

The Role of Collaborative Working Environments in Enabling Global Businesses

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Abstract

The objective of this paper, based on early results of the New Global study, is to explore how globalisation of markets and industries affects the way companies are operating and collaborating, and to investigate the opportunities which global networking and global collaborative working opens up for market players including Europe's large number of SMEs. A core focus is on how ICT-enabled collaborative working environments (CWE) enable global operations and working. Based on an investigation of current trends and developments, this paper explores various types of collaboration settings in which CWEs enable new forms of global collaboration in teams, networks and communities. Initial results of case studies are presented to identify policies and strategies which could be applied to promote global collaboration of European companies.

Keywords

Globalisation, Collaboration, Work, Policy, Innovation

1 Introduction

Globalisation can be described as the process of growing integration of economies and societies around the world, leading to increasing connectivity, integration and interdependence in the economic, social, technological and political spheres. It is characterized by the increased mobility of goods, services, technology, capital and (to a lesser extent) also labour. Key forces driving globalisation are the liberalisation of markets and the impact of information and communication technologies (ICTs) on products, processes and business operations. In particular Internet-based supply chains and collaborative working environments (CWEs) for teams and communities play an important role in enabling companies to respond effectively to the challenges and opportunities inherent in globalisation. Increasingly, so-called Web 2.0 tools are being applied in this context (Tapscott and Williams, 2006). The intensity and shape of the ongoing process of globalisation and the uptake of global collaboration are strongly affected by policies of governments and international bodies, as well as by enterprise strategies.

There is a wealth of studies available looking into economic and social aspects of globalisation, e.g. its impacts and implications regarding markets, occupations and employment, regional economies, work environments, business strategies, and the knowledge economy (e.g. Van Welsum and Vickery, 2005; De Backer, 2006; Coe, 2007). Three major developments can be identified determining the evolving offshoring landscape.

- In the public debate in Europe, globalisation of work is still mainly understood as offshore outsourcing of routine work, which is driven by the search for cost savings, for example via moving back-office functions to India.
- A relatively recent development is the rise of “challenger” companies in emerging economies (e.g. from India and China: Tata, Wipro, Acer, Lenovo), which move up the value chain to compete with EU and US companies in their home markets (Dorfs, 2007). Often such competition is based on disruptive business models.
- A key development is globalisation of high-skilled work, based on the motive of acquiring access to scarce human resources which are not available in the home country but must be found elsewhere.

This macro-picture provides the wider background for companies’ working and business environment. Based on surveys, case studies and in-depth investigation of trends and development, the New Global project (www.ami-communities.eu/New_Global) is exploring how globalisation affects business operations and how to identify “windows of opportunity” allowing market players such as SMEs to pro-actively seize and exploit possibilities. This paper presents some initial results and in particular focuses on the different policies and strategies.

Core focus in New Global is on the role of CWEs using advanced ICTs, for example in establishing global teams for research and design consisting of experts from different companies, or to enable multi-location teamwork across time zones within a multinational company. Besides technical issues to establish interoperability between different collaboration infrastructures other issues must be addressed such as differences in business processes and cultural aspects of collaboration. We therefore see such CWEs not as primarily technology oriented, but as combinations of physical, ICT-based and organisational or social infrastructures supporting people and organisations in their work and collaboration.

2 Globalisation and business collaboration

2.1 Global collaboration cases

Globalisation changes the business environment as it changes the factors determining the attractiveness of markets (low cost entrants and new business models of “challengers” from emerging economies) and changes the strategies that are effective to compete in such markets.

In Southern-Netherlands, large electronics manufacturers such as Philips, ASML and FEI Electronics are sensitive to the pressure of global markets to cope with shorter life cycles of products, ever new product generations, adaptation to changing consumer demands, and shorter time to market. Products are becoming more and more complex and require a high level of skills, life-cycle support and integration of services. Manufacturers cope with this situation by creating networks of advanced suppliers that are able to work with them across the full life product cycle and across different generations of product innovations. Such strategies are grounded in new business models governing collaboration. As place still matters due to factors of human understanding and iterative development requiring close personal contact, manufacturers tend to be located where production factors are most suited to their business strategy. Regional suppliers are facing the challenge to cope with increasing demanding requirements in terms of skills and collaboration. As markets are becoming more global, SME suppliers are also encouraged to participate in global value networks.

