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# **Innovative cluster management for effective cooperation<sup>1</sup>**

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In our globalised world, where SMEs increasingly participate in international market competition, clusters have a decisive role in supporting the competitiveness of companies. Clusters have been in the focus of attention over the last decade, as the competitive advantage of companies is not only their own resources and competences, but also their geographically close business environment. Nowadays, examining both national and international literature, it can be stated that the discussion among practitioners is not about whether a cluster initiative is useful or not, but how they have to be operated.

In relation to cooperation, the author considers it a problem that mostly benefits are recognized, but it is not discussed what the parties have to do to achieve the goals, or what benefits they have to sacrifice. In my opinion, in order that clusters be able to exploit the possibilities of cooperation and run successful in a long term, they must have individual and organizational competences. Cohesion between clusters means that both individual and organizational goals are met. How can it be achieved? Skills and abilities play a key role in cooperation on the cluster level. If partners do not have the competences necessary for cooperation, then no matter how beneficial the cooperation may be, it will not be efficient as it will only be capable of limited operation.

In my opinion, a paradigm shift is needed in terms of the functioning of clusters, a competence-based management could be efficient. The study examines cluster management relevant strategy issues and brings it in line with the paradigm shift. The paper focuses on pilot research results obtained through the concept of the innovative model of cluster management and its testing in practice. Based on my own results, I demonstrate the individual and organizational key competences that facilitate cluster performance.



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## *The problem*

Despite the fact that a vast amount of literature has been published about clusters in the past decades, the image about them is still somewhat obscure, the most studies are very descriptive, primarily qualitative and are not convincing at many key points (Davis et al., 2006)

One of the main problems in the research and practice of clusters is the semantic ambiguity and obscurity of the cluster concept. The cluster research literature has repeatedly pointed out that the concept is too full of contradictory and conflicting meanings to be connected and coherent. Furthermore, it should not be overlooked that there are many alternative concepts available for the public (such as regional innovation systems, innovative milieu, industrial districts, technology platforms) to geographically localize innovation-intensive organizational environments.

Today the question is not whether a cluster initiative is useful or not, but rather how it should be done well. The task is also to develop indicators for science, technology and innovation policies that can measure the effectiveness of a cluster. This paper discusses the necessary conditions for the effective functioning of clusters and is designed to identify indicators that show:

- the development;
- help current and future management and coordination;
- also support communication with stakeholders within the cluster and with other stakeholders.

## *A possible solution*

In my opinion, clustering can be one of the key for SMEs to survive, to create and maintain their competitiveness. However, the operation of clusters needs to be revised, and I consider competence<sup>2</sup>-based management as justified. First of all, I mean that in order to realize the goals set for the initiation of cooperation, the parties should define the skills, expected personality traits, behaviour and, of course, the necessary resources for their prospective members. If a partner is unable to cooperate because it does not recognize the inherent potentials, or does not have the competences it needs, then no matter how beneficial the cooperation may be, it will not be efficient as it will only be capable of limited operation. The new approach to the functioning of clusters requires the examination of the attitudes of cooperation. In relation to cooperation, I perceive that mostly benefits are recognized, but it is not discussed what the parties have to do to achieve the goals, or what benefits they have to sacrifice.

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<sup>2</sup> A competence: 'Those personalities, specific knowledge, motivation, social status or capabilities of an individual, which are in cause-and-effect relationship with the effective and/or excellent performance defined by preliminary criteria in a scope of activity or a certain situation.' (Klemp & McClelland, 1986; Spencer & Spencer, 1993)

Of course, many of the benefits of teamwork are well-known, but in order that collective vision, goals become realized benefits, the cooperating parties must have certain competencies, personality traits and resources, or occasionally "individual sacrifices" have to be made for the "common good", common interests. Clustering should become a force when both individual and organizational goals are fulfilled, that is, the situation becomes a winning game for all actors.

