



Globally Competitive, Locally Engaged Higher Education and Regions

- OECD/IMHE International Conference -

19-21 September 2007
Valencia, Spain

SOCIETAL AND ECONOMIC ENGAGEMENT OF UNIVERSITIES - AN EVALUATION MODEL

by

Jari Ritsilä, University of Jyväskylä, Finland
Mika Nieminen, VTT Technical Research Centre of Finland
Markku Sotarauta, University of Tampere, Finland
Jukka Lahtonen, University of Jyväskylä, Finland

Abstract.

This paper is based on the work of an expert team¹ invited by Ministry of Education of Finland to develop criteria and evaluation framework for societal and economic engagement for use in university performance management. The paper maps out possible indicators for societal and economic engagement of universities in the light of national and international examples. Finally, it proposes a framework for the assessment of universities' societal and economic engagement and a possible set of outcome measurements which take due account of major factors governing strategic planning and resource allocation.

The model presented in the paper for assessing universities' societal and economic engagement seeks to take account of the different operational circumstances of universities and the strategic choices made by them, with due consideration of comparability and national aims. Underpinning the model is an aim to strengthen university autonomy. At the core of the assessment model are five assessment baskets: (1) Integration into innovation (commercial-technological and systems innovations), (2) Integration into the labour market, (3) Integration into socio-ecological development, (4) Integration into the regional operational environment, (5) Integration into societal debate (incl. societal policy making and decision making).

Keywords: universities, societal engagement, measurement, monitoring, evaluation

1. Introduction

The societal engagement is an important and challenging part of the operation of science universities. Although the impact of education and research has been a subject of several research papers, the evaluation of societal engagement is still a very challenging entity; see e.g. Schultz (1961), Becker (1964), Nelson (1959), Arrow (1962). The complexity of the evaluation issue is brought up by several international reports including reports from England² (HEFCE, HEIF), Canada (AUCC); for documentation see e.g. Langford et al. (2006), the United States (AUTM); for more detailed information see AUTUM U.S. Licensing survey: <http://www.autm.net/index.cfm>, and from the common research project of OECD countries (OECD/IMHE). In Finland, the societal engagement of universities has been an issue widely discussed publicly in the late 1990s and early 2000s. For example, a wide research project about the impact of education, funded by Academy of Finland, was conducted in the late 1990s; see Raivola (2000); Raivola et al. (1997). The discussion has stressed a need to understand better the ways of societal engagement of science universities. One reason for the difficulties in the evaluation is that the impact of research activity is often indirect in its nature. For example the literature on the economic impact of research has pointed out that the central channels for impact are influence through education and increase in the stock of information. Instead, public research has quite small influence on foundations of spin-off firms; see Salter & Martin (2001). With increasing knowledge about societal engagement of universities and its importance, new tools and operations to intensify societal engagement have become desirable.

The evaluation model presented in this paper is built on an idea that the evaluation of universities should be focused on their core tasks: education and research. In other words, the degree of integration of research and education activities into society should be the primary measurement target in the evaluation process. This implies that, for example, research projects carried out with external financing or projects aiming to commercialize research results, although both important objectives itself, should not overwhelmingly direct evaluation and the allocation of resources. The evaluation should focus on the following question: how the core activities of universities are integrated into the innovation activity of the society, into the labour market, or into the promotion of the sustainable development, or into regional development processes and general social discussion?

The universities have a role both at national and regional level. The recent discussion has emphasized the responsibility of universities in the developing of local areas. The evaluation model must take into consideration both national objectives and the different profiles of different universities, as well as their strategic objectives. For several universities the strategic objective is to be internationally and nationally competitive. The regional roles should be seen in harmony with national and international roles and, at best, universities are regional junctions in national and international networks. The critical part of the model of societal engagement of science universities will be the combination of the central administration and of university-specific objectives. The universities have their own objectives and strategies but at the same time, the universities are a part of the national university system with its own national aims. The evaluation of the social interaction has to pay attention to both level objectives and needs. The combining of them requires close interaction and cooperation between a central administration and the universities.

