INNOVATION ASPECTS OF THE POSTINDUSTRIAL SOCIETY

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Resume

The paper is devoted to innovation aspects of the postindustrial society. It is defined that innovation has been and must continue to be a major driver of rising living standards. Preliminary estimates for several OECD countries show that firms now invest as much in intangible assets related to innovation (R&D, software, skills, organizational know-how and branding) as they invest in traditional capital such as machinery, equipment and buildings. There is growing recognition that innovation encompasses a wide range of activities in addition to R&D, such as organizational changes, training, testing, marketing and design. It is solved following tasks: shown the importance of innovation in postindustrial society; defined the role of knowledge and innovation in postindustrial society; analyzed postindustrial society in the context of innovation development; summarized policy principles of innovation in postindustrial society.

Key words: innovation, postindustrial society, information-based society, education, knowledge.

INOVAČNÍ ASPEKTY V POSTINDUSTRIÁLNÍ SPOLEČNOSTI

Resumé

Příspěvek je věnován inovačním aspektům postindustriální společnosti. Je definováno, že inovace jsou a musí být i nadále hlavní hnací silou rostoucích životních standardů. Předběžné odhady pro několik zemí OECD ukazují, že některé firmy nyní investují do nehmotných aktiv souvisejících s inovacemi (R&D, software, dovednosti, organizační know-how a branding), zatímco jiní investují do tradičního kapitálu, jako jsou stroje, zařízení a budovy. Stále více se respektuje, že inovace zahrnují širokou škálu činností, kromě výzkumu a vývoje, jako jsou například organizační změny, školení, testování, marketing a design. Toto vše je vyřešeno následujícími úkoly: poukázáním na význam inovací v postindustriální společnosti; definicí úlohy znalostí a inovací v postindustriální společnosti; analýzou postindustriální společnosti v souvislosti s rozvojem inovací; shrnutím principů politiky inovací v postindustriální společnosti.

Klíčová slova: inovace, postindustriální společnost, informační společnosti, vzdělávání, znalosti.

Introduction

The capability to innovate and bring innovation to market will be an important determinant of the postindustrial society over the future decade. There is growing awareness among politicians that innovative business is the main engine of progress and well-being as well as an important factor in meeting global challenges in domains such as the environment and health.

The research object of the current research is innovation aspects of the postindustrial society. The research aim of the paper is to analyze innovation aspects of the postindustrial society. The research aim causes the solution of the following research tasks:

to show the importance of innovation in postindustrial society;
to define the role of knowledge and innovation in postindustrial society;
to analyze postindustrial society in the context of innovation development;
to summarize policy principles of innovation in postindustrial society.

During the investigation it was used such scientific methods: analysis, synthesis, description, induction and concretization.

The investigation is based on the analysis of reports and publications of OECD, European Commission and papers of world-known scientific journals.

1 Postindustrial society essential features

The postindustrial society is largely due to the shift in the kinds of work and the processing of information technology. There is much emphasis on information processing and therefore, sometimes the emerging postindustrial society is also called 'information society'.

Regarding the nature of the emergence of this new society, there has been a debate among sociologists. Bell (1), Castles (2), Gordon (3) have been the major contributors to this debate. These theorists have developed the construct of information society or the post-industrial society with their own perspective.

Bell argues that information occupations or technologies would in the long run result in the development of postindustrial society. Castells, however, vehemently differs from Bell and Touraine and says that information-based society is more post-industrial than the industrial society which was post-agrarian.

It is important to Castells that the information society is not simply confused with a service society in which the manufacturing sector has all disappeared from view. Like Bell and Touraine, he identifies the dynamics of the coming society in which there is role of knowledge and the use of knowledge and not the predominance of any one particular sector of an economy.

We may refer to any thinker who has shown his concern for the post-industrial society, and emphasizes the prime role of knowledge and information in the development of this kind of society.

