Making University Matter Network visit to Helsinki 31th August 1st September 2017

Memorandum

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Background

"Making Universities Matter, A Knowledge Platform on the Role of Universities in Society" (MUM) is run in collaboration between Royal Institute of Technology KTH and Lund University and it is funded by Swedish Governmental Agency for Innovation Systems, Vinnova. Professor Mats Benner, Lund University, is the project leader of MUM. The aim of this network is to study how the blend of missions and tasks of universities has evolved over time, and will relate that mix to institutional specificities such as state governance and how universities interact with students, scientific communities, and stakeholders in industry, government and civil society. It also seeks to elucidate cross-national differences and similarities in the institutionalization (and change) of universities: in Sweden and other countries in Europe, and through relevant comparisons with the evolution of university roles in North America and Asia. See more on the network: www.making universitiesmatter.org

Ministerial Adviser Pirjo Kutinlahti from Ministry of Economic Affairs and Employment (MEE) and Research Fellow Emily Wise from Research Policy Group, Department of Business Administration, Lund University, organized MUM network visit to Helsinki 31th August 1st September 2017. The aim of the visit was to benchmark recent developments and practices in Finnish research and innovation policies and also give a briefing from Swedish policies. Participants from Sweden were from Lund University, KTH and Vinnova. From Finland participants were from MEE, Ministry of Education and Culture (MEC), Tekes and University of Helsinki and Aalto University. This memorandum gives an overview about discussions during these two days, but unfortunately there are many issues neglected because of space and time constrains. List of participants is attached in the end of the memorandum. The memorandum contains also the personal perspective of the author, expressed in general context and in the analysis of results (conclusions).

General context

The good starting point to open the discussion about the meeting is the target of MUM- project: to understand how universities arrange their activities and how they are aligned with different interests in society. It also seeks to elucidate cross-national differences and similarities in the institutionalization (and change) of universities. The timing of meeting was excellent, because major changes have done or is under preparation in the university and innovation systems of both countries. In Sweden, a Research and Innovation Bill was passed in 2016 with major changes in the research system. In Finland, Research and Innovation Council will launch New Vision and Roadmap in Autumn 2017 and Vision for higher education and research in 2030 will be completed

September 2017.Merger of Tekes and Finpro into Business Finland will take place in the beginning of the next year 2018.

The parallel of these reforms in Finland and Sweden is not accidental. The global economy is going through deep changes, when China and other emerging economies are coming stronger and even surpassing many industrial countries. The world will have many new politically and economically powerful centres as compared to USA and EU dominating system of past decades. The new technologies, especially artificial intelligence and robotics are transforming industries and destroying traditional work placed of middle class. Platform economy based on cloud computing, big data and internet of things is a new form of economy, where the owners of platforms like Amazon, Facebook, Google etc. are in the best position for value capturing. Many strengths of national economies have gone and new strengths must be created. The big issue is how societies and their institutions are able to restructure and reinvent themselves to meet the future challenges.

In this changing environment, the role and functions of universities must change, too. The question is how well are research universities serving society in these new conditions. It is recognized that to increase the impact of universities in society it is not enough to provide better public funding for research and educational activities. The societal interaction of universities must be more systematic than today. It has been difficult, however, to invent new tools and channels to improve societal interaction that are in balance with demand to be globally competitive in research and education. The standard indicators of societal interaction like patenting and the amounts of projects with industries are too narrow. Beside this, the discussion about commercialisation of research results is often interpreted in scientific community as a sign of market logic which is said to be in contradiction with science logic. Fortunately, in last years the atmosphere in universities has become more open to collaboration with industry and the broad-based interaction with society is understood to be a necessary condition for the funding of universities. Still forms and tools of societal collaboration are in the process of inventing.

Universities have been considered to be parts of *national innovation system*. The concept of national innovation system was invented by 80's and adopted in 90s in R&I policy in many industrial societies, including Finland and Sweden. In this concept the creation and utilization of knowledge in society was analysed in terms of systematic interaction and networking inside a nation. Later in 2000's the global networking of businesses broken "national clusters of industry" (M. Porter) giving space to new concepts of international collaboration and optimisation of contributions in global value chains.