In the evaluation model presented in this paper, the university-specific and national level aspects are managed to combine by using the system of evaluation baskets consisting of carefully chosen indicators. In order to take account the national-level evaluation needs, the evaluation baskets are fixed nationally. After this, the evaluation baskets are weighted according to university-specific objectives. Therefore, different operational circumstances of universities will be taken account as well. It should be stressed that the model presented here is partly theoretical in its nature, meaning that it includes a variety of components of which some may be not relevant in practice. Thus, before the actual implementation of the model, it very likely requires some restrictions.

2. International point of view

The international reports on the evaluation of the social interaction/societal engagement of universities from England, Canada, the United States, and from the common research project of OECD countries, bring up the complexity of the evaluation issue. The international examples bring up several potential indicators which can be used in the evaluation. Some of these indicators are based on surveys while some of them can be picked up from the register-based statistical data. Naturally, the international examples have been utilized in a building of our model. Our effort, however, has been to modify the indicators presented in the literature to better suit the evaluation of the total system, in addition to the evaluation of individual universities.

Even though international and national reports offer a good starting point to the compilation of the evaluation model, it is not possible to adapt them directly in a Finnish context. First of all, all the social environments differ in many ways. In addition, many of the international evaluations are directed either to the evaluation of one university (for example the university-specific reports done in Finland), or to one sector (e.g. the model dealing with the commercialising of Canada). Some of the studies are area-specific (for example the examinations of the area effectiveness of the OECD). Second, the models presented by the earlier studies have not been able to connect the points of view of the total system and of individual universities to the same model. Although England's evaluation frame can be considered the most comprehensive of the models surveyed, even in it has not been made an attempt to specify the standardised combination meter of the social interaction. Third, the previous models are mainly based alternatively on either to survey data or to register data. An attempt has not been made to connect different types of statistics. Our model attempts to contribute the literature on these aspects mentioned above, at the same time utilising the experiences gained from the previous literature.

The growing interest in the effectiveness of the r&d activity and education has brought its own difficulties in the field. For example, within the sphere of the innovation research, several projects have been carried out attempting to describe the effectiveness of the r&d activity and the mechanisms

of it; see Salter & Martin (2001) for a survey; others for example Cohen, Nelson & Walsh (2002); Beise & Stahl (1999); Mansfield (1995). The developing of unambiguous, reliable and easy-to-use indicators has, however, proved to be difficult. For example, it is difficult to estimate the economic effects of public research contributions because many other simultaneous factors affect the capacity of the national economy. It is possible to use econometric models but several methodological and data-related problems are still complicating the modeling; see e.g. Radiance & Hedman (1996); and for a study on the Finnish discussion of the effectiveness problem Oksanen (2003).

Generally speaking, it is easier to build indicators that measure the operation which produces the result. It is possible to clarify the situation by using the concepts result, output, effect and effectiveness/impact of the operation. In that case, for example the concrete result/conclusion of the study is referred to the result, whereas the article or report been done based on the result is referred to the output. The created direct effects and changes (for example in the products or operation practices of an organisation) are referred to the effect based on the output. Effectiveness refers to wider social changes; Lähteenmäki-Smith (2006).

It is often easier to measure the output than effectiveness. A partly that kind of starting point to evaluate the social interaction of universities has been in the research project carried out a few years ago in Sussex by the SPRU unit of the university; see Molas-Gallart (2002). That evaluation project started developing of indicators and was the starting point for the project to examine the central channels which bind the universities to the rest of society. The objective was to create a simple, measurable, operating and reliable system. In the project, a conceptual frame was to divide the operations of universities into an ability to function (capabilities) and into actual operation (activities). The ability to function includes knowledge and infrastructure and operation, in turn, includes research, teaching and communication. These make possible together, and separately, functions related to the third task including the commercialising of the technology, the entrepreneurship, consultation services and expert services, academic study cooperation, mobility of the staff, the supplementary education, networking, etc. Each of these can in turn be described with a varying number of indicators or with their combinations. For example, it would be possible to describe the commercialising of the technology, among others, with the number of the patent applications, with the number of the accepted patents, with the number of the licensed patents, with the number of the holders of the licence, with the number of the licence fees and with the resources which have been directed for supporting and administration the intellectual property rights. This study provides a valuable insight into critical points of evaluation methods.