The precondition for the establishment and effective functioning of the relationships is that the parties involved in the cooperation should be able to handle the uncertainty and risk that arises from the replacement of formal systems by informal ones. This serves as an explanation for factors becoming essential such as trust<sup>3</sup>, information and communication. The existence of trust between the parties has many advantages, such as facilitating co-operation, contributing to lower transaction costs and smoother operation. "*Without trust, all this would be possible only through strong control, contracts, rigid regulation of decision-making and structures, which is very costly and thus ineffective*" (Tarnai, 2003:676-715). One of the emotional and value-oriented approach is of *Jones and George* (Hámori, 2003); I agree with their opinion, which represents the view that creating trust builds on the extent to which the parties are able to formulate a definition and framing of interpretation that is similar to each other. The establishment of a mutually acceptable interpretation framework is determined by the extent to which the value system, attitudes and emotional states of the parties resemble to each other and how this similarity is perceived mutually.

Identifying the required skills and competencies is key to effective operation. If the partners do not have the skills to cooperate, the cooperation can be anyway beneficial, it will not be effective as it will only be able to function with limited functionality, which means that the "game" can not produce a win-win output that finally can lead to the termination of the cluster.

## *Methodology and research results*

The aim of this research is to examine and provide a comprehensive overview of clusters (including cluster managers, cluster members, and related organizations) on the present practice of clusters, focusing on identifying key competences for long-term successful operation, factors that inhibit the achievement of goals and to identify the competences to be developed.

During my research, I have used several methods in order to define the research topic, literature review, expert interviews, questionnaire surveys. My aim was to get an overview of the operational practices of the current Hungarian accredited clusters, the cluster members' competences. To this

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<sup>3</sup> Confidence is to require regular, fair behaviour which is ready to cooperate within a community, by the members of this community.' (Fukuyama, 1997:45)

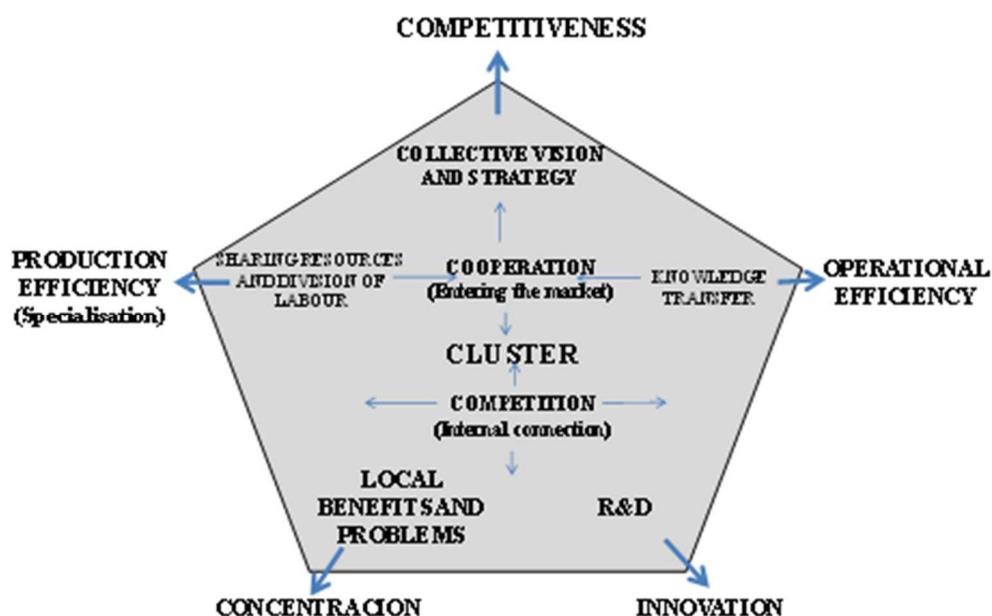
end, my research covers the benefits, motivational factors and satisfaction of clustering, including accreditation; the factors that inhibit and help effectiveness; the competences that affect the effectiveness; the relationship between the objectives and the competences held; attitudes related to trust; effectiveness assessment, performance measurement, and cluster manager's "leadership" activities.

The stakeholders involved in the research are the managers of the Hungarian accredited innovation clusters, its member companies and the organization involved in the accreditation process and coordination. I chose the accredited clusters, because I believe that they accomplish the most effective operation; and with their examination I have the opportunity to identify the factors, competencies that are essential for effective operation, which are the areas to be developed for national relations.

