

MEASURING KNOWLEDGE ECONOMY: TOWARDS AN INSTITUTIONAL APPROACH

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The general message of this article is that the standard approach to knowledge economy is becoming increasingly inadequate, because even within the same market system different countries take different paths of social development. The paper argues that formal institutional arrangements, implemented according to EU recommendations and backed by EU financing, merely touch upon the surface of the problem. Therefore, it is necessary to introduce a conceptual and analytical framework and address key issues related to knowledge economy and society. The paper stresses the role of informal institutions, embeddedness, and the concept of social trust.

Keywords: *knowledge society, knowledge economy, institutional theory, embeddedness, social trust.*

Reikšminiai žodžiai: *žinių visuomenė, žinių ekonomika, institucinė teorija, susaistymas, pasitikėjimas.*

Introduction

Over the recent years, the processes of building “knowledge society” and “knowledge economy” have received increasing attention from public policy researchers, policy makers and public officials. However, the meaning of these concepts is gradually deteriorating, and “knowledge society” is becoming a “broad church”, where different approaches may become convoluted. The present paper turns attention to the neglected gap between knowledge economy and knowledge society. *The objective of this paper* is to present new theoretical approaches to explain this widely observed gap. Emphasis is placed upon the concepts of embeddedness

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and trust. The paper utilizes this approach based on the assumption that EU countries have been creating different forms of institutional arrangements.

According to the World Bank (1996), the essence of the transition from “plan to market” is the replacement of one set institutions governing social life by a different one. The paper argues that due to path dependency of formal and informal institutions, it is impossible to replicate Western patterns and practices for the creation of knowledge society. It was M. Weber (1934/1997) who claimed that, though “capitalism” had existed in different societies, the origins of modern capitalist society are rooted in a system of Protestant values and norms. Although the role attributed to Protestantism by Weber is debatable, the fact remains that ideological models shape and guide the economic and social development of societies. In order to understand and influence such processes, we have to delve deeper into the informal structure of society.

The paper argues that formal institutional arrangements, implemented according to EU recommendations and backed by EU financing, merely touch upon the surface of the problem. The general message of this article is that standard policy for the creation of knowledge society has become increasingly inadequate because even within the same market system, different countries take different paths of social development. It is necessary to introduce a new conceptual and analytical framework, and to address key issues related to knowledge economy and society. The paper stresses the role of informal institutions and the concept of trust.

1. The role of formal and informal institutions

According to North (1990), institutions can be defined as any form of constraint that human beings devise to shape human interaction. Institutions comprise of formal written rules and organizations, as well as unwritten codes of conduct that underlie and supplement the formal rules. Formal rules may change overnight as a result of political or judicial decisions. Informal constraints, however, embodied in customs, traditions, and codes of conduct are mostly impervious to deliberate policies (North, 1990).

In Table 1, Williamson (2000) proposes a classification framework based on different levels of hierarchy. The higher level imposes constraints on the lower level, and feedback takes place from the lower level to the higher one. Since Lithuania joined the EU, most of the institutions of levels 3 and 4 have experienced rapid transformation. New rules of governance and new mechanisms of resource allocation have facilitated the development of knowledge intensive industries. However, some of the new allocation mechanisms in the post-Communist countries have nothing to do with the traditional ones, based on Western values. For example, there is evidence that corruption has become an institution in some East European countries, and is prevalent in defining the modes of contractual relationships and mechanisms of resource allocation. On the other hand, the informal institutional structure of Lithuania

has not changed much. Williamson (2000) points out that the path of change in levels 1 and 2 is very slow.