3. The evaluation model

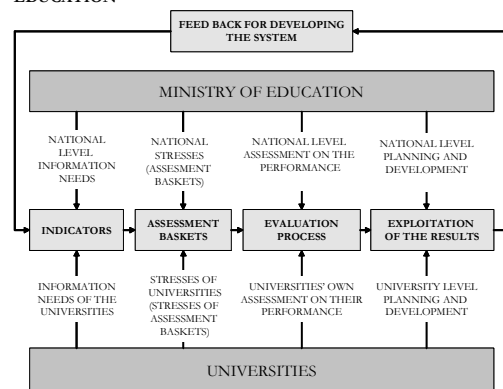
3.1 Stepping stones of the model

The present evaluation model is based on six starting points. (1) The social interaction of universities is related on the primary tasks of universities. These primary tasks are the education and the research. Also the evaluation of universities has to concentrate on the examination of these primary tasks. The main question is how the education and the research are integrated into the operations of the society. (2) The universities have both national and regional tasks. When estimating the measure of societal engagement of universities, these both dimensions have to be taken into consideration. Strategic choices of universities and their real focuses must be respected. (3) The societal engagement of universities is based both on national and university-specific definitions of policy. The evaluation has to pay attention at the same time to both national and university-specific factors. (4) The social interaction of universities is complex as a phenomenon. Because of the complexity of the phenomenon the relevant evaluation of the social interaction requires the use of the combination meter of both quantitative and qualitative indicators. (5) The success of the evaluation process and the process of

allocation of resources requires close cooperation between the universities and the central administration. It is important that the evaluation principles are agreed on together. The common definitions of policy increase the commitment to the whole process. (6) The model of the societal engagement of universities is strongly connected to the operation of the whole university institution. The model raises questions connected to the matter of the entitlement of public financing. In the future, one should consider how strong role the societal engagement of universities, and the evaluation model of it, should have in co-ordinating for example the structural change of universities.

Figure 1: The construction of the evaluation system

(5) THE EVALUATION SYSTEM IS BASED ON SOLID CO-OPERATION BETWEEN THE UNIVERTIES AND MINISTRY OF EDUCATION



3.2 Framework of the model

In practice, the construction of the evaluation model can be divided into four stages, as illustrated in the figure 1. At the first stage, the central administration and the universities will specify the final indicators used in the model. After the statistical indicators are specified in detail, an agreement have to be achieved on who will produce the information required by the indicators. The currently available statistics material offers only a part of the necessary information. The production of the new information is justified by the development of the evaluation model and the development of management by results. To understand the phenomenon it is important to operate (particularly at the first stage) with several indicators taking account several different points of view. Later on, with increasing experiences on the model, ineffective indicators can be removed. To secure effectiveness and commensurability it is probably reasonable to centralize the production of the statistics material on one place. There is a lot of work to be done before the actual evaluation for qualitative indicators. First, the qualitative indicators, which serve the needs of both parties, have to be specified. For qualitative indicators the selection can be made from wider set of variables than in case of the statistics data because the different factors which are related to the acquisition of data do not restrict them. The specifying the set of qualitative indicators and the choice of the relevant scale are challenging tasks. For the success of the measurement it is important that the contents of the indicator have been defined

carefully and that a scale (for example: 5=extremely good, 4=good, 3=average, 2=bad, 1=extremely bad) is as unambiguous as possible. The demand for an unambiguous combination meter and scale is emphasized in the evaluation because several parties participate in it. Every individual university and the central administration should be able to measure social interaction commensurably with the combination meter that has been drawn up.

