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Title	Collaboration and enterprise networks: What about SMEs?
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Publication Date	2004
Publication Information	Van Leeuwen, M. and Cormican, K. (2004) Collaboration and enterprise networks: What about SMEs? Proceedings of eChallenges Vienna, Austria, 2004-10-27- 2004-10-29
Item record	http://hdl.handle.net/10379/4075

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Collaboration and enterprise networks: What about SMEs?

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Abstract: This paper describes the research and analysis realised in relation to the creation of enterprise networks, based on the networked enterprise model, in European SMEs. It focuses on the barriers to inter-firm collaboration and on the skills and competencies needed by SMEs managers and employees in order to collaborate successfully with other SMEs and organisations. It describes the preliminary results of the Managing Enterprise Networks (MENS) project funded by the European Commission under the Leonardo Da Vinci initiative.

1. Introduction.

The new economy is the result of the information revolution, of shrinking and ever more powerful computers, and the emergence of an efficient, ubiquitous and invisible communications infrastructure. It is characterized by three distinctive attributes: it is global, it favours intangible things - ideas, information, knowledge, relationships, and it is intensely inter-linked. As more and more organizations prepare to "go digital", only few of them really seem to recognize what implications this transition will have on their business processes and on the organization as a whole. The transformation involves much more than setting up a digital infrastructure and requires even more than the ability to enter into a virtual network or partnership with other organizations. Organizations must become "smart", i.e. knowledge driven, internetworked and dynamically adaptive to new organizational forms and practices. Furthermore, they must become agile in their ability to create and exploit the opportunities offered by the digital economy.

Globalisation has forged a shift from the traditional corporate hierarchy and big business conglomerate to an economy in which both global and regional companies can be equally successful. However, research suggests that they must be part of an integrated network in which core competencies, localisation and customisation are achieved [1]. The networked economy has shifted the focus from wholly owned value chains - encompassing everything from product development, operations, logistics and delivery, - to knowledge and relationships

[2]. How then should a business develop and expand in today's knowledge economy? Various authors indicate that network building is a major new source of competitive advantage and an essential regional, and indeed, global management requirement [3].

However, we found in our research and interactions with companies that many small organisations find it difficult to collaborate or network with other organisations. While Small to Medium Sized Organizations (SMEs) are lauded to be more flexible and responsive than their larger counterparts, they often lack the skills and resources to collaborate or network. In order to address this, the Managing Enterprise Networks (MENS) project was established. This project team works with SME owner managers across eight European regions in order address the restrictive issues of development and growth within the area of collaboration and networking. The purpose the project is to determine the extent of European SME collaboration and identify the barriers to effective collaboration. It is hoped that these findings will help to paint a clear picture of the state of play of SME collaboration in Europe. These results will then be used to develop a management framework supported by a training programme for SMEs. This will equip SME managers with the skills, structures and systems to collaborate effectively and thus increase competitiveness, sustained growth and profits. This paper aims to provide a better understanding of the nature of SMEs and collaboration and it reports on preliminarily findings from our research.

2. Collaboration and SMEs

2.1 SMEs and Large Enterprises

Small to Medium Sized Enterprises (SMEs) are an important source of employment and trade within Europe. According to the European Commission SMEs represent 99% of all enterprises in the EU and together with start-ups they are reported to create between one and two third of all new jobs within the EU. The majority of these companies employ less than 10 people. With this in mind, SMEs are a vitally important asset and must be specifically targeted to improve their effectiveness and competitiveness for development and growth. There is much debate as to what exactly defines an SME. The structural and behavioural characteristics of an enterprise often provides a great insight into an organisation. According to Storey [4] there are multiple definitions available for an SME each focusing on different business characteristics. Broadly speaking, small and medium sized businesses are characterised by relatively low levels of employment, turnover and balance sheet status (see table 1). However other behavioural traits that characterise an SME include; centralised management, lower level of skilled labour, low level of technology employed, reactive based planning and finally an increasing importance of human resources as the major asset in the daily running of the organisation [5].

