities to help students think critically.

In 1997 and 1998, when the interviews were conducted, there were two "camps" to be seen within Finnish academic marketing. A clear majority saw contributions to academic community rather than business and industry as the main focus of their research, and Bildung as the main goal for a university-level education, but a smaller but louder minority considered marketing professors without practical marketing experience a scam. In addition, there seems to be a discrepancy between what students expect when they enter university education in business, and what they experience to have gotten when they graduate[14].

How does theory relate to practice? How should students of practically oriented areas be educated? Can one learn practical skills by reading books? As seen from above, students often expect to learn practical stuff, and this they want to hear from someone doing it, rather than from someone who writes about it. So, there are different *practices* going on in the field as well as different ideas on what knowledge is, and how it should be acquired.

The practice of academia should be to reflect on practitioners' action. However, researchers' ambition to theorize practitioners' action plans meets with the problem that most action is based on action theories that are not conscious, and much more intuitive and incomplete than the academic ones, and self-learned skills are usually the most difficult ones to teach further. In that case, how does the researcher manage studying practitioners' actions? Action is the subject of the researchers' reflection; reflection offers to action the possibility of change and renewal. Hence, the product of research in business is *theory and reflection* (Czarniawska 1999, 7–8).

There are no ready answers for these problems, nor are there methods that would make all business academics skillful in both theory and practice – these are seldom united in one person. However, there are possibilities to build structures that could support such activities, which I will discuss in the end of this paper. Before that I will explore the characteristics of Finnish university culture and their implications for the third task.

14 In here, the central question is how much students' expectations should be taken into account as they are young, inexperienced, by nature critical, and cannot relate their education with anything before they have acquired some work experience.

2.4. Academic Practices and Their Implications on the Third Task

First characteristic of the Finnish academic culture stems from the new management principle "management by result" that was introduced to universities mid-nineties. This means, simplified, that universities receive state funding in accordance with the number of masters' and doctoral degrees they set as their objectives to produce[15]. This principle has been criticized from various points of view – mostly because it takes only one aspect of universities' activities into account, and further, because it might lower the quality of the masters and doctors produced.[16]

Since the introduction of managerial university, researchers spend growing amount of time with administrative tasks even though the number of administrative personnel has also grown significantly. Hence, universities waste research resources for tasks that do not support its core activities. There are (direct citation) excessive amounts of investigations and task forces, forms to be filled and evaluations of all kinds.

> *This system is like former Soviet Union, except for one difference. Kolkhozes got financing according to how many tractors they produced – nobody cared whether they functioned or had all parts in them. [...] Universities are similar nowadays except that we don't need to produce students, it is enough that we have targets; we get paid according to our targets. If we set as our targets fifty MA's, we get paid according to that. Let's see whether someone will come and ask have they ever been produced [...].* Marketing professor

Secondly, as a growing part of universities' funding comes from external sources, most research now is conducted in short-term projects. These, on the other hand - for lack of functional follow-up system - rarely feed each other and hence the basic principle for research from the society's point of view, cumulative knowledge, often fails to materialize. Also implementing research results is elemental – mostly for the same reason. Hence, most research positions within universities are currently short-term contracts, and from this follows that the main objective for personnel lays within their own futures and careers.

Thirdly, Finnish academic culture does not enhance collaboration. With the introduction of managerial steering principles, every input needs to be measured with equal output, which renders collaboration

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[15] The Ministry of Education and the universities conduct performance negotiations to agree on the objectives of the universities' operations and to set, among other things, the field-specific target numbers of Master's degrees and doctorates for each university. These objectives are based on national analyses of educational needs and on development plans of education. The universities decide on the field-specific intake on the basis of these objectives (Välimaa 2004b).

[16] Part of the resentment felt towards any criteria in evaluating universities' efficiency, however, stems from the university culture itself: University personnel rarely need to answer the question of "what are we here for?" However, it was noted in the interviews that the principle of management by result has shifted the quality control away from where it used to be – inside the academic community.

between sub-disciplines (e.g. marketing and management) practically impossible. Yet for outsiders, business practitioners for instance, such borders can appear artificial.

> *Also we as a department, we have unnecessarily little... although we are physically so close to each other, we have practically no common research projects, although we have discussed it many times but they haven't really started, and when looked at other units, the situation seems to be the same.* Marketing professor

However, it needs to be stressed that difficulties in collaboration stem also from the structure of Finnish university network: There are only a few chairs in Finland and the largest and most desirable ones are located in Southern Finland. Hence, each piece of collaboration can turn into rivalry when a chair becomes vacant.

> *Maybe here in the academic world people should be forced to sit more around the same table, so that they would see the common interests. As long as we just squat in our chambers, well, we have only one mirror, in which we only see ourselves.* Marketing professor

Fourthly, managerial universities cannot answer the basic questions of who their client is and what it is that they produce[17]. Hence: Universities lack both the common objectives and the means to encourage its employees to achieve that goal.

How to manage, then? In what follows, I will discuss findings from my doctoral dissertation (Vironmäki 2007): An ideal system of managing the relationships between individual scholars, academic community, surrounding society and students, based on the interviewees' opinions.

2.5. The Ideal Loop?

As mentioned earlier, Finnish marketing academics had different views on how to manage contacts with business and industry, academic community, and students. Some sought research contacts with firms actively; some contributed more to academic community, marketing discipline outside university borders, and yet others wanted either *to help students think critically*, or *teach them to do something* (both direct citations). From all these various views I constructed an ideal loop, which takes all the aforementioned aspects into account, and places individuals scholars, students, business and academic community into relations with each other.

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[17] For instance: Are students products or clients? Who is the employer or boss; State, rector, professor funding agents: To whom are university employees responsible? Can the State be seen as a client?

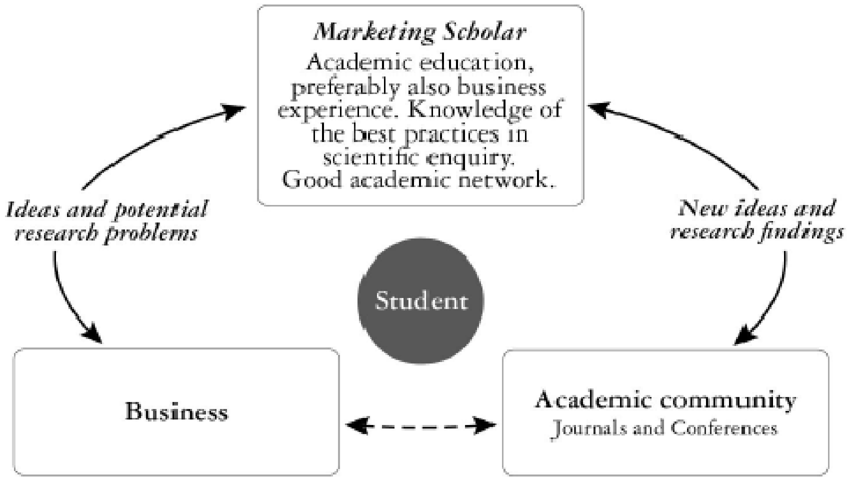

Figure 2.1 The system of academic research in marketing: A summary of interviewees' opinions.

In an ideal loop, ideas and potential research problems flow from the business world to the marketing scholars, who have skills to identify the fruitful ones and transform them into research problems through their scholarly expertise, which stems from the academic community. They are up-to-date with the latest scientific discussion, attained through reading journals and attending conferences and through their participation in academic networks. They collaborate simultaneously with both the academic community, where they present the research findings and obtain new ideas through discussion and reflection; and the business world, where they continually engage in discussions with practitioners, in order to help them in their endeavors, and out of scholarly curiosity for new and fruitful research problems. The academic community and the business world are connected via individual marketing scholars – hence the dash line. The loop circles around the marketing students, through whom the knowledge is then transferred back to daily business functions.

The fact that this model is based on a summary of the opinions of 31 marketing academics implies that all these aspects of academic work are seldom managed by an individual scholar. Nevertheless, it could function as a benchmark for whole departments, and as a guideline for future academics at the beginning of their post-graduate studies.

2.6. Conclusions

As described in part 2.4 of this paper, there are some difficulties within the Finnish academic culture, especially in business studies but perhaps in other fields as well, that might pose problems for the third task of universities. In here, I will list the ones that I see as most problematic ones:

1. There are a lot of resources within universities that are practically wasted because there is no up-to-date system to follow what is done and where. There might be research groups with similar research

interests unaware of each other's existence, even within same university. Hence, it is justified to assume that communication between academia and the surrounding society hardly works any better.

This problem has been recognized and sought to solve by establishing units or posts, whose primary task is to act as mediators between researchers and the surrounding society. Adding such personnel, however, is not the only solution as relationships rarely can be outsourced. Hence, the communication should be standardized and continuous, function from the initiative of individual researchers, and built in, and rewarded by, the academic system. Even though there are expert catalogues and research project catalogues on the universities' WebPages, these are rarely up-to-date as there is no system that would force each researcher to make sure that the information concerning them is current and relevant. [18]

2. This also comes down to the current research policy of short-term projects, which means that researchers hop from project to project, and while entering one spend more time in securing future financing than the work itself. Cumulative knowledge, essential quality of academic research, is non-existent. Research project leaders' capacities to lead projects are rarely evaluated – according to the rules or the Academy of Finland they cannot even enter payrolls of the projects they lead. Hence, enhancing one's academic career and building of personal expertise are difficult to manage.

3. From the point of view of the surrounding society universities are closed entities: Disciplines, faculties and units might have names that communicate nothing to the outside world[19]. Part of this is because, in the case of marketing, the field has been divided into many different sub-fields with different names that might not communicate to the outside world what in fact is been done, and how it might be of interest. It should lie in each institutions interest to communicate their activities as clearly as possible.

In this sense, especially business studies should start to use the knowledge they teach. It is paradoxical how poorly academic business education institutions can relate to their leadership, communication, marketing and management tasks.

4. Collaboration inside universities is difficult, if not impossible. University might, for instance, have a further education and research unit on its side, that do not use university personnel's expertise for their education and research projects. This might be due to stiff financing and bookkeeping principles, and/or university traditions.

The above listed problems originate partly from education politics, partly from old habits that die hard. Suspicion towards reforms is understandable in the light of previous ones that have brought more trouble than benefit. The new university law, however, will hopefully bring along more freedom to decide on common goals as well as possibilities to reward and motivate faculty members to achieve them.

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[18] Academics are perhaps too used to making things sound better than they really are. Nowotny et al. (2001) refer to this as one criterion for new mode of science: Impressiveness as a measure of quality.

[19] Harvard University, for instance, makes a nice comparison: On the front page of their WebPages, all schools are listed in the simplest possible way: Business, Law, Engineering, Education, Dental, Medical etc.

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3. DIDACTIC CHALLENGES FOR THE FUTURE – HOW TO PREDICT FUTURE SKILL NEEDS ON THE LABOUR MARKET

Maria Lenczuk
Observatory for the Labour Market and the Education of the Malopolska Region, Regional Labour Office in Krakow, Poland

Learning is not compulsory... neither is survival.

W. Edwards Deming

3.1. Introduction

For the last few decades we have observed the acceleration of technological changes that made people be more and more flexible and adaptive in their private and vocational life. To face this challenge, individuals have to be prepared for lifelong learning. It is foremost a matter of governments and business institutions to create good educational environments in which people have opportunities for constant development. The quality and effectiveness of the institutions acting and their competitiveness in local and global scale depend on how good they are in improving the educational environment. The crucial element of this process is the ability to foresight tendencies and new educational and vocational needs.

3.2. Origins and Principles of the Observatory

In 2003, when Malopolska' authorities were building regional strategies based on data analyses, the need for a centre providing appropriate and complementary information about the region surfaced. Good practices from the EU countries were the inspiration that appeared earlier and inclined authorities of the Regional Labour Office to think about establishing an observatory for the labour market as a project within the Office. The project, co-financed by the European Union from the European Social Fund, has been implemented in the Regional Labour Office in Krakow since 2006. The full name of the project is Observatory for the Labour Market and the Education of the Malopolska Region.

The reason for the project was **the necessity of having appropriate information as a basis for the decision-making process, particularly in programming regional development and creating employment policy.** The project meets the information needs of policy makers by providing research and transforming data to information and recommendations.

The objectives of the project are: to improve the quality of and accessibility to information on the labour market and its environment and to develop cooperation between institutions in the field of labour market surveys and information exchange.

In order to respond to the information needs of policy makers and stakeholders, we look for two kinds of information problems - information gaps as well as information overload. Then we try to resolve them by research, analyses, preparing recommendations and organising conferences and other events that help in the exchange of knowledge about regional labour market and related subjects.

Project beneficiaries are:

- Self-government of the Malopolska Region
- Institutions involved in shaping regional policy
- Labour market institutions
- Educational institutions
- Employers
- ESF projects providers
- Inhabitants of the Malopolska Region.

The implementation of the project enables the production of reports of comparable content and quality – the same team supervises and monitors each research project. This way of work usually shortens the time needed to prepare reports and helps to produce complementary information on different subjects connected with labour market and education. Preparing each study in cooperation with all institutions interested in using particular data helps to avoid spending money several times by several institutions to gain similar information. Ways of dissemination of project effects, in particular the manner of preparing reports from surveys, protects decision makers from information overload by giving them condensed information about the current situation as well as recommendations.

Main achievements of the project in 2006–2007 were: 11 reports from surveys and analyses containing conclusions and recommendations focused on a range of subjects related to the labour market (job offers, employment and unemployment, education, social exclusion, career possibilities of graduates of secondary level vocational schools, migration, branches of regional economy in Malopolska). To make them public we organised 2 seminars and 2 conferences for labour market, education specialists and policy makers.

