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Title: Social Infrastructure of Inter - organizational Networks and Regional Entrepreneurial Development: technological and managerial role of universities

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Abstract: the paper addresses the issue of social regional infrastructure in the context of regional entrepreneurial development. Authors emphasize the issue of inter-organizational networks of social relations as profound elements of regional pro-entrepreneurial infrastructure. Inter-organizational social networks are described as institutional pillars which are necessary for cooperation, mutuality and stability among regional organizations. Among different kinds of regional actors (special emphasis is put on: SME, Research and Development Institutions - incl. Universities, Business Support Institutions) - who are creating regional networks - special roles play regional leaders. Process of regional development is perceived in the context of regional undertakings which are strategically shaped by behaviors of regional leaders. Within the above context authors attempt to prove that Universities can play both the role of regional technological competence leader and the role of regional managerial leader.

1. Short characteristic of regional infrastructure within knowledge economy

Regional infrastructure is strongly affected by processes which take place in today world. The most obvious and popular characteristic of today world are knowledge dominated processes. This processes shape both economic and social policies of current governments and according to the trends of decentralization regional and local governments are especially involved in. The most important features of today economy are (F. 2000): (a) large innovative ability of organizations, (b) using the newest achievements of IT technology, (c) the globalization of world market, (d) rapid growth of knowledge as the basic carrier of economic success. Within the above circumstances the competitive position of today organizations created traditionally by material values are in more and more degree substituted by such organizational features as (Kanter 1997) (a) the core competencies consisted of distinctive organizational abilities,

processes and resources, (b) the abbreviation of lifecycles and value creation processes, (c) the continues learning oriented toward real improvements implementation, (d) the network of external relations with special emphasis on their social aspects. The general consequence of above counted knowledge based features of competitive success of today organizations is progressive growth of organizational behaviors complexity. The classical economic theories based on cost versus income calculation seem to be very poor within knowledge based economy and analysis of organizational behaviors has to take into account social aspects (Bratnicki 2001; Stachowicz and Kordel 2004)

The definitions of region are based on various categories but the most essential are (Gancarczyk 2001): territorial space (natural environment), and socio - cultural space (social, cultural, institutional, economical and technological environment). The shift toward knowledge economy view of region is based on two foundations (Stachowicz 2004): (a) region as system of organizations and institutions that create regional system of various development processes. These regional processes should be consciously managed toward achievement of different purposes including growth of competitive position of region with special emphasis put on quality of life of its inhabitants; (b) intellectual resource treated as the crucial regional capital. From among various aspects of intellectual capital social capital plays a special, causative role. It builds the social regional institution (North 1991) that is basic in the context of region understood as entrepreneurial network of different organizations. The entrepreneurial regional environment based on social capital is actively enhanced by regional projects that create different social institutions (e.g. cluster, scientific and industrial parks, incubators, loan funds etc.). The entrepreneurial regional development is so the outcome of conscious process of regional strategy implementation. Regional leaders play the decisive role within the above process and their behaviors strongly affect entrepreneurial development of region that is determined by entrepreneurial behaviors of regional organizations. The basic features of entrepreneurial behaviors of regional organizations are (Stachowicz et al. 2003): (a) innovativeness, (b) developmental feature of outcomes of organizational behaviors, (c) liable risk taking, (d) social responsibility.

Polish regions have already created the Regional Development Strategies (RDS) as the parts of National Development Program. Within the framework of regional strategies the Regional Innovative Strategies (RIS) oriented toward building pro-entrepreneurial regional environment play very important roles. There are many initiatives which cover the RIS strategy in Katowice Voivodship (traditional industrial region in south of Poland). Many scientific and industrial organizations have already created various groups of cooperations (e.g. clusters, technological parks, scientific parks, technology centers, loan institutions, new business initiatives incubators etc.) that create very strong potential from pro-innovative regional development point of view. Universities (especially Technical Universities) play here very important role both as part of high technologies creation teams and part of regional leader teams.

