

DEVELOPMENT OF RESEARCH AND INNOVATION UNIVERSITY IN LATVIA

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Abstract

The aim of this publication is to offer an analysis of possibility to establish Research and Innovation University in Latvia. Based on current political interest to reform the field of higher education, this publication provides one of possible solutions to the question of how to categorize Latvian Universities and how to establish Research and Innovation University.

First part of the publication provides analysis of the classification principles of Universities, based on global trends and highlights the differences between general types of Universities. Main aims and tasks are provided to these types of Universities, especially indicating prerequisites for establishing a Research and Innovation University.

Second part gives an analysis of current classification of Latvian Universities as well analyses other options of classification offered by Ministry of Higher Education and Science and by other Latvian Universities.

Third part of publication evaluates potential to develop a Research and Innovation University in Latvia. This part analyses current financial support from the government to the Latvian Universities and a Reform plan of Higher Education system developed by the Ministry of Education and Science.

It also indicates what should be changed in the financial system and within the Reform plans if government would set an aim to establish Research and Innovation University.

Recommendation part provided suggestions for government of classification of Latvian Universities and creating a Research and Innovation University in Latvia.

Key words: Research and Innovation University, Development plan, University classification

Development of research and Innovation University in Latvia (LV)

Šīs publikācijas mērķis ir piedāvāt analīzi iespējai izveidot Zinātnes un inovāciju universitāti Latvijā. Balstoties uz pastāvošo politisko interesi reformēt augstāko izglītību, šī publikācija piedāvā vienu no iespējamajiem risinājumiem jautājumam, kā iedalīt universitātes Latvijā un kā izveidot Zinātnes un inovāciju universitāti.

Publikācijas pirmā daļa piedāvā universitāšu iedalījuma principus, kas balstās uz pasaules tendencēm un pievērš uzmanību atšķirībām starp vispārējiem universitāšu tipiem. Galvenie mērķi un uzdevumi šāda veida universitātēm tiek piedāvāti, jo īpaši norādot priekšnoteikumus, lai izveidotu Zinātnes un inovāciju universitāti.

Otrā daļa sniedz pašreizējo universitāšu iedalījuma analīzi, kā arī analizē citas iedalījuma iespējas, ko piedāvā Izglītības un zinātnes ministrija un citas Latvijas universitātes.

Trešā publikācijas daļa izvērtē potenciālu izveidot Zinātnes un inovāciju universitāti Latvijā. Šī daļa analizē pašreizējo valsts sniegto finansiālo atbalstu Latvijas universitātēm un Izglītības un zinātnes ministrijas izstrādāto Reformu plānu.

Tajā arī ir norādīts, kam būtu jābūt izmainītam finanšu sistēmā un reformu plānā, ja valsts izvirzītu mērķi izveidot Zinātnes un inovāciju universitāti.

Rekomendāciju sadaļā tiek nodrošināti ieteikumi valdībai Latvijas universitāšu iedalījumam un Zinātnes un inovāciju universitāti izveidei Latvijā.

Atslēgas vārdi: Zinātnes un inovāciju universitāte, Attīstības plāns, Universitāšu iedalījums

Introduction

The aim of the research is to investigate possibility of creating Research and Innovation University in Latvia. Research analyzes existing classification of Universities, defined by the Law On Institutions of Higher Education, and new typology developed by the Ministry of Education and Science. At the end of the paper new authors developed classification of Latvian Universities is presented.

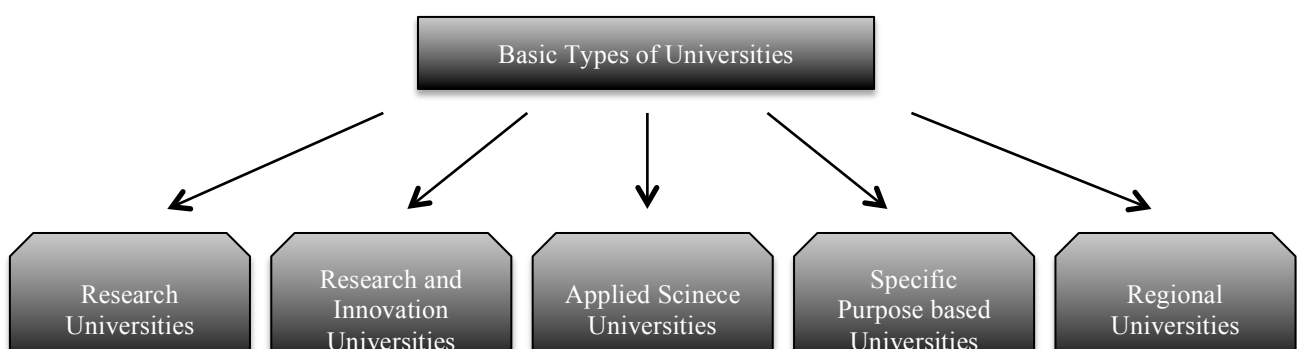
Research defines guidelines for Government on how to create Research and Innovation University in Latvia and what support should be dedicated to this aim.

