

Universities as Channels for Structural Fund Interventions Aiming to SME Growth – A Case Study from Finnish and Romanian Regions

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Abstract

Currently universities are acting as eminent channels for structural fund interventions in EU-countries. This paper studies the experiences of regional universities in a long-standing EU-country (Finland) and in a recently joining EU country (Romania). Results are based on expert interviews using the A'WOT-method. The results suggest that universities must have an appropriate understanding of the real development needs of SMEs and the region, including a good understanding about the ideas behind the regional development policies and structural fund programmes. This understanding cannot be established without strategic partnerships. By combining these two perspectives, universities should take a proactive role in the development of regional economies. This means a transformation from a follower into a co-explorer of future opportunities hand in hand with local enterprises.

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1. Introduction

The SMEs' importance in the development of regional economies has been recognized in all of the main EU development policy documents, e.g. the Lisbon Strategy. Drawing on this, the Structural Funds (ERDF, ESF) have invested vast sums to enhance the functional environment of SMEs by building infrastructure and improving skills of the workforce. The last enlargement of the EU, with the ascension of Romania and Bulgaria, has made the Structural Fund resources available to newly joined countries. However the project experience has only recently started accumulating and the participation of beneficiaries (SMEs in this case) to the planning processes is quite new.

The article aims at charting possibilities of knowledge transfer between old, more advanced EU member states and new member states in the field of SME targeted innovation support services. This article has a specific focus on universities as a regional channel for Structural Funds interventions. It is underlining the introverted capabilities of universities in absorbing, transferring and adjusting concepts and models of regional development from outside the region. By these actions, the Universities are also supplementing their basic role in Triple helix, university-industry-government relations, and providing catalysts for the innovation environment (Leydesdorff 2006).

The evidence shows that universities contribute to local innovation processes in a variety of ways (Lester and Sotarauta 2007). Typically the university's most important contribution is education with a major focus on technology transfer. Many universities are seeking to exploit their laboratory discoveries by patenting and licensing intellectual property to local firms. Technology and science based knowledge centres and regional clusters are some examples (Porter 1991; Feldman, Francis and Bercovitz 2005).

In addition to their own discoveries, universities can help attract new people, knowledge, and financial resources from elsewhere. They can help to adapt knowledge originating elsewhere to local conditions. This is growing even more important as globalization has moved into the third metanational phase (Doz, Santos and Williamson 2001), which means knowledge hunting from global sources for enterprises. Mode2 (Nowotny, Scott and Gibbons 2004) as a model of knowledge formation emphasises the multidisciplinary approach and knowledge transfer by unofficial ways during the ongoing research. The challenges for universities and the regional innovation environment arising from too little geographical proximity are real but solvable by effective coordination (Boschma 2005). The traditional technology and science based "waterfall" model has been challenged by practical based and demand driven models (Cooke et al. 1997; Harmaakorpi, Hermans, Uotila, 2008)

In Finland the Universities have had a strong role in regional development. Especially after the founding of the Universities of Applied Sciences with an obligation of regional development in the mid-90s, the higher education institutions have acquired a pertinent role as the facilitators between research and business; as well as incubators of new ideas and businesses. The challenge still remains to pay more regard to SMEs' needs and enhancing services, yet the successful projects indicate that the direction is right at the general level. In the Ylä-Savo region, the University of Applied Sciences has been directing approximately one third of its functional capacity (based on its budget) into Structural Fund interventions.

There has been a strong tendency in the regional innovation system to aim at strong and durable partnerships, which has led to positive effects, such as transparency of strategic planning and wide participation of beneficiaries in the planning process (Harmaakorpi, Hermans, Uotila, 2008).

In Romania the most important objective of the Universities is the education of the upcoming generation and its specialization in various fields of activity. The goals of the university in this direction are: to boost the cross-border economic development process by increasing the amount of entrepreneurs who are establishing cross-border start-ups; to upgrade human resources by enhancing the number of cross-border start-up entrepreneurs with viable business plans and by training local trainers. In the University of Suceava there are some projects that help to promote entrepreneurship projects outside the formal school activities as an educational leisure and learning activity for young people. Those projects are a precursor for the establishment of business incubators in the region. With those projects crucial insights will be gained in the need, willingness and possibilities for the establishment of business incubators in the cross-border region in the coming years.

The regional similarities between the Ylä-Savo region in Finland and the Suceava region in Romania make the case comparisons prolific and credible. The cluster structures of both regions resemble each other, consisting of forestry, metal and agrifood mini-clusters. Regions also share the fact that both are situated remotely from their national centre areas. The business structure in the Suceava region is the same, mainly SMEs in wood, food and service industries.