At the second stage, the evaluation baskets and their weights will be agreed on. The evaluation baskets have been specified as the result of the cooperation of the universities and of the central administration. It is reasonable that the central administration makes a decision on the final modification of evaluation baskets. Instead, the weights of the evaluation baskets are defined university-specifically. This procedure assures that national and university-specific points of view stay in the balance. In this context, constant interaction between both parties must be emphasized. In practice, the process could proceed as follows. The central administration draws up the proposal for final evaluation baskets and sends it to the universities to be commented by them. As mentioned earlier, the evaluation baskets are formed based on the group of indicators that has been jointly drawn up. After the commenting the central administration draws up the final baskets and sends these to the universities. The universities, in turn, draw up the proposals for their own indicator-specific weights and send them to be commented to the central administration. Obviously, the definition of indicator baskets and the definition of university-specific weights are critical stages in the evaluation process. The contents and limits of baskets should be as clear and unambiguous as possible. The successful definition of baskets facilitates the successful definition of weight values. The problems which are manifested with the interfaces of indicator baskets should be surveyed and should be as thoroughly as possible closed away before the compilation of weights. The determination of assessment baskets forms the foundation for the evaluation system. Similarly the determination of weights is a precondition for the successful adapting of the evaluation combination meter. The relevant weight values of assessment baskets create the foundation for getting the realistic picture of the state of the societal engagement. For the purposes of utilizing the evaluation results, it is important that the universities determine the weights as realistically as possible. They have to avoid the traps which include presenting the objectives or wishes as a present state.

At the third stage the actual evaluation will be carried out. The starting point for the model is that the evaluation process is made in cooperation with the central administration and universities. This applies to the whole process up to the utilizing of results from the compilation of indicators. That requires that the views of both parties are brought out in the evaluation process. Furthermore, agreeing on the common evaluation result is required. In the model, both parties will first prepare their own estimates on the societal engagement. In turn, the central administration estimates the state of each university in relation to the whole university sector. It would be desirable that the statistics materials would be checked together and the possible differing observations would be detected and repaired at as early a stage as possible. This way the faulty interpretations are avoided when drawing up actual evaluations. It is reasonable, that the format of evaluation report drawn up by both parties is jointly agreed. Both parties should also have a form of the common estimate in use already when separate estimates are made. The openness, supplement and interaction between the universities and the central administration can be considered as the soul of the successful evaluation work. In practice, it is natural for the evaluation process to proceed so that the universities will send their own estimate of the results of the operation to the central administration before a common negotiation to define the final evaluation result. The central administration, in turn, draws up its own estimate on the results of the operation in proportion to the all the universities. This estimate is used as a basis for the drawing up of the common estimate. It is natural that sometimes the views may differ significantly and also for these differing contentions a place should be reserved in the final evaluation statement.

At the fourth stage the proper exploitation of results will be assured. The exploitation of results takes place as following. The results are made good use as the tool of national strategic planning and management by results. The analysis of results is possible at a national level because of the commensurate indicators. This way the national state of the societal engagement of universities can be surveyed in order to draw up policies supporting the development. The model should reveal the structural bottlenecks as well as the strong areas of the system. The natural channel of exploitation of achieved evaluation results in the central administration is management by results.

The universities itself can exploit the results of the evaluation. From the university-specific point of view it is important that the evaluation process and its results integrate into the strategic planning and concrete development projects of universities. Universities should also be provided by sufficient resources for evaluation and developing. Even though the societal engagement is already a natural part of the activities of universities through education and the study, the evaluation and the developing of the operation require its own inputs. The advantages to be obtained from these inputs can be interpreted as leverage which can be significant from the point of view of both the university and the society.

One of the central questions of the carrying out of the evaluation model is a time span. How often should the phases of the evaluation be repeated? From how long a period should the data be collected. The evaluation model requires resources to carry out the collecting and refining the information and to conduct evaluation process. Therefore the evaluation would be good to perform every third year. If possible the statistics are worth collecting and utilizing from every year. Evaluation process itself with some of its stages being the specifying of indicators, the focusing of baskets and the actual evaluation process, is worth making every third year maximum. In addition to the large amount of work, the sequence more sparse than a year is supported by the character of the phenomenon to be examined. For example the placing the education to the area is a relatively steady phenomenon and the effects of the interventions which are directed to it require a moderately long period to be realized. On the other hand, the average of several years must be used for example in the follow-up of the patents and licences to level down random year variations.