Classification of Universities

Diversity between higher education institutions in the world offers great possibility to create different classifications of Universities. It is possible to differentiate Universities by so many criteria and measures that sometimes it is possible to get mixed up between all kinds of rankings, classifications and typologies. Some countries divide higher education institutions based on awarded scientific degrees, others based on placement or research intensity within the institution (Benneworth P., Charles D., Humphrey L., Conway C. 2010). It is possible to categorize Universities by purpose of establishment or major field of science taught within higher education institution, for example, technical or art sciences (Bohmert D. 2006). In some countries Universities are differentiated based on their founders – state founded Universities or Universities founded by private persons. This clearly indicates that each country has a possibility to divide Universities by its own criteria, what is done for example, in United Kingdom (Howells J. Ramlogan R., Cheng S-L. 2009) and United States of America (Richard C. A., William A. B. 2008). These both countries have defined their own typology of Universities that cannot be directly transferred to other countries. It can be concluded that each country needs to establish its own strategy for development of higher education and create typology of Universities in compliance with this strategy.

Although different typologies of universities exist, most of them have some similarities. Higher education institutions may be called under different names, but there still are some basic types of Universities found in majority of classifications. Figure 1 shows these types of Universities.

Figure 1 – Basic types of Universities in different classifications



All five types seen in Figure 1 are represented within majority of classifications of Universities and represent a certain group of higher education institutions. Government defines educational priorities and strengthens them by creating and implementing higher education development strategy. For example, strengthening regional Universities can support equal regional economic growth. By providing greater support to research and innovation Universities, Government can promote research and development process in Universities, technology transfer and new product development. Further description provides more information on main aims and tasks of different Universities.

Research Universities are generally dealing with fundamental research. They tend to have large research capacity in terms of infrastructure and scientific personnel. It is also important for them to involve students within the research process. Most of these Universities tend to specialize in higher-level studies – offering master and doctor study programs. The government must provide funding for Research Universities, since results of their research activities are fundamental science (Duse D.S., Duse D. 2011).

Research and Innovation Universities or in some cases called third generation Universities define three priorities - study process, research and commercialization – technology transfer activities. These priorities must be balanced and well managed, since they overlap and are closely linked with each other. Research and Innovation Universities as well tend to put more attention to higher-level studies, but they also offer bachelor level studies (Mintrom M. 2008). These Universities strive to diversify their income streams. Although great amount of funding comes from the State, University must manage its collaboration with industry to earn great portion of income by its own. Research and Innovation University is closely linked with business industry providing many different services, such as consultations and research and development services. Also great deal of income comes from commercialization of new products developed by University (Tornatzky L.G. 2000).

To create and strengthen Research and Innovation University, Government must define that University integration with business industry is important and dedicate significant funding for development of this kind of University. Additional funding in early stages of Research and Innovation University development is important for creating infrastructure, attracting best academics and professionals to set up the processes and services for the business industry.

Applied science Universities are higher education institutions that in general perform bachelor and master level study programs. They may offer studies in different scientific fields, mostly applying scientific results within study process. Applied science Universities may be financed by the State, but they may as well have a tuition fee for students (Bohmert D. 2006).

Specific purpose based Universities are Universities that are made with specific aim, for example, medical or defense Universities. These higher education institutions generally are financed by the

Regional Universities are the ones that ensure regional sustainability and are important to ensure equal economic development in all country. These higher education institutions help to keep the bright young people in the region thus supporting regional business industry. Regional Universities must be financed by the State to ensure their sustainability in the long run (Bohmert D. 2006).

All different types of Universities have importance to the country's development. Though Research and Innovation University is able to deliver more visible financial gains in shorter period of time since it works closely with business industry. This type of University, by developing new products and innovations, create an added value for companies that commercialize new inventions. If Government decides to establish Research and Innovation University, it must provide additional resources and support at the first stage of development of this kind of University.