We also searched for good practices by organising study visits (3 domestic and 3 abroad: Oulu – Finland, Turin – Italy, Edinburgh – Scotland).

As one of our main objectives is to give wide access to information on the labour market, we established several regularly updated tools: the internet portal of the project, the Labour Market On-line Library, and the Module of the Data' Graphic Presentation. Internet tools enable a wide range of stakeholders to get easy access to different types of information; to press news, reports, data, feedback from research and conferences and others. At the same time, the aforementioned tools protect professional users from information overload by giving access to data according to their own requests.

3.3. Predicting Future Skill Needs on the Labour Market

As we treat our research activities partly as preparation for the foresight, we started two periodic surveys: *Career possibilities for graduates of secondary level vocational schools* and *Survey on the Malopolska strategic branches*. The reason for doing them is the information needs indicated by regional institutions involved in creating the education and labour market policy. We found good practices in this area both in Poland and abroad.

Career possibilities for graduates of secondary level vocational schools

Preparation for the research was based mostly on Polish surveys. We had learned a lot from foreign experiences, but they were difficult to be copied to our conditions as most of them were based on systematic solutions, hard to provide in our regional environment for this single survey. Polish inspiration for *Career possibilities for graduates of secondary level vocational schools* was mainly the survey by Polish Central Statistical Office *Vocational curricula of graduates in 1989–94*, and its second edition *Vocational curricula of graduates in 1994–1997* (*Losy zawodowe absolwentów w latach 1989–94* i *1994–1997*). Both surveys, conducted by A. Kowalska and her team, were prepared as modules of Labour Force Survey (LFS) in Poland.

Researchers defined two approaches to surveying vocational curricula of graduates. In the first approach, the survey includes students leaving the system of education within one year after graduation. Survey of this group may be focused on how those graduates coped with entering the labour market whether they were employed, unemployed or economically inactive. The second approach is much wider – the group in question is composed of all population between ages 15 and 30. In other words, the survey is an analysis of the situation of youth on the labour market. In this approach graduation is treated not as the base of defining the surveyed group, but as an element of the process of entering the labour market. In this case, topics of the research are: choosing educational path after leaving primary school[20], looking for the first job after graduation and first years on the labour market as the time of career development[21]. In previous surveys, researchers had chosen the second approach. We decided to choose first approach as it is easier to implement in the survey. Moreover, this approach seemed to make the use of the survey outcomes easier.

Main sources of information used in the research projects of the Central Statistical Office were national censuses (1988 and 1995), LFS, monographies, labour office statistics and enterprises' obligatory reports for public statistics. In the second edition of the survey, the main topic was the comparison of the scale of problems with finding the first job and achieving a stable situation on the labour market faced by cohorts questioned in both editions.

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20 Up until the reform of the education system in 2001, 8-grade primary schools were the standard in Poland.

21 LFS 1997 outcomes show that the process of entering the labour market in Poland takes place between ages 20 and 29.

Both research projects focused on creating a description of the cohort according to their level and type of education and profession, analyzing the obstacles faced in entering the labour market, distinguishing existing patterns of looking for and finding the first job, comparing the scale of problems in entering labour market faced by each cohort, and analyzing career patterns of graduates.

Description of these research schemes were included in a publication of the Institute of Labour and Social Affairs (IPiSS) edited by Urszula Jeruszka *Methods of studying the career of students finishing vocational education* (*Metody badania losów i karier absolwentów szkół zawodowych*, Warszawa 2001). The publication, prepared in the framework of the project *Optimalisation of vocational education for the labour market* (*Optymalizacja kształcenia zawodowego z punktu widzenia potrzeb rynku pracy*, KBN project number 1 H02F 005 17) is a review of different research projects conducted in Poland. In this publication, we found descriptions of possible methods of studying the career of students finishing vocational education, including aims of these surveys and scientific tools used by their authors.

Possible aims of studying graduates' curricula and careers may be listed in form of questions as follows:

- What is the percent of secondary level school graduates who attended the university?
- Does the vocational training adequately meet the requirements of economy and job offers available on the regional labour market?
- What percent of graduates have an occupation connected with the subject of their vocational training?
- Is a diploma helpful in getting the first job?
- Does a (particular) school prepare to work in professions that are surplus, deficit or balanced[22] on the labour market?

Do vocational learning programmes adequately meet the requirements of particular position and profession?

Do the final outcomes of school teaching activities adequately meet the vocational learning programmes guidelines?

Are graduates' qualifications up-to-date with currently used technologies?

From this list we chose three questions, reformulated them and supplemented with our own. Final list of scientific problems in our survey is as follows:

- Vocational school leavers' curricula – their careers and further education.
- Which professions taught by schools give their graduates the best opportunity to get a job connected with the subject of their vocational training?
- Subjective and objective factors of vocational success and their impact.
- Does the vocational school prepare to work in a particular profession?

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22 Surplus professions – professions in which there are more labour force than is needed on the labour market in a specific area. Deficit professions – professions in which there are less labour force than is needed on the labour market in a specific area. Balanced professions – professions in which there are almost equal amount of labour force with needs on the labour market in a specific area.

- Qualifications (formal) and competences gained outside the school brought to the labour market by the graduates.
- Types of job seeking problems that different groups of school leavers have to cope with.
- What kind of job do graduates look for and what kind of job do they take?
- Further curricula and careers of graduates after leaving their first work place.
- Criteria of choosing job offer.
- How do graduates look for job?
- To what extent do conscious choices of school leavers have an effect to their educational and vocational curricula?
- Factors encouraging the young to continue their education.[23]

Conclusions and recommendations

The results and conclusions were presented during a conference that concluded the research. After considerable discussion on the presentations the Observatory team formulated concrete conclusions and recommendations that focus on three subjects: reorganising vocational education system, vocational counselling and research organisation (in particular regular monitoring of the curricula of vocational school graduates).

Research showed that continuing education after upper secondary level vocational school is determined mostly by parents' education level, pupils' active participation in additional (optional) classes (mainly language courses). In order to help the vocational school graduates enter the labour market or achieve success during their education, it is necessary to organise additional and extramural classes and encourage pupils to take part in them.

For those who want to work after school, workshops on job searching are very useful. It is interesting that pupils from schools where such additional classes were organised, were less threatened with unemployment even if they did not participate in the workshops. Organisation of such classes is evidence of the commitment of the teachers and the school, which may influence pupils and encourage them to begin an active job search.

Parents' lower education level correlates with a lower probability of a vocational school graduate to continue education and increases the probability of the graduate to being unemployed after school. That is why it is necessary to provide parents with lifelong learning opportunities and approach – especially those parents who have lower formal education and usually are not interested in raising their qualifications. Lifelong learning of parents may stimulate pro-educational behaviours among the young.

The unemployed graduates are usually passive; they have low qualifications, they do not care about their educational future and they have a low motivation to improve their situation on the labour market. To help such graduates avoid unemployment, it is necessary to encourage them to plan their own occu-

[23] More detailed information about the methodology and outcomes may be found in Michał Zawadzki, *The fates of post-gymnasium vocational schools [leavers] in Malopolska* in *Pedagogika pracy* 51/2007 (*Labour pedagogy*).

pational or educational future, taking into account personal predispositions and school exam results. Moreover, they should accumulate occupational experience, be it through compulsory trainings and internships, voluntary service, part-time, or holiday and temporary work. Extramural diplomas and certificates are extremely important for the future of a young person. Basic vocational school graduate's poor skills and qualifications are partly a matter of state policy - in the past couple of years, the government has promoted comprehensive education at the cost of vocational training. As a result, pupils and their parents prefer the comprehensive education and consider it as the best one. Basic vocational schools (zasadnicza szkoła zawodowa – ZSZ) are chosen by the young with low aspirations and limited abilities. Moreover, many of the students do not broaden their occupational experience and do not take vocational exams. Pupils from upper secondary technical schools (technikum) do not appreciate vocational training, since they plan to continue their education at universities. Therefore, entrepreneurs do not have good opinion on value of their preparation as workers.

Taking into consideration the high costs of vocational education, it is necessary to engage entrepreneurs in the work to adapt school programmes to meet the needs of the labour market. Young people must have access to all information they need to make rational and conscious decisions on their education. It is also crucial to improve the quality of practical training.

Usually, people with vocational education, especially basic one, have specialised qualifications, which limits their flexibility during a job search and in consequence deteriorates their situation on the labour market. To solve this problem the government should popularise module learning in vocational schools and the idea of lifelong learning.

Part of the conclusions and recommendations are connected with vocational counselling: secondary school (gimnazjum) pupils should have access to employment advisors and have final exam results and competence tests which will help them consciously shape their educational and occupational future. Predisposition tests will show quality of human resources entering the labour market. The present number of employment advisors in Poland is insufficient. Officials of Malopolska region indicated in documents released this year the urgency of activities such as providing each pupil the access to advisors.

Insufficient information about graduates on the labour market is an obstacle in planning educational policy on vocational training. That is why a systematic, regular and careful monitoring of the curricula of vocational school graduates is necessary. Upper secondary courses should be prepared taking into consideration periodical analyses on the labour market. It is also important to monitor the entrepreneurs' needs for employees.

The knowledge on vocational and educational curricula of the vocational school graduates is valuable for pupils who make decisions on their future school. Taking into account what inspires the young to choose a school (fashion, peers' or parents' suggestions), it is necessary to provide pupils and their parents with information they need in order to be able to make rational decisions on their educational future. Observatory prepared a leaflet for pupils on how their decisions on education may influence their vocational future.

In the second edition of this study, we are going to implement a few changes. The most important of them is that we will encourage secondary schools to take part in collecting data on pupils and to use information thus gained to improve the quality and the direction of education and vocational training.

3.4. The Survey on the Malopolska Strategic Branches

As the aforementioned research of graduates focused on situation of the special group within the labour force, the second study examined employers' demands. This subject was indicated as an information need in 2006 by regional institutions involved in shaping education and labour market policy. In Poland, there were no such surveys available. Thus, we had to base this study on foreign good practices. Fortunately, we had a pleasure to learn from Finland: during our study visit in Oulu region in November 2006 we met Mr. Jouni Marttinen from the TE-Center for Southwest Finland. He presented us the regional foresight activity – TKTT (The Study of the Needs for Workforce and Training of Enterprises), which appeared to be a most suitable model for research in our region. However, we had to adjust it to institutional organisation in the Malopolska region.

In Southwest Finland, TKTT-process is coordinated by TE-Centre. Quantitative (interviews) as well as qualitative (expert panels) methods are used in this research. The whole study consists of stages involving four types of participants: enterprises, educational institutions, employment offices and sub-regional development centres. First stage is selecting fields of business (branches) that have special needs or problems on the labour market. Then interviewers – workers of educational institutions, employment offices and sub-regional development centres – are trained on topics connected with the selected branches. As the research campaign starts, interviewers receive lists of enterprises to contact with in order to arrange meetings or telephone interviews. Topics of interviews are: job increases and declines by profession, recruitment problems and training needs by profession, suggestions for educational institutions in the region, changes in skills and qualifications by profession, the age distribution and retirement rate of personnel, plans of sub-contracting, networking, new business ideas, economical situation at the time of the interview and forecast for the following year, outsourcing plans, export prospects, investment needs (including premises) and R&D. Respondents are also asked for open comments.

During this campaign the first phase of the utilisation of the research outcomes takes place – employment offices react if entrepreneurs inform the interviewers about problems that could or should be solved immediately. The initial report from interviews is prepared for experts who take part in panels organised for each field of business. They discuss the questions and themes indicated in the interviews as well as on megatrends which affect the business branch. Experts prepare SWOT analysis and recommendations regarding the finding, timing and responsibility for implementing them. The final report includes the outcomes of the expert panel analysis. Research outcomes are disseminated as feedback for respondents and as information for companies and media. Second phase of research outcome utilisation takes place in the TE-Centre, educational institutions, employment offices and sub-regional development centres, which use the new information and recommendations in their work and decision making. The TE-Centre also monitors and measures the influence of the information and recommendations gained through the study.

In our survey, we tried to implement similar methodology. We commissioned interviews and then asked experts to comment outcomes and to prepare recommendations. The survey aims were focused on the gathering of information on the situation of enterprises, as well as on the demand for personnel in branches recognised as strategic for the Malopolska labour market.

Here, the research problems were following: the structure of employment, employment movements, deficits in employees' qualifications and training needs, conditions for running businesses and forecasts of the strategic branches' future.

Survey was preceded by an expert analysis that indicated branches strategic for regional labour market and economy. The aim of the analysis was to identify the branches that could be characterised by the most dynamic development in Malopolska; business branches, that in the next five years may create biggest employment. The analysis was based on the Polish Classification of Activities (sections A-O). Selection of indicators (they had to be fully accessible for the period of 2001–2005) guaranteed the best access to data. Evaluation and assigning wages to every branch on each indicator helped to rank all sections/branches. Taking into account over 30 different indicators, the experts pointed three branches that would have the biggest demand for personnel in the following 5 years: 1) "hotels and restaurants" (section H of the Polish Classification of Activities – PKD), 2) "real estate, renting and business activities" (section K of PKD) and 3) "other community, social and personal service activities" (section O of PKD).

The survey itself consisted of two phases: interviews with over 1200 employers to collect quantitative data and 8 focus group interviews (FGI) to discuss the findings with entrepreneurs. Focus group participants discussed the best ways to solve existing problems and opportunities in the business branch, as well as the activities on labour market and education (esp. vocational education) that should be taken in order to develop the branch. They evaluated development potential of the branch: present situation, perspectives of development, identification of obstacles and chances, changes of employment rate. FGI participants were asked for their opinions on qualifications of employees and qualification needs of employers as well as on possibilities of improving workers' skills.