There is no single concept replacing the generally accepted concept of national innovation system. The *Technological Innovation System* (TIS) framework has become a popular tool for the analysis of innovation dynamics, particularly on a national scale (Bergek, Hekkert et al.). There have been calls to utilise the framework at sub-national levels too, and to pay attention to location-specific features and interactions. Conceptually, a TIS is composed of the actors, networks and institutions contributing to the overall function of developing, diffusing and utilising new products and processes. Therefore, a TIS contains multiple components that influence the innovation process for technology – and not only those exclusively dedicated to the technology in question. The TIS approach has been developed to analyse system performance and the factors affecting that performance. In my mind TIS provides a good framework for national and local analysis of

innovation dynamics, but it concentrates too much to technologies. In modern digital economy, innovations are more and more related to new services, using digital platforms but being basically "societal innovations" (e.g. design, customer centred).

However, in 2000's the concept of *ecosystem* started to emerge in describing the dynamic business environment in Silicon Valley and in other hubs of high tech industry. The concept of ecosystem is borrowed from biology, referring to milieus where different entities are adapted themselves to roles supporting and feeding each other (cf. rain forests). The concept of ecosystem has taken different versions in last years: innovation ecosystem, business ecosystem, platform ecosystem and growth ecosystem. See more http://tem.fi/en/ecosystems.

What is essential in ecosystem concepts is the good matching of different skills and resources: they are complementary to each other. Also, some forms of self-steering are peculiar to ecosystems, although a champion, a leading partner or an organiser is often present.

For universities the transition from national innovation systems to ecosystems means that the traditional technology transfer is no longer working well. In innovation systems, there was quite stabile industrial structure with well-defined problems and traditional products. Now companies face complex problems and operate in new markets, even creating new markets. It is no longer possible to define "knowledge packages" and sell them to companies. Universities must be partners in ecosystems and participate to knowledge creation with companies. For that new skills and competencies have to be developed in universities. Open platforms for co-creation must be present in ecosystems. Platforms are enabling collaboration. The task to provide platforms belongs to public authorities rather than to universities as such (e.g. Vinnova, Tekes, Business Finland, local innovation authorities, private incubators etc.)

Ecosystems are more related to collaboration with business than to general development of society. It's clear that societal collaboration is not exhausted in working with companies. The third task of universities was first associated with economic growth in USA in 70's and 80's. Universities was started to see "growth engines" of economy. Paul Romer and the representatives of so called "new growth theory" showed how new knowledge and innovations based on it explicate a major part of economic growth. This new growth theory is still valid and referred often when looking for arguments for more active role of universities in society.

But the new growth theory points out also the role of institutions in economic growth. Elhanan Helpman writes in his book *The Mystery of Economic Growth* (Harvard 2004) that "institutions are more fundamental determinants of economic growth than R&D or capital accumulation, human or physical" (p. 139). But he adds that "institutions too have to change on order to promote growth" (p. 140). Especially "the mismatch between institutions and technology is particularly severe during periods of rapid technological change" (p. 140-141). I have referred to these words because the mismatch is now bigger than in previous decades and therefore the gap is threating the future of our countries.

How we have to react to the inadequacy of some of our institutions in comparison to new technology, e.g. digitalisation. First of all, to rise the productivity and enhance the impact of public institutions is an immediate strategy. The other, complementary strategy is to adopt the concept of entrepreneurial state proposed by Mariana Mazzucato (*The Entrepreneurial State*, 2013). There

state is taking an active role in developing technology and first of all in promoting the adoption of new technology in industry and society in general. The state is not only enabler, but takes also risks and decreases risks of enterprises. For that public RDI-policy will be in central place. It is well known that companies are not investing in research and radical innovation, because risks are too big and results are seen only later, after a long period.