In this study we have evaluated and compared two different cases of universities in regional innovation systems (RIS), one located in the north of Romania, in the Bucovina area and the other in the Ylä-Savo region, in the middle of Finland. The main focus has been on how the universities could contribute to Structural Fund interventions. Special emphasis has been placed on how the lessons learned in the Finnish RIS could be utilised in the university channelled regional development in the Romanian functional environment. The research consists of two case analyses and stakeholder interviews in both countries.

As a result, this study produces a general understanding of applicability/transferability of an old EU member state's programming experiences as a toolkit for a new EU member country in the context of Finland and Romania.

2. Methods

A'WOT-method

Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is a commonly used tool for analysing both internal and external environments and it is a systematic approach that provides support for a decision-making situation (e.g. Kotler 1988; Wheelen & Hunger 1995). The most important internal and external factors for the future are summarised in the SWOT analysis. When used properly SWOT can provide a good basis for strategy analysis and formulation. However, SWOT could be used more efficiently than the case has been normally (McDonald 1993). SWOT analysis cannot appraise the strategic decision-making situation comprehensively. Often it only pinpoints the factors in the analysis and individual factors are usually described briefly and very generally (Hill & Westbrook 1997). Furthermore, SWOT does not provide means for analytically determining the importance of the factors or to assess decision-making alternatives according to the factors. The use of SWOT alone is based mainly on the qualitative analysis made in the planning process, and on the capabilities and expertise of the persons participating in the process. In fact the result of a SWOT analysis is often only a listing or an incomplete qualitative examination of internal and external factors. SWOT also lacks the means to integrate the operational environmental analysis into the value

analysis. In this study, we show how some of the weaknesses of SWOT analysis can be avoided, and how it can be elaborated upon in order to provide more comprehensive support for analysis. This approach is applied to the question of universities as channels for structural fund interventions aiming at SME growth in the two case areas. The A'WOT hybrid method (Kajanus et al. 2008; Nästase & Kajanus 2008; Kurttila, Pesonen, Kangas, & Kajanus 2000; Pesonen 2001; Pesonen, Ahola, Kurttila, Kajanus, & Kangas 2001a; Pesonen, Kurttila, Kangas, Kajanus, & Heinonen 2001b) as a specific method for analysing strategic decision situations was used in this analysis.

The most important internal and external factors are summarised within the SWOT analysis. In the A'WOT method (Kurttila et al. 2000; Pesonen et al. 2001a, b), SWOT analysis is made more analytical by giving numerical rates to the SWOT factors as well as to the four SWOT groups. In the standard version, this is carried out by integrating the Analytic Hierarchy Process (AHP) (Saaty 1980) and its eigenvalue calculation technique with SWOT analysis. The hybrid method improves the quantitative information basis of strategic planning processes. The use of AHP with SWOT yields analytically determined priorities for the factors included in SWOT analysis and makes them commensurable. In addition, decision alternatives can be evaluated with respect to each SWOT factor (Pesonen et al. 2001b). Thus, SWOT provides a basic frame within which to perform an analysis of the decision situation, and the AHP assists in carrying out SWOT more analytically and thoroughly so that alternative strategic decisions can be prioritised. Other decision support techniques can be applied for the same purpose in place of the AHP. In this study, the AHP was replaced by the Simple Multi-Attribute Rating Technique (SMART) method (Edwards 1971). SMART is based on the multiattribute utility theory (MAUT). Compared to the AHP, SMART is simpler to use, and makes comparisons of the importance of decision criteria and evaluations of the decision alternatives more straightforward. Therefore SMART is suitable for situations where, for example, there is a large number of criteria or decision alternatives and the persons defining the priorities are not able or willing to perform numerous and sometimes difficult pairwise comparisons. SMART techniques have been applied by Reynolds (2001), among others. Different variations of SMART have been developed (see von Winterfeldt & Edwards 1986). In fact, nowadays SMART consists of a family of different techniques and modifications (SMART/SWING). However, common to all SMART/SWING techniques is their reliance on direct numerical rating methods. In this study, the version of SMART/SWING used was the one where a fixed number of points (100) were allocated to decision elements compared at a particular time. For example, 100 points were allocated to the SWOT factors within a SWOT group, to indicate the relative mutual importance of the factors. The hybrid method A'WOT along with the SMART/SWING technique proceeds as follows:

- (i) SWOT analysis is carried out. The relevant factors of the external and internal environment are identified and included in the SWOT analysis.
- (ii) The mutual importance of the SWOT factors is determined separately within each SWOT group. When the SMART/SWING method and its simple rating version are applied, the importance of the SWOT factors is defined as follows: one hundred points are given to the most important SWOT factor inside the examined SWOT group and the importance of every other SWOT factor is determined in relation to the most important factor. For example, if the factor is considered to be half as important as the most important one, then fifty points are given to it.
- (iii) The mutual importance of the SWOT groups is determined as follows: the most important strength, the most important weakness, the most important opportunity and the most

important threat is compared with each other. One hundred points are given to the most important one and the importance of other factors is determined in relation to the most important one.

