European Journal of Social Sciences Studies
ISSN: 2501-8590
ISSN-L: 2501-8590
Available on-line at: http://www.oapub.org/soc

10.5281/zenodo.55482 Volume 1 | Issue 1 | 2016

DEVELOPMENT AND INNOVATION MANAGEMENT ON HIGHER EDUCATION INSTITUTIONS

Giacomo Andolfi
PhD, Università degli studi di Bari Aldo Moro, Bari, Italy

Abstract:
The ability to innovate is considered as a major competitive advantage in organizations, enhancing their effectiveness, productivity, and thus their potential for long term sustainability. The concept has been strongly identified with manufacturing, where innovations concern products and artifacts, while in other sectors, like education, have by contrast, been seen as a "foot-dragger". However, the rapid expansion of the other sectors in modern economies and the increasing "servicisation" of many, previously pure, manufacturing industries have shifted the focus of attention to new forms of behavior and activities, expressed as service innovations. Third level institutions play the main part in increasing technical expertise and knowledge of graduates who will contribute at the development of the future enterprises and organizations. Due to globalization reasons, technological innovation, the arrival of the Information Age and other influences, theoretical and practical requirements for undergraduate and postgraduate students are constantly evolving. This obliges institutions to develop in new ways, to offer continual expansion and enhancement in their curriculum, research output and service to the business community. However, higher education is falling behind in modernization and improvement; and the break between what academia offer and what industry requires is of growing concern.

Keywords: innovation management, higher education institutions, curriculum enhancement, knowledge society

Introduction

The innovation management is the implementation of management techniques and devices in order to create the most favorable conditions for development of practical

Correspondence: Giacomo Andolfi, email: giacomo.andolfi@mail.com

innovations. In corporate management "*innovation*" is a function of the company, the transverse function that seeks to ensure the maximum of profitability and production. Innovation is, in the latter case, a managerial process, the objective to innovate, that is to say, to try to constantly improve existing dramatically through a process called "*innovation*."

> *"Innovation is a process of intra- and inter-organizational, deliberate, which led to the proposal and adoption of a market or within an organization, a new product. The new product can be a physical good, service, process, expertise, organizational device or a combination of several of these. This process allows the organization (eg business) to improve its strategic position (eg, gain or increase market power) and / or strengthen its core competencies, knowledge and know-how (technology, market, etc.)."*
>
> Sandrine Fernez-Walch, François Romon
> Innovation Management. From strategy to projects (2006)

> *"Innovation is a process that leads to the implementation of one or more products, processes, methods or services, new or improved, likely to meet implicit or explicit expectations and generate an economic value, environmental or social for all stakeholders. The actions and innovation management decisions are presenting two organizational levels of responsibility: strategic innovation management (including an evaluation and update of the choices) and the operational management of innovative projects."*
>
> AFNOR Standardization, FD X50-271. Innovation Management –
> Guide to implementing a management approach to innovation, AFNOR, 2014. (p. 31)

Higher education institutions are conventionally perceived as manufacturers of new knowledge, technology and quality graduates. Nowadays they are also supposed to be platforms of co-created innovations and enhancements in culture, knowledge and society. This is a challenge for all higher education institutions. The creation of technological, economic and social innovation requires new types of actions and collaboration from institutions of higher education as well as from their management, teachers, researchers and students.

Innovation management

Innovation management comprises a set of tools that permit managers and engineers to collaborate with a common accepting and understanding of methods, procedures and

objectives. Innovation management allows the institution to answer to external or internal opportunities, and use its inventiveness to familiarize new concepts and designs, processes or products. It is not transferred to R&D; it involves employees at every level in participating imaginatively and inventively to an institution's product development, manufacturing and marketing. By employing innovation management implements, management and engineers can activate and organize the inventive competences of the work force for a continuous and harmonious development. Common tools comprise brainstorming, virtual prototyping, product lifecycle management, idea management, TRIZ, Phase–gate model, project management, product-line planning and portfolio management. The procedure can be regarded as an evolutionary incorporation of organization, technology and market by iterating series of activities: search, select, implement and capture.

Innovation processes can either be pushed or pulled through expansion and progress. A pushed process is founded on existing or newly invented technology, that the organization has access to, and tries to find profitable applications for. A pulled process is founded on discovery areas where customers' requests are not met, and then discover answers to those requirements. In order to prosper with either method, an understanding of both the market and the technical problems are required. That can be achieved by forming multi-functional development groups, comprising engineers and marketers.

The product lifecycle of products is getting shorter because of increased competition. This forces companies to reduce the time to market. Innovation managers must therefore decrease development time, without sacrificing quality or meeting the needs of the market.

Universities are among the oldest educational foundations that humanity created. Until the last century, their duties remained untouched: education and research. On the last century new responsibilities was added to this: service to the society, or outreach activities, or knowledge transfer, or research valorization. Not only has this new responsibility many names, it also has many expressions – old expressions and new expressions, because of the recent modifications in society: from an information society into a knowledge society. A knowledge society "*creates shares and uses knowledge for the prosperity and well-being of its people*" (Wikipedia).

As one important creator of knowledge higher education institutions are also in center of innovation structures, like many other large producers of knowledge like for example large multinational firms. Also small firms, particularly knowledge intensive ones, are considered important performers in innovation networks as well, just as consultants and private research organizations have their definite scope. For universities the question in not only how to create usable research knowledge or find

the needed knowledge, but how to become a partner and act in dynamic innovation networks and how to combine knowledge from several sources and co-create it with other organizations, to contribute into innovativeness of industry and society as whole. This requires a multidisciplinary approach and research into applications combined with market intelligence.