The renewing of society and industry must be conducted in the spirit of "creative destruction". This means that government have to avoid protecting industries, technologies or institutions which are not viable. Therefore, the competition is a necessary and very effective way to show which companies and technologies can survive and which are not worth to support. Politically this strategy is difficult to follow consistently, because the lobbying is strong for all privileges. Fortunately, there is also another strategy to support renewing of old structure and it is experimentation. Experimental development allows to test ideas before political decisions and legislation. This approach is now reaching a stronger position in public governance, in Finland too.

I have described the changing environment of RDI policies. The challenges are notified in OECD, EU and in national level, but conclusions are difficult to implement. One of the most important conclusions is that renewing research and innovation policy is now even more urgent than in industrial society. Especially we have to ask what is and should be the role of universities in the future. Now we will see how Finland and Sweden are facing these challenges.

The Finnish RDI policies

One background for recent reforms and processes in then the Finnish RDI-policy is the long economic depression in years 2008-2017. The gross value added of industries is still behind its level in 2007. However, this year 2017 shows the growth rate of about 3 % and a similar growth (2.5 %) is anticipated for years 2018-2019. The unemployment rate has been high during these years of depression and still is about 8,5 %. The investments in industry has been low and productivity growth has been moderate. The present government has adopted a *growth agenda* for economic growth, employment and renewal. The growth agenda contains basic choices: renewal national strongholds and selecting future growth areas. Strengthening of competence bases is the longstanding overall strategic target. The growth agenda contains four concrete actions:

1. To improve regional growth services.

2. To adopt public-private-people partnership model (PPP-partnership) and funding Growth Engine networks (ecosystem).

3. To support universities collaboration with companies by a new Research Flagships funding.

4. To create new competencies at universities and research institutions.

Strategic substantial choices presented by Finnish Government are Bioeconomy, Cleantech, Digitalisation, Health and wellbeing, Arctic and Turism. Based on these choices a growth portfolio will be created by identifying of new growth areas and ecosystems.

One boost for RDI-reforms comes from the recent evaluation of Finnish RDI-policy by OECD[1] . According to the evaluation ordered by MEE and MEC:

- A key challenge for Finland is to transform knowledge, research results and new ideas into new products and innovations in global markets.
- Finland has to improve the steering and impact of research and innovation policy.
- More funding is needed in research relevant for business and industry, and there should be closer interaction between higher education institutions, research institutes and companies.
- The internationalization of research and innovation activities needs more investments.

The major ongoing reforms and projects related to RDI policy are:

- Research and Innovation Council is preparing a new Vision and Roadmap, to be launched Autumn 2017.
- MEC is leading a process to create the Vision for higher education and research in 2030, to be completed September 2017.
- Tekes and Finpro will be merged to form new Business Finland organization in the beginning the year 2018.
- Reforming the Business Services as Part of the Regional Government Reform.

The new vision of Research and Innovation Council

According to the draft for vision of research and innovation council *Finland is the best and most competent innovation and experimentation environment*. I like to stress here the last part of this vision: experimentation environment. Finnish government has launched an experimentation policy and there is a special office in Prime Minister's office for enhancing experimentation in public sector and in society in general.[2]

In the road map for the vision in a central part is the development of competence platforms and growth ecosystems. The development contains four dimensions:

1. *Competence platforms*: Strong incentives for multi-user research environments and experimentation platforms.

2. *Ecosystems*: Systematic method for recognising and supporting promising company-led ecosystems will be created.

3. *Digital platform economy*: An action programme will be started to raise awareness and accelerate development on digital platform economics.

[1] http://www.oecd.org/finland/oecd-reviews-of-innovation-policy-finland-2017-9789264276369-en.htm
[2] http://kokeilevasuomi.fi/en/frontpage

4. *Enabling government*: New Growth Motor activities and research Flagship institutions are launched and properly resourced.

New vision for higher education and research

Major recent reforms in Finnish higher education systems are university reform 2009-2010, polytechnic reform 2014-2015, and structural development of higher education institutions. In research system the reform of state research institutes and research funding is also important.

The new vision for higher education and research was created in collaboration of ministries and higher education institutes. The general targets of vision are better quality, greater impact and international competitiveness. The concrete challenges to solve include especially the following two:

1. We need more experts with an academic degree and new kinds of skills.
2. We need a culture of working together and a visionary approach evolving from it.