- (iv) Finally the individual SWOT factors within each SWOT group are scaled according to these priority values.

Interviews in Romania and Finland

In Romania, four experts from the Suceava region (one from a local business, one University staff member, one from the North-East Regional Development Agency and one from the Consulting Group Company) were interviewed for the A'WOT analysis in a two hour meeting based on the point of view "University's role in Structural Fund interventions."

In Finland, four experts from Eastern Finland were interviewed separately for the A'WOT analysis. The expert group consisted of one Private Enterprise consultant, one Private EU-Project Evaluation and Planning Consultant, one structural fund co-ordinator from State Provincial Office of Eastern Finland and one Head of Development of the University of Applied Sciences.

In addition, in both cases the interviewed experts weighed SWOT factors individually. These weights were aggregated by calculating averages. These average weights were used in the analysis.

3. Case Regions

3.1. Ylä-Savo

Location and population

The Ylä-Savo region is situated in the middle of Finland ca 500 km north of Helsinki. 22,000 of the total 60,000 inhabitants are living at the regional centre, the city of Iisalmi, and the rest of the population is scattered in a multitude of small settlements around the region. The distance to the nearest airport from the regional centre, Iisalmi, is 85 km. The population is ageing rapidly, primarily due to the strong migration to Sweden and core areas of Finland from the 1960s to 1980s. The sufficiency of feasible workforce is already a bottleneck for the growth of local enterprises.

Business and livelihood

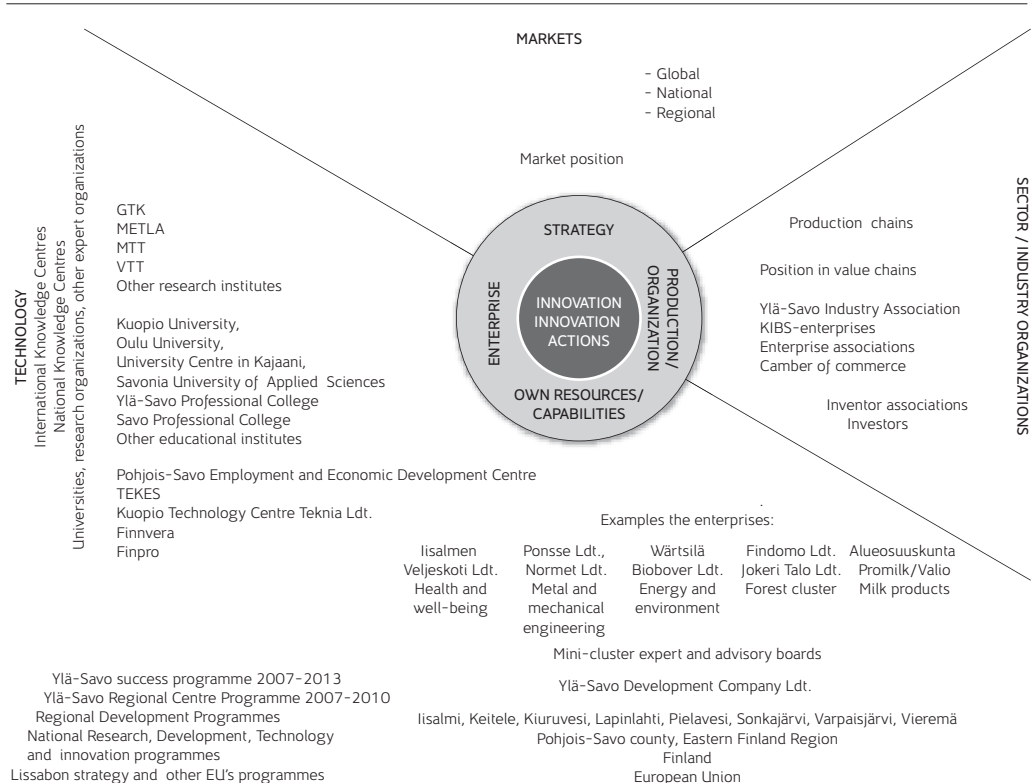
The most important private employers are working in (1) metal- and machine building industries, (2) business, catering and tourism services and (3) agriculture and forestry sectors. Ylä-Savo is famous for its special vehicles such as the Ponsse forest harvesters and the Normet mining vehicles. Situated in the Finnish "cattle belt", there is a strong and progressive milk and meat production focus in the agriculture and the previous 10 years have seen a huge development in agriculture as the number of farmsteads has halved yet the production has increased (Kanala et al. 2008).