Research let us obtain valuable information for those who plan professional trainings for enterprise staff. I would like to present the most valuable conclusions and recommendations of this survey.

International IT enterprises operating in the Malopolska region have the biggest influence on the regional labour market amongst all surveyed branches. They are to some extent independent of the local and national economy. However, these companies are also affected by the human resources fluctuation and shortness.

Entrepreneurs' attitude, often independent from the true situation of the company and sector, affect their investment and HR decisions. The optimistic approach and objective economy data are conductive to establishing new positions in the enterprise. On the contrary – even a good economical situation of the company does not prevent managers from limiting recruitment when they are pessimist and foresee possible decline in the economic situation of the country or their own branch. Entrepreneurs who have a good financial situation and moderate attitude to the forecast are surprisingly the least inclined to invest. 70% of surveyed enterprises planned investments. The most optimistic way of thinking about future economic situation characterised entrepreneurs who run their business in IT or R&D sectors. To change the attitude of the businessmen, it is necessary to promote examples of companies from the same branch that are successful in other regions and developed countries.

Describing the structure of employment, researchers defined the most popular professions. The high qualified specialists are the most numerous in IT and R&D. Other surveyed branches are dominated by manual workers and clerks. Regular monitoring of the employment structure is crucial in order to be able to describe the tendencies in particular sectors, or noticing the ageing of labour force. Furthermore, it helps to foresee entrepreneurs' demands for professions and qualifications.

In most of the surveyed companies, the number of employees had not changed within the year before the survey. Within the group of enterprises that changed the scale of employment, two thirds of the companies increased the number of employees and one third decreased it. In all sectors, most of the employment reductions and increases related to the same professions. This means that the scale of rotation within the labour force is quite big. It is necessary to find out how big the scale of the problem is, as in some companies rotation may be an element of employment policy.

Employment plans of most of the surveyed enterprises were related to supplementing staff shortage. Forecasts said that new jobs would be established mostly in IT and R&D enterprises. Most wanted professions, based on the constant monitoring of employers needs, should be popularised in local labour offices, secondary and vocational schools and universities.

Encouraging employers to cooperate with the schools where their workers-to-be study will increase their chances of finding loyal employees on the local labour market and to strengthen the cooperation between business and education. This may improve information exchange and help vocational education to better adjust to the needs of the labour market.

Only one of every three companies surveyed had the will to train their employees. Investments in human resources were planned mostly in IT and R&D companies, in "Sewage and refuse disposal, sanitation and similar activities" and in institutions operating in culture, sport and leisure. In those sectors about 40% of surveyed enterprises planned to train their workers. Researchers managed to specify, which groups of workers would be trained and what would the subject of the training be. This information would be useful for vocational schools, universities and other educational institutions in preparing training offers that would correspond with employers needs. The information about employers' preferences on workers qualifications may also be crucial for pupils, students and those who seek for a job.

Applying for the EU funds is still not very popular amongst companies in Malopolska region, and, although it will probably grow within few years, businessmen interest varies. In "hotels and restaurants" only 15% of local enterprises applied EU funds. More than a half of the entrepreneurs in this branch declared that they were not interested to do it in the future. About three quarters of companies operating in the sector "real estate, renting and business activities" has never applied for the EU funds. The most successful in applying were R&D (61%) and IT (45%) companies. At the time of the survey, 22% of the companies were supported from the EU funds. In the future, the number of applicants will double. The main reasons for not applying are the lack of interest and/or information how to do it effectively.

As the most probable manner of using the outcomes of the survey in Malopolska is connected with implementing the ESF, we would like our research to emerge towards an Italian model. It is a good practice we gained during our study visit in Turin in 2007. Our host, The Observatory on Labour Market (ORML), presented RIF (Rete Indagini Fabbisogni) – Occupational Needs Network.

Since 1995, the provinces of Piedmont Region have been obliged to assess labour force needs of enterprises with the coordination and support of ORML. Important branches of the regional economy have been monitored out both on a regional and on a provincial level.

The main objectives of the survey are to provide effective means to evaluate the projects made by the vocational training agencies, to support the planning of tertiary education (university and specialisation courses) and to provide a reliable and up-to-date set of indicators about occupational trends. Survey outcomes also support students and workers in their occupational choices.

Research field consist of 18 sectors (branches) in 8 territories (Piedmont Region and 7 provinces) what gives the number of 52 surveyed sectors of regional economy. 100.000 local enterprises have been interviewed in 2007 (summing up to information about half million of employees).

For each sector, a technical board has been established, composed of experts from various companies, unions and employers' associations, assisted by ORML and the research organisation in charge of the survey. Their first task is to define the organisational framework of cooperation.

During the desk research and expert panels, lists of the most significant professions for each sector are built, with a description of the duties performed in frame of each of the professions and competences needed. The current presence of workers performing a particular profession and the extent of the demand for them in the period of 3-4 years is measured in the survey.

Quantitative data are collected by sending a postal questionnaire to local enterprises representing surveyed sectors. This tool consists of two parts: one regarding the company and the sector and the second concerning quantity and quality of human resources as well as labour force needs and recruitment problems of the enterprise.

Research findings help to identify occupations that will be demanded on the regional and local labour market. These data, confronted with the number of workers available in the region, give information about vocational training needs and help to establish directives for contests within the frame of Operational Programme and criteria for selection of projects. (Projects on vocational training connected with occupations that are deficit on the regional or local labour market may get extra scores.)

3.5. Summary

Information from both Observatory' (MORPIE) surveys presented in this paper is used *inter alia* to directly support ESF to improve its effectiveness in Malopolska. Results from research projects carried out by the Observatory are also addressed to project providers to enable them to use this information to prepare applications for the ESF funds.

Organising both surveys, we may receive complementary information about skills available and demanded on the regional labour market. The next stage of our project is to repeat both surveys periodically. We want to engage all actors (schools, employers, sector specialists) to take part in the research process to make it more effective. Feedback and more applicable recommendations will allow us to intensify the impact of the project on the regional education and the labour market policy.

Standardisation of methodologies, collecting comparable data, and developing a system of two-way information flow (bottom-up and top-down) will allow us to design and implement foresight that should become the reliable basis of decision making process in six years. That should help regional institutions to respond to future challenges in the field of education and labour market, and result in an improved educational environment that gives citizens better opportunities to develop their competitiveness.

PART II

WORK ASPECTS ON LEARNING AND INNOVATIONS

4. THE OCCUPATIONAL SKILL NEEDS SURVEY THE APPROACH OF THE REGIONE PIEMONTE

Leonardo Angelini & Mauro Durando

Regione Piemonte - Education, Training and Labour Department, Observatory on Labour Market, Italy

4.1. Introduction

In the recent years, a sharp increase of competition on the global market has constantly been transforming our economical activities. Consequently, a comprehension of the innovative aspects at stake has become necessary, not only for private operators, but also for the Public Administration that must foster and support this change by the efficient planning of guidance, vocational training and labour politics.

Italy and Piemonte, in particular, have a long-standing experience in the analysis of innovative phenomena taking place on the labour market, with particular respect to the changes in the occupational framework. In our region, in fact, the first attempts to predict the skill needs of the enterprises, with surveys carried out on a sectoral approach in collaboration with a private research organization, date back to the early 1990's.

The impact of demographic trends has given additional importance to this kind of research: in fact, youth population declined heavily in the 1990s, consequently causing a shortage of qualified and flexible workforce to fuel the economic development. Therefore, it has become essential to minimize the occupational mismatch between the needs of the enterprises and the qualifications acquired by the youth in their training and education careers.

The methodology applied to the first experimental survey – carried out in 1992 – has remained basically unchanged since then, even though some improvements have been made. It will be explained in detail, with respect to the most recent survey, carried out in 2007–08, but it may be useful to first trace the development that brought us to the current situation and to outline the most significant methodological issues.

4.2. The Main Steps in the Development of the Survey

A first trial survey was carried out in 1992 in the metal forging district in the northern area of the region. In 1995, the Regional Council of Piemonte approved an innovative law about the vocational training system in which the provinces were made responsible for assessing of the occupational needs of the enterprises with the assistance of the Regional Observatory on Labour Market, which has since coordinated all the surveys carried out in Piemonte.

The new methodology was applied on the regional scale with positive results in 1995. In 1996 the national government and the social partners signed a memorable agreement called "Labour Pact", where the importance of this activity as an effective instrument to reorganize the training system and to promote the meeting of labour supply and demand was emphasized. The methodology of the Regione Piemonte won the recognition of the Ministry of Labour, who then financed a survey on the national scale – coordinated by the so-called "Bilateral Organism", a structure created between employers and unions to carry out activities of common interest.

ESF regional operational programme 2000–2006 provided one million Euros for this research, under the Measure C2, and the Provinces started a cycle of surveys in several sectors.

Considering the spreading out of this research and the occasional adoption of different methodologies that led to non-comparable results, creating some confusion about it, the regional government, in accordance with the Provinces, decided to officially describe the approach and methodology of the surveys supported by public institutions. Following this deliberation, a permanent regional network called RIF (Rete Indagini Fabbisogni – Skill Needs Survey Network) was set up through a formal agreement in 2006 by the Region, the eight Provinces and the most representative social partners. This network enhances continuity and integration to the activity going on by introducing a "common language" and a common set of technical tools to exchange and process the data collected.

The need for a structured network was underlined in the creation of a system of training poles to organize a new post-secondary training channel called IFTS (Istruzione e Formazione Tecnica Superiore – Advanced Technical Education and Training) in connection with tertiary education. The poles are permanent clusters operating mainly on the leading business sector of each area and the skill needs surveys are an essential instrument to guide IFTS planning.

In 2007, the RIF was put into effect and a new cycle of surveys started, with the aim of investigating 18 sectors of strategic importance for local and regional economy, and of describing, in depth, the skills actually pertaining to each occupational group identified.

4.3. The Importance of Anticipation Surveys

The early recognition of occupational trends gives the public system the means and the time to organize a proper response. The survey aims to identify economic and organizational trends in the sectors under observation, and to single out the main innovations taking place in a medium-term outlook (at least four or five years) so that there is enough time to reorganize the training and education system accordingly.

The methodology in use has undergone some changes, but its basic features have remained the same:

- the approach is essentially qualitative, in the sense that the survey does not try to estimate the number of expected vacancies for each occupation considered, but aims only to identify the direction that the demand will take in the years to come (up, down or steady). In fact, this methodology has been developed in opposition to the earlier, mainly quantitative approach that was deemed unreliable, because the enterprises, in a situation of relative uncertainty on the market, can only give general indications about their skill needs, but no absolute figures. The survey only uses quantitative data that concern the current presence of different occupations of the employees of the companies.

- It is specifically designed to support the considerably developed regional vocational training system of Piemonte that has acquired an important status alongside state education by being well integrated with it. The reference occupations, for consequence, must be identified and described in relation both to the actual organizational framework of the sector and to the training pathway needed to attain an adequate level of qualification. So, we are not talking about elementary occupations, but about occupational groups, as we shall call them, holding mixed, different skills, not necessarily typical of the sector under inquiry, but often cross-sectoral: in the first surveys, they were called "archetypes" of training modalities, to emphasize their being tailored to the requirements of the VET system. A close relationship between these groups and the standard occupational classification, or the qualifications acknowledged and certified by the training courses, is necessary and actively sought for.

- It calls for a tight confrontation between institutions and social partners: employers and trade unions must participate to the whole research process, especially to the preparatory meetings where the main features of the sectors and the reference occupational groups are identified. A weak engagement at this stage may compromise the positive outcome of the survey, as it is important that the social partners validate the following proceedings and the final results.

4.4. The Survey Carried Out by the RIF Network

Occupational systems

The new survey started in 2007 analyzes 18 economical sectors; 14 on a local scale, regarding one, or more, provincial area; 4 on a regional scale, with a sample set up for the whole regional territory.

Here is a list of the sectors under observation:

- milk and dairy industry
- winemaking
- rice production
- pharmaceutical / biochemistry
- marble industry
- construction
- plastic materials
- printing and publishing
- textile and clothing
- metal and machinery manufacturing

- aerospace industry
- ICT
- foodstuff trading
- hotels and restaurants
- logistic/road transports
- refuse disposal
- social work
- winter sports and tourism

A board of experts is made up for each sector; they analyze the current situation and the expected trends, defining a standard organisational framework and identifying the structural components of it (production, quality control, administration, marketing, etc.).

The leading occupational groups of each operative area are subsequently identified and described: this is the most delicate stage of the survey. A proper and accurate identification and description of the occupational groups is of strategic importance for the reliability of the results and for a correct recognition of the expected developments.

When the main characteristics of the sectors are defined, the questionnaire can be set up and submitted to the sample of enterprises.

The main items of the questionnaire are as follows:

- general information about the company;
- current employment structure;
- kind of activities actually taking place (on the base of the standard framework identified by the board of experts);
- expected needs related to each occupational group.

The specific skill needs for each occupation are measured through a limited set of items:

- current presence in the company staff (quantitative data, inclusive, in case, the supply of external resources);
- foreseen trends of the next four or five years (decrease – constancy – increase);
- recruitment difficulty level (no problem – some problems – many problems);
- education level required

The identification of the skills

Innovativeness and the level of competitiveness of a company imply constant and significant modifications to labour organization and to the skills of the personnel. The contents of jobs have changed and are constantly changing: identifying what the workers actually do and how they do it brings to a full and coherent comprehension of the position of the company in relation to the level of innovation demanded on the market.