2. Inter - organizational regional networks as high potential pools of social capital

The term of inter - organizational network understood as two or more organizations engaged in long term relations has been very popular during the last years. Inter-organizational networks are described as a specific mechanism of coordination of economic transactions¹ (Powell 1991). In the regional context networks

¹ Networks of inter - organizational relations are often described as substitute for two opposite traditional mechanisms of economic exchange: hierarchy and market.

of organizations are process oriented structures characterized by social values such as: mutuality, cooperativeness and relative stability, which join independent regional actors. At the same time these loosely shaped relations can create different configurations and can be used for exchange of different resources. Within the above context inter-organizational relations can be treated as a kind of unique regional resource that plays important role in process of building of regional competitive advantage.

Inter-organizational relations are described by the category of social capital most commonly. Scholars have already conceptualized this category very broadly and there are various definitions of social capital in the literature (Bourdieu 1986; Coleman 1990; Fukuyama 1995; Nahapiet and Ghoshal 1998). Summarizing different approaches to social capital one can distinguish two opposite theories: (a) egocentric theory (Bourdieu 1986), according to which social capital is a collection of resources belonged to entities, accessible across possessing more or less institutionalized relations of mutual recognition, (b) sociocentric theory (Coleman 1990), according to which social capital is the only characteristic of many entities who are interrelated by social relations that facilitate decision making processes. Polish researchers have presented interested analysis within the issue of social capital as well (Bratnicki and Kordel 2002; Bratnicki et al. 2002, Stachowicz and Kordel 2003), but the issue is not deeply recognized in Poland.

At present, there is a strong trend toward the integration of various approaches to social capital category in the world management literature. The integrative trend (Nahapiet and Ghosal 1998; Cohen and Prusak 2000; Adler and Kwon 2002; Kostova and Roth 2003) is represented by approach according to which social capital is defined as potential value arising from certain psychological states, perceptions, and behavioral expectations that social actors form as a result of both their being part of social structure and the nature of their relationships in these structures. In accordance with integrative approach the social capital can be measured in the three-dimensional model (Nahapiet and Ghosal 1998; Cohen and Prusak 2000). Three key dimensions of social capital are: (a) the structural quality of relationship, which refers to the structure of social network (communication channels); (b) the relational dimension, which deals with social values (mutual trust and reciprocities); (c) the cognitive dimension, which embraces the level of shared understanding and goals (common mental models).

In the context of regional development social capital is defined as (Stachowicz 2005): process oriented network of organizations (including various institutions and companies) and inhabitants which structure them into particular parts of social capital (structural, relational and cognitive) in order to: (a) create and enhance their entrepreneurial behaviors; (b) increase number, effectiveness and efficiency of regional projects. Beside the category of social capital analysis of region as network of different relations needs category of IT culture. IT culture is defined as (Orylska 1998) hardware resources, software resources and human abilities within the area of using IT technology (including internet as very important part) in every day life of organization. Modern, knowledge societies are based on IT technology in more and more degree and crucial role of IT culture is especially obvious when one is talking about explicit knowledge and its diffusion. Widely understood IT technology is very important part of regional pro-entrepreneurial strategies including management of inter-organizational networks. Social and IT infrastructures are complementary technologies that create basic pre-conditions for regional pro-innovative system and entrepreneurial regional development. Efficient knowledge management on regional level needs social capital when regards tacit knowledge and IT infrastructure when regards explicit knowledge.

3. Regional leadership, Universities and pro-entrepreneurial regional development

The leadership theory is very deeply rooted within management literature. In measure of period of time the varied theories of leadership underwent the change. Today range of leadership theory can be divided into following areas (Van Seters and Fidel 1990): (a) personality era, which focused on establishing a list of traits that are the most important for effective leader (the route to becoming the effective leader was to study and to copy the lives of previous great leaders); (b) influence era, according to which leadership is a process involving relationships between individuals; (c) behavioral era, scholars who represented this school examined typical leader behavior patterns and differences in behavior between effective and ineffective leaders; (d) situation era, which focused the context in which leadership is exercised; (e) contingency era, according to which effective leadership was dependent on many factors of behavior, personality, influence and situation; (f) transactional era, added to the previously described insights that leadership resided in role differentiation and social interaction; (g) culture era, the main idea within this school was that if leader can create a strong culture in an organization then people will lead themselves; (h) transformational era, according to this insight the emphasis is on strong leadership, which both creates the vision and empowers subordinates to carry it out.