Higher education

The Savonia University of Applied Sciences is the only established provider of higher education in the Ylä-Savo region. Founded in 1995 to provide higher education and to contribute to regional development, Savonia has consolidated its role in the region. In the framework of traditional education programmes provided, the variety has been rather limited due to the

scarcity of young people in the area, and hence the supply of potential new students. However, the absence of research and education in some vital sectors has been resolved partially by the introduction of a “provincial university” model. The model serves the Ylä-Savo’s diverse innovation environment (see Table 2). The nucleus of the model is to make the services and knowledge of traditional universities attainable for the enterprises and in the area. This is necessary because the nearest traditional universities are located at Kuopio (85 km), Joensuu (210 km) and Oulu (200 km). Additionally, more specified technological competencies are available as far away as Tampere (400 km) and Lappeenranta (450 km).

Figure 1. Ylä-Savo Enterprise Centred Environment



Source: Authors' illustration

Regional development needs

The regional challenges can be inducted from regional characteristics. Due to the distorted regional age structure the demand for labour will be higher than the regional provision in a few years. As a signal, the regional unemployment has halved in recent years. The strong ageing process in the population is also affecting the local entrepreneurs and therefore the need for generational change is evident. At the same time, new entrepreneurs are needed to renew the vitality of the regional economy. New lucrative business models, products and services are naturally needed also. The distances to the centres of excellence are an obstacle to transfer knowledge, utilise expertise and receive feedback for the new ideas to enable better innovation

development. Commercialization at the other end of the renewal processes is still a challenge – how to create successful and lucrative products and services. As a crosscutting issue, there is need to promote the full utilisation of information communication technology (ICT) in traditional sectors, especially concerning SME category enterprises (Jääskeläinen 2008; Kajanus-Somerkoski 2007).

Structural fund interventions

Ylä-Savo is currently a part of a convergence objective area and held the status 1 objective in the last programming period between 2000 and 2006. The status is given to regions whose GDP per capita is lower than 75% of the EU average and it aims to accelerate their economic development. Due to this status structural funds invested 18M€ in regional development projects in the Ylä-Savo region in 2000-2005. The money was channelled to projects focusing on different themes and clusters, mainly in the development of the food chain, tourism, metal and machine-building industry and ICT clusters. These projects operated by creating educational models, developing business activities and networks (Tuomela & Nikula 2007).

Savonia was acting as a coordinator or as a partner in most of the structural funded projects in 2000-2006. This, in addition to previous experiences, resulted in a few extremely successful projects, of which the most relevant concerning the role of universities in developing the local economy are brought up here. Thematically, these projects involved the development of the innovation environment and the provincial higher education model, entrepreneurship education and promotion of e-business for SMEs.

3.2. Suceava

Location and population

Suceava County is situated in the north-eastern part of Romania, at the Ukrainian border. Suceava County covers 8,553 km², with slightly more than 700,000 inhabitants living in 16 towns of the county (43%) and in the surrounding rural areas (57%). Suceava town alone concentrates 120,000 inhabitants. The number of employed persons is 250,900, with the unemployment rate decreasing over the last three years, today it is at 4.4%. Half of the population is employed in the primary sector – agriculture and forestry, another 18% in industry and 13% in services.

Business and livelihood

The main industries in Suceava County are the wood-based industries, the foodstuffs industry, and the machinery producers. Most of the industries are located around Suceava town, in an industrial park area. Tourism is not a main contributor to the local economy, although Suceava region has a significant tourism potential due to the forested landscape, rural area traditions and mostly its centuries old, well-known monasteries. Suceava county is presently recovering from a over a decade long economic recession. In 2000, the North-eastern region, where Suceava is located, was one of the poorest in the country.

Higher education

The University Stefan cel Mare is one of the most important institutions in the higher educational field in the north-east of Romania. The university is offering a modern educational curriculum, following the example of modern universities of Europe, at the same time keeping its own traditions.

The University Stefan cel Mare is a public institution educating in total 12,000 students in nine faculties, with a total number of 315 staff, teachers and researchers (2007). The main contributions of the University in the local context are to be located in: research activities; educating a skilled labour force for local industries -namely forest industry, food industry, machines and equipment; improving education and continuous education for practitioners, managers - namely in tourism-related issues, forest investment, construction; and partnerships with different institutions and firms.