Table 1. SME Definition (EU, 2003)

Category Size	No. of Employees	Turnover	Balance Sheet
Micro	< 10	≤ € 2 million	≤ € 2 million
Small	< 50	≤ € 10 million	≤ € 10 million
Medium	< 250	≤ € 50 million	≤ € 43 million

There are certain characteristics that are found in SMEs that help us to understand them better. These are:

a. Management/Organisational Structure

SMEs managers can adopt several different management strategies [6]. However many SMEs are managed by the founder and owner of the company and therefore adopt a personalised approach which is characterised by a desire to maintain control [7]. This feature can act as a major benefit as well as a limitation to the business. More specifically, owner managers are lauded to be passionate, hard working and tenacious and they often have a burning desire to succeed. Furthermore, employees experience a sense of belonging and importance in such a family type set-up [8]. However, owner managers are often reluctant to relinquish power and control. Lack of empowerment can impede effective decision making and prevent an organisation from expanding and developing.

b. Financial Restrictions

The lack of finance is a significant characteristic of SMEs and is well documented as one of the main limiting factors for continued development [9]. SMEs often lack large investors and suffer from cash flow problems. Therefore, investment in areas such as re-engineering, training, marketing and capital equipment is limited as purchasing of materials and day-to-day operations absorb most of the cash on hand.

c. Process and Planning

It is difficult to generalise about process and planning within SMEs as the nature of both depends on the type, the volume, specialisation and the flexibility of the product being produced. The one general characteristic of processes within manufacturing SMEs is the fact that they tend to be more labour intensive with lower levels of skilled workers than the larger manufacturer. This is mainly due to the cost of automated production. In relation to planning, SMEs tend to focus on the short term often with an emphasis on survival rather than strategy [10]. As is often the case the forecasting and planning is dictated by the larger enterprise within any given market.

There is a widespread perception that SMEs are entirely different organisations from the larger enterprises from a social, organisational and financial perspective with the SME providing very much a subservient role to the larger enterprise[11]. On the contrary a there is also a view that the smaller firm exists in a complimentary role rather than in a subjugated role with respect to larger firms [12], especially since the shift away from mass production towards the consumer market. In reality, the relationship between SMEs and larger enterprises is very much dependant on industry and market specifics. However there are significant structural, organisational and operational differences between the two. Table 2 illustrates the key differences between large enterprises and SME's.

Table 2 Differences Between LE's and SME's

Dimension	Large Enterprise	Small Medium Sized Enterprise
Workforce Size	Greater than 250 employees	Less than 250 employees
Management Structure	Rigid/Formalised/Decentralised	Dynamic/Informal/Centralised
Leadership	Board of Directors	Owner Management
Business Systems	Proactive	Reactive
IT Infrastructure	Fully Integrated	Basic Use of Computers
R & D	A Core Competency	Small Scale

Resources	Plentiful	Limited
Project Management	Implemented and Practiced	Ad hoc/ At Managers Discretion
Funding	Generally Abundant	Limited/Government Reliant
Training	Structured/Regular	Ad Hoc/Informal
Human Resources	Integral Part of Business Plan	At Managers Discretion

On examination of the table above we can see that due to the differences in scale, leadership and operations, an SME requires different support systems than their larger counterparts.

2.2 Collaboration

Collaboration in its simplest form is a process in which two or more agents work together to achieve a common goal. When looking at the business world collaboration is best defined the following way: “*Collaboration is multiple enterprises working in concert to execute critical business processes while sharing responsibility, quality and accountability. It is key to greater efficiencies, better trading relationships and improved profitability*” [13]. Collaboration is a business strategy that motivates partners with a common business interest to generate value through sharing information at all phases of the business cycle (from product design to development to delivery). The goal is to enhance profitability while satisfying ever-increasing customer demands. All members of the network benefit, by combining each of their core competencies in creating a new product or service that is of higher value than the sum of its components. Enterprises have embraced the concept of inter-firm collaboration in order to remain profitable and enhance their market share. Research has show that the key drivers for collaboration include; the birth of the consumers market, the reshaping of today’s ever changing global markets as well as the reform and reorganisation of local economies and industries to comply with global standards [14]. These changes have been accelerated by the development of information communication technology, the Internet and the growth of e-commerce.