Above described schools of leadership create the theoretical background for analysis of leadership behaviors on the regional level. Especially two last insights which put emphasis on culture and participative vision building process seems to be very useful. In the context of participative leadership models, the basic mechanism of social influence is social capital and its central dimension trust. The crucial dimensions of trust based leadership are (Kordel 2002): (a) business ethics and management by ethical values; (b) abilities within the field of influence of emotions and expectations; (c) informal authority of leader; (d) participation and empowerment; (e) strong and widely shared vision of development; (f) consequence and reliability. Trust based leadership has a special impact on strategy developing processes (Bratnicki 1999). Empirical investigations carried out among polish organizations pointed out five the most important strategy creating processes (Kordel 2002): SCP1: strategy creating process based on strong vision initialized by leaders; SCP2: strategy creating process based on friction of various centers of organizational power; SCP3: strategy creating process based on participation and free flow of information; SCP4: strategy creating process based on social values and organizational order; SCP5: strategy creating process based on strong tendency toward the maximization of financial output. In the context of trust based strategy creating processes the most common were processes first, third and fourth. In other words trust based management creates strategy by the meaning of strong vision of development, participation, free flow of information and social values.

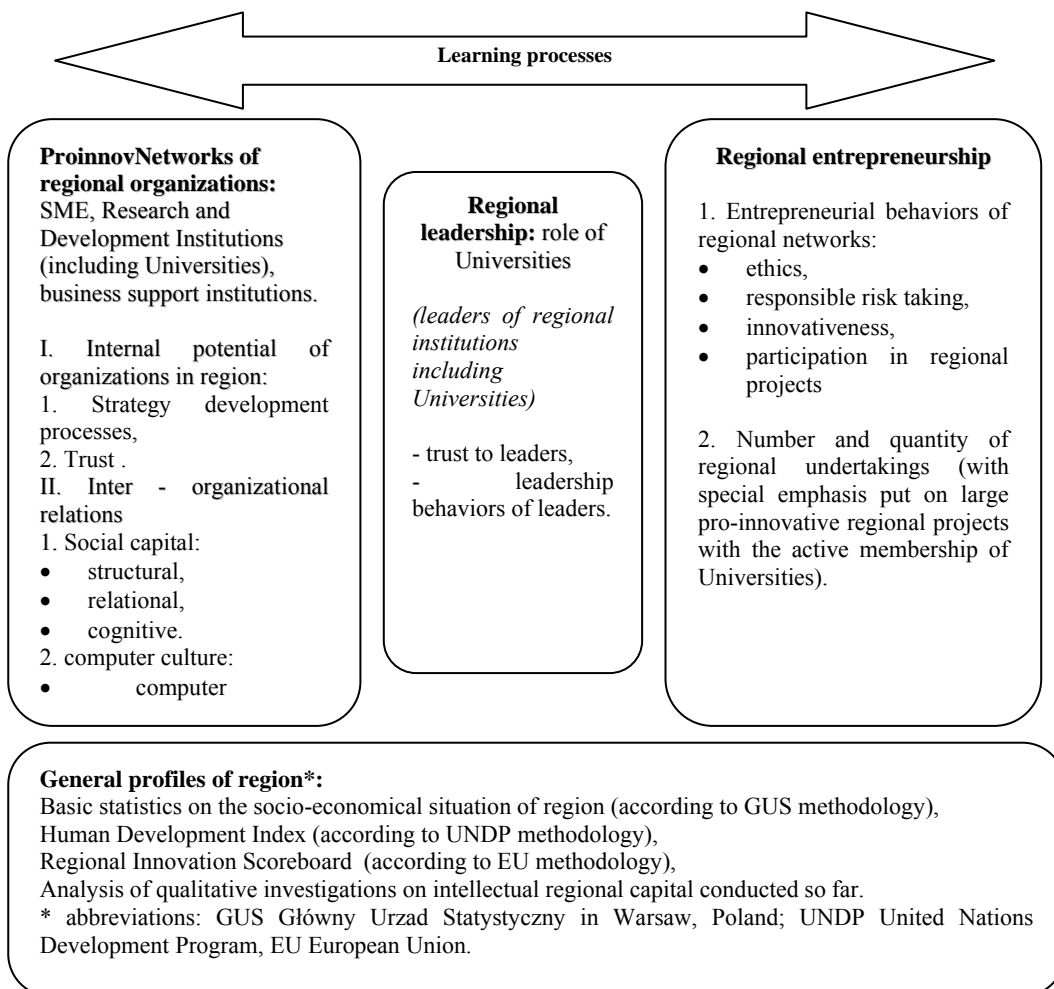
Initiatives which are undertaken in Katowice Voivodship show that Universities can play very important role as regional leaders. Many pro-innovative and pro-entrepreneurial initiatives (e.g. Silesian Center for Advanced Technologies, Regional Development Strategy incl. Regional Innovation Strategy) are successfully leading by Universities. The creditability of Universities based on previous contacts within the fields of new technology creation and their implementation and high level of both technical and managerial knowledge (each Technical University in Katowice Voivodship have recently built Departments of Management with success) allow them to be effective regional institutional leader.

