

**MODERN INFORMATION TECHNOLOGY AND
ORGANIZATIONAL THINKING OPEN A WINDOW OF
OPPORTUNITY FOR ENTREPRENEURIAL SMES**

by

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Abstract

The paper addresses recent organizational trends, and the opportunities created by these, combined with information technology. For SMEs to exploit this opportunity, however, their traditional management thinking must change. A research program to identify needs and create educational opportunities to facilitate this is proposed.

Three major trends are presently merging and seem to lead to a reconfiguration of how business is conducted:

1. Larger corporations are looking for ways to develop their core competencies to gain competitive advantage. On the other hand, they seek to outsource some of their non-core business functions to outside entities. That means new business opportunities for smaller firms.
2. Smaller firms create cooperating networks, where each one contributes a specialized competence. An organization consisting of a number of independent firms working in a network can be envisaged. Each member performs a superior core activity on behalf of the network. The firm may belong to several networks, performing the same task in each one. If the trend catches on, it may be a golden opportunity for smaller firms (which normally are rather specialized) to grow in one or multiple networks. The network acts as one vendor in the marketplace.
3. Information technology, which formerly favored the larger companies, is now within reach of all firms that want to make use of it. Consequently, information

technology acts as glue for the network, making all information available to all partners at the same time. The playing field is getting even!

The paper finally points out the need for research to assist SMEs to exploit the opportunities that arise from the identified trends.

Introduction

This paper addresses the issues of focus on core competencies of the firm, the resulting tendency towards outsourcing of non-core activities to SMEs by larger companies, and finally virtual organizations that can be created by SMEs as a way to achieve the advantages of larger firms while keeping the entrepreneurial spirit of the smaller firm.

The paper further suggests a research agenda to identify the forces that enable the implementation of these trends, as well as those forces that restrain this development. The findings can be used by businesses, in education and in public support organizations to improve competitiveness for SMEs.

Need for new ways

Competition is not any more only a local or national issue, but is extended to regional or global scopes. The "global village" is becoming a reality, with the resulting fierce competition. The result is that there will be an increasing demand for higher efficiencies in the way business is conducted. Cooperation in various forms of alliances between firms seems to be one way to achieve this. New ways of organizing work through networks may redefine processes and tasks to create a "work locally but interact with the world" setting. Both large and small companies need to have an understanding of the underlying economics pertaining to transaction cost to be able to successfully change their mode of operation.

What is happening?

Three major tendencies seem presently to be emerging, leading to a reconfiguration of how business is conducted:

Larger corporations are looking for ways to increase competitiveness. One approach is to develop their core competencies and outsource other business functions to outside entities. That means new business opportunities as outsourcing partners for a large number of small and entrepreneurial firms.

Smaller firms with different special competencies have started joining forces into cooperative networks (virtual organizations) to increase competitiveness.

Information technology, which formerly for cost reasons favoured the larger companies, is now within reach of all firms that want to make use of it. The playing field is getting even!

The combination of the trends, creating closely linked outsourcing relationships as well as cooperating networks, glued together with information technology will most likely result in improved competitiveness both for the larger corporation and the smaller firms.

Trends in strategic thinking for larger companies

Over the past few years a discussion has been taking place both among practitioners and academia if a larger company shall be integrated, i.e. carry out all administrative and operational functions themselves, as has been the tradition. Integration has the advantage of managerial control over all activities. That may be beneficial in many circumstances, but can create a false feeling of security.

A changing environment forces change in strategic thinking

There is an increased awareness that a concentration in the areas of the organization's superior competencies

increases competitiveness. The time of the fully integrated corporation that makes all from its inputs to the finished product may be coming to an end. This has been experienced painfully by numerous companies, with IBM as a notable example. After having maintained an unchallenged leadership position as a completely integrated corporation in the IT industry until the 1990s, it experienced a dramatic downturn due to competition from smaller, specialized, non-integrated firms. These new competitors had developed core competencies such as technology development, marketing or superior software. Several of these firms, for example Sun Microsystems, Dell and Compaq Computer, grew into multi-billion companies within a short time span, partly due to a strategy of outsourcing non core activities. (IBM withered, but has later staged a come back through a complete strategy change).

Core competencies

Identifying and nurturing core competencies is considered to be an important issue for the organization as it is through them that the competitive advantage evolves. The term "*core competencies*" was coined by Prahalad and Hamel in 1990. The topic has been addressed by numerous authors, however, and given several terms, such as *invisible assets* (Itami 1987), *strategic assets* (Dierickx and Cool 1988), *meta skills* (Klein et al. 1991), *skills or competencies* (Hall 1992), *capabilities* (Stalk et al. 1992)

The common denominator seems to be that a core competence is a unique organization specific quality that cannot readily be bought, and is furthermore difficult to imitate. It has value only if it gives the customer a superior, real or perceived, value of whatever is being delivered. There are two ways by which this is expressed: either by lower price or by increased performance for the user. In other words, a core competence only has value if it can be converted into some form of customer satisfaction.