To meet the first challenge following targets are presented: 50 % of young adults should complete an academic degree. In 2015 the number was 40 % in Finland and almost 50 % in Sweden. Students need more versatile skills in society and individual combination of skills and study paths.

The meet the second challenge, two kinds of measures were proposed in vision:

1. Measures to establish skill ecosystems that gather knowledge producers and utilisers together and aim for visionary skills.
2. Measures to enhance impact and competitive advantage based on the openness of science and research and the utilisation of data management.

Money rules. To understand structure of Finnish public funding system for universities, a “triple channel” system is crucial to know. Universities are funded directly by MEC, and by competition by Academy of Finland and by Tekes. The Funding by MEC is based on a funding formula.

Figures are from the budget of 2017.

MEC:
1769 + 50 m€ to universities
258 + 56 + 30 m€ to Academy of Finland
385 m€ to universities of applied sciences

MEE:
433 m€ to Tekes
90 m€ from Tekes to Universities
344 m€ from Tekes to Business
87 m€ to VTT

Funding formula of universities, used by MEC in allocating resources (about 1800 m€) , is performance based. This means that universities get money according to indicators related to education (mainly amount of degrees, 39 %) and to research (mainly publications and PhD degrees, 33 %). Beside that there is reserved money to some other duties and strategic development (together 28 %). It's interesting that in this formula there is no place for societal interaction, although external funding from business is an indicator in research part. For universities one implication from this formula is, that there are no budgetary incentives to extend and develop societal interaction and collaboration with businesses. Therefore, universities must use their internal allocation of resources to create incentives. Note that the funding from MEC gives universities free hands to allocate resources, because they are autonomous. MEC uses a similar formula in funding universities of applied sciences. But there the share of education is 85 %. Each year there is a negotiation between MEC and each university leading to an agreement. In agreement, there are expressed general targets of HE-policy and special targets for the university, the mission and profile of university and funding. There is a clause: "EUR xxxx of core funding determined on the basis of the calculation criteria". This part of agreement is transparent and performance-based.

The Flagship programme

The aim of the Academy of Finland's flagship programme is to pool together expertise from different fields in Finland to form high-level research and impact clusters that will further contribute to increasing the quality and impact of Finnish research.

General conditions for flagship funding are cutting-edge research, impact in support of economic growth or society, close connections to the business sector and society at large, adaptability, and a strong commitment from host organisations.

Implementation of the programme is delegated to the Academy of Finland. The funding earmarked for the flagship programme comes to 25 million euros in 2018 and 25 million euros in 2019.The funding may be applied by universities or government research institutes, or by consortia formed by such organisations. 4-5 flagships will be funded for 8-years period, evaluated after two years. The criteria for applications are scientific quality, societal impact of research and organisational stance like partnerships, overall funding, support of host organization.

Business Finland

The merge of Tekes and Finpro has been in agenda a long time. The logic here is clear, because Tekes has been funding product and technology development and innovation in businesses, whereas Finpro was supporting internationalisation of businesses, so that their functions are complementary, not overlapping.

Business Finland, starting its operations in 2018, aims to increase the use of research in companies and strengthen the societal influence of research by:

- Promoting equal cooperation between companies and researchers.
- Providing timely and quick feedback for research ideas even before the application process and, if necessary, by directing the owner of the idea to other potential funding organisations.

- Supporting the research activities and the R&D in companies in parallel , not consecutively. Advancing the creation of radical innovations by sparring and financing in phases.

What changes in Business Finland as compare to earlier practice is that researchers and companies are encouraged to commit to a more active collaboration. This is seen in new funding instruments Co-creation and Co-Innovation. The targets of these funding instruments are twofold:

- For research organisations to carry out high-level research and simultaneously cooperate with companies.
- For companies to renew business activities by working closely together with researchers.

Co-creation: For research organisations and companies to develop the research idea.
Project aims to verify the demand for the R&D and achieve good problem solution customer fit. It also evaluates the idea's compatibility for businesses and creates a network for cooperation.