A second branch of the survey is based on this issue, and concerns the description of the skills pertaining to each occupational group with reference to the expected performance ("what one must show that he can do?"), without considering the ways (whether formal or not) of learning these abilities.

The identification process of these skills can be broken down in three levels:

- describing **ideal performance**: what one should be able to do and how he should do it (*performance*) in relation with the most positive occupational situation (*ideal*);
- identifying **competence units**: the occupation is not seen as a tight block of abilities, but as an assembly of different "competence units" that can be broken up and that make up the occupational performance;
- defining **minimum competence standard**, in terms of contents ("what one person must be taught to do and must show that he can do") and of know-how level ("how far he can go") in order to have objective assessment criteria.

This section of the survey is carried out with the support of the social partners through seminar meetings for each occupational group. In order to identify the minimum competence standard, and because of the close connection between this issue and the related learning pathway, experts of the training and education system are involved. They are asked, in particular, to identify the curricula that lead to a formal degree or qualification pertaining to that specific occupation.

4.5. The Main Expected Results of the Survey

The social and institutional partners involved in this project consider their highest goal to bring about an effective adaptation of the vocational training system to the occupational changes of the labour market. An anticipatory approach is absolutely necessary to reach this objective.

In this context the occupational groups play a decisive role: a correct identification of the development of the sector under observation and of some fundamental variables related to them guarantees the quality and reliability of the information collected, in order to guide the adaptation of the training activities to the changes taking place on the market.

The information about sectoral characteristics

A first outline of the main features and of the trends of the various sectors is drawn by the panel of experts in the preliminary seminars. This will be verified through the questionnaires, where the information collected to this respect concerns:

- products/services structure;
- organization of the production cycle (including the level of specialization or verticalization).

If there are significant differences between the first sectoral analyses and the situation resulting from the survey, the social partners will decide how to make up for them in the final survey report.

The employment structure

The survey collects quantitative information about the staff employed in each of the 19 sectors. The information can be compared with the available results of previous surveys to highlight the structural changes in the occupational framework. In Italy these data are supplied by the Central Statistical Institute (ISTAT), but on the regional scale they are significant only for three macro-sectors (agriculture, industry, services). The survey gives us more detailed information – even though limited to the 19 sectors considered – that is available even on the sub-regional scale.

Quite important are the data relating to the so-called atypical jobs, precarious or non standard contracts. In contrast with the rooted idea of a large diffusion of precariousness, the first, still partial results suggest a limited presence of temporary jobs as far as our sample is concerned.

In addition, information about outsourcing practices, the use of external human resources for specific functions, is precious, perhaps unique in its kind in Italy.

The occupational groups

The core of the survey is represented in the data collected about the occupational groups. The economic and productive system is very interested in knowing their current presence, their expected trends (up or down) in the next years, their distribution in the companies according to the size or the sector, and the recruitment difficulty.

Without getting into the national and European debate on the need of a shared and acknowledged classification and standard description of each occupation (E.Q.F. – European Qualification Framework), which lies outside the scope of the present paper, we would like to underline that the discussion between the social partners to identify the skill contents of the occupational groups may represent a useful contribution to this controversial issue.

Information about the level of education recommended for each occupation is particularly useful for the training system, especially for the guidance services. The first results of the survey show considerable differences among the companies' assessments regarding the same occupation, so this information has to be attentively dealt with. Within a sector this difference is often related to the size of the company: it is therefore necessary to be particularly careful in the use of these data for guidance purposes.

But the most important data concern the variables related to the expected trends of the occupational groups and to the recruitment problems encountered. The first indicator measures the evolution of the occupation in the medium term according to three basic items (increase, decrease, constancy), while the second one is a simple estimation of the degree of recruitment difficulty (none, some, many).

Crossing these two variables we get the *tension* of the occupational group for the next four or five years: the higher the tension, the higher the interest of the economic system for that occupation. The tension values may be negative when the demand for that occupation in the next years is expected to decrease.

4.6. The Skill Needs Matrix

The training and education system needs to know not only the tension of the occupational group, but also its incidence in the sectoral employment (concerning more than one sector when dealing with a cross-sectoral occupation), to avoid the mistake of making the same assessment for occupations with a high tension, but different employment weights.

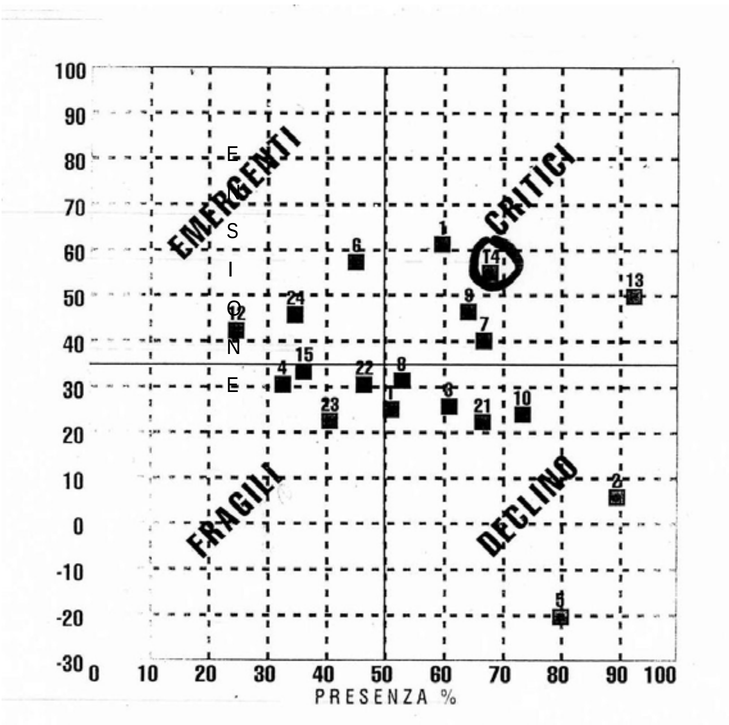

Figure 4.1 *Occupational classification by tension and pressure.*

To get an immediate picture of the results of the survey for each sector, we can transfer the data of these two indicators in a Cartesian plane, where the presence falls on the x-axis and the tension on the y-axis. The points representing each occupational group are positioned differently on the plane, and you get a clear view of their situation in a medium-term projection. In such a scheme (see the image above), the occupations are classified into four categories, according to the combination of tension and presence:

- *emerging* (high tension and high presence)
- *critical* (high tension and low presence)
- *fragile* (low tension and high presence)
- *declining* (low tension and low presence)

The use of the matrix to assess vocational training projects

Without getting into all the various and different ways of using the survey results, that may take in a large field of application, especially with reference to the guidance and education services, we would like to concentrate on a single case in point, concerning the selection of vocational training courses.

The ESF funds are largely used to support the regional training system. The training agencies are asked to present their proposals according to specific regional or provincial bids; the available funds, however, do not cover all the requests, so it is necessary to make a selection of the projects.

		PRESENCE		
		Low	Medium	High
TENSION	High	50 points	50 points	60 points
	Medium	20 points	30 points	40 points
	Low	5 points	10 points	10 points
	Negative	0 points	0 points	0 points

Figure 4.2 A matrix to assess vocational training projects.

It is plain to see that a priority must be assigned to the courses leading to the occupations most functional to the competitiveness of the economic system, on the base of the indications coming from the skill needs survey. So, within the multi-criteria methodology of selection adopted by the regional government, this item is well taken into account: each project gains a score, from 0 to 60 points according to the combination of tension and presence values, which is a part of the total score assigned and contributes significantly to the choice or the exclusion of the project, on the base of its coherence with the results of the survey.

The above scheme sums up the score system, which is quite simple: the top score is assigned only when both tension and presence are high, while no points are given when the tension values are negative, independently from the extent of the presence. The tension is actually more important than the presence, so a significant advantage is awarded to the occupations with a high tension level.

The multi-criteria system of training projects contains several other items; among them we must point out to the results of the placement surveys, which have a significant link with the skill needs surveys. The placement survey is a follow-up research on the outcome on the labour market of the occupations created by the vocational training activities, and is carried out 12 months after the end of the courses, to know the condition of the attendants on the labour market, and whether the job they got is coherent with the training pathway.

We will not get into details about it, but it is evident that the anticipation and follow-up surveys must be part of an integrated system leading to an efficient planning of education and training activities.

5. SHORT TERM ACTIVITIES IN STUDYING THE NEEDS OF WORKFORCE AND TRAINING AT LOCAL AND REGIONAL LABOUR MARKET IN FINLAND

Jouni Marttinen
Employment and Economic Development Centre for Southwest Finland, Finland

5.1. Introduction

The Employment and Economic Development Centres (TE-Centres) are state owned regional development and service offices in Finland. The tasks of these offices are to promote SMEs and the technological development of enterprises, to implement regional labour polices, to plan and organise adult training and to promote farming, fisheries and rural enterprise activities.

In 1998–2002 the Ministry of Labour and the Ministry of Trade and Industry implemented a foresight project that aimed to develop a national foresight system for the TE-Centres, to launch foresight activities in the TE-Centres, to integrate foresight into the strategic planning and management systems of TE-Centres, to train foresight experts in every TE-Centre and to develop foresight at local and regional levels in a way that makes it possible to utilise that information in the planning of the national labour market and economic policy.

That project stated as a vision to the year 2010 that Finland has the best regional foresight system in Europe. The vision about the methods and activities used and utilised in TE-Centre is seen in Figure 1.

Table 5.1 Methods and activities used in TE-Centre.

TIME SPAN	QUANTITATIVE METHODS	QUALITATIVE METHODS
Long term (6-20 years)	Long term (LT)- model Mitenna-model	Scenarios, delphi, mega trend analysis, weak signal analysis, future workshops…
Middle term (3-5 years)	Regional econometric model (ETLA)	Cluster analyses
Short term (½-2 years)	Interviews of enterprises Barometers	Expert panels (Swot/Delphi))

My presentation discusses the short term activities, which concentrate on the needs of the workforce and training at the local and regional labour market.

5.2. The Study of the Need for Workforce and Training – TKTT-model

Almost all of the 15 Finnish TE-centres are implementing short term studies focusing on the needs of the workforce and training in the local and regional labour market. The process of these studies consists of three stages: 1) the interviews of enterprises implemented by the employment offices, 2) an expert panel that analyzes the results of the interviews and produces SWOT-analysis and recommendations and 3) a Delphi - questionnaire to the interviewed enterprises and members of the expert panel.

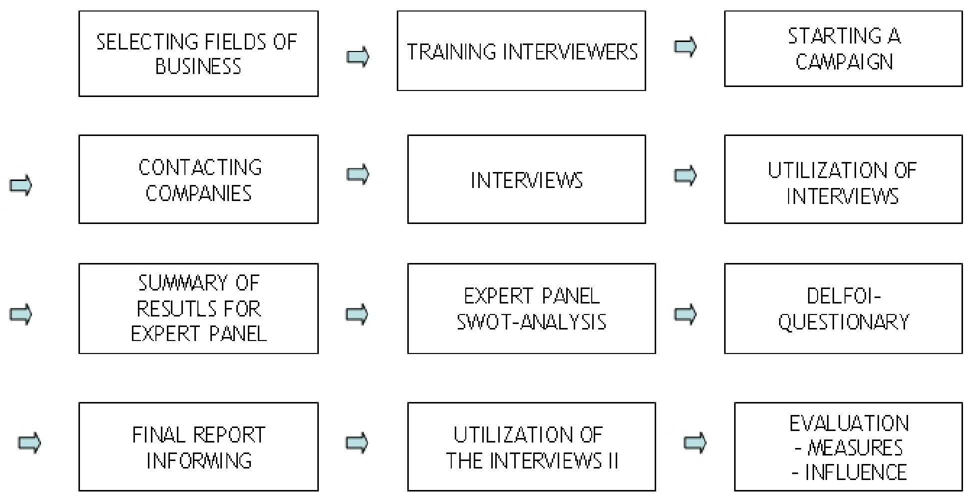

Figure 5.1 The TKTT-process in Southwest Finland.

Selection of sectors

Decisions concerning the selection of fields of business are made chiefly in the result-based management process between employment offices and the labor department in the TE-Centre. The employment offices make a proposal concerning the fields of business and the number of companies to be interviewed.

When the TE-center/employment offices make proposals concerning the fields of business, the criteria for selection are as follows:

- The employment office is not very familiar with the field of business, its core occupations, professions, skill and training requirements, etc.
- There is a desire to improve the market share of the employment service in the business field in question.
- The field of business is a so-called “growth field”, in other words, according to the office's knowledge, it is difficult to obtain skilled workforce for the field.
- The field is often faced with structural changes and/or it is a rapidly changing.
- The field is an area of focus in the province.
- There is a desire to identify businesses doing poorly and threatened businesses

In addition to this, interviews can be directed to different business fields on the basis of other criteria as well. Other TE-center departments, business field managers, TE-center projects, sub-regions etc. may also make proposals and initiatives concerning the fields of business to be interviewed. The business fields to be interviewed are also discussed in the TE-center's business team/strategy team.

Training for the interviewers

Prior to beginning the interviews, the TE-center organizes a training course for employment office representatives (i.e. campaign managers and other interviewers). During the training, the themes of the interview will be jointly agreed upon and participants will be guided through interviews. Participants in the training concerning the business field will be provided with information about the structure, the development and future prospects of the field. During the course, TOP 30–50 lists of the most important businesses in the field will be handed out. At the same time, print-outs from the ASKO system (register of clients) of the TE-center's so-called growth businesses (40 enterprises)) are handed out. The ASKO system may be used to make specialized searches in the Business Information System (BIS, Database of the Ministry of Labor) based on a certain business field and district. These procedures are means to ensure that interviews are directed to the top businesses of the field. This ensures that the sample size of the interviews is big enough.