To assure a continual development of the evaluation process it should include the feedback system. A central administration and the universities should discuss the development of the model and model criterion when the evaluation process is in motion. It is hardly possible to build an active and efficient model without the testing and learning during the process. The comprehensive introduction of the evaluation model must be designed to be executed on the perspective of several years. If indicators required are not available, and not either a sufficient infrastructure for the production of them, it is not possible to move on quick to the evaluation system. At the same time attention must be paid to the fact that the developing of the strategic and operative actions which supports the social interaction has just begun in some universities. The introduction of an evaluation system and developing system would have to be carried out step by step following partly England's example. At the first stage, the universities and the Ministry of Education will specify the indicators to be used. They agree on the baskets and make the agreement on the necessary further operations to collect and record the information into use. At this stage finance will be allocated to the universities for the introduction of the new system. After the collecting of new information have been or carried out, it is possible to bring the system into use step by step.

4. Indicators and evaluation baskets

The model for the calculation of university-specific indices is presented in Appendix 1. Potential indicators and assessment baskets of the evaluation model are introduced below.

Basket 1: Integration into innovation activities (commercial-technological innovations and system-innovations)

1.1 Statistical output measures

- S1. Commercializing of research activities
 - a. Patents per research resources in the field of technology
 - b. Other commercial rights (e.g. licences) per research resources
 - c. Commercial rights per total commercial rights of all universities (relative strength)
- S2. Development processes of private sector
 - d. Skill-intensive spin-off firms per employees
 - e. The number of students becoming self-employed per the number of graduating students
 - f. Theses concerning the development of firms per senior students
- S3. Expert services
 - g. R&d -projects in private sector per project financing
 - h. R&d -projects in public sector per project financing (excluding internal development projects of universities)
 - i. Occasions of consultancy per employees
- S4 Specialization relating to exploitation of innovations (realization of strategic focuses)
 - j. Index of specialization of rights produced (industry)
 - k. Index of specialization of R&d-finance (field)
 - l. Specialization relating to starts of entrepreneurship (field)

1.2 Qualitative structural indicators

- QS1. The position of exploitation of business innovations in strategic thinking and planning
- QS2. The position of exploitation of non-business innovations in strategic thinking and planning
- QS3. The strategic tools for supporting exploitation of business innovations
- QS4. The strategic tools for supporting exploitation of non-business innovations
- QS5. Structures supporting exploitation of business innovations
- QS6. Structures supporting exploitation of non-business innovations
- QS7. Incentives for supporting exploitation of business innovations
- QS8. Incentives for supporting exploitation of business innovations

1.3 Qualitative indicators for effectiveness

- QE1. Estimate for the quality of the strategy of the university for the exploitation of innovations
- QE2. Estimate for the success of implementing the strategy for the exploitation of innovations
- QE3. Estimate for the added value for the exploitation of innovations
- QE4. Estimate for the effectiveness of the exploitation of innovations in Universities

Basket 2: Integration into the labour market

2.1 Statistical output measures

- S5. The transition of students to the labour market
 - a. The employment rate of new graduating students
 - b. The employment rate of students measured one year after the graduation

- c. The employment rate of students working in the field accordant with education (measured one year after the graduation)

S6. Practical training of students

- d. Students participating in practical training per total of students
- e. Students participating in practical training in private sector per total of students participating in practical training
- f. The rate of participation in practical training among international students

S7. Supplementary education/in-service training

- g. The number of students participating in supplementary education per total of students
- h. Supplementary education provided for private sector (measured in hours) per total hours of supplementary education provided
- i. The rate of participation in supplementary education among own staff (includes only employment spells of one year or longer)

S8. R&d-activities supporting the labour market matching of education

- j. Research projects supporting the labour market matching of education per total project financing
- k. Development projects supporting the labour market matching of education per total project financing
- l. The occurrences of consultation supporting the labour market matching of education per employees

2.2 Qualitative structural indicators

- QS9. Strategic tools enhancing the labour market matching of education
- QS10. Structures enhancing the labour market matching of education
- QS11. Incentives for enhancing the labour market matching of education

2.3 Qualitative indicators for effectiveness

- QE5. Estimate for the quality of strategies to enhance the labour market matching of education
- QE6. Estimate for the success of implementing acts to enhance the labour market matching of education
- QE7. Estimate for added value from enhancing the labour market matching of education
- QE8. Estimate for the effectiveness of enhancing the labour market matching of education

Basket 3: Integration in the socio-ecological environment (sustainable development/societal responsibility)