Co-innovation: Search for solutions with the help of research, cooperate and develop new export products. Research organisations and companies jointly develop solutions and new knowledge for business purposes. Funding advances the use of research results, increases the creation of new Finnish export products and strengthens networks in ecosystems.

The relation of these instruments is such that in Co-creation researchers and companies jointly develop a research idea, to be completed later in Co-innovation project. In Co-innovation research organisations and companies jointly develop new knowledge and innovations for business needs. It is important that in these instruments universities are not allowed to have funding without close collaboration with companies. Still there is a third well-tested funding instrument available to universities: New business from research ideas – funding (acronym in Finnish TUTL). Funding is intended for research groups and researchers in research organisations, who want to build a new business based on their research and realise their idea by commercialising it. From its beginning in year 2012 this funding has been a success story in terms of number of commercialization projects in universities and businesses started (Tekes funding has been 93.4 m€ to 365 projects).

Performance agreements between universities and Ministry of education and culture

Universities make a performance agreement with the MEC in every year. It's an important strategic document containing several issues:

- Objectives and targets for coming years (actually for 2017-2020)
- Profile and key areas of the university
- Objectives of degree qualifications
- Funding
    - Results-based funding
    - Funding for special national duties
    - Strategy funding
- Reporting.

Result-based funding is calculated by the funding formula or model, divided into three parts: education (degrees) 39 %, research 33 % and other education and science policy considerations 28 %. In this last group, there is reserved 12 % to strategic development. Note that the total funding

is dependent of the budget of the state. The share of each university is calculated by the objective criteria of performance, except the moment for strategic development. The funding based of this model is just a way to calculate the share of university from governmental basic funding. Universities could allocate that money freely by using their own internal funding models.

According to Aalto university the performance agreements guide universities towards societal impact in the following way (this kind of evaluation is shared by other universities):

- Societal impact is one of the main objectives mentioned in the performance agreement
- However, the share of funding allocated based on societal impact actions and results is fairly low
- Funding in connection with societal impact:
    - Amount of corporate research funding
    - Special national duties, depending on the university in question
    - Strategy funding e.g.: utilization of research results, collaboration with business sector, and strengthening the role of entrepreneurship.

Note that technology transfer is not taken into account in the results-based funding. Aalto University stresses that the funding model should guide universities towards quality, impact and internationalization. For impact, indicators could include joint publications with non-academic organizations and funding from non-academic organizations (assessed separately from national competitive funding). Funding from the Academy of Finland, Tekes and EU are highly competitive.

Case of the University of Helsinki. UH is a large-scale research university, concentrating on basic research. The vision of UH is Global impact in interaction. To achieve vision UH has selected three strategic objectives for the period 2017-2020:

1. A creative, international environment for learning and top-level research
2. a focus on the student and
3. resources for reform.

Sources of total earnings (692 M€) are in 2016 the following: MEC 59 % 412 M€, External funding 37 % 257 M€, own income 3 % and Ministry of Finance 1 %. From external funding the shares are as follows: Academy of Finland 55 %, EU funding 11 %, Foundations 11 %, Tekes 7 %, Ministries 5 %, municipalities 2 %, companies 2 % and others 7 %.

Case of the Aalto University. AU is foundation-based university of technology, business, art and architecture. The mission of AU is Shaping the future: science and art together with technology and business. The vision is An innovative society. The total funding was 354 M€, from which the share of government (basic funding) was 237 M€. In external funding the shares was as follows: Academy of Finland 40 M€, Tekes 23 M€, EU 21 M€ and others 33 M€. In AU's internal funding model the criteria are: Excellence Funding about 5-10 %, Joint Strategic Initiative Funding about 10 %, Input Based Block Funding about 40 % and Output Based Block Funding about 40 %. AU uses special indicators in internal funding model.