Launching the campaign

The management of the employment office chooses a campaign manager at the employment office. Employer services clerks and/or applicant services clerks, training unit clerks, international unit clerks and so on are chosen as interviewers. Civil servants from the TE-centers may also take part in carrying out the interviews.

A campaign manager follows the progress of the interviews on the ASKO system, contacts with businesses and the implementation of the interviews. The campaign manager hands out lists to the interviewers.

The register of all the companies in Finland stays in the ASKO system. When a campaign is shaped, every interviewed company is upraised from that register to a certain campaign.

- The themes for the ASKO-TKTT's interviews are:
- Changes in the use of workforce – increases/decreases by profession (3 classification levels)
- Recruiting problems (3 classification levels)
- Training requirements for professions and job assignments (3 classification levels)
- Changes in core professions and job content (3 classification levels)
- The age distribution and retirement rate of personnel
- Economic situation now and in one year
- Training needs and presentations to educational institutions
- Networking and sub-contracting needs and new business ideas
- Prospects for export

- Investment needs
- Need for premises
- Open comments
- (Plans for outsourcing)

Carrying out the interviews

Contacting the company

- Scheduling the interview
- Marketing the TKTT-interview, marketing material
- Etc.

Other possibilities for acquiring TKTT information (need for development) are:

- Contact by phone – interview form or a summary of it can be delivered in advance
- Web survey
- Use of a laptop
- Making contact via email
- The participants of educational institutions or the development centres of municipalities may conduct the interviews as well. In Southwest Finland, the interviews have been once outsourced to an educational institution.

Application (I)

The employment offices will response immediately after the interview if some kind of need has been found in the company. These needs may concern increasing or decreasing workforce, training needs, recruitment problems etc.

It is the responsibility of the TKTT interviewer to pass on the acute needs of the companies to the employment office.

Summary for the panel of experts

Once the results from the interviews have been compiled, they are outlined in a summary to be delivered to the panel of experts. The manager for the business field in question or other TE-center functionary will be responsible for drafting the summary. Since 2006, the summary has been outsourced to a private consultant company. Before that year the researcher of the TE-Centre wrote the summaries.

Meeting of the panel of experts and SWOT analysis

The organizer of the panel will be agreed upon at the result-based management meetings or in separate meetings. The employment office/TE-center selects the representatives for the panel from top companies in the industry, educational institutions, the TE-center business field team, the municipalities' development centers, projects etc. The organization (usually the employment office or a TE-center unit), to which the task has been assigned, then calls the panel to a meeting and makes the necessary arrangements for it.

The panel is organized within a month of the deadline for the interviews. The goal is to hold spring interviews before summer vacation and autumn interviews before the new year.

The agenda of the expert panel consists of the following themes:

- Problems and themes emerging from the interviews
- Megatrends and weak signals that affect the business of the sector
- SWOT-analysis
- Recommendations of action (founding, timing, responsibility etc.)

Panels may also convene more than once.

Delphi questionnaire

When the results of the expert panel are ready, they are sent back to the interviewed companies and the participants of the expert panel. Thus, the companies and panelists may give feedback about the SWOT-analysis and recommendations. They also rank these recommendations.

Reporting

The final report and a separate summary are printed and sent to the interviewed companies as well as to the members of the expert panels. Likewise, the report is delivered to TE-centers, government ministries, the development centers of provincial sub-regions, educational institutions, etc.

Information concerning the essential results is sent to the media. If necessary, a briefing about the interview results can be arranged. The report is published on the Internet on the regional (www.luotain.fi) webpage of the TE-Centre for Southwest Finland. Currently the reports are not published on a national webpage.

Application (II)

After the expert panels have convened, the results of the interviews and the panel's SWOT analysis are presented to the training unit of the TE-Centre.

TKTT interview results can be applied:

At employment offices

- in planning and obtaining local workforce training
- in identifying problem businesses
- in employment services (companies adding to their workforce and companies where recruiting is problematic)

- in location guidance and networking activities (sub-contracting needs, outsourcing, premises need)
- in employment office public relations and image-building

At the TE-center

- to plan and acquire regional and local adult training
- in business environment analyses, labour market analyses, in economic and business condition reviews, probe reports etc.
- in identifying new business potentials and outlines for innovation (new business ideas, outsourcing plans, networking and sub-contracting needs)
- in TE-center public relations
- in the business field teams (i.e. considering measures for development)
- in implementing strategy: in reducing recruitment difficulties such as ensuring the availability of labor, improving regional competitiveness and supporting skill development

In government ministries

- drafting regional economic reviews
- drafting business field reports

In companies

- evaluating the status of the company in a given business field

Evaluation

The effectiveness of the interviews can be monitored, for example, by the assignments received during the interview (vacant job positions, training positions, subsidized job positions, apprenticeship positions etc.). These can be monitored in the URA system. The so-called initiative will be monitored in the ASKO system.

Possible gauges for effectiveness can be:

- Workforce training which has been started
- Establishment of a job after workforce training
- Implementation of the measures proposed by the panel of experts
- Effectiveness of workforce training; unemployment rate three months after completing the training
- Market share of employment services (%)
- Assignments/initiatives (their percentage compared to the number of visits)
- HR assignments

During the years 2004-2008, about 1500 companies have been interviewed and 25 expert panels from 20 sectors organized. Over 300 experts from Southwest Finland have participated in the expert panels.

5.3. Occupational Barometer

The employment offices collect plenty of data, information and knowledge about the local labour market. During one year, over 40 000 vacancies are informed open in Southwest Finland. Employment offices are discussing daily with companies and job seekers. The market share of employment offices in Southwest Finland is about 60%. Thus the employment offices have the best understanding and knowledge about the need and function of the local labour market.

The employment offices of Southwest Finland answered the foloowing three questions 1) How will the demand for workforce develop during the next year?, 2) What is the balance between the supply and demand for the labour force? and 3) Is the shortage of workforce so severe that the growth of the sector is threatened? Thus the employment offices valuated about 200 occupations. The TE-Centre classified these 200 occupations into three categories a) lack of jobseekers, b) balance and c) the surplus of jobseekers.

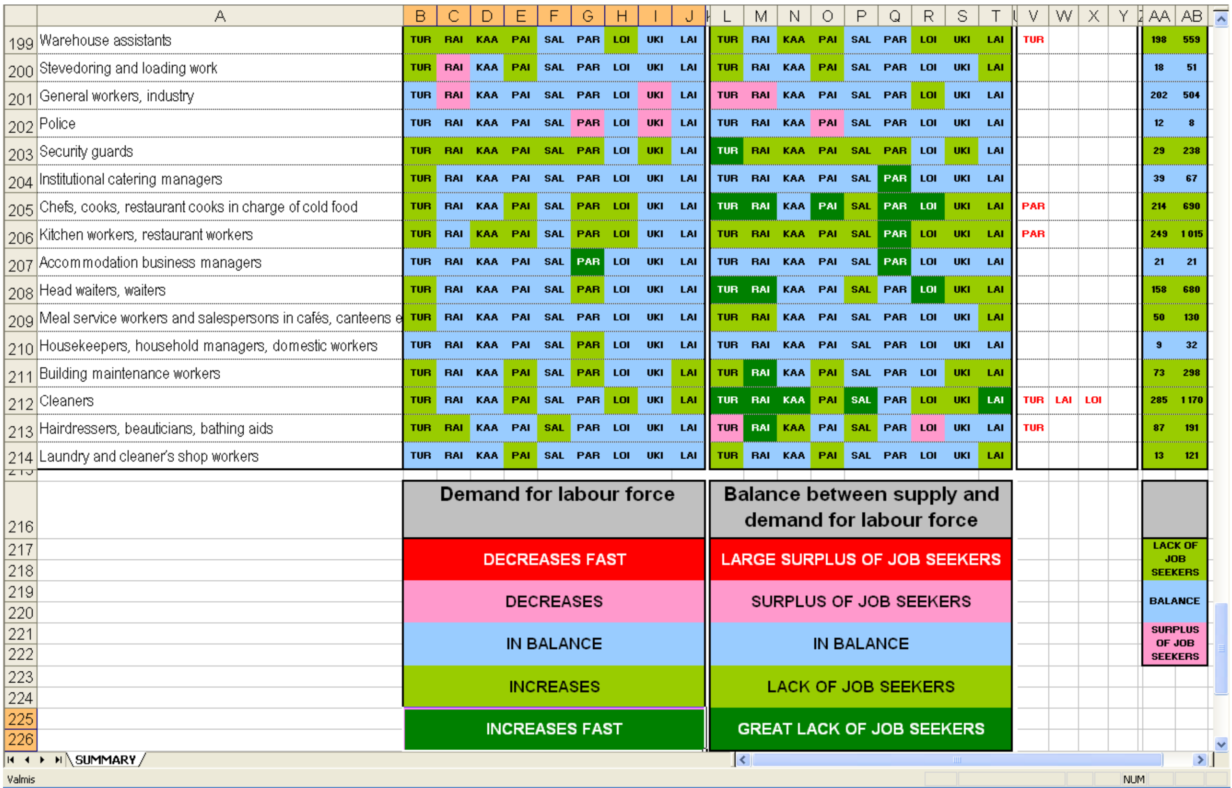

Figure 5.2 The Occupational barometers 2008–2009 in Southwest Finland.

In the final stage, the barometer is printed on posters in Finnish, Swedish and English. The occupation barometer is utilised in the employment service, planning of vocational training, matching of the demand and supply of the labour force, in the planning of immigration, in the anticipation of the local and regional labour market etc.

The barometer has been published for the first time in May 2008. The plan is that the situation in the local labour market will be valuated twice a year. The next time will be January 2009.

5.4. Challenges in Developing Regional Foresight in Finland

The largest challenges in the development of regional foresight in Finland are the co-ordination and co-operation between the national and regional levels. More and better cooperation is needed between regional and local actors, too. Perhaps the greatest challenges of the future are in the utilization of the results of the TKTT- process in the strategic planning and decision making.

6. LESSONS FROM THE REGIONS – THE FUTURREG PROJECT 2005–2007 AND INNOVATIVE APPLICATIONS OF FUTURES TOOLS ACROSS GOVERNMENTAL ORGANISATIONS, BUSINESS AND HIGHER EDUCATION

Gethin While

Centre for Research in Futures & Innovation (CRI-FI), Glamorgan Business School, University of Glamorgan, United Kingdom

6.1. Introduction

This paper will provide an examination and analysis of the relevant outputs of the EU FUTURREG Project's activities informing and transforming regional policies and development organisations through high quality futures tools and participatory processes with significant long-term impacts. The project began its work in July 2005, with a two and half year schedule of activities which formally ended in December 2007. Funded by INTERREG IIIC, an EU-funded Programme that helps Europe's regions form partnerships to work together on common projects, it shared knowledge and experience. These partnerships enabled the 7 regions involved to develop new solutions to economic, social and environmental challenges. This paper will detail the outputs of the project - a common Futures Toolkit, including scenarios, Delphi, Horizon Scanning, visioning and futures forecasting for use in all EU regions; increased use of futures tools in association with other Foresight approaches within the regional policy-making system and specific applications of the futures toolkit to regional development issues and problems; increased capacity and the use of Foresight by a wide spectrum of actors at regional level through a managed learning process. Specific case studies of real time applications of the FUTURREG futures toolkit within foresight exercises will be presented and analysed in depth at the Conference, with particular relevance to

- Innovation and Learning in Strategy and Policy Environments (Countryside Council for Wales, UK; Higher Education in Malta)
- Innovation, Research and Technology Sector-based work/clusters (Footwear Industry, La Rioja, Spain)

The FUTURREG: Futures for Regional Development project began its work in July 2005, and had its inaugural meeting in September 2005. It had a two and half year schedule of activities which formally ended with a concluding conference in Sligo, Ireland 8–9 October 2007 and termination of all sub-project work in December 2007[24]. It was funded by the INTERREG IIIC Programme, one of the three strands of the European Community Initiative INTERREG III designed to strengthen economic and social cohesion in the European Union by promoting interregional (strand C) co-operation. The programme specifically supported interregional co-operation between regional and other public authorities across the entire EU and adjacent countries, permitting regions without common borders to collaborate on projects and develop cooperative networks. Its overall objective was to improve the effectiveness of regional development policies and instruments through large-scale information exchange and sharing of experience (networks) in a structured way[25].

The FUTURREG project had three main objectives compliant with the cohesion and development goals of INTERREG III, namely:

(1) To develop a common futures toolkit, including scenarios, visioning and futures forecasting that could be used in all EU regions. This was to be done by pooling the knowledge and resources of the partners through inter-regional exchange. A sub-objective was to identify tools and processes that were appropriate for different regional uses;

(2) To increase the use of futures tools in association with other foresight approaches within the regional policy-making system. A sub-objective was to strengthen the futures capacity of the regions, using an inter-regional network approach. A further sub-objective was the facilitation of stronger linkages between different actors within the regional policy system (through regional networking), especially between public authorities and futures experts. Inter-regional futures workshops were to be used to meet the objective.