Another example is a large company active in the printing industry. All competitors and many customers are global players. For various reasons, this company considers globalisation as a strategic issue. Printing is not a fast growing industry, therefore growth will arise from new regions (currently in North-America). There are many growth opportunities in strong economies in Eastern Europe and the Far East. Costs of design and production are low in Eastern Europe,

China and Malaysia. The company uses several organisational approaches to strengthen collaboration on a distance, such as common unifying meetings, team building initiatives, and trust enforcing activities e.g. to make people feel responsible and establish service level agreements concerning processes. As regards collaboration tools, the company prepares for a global collaborative workspace environment whereas currently decentralised collaboration tools are being used such as Lotus Notes and WebEx. Additionally it is experimented with Web 2.0 tools such as blog and wiki tools.

A third example is a large multi-national company in business software serving clients in many countries. Examples of global teams are those working on research projects, and on global consultancy. Main diversities are caused by different cultures and expertises from local markets. Global collaboration is supported by various tools. Meetings are scheduled via globally used calendar system. In addition, on-line tools are used like net meeting, intra web, internal document repositories, and wikis in order to share information and find relevant expertise and persons. The establishment of good communication channels is considered as the critical success factor of global collaboration, but also appropriate management approaches and motivation is considered to be highly important.

These examples illustrate a few changing factors in strategies. In deciding on location, low costs matter but in many markets product quality and customer responsiveness are the key factors. The required capability and skills to cope with increasingly complex products and changing consumer demands is priority. Companies tend to look more and more carefully to global sourcing strategies based on business models enabling longer term collaboration, collaborative innovation and risk-sharing. They tend to integrate resources from anywhere in their production, innovation and marketing strategies, adapting their business locations to the priority to find adequate skills and be located closely to customer markets. This also implies that work is moved more and more to places where critical but scarce resources are available at acceptable cost. SME suppliers increasingly face the challenge to play their role in global business networks by enhancing their skills level, by specialisation and by engaging in global partner networks.

2.2 CWEs to support SMEs in global collaboration

These examples also illustrate the importance of CWEs to enable global collaboration and participation in global value chains. While there is much consensus among experts and policy makers that utilisation of newest-generation ICTs for making work settings more collaborative, adaptive, effective and productive is a key requirement for keeping Europe competitive, it remains a challenge how to best help SMEs in adopting and exploiting CWEs. This applies, in particular, to cases where collaboration involves participants from countries outside of Europe. As a result of the ongoing globalisation trend and market growth that increasingly takes place outside of Europe and North America in the future, European SMEs face the need to find ways how to extend their business activities to the global level. Today's most successful globalisation strategies demonstrate that the biggest economic impact does not come from arms-length interaction as in the case of traditional trade and off-shoring relationships, but rather from intense collaboration which makes the best use of local knowledge and skills while integrating them in carefully managed, highly effective global production systems. The latter can be termed "collaborative globalisation", which is defined as the use of CWE for collaboration in project teams across national boundaries.

Previous experience has shown that attempts to implement innovative new working environments are likely to face considerable obstacles. Such barriers may be related to the readiness of organisations, workers and societal environments to initiate, foster or adapt to change. Arguably, there still are many deficiencies in collaboration technology, for example poor integration and a focus on individual co-located work rather than collaborative interaction. The barriers and resistance may also be related to perceived risks and uncertainty about the impacts

of stronger cross-boundary collaboration on the workforce, organisations, labour markets, societies and the environment.

Chances are that those companies that are capable of cross-cultural cooperation will be among the winners in the global economy. Europe, with its rich tradition of cultural diversity, should be well equipped to deal with such issues. From an analysis of the available empirical evidence, however, it appears that too little is known about the critical factors that will determine take-up of CWEs in Europe, how collaboration across nations and continents will impact on European SMEs, and what both mean in terms of demand for specific EU policy-making. It can be expected that policy-making for fostering the diffusion of CWEs into the mainstream of the European economy will be severely hampered if there continues to be a lack of insight into the preconditions, success factors and likely outcomes of CWEs.