Author's analysis of Finnish RDI-policy

If we consider the whole picture of Finnish RDI-policy, we see there a clear influence of OECD's analysis of global economy and its development. There is a consensus also among researchers and civil servants in government about the challenges and lines to follow. Finland is a quite future oriented country, and accordingly we are good to write visions and roadmaps. In practical level ministries are developing their own strategies and visions and are located in their own silos. In this situation, the new vision and roadmap of the research and innovation council must have highest priority. The vision *Finland is the best and most competent innovation and experimentation environment* is ambiguous and difficult to reach. In fact, Finnish innovation environment has been one of the best, alongside Sweden. Now we face a RDI-paradox that beside of our records in innovation environment, our economy has lost its competitiveness and accordingly jobs. We see in all visions and reforms a transition towards more close collaboration between universities and businesses. Look at Flagship programme of the Academy of Finland or Co-creation and Co-innovation funding of Business Finland. Still in a preliminary version for Vision for higher education and research in 2030 there is no clear statement to enhance the collaboration of universities with companies. What is needed is a new incentive system for collaboration between academia and industry. For that new structures for co-creation must be created. Note that universities have well-developed structures for research and education (tenure tracks, management, internal allocation of resources etc.).

Swedish Research and Innovation Bill and after that

The name of the new Research and Innovation Bill (2016) is illuminating: 'Collaboration for knowledge – for society's challenges and strengthened competitiveness'. In the bill, the Swedish government highlights three objectives for HEIs in the next ten years:

- For Sweden to be an internationally attractive country for investment in research and development. Investments in research and development should continue to exceed EU targets.
- Higher quality research and greater gender equality.
- Increased science-society interaction and societal impact.

The last target is an important element, not so clearly stated in the previous bill (2012) according to which Sweden is a prominent research nation in which research and innovation are conducted with high quality, contributing to the development of society and the competitiveness of industry. That bill wanted to "increased utilisation of research-based knowledge". In this new bill, science-society interaction and societal impact are in a central position demanding intensification. The recent OECD's review of innovation police in Sweden, from year 2016, pointed out some weakening in innovation and research performance. These are notified in the implementation of the new Bill. A Finnish note for gender equality: It's great that gender equality is on the strategic position in the Bill; otherwise it is difficult to proceed in this issue in traditional male culture of universities.

Also in Sweden the innovation system concept has been in central positon when developing RDI-policy. Now the new emphasize is on *innovation for system transition*. It's interesting that system transition has taken to a major target of innovation policy. Reflecting this, Swedish universities,

especially Lund, are actively participating in a transformative innovation policy consortium (TIPC)[3] established by Science Policy Research Unite (SPRU) in Sussex in 2016. TIPC brings together global actors to examine and research respective innovation systems to explore the future of innovation policy. Researchers in SPRU are talking about three framing of innovation; first framing is "innovation for growth" related to industrial society, second is "national systems of innovation" of 80's related to competition and globalization. The third frame "transformative change" "involves a questioning of how to use science and technology policy for meeting social needs and addresses the issues of sustainable and inclusive societies at a more fundamental level than previous framings or their associated ideologies and practices" (Schot and Steinmueller 2016).[4]

The new initiatives in Swedish research and innovation policy include Government *strategic collaboration (partnership) programmes*. There are five collaboration programmes in three horizontal areas:

1. The next generation's travel and transport
2. Smart cities
3. Circular and bio-based economy
4. Life science
5. A connected industry and new materials

Horizontal areas are digitalisation, life sciences and environmental and climate technology. The partnership programmes have been made a priority by Prime Minister Stefan Löfven via the National Innovation Council. Vinnova has been specially tasked by the Government with assisting the work on the partnership programmes in 2016–2018.

Strategic innovation areas are funding initiatives where leading actors from commerce, academia and the public sector identify and define areas where they see a need to focus Swedish competence and joint efforts. Two types of funding are available within Strategic innovation areas:

- *Strategic innovation agendas*, where a group of actors collectively define visions, goals and strategies for the development of a specific area.
- *Strategic innovation programme*, which is intended to support the implementation of strategic innovation agendas and comprises projects and other activities that contribute to the visions and goals of the agendas.