Existing and discussed classification of Latvian Universities

In Latvia so far discussion on classification of Universities has more served as a tool for gaining additional funding from the State and was not done with the purpose to define Governmental priorities in higher education. At current being still classification of the higher education institutions is defined by the Law On Institutions of Higher Education, which separates 4 general types of higher education institutions:

- Universities;
- Academies;
- Higher education institutions;
- Colleges (LR Saeima 1995).

These higher education institutions are separated by different criteria, such as number of study fields performed at the institution, percentage of elected academic personnel with doctoral degree and level of degree presented.

For last few years in Latvia can be observed attempts to develop a new division of higher education institutions. Ministry of Higher Education and Science, Council of Higher education and some Universities them-selves have developed new offers on classification of Universities. From all developed offers the Ministry of Higher Education and Science has prepared vision with the most dramatic changes. Ministry foresees that in Latvia all Higher education institutions should be divided into 5 groups:

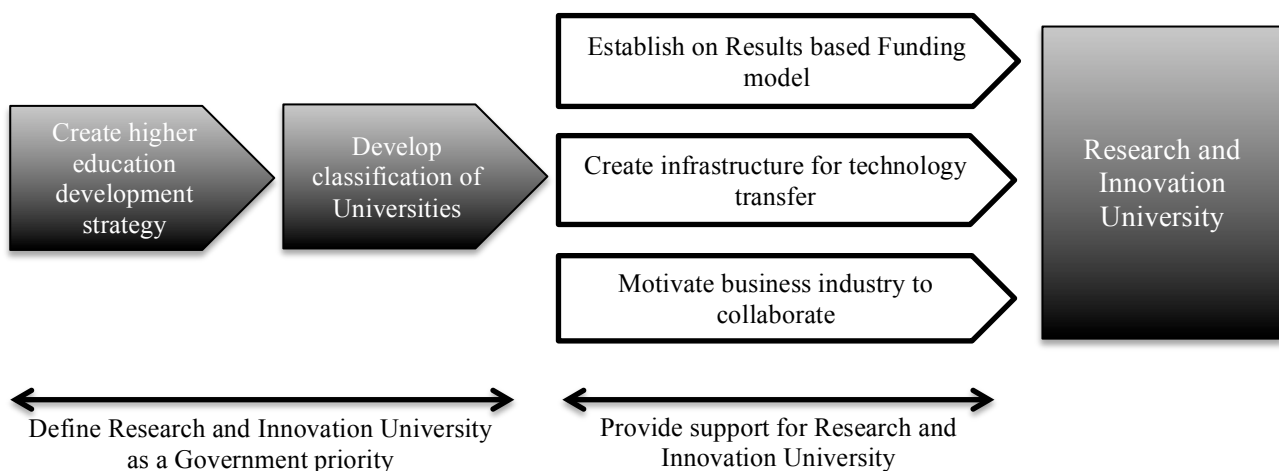
- Science (National) University – for research development;
- Technology University – for development of innovations;
- Regional University – for regional development;
- Academies – for educating professionals;
- Regional higher education institutions and colleges – for educating professionals in regions (MoES 2011).

This classification offers to establish one Research University, one Technology University and one Regional University. Other higher education institutions are divided into the last two sections. Based on current classification of Latvian higher education institutions it is not clear why first three sections are represented by only one institution and all other are in the last two sections. From first glance one might tend to think that the general purpose was to separate one University – Science University for devoting additional funding to it and not much attention was drawn to other higher education institutions. For example, if Government wants to ensure equal regional development it is not clear why there is only one Regional University and what happens with two other regional Universities if only 3 from existing 6 are left.

Development of Research and Innovation University in Latvia

As stated earlier Research and Innovation University has three basic priorities - study process, research and commercialization – technology transfer activities. For Government to establish or strengthen one such University, it is important to provide appropriate support by defining it as a priority and providing a constant support. Model of establishment of Research and Innovation University is seen in Figure 2.

Figure 2 – Establishment process of Research and Innovation University



If Government has decided that it wants to strengthen economy by developing new products and innovations it must create higher education development plan according to this decision. Next step is to develop a classification of Universities, where one of leading higher education institution must be – Research and Innovation University. This will help to promote collaboration of researchers and business industry, allow creating new products and establishing new spin-offs (Closs L., Ferreira G.C., Soria A.F., Sampaio C.H., and Perin M. 2012). In Latvia it is possible to adjust Riga Technical University to the status of Research and Innovation University, since it has wide study and research areas and executes strong collaboration with business industry.