Do more of what you are best at

It seems that no organization can be the best in all fields over time. It must make choices as to what to concentrate on. The resources should obviously be concentrated where they are best leveraged to achieve competitive advantage. An example of this outsourcing trend is given by Doig et al (2001) stating that in 2001 the average electronics OEM was hoping to outsource 73% of their manufacturing.

Outsourcing in a large company perspective

The activities to be considered outsourced are activities not considered representing core competencies of the organization. They may be bought more inexpensively from specialized vendors outside the organization. Quinn (1992) states that if external vendors can perform the task better, the firm is sacrificing a competitive advantage by carrying it out itself.

One definition of the concept of outsourcing could be:

Transfer to an outside entity of responsibility for production of a primary production or central support activity that formerly has been performed internally by the organization.

Successful outsourcing requires an understanding of the strategic issues as well as benefits and costs affecting the end result, however. An overview of the underlying economic factors is therefore of interest.

In its simplest form, the strategic question is whether the activity considered outsourced is of strategic, i.e. important for the long term competitive position or not. Core competencies are obviously not chosen, but in some cases also non-core (for example selected support activities) are kept in-house for strategic reasons even if they could be bought in the market at a lower price.

Transaction cost theory Williamson (1979) assumes that market forces and internal hierarchies are alternative forms for control and decisions. The economic aspect of the outsourcing decision must be understood by both the outsourcer and the outsourcing partner to reach a satisfactory decision.

The potential cost savings can be divided into three parts: *production cost*, *internal coordination cost* and *communication cost*. *Production cost* is the direct, calculated cost per unit. *Coordination cost* arises from internal communication between individuals within organizations to achieve the optimum way of coordinating internal activities. Internal meetings are a good example of this. *Communication costs* arise from the need to interact with the outside world, for example hiring of workers, negotiation with banks to finance raw materials or accounts receivable, etc.

Theoretically, it should therefore be rather simple to calculate whether an activity should be carried out internally by the organization, or outsourced. Unfortunately, costs are difficult to identify clearly, partly due to allocation problems and partly due to inadequate accounting systems. The question is further complicated by the fact that human beings are not rational decision makers. Personal opportunism influences decisions, that being consciously or unconsciously. At best the decisions are "intendedly rational, but only limited so" (Simon 1976).

Outsourcing has, however, also the potential for an increased cost side. Milgrom and Roberts (1992) state that the process of establishing a contractual relationship with an outsourcing partner can be named *bargaining costs*. They consist of resources needed to identify, negotiate and possibly the cost of a non-agreement.

Monitoring (or *management costs* (Demsetz (1993))) are incurred in connection with the execution of the

relationship. They include control of performance, adjustments to the contract, etc.

Dahlstrom and Nygaard (1999) mention *maladaptation cost*, i.e. costs related to communication and coordination failures between the outsourcing partners.

The networked company

Present thinking goes one step further than a one to one outsourcing relationship. An organization consisting of a number of independent, non-competing entrepreneurial firms working in a network can be envisaged. A small firm may, in some cases, belong to several networks, performing the same task in each one. Each member performs a superior core activity on behalf of the network. The network may be permanent or temporary. As a result, the "virtual" organization is being created.

If the trend continues, it may be an opportunity for smaller, entrepreneurial firms (which normally are rather specialized) to grow in one or multiple networks. See for example Davidow and Malone (1992) for further description. The group of companies in the network can behave in the marketplace as if it were a larger, integrated company.

Sources of advantages for the networked SMB

Specialization

Resource based theory, (see for example Barney (1991)), suggests that organizations that can develop leading edge skills or utilizing specialized production equipment are particularly well suited in network organizations. By combining the members' specialized capabilities, the network as a whole can get a broader and deeper competency than the integrated firm.

Flexibility

The partners in the network can be *geographically dispersed*. Information technology eliminates distance. Theoretically, the network can consist of firms on different continents.

The participants can have *numeric flexibility*; i.e. they may achieve their optimal capacity utilization and scale advantages, resulting in the lowest unit cost of production.

Functional flexibility is the ability to combine the unique competencies of each of the participants in ways that can create a value chain different from the traditional one of the large, integrated competitor. Such a reconfigured value chain can result in competitive advantage.

Resource utilization

In case there are several potential vendors in the network, resource balancing can be achieved by allocating tasks to those with unused capacity. The network can also act as an internal market mechanism, using the price mechanism for allocation of work to partners in the network.

Four important issues for the network

Hakansson and Sharma (1996) point out some important focus areas in developing the network:

Value concept

A "network captain" develops the value concept that defines a target market and a product or service offering that will provide clear value to the target customers.

Relationship development

Gaps between the value concept and the resources necessary to execute it and help define the characteristics

of ideal partners and the capabilities they will contribute to the network.