(3) To apply the futures toolkit to regional development issues and problems through real time applications of the futures toolkit within foresight exercises.[26]

The seven FUTURREG project partners saw it as a way of exchanging experiences acquired though the use of foresight, futures tools and techniques previously implemented in Innovative Actions and other regional development policies. The seven included governmental departments, centres for applied research and economic development bodies in their respective regions or small countries:

1. The Observatory of Innovation, Cardiff University Business School, Cardiff – Wales, UK (Lead Partner)
2. URENIO Research Unit , Aristotle University of Thessaloniki, Thessaloniki – Central Macedonia, Greece
3. The Destree Institute, Namur – Wallonia, Belgium
4. Economic Development Agency of La Rioja (ADER), Logroño – La Rioja, Spain
5. Malta Council for Science and Technology – Malta
6. Finland Futures Research Centre, Turku School of Economics and Business Administration, Turku – South-West Finland

24 www.interreg3c.net/sixcms/detail.php?id=8109

25 About INTERREG IIIC, www.interreg3c.net/sixcms/detail.php?id=310

26 www.futurreg.net/objectives.html

7. Midland and Western Regional Assembly, Ballaghadreen – Ireland [27]

They all had some or significant previous experience in futures or Foresight work to consolidate and share. Lead Partner Cardiff University, had an 8 year track record in interregional cooperation and Structural Funds financed operations notably the Wales Regional Technology Plan (DG Regio), InnoRegio[28] (with 5 other regions) and Foresight for Regional Development Network, FOREN (DG Research, FP 5)[29], with a large network of organisations to develop a Foresight guide and META-FORESIGHT (EU Regions of Knowledge)[30]. URENIO also had wide-ranging experience of inter-regional cooperation and Structural Funds projects in a similar set of trans-regional projects. The Destree Institute had also collaborated in META-FORESIGHT and the SPIDER project (EU Regions of Knowledge) concerned with increasing regional competitiveness through futures research methods[31]. ADER in La Rioja had carried out a number of EU projects, including FEBAT, FIDES, INNOVA, SME-TIC and CENEO-IRC. The Malta Council for Science and Technology had taken part in a range of co-operation projects including the ERA-NET ForSociety project (FP6) (a network for national Foresight Programme Managers) [32], eFORESEE (Exploring the use of Foresight for Policy Makers in the EU and Accession Countries, FP5) and the IPR-GUIDE (Innovation Project)[33]. The Finland Futures Research Centre is an internationally recognized locus of best practice and research in the role of futures and Foresight in regional development and had participated in a number of European projects with the other partners, notably SPIDER which it coordinated[34]. In Ireland, the development body known as The Border, Midland and Western Regional Assembly is responsible for the administration of Structural Funds operations in its eponymous region, covering approximately half the area of the country, and had recently carried out a regional Foresight exercise as part of the Regional Innovative Actions Programme[35]. All partners maintained close links with their respective regional authorities and a wide range of other regional stakeholders.

More specifically the project rationale posited that weaving futures capacity and understanding into regional development planning and practice would systemically benefit the European Union as a whole in the context of globalization of economics and trade, technological change, demographic changes and environmental pollution, and the drive towards greater sustainability of economic activity. It also observed that the employment and effective applicants of futures approaches was generally weak and underdeveloped in most European regions[36].

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27 www.futurreg.net/index

28 www.materlab.eu/content/view/121/72/lang,el/

29 www.istworld.org/ProjectDetails.aspx?ProjectId=6b0eb619fd694626abbef42053bb8917&SourceDatabaseId=9cd97ac2e51045e39c2ad6b86dce1ac2

30 www.urenio.org/metaforesight/

31 www.spider-project.net

32 www.eranet-forsociety.net

33 www.iprguide.com

34 www.tse.fi/EN/units/specialunits/ffrc

35 www.bmwassembly.ie/innovative_actions/background

36 The Futures Toolkit, page 3 (December 2008).

6.2. The FUTURREG Outputs

One of the chief outputs of the Project is a "regional futures toolkit" – The FUTURREG Futures Toolkit [37]. This document was modeled on other similar foresight/futures project reference handbooks deriving from other Innovative Actions Programmes and national initiatives – *inter alia* the FOREN Guide, the EFMN online foresight database and the UK Local Government Association Toolkit (2001) of which the partners had experience. It details the general rationale of futures use, institutional preparation for using futures, principles for launching a futures exercise, FAQs, a detailed bibliography and case study files. The Toolkit preamble states:

> *At a time when all of us in Europe are facing uncertainties about the future opportunities and challenges we need to find ways in which we do not have to rely on ad hoc policies created from imperfect knowledge and constrained thinking. Individuals, communities, businesses, organisations and public authorities often have to react to external events that may be caused by the effects of climate change, demographic shifts, the globalisation of trade and technological changes. These effects are unpredictable and potentially far-reaching, so reacting effectively and accurately requires at least an ability to understand, anticipate and deal with their potential impacts*[38] .

The Toolkit includes six specific futures tools, researched and described by the partners themselves in individual "tool reports" for specific regional application and relevance. These were:

1. Scenario Building
2. DELPHI
3. Visionary Management
4. Horizon Scanning
5. Trend Analysis
6. Futures Workshops

It contains guidance on appropriateness of future tools and approaches for use in particular sub-sectoral contexts, their combined or sole use and relevance to regional objectives, priorities or resources. This includes a step by step process guide outlined in the flow chart below. The narrow casting of the FUTURREG toolkit can be compared with much broader spectrum application resources such as the UK government' Foresight's Horizon Scanning Centre toolkit *Exploring the future: Tools for strategic thinking for anyone who uses, or would like to use, futures thinking and analysis to make better decisions today* (2008) which provides 24 basic future approaches and further sub-categories, phased stages and refinements of them[39].

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37 www.futurreg.net/toolkit

38 The Futures Toolkit, page 1.

39 www.foresight.gov.uk/HorizonScanningCentre

Detailed regional baselines and benchmarking were conducted in each regional territory, which included broad spectrum advocacy to relevant actors and stakeholders as part of the recruiting for the regional sub-applications to be conceived later in the project. Using standard indicators, the regions' positions and future progress were be described. Two inter-regional futures workshops with 30 "Futures Champions" selected from the respective regional authorities and stakeholders were held in the first year of the project:

1st Inter-regional Up–Skilling Futures Workshop (Turku, Finland 7 June 2006) promoted the use of futures thinking and tools in regional development, focused on methods and tools, and the epistemological and organisational principles of a Futures Toolkit.

2nd Inter-regional Futures Workshop (Liège, Wallonia11 October 2006) shared regional experiences from experts and from the incipient regional applications of the project. An Opportunity matrix for applications of regional futures toolkit was also circulated to workshop participants to help them determine the appropriateness of the 6 tools to the applications they were planning, a swell as a working version of the Futures Toolkit.

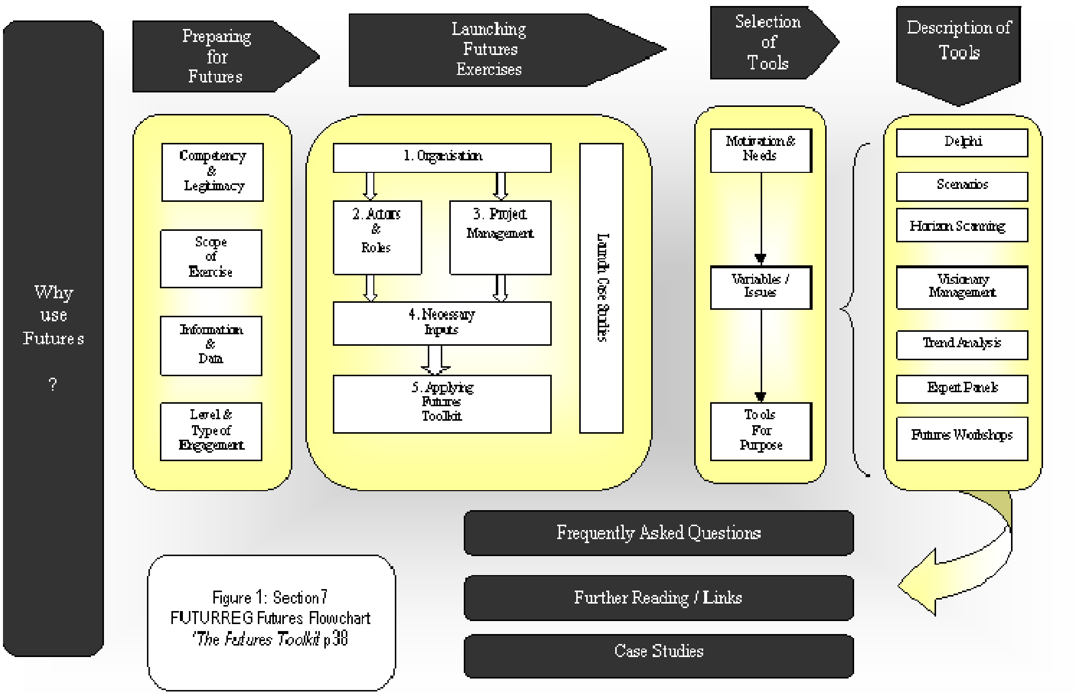

Figure 6.1 FUTURREG Futures Flowchart.

Subsequent to the 2nd workshop14 application regional applications of the FuturesToolkit were developed and launched under the three overarching thematic headings of

- Theme 1: Strategic Futures – Futures exercises undertaken for strategic/organisational development
- Theme 2: Futures in Places – Futures exercises undertaken with a territorial/spatial focus

- Theme 3: Sectoral Futures/Innovation Futures – Futures exercises addressing specific regional sectoral strengths or weaknesses, and the use of futures in developing innovation strategies.

By March 2007 the bulk of these FUTURREG Regional Futures application sub-projects had been described and were launched or were on the verge of launching:

1. Athlone Institute of Technology – Ireland

Main theme: Identification of key Higher Education Institution development changes required to impact on technology company start-up & clustering

Type of application: Development strategy/Organisational development

Type of tools used: Scenario Building, Horizon Scanning

2. Galway-Mayo Institute of Technology – Ireland

Main theme: Innovation in SMEs

Type of application: Product Development and Innovation Planning

Type of tools used: Scenario Building & Delphi Technique

3. Institute of Technology, Sligo – Ireland

Main theme: Higher Education

Type of application: Develop strategy

Type of tools used: Scenario planning, Delphi, brainstorming, brain writing, mind mapping

The development of the Institute's strategic plan used the tools in the initial phases so as to take a longer term perspective of the Institute's future growth and development. The Institute was keen to continue developing an understanding of foresight/futures approaches to longer term development as a way of getting greater staff engagement with the Institute and its development.

4. Aristotle University of Thessaloniki – Central Macedonia, Greece

Main theme: Innovation, new product development

Type of application: Strategy development towards technology and knowledge transferType of tools to be used: Trend Analysis

5. Municipality of Thermi – Central Macedonia, Greece

Main theme: Digital Research Centre: Digital Cities, e-government

Type of application: Regional policies, organisational restructure

Type of tools used: Scenario Building

6. Footwear Technology Centre of La Rioja – La Rioja, Spain

Main Theme: addressing specific regional sectoral strengths or weaknesses, and the use of futures in developing innovation strategies for the footwear industry in the region

Type of Application: specific regional sectoral strengths or weaknesses

Type of Tools to be used: Trends Analysis, Expert Panels.

7. Trends in the Regional Agri-Food Industry and Development of a Strategic Plan for the *Centre for Food Innovation & Technology* – La Rioja, Spain
Main theme: Sectoral Futures/ Innovation Futures
Type of Application: a futures exercise addressing specific regional sectoral strengths or weaknesses, and the use of futures in developing innovation strategies for the regional agri-food subsector
Type of tools used: Trends Analysis

8. Malta Enterprise – Malta
Main theme: Development of a regional/national innovation strategy
Objectives: to assist the RIS (Regional Innovation Strategy) project, entitled MARIS with the objective of developing an innovation strategy for the Maltese Islands (www.innovationmalta.com/maris/)
Type of tools used: Horizon Scanning, Scenario Building.

9. Higher and Further Education in collaboration with the Maltese National Higher Education Commission – Malta
Main theme: Strategic Futures – a futures exercise undertaken to improve strategic and organisational development
Objectives: promotion of more long-term futures and evidence-based approaches to governance, strategies, and policy development in the higher and further education in Malta capacities in higher and further education in Malta.
Type of tools used: Horizon Scanning

10. Loimaa Region Development Centre – South West Finland
Main theme: Economic development (to provide settings for new and versatile entrepreneurship in the region)
Type of application: Develop economic life of the Loimaa region (comprises 10 municipalities). The objective is to create networks and start up new joint projects among entrepreneurs.
Type of tools used: Horizon scanning, Futures Workshops (expert discussions and group work)

11. Regional Council of Satakunta – South West Finland
Main theme: Manage and carry responsibility for long-term regional development and planning work in Satakunta region; define the objectives of the long-term development, create a development strategy for the region, maintain it and revise it when necessary; provides guidelines for the member communities in various areas and certain aspects of land use.
Type of application: The activities of the cooperation address the foresight practices in relation to the preparation of a new Regional strategic plan for the Satakunta region.
Type of tools: Horizon /Environmental Scanning; Delphi; Scenario Building

12. Countryside Council for Wales – Wales, UK

Main theme: Conserving the natural environment and helping people to enjoy it and learn from it. A statutory advisor to the Welsh Assembly Government

Type of application: developing the organisation's strategic direction in the medium term

Type of tools used: Delphi; Workshops based around issues, trends, variables; Developing scenarios to underpin strategic planning

13. Menter a Busnes – Wales, UK

Main theme: Economic Development (economic value of the Welsh language)

Type of application: Company development and strategic contribution to policy framework and programme for action.

Type of tools used: Scenarios mainly (leading from visionary management, Delphi and workshops)

14. Molinay 2017 – Futures in an Urban Context – Wallonia, Belgium

Main theme: Futures in Places - Futures exercises undertaken with a territorial/spatial focus

Type of Application: a mobilising project for a post-industrial suburban area (a bottom-up approach) in order to support a regeneration process; to convince metropolitan authorities regarding necessary urgent and long term actions.