So far 700 mSEK is allocated to 25 proposals. Here are some projects funded:

- Self-driving, shared and electric vehicles and systems
- New materials development–E.g. new platform with basis in forest products

[3] http://www.transformative-innovation-policy.net. Note also Sustainability Transitions Research Networks, devoting to research about sustainability transitions: https://transitionsnetwork.org/about-strn/

[4] http://www.johanschot.com/wordpress/wp-content/uploads/2016/09/SchotSteinmueller_FramingsWorkingPaperVersionUpdated2018.10.16-New-copy.pdf

- Innovation in the health care chain
- Cities as ”testbeds” for the sharing economy
- Smart factories–”testbeds in process- & manufacturing industry”
- Digital infrastructure
- Digital security

There have been good experiences in the process:

- Great engagement from the political side
- Large response from a broad range of actors
- Clear priorities and common vision among the actors
- Many exciting and innovative projects

On the other hand, there are challenges, too:

- Increase focus on systems
- Increase engagement outside the collaboration groups
- Additional ministries and agencies must be involved
- New strategies from the government need to focus towards the collaboration programmes
- Increase the focus on regulatory change

Evaluating universities' role in societal interaction –The model of Sweden

The *model of evaluation* contains evaluation by on expert panel, supplemented by self-assessment and collaboration partner evaluation. Contextual information is used as a background. This model has been in use from 2012. The model has been reconsidered in this year. HEI's have send their comment letters and a call for new societal interaction projects has launched. Government gives a commission on funding and steering for HEIs.

The basic principles of evaluation of societal interaction are:

- Starts with HEI own visions and aims
- Should be useful in HEIs own strategy and operational development
- Collaboration has several functions and contributes to different impacts

In the new call HEIs have presented interesting proposals for projects for societal interaction capacity (18 applications). Proposals show great engagement and broad interest, commitment and collaboration between many HEIs (30 participating HEIs). Themes of applications include

- Internal quality systems
- Education
- Societal interaction on an individual level
- Organisation of outside relationships

Take two cases. In the proposal related to improving handling of IPR targets are to increase HEIs capacity and responsibility for societal interaction and utilization and to reach greater impact

without increase in funding (14 participants). In the proposal concerning collaboration capacity skills targets are integration of collaboration skill in hiring and promoting faculty staff and researchers and adopt a broader view of skills, which will challenge and complement the current focus on publications (12 participants). All applications are evaluated with expert panel in September.

Summary

The MUM network meeting provides us with an overview about recent and ongoing activities, initiatives and projects in Finland's and Sweden's RDI-policies. In both countries, universities are on high priority in Governments' strategies. In Finland public funding for universities (HEIs) has been decreasing, unfortunately. Instead, a structural development of HEI-system has been in focus in last year and still continue. OECD reviews about innovation system and RDI-policies has published recently for Sweden (2016) and for Finland (2017). OECD reviews are comprehensive and useful, but they are conceptually still quite traditional. The concept of national innovation system must be further elaborated. A major reason for this is the challenge of sustainable development: the strong growth policy might accelerate climate change. This fact is reflected quite clearly in Swedish innovation policy. Other challenges include the development over and below the national state: international networks on the other hand and local ecosystems on the other hand.

The new Research and Innovation Bill of Sweden passed last year, expressing the commitment of Swedish Government to develop universities and enhance innovation. In Finland the programme of Government has been an important document steering recent development in RDI-policy. Research and Innovation council is now defining a new vision and roadmap for RDI-policy supporting the Growth Agenda of the Government. Much is taking place in the future.

Noteworthy, the university-industry collaboration and societal interaction are expressed strongly in the RDI-policy of both countries. It seems to me, that the stress towards societal interaction is stronger now than some years earlier. I will call this change in orientation an "impact turn" of research policy. In the new Bill of Sweden one of the major principles is "Increased science-society interaction and societal impact". Also the Strategic Collaboration Programmes of Swedish Government express the same focus. In Finland the new instruments like Flagship programme of the Academy of Finland or Co-creation and Co-innovation funding all intend to improve university-industry collaboration. A recent case of the impact turn is the establishment of a new unite for economic research, called Helsinki Graduate School of Economics, funded by The Finish Band, MEC and VATT Institute for Economic Research. The new unite will be managed by Aalto University, the University of Helsinki and Svenska Handelshögskolan. One argument of the Government for this new initiative is the increasing need of economic research in policy planning and in impact evaluation.