We give below some of the characteristics of the postindustrial society which are the resultant of informational mode of development (4).

People work with other people to deliver a service. Gone is the industrial society where the workers toiled on machines day in and day out – one shift after the other. Now, there is growth of service sector where there is very little of manual labor in which there is some degree of creativity and sociability. In the post-industrialism, the workers do not work upon things; they work with other people to deliver a service. This provides a more rewarding and interesting form of work. Transformation of working class to professional middle class

The post-industrialism creates a new professional class in place of labor class. In the industrial society, the labor was required to put its physical dexterity. Now that has gone. In the new society, the working class does not exist. It is because of this that Andre Gorz (1982) says that in the post-industrial society there is farewell to the working class.

Emergence of knowledge elites. The emphasis in postindustrial society is on knowledge as the source of societal change. But, the question is: who controls the sources of knowledge? Bell argues that it is the group of knowledge elites which controls. The knowledge, that is, information processing, comes from the new technical elites in the universities, government institutions and economic enterprises.

Growth of multiple networks. In the post-industrial society there are combined advances in communication technologies, systems of management and technologies of production. These advances retain their links with markets and production complexes. As a result of this, there is growth of multiple networks between corporations.

These networks enable firms to develop products jointly or to serve specific markets and thus represent a different economic strategy from the establishment of multinational empires. The focus of the coming society on knowledge and information as the driving forces brings multinational corporations together for economic growth.

Divide in society. The debate on the future state of post-industrial society also deals with the problem of the structure of such a society. To recapitulate the transformation of industrial society into post-industrial society, we would say that during the Fordian period there was mass production of goods on standardized scale for market.

Now, there was no decline m the production but it had become flexible, i.e., according to the varying needs of the consumers. There appeared a vast change in the kinds of work: the occupational structure witnessed professional change and manual labor gave way to service class sector (4).

Majority sell labor at cheap rates. Elaborating his thesis of unemployment in post-industrial society. Gorz says that the knowledge society remains restricted to professional class only. The labor in this situation remains out of employment. If it gets anything, it is only the domestic work which the professional class requires for its day-to-day living. The wages for the domestic work, obviously, are at throwaway prices. The domestic workers now only remain a servile class without any dignity.

Gorz, Bell, Castell, Gordon, Harvey and other post-industrial society's thinkers do not share in all their views. They differ largely on the strength of their emphasis. Despite their varying positions they can be singled on a number of economic and social fronts.

Above all, the writers seem to agree on one thing: there has indeed been a shift away from industrialism. In broad terms, this movement can be identified with a shift in the balance of the western economies from a manufacturing to a service base, primarily in terms of employment, although it is often extended to include the output of an economy (4).

2 The role of innovation in postindustrial society

Innovation has been and must continue to be a major driver of rising living standards. Preliminary estimates for several OECD countries show that firms now invest as much in intangible assets related to innovation (R&D, software, skills, organizational know-how and branding) as they invest in traditional capital such as machinery, equipment and buildings.

There is growing recognition that innovation encompasses a wide range of activities in addition to R&D, such as organizational changes, training, testing, marketing and design. The latest (third) edition of the Oslo Manual defines innovation as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.

By definition, all innovation must contain a degree of novelty. The Oslo Manual distinguishes three types of novelty: an innovation can be new to the firm, new to the market or new to the world. The first concept covers the diffusion of an existing innovation to a firm – the innovation may have already been implemented by other firms, but it is new to the firm. Innovations are new to the market when the firm is the first to introduce the innovation on its market. An innovation is new to the world when the firm is the first to introduce the innovation for all markets and industries.

Innovation, thus defined, is clearly a much broader notion than R&D and is therefore influenced by a wide range of factors, some of which can be influenced by policy. Innovation can occur in any sector of the economy, including government services such as health or education. However, the current measurement framework applies to business innovation, even though innovation is also important for the public sector.

Consideration is being given to extending the methodology to public sector innovation and innovation for social goals (5).

