THE SMALL AND MEDIUM-SIZED ENTERPRISES NETWORKS, 
THE FIRST STEP IN THE FUTURE INNOVATIVE REGIONAL 
CLUSTERS DEVELOPMENT

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ABSTRACT: The objective of this paper is to understand the contribution of the Small and Medium-Sized Enterprises Networks to innovation, firm performance, regional and social development, through the new innovative regional clusters. With acceleration of technological development and adoption and greater market competition, innovation is a prerequisite for enterprise survival. The use of cluster building activities as a means of supporting regional economic development is widespread. However, this study highlights the emerging role of SMEs in cluster building particularly as a means of facilitating knowledge transfer with small firms.

KEY WORDS: Small and medium-sized enterprises, networking, regional clusters.

1. INTRODUCTION

Networking offers an important route for individual Small and Medium-sized Enterprises (SMEs) to address their problems as well as to improve their competitive position. By coordinating their activities, enterprises can collectively achieve economies of scale beyond the reach of individual small-scale firms and obtain bulk purchase inputs, achieve optimal scale in the use of machinery and pool production capacities to meet large-scale orders. Inter-enterprise cooperation also enables SMEs to specialize in their core businesses and give way to an external division of labour thus improving their efficiency in production. Joint work also encourages enterprises to learn from each other, exchange ideas and experience to improve product quality and take over more profitable market segments. [4].

The context of our paper is based on knowledge management and statistical methods (about the economic performance, human resources, sustainable development, environmental policy and innovation) for SMEs in the South-Muntenia region, qualitative and quantitative research methods needed to implement an innovative regional cluster, holistic marketing and the external environmental analysis for SMEs [8]. The clusters and SMEs networks development is based on the models of cooperation with universities, training providers, consultants, colleges, high schools and specialized schools [3].

2. ROLE AND BALANCE OF KNOWLEDGE IN THE NETWORK ECONOMY

We identified several characteristics for knowledge based business. These options provided to show how an old business change to knowledge based business. It is possible by make products proficient in a form that efficient use of information has been possible[5]:

- Whatever knowledge based products use more, they become smarter;
- Whatever, you use knowledge based products more, you will become smarter;
- Knowledge based products and services conform themselves with environmental changes;
- Knowledge based businesses can make their products orderly;
- Knowledge based products and services have relatively short cycle of use;
- Knowledge based business make possibility for its customers to act immediately;
- Available chains of value divided into diverse works and each one of these businesses will have their especial sources for competitive advantageous;
- Power of bargaining will revolutionized in result of deep decrease of monopoly ability;
- Market governors will sacrifice by especial psychology and obsolete physical substructures;
- New balance in supply and demand;
- Combining customs needs with simple and technical solutions.
The mathematical formula (refere with Eq.1) for calculating knowledge is:

\[ K = P \times (P + S + P \times S) \]  

(1)

where \( K \) is the knowledge, \( P = \) people, \( S = \) systems and \( P \times S = \) synergy between people and systems.

Synergy is to look not through the opposite or paradoxical terms that make them different, but we should see their similarities. Synergy means changing the mentality of “either – or” and search the whole and not parts. The concept of synergy applied to groups, means collaboration in planning, problem solving, etc., resulting in a much better product than that of an individual. Synergy means that the sum of a group of individuals is less than the whole group. Thus, one of the elements needed to create synergy within a group / team is the consensus of all members and not sharing the members into a majority and one or more minorities when debating an issue. Success becomes a group effort, not individual. Individuals, who do not always agree with the others, are considered catalysts that improve outcomes[2].

As raw material, knowledge is involved to some extent in the manufacture of modern technology (computers, televisions, mobile phones, tablets, etc.).