Table 1. **Level-based classification of institutions**

<i>Level</i>	<i>Examples</i>	<i>Frequency of change</i>	<i>Effect</i>
Level 1			
Social structure of society	Informal, such as traditions, social norms, customs. Exogenous	Very long horizon (102 and 103 years), but may also change in times of shock/crisis	Defines the way a society conducts itself.
Level 2			
“Rules of the game”	Mainly formal rules defining property rights and the judiciary system. Exogenous and endogenous	Long horizon (10 to 100 years)	Defines the overall institutional environment.
Level 3			
The play of the game	Rules defining the governance of private structure of a country and contractual relationships, e.g. business contracts, ordering. Endogenous	Mid-term horizon (1 to 10 years)	Leads to the building of organization.
Level 4			
Allocation mechanisms	Rules related to resource allocation, e.g. capital flow controls, trade flow regimes, social security systems. Endogenous	Short-term horizon and continuous	Adjustment to prices and outputs, incentive alignments.

Source: adapted from Jutting (2003) and Williamson (2000)

North (1981) notes that Western societies have created their institutions over decades, if not centuries, and they vary as a result of different historical evolution and underlying conditions in each country. In post-Communist countries, and Lithuania in particular, path dependency shapes the future of institutional frameworks. As noted by Meyer (2000), we can predict that Eastern Europe may develop a distinctive form of capitalism. A question remains whether the development of knowledge economy will follow the Western pattern. North (1994, p. 366) stresses that “...economies that adopt the formal rules of another economy will have very different performance characteristics than the first economy because of different informal norms and enforcements”.

In establishing a legal framework in independent Lithuania, the main emphasis was put on the establishment of formal institutions. North (1991) stresses “the fundamental rules of the game” or the basic ground rules provided by constitution and

law. Meanwhile, the informal institutions are neglected. The paper argues that only sustainable development of both types of institutions, and informal ones in particular, could guarantee the success of the process.

2. Knowledge, information and different kinds of knowledge

There is a tendency to use the terms “information society” and “knowledge society” interchangeably. However, the paper adopts the view that there is a key difference between knowledge and information. According to Bell (1975, p. 168), “information means ‘data processing in the broadest sense’; knowledge means ‘an organized set of statements of facts and ideas, presenting a reasoned judgement or an experimental result, which is transmitted to others through some communication medium in some systematic form’”. Therefore, the term “information society” corresponds to the technical side of the problem, and the term “knowledge society”—to the human side.

Lundvall (1996) avoids the dichotomy of information *versus* knowledge, and distinguishes between four types of knowledge: know-what, know-why, know-how, know-who. According to Lundvall (1996), know-what refers to knowledge about “facts”; know-why concerns knowledge about principles and laws of nature; know-how is about capability (skills) to do something; and know-who involves social capability to establish relationships with other people or groups. This classification could be traced back to the concept of tacit knowledge, developed by Polanyi (1983), who claims that there are different types of knowledge, different origins of knowledge, as well as different modes of knowledge transfer. Moreover, Lundvall (1996) stresses that it is impossible to gain access to tacit knowledge through ordinary market transactions. Therefore, a question arises as to what institutional arrangements we need, and what are the most appropriate mechanisms of the transfer to facilitate access to different types of knowledge.

In light of the above arguments, the paper adopts the view that different types of institutional arrangements are suitable for different types of knowledge (know-how, why, what, and who). Moreover, it is a combination of formal and informal institutions which creates the most conducive environment for knowledge creation and transfer. While explicit and codified knowledge is easy to transfer within the framework of formal institutions, tacit knowledge has to be backed up by the mechanisms of informal institutions.

3. The idea of knowledge society

As early as in 1960, Peter Drucker had noticed a transformation from the manufacturing-based industrial society of the post-war period, through a service society, towards to a so-called post-industrial society. According to Drucker (1993, p.7), we

are entering the phase of “knowledge society”, where “the basic economic resource” is no longer capital, natural resources, or labour, but “is and will be knowledge”.

The idea that the knowledge has a superior role in the economic processes is not a novel one. The Austrian school of economics, and Hayek (1945) in particular, has explored the importance of implicit, context-specific knowledge. Subsequently, the advent of the so-called “information age” has provided us with new insights. Currently, the concept of knowledge has moved from the domain of pure economic theories into the broader waters of sociology. Daniel Bell (1973) coined the term “post-industrialism”, which has lately been changed to “information” and/or “knowledge” society. Augustinaitis (2003) stresses the increasing dominance of such formations as different communities, interest groups, social networks and institutions that represent these groups. Values and symbolic capital play a key role in knowledge-based society (Augustinaitis, 2003). Moreover, knowledge society reshapes existing relationships between governing bodies and citizens (Augustinaitis and Petrauskas, 2002).