Regional development needs

Romania is the largest country in Eastern Europe, and is poised to enter the European Union. Accession to the EU was accompanied by significant investments to support regional and rural development objectives, and there is a tremendous opportunity to realize the expectations of large segments of the population: improved rural livelihoods, economic and social revitalization of lagging regions, and increasing competitiveness with comparable regions of Europe.

Structural fund interventions

During the programming period 2007-2013, Romania and especially the North East of the country will benefit significantly from structural and rural development funds, and will receive about 17 billion Euros from Structural Funds (including 11.143 billion for convergence) and approximately 8 billion Euros from agricultural and rural development funds. These resources offer the financial means to address critical and strategic local needs, but also pose significant challenges in terms of absorption capacity, effectiveness and efficiency of expenditures. Strategic thinking, selectivity and synergies between operational programmes, especially territorial aspects of regional and rural developments are important to maximize the impact and absorption of EU funds.

The University Stefan cel Mare of Suceava plays a major role in delivering European Structural Funds Programmes and has led or participated in over 80 projects. The University, through the Faculty of Economics and Public Administration, has initiated many projects financed by the EU or by the Ministry of Research and Education aiming to SME growth.

Table 1. Previous Key-projects in Suceava Region

Project	Period
Developing and implementation of the entrepreneurial behaviour of the students and graduate students from the Bucovina area in a market economy development context	2004 - 2006
CENTROS – Counselling Centre for the unemployed	2006
European Curriculum for Methodological Forming in Environmental Education	2006 - 2007
Developing of skills and competences for trainers in the field of formal and informal entrepreneurship training programmes for the local community	2006
INNO-TOOLS Enterprise level Inno-tools – Innovation tool-box in European peripheral areas	2007 - 2008

Source: Suceava Region data

Important projects related to the Structural Fund are the two projects financed through the Phare CBC Cross Border. The VISEC (Virtual Incubation of Student Entrepreneurs Cross Border) project will help to enable the border region between Romania and Ukraine to consider

promoting entrepreneurship projects outside of formal school activity, as an educational leisure and learning activity for young people. The VISEC project is a precursor for the establishment of business incubators in the region. With the VISEC project crucial insights will be gained in the need, willingness and possibilities for the establishment of business incubators in the cross-border region in the coming years. The primary target group of the VISEC project is young people from universities and schools of higher education that are finishing or just finished their studies. The secondary target group of the VISEC project is SMEs who are looking for strong cross-border growth opportunities.

Another project – TESCA (Tourism Entrepreneurship in Suceava and Chernivtsy Area) project is a human resource development project and will contribute to a steady upgrade of entrepreneurial skills and sustainable business cross-border cooperation in the tourism field. Common interests of the partners are: to develop an endogenous capacity to train, develop and coach local entrepreneurs; to show that common activities can have direct economic and social benefits through tourism development; to demonstrate the capacities of the involved institutions to obtain similar results in other regions; to adopt an entrepreneurship development method which is both efficient and effective; to increase the number of local/international high-tech companies in the tourism field.

4. Results

It seems (Figure 2) that the major difference between the cases was that the Finnish experts are putting more emphasis on external factors (opportunities & threats) while the Romanian experts are stressing the internal factors (strengths and weaknesses). This is probably due to the different business environments of Finland and Romania. In Romania, the SMEs focus of business is on domestic markets while their Finnish equivalents have established themselves in global value chains. This naturally is reflected in the objectives of universities as regional actors.

Figure 2. AWOT-result Comparison between Suceava, Romania and Ylä-Savo, Finland



Source: Authors' illustration

In Romania the major threats are related with basic economic factors; such as, workforce (brain drain), breaching of the intellectual property rights (piracy) and lack of investment in innovation (scarcity of R&D funding). In Finland the threats arise from quality/quantity of

University's activities (t8 lack of effectiveness analysis, t14 failures in cooperation with other educational organisations, t9 eroding critical mass) and problems with relations to businesses such as enterprises getting used to free services by public funding (t2).

In regards to opportunities, the Finnish results seem to be "negative" in relation to threats: there is a strong emphasis on opportunities of securing the enterprise relations (o12), implementing corporate demand driven projects (o10, o18) and using the accumulated international expertise and networks (o5). The Romanian results, on the other hand, point out the relevance of EU membership, policies and programmes for local R&D&I (EU membership o1, 7FPO o2, EU border region status o8) as well as the importance of locations and infrastructure for regional development (position o8, airport o7, business environment o4).