Governments play a fundamental role in determining demand-side policies, such as smart regulations, standards, pricing, consumer education, taxation and public procurement that can affect innovation. Because demand is necessarily linked to supply, policies that affect both need to

be better harnessed to drive long-term innovation and sustainable growth. Establishing a sound rationale for government intervention is important in this context.

The idea that "market failures" lead to under-investment in research has long been the principal rationale for government funding of research and development (R&D). However, the presence of bottlenecks or other failures that impede the operation of the innovation system can also constitute crucial obstacles to the effectiveness of the innovation effort.

Policies to stimulate innovation need to take account of changes in the global economy and the transformation of innovation processes. To transform invention into innovation successfully requires a range of complementary activities, including organizational changes, firm-level training, testing, marketing and design. Innovation today encompasses much more than research and development (R&D), although R&D remains vitally important. Innovation rarely occurs in isolation; it is a highly interactive process of collaboration across a growing and diverse network of stakeholders, institutions and users. Moreover, the emergence of new and important players has added to the complexity of the multifaceted international landscape of innovation.

Table 1: Policy principles for innovation in the postindustrial society (6)

Empowering people to innovate	Education and training systems should equip people with the foundations to learn and develop the broad range of skills needed for innovation in all of its forms, and with the flexibility to upgrade skills and adapt to changing market conditions. To foster an innovative workplace, ensure that employment policies facilitate efficient organizational change
	Enable consumers to be active participants in the innovation process
	Foster an entrepreneur culture by instilling the skills and attitude needed for creative enterprise.
Unrealising innovations	Ensure that framework conditions are sound and supportive of competition, conductive to innovation and are mutually reinforcing
	Mobilize private funding for innovation, by fostering well-functioning financial markets and easing access to finance for new firms, in particular for early stages of innovation. Encourage the diffusion of best practices is the reporting of intangible investments and develop market-friendly approaches to support innovation
	Foster open markets, a competitive and dynamic business sector and a culture of healthy risk-taking and creative activity. Foster innovation in small and medium-size firms, in particular new and young ones
Creating and applying knowledge	Provide sufficient investment in an effective public research system and improve governance of research institutions. Ensure coherence between muli-level sources of funding for R&D
	Foster innovation in the public sector at all levels of government to enhance the delivery of public services, improve efficiency, coverage and equity and create positive externalities in the rest of the economy

Applying innovation to address global and social challenges	Improve international scientific and technological co-operation and technology transfer, including through the development of international mechanism to finance innovation and share costs
	Provide a predictable policy which provides flexibility and incentives to address global challenges through innovations in developed and developing countries , and encourages invention and the adoption of cost-effective technologies

These factors require rethinking innovation policy in order to move beyond supply-side policies focused on R&D and specific technologies to a more systemic approach that takes account of the many factors and actors that influence innovation performance, including demand-side policies. The policy objective should not be innovation as such, but its application to make life better for individuals and society at large. This is no easy task, especially as the scope for policies for innovation broadens. Effective policies will require priority setting and strategic decisions, safeguards against favoring a particular firm or region for political as opposed to economic or social reasons, and recognition that striving for "whole of government" co-ordination involves transaction costs. The objective of the OECD's work to develop a strategy for developing policies for innovation is to support this process, avoid these pitfalls and provide guidance to achieve these goals.

Conclusion

Innovation has been and must continue to be a major driver of rising living standards. Preliminary estimates for several OECD countries show that firms now invest as much in intangible assets related to innovation (R&D, software, skills, organizational know-how and branding) as they invest in traditional capital such as machinery, equipment and buildings.

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Governments play an important role in determining demand-side policies, such as smart regulations, standards, pricing, consumer education, taxation and public procurement that can affect innovation. Because demand is linked to supply, policies that affect both need to be better harnessed to drive long-term innovation and sustainable growth. Establishing a sound rationale for government intervention is important in this context.

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