Knowledge is, also, a key factor of production, as they participate with other classical factors of production - labour and means of labour - to conduct all phases of production processes, starting with obtaining raw materials, continuing with their processing and ending with trading the final product. Obviously, the more modern is a firm, the higher are the weight and role of knowledge as a factor of production. One of the ways of most intense manifestation of knowledge as a production factor is the network companies. Knowledge is a finished product, by itself, the most well known forms being their software, technical projects, patents, quality standards, analyzes and management studies, marketing, etc. The overall value of the modern firms, knowledge capital tends to have a share ever higher.

The learning-knowledge-creativity triangle underlies the beginning or the end of the economic crisis. A crisis may occur and develop inside and / or outside of a society. When the crises have their sources inside of society, that society is probably creative[1]. They are the result of external interventions: military, economic, informational, etc. the society is typically less creative. There is no absolutely non-creative society. Although intangible, staff knowledge of the companies, technologies, managerial, financial know-how, etc. present value, which, with increasing frequency, is expressed in monetary. In conformity with the map of intellectual capital worldwide, conducted by Leif Edvinsson and Carol Yeh - Yun Lin, on a representative sample of 39 countries, from 1995 to 2008, countries that have attached the greatest importance to the intangible capital were Sweden (40,097), Denmark (39,445), Finland (39,425), Switzerland (38,735), Singapore (38,133), Netherlands (36,205), Norway (35,951), United States (35,488), Canada (35,255) and Australia (35,064), the last of this ranking being represented by the Philippines (20,934).[6]

The characteristics of strategic factors in the knowledge-based network economy (refer with Fig. 1.) are: Foresight; Programming; Organizing (general structure of organization, designing units of organization, compiling commissions and duties & relations available between units); System designing.

![Figure 1. Characteristics of strategic factors in the network economy](image)

### 3. THE REGIONAL SMEs NETWORK, THE FIRST STEP OF THE INNOVATIVE REGIONAL CLUSTER

Evidence of well performing SME clusters has been extensively reported in literature (Goodman, Bamford, and Saynor, 1989; Pyke, Beccattini and Sengenberger, 1990; Sengenberger, Loveman, and Piore, 1990; UNCTAD, 1994; among others). In many performing clusters, like the Italian industrial districts, inter-firm networking primarily emerged spontaneously as the result of the peculiar historical and social environment surrounding the SMEs (Brusco, 1982; Piore and Sabel, 1984;
Spontaneous networking has also been observed in some developing countries (Schmitz, 1990; Nadvi, 1995) but it appears to be relatively uncommon. Even less common is the spontaneous emergence of other features of successful clusters such as institutions promoting collective learning and innovation. The principals needs of SMEs are: Reduction of isolation, Communication and tailored education, Adoption of networked technologies, Networking via industry & regional associations, and Trust.

As discussed earlier, regional network building and collaboration are considered the cornerstones of the new economy, with social and institutional conditions functioning as prime driving forces behind regional economic growth.

Regional development (refer with Fig. 2.) is the provision of aid and other assistance to regions which are less economically developed. Regional development may be domestic or international in nature. The implications and scope of regional development may therefore vary in accordance with the definition of a region, and how the region and its boundaries are perceived internally and externally.

![Figure 2. Involved factors in regional development](image)

A strategic SME Network (famous companies such as Ford, Procter & Gamble and General Electric) is based on:

- Creativity and entrepreneurship education (Example: contests for creative ideas in entrepreneurship, organized for pupils / students);
- Knowledge SWOT analysis (K-SWOT) based on combined strategies: SWOT, S-O Strategies, S-T Strategies, O-W Strategies and T-W Strategies;
- Specific activities of lobbyists (VIP people born in the region of the network);
- Alliances among SMEs with similar / related activities;
- Alliances between SMEs, high schools / post-high schools and training providers (LLP), cluster model, in pursuit of "ideas factories", so called "think tank" sites;
- Develop tele-work and virtual teams (especially in rural and small urban areas);
- Full use of capabilities / services provided by Business incubators;
- Features of "Learning organization";
- Environmental awareness of employees;
- A horizontal organizational structure (generated by the reduced number of employees);
- The tele-element (an important element in the psychology of human resources).