3 CWEs responding to global collaboration needs

3.1 Forms of ICT-enabled global collaboration

Three forms of ICT-enabled global collaboration can be identified. The first form is inter-company value networks and supply chains. The formal and process-oriented aspects of collaborative business have been on the foreground. Key drivers of the trend towards global business networks are technology and costs. They are typically part of market-seeking and efficiency-seeking globalisation. New developments, however, go into the direction of short-term, ad-hoc and temporary business collaboration networks (Malone, 2004; Hagel and Seeley Brown, 2006). The term “value network” or “business web” (Tapscott, Ticoll and Lowy, 2000) is still valid to provide a generalisation of such collaborative networked organisations and stresses the decomposition and reconfiguration of traditional supply chains and the new forms of less hierarchical, more informally and trust based coordination and management principles and associated business models.

The second type is inter-company Communities of Practice. These focus on more informal and loose forms of collaboration dedicated to the exchange of knowledge and information and solving problems. Many organizations have established Communities of Practice as a coping mechanism in order to develop and exchange common concepts, practices and systems across organizational and geographical boundaries. However, the success of new working environments is highly dependent on the alignment of the broader socio-cultural context with differences of individual members – that is, opportunities of Communities of Practice lie in creating and maintaining an understanding that communities differ from more traditional structures within the organization in terms of flexibility and informality, and on an awareness that employees partaking in such communities thus need to be managed in a more loose way in order to make community-related activities beneficial to the organization as a whole. Challenges for Communities of Practice in globalisation are, among others, the operation across national diversities and cultures, the lack of cohesion stemming from cultural inequality or misunderstanding which may polarize individual participants’ personal beliefs and frames of reference, and the lack of cohesion stemming from low levels of trust.

The third type is global virtual teams. In globalised working environments functions are distributed and group task shared to a group of employees working dispersed in multiple locations. At the organizational level, this results in growing numbers of distributed teams and projects, and needs for developing of practices to work in them and manage and lead them. The globalization of the companies’ design and operative actions is shown as changes in work requirements of their groups and projects as they communicate and collaborate cross geographical and organizational borders and over time zones. An extreme situation is to collaborate electronically in a fully virtual mode that is without face to face contacts and communication. Though globalization does not necessary – and in fact very seldom it does -

imply missing physical face-to-face interaction, the full virtuality as an extreme end provides a viewpoint to study and understand the changing requirements of global working.

3.2 CWEs enabling global collaboration

Collaborative working environments can be understood as combinations of physical, IT-based and social or organisational infrastructures supporting people in their work. Web-based systems have increasingly become a critical enabler of business strategies and organisational forms through diminishing the costs of communication and interaction to benefit from interconnection with valuable distributed sources of people, knowledge and information. Digital CWEs include community and team-oriented shared workspaces and Web 2.0 technologies such as wiki's, blogs, web conferencing and presence-based communication tools allowing working together and social networking on a distance, even across multiple time zones. Such CWEs focus on people collaboration and are complementary to collaborative business systems, which allow business processes of multiple companies organised in supply chains or networks to cooperate. Clearly, ICTs fall in the category of enablers of global collaboration. The primary success factor of business performance is not collaborative technology but collaboration capability, work practices and a supportive culture (see also Gofus, Conway and Kostner, 2006). This demonstrates the need for more emphasis on social, organisational, human and cultural issues in order to understand better how to increase the impact of collaboration on value creation.

4 Responding to global collaboration: knowledge gaps and open issues

Very little systematic evidence is available as yet about the benefits which companies, workers and other stakeholders can derive from virtual collaboration that stretches across the borders of countries and even continents. Academic research has focused mainly on case studies into the experience of companies which are leading innovators, and as such not representative of overall developments. Most media attention has focused on the phenomenon of off-shoring of manufacturing jobs and routine knowledge work. Recent studies highlighted the possibility that knowledge-intensive, high quality jobs such as in R&D may also “move” to offshore locations such as India and China. Such reports give the impression that globalisation is a zero-sum game, where a country can only gain if other loses out at the same time, and companies are engaged in a struggle for life where only the most powerful multi-national players will survive. This impression does not properly reflect the real experience of globalisation in recent decades.