Group processes through which collaboration operates include:

- Communication- intentional transmission of meaningful messages
- Coordination – the act of working together harmoniously
- Cooperation – the association of persons or businesses for common benefits
- Information sharing – group members can synchronously share and use data and information

These processes do not work independently of one another but are usually intermingled and determined by each other. In order to facilitate effective collaboration, support must be provided for all these sub processes.

Many SMEs find it difficult to collaborate or network with other organisations. While SMEs are often more flexible and responsive than larger organisations, they frequently lack the skills and resources necessary to collaborate or network. Collaboration takes place in a very different business environment and has different requirements than large organisations, therefore approaches and systems for SME collaboration need to be designed specifically for their unique needs and requirements. For example, on the one hand it does not have the potential to dedicate large resources to experimenting within areas of collaborative work and

innovation [15], but on the other hand the flexibility and the responsive nature have a positive impact on collaboration.

2.3 *Barriers to collaboration*

The MENS project aims to identify and analyse the barriers to enterprise collaboration and enterprise network creation in SMEs. In order to determine the key problems and challenges an open workshop was realised which focussed on the specific difficulties within the area of sharing information and knowledge for collaboration. It was targeted specifically at owner managers in the west of Ireland. It was facilitated in the National University of Ireland, Galway and a total of 16 SME owner managers actively participated in the event. The key findings from the workshop identified some of the softer “people” issues as the main barriers to successful collaboration. Specifically, four main obstacles to successful collaboration were recognised:

- a. **Semantics/language:** There is a lack of a common language between representatives from different organisations and consequently there can be many different interpretations of the same statement. Therefore, information is often misinterpreted between its creation and incorporation. Furthermore, information is often incorrectly formatted in documents and files and people are unable to communicate effectively. These factors also impede effective information sharing. Therefore, a common and agreed language and format must be finalised from the outset in order to allow the members to understand each other.
- b. **Motivation:** Many people are unclear of the benefits for inter firm collaboration. In other words, they do not know what are the drivers, advantages, rewards and returns of sharing information with others. Unless mutual benefits to collaboration are established and communicated to all parties, people will remain unwilling to participate and reluctant to learn new procedures for information exchange.
- c. **Trust:** SMEs often lack the confidence to share propriety information with other organisations. They often fear that competitors will gain access to proprietary data if they share information such as sales forecasts, or promotional plans with collaborating partners. Nevertheless this kind of real-time sharing of vital operational information is essential if companies want to work together towards a common goal. Establishing trust is potentially the greatest barrier to overcome in collaboration, and it must be established from the outset to allow knowledge sharing.
- d. **Access:** There is a lack of common standard to enable information access and transfer. Therefore SMES often do not know what information to share, where critical information can be found and how to transfer it to others. Software is a key enabler for collaboration and information sharing with the Internet playing a leading role. In the case of SMEs, access to sophisticated IT is often not necessary, however an adequate knowledge of the methods and mechanisms available for communication is important.

Most organisations have been designed to work best within the four walls of the enterprise. As a result, their basic business processes and technology architectures may be difficult to extend outside the company. Attention must be paid to redesigning and restructuring internal processes to support this new collaborative business environment. Furthermore, successful initiatives require top management support and backing to overcome the natural resistance of organisations to change. Inter-firm collaboration may demand even greater leadership and support than previous internally focused initiatives. Therefore leaders must focus on the specific, tangible business benefits of these efforts, and participants across collaborating

organisations must understand and support those benefits. Such foundation building will be critical in overcoming the barriers to SME collaboration.

