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SciVerse ScienceDirect

Procedia - Social and Behavioral Sciences 52 (2012) 72 – 79

Procedia
Social and Behavioral Sciences

10th Triple Helix Conference 2012

Creating a web infrastructure of the regional innovation ecosystem in the Triple Helix model in Russia

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Abstract

This research attempts to find out the following issues: who is interested in the establishment of innovative economy infrastructure in the Internet; what technologies can be used in development of innovative infrastructure development in the Internet; what is the role of services and web sites in the development of innovation regions; is it possible to integrate services and web-sites of universities, businesses and regional authorities into a single web infrastructure.

Keywords: semantic web; infrastructure; innovation ecosystem

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1877-0428 © 2012 The Authors. Published by Elsevier B.V. Selection and/or peer-review under responsibility of Institut Teknologi Bandung
doi:10.1016/j.sbspro.2012.09.443

Introduction

Any innovation region must have a sufficient infrastructure for successful innovative and socio-economic development. The developing countries have been looking for the answer to the question «How to build an infrastructure for innovative activities?» in borrowing elements of innovation infrastructure from developed countries and creating their material infrastructure. Such elements include technological business-incubators for students, facilities within special economic zones, etc. Still, these do not provide a significant boost of regional innovation ecosystem and fail to bring tangible benefits to three main participants: government, business and universities [1].

In their approach to this situation, the authors of the article focus on the non-material infrastructure, which can have a significant impact on the regional innovation ecosystem development. Currently, Tomsk region is the key experimental platform in Russia where the Triple Helix Model is being adapted. However, the task is encountered with two main challenges. First of all, despite the many brilliant ideas put forward by enterprises, universities, and research groups, there is a lack of contact and communication between them, which hampers the development of new technologies and products. The second problem is the difficulty in finding information about the participants of regional innovation ecosystem in the Internet, which hinders efficient partnership. After a number of discussions with regional authorities, the authors proposed to include development of web infrastructure of innovation ecosystem into the innovation strategy of Tomsk region. It is aimed at boosting e-communication between universities, business and regional authorities. The regional administration has subsidized a grant to the Institute for Innovations of Tomsk State University of Control Systems and Radioelectronics to develop a web infrastructure of the regional innovation ecosystem in 2011–2014. The developers identified the following criteria for the development of the web infrastructure.

Establishment and functioning of the web infrastructure with the use of new web technologies should rest upon the principles of Triple Helix Model and reinforce communication between universities, business and regional authorities for the purposes of innovative development.

A web infrastructure is a tool to develop the regional innovation ecosystem, intensify e-communication between its participants, and promote the openness of the region, its integration into the global innovation system and research networks.

1. Current status of the research object

The global expert community pays significant attention to infrastructure establishment in the Internet. One of the projects designed to develop Internet infrastructure is FinnONTO project. Its main principles are described in the article of Semantic Computing Research Group (SeCo) from Helsinki University of Technology (TKK) and University of Helsinki «Elements of a National Semantic Web Infrastructure – Case Study Finland on the Semantic Web». The role of Internet in the development of innovative economy has hardly ever been discussed in Russian research publications.

2. Research Focus

The group of developers performed a study to reveal the following: 1) whether national and regional authorities are interested in the establishment of innovative economy infrastructure in the Internet; 2) what technologies can be used in proposed projects of infrastructure development in the Internet; 3) whether services and web sites can successfully support the development of innovation regions; 4) whether web sites of universities, businesses and regional authorities are integrated into a single web infrastructure.

3. Methodology