A focus on cross-country virtual collaboration, rather than on ICT-enabled “relocation” of jobs, should be better capable of highlighting the processes and structures through which globalisation can benefit all parties concerned – including European SMEs. Saxenian (2005, 2006) has researched the labour market of Silicon Valley in order to better understand the workings of the kind of flexible labour markets, which underlie certain regions’ success in terms of innovative activity and growth. In recent years she turned her attention, in particular, to the region’s stock of high-skilled, foreign-born overwhelmingly Asian workforce. While the dominant belief has been that there is a risk of brain drain once foreign-born but US-educated highly qualified workers re-establish connections to their home countries, Saxenian has produced a rich body of evidence suggesting that both the Silicon Valley region as well as the native countries of these engineers benefit from the collaboration networks which are developing in the course of this process. Cross-continent collaboration is not leading to brain drain, but to what Saxenian terms “brain circulation”, increasing levels of innovative activity and entrepreneur-based growth in both parts of the world. Additionally, it leads to new structures of collaboration in horizontal networked organisations across regions.

Translated to the situation in the European Union, this evidence suggests that by fostering cross-country collaboration in flexible and human-centric manners, Europe can benefit from the forces of globalisation by combining the specific location advantages of Europe and the competence

base of the European workforce with those of other labour markets around the world. It goes without saying that this process brings with it a number of challenges which put much pressure on Europe's ability to transform itself. The concept of global, new collaborative working environments, as defined by the European Commission and used for the New Global study, presents ways of how to deal with these challenges. It also provides valuable insights into the kinds of political measures which will be necessary for fostering stronger cross-country collaboration, as well as for pro-active policy-making aiming at maintaining and further developing the European Social Model.

Our findings so far let us assume that only through improvements in the set-up and management of collaborative work processes will it be possible to achieve self-sustaining increases in the competitiveness of the EU economy. Unless work processes and value chains that cross national borders are well managed, the risk is high that losses will occur. Indeed, as opposed to the common perception that globalisation of production is a logical result of the pursuit of easy profits by companies, the most successful global companies are the ones that consider global production systems mainly as a means to increase their ability to innovate and to respond to market changes. Global collaboration opens up totally new possibilities in this respect. What is more, this type of globalisation may actually benefit source countries by creating new, high-quality employment rather than destroying jobs. This will not happen, though, without policy-making taking an active role in fostering innovation and in supporting Europeans to adapt to the changing global marketplace while preserving the achievements of the European Social System.

It is clear that policy action will be needed in a large number of policy areas. In the area of skills, competences and education, key challenges include more effective policies for tackling competence shortages and mismatches, better preparation of school and university students for a world of work in which the ability for effective collaboration is a key requirement, and support of geographical labour mobility. With regard to regional development and cohesion policy, there is clear demand for policies which effectively increase the absorptive capacity of regions and cities in order to enable them to fully exploit knowledge, which is being transmitted through inter-regional and cross-border collaboration (Karlsson, 2006). Europe's SMEs – which employ the large majority of the EU labour force – may need policy support to improve their adaptability and innovativeness, for both of which extensive collaboration with local as well as distant partner organisations is of prime importance.

The patchy evidence, which is available on the current and likely future impacts of developments related to cross-border virtual collaboration, indicates the need for more research into how to gain the benefits and avoid the drawbacks from globalised collaboration and from ICT-tools for virtual collaboration. The main gaps in knowledge appear to be the following:

- The relative elusiveness of inter-organisational collaboration – in particular if these are of a rather informal nature and not reflected in trade statistics or legal agreements – means that it has tended to escape the interest of mainstream research and especially of official statistics. If such collaboration is of vital importance for the competitiveness of the EU economy then representation of collaborative activities within research and statistics needs to be improved considerably.
- The amount of research in the area of CWEs has been growing, originally using the term “computer supported collaborative work” (CSCW). However, insufficient attention has been paid to aspects which are specific for global collaboration such as the spanning of cultural, temporal and organisational boundaries at a global scale.
- To what extent are there national differences in the degree to which SMEs in EU countries exploit the potential for international collaboration? Are these differences purely due to different sizes of the home markets, or do significant variations persist once this factor is controlled for? If the latter is the case, can we identify good practice in

policy action at national or regional level, which could be utilised by other member states to improve their SMEs capability to “go global”?