Conclusions

The concept of innovation (business) ecosystem has become a central concept in articulating local conditions for innovation. But in national level new concepts for innovation policy are in demand.

Just to say that state is enabler is not enough. One proposal is the experimentation policy adopted in Finnish Government. Also, the concept of entrepreneurial state is worth to think, especially if its actions include public procurement, competition policy, institutional reforms, adoption of new technology, and competence development (new jobs etc.).

In looking for new RI-policy we have to find a balance between top-down and bottom-up approaches. In global, digitalized economy old top-down tools of steering are not effective any more. More direct *dialogue* between companies and RI-policy institutions like Tekes, Vinnova or local authorities in funding and supporting is a key for adapting support tools to the real need of companies. This is a good strategy also in ecosystem policy. It is not possible to build ecosystems from top-down, because they are company driven. But public sector could be a partner in ecosystems. I refer here to public procurement and large infrastructure projects of cities (smart cities). Also opening public data for companies to develop new services (health care data, geographical data etc.) will be an important boost to ecosystems. In general, incentives are more effective than pushing in boosting ecosystems to growth

It is generally accepted, that the role of universities in society and economy must and could be stronger. But universities are changing slowly in this direction and one reason for this is that the traditional view that basic research is “pure” research is still dominating the university culture. Of course, we must take care of the quality of research, especially the amount of top level basic research. But there is no contradiction between basic research and application of research results to solve practical problems. In fact, many cases the high-level research has developed hand in hand with useful inventions of new technics and methods and with feedback from practical projects. The term “co-creation” describes better the relation between universities and companies than the term knowledge transfer. Co-creation is WIN-WIN and universities are not only giving but also learning new things.

Good basic research is a necessary condition of extensive societal impact for universities. Our universities need a “dual strategy”, where societal interaction is flourishing in the sole of basic research. For that RDI-policy must provide clear incentives and working structures for collaboration between universities and industry. At least in Finland, the funding model of MEC is not encouraging to deeper interaction with society, like the cases of University of Helsinki and Aalto university showed in the meeting: the technology transfer and commercialisation of research results are not taking into account in performance based funding model. Therefor the impact turn must be taken seriously in official research policy, too.

How to continue?

The MUM network meeting in Helsinki proved that it is very useful to discuss with colleagues from both countries and to share and compare experiences in developing and implementing RDI-policies. There are some similarities but also interesting differences, from which we all can learn. Especially useful was to consider the future challenges facing both countries. One impression is that the reform of university system will and must continue. Societal interaction has not yet found really workable organizational forms, incentives and indicators. The balance between high-level research and collaboration with companies has not yet settled in a satisfactory way. There is a real need and demand for research of university system and its societal interaction.

The group will be discussing and following up on a number of opportunity areas that were identified during the study visit. For example, the following are worth to consider:

Examining ecosystem policies. Developing common research questions:

- The growing intent of societal impact? How to measure?
- How to promote new vs. established research areas?
- How to manage policy-level coordination and different 'logics' across funding agencies?
- How to facilitate and govern?

Developing a framework for monitoring and evaluating collaborative ecosystems/platforms

- What various types of activities (across ecosystems)
- What menu of elements and indicators
- What variations/dynamics over time
- Comparisons/development of 'logics'/frameworks across types of collaborative programmes (e.g. cluster vs. SIP vs. university collaboration)

Performance agreements with HEIs – Perspectives on its impact on University Strategies
Share information (or work together) on indicators of collaboration (project)

Comparisons between Uppsala University and University of Helsinki (international benchmarking and mentorship between universities)

Study visit for SE universities to Helsinki. Using a new comparative framework to describe the participating universities and policy frames that are working.

In Helsinki 12th October 2017

Antti Hautamäki

PS. Thank you Pirjo Kutinlahti and Emily Wise for useful comments about earlier drafts of this memorandum.

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