4. Research model – conceptual proposition

Previously described theoretical investigations and findings of empirical research were basis for construction of bearing structure of empirical research model on pro-entrepreneurial regional development (see fig. 1.). the methodology of analysis of pro-entrepreneurial infrastructure of region is consisted both of qualitative and quantities methods.

Qualitative methods are based on secondary sources (outcomes of previously made research) and deal with structural and human capital issues. Similarly quantities methods are based on secondary statistical sources and they take into account different well known methodologies including: EU methodology called Regional Innovation Scoreboard, UNDP methodology called Human Development Index and Polish Statistic Office methodology. Analysis of regional networks of inter-organizational relations regards social capital analysis (based on three dimensional model including: structural, relational and cognitive dimensions), IT culture analysis (similarly based on three dimensional model consisted of hardware, software and IT human abilities dimensions), trust and strategy developing processes of regional organizations analysis. First and second variables (that is social capital and IT culture) describe the quality of regional network of inter - organizational relations, the third variable analyze internal potential of regional organizations.

Fig.1. Research model: intellectual regional infrastructure and entrepreneurial development of region.



Source: Self study.

The special roles in proposed research model play regional leaders who have decisive power in the field of pro-entrepreneurial infrastructure shaping process. Process of building of pro-entrepreneurial region requires adopting the cultural and participative model of leadership by regional leaders. Trust based management seems to be very appropriate model within the above context.

The level of regional entrepreneurship is constituted by entrepreneurial behaviors of regional organizations (described by four traits: innovativeness, developmental feature of outcomes of behaviors, liable risk taking, social responsibility) and number, efficiency of regional undertakings (regional projects). The above conceptualized research model presents the basic logic of empirical investigation that are currently made. This investigations are carried out on the Katowice Voivodship geographic territory (Upper Silesia – post-industrial region in Poland). Two towns: Gliwice and Częstochowa which are placed in Katowice Voivodship (region) with high scientific potential (two Technical Universities of region are placed in these towns) are deeply investigated in order to make comparative case studies. The research sample consist of various organizations that represent the technological profile of region (e.g. SME, Universities, Research and Development Institutions, Business Support Institutions, Regional Agencies etc.). The separate part of research are deep case studies on pro-innovative regional projects with strong emphasis put on RIS – Silesia project and the role of Silesian University of Technology as both technical competencies leader and managerial leader.

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