

## The Role of the Czech Public University in an Innovation-Based Era: From Academic Socialism to Academic Capitalism

Innovation is the key to success and survival in a knowledge-based society. It leads to increased competitiveness, which in turn leads to employment generation, socioeconomic sustainability, and social cohesion. To develop, strengthen, and sustain a high level of economic competitiveness, national systems of higher education worldwide are expected to produce world-class research, as well as to maximize nations' human capital (World Bank, 2002). In this sense, maximal utilization of *embodied* (i.e., formal education) and *disembodied* (i.e., research) human capital is a prerequisite for the continuous production of innovation (see for example, OECD, 1998; Rebelo, 1998; Romer, 1994).

The Czech Republic, that was widely praised in the West for a smooth transition from a totalitarian and closed system to a pluralistic and open one, has been considered one of the few post-socialist European countries with the best growth and innovation prospects (OECD, 2000). According to the 2002 European Innovation Scoreboard (EIS) indicators, for instance, the Czech Republic scores equal or above the EU mean when compared to the EU for the number of employees in high-tech manufacturing industry, high-tech services, and the total expenditures on research and development, and information and communication technology as a percentage of GDP (Innovation Scoreboard 2002, 2002). Subsequently, in 1998, approximately 34% of the Czech workforce consisted of highly skilled knowledge workers (Beck, 1998). In this respect, the Czech Republic is ahead of such economically strong countries as Canada (32.8% of knowledge workers), United States (32% of knowledge workers,

but estimated elsewhere as (40%), and Japan (16.1% of knowledge workers) (Beck, 1998).

Without a doubt, the continued future success of the Czech Republic will be even more profoundly associated with the primary outputs of universities. Therefore, if the Czech Republic aspires to maintain its privileged position among the world's most developed societies, it must now begin to analyze the future of its public higher education through forecasting the most probable future trends in terms of the knowledge production, diffusion (disembodied human capital), and professionalization (embodied human capital).

The primary purpose of this study, thus, was to forecast possible future directions for the Czech public university in an innovation-based era. In other words, this research project sought to build consensus among Czech educational experts as to what will be the most probable trends and events in terms of university knowledge production, knowledge professionalization, and knowledge diffusion. To achieve this objective, I selected one of the most effective methods for short-range, as well as long-range forecasting – Delphi. Delphi is a method of collecting subjective judgments from knowledgeable individuals about future events who possess relevant information about the topic of concern for which there is no hard data or well-established theory available (Dalkey & Helmer, 1963). The set of assumptions used to establish the plausibility of the future events is based on *informed judgment* (Delphi) of carefully selected experts relying on *retroductive logic* (i.e., expertise, experience, and insight) rather than inductive or deductive reasoning. S

Following a modified classical Delphi technique, selected Czech educational experts (n =12) were asked to fill out three successive rounds of web-based questionnaires containing 58 statements divided into three sub-themes: (1) knowledge

production (22 statements), knowledge professionalization (26 statements), and (3) knowledge diffusion (10 statements). The experts were asked to rate each statement on a five-point Likert-type scale ranging from strongly disagree to strongly agree responses.

The overall findings of the study revealed a high level of consensus toward the necessity of creating an entrepreneurial university as the most suitable type of Czech public universities for an innovation-based society. An ever greater dependence of society on the continuous knowledge and innovation production, the importance of the commercialization of research findings, and increasing autonomy are indeed one of the characteristic features of the entrepreneurial university that were agreed upon by the experts.

More specifically, in terms of knowledge production, the Delphi experts agreed upon the following stream of trends: (a) the importance of *purposeful networking* and *collaboration* with *non-academic* knowledge producers (Triple Helix); (b) the importance of *contextuality and practicality* of produced knowledge, and (c) the need for *transformation* of the institutional culture of the public university from a *hierarchical* to a *heterarchical* environment. Networking and collaboration are growing phenomena that will also significantly contribute to the pressure to re-design the *occupational identity* of academic researchers. While the traditional academician has not been faced with the dilemma of successfully reconciling the intersection of business and research, the emerging trends suggest that the academic researcher of the innovation-based society forms a new, hybrid occupational identity comprised of both academic and entrepreneurial skills. There will be an emergence of a new breed of successful “*academic capitalists*”.