Views on strengths seem to differ as well, as the Romanian experts are emphasising the role of university centres armed with strategic business development competences and research infrastructure of good quality (s2 and s2), availability of capable RDI & IT human resources in the area (s1), as well as vital traditional sectors with a development potential (s4). The issues the Finnish experts are bringing up are more linked with the university performance and activities: knowledge on regional development (s2), demand driven nature of the projects (s1) and amalgamation of R&D in university activities. Flexibility (s6), strategic partnerships (s3) and international competencies (s6) are also pointed out as strengths of Savonia.

The Finnish interviews reveal the major weaknesses to be internal; the internal communication and R&D maturity between units and faculties (w4, w1) and the changeability of personnel (w3). In the perspective of the regional innovation environment the latter can be seen also as a strength, yet the experts did not point this out in interviews. In Romania, the weaknesses are focusing on access to financing (w2, w3, w1), both public and private, as well as challenges in productivity (w6), entrepreneurial and innovation cultures (w7).

5. Conclusions

The original purpose of Structural Funds is cohesion. The main idea is to establish strategic partnerships among local actors in order to enhance the operational environment for SME growth. Universities are playing a major role in this development. The main idea of this paper was to study the experiences of Eastern Finland and whether the lessons learnt can be adaptable in a new member state, Romania, when beginning Structural Funds based development.

Several researches indicate that universities can support local economic development through their contributions to local industrial innovation processes (Lester and Sotarauta 2007). The vigour and dynamism of local economies depends on the ability of local firms to adapt to changing markets and technologies by continually introducing commercially viable products, services, and production processes – that is, by innovating successfully. The research results show this is also true in both case regions – each of the universities does have an important role in their respective region.

The interviews with experts revealed that the main success factor from Finnish experience was that projects should focus on real needs in the region and that the projects should establish a strategic partnership among local actors. This is the way that projects could empower SMEs to a real sustainable change, which will also remain after the structural fund period. The main weaknesses and threats were indeed seen in how the changes performed by a structural fund project can be sustained.

The case of Romania demonstrates the importance of SMEs in the regional economy. The university is playing a central role in regional development, not least because the essential factor in national or regional economic development is highly represented by human capital. The problems of absorbing the structural funds now confronting the new member states reflect the absence of effective national policy frameworks, weak implementation capacities, and inexperience with the principles and practices of development partnerships. This has sometimes led Romania to adopt approaches to the structural funds that are formalistic and mechanical, rather than truly 'developmental'. The emphasis is on structures and procedures rather than on partnerships for impact.

A key finding is that the university's role in local innovation processes depends on what kind of industrial transformation is occurring in the local economy. New industry formation, industry transplantation, industry diversification, and industry upgrading are each associated with a different pattern of technology take-up and with a different set of university contributions (Lester and Sotarauta 2007). This was also emphasized in this study: for example, the external factors had more weight in the Finnish case while the internal factors in the Romanian case. This probably is due to different business environments, and both universities have adopted in its environment in a reactive way.

These findings strongly suggest that the 'one-size-fits-all' approach to economic development should be replaced by a more comprehensive, more differentiated view of the university role. Universities need a strong awareness of the pathways along which local industries are developing and the innovation processes that are associated with those pathways. They should seek to align their own contributions with what is actually happening in the local economy. This emphasises issues like strong participation in innovation processes, ensuring the enterprise relations, demanding driven project activities and strategic partnerships. By this approach universities should take the proactive role in developing the regional economy.

A relatively small group of experts took part in this study, both in the Finnish and in the Romanian case study. The final weighted results were calculated as averages. In addition, the differences of the weighted results between participants were examined. There were differences in opinions and insights they had in some respect; however, the main lines were similar. Still, the research results would be more reliable if the number of experts with different backgrounds were increased. In this case, the weights of SWOT factors could be determined by reaching a consensus of opinions in the meetings, as was done in Kajanus et al. (2003).

The A'WOT method with the SMART/SWING rating technique was easy for experts to understand and apply. Comparisons between the factors forced the experts to give deeper consideration to the meaning and importance of the factors. Although the rating technique and respective calculations of SMART/SWING are easier to carry out as compared to the comparison technique and calculations of the AHP, giving ratings to all factors within the specific SWOT field simultaneously can be more difficult. In SMART/SWING, the rating of all the factors simultaneously requires a rather comprehensive/holistic understanding of the operational environment. For people not experienced in strategic thinking and business management, pair wise comparisons (being also pedagogically sound and which can be performed without managing the strategic process as a whole) might be a better alternative. On the other hand, holistic evaluation forces one to think more comprehensively.