Therefore, the evolution of scientific research which has advanced the evolution of knowledge, and the subsequent effects these two evolutions have on industry, have created an urgent need for innovation in universities that cannot be ignored. An evaluation of a broad spectrum of literature on innovation in higher education from both university and industry sources has uncovered a number of theories regarding how universities should innovate. These can be roughly divided into two arenas: a macro arena, which includes strategy, organizational culture and innovation champions; and a micro arena, which includes implementation of technology into teaching pedagogy and curriculum design within the classroom.

In innovation, there are also two kinds of developments (Lester and Piore 2004). There are goal oriented processes where targets are well-known. And then there are approaches that are more open-ended: for searching of new tactics, markets, tasks and goals. Higher education institutes are supposed to be a player in both types of networks and processes. Higher education is also expected to help others to transform, not only to improve itself. This creates expectations and higher education institutions are expected to have new competences and processes on areas of innovation and productive collaboration. New types of enterprises based on confidence and directness are necessary to cooperate. Knowledge conception in scientific investigation necessitates many times long lasting conglomerates but innovation involves also dynamic networking. This needs balancing among two "worlds".

In the search of innovations, higher education institutions also must be able to be linked to new research, knowledge conception networks and innovation networks at the same time. In the future, there is also need to connect to more application and other actors of the knowledge and technology. All this affects the ways how teaching and research are organized. Altogether new ways that build interaction with other actors and between the processes in house are to be developed. Changes affect also to recruitment of new people. Industry wants to hire people who have good contacts to industry; universities want to have researchers who can have good relations to industry, are ready, able and willing to mentor students to become entrepreneurs and teachers who want to use new teaching methods.

Successful innovative practices are built on a relationship among national/regional and institutional factors. The importance of one or another type of

factor contrasts subject to numerous features, such as scope of the initiative and level of autonomy of an institution.

Regarding the former, the broader the scope, the higher the influence of national/regional factors; the more limited the scope, the higher are the influence of institutional factors. Regarding the latter, more independent institutions of higher education, having more control over their financial incomes and distribution of these resources to their purposes, incline to cultivate more bottom-up practices.

The direct effect of these types of innovations may be more immediate, but also more restricted, often confined to the limitations of the innovating institution. On the other hand, less autonomous higher education institutions incline to have a more top-down, state-driven tactic to innovation. This does not make them less innovative, but comes to sustain wide-ranging relationships and processes across the higher education system and longer periods for application, ensuring a longer-term and larger impact beyond institutional borders.

Conclusions

The main scope of the future higher education institutions is to project and involve, in collaboration with society, industry world-class academic curricula, world-class education and world-class research. All this aims to deliver students with state of the art knowledge and competences for a career as employee or as an entrepreneur and for universities to be a partner and a major player in the open innovation system. Increased competition, the current evolutions of industry, technology knowledge, and best practice are just a few important reasons why innovation is vital for all higher education institutions.

Universities must modernize to reduce the break between academic researching and industry; and begin to provide graduates that encounter and surpass industry requirements. If universities do not meet industry requirements, organizations may take it upon themselves to deliver their own forms of higher education, or students may initiate looking for other educational opportunities, which may modify the university landscape permanently in the future.

References

1. Howells J: The nature of innovation in services. Innovation and Productivity in Services. Edited by: Pilat D. 2001, Paris: OECD, 55-79.

2. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O: Diffusion of innovations in service organisations: Systematic review and recommendations. The Milbank Q. 2004, 82 (4): 581-629. 10.1111/j.0887-378X.2004.00325.x.
3. Clark, B. 2004. Sustaining Chang in Universities: Continuities in case studies and concepts. Open University Press.
4. Miles I: Services in the new industrial economy. Futures. 1994, 25: 653-672.
5. Braun V, Clarke V: Using thematic analysis in psychology. Qual Res Psychol. 2006, 3: 77-101. 10.1191/1478088706qp063oa.
6. Clark, B. 1998. Creating Entrepreneurial universities. Organizational Pathways of Transformation, IAU Press, PERGAMON.
7. Lester, R. and Piore, M. 2004. Innovation - the Missing Dimension. Harvard University Press.
8. Chaiklin, S. 2003. The Zone of Proximal Development in Vygotsky's analysis of learning and instruction, In A.Kozulin, B.Gindis, V.S.Ageyev, S.M.Miller (Eds.), Vygotsky's Educational Theory in Cultural Context, Cambridge University Press, Cambridge, UK.
9. Shattock, M. 2003. Managing Successful Universities. Open University Press.
10. Tidd J, Bessant J: Managing Innovation: Integrating Technological Market and Organizational Change. 2009, Chichester: John Wiley & Sons, Ltd., 4
11. Boyatzis RE: Transforming Qualitative Information: Thematic Analysis and Code Development. 1998, Thousand Oaks, CA: Sage
12. Kari Laine, Peter van der Sijde, Matti Lähdeniemi, Jaakko Tarkkanen, Higher Education Institutions and Innovation in the knowledge society, Rectors' Conference of Finnish Universities of Applied Sciences ARENE , 2008
13. John Brennan, Steve Ryan, Marina Ranga, Simon Broek, Niccolo Durazzi, Bregtje Kamphuis, Study on innovation in higher education: final report, Luxembourg: Publications Office of the European Union, 2014
14. Gasser Scotte & Scotte, Managing Innovation in Higher Education, World Journal of Social Sciences, Vol. 2. No. 6. September 2012 Issue. Pp. 14 – 24