Type of tools used: Visionary Management, Futures Workshops[40]

A number of potential public sector participants notably in Wallonia and to a lesser degree in Malta in other sub-project applications declined to develop sub-projects beyond the initial consultancy and attendance at the 1st and 2nd Inter-Regional Futures workshops, citing reasons of corporate confidentiality and reluctance to publish internal strategic planning in the public domain. Only sub-project 2. did not complete within the project lifespan, although the actors involved participated in all the project training activities and the FUTURREG Final Conference.

[40] The Futures Toolkit p42 – also www.futurreg.net passim.

2: FUTURREG IOSTIC' MATRIX OF ATIONS, VARIABLES AND ;, *The Futures Toolkit* p17	Variables/ Issues				
	Engaging stakeholders	Assessing key external influences/ drivers for the organisation/region	Understanding current position and likely future path	Soliciting expert views	Networking and communication of key issues
Developing a new strategy in the region	**Scenario building Visionary management Futures workshop**	**Scenario building Trends analysis**	**Trends analysis**	**Delphi**	**Futures workshop**
Understand the impact of external influences on the organisation	**Delphi Futures workshop**	**Scenario building Futures workshop**		**Delphi Horizon scanning**	**Horizon scanning**
Help the region through a period of economic restructuring	**Visionary management Scenario building**	**Scenario building**	**Trends analysis**	**Delphi** Expert panel	
Decide in which science and technology areas/sectors to invest	**Scenario building Trends analysis**	**Scenario building**	**Trends analysis**	**Delphi** Multi Sector Qualitative Analysis	**Scenario building**
Generate widespread dialogue about the future of the region	**Visionary management Scenario building**		**Trends analysis**	**Delphi**	**Scenario building Visionary management**
Build organisational and regional capacity to deal with the future	**Scenario building**	**Horizon scanning Scenario building**		**Horizon scanning Delphi**	
Provide anticipatory intelligence for actors in the region	**Scenario building**	**Horizon scanning**	**Trends analysis**	**Horizon scanning Trends analysis Delphi**	
Challenge mindsets, shake off complacency	**Scenario building Futures**	**Trends analysis Futures workshop**			**Scenario building Futures workshop**

Figure 6.2 FUTURREG 'diagnostic' matrix of motivations, variables and tools.

6.3. Case Studies

To ascertain if the FUTURREG project was successful in increasing the use of futures tools in association with other Foresight approaches within the regional policy-making system and whether it did actually increase capacity and the use of Foresight by a wider spectrum of regional actors we shall examine 3 of its sub-project outputs listed above in further detail. These fall under two of the three thematic headings:

A. Innovation and Learning in Strategy and Policy Environments

i. Countryside Council for Wales – Wales, UK

ii.Higher and Further Education in collaboration with the National Higher Education Commission – Malta

B. Innovation, Research and Technology Sector-based work/clusters

i. Footwear Technology Centre of La Rioja – La Rioja, Spain

A.i. The Countryside Council for Wales, UK[41]

This was an exercise carried out in partnership with Cardiff University Business School over a duration of 18 months 2006–2007. Wales as a nation–region has benefited from the various manifestations of UK central government investment in the promotion and development of foresight since the early-mid 1990s largely focusing on industrial sectors and technologies (1st Foresight Programme). By the late 1990s–2000s these initiatives were addressing more complex socio-economic & environmental challenges e.g. *Mental Capital and Wellbeing* (DEFRA), *Tackling Obesities: Future Choices* (DEFRA)[42] and *Climate Change Scenarios* (UKCIP)[43]. The UK *Science and Innovation Investment Framework 2004–14* recognised the need to capture emergent issues and trends and led to the foundation of The Centre of Excellence in Horizon Scanning (Office of Science and Innovation) in London which was designed to input directly into cross-government priority-setting and strategy formation. After the Devolution Settlement of 1997–98 initiated by Labour the Scottish Parliament was the first to enter upon a more regionally specific relevant foresight programme with the Scottish Executive Futures Project 2007–2027 – "To ensuring all aspects of devolved government coordinate effectively to best position the country over this planning horizon"[44] which is still ongoing. Futures exercises specific to Wales on the other hand have been few and far between, possibly reflecting the relatively weaker executive arm of the Welsh Assembly compared to the Scottish Executive and the relative inexperience of the indigenous civil service and persisting reliance on and imitation of the UK central government lead.

In the later part of this decade however there has been a gradual increase in the use of futures to inform policy work – notably in the Welsh Assembly Government Report, *Futures: some trends, implications and uncertainties* (January 2007) – which provides a very broad and largely extrapolatory thematic focus on transport, technology, society, international migration, health and lifestyles, governance, environment, energy, economics and demography[45]. Other uses of futures tools can also be instanced in The Wales Tourist Board Scenarios (2004). Latterly Gwynedd County Council (2006) developed "Gwynedd Tomorrow", scenarios designed to help an area – one of the poorest in Wales – grappling with complex issues of how to reconcile the region's distinctive cultural and linguistic traditions with the needs economic development[46]. The now defunct Welsh Development Agency also undertook a Foresight exercise *The Future Technologies* Project (2002-2004) looked at the range of technologies likely impact on people's lives and businesses in the future including convergence, nanotechnology but focussed on a small number of core technologies assessing possible impacts on key sectors in Wales – both established and embryonic.

The Countryside Council for Wales (CCW) is the Welsh Assembly Government's (WAG) statutory advisor on sustaining natural beauty, wildlife and the opportunity for outdoor enjoyment in Wales and its inshore waters. In order to improve the quality and breadth of the preparations for its Corporate Plan

41 The Futures Toolkit, p. 49–54. Case study author: Gethin While.

42 www.foresight.gov.uk

43 www.ukcip.org.uk

44 www.scotland.gov.uk/Topics/Government/futures/introdufutures

45 new.wales.gov.uk/about/strategy/futures/?lang=en

46 www.gwyneddarycyd.org.uk/prwgwyneddarycyd/gcyd_dogfen.asp?cat=5072&doc=17837&Language=1

for the period 2008–2012, CCW decided to innovate and undertake a futures exercise introducing the concepts of futures and scenario planning to the organisation. Hitherto there had been little history of futures or Foresight practice at CCW, apart from a pilot exercise in 2005 to identify key policy drivers. CCW was required to submit a Corporate Plan to the Assembly during the autumn of 2007, the previous Plan having been submitted in July 2004 for the period 2005–08. On that occasion CCW was required to submit a Plan annually for a period of 3 years. Reporting requirements had since changed with CCW having to submit a Plan every four years broadly in line with the National Assembly of Wales' election cycle. The Plan would essentially be CCW's response to the new Assembly Government's strategic agenda, and the rigour and validity of foresight practiced methods was felt to be a critical element in giving it greater clarity and purpose at a time when WAG policy was increasingly tending to the abolition and absorption into central government departments of outlying agencies or Non-Departmental Government Bodies, such as CCW.

In early 2006, the consultancy Bute Communications completed a futures exercise for CCW that introduced the concept of futures and scenario planning to the organisation. Whilst the work was considered a useful exercise, it was suggested that the findings were biased towards 'policy' developments, resulting in an incomplete coverage of CCW's remit. It was felt, however, that the approach could be used to support the development of the next Corporate Plan. The subsequent fuller futures exercise in question was therefore focused on the Plan period, building on what was achieved previously, but developing scenarios and identifying key drivers relevant to CCW's whole remit to help develop a thorough understanding of how the environment in which it operates might change over the Corporate Plan period.

To this end a panel of experts was selected from CCW staff and its external stakeholders and took part in a Delphi process over two rounds of future scenario development. The second round enabled identification of the forthcoming issues and events of most interest or concern to the panel. A Futures Seminar was held to consider and to test the draft scenarios developed following the second round survey and to begin consideration of their impact on CCW's planning. The Seminar also stimulated work on identifying the key external drivers on which the development of the Corporate Plan should focus.

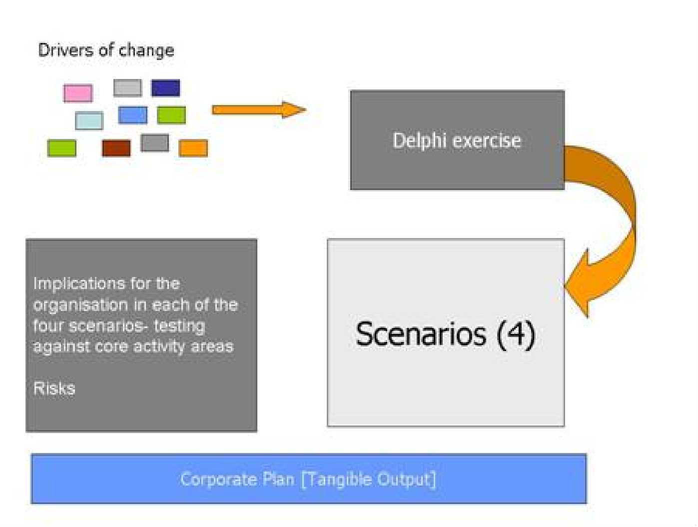

Figure 6.3 CCW Scenario Building Process.

Scenarios to inform CCW corporate planning emerged from analysis of the two rounds of questionnaires and the information gathered during the process. The two determining axial factors in CCW's future planning were those of **funding/resources** and **operating flexibility**. These themes emerged from the research and underpinned aspects of the decision-making and context for CCW's work in the next planning period.

The 4 resulting scenarios all paid particular attention to the nature of the relationships between CCW and its partner organisations, including other environmental organisations. The scenarios produced focused on the environment within which CCW must operate, whatever its priorities for work. They set the context for CCW's work and can be used to test and rehearse CCW's response to changes in the environment within which it operates, to ensure that the organisation has considered how best to achieve its objectives in each of these circumstances.

SCENARIO 1 – this operating environment would mean that CCW is well funded and has a high degree of autonomy in setting its own priorities

SCENARIO 2 – this represented a situation whereby CCW would be well resourced, but seen by central government as a tool to deliver its remit.

SCENARIO 3 – this represented a situation where CCW's budget would under pressure, but it would still possess a degree of autonomy.

SCENARIO 4 – this would be a challenging operating environment for CCW, in that there would be pressures on its budget and it would have little autonomy. It would be in the position of having to make hard choices on which priority areas of work to resource.

Each scenario was tested against four pen picture case studies, representing elements of work from across the breadth of CCW's remit.

The exercise was considered as useful by CCW senior managers, as a means to perceive a longer-term view and was successful in pulling together a repository of valuable information that was used in the construction of the Corporate Plan. The project also became a catalyst for other work within the organisation and the techniques used in this project were considered very apt for use in future policy work, such that it was intended that key policy staff would be trained in their practice and application. The work provided CCW with information about how its future is perceived by a number of internal and external stakeholders. The four scenarios attempt to synthesise these different views into a coherent and understandable form, whilst at the same time creating a context for debate on these futures.

Martin Parkinson, the Futures Sub-Project Leader at CCW noted that:

Using Futures techniques has allowed us to analyse the external environment in a more systematic way, both from the perspective of the environment we operate within and the external drivers that influence the way in which we will need to prioritise our resources and target our delivery. It has also given us a basis for carrying out our medium term planning in the context of longer term outcomes.

The resultant draft Strategic plan was submitted to the Welsh Assembly Government at the end of 2007 to early 2008[47]. In its final approved form it has yet to be released into the public domain although this is expected shortly[48].

A.ii. Higher and Further Education in collaboration with the National Higher Education Commission – Malta

In the FUTURREG Regional Appraisal Futures Skills and Experience Report for Malta, Lisa Pace of the MCST details the interrelationship between the regional context and previous forays into Foresight and futures work:

> *A small country like Malta can be seen to share such size-dependent and context-specific characteristics with a number of other small countries and regions in Europe. Malta can be taken to represent a microcosm that can be likened to that of a regional reality… Malta considered the use of foresight as a strategic and facilitating tool in its catch-up process, and especially as a means for addressing the challenge of dealing with changes in the economy and policy systems that accompanied European Accession in 2004, as well as integration in the European Research area. Foresight was regarded as offering more long-term systematic and participative approaches to RTDI policy formulation and implementation, capacity-building and in triggering a process of mutual learning*.

The first national foresight exercise for Malta was carried out as part of an EU FP5 STRATA Project - eFORESEE – which aimed at promoting the exchange of Foresight Relevant Experiences among Small Enlargement Economies with two other small partner countries namely Cyprus and Estonia. The exercise was mainly focussed on strengthening Malta's research, development and innovation capacity through the introduction of new visions, policies and programmes. It provided strategic input into the updating of the National RTDI Strategy for Malta by providing a more forward-looking approach to policy setting. It also flagged those sectors, research and policy areas which needed to be strengthened in order to support Malta's capacity in research and development, also through more effective use of the structural funds, and thus improve Malta's competitiveness and increase its participation in the EU's Framework Programmes. It thus served to capture the various strategic conversations on Malta's future which were ongoing at that time time, and to supply alternative feasible trajectories through consideration of the role and impacts of science, technology and innovation on the economy.

This sub-project was carried out in partnership between the Maltese National Commission for Higher Education and the Malta Council for Science and Technology, running January–November 2007 with a time horizon of 2028,

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47 The Countryside Council for Wales www.ccw.gov.uk

48 The Welsh Assembly Government wales.gov.uk/topics/environmentcountryside/?lang=en

to promote more long-term futures and evidence-based approaches to governance, strategies, and policy development in the higher and further education in Malta"[49] *given a self-admitted urgency on the part of HE and FE sectoral institutions to develop capacity using futures approaches and foresight tools in developing their strategies and thereby expand their skillets as part of a concerted effort to gear up the country for the knowledge-based society and the innovation-driven economy* [50].