According to the experiences gained from the presented applications, the combined use of the MCDS method and SWOT analysis is a promising approach in supporting strategic decision-making processes, and also increases and improves the information basis. The defining of the

importance of the SWOT factors forces the decision-makers to analyse the situation more precisely and in more depth, than the standard SWOT does. In addition to the operational environment, the goals of the decision makers are crucial in strategic choice situations. The presented approach provides not only a solid decision support, but also an effective framework for learning in strategic decision support in numerous situations. It can also be used as a tool in communication and education in decision-making processes where multiple decision makers or judges are involved. In addition, making separate A'WOT analyses for individuals or interest groups can provide a good basis for studying differences in opinions, expectations, etc. of the different stakeholders in the decision-making process.

In this study, value analysis and operational environment analysis were carried out separately. In any MCDS application, structuring the decision hierarchy is an important but also a difficult phase. In the hierarchy, lower level factors refer to factors just above them. These lower-level factors should be mutually exclusive and they should collectively provide an exhaustive characterisation of the higher level factors they refer to in order to include all fundamental aspects of the consequences of the decision alternatives and to avoid double-counting of the possible consequences (e.g. Keeney 1992). When dealing with SWOT factors as decision elements like in our case, this can be problematic.

The main conclusions are as follows. Universities are playing a central role in regional development and they have to take the responsibility for that. This means basically two held points of view: 1) Universities must have good contacts and relationships within the region, actors there and especially with the SMEs. This means an appropriate understanding of real development needs of SMEs and the region. This understanding cannot be established without face-to-face discussions. 2) At the same time, universities must have a good understanding about the ideas behind the regional development policies and structurally funded programmes. This understanding cannot be established without strategic partnerships. The main challenge is to combine those two points of view into solid projects and project management on a practical level. 3) By combining these two perspectives, universities should take a proactive role in the development of regional economies. This means transformation from follower into co-explorer of future opportunities hand in hand with local enterprises.

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Appendices

Appendix 1. SWOT – Factors and Weights, Case Suceava, Romania

SWOT – factor	Weight
Strengths	
s2 – 3 universities–centres where the main areas of activity include scientific research invention, technological innovation and IT	0.048
s1 – well-prepared human resources active in the sector of RDI and IT	0.033
s3 – basic infrastructure for research, development, innovation and IT – 79 units recognised by CNSIS (cca.12% from the total at national level)	0.033
s4 – 13.3% of enterprises in the region with innovation departments at national level	0.033
s8 – sectors of activities with potential for development, inclusive through innovation, such as: wood superior processing, food industry, textile industry, ITC, machinery and equipment, biologic agriculture, tourism, energy sector.	0.033
s7 – the European road E85 that crosses the region from north to south, the European corridor No. IX and the international airports Bacau, Iasi, Suceava	0.029
s6 – Communication infrastructure well developed with high level of coverage	0.024
s5 – specialized companies producing software and IT services in the region	0.019
Weaknesses	
w2 – Reduced level of investments in modernizing, re-technologisation	0.037
w3 – Insufficient accessing by companies of the available financing (loans, grants)	0.033
w7 – Low level of entrepreneurial and innovation culture	0.033
w1 – Insufficient financing of RDI sector, both from public and private sources	0.030
w8 – Insufficient cooperation between research/university centres and business environment in order to valorise results of research and achieving TT toward economy	0.030
w4 – Reduced number of enterprises ISO certified	0.026
w5 – Reduced level of EDI in the region	0.022
w6 – Low productivity of economic activity	0.015
Opportunities	
o1 – Romania's accession to EU, importance of innovation being recognized in the European policies	0.042
o2 – Opportunities to finance RDI projects from 7 Framework Programme and structural funds	0.038
o3 – Possibility to develop commercial exchanges due to the position of the region on the Eastern border of EU	0.034
o6 – Increased interest of foreign companies to locate branches in the region as a consequence to accession	0.030
o7 – Possibility that through modernisation of regional airports the development of regional businesses would become starting points for regional tourist itineraries	0.030
o4 – Development of business environment as a result of the establishment of industrial and scientific parks as well as business incubators	0.025
o5 – Increasing dynamics of SMEs sector	0.025
o3 – Increasing awareness of the role of RDI in economic development of the regions	0.021
o9 – Development of the first Regional Innovation Strategy	0.017
Threats	
t1 – Work force migration, particularly those qualified and specialized in research and innovation sector to countries that offer more motivating salaries	0.053
t4 – High level of piracy in the IT sector that jeopardizes development of this sector;	0.048
t5 – Limited availability of the enterprises for RDI expenditures, especially due to financial issues	0.042
t2 – Reduced competitiveness of the regional companies on the European market	0.037
t3 – Increased volume of imported products on the Romanian market	0.032
t6 – Lack of a structure that would integrate the innovation system at regional level	0.026
t7 – Lack of coordination between different sectoral policies with consequences for the development of RDI sector	0.021