Consequently, the issue of networking (formal or informal) relies intensively on the building of *mutual trust* in the production of knowledge, especially since competition in the transmission of new knowledge will become more profound. The production and diffusion of knowledge is often quite difficult in university-industry relations wherein conflicting interests and cultural barriers make the development of mutual trust quite difficult (Vysoka, 2003).

The second emerging theme is the increasing demand to produce knowledge that is *context-specific*, determined by specific economic or societal factors and needs, and thus available for immediate *practical use* and *application* (Gibbons et al., 2000). If, indeed, Czech public universities succeed in reconnecting themselves with the needs of the society: What will be the future role of the Academy of Sciences in an innovation-based society? Will it still exist? The Academy of Sciences might be viewed, in the Czech context, as the major competitor of public universities in the production and diffusion of knowledge.

Finally, the strong consensus regarding the practicality of knowledge, driven by actual societal demands, might they be present or future-oriented, also confirms the trend of creating knowledge that transcends its disciplinary boundaries. Agreement among the experts regarding this issue implies a radical change in the institutional landscape; the previously clearly defined boundaries of individual academic disciplines will become increasingly fuzzier to the point of possible future disappearance.

In terms of knowledge professionalization (this concept is rooted in the Western liberal notion of an *autonomous* and *independently* acting professional or expert who is not controlled by bureaucratic procedures, and whose knowledge is valued in all layers of society, i.e., knowledge and innovation workers), the Delphi

experts showed a high degree of consensus with statements advocating the development of such autonomous and independently acting knowledge and innovation workers. The experts envisioned the following four trends as being critical to this improvement: (a) the increased *access* to higher education; (b) the need for new *teaching and learning methods*; (c) the importance of developing students' *specialized knowledge* as well as *general skills*, and (d) the need for *global, issue-oriented, transdisciplinary* curriculum. The first emerging theme, one that speaks directly to the trend of massification of higher education, is the necessity of *increased access* to higher education. Currently, the proportion of adults with higher education in the Czech Republic is only 11% which is well-below, for instance, the OECD average (18%) or that of the U.S. (37%) (Mateju, 2003).

Apart from creating more opportunities for students and widening participation in higher education, experts also expressed a high level of consensus with statements on university mechanisms conducive to the development of students' skills generally associated with the characteristics of knowledge and innovation workers, i.e., those who are skilled at working with de-materialized resources such as knowledge, information, and data. Such skills cannot be developed in a vacuum or simply on a theoretical level; hence the call for a curriculum that is characterized by a direct connection to global and local reality.

And finally, the consensus regarding knowledge diffusion centered around two major themes: (a) the need for building new *communication bridges* between academia and society and (b) the *importance* of the timely diffusion of innovation. Not only will public universities have to design an effective means of communication with the non-academic environment, whatever that might be, but they also will have to solve the ever-pressing issue of capturing or *externalizing tacit knowledge*. Experts

agreed on the notion that a highly specialized language, the language that Alan Sokal and Jean Bricmont (1998) call “fashionable nonsense”, is often loaded with unnecessary discipline-specific jargon which further leads to hyper-specialization and fragmentation in science.

And finally, what will be the most effective means of knowledge diffusion in an innovation-based society? Consistent with knowledge management literature, the experts expressed their high level of consensus with statements pertaining to the role of *networking*, *cyclical forms*, and *technologies* in knowledge transfer.

All in all, my research findings can be summarized into one simple sentence: *In an innovation-based society, the Czech public universities will have to become entrepreneurial universities characterized by direct market activity, and entrepreneurial ethos and behavior.* I call this evolutionary trend a movement from academic socialism to academic capitalism. Yet, the concept of entrepreneurship is not an easily accepted idea among some academicians, who equate this notion with losing traditional academic values and norms of behavior (i.e., freedom, autonomy, prestige), and thus fear the possibility of creating one single academic chain of “McUniversities” (Paker & Jarry, 1995). These concerns seem to be unfounded since market mechanisms also expand the horizon of research by allowing independently and autonomously acting researchers to actively market and propagate their research ideas. Researchers “do not helplessly drift wherever the market leads them” but instead they actively create funding opportunities by “selling ideas to the funding agencies” (Ylijoki, 2003, p. 323).

To conclude, my research quite explicitly confirmed the notion of the entrepreneurial university as the most appropriate path for the future. I believe that preemptively addressing globally emerging issues in higher education should enable

educational leaders and other policy makers to not only deflect some of the anticipated problems and challenges, but most importantly, to begin to design the most desirable future for Czech higher education.

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