Network management

The underlying motivation for network members to organize and integrate activities is to create competitive advantage for the network as a whole. Mutual value objectives are important and must be constantly reinforced for the partners to focus on cooperation in the network.

Partner learning

This includes both transfers of specific skills as well as tacit learning as the partners work together.

Opportunities created by developments in information and communication technology

Information technology is the glue that will tie the firms together and make cooperation “seamless” and potentially efficient. Several factors pull in this direction:

Price

The price and performance level for hardware and software place the tools within reach of any firm.

Software

All kinds of packaged software are available to cover most applications and networking for smaller firms.

Functionality and ease of use is rapidly improving. Only modest in-house technical competence is required.

Networking capabilities

Data networks, intra-company, regional or global, are becoming commonplace. Time and distance are eliminated, and information is available to all authorized individuals at the same time. Computer networking is perfectly suited for outsourcing relationships or virtual organizations where participants can work together as if they were one organization.

In marketing, the “web” will create an open, global market that can be exploited by SMEs in network organization at no size or location disadvantage. A world wide pool of buyers and sellers can be reached. Prices will be more transparent and the value of the large firms’ physical, local presence, which has constituted a marketing and production advantage, may be reduced.

Effects of reduced interaction costs

The combination of constantly reduced cost of information technology and greater processing power that are available (and there is no indication that that trend will change) will further reduce the interaction costs and change the way business is done.

Because of the lower interaction costs made possible by information and communication technology, the result may be reduced value of vertical integration, whereas outsourcing will be less costly as buyers can benefit from superior economics of specialized suppliers. The total transaction costs have been considered increasing by outsourcing, however, reducing its attractiveness to some extent.

Horizontal integration and cooperation (alliances) will become more economically attractive as lowered interaction costs will allow companies better to coordinate the activities in for example marketing and distribution of a wider variety of products and services.

Conclusion

This paper has suggested that larger firms are increasingly focusing on developing their core competencies to achieve sustained competitive advantage. The non-strategic activities are increasingly being outsourced, which gives the specialized SMEs a unique opportunity to expand. Reduced interaction cost accelerates this trend.

Reduced cost and increased power of information technology mean that SMEs can be linked with the

outsourcer as if they are part of the organization independent of geographical location.

Specialized, entrepreneurial SMEs can link in a co-operative (and IKT) network, each one supplying unique input to an entity that works in concert towards the market. Thereby scale advantages can be achieved without losing the entrepreneurial spirit of each participant.

A research program is needed

It is not difficult to describe the above trends that converge into an opportunity to be exploited by SMEs. It is far more difficult, however, to change the ways of how SME owners and managers think and act. Operating in close cooperation with one or several partners requires a different way of thinking. Firstly, the firm is no longer an integrated entity, but a specialist delivering just one part of the final product. Secondly, a greater degree of openness is required. The business partners, (who could, in the worst case, become future competitors), gain insight into both each other's strengths and weaknesses. Thirdly, managers and employees in a network must be comfortable with working via computer screens with little face to face contact. Finally, the networks must be configured in a way that the benefits are fairly distributed between the partners.

To address all these issues and help the small, entrepreneurial firms to develop a cooperative mode of operation, a better understanding of forces promoting and resisting such development must be gained. Some suggested areas to be investigated are:

Status of organizational and technical networking

How widespread is organizational networking and to what extent is computer networking involved?

Status of organizational thinking among larger companies

It is important to identify the present status for outsourcing and alliances among the larger companies, as this forms the basis for business opportunities for the SMEs.

SME and large company attitudes to cooperation in networks

What are the forces that promote and constrain these opportunities?

Management styles and competencies in SMEs that seem to facilitate cooperation in organizational networks

It is important to identify characteristics of early adopters of the outsourcing and networking concept. Differences between family-owned and managed vs. professionally managed firms could also be an issue. Based on these observations, a selective approach can be chosen to maximize impact.

Information technology competence among SMEs

This is not only of importance for this project, but also for the field of information technology in the SME sector. To what degree is information technology a real instrument for expansion of SMEs? What are the main conditions for successful use of information technology in SMEs? The findings can help in designing information technology for education and training programs in this segment.

Employees' attitudes towards new ways of working

Any change in the ways of organizing work depends on support from the workforce. The degree of resistance to change determines the approach needed for organizational change.

Use of research results

Develop a theoretical framework

It must be expected that the findings will result in a number of constructs that can be classified. A good theoretical framework can help in advancing the research and education in this field.

Increase awareness of networking advantages for SMEs

A set of information programs should be developed to make smaller firms aware of the opportunities in the field of networking. Academia could be updated through research reports and published articles, lectures and books. Government institutions and trade organizations can be made aware of the opportunities in this field to adapt policies.

Develop an educational program

Upon completion of the research program, the insights should be converted into educational programs for SMEs to help them reap the benefits of cooperation through networks and information technology.