The NCHE accepted the value and applicability of futures approaches in addressing these concerns with alacrity, especially with the longer term goal of developing a more thorough-going and vigorous national strategy.

The main objectives cited for the exercise were:

- To promote more long-term futures and evidence-based approaches to governance, strategies, and policy development in the higher and further education in Malta;
- To support institutions in the higher and further education sector in using futures approaches and foresight tools in developing their strategies;
- To encourage students to play a more proactive role in the higher and further education strategy process through enhanced awareness and use of futures approaches;
- To create a shared understanding of emerging trends and drivers of science-society and science popularisation futures;
- To share inter-regional experiences on futures methods and approaches for tackling future and emerging science-society challenges, namely gender, privatisation, lifelong learning;
- To define a framework for future-oriented higher and further education and science popularisation strategies using futures approaches.

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49 *The Futures Toolkit* pages 72–79. Case study author: Jennifer Cassingena Harper, MCST.

50 For the background re HE in Malta and the Bologna Process see www.eurydice.org/ressources/eurydice/pdf/085DN/085_MT_EN.pdf

Warm-up: a time-line for Gozo and GPSS 1977–2007	Goal: to heighten awareness of past change, and past watersheds/ transformations
Reversing the Negative	Goal: to move from worries to transformative goals.
Emerging Issues of change	Goal: heightening awareness of oncoming change.
Briefing on emerging issues	Goal: increasing awareness of emerging changes and implications.
Stakeholder / potential partner Identification	Goal: identifying network of support for positive change.
Sentence Completion	Goal: creating concrete goals for transformative change.
Strategy Working Groups	Goal: draft initial strategies for positive change.
Reviewing Strategies	Goal: to share brainstormed strategies, add more concrete details, understand how the strategies might work in concert.
Creating Change	Goals: to add more concrete details, resources, and allies to each strategy; to create a list of possible next steps; to commit to creating change.
Debrief; next steps; close.	Goals: to identify biggest opportunities within grasp, hazards to avoid and desired next steps.

Figure 6.4 Objectives of the exercise.

To kick-start this initiative, a training event for the development of futures skills in policy was organized at the end of July 2007 for key stakeholders in the higher education sector[51]. Those responsible for strategic policy development within higher and further education organizations were particularly targeted as it was expected that this training would benefit the development of the organisation's long-term strategic plan. As a result of the feedback from this event, three key groups of stakeholders were identified for follow-up action, namely educational institutions in Gozo (the second island), the vocational college (Malta College for Arts, Science and Technology) and student bodies.

The futures approaches used in this exercise were adapted to the needs and understandings of the different stakeholder groups. Three one-day futures workshops were organised for each stakeholder group adopting a similar approach creating shared awareness and understanding of emerging trends and drivers of change and their sectoral implications. The Gozo and MCAST workshops followed scenario-building approaches and produced superlative sentences describing the organisation's achievements by 2028. The student workshop focused on the development of a mini-vision for the HE sector.

This futures training and scenarios development workshop was aimed at the development of futures skills in policy. The event was well-attended by heads of institutions, deputy heads, members of governing bodies, and members of the NCHE and secretariat. Prestigious overseas

51 www.mcst.org.mt/news.aspx?nid=38

futures practitioners and trainers guided participants through a process of identifying key drivers, horizon scanning and scenarios developments. The activity provided a unique opportunity for participants to interact and share experiences as an excellent start towards developing a structured dialogue on an F&HE strategy for Malta.

Follow-up activities were planned post-FUTURREG in Gozo with the Ministry and education bodies, the Malta College for Arts, Science and Technology (MCAST) and the student bodies in 2008.The receptivity of the sector to the results of the futures exercises and the resultant impetus for policy-making with some urgency is revealed in prefacing remarks made by Education Minister Joseph F. X. Zahra

> *Malta is moving fast in its expansion of further and higher education, to meet the growing emands of both the labour market which is increasingly knowledge-based, and the aspirations of more students who decide to continue their studies after completion of compulsory education. Government's vision of developing Malta into an international centre of excellence in further and higher education by 2015 requires a modern regulatory environment that ensures growth and promotes high quality standards. To date university and further education is predominantly provided and funded by public institutions. However a private sector has been emerging over the past years, mainly in new areas of further and higher education where demand has been greater than the capacity of public institutions, or in particular niches were no provision was available. Foreign education institutions are also knocking on our doors with the intention of setting up centres or providing education programmes in Malta. These developments shall continue at an increasing pace.*[52]"

Innovation, Research and Technology Sector-based work/clusters
B.i. Technological Trends – Futures and the Region's Footwear Sector La Rioja, Spain
Regional Introduction

The autonomous community of La Rioja, although relatively small in size and population (c.260,000) ranks 20th among European regions in terms of the highest percentage of economic activity devoted to the industrial sector and enjoys one of the highest GDP and value exported ratios per capita in Spain. Small and medium enterprises (usually family businesses) predominate and economic activity concentrates largely on the lightweight metals industry, agro-food, shoe and furniture manufacturing, which are the main sources of income. The agro-food sector – largely linked to the wine trade - is particularly important. The application of regional policy on RDI is driven by the First R&D Plan for Rioja, structured around six management themes (General Progress in Knowledge; Education, Culture and Society; Health and Quality of Life; the Environment; Food Production; and Industrial Technology) and

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52 Page 5, A QUALITY ASSURANCE FRAMEWORK FOR FURTHER AND HIGHER EDUCATION IN MALTA: Report by the National Commission for Higher Education to the Minister of Education, Youth and Employment (December 2007)

two horizontal programmes (General Research Promotion Programme and the Horizontal Programme for Development and Technology Transfer). The Economic Development Agency of La Rioja (ADER) coordinates and supplies the relevant economic and institutional support for innovation in business plus acts as an intermediary between business and research institutions[53].

Table 6.1 *The preliminary FUTURREG Regional Appraisal Futures Skills and Experience in La Rioja by ADER demonstrated a very modest level of futures knowledge and application.*

	Level of expertise in region (1=None/very little; 2=Some; 3=Good)	Examples
Scenario Building	2	La Rioja Strategic Wine Plan 2005–2020 Territorial Strategy
Delphi	2	Territorial Strategy; Research on trends of technological innovation
Trend Analysis	2	Territorial Strategy; Coyuntura Económica de La Rioja
Horizon Scanning	1	
Visionary Management	2	La Rioja Competitiviness Plan territorial strategy

The subsequent exercise was conducted in partnership between ADER, the Regional Development Agency[54], the Footwear Technology Centre of La Rioja (Centro Tecnológico del Calzado de La Rioja, CTCR)[55] and the Fundación OPTI (OPTI Foundation)[56] from June 2006 to November 2007 at a budget of €53,000 and a Time Horizon of 2011–2020[57].

The sub-project was intended by the regional partners as a stimulus for the different parties involved informing footwear professionals of technological and organisational trends likely to impact on their sector in the near future over a period of ten to fifteen years. The region's footwear industry is vulnerable to the rapid acceleration in technological developments, market liberalisation and the new EU accession countries plus competition from non-EU countries with significantly lower production costs. It will also have to grapple with the effects of globalisation, restructuring its activities as well as taking advantage of new business opportunities presented by this novel economic model. This will necessarily entail complex

53 Innovating Regions in Europe (IRE) www.innovatingegions.org/network/whoswho/regions_search.cfm?region_id=85

54 www.ader.es

55 www.ctcr.es

56 www.opti.org

57 The FuturesToolkit pages 69–73. Case study author: José Ramón Ibáñez Prado.

organisational changes and the restructuring and modernisation of production processes to maintain international competitiveness plus attendant improvements in innovation, design and quality[58].

The exercise had the following objectives:

- To identify the future trends that will influence the technological and industrial development of the footwear sector in La Rioja in the coming years.
- To identify innovation needs and related critical technologies.
- To define future strategies and frameworks most appropriate for the region and select those most promising as foci for efforts and investment.
- To provide a useful consultation tool for decision makers in the context of R&D policy.
- To supply support for sectoral business planning of the sector, aiding the definition of paths of action based on the scientific and technological documentation thereby adduced.

The exercise was methodologically phased as follows:

a) *Documentary synthesis*

Analysis of recent trends and studies at a national, European and international level, technologies currently in use, the main economic indicators for the sector, and scientific/technological and management questions considered of key importance for the future of the sector.

b) *Panel of Experts*

An 8 member Panel of Experts selected from regional industry, technological centres, the Public Authorities and the Universities, of diverse professional backgrounds of its members.

c) *Questionnaire*

A questionnaire containing 25 hypotheses for the future identified by the Panel, in a standardised format crossed with a row of variables, about which the sample population was asked to give their opinion.

d) *Analysis of survey results*[59]

e) *Conclusions and drafting of the final report.*

Model, Product Development and New Technology. It made 14 specifc recommendations for action such as strengthening integrated digital platforms, creation of a business portal for the sector, alliances between footwear production companies and companies that supply technological solutions and Reverse Engineering – as well as more conventional training solutions. It also

[58] Observatorio del Sector Calzado: Identificación y Vigilancia mundial de Información Estratégica Crítica Para PYMES Riojanas (2006)

[59] SABI (Sistemas de Análisis de Balances Ibérico) Base de datos: sabi.bvdep.com

identified Key Technologies from the top 10 hypotheses the experts ranked as critical e.g. management and integration of information on a base provided by digital platforms; implementation of digital tools – hardware for rapid prototyping; development of sector-specific tools for technical design and simulation in products and processes and the creation of systems that can reproduce the morphometric characteristics of the foot, using 3D vision techniques etc.

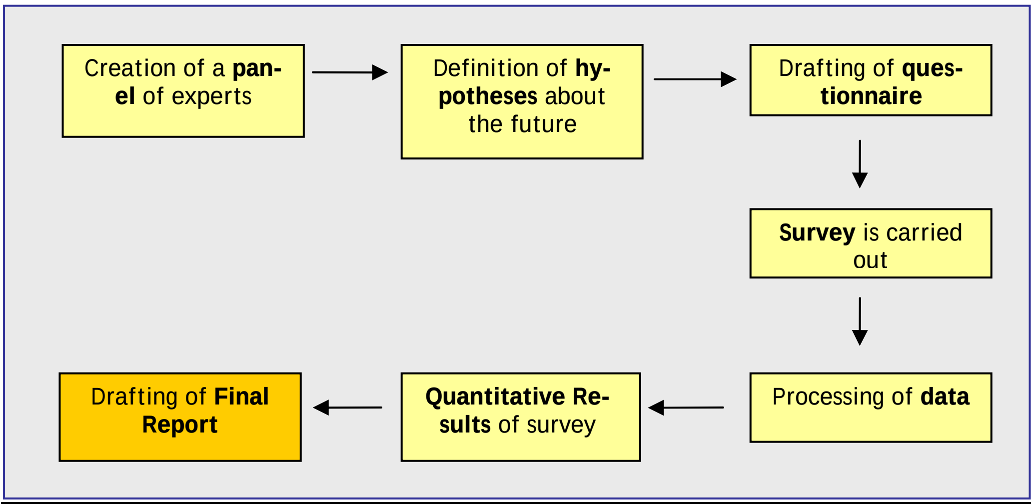

Figure 6.4 Diagram of Futures Exercise Process – La Rioja Footware Industry.

6.4 Conclusions

The main conclusion to be drawn from these three case studies is that the application of futures is frequently coincident with actual or perceived systemic or contextual crises impacting on regional institutional actors:

- Wales – institutional extinction and absorption, cessation of central government funding
- La Rioja – extinction of industrial base due to inability to combat impacts of rampant globalisation
- Malta – stagnation and erosion of the national skills base leading to loss of competitive advantage, and fast-evolving sector of higher and further education, representing a very wide range of diverse interests and needs

Supplement perceived failures of conventional strategic planning

In all 3 conventional planning was deemed too short-term and un-dynamic to meet critical needs on its own. Also the three cases demonstrated the crucial receptivity and preparedness of the respective internal corporate cultures for change in approach, and the availability of the broader spectrum of stakeholders best placed to advise on and support the development of long-term strategies. The insights and lessons learnt from these workshops highlight the fact that foresight exercises are vital tools to support the strategic development process for the following reasons, by allowing stakeholders an opportunity to form or revise and voice openly their opinions; jointly review current pathways emerging from past decisions and actions and ways of escaping future lock-ins; prioritising key challenges and next steps for joint action and creating space for institutional capacity to absorb and embed the futures approaches employed for longer term – and more systemic – application.

Human Capital and Technique Cascade

In the 3 regions under consideration the presence of a core cadre of 3–4 individuals proficient in the new futures approaches was critical for networking them internally and externally, permitted real transformation and the extension of the use and capacity building. Although the 3 examples targeted use of the futures tools for a top-down planning and decision making architecture, the futures approaches were sufficiently embedded though the processes employed for subsequent combined bottom-up and top-down application to be practicable and profitable post-introduction.

Bigger Pictures

The extent of use of futures and their scalability in the regional context is directly related to the capacity and use of futures at the larger national/supra-regional level. CCW in Wales drew on the depth of UK practice to undertake a multi-layered multi-level route, and Malta's futures tradition draws intimately and directly on UK government and other major nation-state policy making practice. Conversely La Rioja developed more modest capacity from a much lower regional knowledge base and with less input from national level policy making centres.

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TURUN KAUPPAKORKEAKOULU
Turku School of Economics

FINLAND FUTURES RESEARCH CENTRE