- While global collaboration is bound to bring with it a large number of challenges, what are the critical success factors, which differentiate poor from good performers?
- To what extent are technical, financial, knowledge-related and attitudinal factors responsible for the large number of firms that do not intend to collaborate globally?
- Which are the competences that are of particular importance to global collaboration, to what extent are they present in today’s workforces in the EU, and what needs to be done to improve competences supply if shortages are existing?
- While multi-national enterprises make extensive use of CWEs and are currently engaged in a process of trial-and-error to identify the best way to set up and manage global collaboration activities, SMEs which by their very nature tend to be more bound to their immediate environment (region, country) are lagging behind. Very little is known about the conditions under which SMEs are capable to engage in intensive global collaboration and the critical success factors for doing so. In this respect, the exact need for policy support to SMEs and how this should look like is also largely unknown territory.
- There is still a high degree of uncertainty and disagreement about the health and well-being effects of work intensification as it is typical for types of work organization, which make heavy use of ICTs for increasing work productivity and collaborative activities. The concept of pro-active work (Antila & Ylöstalo 2005) goes some way towards addressing the assumed contradictions in previous research findings. More research is necessary to identify the long-term consequences of pro-active work organisation.
- Whereas traditional models for internationalisation of firms assume a step-by-step process, the Internet together with other ICTs have opened up totally new possibilities for establishing a global enterprise from scratch. This relates to the phenomenon of “born globals” the number of which has been growing explosively in recent years in Europe, although still at a very low level. To what extent can the “born global” model be considered as a model for self-sustaining entrepreneurial activity in the knowledge economy, and what do EU policy-makers need to do to exploit this potential?

5 Conclusions and implications for further work

So far the New Global project has addressed the issue of how to create a more or less complete overview of strategies addressing global cooperation. A different task is to get insight in appropriateness of specific strategies in specific situations and under specific contextual conditions. We need to understand what specific answers to specific globalisation challenges are. As a first attempt we propose two key dimensions spanning a globalisation strategy matrix and position specific coping strategies in the different quadrants. The first dimension is company reach (intra- vs. inter-organisational collaboration); the second dimension identifies two contradictory trends representing the impact of globalisation: concentration and dispersion. Strategies could be identified that could be considered as appropriate or successful to exploit the opportunities of globalisation in the mentioned quadrants.

Further work will address the precise impact and role of collaborative working environments as business strategy, in relation to generic policies such as those promoting flexible working, clustering and open innovation.

It should be distinguished between actual strategies observed in our case studies and survey analysis (descriptive analysis, in need of understanding why these strategies have been chosen), and normative or prescriptive strategies (in need of understanding why these strategies should be chosen in the future). In the end, we must answer the question as what are the conditions for

European firms to exploit the opportunities of globalised work environments in coping with the related globalisation challenges, and how European policies could respond to create the conditions. In order to better understand these strategies they must be related to situational characteristics and to trade-offs of stakeholders and they must be evaluated in terms of impacts, success and failure. Such analysis could then shed light on designing potentially successful strategies addressing global collaboration in the future.

As the next steps in our project, the survey study will provide more detailed knowledge about the present status quo among European companies in a number of EU Member States. The main objective of the survey is to provide indicative data about the spread of cross-country CWE, as well as elements hereof, among EU companies in sectors which are likely to be significantly affected by globalisation tendencies of high-qualified knowledge work. The data thus collected will allow the study to shed light on the current situation in the EU as well as related drivers, success factors and impacts on performance, innovative activity and quality of working life.

The case studies will provide in-depth description of different global collaborative working environments. The description will include a description of globalisation strategies at strategic-company level and on the specific team level. As well specific characteristics of global collaborative environments will be identified. The focus is particularly on key drivers, barriers, obstacles, processes, issues, technology used and contextual factors for the companies and value chains involved. In addition good practice in organising global collaboration environments will be identified.

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