Appendix 2. SWOT – Factors and Weights, Case Ylä-Savo, Finland

SWOT - factor	Weight
Strengths	
s2 - Universities have a good knowledge in the field of regional development	0.011
s4 - Universities have strong expertise to utilize R&D	0.010
s1 - Projects have been based on genuine needs	0.010
s11 - Savonias has successfully amalgamated the roles of research and development organizations	0.009
s3 - Universities have established good strategic partnerships	0.009
s13 - Good paying capacity facilitates project coordination	0.009
s6 - Universities have a flexible organization that can respond fast to arising needs	0.008
s7 - Universities have a coverage in working life networks	0.008
s12 - Good quality of Savonia's personnel in international and projects skills	0.008
s5 - The specialists of Universities are involved in deep dialogue with the regional environment	0.008
s10 - Universities have been able to find their role in between the established universities and regional industry and commerce	0.007
s9 - Universities' basic research is scientifically valid and credible	0.007
s14 - The division of responsibilities is working well in Savonias regional partnerships	0.006
s8 - Universities project result quality is well above average	0.006
Weaknesses	
w3 - The changeability of personnel in Savonia has prevented the durability of project results to some extent	0.012
w4 - The internal communication between Savonias units needs to be improved	0.011
w2 - There is still much improving to do in co-operation with other universities and regional vocational schools	0.010
w1 - The development inside Savonia has been imbalanced – some disciplines are ahead of others	0.008
w10 - The threshold level for enterprises to contact Savonia is high – private consultants should be used more to fill this gap	0.008
w9 - The knowledge of enterprise field	0.007
w11 - Language skills – too strong emphasis on English language	0.007
w5 - Some of Savonias projects have not worked well	0.007
w12 - The projects are planned considering the needs of Savonia rather than enterprises	0.006
w8 - Good availability of funding has led to weaknesses in starting level analysis	0.006
w6 - Projects have been carried out for the sake of activities	0.005
w7 - Money has been the driver behind projects, not the genuine needs	0.005
Opportunities	
o5 - Capability for international activities; established networks and lessons learned	0.016
o10 - Projects that are specially tailored to meet the needs of enterprises	0.016
o12 - Ensuring the enterprises relations with Savonia	0.016
o17 - Well functioning strategic partnership in region	0.016
o18 - The main driver for project work will be the needs and changes not the funding	0.015
o8 - Regional higher education organizations succeed in fusing the R&D activities in order to guarantee the critical mass	0.015
o1 - The high quality of Savonias activities and R&D	0.014
o2 - Right ratio between R&D, especially concrete development projects	0.014
o3 - Credibility of Savonia as a reliable and beneficial partner for enterprises	0.014
o9 - Basic education is not overshadowed by the strategic concentrations of competence (spearheads)	0.014
o14 - Empowering the local enterprises	0.014
o11 - Specialist services for enterprises	0.014
o7 - The regional R&D division of responsibilities becomes more sophisticated	0.012
o6 - As structural funding decreases, the project activities are successfully channelled to European level development	0.012
o4 - Durability of project results can be guaranteed through educational and R&D activities of Savonia (Volume)	0.011
o13 - Exporting the competences	0.011
o15 - Unexpected yet highly beneficial results	0.011
o16 - Savonia overcoming the weaknesses	0.010

Threats	
t2 - Enterprises get used to free services (funded by projects)	0.020
t8 - No effectiveness analysis – loss of ethical and moral justifications of projects	0.018
t14 - Cooperation with other educational organizations fails	0.018
t4 - Risks of involvement in international activities	0.016
t9 - The volume of activities decreases and there is not enough critical mass	0.015
t13 - The projects become too bloated and could not be sufficiently implemented (not enough resources and skills)	0.014
t3 - End of structural funds is met unprepared	0.014
t10 - Ensuring durability of results and competencies created in projects	0.014
t11 - Focusing solely on spearheads and forgetting the wide spectrum of regional development needs	0.013
t12 - Loss of target group confidence	0.012
t15 - The diversity of project activities and inability of focus on essential issues	0.012
t5 - Money will be the primary driver behind projects (quality drops)	0.012
t7 - No lessons learned, no emphasis on evaluation of projects	0.012
t1 - Retreat to ivory tower – Savonia will isolate itself from other regional actors	0.010
t6 - The needs of the region are not taken into account	0.009