Anthony Giddens was one of the first to introduce the idea of knowledge economy into the sphere of public policy. Giddens (2000) points out that societies or regions can move from an agrarian to a knowledge economy without passing through a phase of old-style industrialization. At the same time, these economic transformations have to be backed up by social transformations. A. Giddens stresses that a crucial role belongs to the development of human capital, where the main factor is education. The system of education encompasses different levels and modes. However, current European Commission and World Bank policies take a narrow view, and mainly emphasize the goals of research and innovation. In this particular case, knowledge is construed purely as an economic resource. Institutions of higher education and universities in particular have been regarded as part of the innovation system, assuming intensive co-operative relationships between businesses and public institutions. It is hard to deny that knowledge becomes a key factor of economic productivity. However, the role of the scholarship in the processes of social transformation remains neglected. There is an increasing tendency to reduce the concept of knowledge down to a straightforward definition of knowledge as a production resource. In spite of this, knowledge also has certain characteristics of a public good (Schultz, 1981). Moreover, many authors claim that there is no such thing as “knowledge economy”. This might be true, but what about “knowledge society”? Is it the same modern society “plus Internet”, or do we have a case of qualitative transformation? The article argues that in terms of institutional development, knowledge plays a dual role. On the one hand, it is a key resource of modern economy. On the other hand, knowledge as a public good shapes the social structure.

4. The traditional approach to knowledge economy: economy without society

The current situation in Lithuania represents a bizarre mix of agrarian, industrial and post-industrial societies. On the one hand, Lithuania has a sizeable agricultural

sector, which lags behind in terms of productivity and competitiveness. On the other hand, the country has declared an ambitious aim to build a knowledge-based economy. Lithuania's progress in developing a knowledge-based economy was assessed in the study "Measuring Knowledge in the World's Economies", prepared by the World Bank Institute (2008). According to the Knowledge Economy Index (KEI), Lithuania ranks high among countries that have made the most progress in developing information and communications infrastructure and improving economic and institutional framework (table 2).

Table 2. Changes in the KEI from 1995 - top gainers. Source: World Bank (2008)

Country	KEI Rank Change	KEI 2008 Rank	KEI 2007	EIR Rank Change	EIR 2007 Rank	Innovation Rank Change	Innovation 2007 Rank	Education Rank Change	Education 2007 Rank	ICT Rank Change	ICT 2007 Rank
Mongolia	+24	70	4.80	+25	66	+2	109	+40	42	+26	73
China	+18	77	4.36	+21	80	+17	64	+5	87	+34	78
Mauritania	+16	114	2.08	+38	86	+8	129	-1	126	-1	116
Lithuania	+14	30	7.70	+8	31	+20	44	+15	20	+28	29
Tunisia	+14	72	4.69	+11	65	+13	70	+7	88	+13	67
Dominican Republic	+14	86	3.71	+36	74	-3	103	-4	83	+7	95
Armenia	+13	61	5.41	+64	56	+6	48	+5	49	-12	87
Angola	+13	123	1.51	+16	120	+7	116	+11	122	+2	128
Romania	+12	45	6.18	+10	46	+13	58	0	50	+13	52
Turkey	+12	52	5.68	+5	41	+35	57	-8	84	-1	59
Algeria	+12	95	3.20	+7	114	+8	91	+3	93	+4	100
Vietnam	+12	96	3.17	+4	107	+25	104	-1	94	+24	94
Latvia	+11	32	7.61	+9	29	+21	46	+14	18	+15	34
Brazil	+11	55	5.50	-6	73	+4	49	+32	54	+5	58
Lao PDR	+11	124	1.50	+6	132	+2	137	+9	108	+7	122

The KEI summarizes each country's performance on 12 variables corresponding to the four knowledge economy pillars: Economic and institutional regime, Education and skills of population, Information infrastructure, Innovation system (figure 1).