My assumption is that for the survival and long-term functioning of clusters the prerequisite is meeting the set goals, so my study was built around the initial objectives.

The frame of my questionnaire is given by the modified Mintzberg model (see Figure 1). The model demonstrates what key factors play a role in achieving the benefits that can be gained through co-operation.

Figure 1. Modified Mintzberg model



Source: Made by the author

The model includes the group of key activities (Knowledge Transfer, Collective Vision, Strategy, Resource and Work Sharing, R & D, Local Benefits) that enable motivators of benefits / co-operation through cluster-level collaboration. I assigned the competences examined and the

benefits from the collaboration to each group of activities based on my secondary research and the information I obtained during the preliminary interview. The benefits of all competencies / co-operation (initial motivation, satisfaction) were examined along two dimensions:

- ❖ Competencies: how important is the effective operation / the competence level of the cluster;
- ❖ The benefits of co-operation: how important a motivation factor was at the time of entering / how much they functioned.

In my questionnaire, I was looking for answers about the competences that are important and what kind of competence the cluster has to characterize, and what benefits the cluster offers at the time of accession and to what extent. The questionnaire survey was done online using the EVASYS system.

As I have already mentioned, in my opinion, the operation of clusters should be based on competence-based principles. Additionally, it is important for both cluster management and members to be aware of what competences are needed to achieve the benefits of collaboration and how to achieve them. If this is not the case, cooperation can not function effectively and can not be maintained in the long term.

During my primary research, the respondents also agreed that the cluster's performance depends on the competences held by the members. The cluster's competence is partly the sum of the cluster members' individual competences. In the mutual exploitation of existing competences, these can also develop and grow. Expertise, trust, commitment, accuracy and reliability are the basis for cluster collaboration, these are the competencies that each co-operating party must possess. With the research results, it can be stated that trust plays a prominent role in clusters' operation. During the realization of the goals set for the co-operation, significant activities such as effective information flow, open share of expertise and knowledge transfer play a key role, which is a key condition for mutual trust. Despite the fact that clusters have already recognized the importance of trust, for the sake of effective operation, unfortunately, on the basis of my survey, I came to the conclusion that it is not yet at the desired level. In the opinion of the respondents, the rise of time and confidence level is directly proportional, that is, the longer the partner relationship lasts, the more trust the parties have in each other. Trust is based on reciprocal gestures; good examples can have a positive impact on the spread, but this is still a rare issue today.

Without the appropriate competences, neither professional nor cooperative activity can be realized. Certain competencies are essential for effective cluster-level collaboration and competence-based operation contributes to effective operation.

During the survey, I came to the conclusion that, unfortunately, cluster members, although they consider their partners to be honest, do not trust each other sufficiently. Even with this result, it is not surprising that altruism was considered to be an important factor for the respondents,

but their level is low in practice. Trust, altruism, trustworthiness, honour go hand in hand; and we can conclude that there is a need for development in these competences for clusters and cluster members because they are indispensable for long-term successful operation and achievement of the set goals. Competences can be developed, either in close cooperation with the local university, through the implementation of development trainings. The existence of the competences needed for effective operation could be seen as a kind of entry barrier for clusters.

The existence of the required competences and their competency level should be considered by the cluster management at the time of membership, if the given company/organization/institution does not meet a minimum requirement for the expected competencies, their inclusion should be subjected to be subject to conditions; they would only gain admission if they were involved in competency development and fulfilled the minimum requirement. For clusters, it is a cohesive force for all actors that the situation become a Win-Win game. For members, it is important that the benefit from co-operation be greater than the benefit they have gained; that is, to win more than you lose. The profits from the cooperation, the members' achievement of the set goals, that is, the benefits expected from joining the cluster will be realized. If the cluster is able to provide services to its members that is attractive to them, they will be willing to pay high membership fees and finance the cluster's operation. If the benefits of the cluster are out of reach and the offered service range does not meet the requirements, members will not be willing to pay a membership fee and leave the cluster. And if the members quit, it will result in the termination of the cluster.