2.4 Successful collaboration

There is a clear similarity between the barriers identified by the workshop and the success factors identified by Evens [16], both indicate that the major elements for effective collaboration include the following:

- There is a willingness and flexibility during the early stages of establishing a structure;
- Members have a stake both in the process and outcome;
- A shared vision with obtainable goals is necessary;
- Clear performance measures keep the vision and strategy focussed;
- The group develops clear roles for members as well as policy guidelines;
- Sufficient resources and funds with strong leadership and guidance;
- Effective project management is essential;
- Open and frequent meaningful and informal communication structures are necessary;
- Vital membership characteristics include above all mutual respect and trust.

3. The MENS findings

Much literature exists on collaborative business and training however little relevant material exists in relation to SMEs. Hence a mixed method research approach is applied to the MENS project in order to gain an understanding of the training needs of SMEs to improve collaboration. The findings of the workshop mentioned are used to contextualise existing material. Further to this a questionnaire has been developed to determine the relevance and level of current practice of the best practices contributing to effective collaboration and training within SMEs. The aim of the questionnaire is to ascertain (a) the extent of collaboration that takes place within the organisation; (b) the barriers experienced; (c) the structures and culture in place to support collaboration and (d) finally management skills that can be improved to facilitate effective networking and collaboration. It contains an explicit set of carefully chosen and justified statements. These statements have been formulated from best practice concepts that have been compiled from workshops and justified by extensive literature searches. The questionnaire employs a Likert scaling technique in order to identify the extent to which the interviewee agrees or disagrees with each statement and the relevance of each statement to his/her business. The Likert scale contains a rating scale (1-5) for each statement. This allows each statement to be quantified and analysed providing a set of results that can be summed up to give a total score or attitude.

The MENS study is targeted at the following population:

1. Owner Managers: Owner managers of the main target audience as they make all the key decisions within SME's

2. Number of Employees: The companies that are mainly targeted are the SMEs that have less than 50. This is due to the fact that these SMEs tend to have less proactive mechanisms in place and account for the majority of SMEs in operation throughout Europe.
3. Level of technology: SMEs of less than 50 are characterised by low levels of technology. The use of the Internet and mail will be assumed to be the key resources of the audience.

A total of 160 questionnaires is being recollected in 8 different European regions: Extremadura and Madrid in Spain; Friesland in Holland; Liguria in Italy; Athens area in Greece and the Western corridor in Ireland, with an average of 20 questionnaires per region. Preliminary results confirm the main barriers as identified in the workshop, and identify two new barriers: one being the lack of knowledge on how to collaborate and second the lack of time. SMEs indicated that for them it is important to work together with their clients and suppliers, but in the day-to-day business this loses importance over other issues. Preparing SMEs for collaboration and providing them with the knowledge and tools to do so, can reduce many of the barriers identified, and help to put in place the conditions and factors for successful collaboration.

The preliminary results concerning the analysis of the training needs show a clear tendency towards the “softer” issues, mainly concerning people management, for example related to creating a basis for trust, such as the need for competencies regarding to emotional intelligence; or related to the improvement of the motivation for collaboration, for example by increasing the management skills and communication skill (both of management and the organisational members). Although this does not mean that the “harder” issues were not mentioned, the related competencies and skills that were considered important and needed for successful collaboration can be classified in three groups performance (e.g. negotiating skills); structures (e.g. creating the legal structure of the collaboration) and finance (e.g. participating in shared results). The identification of the training needs will be based on the final results of the analysis, although it is clear that a training plan which is capable of providing the

4. Conclusions

The collaboration process will ultimately be successful if there is an existence of appropriate systems and structures, open channels of communication, a strong sense of purpose and availability of the necessary resources. However, it must be noted that without a healthy interpersonal relationship including the existence of motivation, trust, loyalty and honesty between all members of the team then the collaborative process is doomed to fail. It is often the softer issues “people” issues that affects the success of the collaborative work. It is clear that SMEs need these skills to take maximum advantage of the opportunities offered by enterprise collaboration and the participation in enterprise networks. Much literature exists on collaborative business, however little relevant material exists in relation to SMEs. The setting up of the MENS project is a logical outcome of the above mentioned. The final objective of the MENS project is to provide European SME managers and their employees with the competences necessary for collaborating with other organisations and SMEs, and give the SMEs managers the ability to create and manage enterprise networks.