3.1 Statistical output measures

- S9. Services enhancing physical and mental well-being
 - a. Projects enhancing physical and mental well-being per total project financing (excluding internal development projects)
 - b. Occurrences of consultation to enhance physical and mental well-being per employees
 - c. Concrete services enhancing physical and mental well-being measured by hours per employees

S10. Act preventing social isolation

- d. Projects supporting the prevention of social isolation per total project financing
- e. Occurrences of consultation to prevent social isolation per employees
- f. Concrete services to prevent social isolation measured by hours per employees

S11. Activities supporting sustainable development

- g. Projects supporting sustainable development per total project financing
- h. Occurrences of consultation to support sustainable development per employees
- i. Concrete services to support sustainable development measured by hours per employees

S12. Promoting cultural activities

- j. Projects promoting cultural activities per total financing
- k. Occurrences of consultation to promote cultural activities per employees
- l. Concrete services to promote cultural activities measured by hours per employees

3.2 Qualitative structural indicators

- QS12. Strategic tools for enhancing individual well-being
- QS13. Structures for enhancing individual well-being
- QS14. Incentives for enhancing individual well-being
- QS15. Strategic tools for improving societal cohesion
- QS16. Structures for improving societal cohesion
- QS17. Incentives for improving societal cohesion
- QS18. Strategic tools for promoting cultural activities
- QS19. Structures for promoting cultural activities
- QS20. Incentives for promoting cultural activities

3.3 Qualitative indicators for effectiveness

- QE9. Estimate for the quality of the strategy for the development of socio-ecological environment
- QE10. Estimate for the success of implementing strategies to develop socio-ecological environment
- QE11. Estimate for the added value from the development of socio-ecological environment
- QE12. Estimate for the effectiveness of developing the socio-ecological environment

Basket 4: Integration in local activities

4.1 Statistical output measures

- S13. Contribution to local r&d-activities
 - a. Foundations of university-inspired firms in local area per the total number of foundations of university-inspired firms
 - b. Theses completed in co-operation with local firm per total of theses completed in firms
 - c. R&d-projects in local area per total of r&d-projects
 - d. Occurrences of consultation in local area per total of occurrences of consultation

- S14. Contribution of education to local area
- e. The net-number of employment in the local labour market of those participated in education
 - f. The proportion of local practical training of total practical training
 - g. The proportion of local supplemental education of total supplemental education
 - h. The proportion of local labour market r&d-activities of total r&d-activities
- S15. Regional dimension of societal responsibility
- i. The proportion of local activities to total of activities to enhance physical and mental well-being
 - j. The proportion of local activities to total of activities to prevent social isolation
 - k. The proportion of local projects of all projects enhancing sustainable development
 - l. The proportion of local projects of all projects enhancing cultural activities.
- S16. Participating in local development forums and discussion
- m. Memberships in local forums aiming to develop socio-economical environment compared to total number of that kind of memberships.
 - n. Strategic projects in co-operation with central local interest group organisations compared to all that kind of strategic projects
 - o. Exchange of employees with the university and central local interest group organisations per all exchange of employees
 - p. The amount of local research of socio-economical environment per total of that kind of research

4.2 Qualitative structural indicators

- QS21. Strategic tools for enhancing local contribution of education
 QS22. Structures aiming to enhance the local contribution of education
 QS23. Incentives for enhancing the local contribution of education
 QS24. Strategic tools for enhancing local contribution of r&d-activities
 QS25. Structures for enhancing local contribution of r&d-activities
 QS26. Incentives for enhancing local contribution of r&d-activities
 QS27. Strategic tools for executing societal responsibility in local areas
 QS28. Structures for executing societal responsibility in local areas
 QS29. Incentives for executing societal responsibility in local areas

4.3 Qualitative indicators for effectiveness

- QE13. Estimate for success of the strategy for local contribution
 QE14. Estimate for implementing local strategies
 QE15. Estimate for the added value from local contribution
 QE16. Estimate made by interest groups for local engagement of the university

Basket 5: Integration in public societal discussion (Systems for decision and planning, and participating in public discussion)