As a result of my primary research it can be said that in the case of the examined national clusters, the following stated objectives are expected to benefit from the expected benefits:

Table 1. Motivation - satisfaction

<i>Motivation factors for cluster membership; the most important benefits provided by the cluster</i>	<i>Realized benefits during operation (Realized goals)</i>
effective information flow flexible use of capacity division of labor resource sharing the spread of best practices learning about new methods and activities professional development access to information (knowledge transfer) joint product development joint R & D joint procurement generating joint projects the spread of technological knowledge recognizing market gaps value creation common interest representation joint marketing joint knowledge base knowledge management advisory service benchmarking export increase obtaining state subsidies and grant applications building / enhancing a network of contacts strengthen market position stable operation revenue increase job creation	revenue increase stable operation building / enhancing a network of contacts obtaining state subsidies and grant applications joint interest representation value creation professional development effective information flow job creation strengthen market position access to information (knowledge transfer) generating joint projects the spread of technological knowledge export increase

Source: Made by the author

Red is very important but shows the not realized goals, and green color shows those that have already been realized. In the light of their possessed competences, the ratio of achievement is acceptable, but there is still potential for development.

The question arises that why certain goals have not yet been realized. What is hindering achievement of the set goals? Based on the opinion of the respondents, the factors preventing the achievement of the objectives are as follows:

Table 2. Factors hindering reaching the goals

<i>Coordination and management deficiencies</i>	Unmotivated members No regular support from the management Lack of co-ordination of different needs
<i>Lack of resources</i>	There is not enough input from the members Lack of material resources lack of information lack of time (overload)
<i>Not appropriate conduct, behaviour</i>	Inactivity, passivity by members Inappropriate way of thinking: short-term profit maximization, only gaining benefits without profit
<i>Other factors</i>	Internal oppositions, personal conflicts Lack of a common interest Proposal structure, uncertainty of tender specifications Lack of local government / state support Lack of language skills conflict interest size difference of firms (excessive dominance of large companies)

Source: Made by the author

During my research I have been able to identify the individual / organizational competences necessary for effective operation, the successful cluster, the management / coordination needs, and the capabilities, resources, without which effective cluster-level cooperation can not be achieved.

Table 3. Key factors of effective functioning

<i>Management/ Coordination Need</i>	targeted development strategy; maintaining a sense of purpose; leadership openness; promotion of development; joint objectives; professional, stable management; integrator organization; move business values within a cluster; promoting joint investment; promoting a joint application; promoting joint R & D & I; long-term time-orientation (awareness of the members as well); promotion and operation of knowledge management
<i>Individual (member) key competences</i>	willingness to cooperate; communication skills; professional experience; strategic thinking; adaptable skills; respect (for work); trust; learning willingness, need for development; innovation skills; openness; commitment, loyalty; initiative; endurance; patience; activity
<i>Cluster Level/ Management Key Competences</i>	strategic thinking; proactivity; be able to motivate; given industrial experience and leadership experience; leadership skills; goal orientation; system approach; innovative approach; decisiveness; critical thinking; wide network of contacts (also abroad) educational ability; intellectual property protection, patents; service range adapted to market needs; moving business values within a network; adequate funding; stability
<i>Facilities</i>	social capital; international relations; tenders: the possibility of winning bidding resources; support for a region-city; adequate human resources; adequate funding

Source: Made by the author based on primary research

During my research, the respondents believe that it would be necessary to develop the following: competencies supporting the functioning of the organization; talent training, pipeline management; openness; tolerance; trust; project management capability; willingness to cooperate; marketing activities; increasing efficiency.

## Conclusion

This paper focuses on identifying the necessary conditions for the effective functioning of clusters. The effectiveness of a cluster can be judged in proportion to the fulfillment of the objectives. If the objectives are met, then a cluster is effective, if the goals are not met, it is worth exploring what causes and obstacles may be in the background. In the case of examined clusters, more than half of the set goals were realized, this ratio is encouraging depending on existing skills and abilities. However, it clearly shows that there is development potential. In my opinion, skill levels should be homogenized, of course, active members should be considered as norms who possess a high level of competencies needed for effective cooperation. If trust, tolerance, openness, and initiative for each member reach the desired level, huge results could be achieved.

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