References

- [1] J.Milton-Smith, The Value of Networking SMEs: The Asia-Pacific experience. In P.Formica and D. Taylor (Eds.) Delivering Innovation. Key Lessons from the World-Wide Network of Science and Technology Parks. Campanillas (Malaga): IASP 1998, pp 225-248.
- [2] S.Davis, S.Meyer, Blur the speed of change in the networked economy, ISBN 0 201 33987 0, Perseus Books 1998
- [3] S.Birley, S.Cromie, and A.Myers, Entrepreneurial networks: their emergence in Ireland and overseas', International Small Business Journal, 1991 9(4), 56-74; D.Carson, S.Cromie, P.McGowan, and J.Hill, Marketing and Entrepreneurship in SMEs: An Innovative Approach. ISBN: 0131509705, Prentice Hall International, 1995; E.Shaw, The real networks of small firms, in D.Deakins, P.Jennings, and C.Manson, (eds) Small Firms: Entrepreneurship in the 1990s. London, Paul Chapman Publishing 1997; D.Lenoard-Barton, International communication patterns among Swedish and Boston-area entrepreneurs, Research Policy, 1984 13(2), 101-14.
- [4] D.J.Storey, Understanding the Small Business Sector, ISBN: 1861523815, Thomson Learning, 1994
- [5] S.Carter, and D.Jones-Evans, Enterprise and Small Business: Principles, Practice and Policy, ISBN 0201398524 ,Financial Times Prentice Hall, 2002.
- [6] P.Chapman, Managerial control Strategies in Small Firms, International Small Business Journal, 1999 17(2)
- [7] T.B.A.van der Wiele, Relative strengths and weaknesses of small firms in innovation, International Small Business Journal, 1998 16(3): 88-93.
- [8] R.Holliday, Investigating Small Firms: Nice Work?, ISBN: 0415123054, Routledge Small Business Series, Edited by David J. Storey. 1995
- [9] M.S.Freel, Barriers to Product Innovation in Small Manufacturing Firms, International Small Business Journal, 2000 18(2); P.M.Swamidass, Modeling the adoption rates of manufacturing technology innovations by small US manufacturers: a longitudinal investigation, Research Policy 2003 32(3): 351-366.
- [10] Y.P.Gupta, Linking Small Business and Modern Management Techniques, Industrial Management and Data Techniques, 1998 13-19
- [11] D.Hamblin, and J.Willcock, Assessing the likely effectiveness of the intervention programmes in small manufacturing companies. Proceedings of the 2nd International SME conference, Plymouth University, March 1999; S.Rahimifard, S.Newman, and R.Bell, Distributed autonomous real-time and control for small to medium sized enterprises, Proceedings of the Institution of Mechanical Engineers, 1999 213(B) 475-489.; C.H.S.Pollard, The changing face of information systems issues in small firms, International Small Business Journal, 1998 16(3) 70-77
- [12] G.Bannock, Counting Small Businesses in P. Ganguly, (ed.), UK Small Business Statistics and International Comparisons, London, Paul Chapman, 1985
- [13] P.Strzelec, Achieving the Potential of Network Collaboration (ASCET) Achieving Supply Chain Excellence through Technology 4, 2002.
- [14] H.S.Jagdev, K-D.Thoben, Anatomy of enterprise collaborations, Production Planning and Control, 2001 12(5): 437-451.
- [15] F.Bougrain,, B.Haudeville, Innovation, collaboration and SMEs internal research capacities. Research Policy, 2002 31(5): 735-747.

[16] E.Evens, Management Issues of co-operative ventures and consortia in the USA. Part one. *Library Management*, 2002 23(4/5): 213-226; G.E.Evens, Management Issues of consortia. Part two. *Library Management*, 2002 23(6/7): 275-286.