Factors influencing the sustainable development model of the network of SMEs are:

- Products / services represented by their attributes, characteristics and functions;
- Organizational architecture based on core business and outsourcing;
- Regional strategic alliances, international partnerships (Examples: Digital Alliance for Romania - digital inclusion initiative group through an innovative platform for collaboration between civil society, business sector, universities, research centers / business and SMEs; STAR Transport-NET - European Network to Support the Surface Transportation Sustainable SMEs, FP7 project consists of 15 companies from 14 countries);
- Adaptability / flexibility due to its small size, rapid decision making and involvement of businessmen;
- Optimization, innovation and dynamism, obtained through quality and professionalism;
- Organizational culture. Principles / successful cultural policy in the context of global market;
- Ambitious, fair and consistent market strategy.

Cluster development initiatives are an important new direction in economic policy, building on earlier efforts in macroeconomic stabilization, privatization, market opening, and reducing the costs of doing business. In the scientific literature are defined two types of clusters: vertical clusters, and horizontal cluster. Vertical clusters are made up of industries that are liked through buyer-seller relationship. Vertical clusters are made of industries that are liked through buyer-seller relationship. Horizontal cluster include industries which might share a common market for the end products, use a common technology or labor force skills, or require similar natural resource.

Many countries such as United States (North American Regional Organization Development Network), Canada, Japan, Australia, Korea and France gains their competitive advantage through the utilization of clusters development. A cluster
contains many Small and Medium Enterprises (SMEs) operating in the same or similar industry strongly connected with each other to produce good and services. In developing country, especially, Small and Medium Enterprises (SMEs) take very important role to their economic. Most governments, as facilitator, support cluster through initiate help and encourage SMEs’ linkage to reach the concept of industry cluster. In modern competition, all clusters need to be innovation clusters. Regions that combine risk capital, skills and research excellence, with strong cluster portfolios face more opportunities to become innovation hubs, while regions with no clusters or isolated research risk falling behind. Globalisation has increased the need to combine strong internal dynamics within clusters with solid linkages to clusters and markets located elsewhere. The development methodology for a regional innovation cluster, consists in: quantitative and qualitative analysis, modeling, implementation and sustainability (smarter and integrated).

4. CONCLUSIONS AND INTENTIONS
The network of SMEs in the context of globalization and knowledge economy is based on the "Small Business Act 2008" (revised on 08/31/2011) and on the principle of operation resulted in the draft regional clusters INRES - FP7 - “Insular Regions Environmental Cooperation for Maximizing the Benefits from the Economic and Research in Renewable Energy Sources” European initiatives supporting clusters and a model of excellence in the context of economic globalization. The innovative cluster network must be integrated in the European clusters context: The European Cluster Observatory (cluster mapping, case studies, policies and benchmarking), High Level Group (cooperation tool), European Cluster Alliance (promoting the clusters), Excellence of Cluster Organization (quality standards & accessing EU funds), The European Cluster Memorandum, Small Business Act of Europe, Europa InterCluster and The Club of Cluster Managers. Economic geography during an era of global competition involves a paradox. It is widely recognized that changes in technology and competition have diminished many of the traditional roles of location. Yet clusters, or geographic concentrations of interconnected companies, are a striking feature of virtually every national, regional, state, and even metropolitan economy, especially in the new “extended EU family”. The prevalence of clusters reveals important insights about the microeconomics of competition and the role of location in competitive advantage. The regional development model will be based on the integration of the SMEs networks in the new innovative regional clusters network (refer with Fig. 3). The Romanian context of the cluster development is based on: Regional SWOT Analysis, The INCLUD Project-Industrial Cluster Development, The InovCluster Project, The Romanian cluster mapping and The Guidelines for implementing the concept of innovative cluster in Romania.

Figure 3. Network dynamic in regional clusters

5. SELECTIVE REFERENCES
▶ Ministry of Economy, Guidelines for implementing the concept of innovative cluster in Romania, Bucharest, (2009).