In the study, the World Bank attempts to formulate the core of an agenda that aims to support Lithuania's efforts to achieve a knowledge economy. Proposals are grouped into six categories involving both policy measures and private initiatives. The first category concerns the improvement of collaboration between the business community and the public sector. The second encompasses activities related to reforming and supporting public institutions. The study also recommends incentives for innovation, learning, and networking within information society; to support labour market development, as well as to strengthen the regulatory framework.

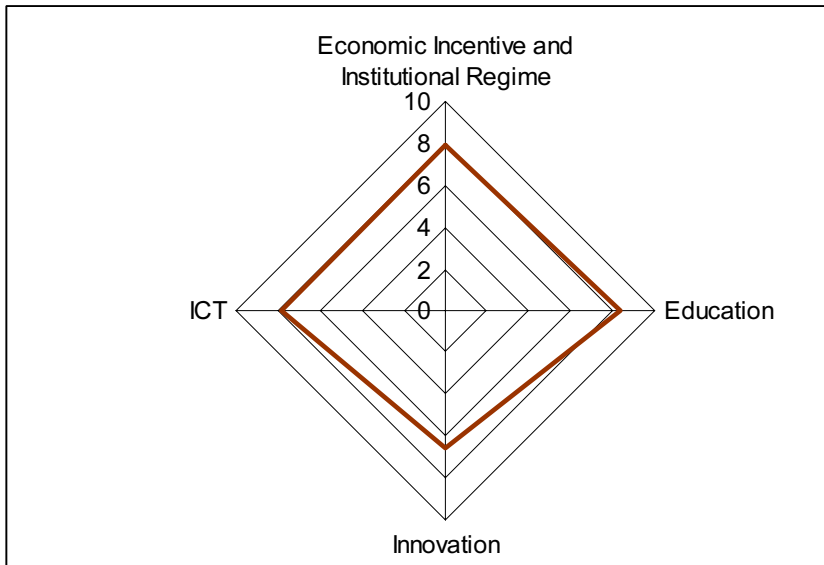


Figure 1: Lithuania's performance in developing a knowledge economy.
Source: World Bank (2008)

The Knowledge Economy Index takes into account whether the environment is conducive to the effective use of knowledge for economic development. However, the index captures only the constituent parts of the formal institutional framework, such as universities, clusters, technology parks, infrastructure, legal basis, etc. Meanwhile, informal institutional arrangements are neglected. Admittedly, it was not the World Bank's intention to examine such topics as the development of informal institutions. Regardless, the current index illustrates the popular approach based in the assessment of formal institutional arrangements. Such assessments and recommendations rest upon two basic assumptions. Firstly, it is implicitly assumed that institutions are endogenous in relation to the economy, whereas society gradually converges towards the common pattern of the free market system. Secondly, there is a strong belief in the success of transferring informal exogenous institutions.

5. An alternative approach: “the social life of knowledge”

D. North (1991) points out that, in terms of transaction costs, institutions reduce coordination and production costs per exchange, so that the potential gains from trade are realizable. To put it in another way, an effective institutional framework reduces the opportunistic behaviour of actors. Trust is an alternative way to reduce opportunistic behaviour. Guogis and Gudelis (2003) demonstrate the relationship between social trust and civil society. Social trust reduces transaction costs and facili-

tates collaboration between actors. To a large extent, transaction costs theory, as a part of New institutional economics, is based on the concept of opportunism. In the original literature of New institutional economics, opportunism is defined in general terms as “self-interest seeking with guile” (Williamson 1975, p.6). At the same time, Williamson stresses the market-hierarchy dichotomy, and neglects the role of collaboration. In this case we approach the same conclusion, that only formal institutions can decrease transaction costs.