Based on existing variety of higher education institutions, authors offer following classification of

Latvian Universities:

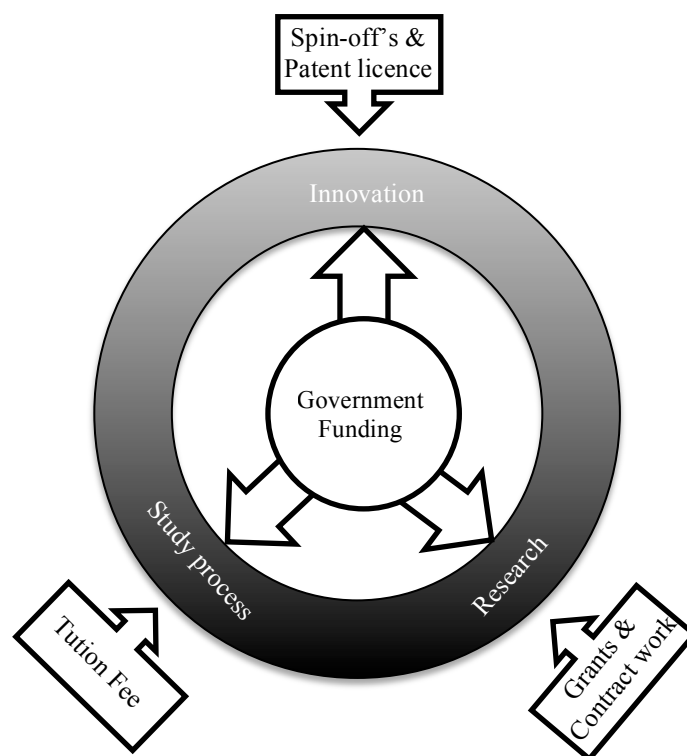
- Research and Innovation University – University that performs study and research activities and as one of its priorities defines collaboration with business, new product development and commercialization process. This University must work in three main directions – engineering and natural sciences as well as business management and design.
- Research University/-ies – University that executes high-level research, mostly in fundamental sciences and incorporates the results of scientific research and the research process it-self in study process.
- Regional University/-ies – University that ensures regional development and equal economic growth. This University implements study programs and research that is required by local business industry.
- Specific purpose based higher education institutions or Academies – institutions that provide specific study programs, such as fine art, music and other. Some of these institutions might be situated in regions, but they might not apply to the status of Regional University.
- Colleges – institutions that provide first level study programs.

Important for establishment process of Research and Innovation University is constant Government support to the University. Establishing results based funding model is one of priorities for such support. Government can define clear results it expect from the University and grant funding based on these results. Another important support line is infrastructure for technology transfer. Government in collaboration with local municipality must participate in creation of such infrastructure, for example, by developing joint business parks or technology parks. And third but not last support area is motivation to business industry to use University's services. Motivation can be provided in different ways –such as – granting tax benefits for the funding spent in Universities.

In year 2011 total funding for higher education that has been assigned by the Government for study and research process constituted LVL 73,5 mil. (MoES 2011). There was no funding allocated for commercialization or innovation activities performed by Universities. Which indicates that all innovation and technology transfer activities implemented by Universities were financed from the money received for study and research process or other internal sources. Authors once again stresses that Universities should receive in results based funding what should be allocated based on model seen in Figure 3.

Figure 3 shows that Governmental funding should be allocated to the Research and Innovation University for three interrelated activities – study process, research and commercialization. University is obliged to attract external funding from three basic income streams. First - tuition fee that provides income for study process, second - grants and contract work that provide income for research and third - technology transfer – income from spin-off's and patent licenses - and commercialization on new products for innovation process.

Figure 3 – Funding for Research and Innovation University



If Research and Innovation University receives basic funding for these three core activities it can perform well in attracting outside income as well (Bienen H.S. 2012).

Conclusions

Based on analysis done by authors it is clear that many different classification types of Universities exist and each country should pick one that best suits its economic development needs. Latvia has defined old-fashioned classification of Universities and now Ministry of Education and Science and some Universities have offered some new possible options for discussion. However, none of existing classifications offer to create Research and Innovation University, which is crucial for interconnecting business industry with research process.

Research and Innovation University performs study and research activities and as one of its priorities defines collaboration with business, new product development and commercialization process. For Government to establish such institution or strengthen one of existing in this status it is important to create higher education strategy and proper University classification. Next task for Government is to ensure appropriate support for Research and Innovation University by participating in infrastructure development for technology transfer, motivating business industry to use University's services and granting funding based on these results. Funding should be allocated for three core activities – study process, research and commercialization and must closely linked with results Government desires University to achieve.

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