5.1 Statistical output measures

- S17. Participation in forums of societal development
- a. Memberships in fixed-term work groups for socio-economic development (in proportion of total of employees)
 - b. Memberships in permanent work groups for socio-economic development (in proportion of total of employees)
 - c. Leaderships in work groups and forums for societal development (in proportion of total of memberships)
- S18. Contribution to societal models for anticipation and change in society
- d. Models for anticipation of demand of skills build in co-operation with central interest groups of societal development (gross measure)
 - e. Strategic co-operative projects with central interest groups of societal development (gross measure)
 - f. Jointstrategies with central interest groups of societal development (gross measure)
- S19. Exchange of employees with central interest groups
- g. Transition of employees from the university to central interest groups of societal development per total of employees
 - h. Transition of employees from central interest groups of societal development to the university per total of employees of the university
 - i. Active exchange of employees with central interest groups and the university
- S20. Contribution to socio-economic research
- j. Finance for socio-economic research in proportion to total of employees
 - k. Scientific articles concerning socio-economic environment per total of employees
 - l. Socio-economic congresses and seminars organised by the university

5.2 Qualitative structural indicators

- QS30. Strategic tools for participating in societal discussion
 QS31. Structures for participating in societal discussion
 QS32. Incentives for participating in societal discussion

5.3 Qualitative indicators for effectiveness

- QE17. Estimate for strategic basis of participating in societal discussion
 QE18. Estimate for the success of implementing strategies of societal discussion
 QE19. Estimate for the effectiveness of participating in societal discussion

5. Conclusion

This paper was based on the work of an expert team invited by Ministry of Education of Finland to develop criteria and evaluation framework for societal and economic engagement for use in university performance management. The paper investigated forms of societal and economic engagement and mapped out possible indicators in the light of national and international examples and assessed the relevance, limitations and possible effects of different indicators in the Finnish context. Finally, it proposed a framework for the assessment of universities' societal and economic engagement and a possible set of outcome measurements which take due account of major factors governing strategic planning and resource allocation.

The model presented in the paper for assessing universities' societal and economic engagement seeks to take account of the different operational circumstances of universities and the strategic choices made by them, with due consideration of comparability and national aims. Underpinning the model is an aim to strengthen university autonomy. At the core of the assessment model are five assessment baskets: (1) Integration into innovation (commercial-technological and systems innovations), (2) Integration into the labour market, (3) Integration into socio-ecological development, (4) Integration into the regional operational environment, (5) Integration into societal debate (incl. societal policy making and decision making).

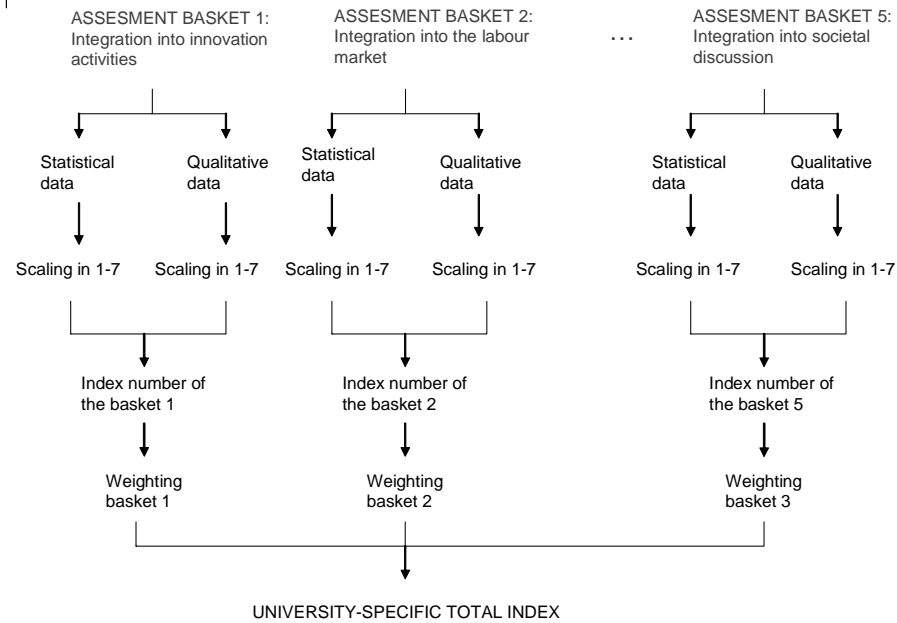
In the paper it was outlined that the final model should be built in close co-operation between universities, the central government, compilers of statistics and other relevant stakeholders. Cooperation across the board between the Ministry of Education and universities both in finalizing the assessment model and in using it offers a new cooperation-based paradigm which could be applied more widely in the evaluation and development of the education and research system. The transfer to the proposed system could be effected in stages over the next six-seven years.