Concerning the issue of formal rules, it is widely argued that it is difficult to account for why actors follow some rules but not others. Although North acknowledges the role of ideology, cultural beliefs, norms and conventions, his approach does not provide an appropriate framework to study how knowledge, and tacit knowledge in particular, is created and shared within a network of actors. The present study argues that the concept of embeddedness could provide a framework for a better understanding of such processes.

The concept of embeddedness of economic action was introduced by Granovetter (1985). Granovetter is quite sceptical of the ideas espoused by New institutional economics (Williamson 1975) and proposes an alternative view. Granovetter (1985) emphasizes the role of specific personal relationships and structures (or “networks”) of such relationships in generating trust and discouraging malfeasance. The idea is that we trust people we know or have heard spoken of in a positive way. Considering the role of trust and collaboration, two important issues should be put forward. The first is related to the creation of informal networks, and the second one concerns the dissemination of information within such networks.

In analysing relationships between knowledge-based economy and society, many researchers, experts and politicians in Lithuania used to refer to the Silicon Valley phenomenon. However, few of them account for the role of social networks. According to Saxenian (1996), the success of Silicon Valley is rooted in the networks of practice within the particular cluster. Brown and Duguid (2001) note that common practice creates extended epistemic networks and enables the flow of knowledge within them. Going back to the question of cluster formation, the paper argues that there are two dimensions to this process - formal institutional and informal networking. The formation of a successful cluster depends on the interplay between formal arrangements and networking activities.

Conclusions and perspectives for further research

The field of knowledge economy and knowledge society research is expanding rapidly. Nevertheless, there is an increasing tendency of deterioration in the research domain. The paper attempts to refresh the current analytical framework. The need for new theoretical insights is justified by substantial evidence of a disconnect between current theories and empirically observable processes in the new EU members. Opportunistic behaviour and lack of trust cause considerable friction in the process of knowledge society development in Lithuania. The paper argues that straightforward

implementation of a formal institutional framework does not guarantee the successful development of a knowledge society. It has to be backed by interplay between formal and informal institutions.

Based on the concepts of formal and informal institutions, embeddedness and social trust, the paper proposes guidelines for the new theoretical framework. Sustainable development of both types of institutions, and informal ones in particular, could guarantee the success of knowledge society development. Prospective policies for knowledge society development should be based on the interplay between formal and informal institutional arrangements.

As for future research, new paradigms should be developed. Up to date, the paradigm of economic rationality has dominated. It is based on the assumption that economic actors behave rationally, and always choose the best alternatives. In such a case, all we would have to do is to select the best institutional system, where transaction costs are the lowest. However, there is strong evidence that institutional arrangements do not guarantee the development of knowledge society. The paper proposes a paradigm shift towards the concept of embeddedness, where personal relationships and structures (or “networks”) of such relationships generate trust and discourage malfeasance.

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ŽINIŲ EKONOMIKOS RODIKLIAI: INSTITUCINIO POŽIŪRIO LINK

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Santrauka

Straipsnyje nagrinėjamos žinių visuomenės bei žinių ekonomikos plėtros perspektyvos Lietuvoje. Formaliosios institucinės sąrangos požiūriu šiai plėtrai Lietuvoje yra sukurtos visos reikalingos sąlygos. Tačiau vis aiškiau yra matomi požymiai, kad vien tik formaliųjų institucijų sistema yra nepajėgi susitvarkyti su iškeltais uždaviniais. Per ilgą laiką susiklostę visuomenės ideologiniai modeliai lemia šalies visuomenės vystymosi kryptį ir dinamiką. Daugėja atvejų, rodančių, kad naujų ES narių visuomeninė raida gerokai skiriasi nuo senųjų Sąjungos narių. Todėl mechaniškas formaliųjų institucijų (žinių branduoliai, technologijų parkai, inovacijų centrai ir kt.) perkėlimas negarantuoja raidos sėkmės. Trūksta grandies, kuri sietų žinių ekonomiką ir žinių visuomenę. Remiantis socialinių santykių susaistymo ir tarpusavio pasitikėjimo koncepcijomis siekiama apibrėžti šios grandies koncepcinius kontūrus žinių kūrimo ir sklaidos požiūriu.

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