The assessment of societal and economic engagement is a very challenging entity. The model proposed can be regarded as one step in its development. Although holistic in outlook, the proposed model is not intended to be an all-inclusive description of what should be done and how the assessment should be done. It is intended to provide pragmatic and concrete premises and alternatives for the work. To succeed, the model requires a profound understanding of societal and economic engagement and the processes and measurements involved. It is crucial to strengthen research into these aspects in Finland, which would bring added value to practical development.

References

- Arrow (1962) K.J. Economic Welfare and the Allocation of Resources for Invention. Teoksessa Nelson R. (toim.) *The Rate and Direction of Inventive Activity*. Princeton University Press.
- AUCC (Association of Universities and Colleges of Canada) http://www.aucc.ca/index_e.html
- Becker G.S. (1964) *Human capital*. Columbia University Press: New York.
- Beise M., Stahl H. (1999) Public research and industrial innovations in Germany. *Research Policy* 28, 397-422.
- Cohen W.M., Nelson R.R., Walsh J.P. (2002) Links and Impacts: The Influence of Public Research on Industrial R&D. *Management Science*, 48,1.
- Langford C.H., Hall J., Josty P., Matos S., Jacobson A., (in press) Indicators and outcomes of Canadian university research: Proxies becoming goals? *Research policy* (2006).
- Lähteenmäki- Smith K., Hyytinen K., Kutinlahti P., Konttinen J. (2006) *Research with an impact. Evaluation practices in public research organizations*. VTT research notes 2336. VTT: Espoo.
- Mansfield E. (1995) Academic Research Underlying Industrial Innovations: Sources, Characteristics and Financing. *The Review of Economics and Statistics*, 55-65.
- Molas- Gallart J., Salter A., Patel P., Scott A., Duran X. (2002) *Measuring third stream activities. Final report to the Russel group of universities*. SPRU - Science and Technology Policy Research.
- Nelson R.R. (1959) The simple economics of basic scientific research. *The Journal of Political Economy*, 67, 3, 297-306.
- Oksanen T., Lehvo, A., Nuutinen A. (2003) *Suomen tieteen tila ja taso. Katsaus tutkimustoimintaan ja tutkimuksen vaikutuksiin 2000-luvun alussa*. SA 9/03. Suomen Akatemia.
- Radiance & Hedman (1996)
- Raivola R. (edit) (2000) *Vaikuttavuutta koulutukseen. Suomen Akatemian koulutuksen vaikuttavuusohjelman tutkimuksia*. Suomen Akatemian julkaisuja 2/00. Edita: Helsinki.
- Raivola R., Valtonen P., Vuorensyrjä M. (1997) (toim.) *Koulutus, yhteiskunta, menestys*. Edita: Helsinki.
- Salter, J.A. & Martin, B. (2001). The economic benefits of publicly funded basic research: A critical review. *Research Policy* 30:3, 509–532.
- Schultz T.W. (1961) Investment in Human Capital. *American Economic Review* 51, 1-17.

Appendix: Model for the calculation of university-specific total index



¹ On 23 October 2006 the Ministry of Education invited an expert review team consisting of Research Manager Jari Ritsilä, University of Jyväskylä, senior researcher Mika Nieminen, VTT research centre, and Professor Markku Sotarauta, University of Tampere, to develop criteria for societal and economic engagement for use in university performance management and to propose a model for the monitoring and evaluation of universities' societal and economic engagement.

² For detailed documentation see Higher Education Innovation Fund. Round 3. Invitation and Guidance for Institutional Plans and Competitive Bids. November 2005/46. OST&HEFCE; Emma Källblad (2005) The Organization of Third Stream Funding in the UK. An Overview of the Higher Education Innovation Fund and its Impact. Julkaisematon muistio; HEIF: <http://www.dti.gov.uk/science/knowledge-transfer/heif/page12054.html>.