

Partnering in the High-Velocity Environment - Is the Interaction Theory Valid Approach?

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Abstract

The central theme and purpose of the paper is to illustrate and describe the asymmetric technology partnership formation in the ICT sector and compare how well partnering in such high-velocity environment is explained by the Interaction Approach (Håkansson 1982). The evaluation of the Interaction Approach will be done by analysing and comparing its basic assumptions, limitations and propositions to the empirical reality of asymmetric partnerships in the ICT sector. Our endeavour is finalized by the discussion of how the Interaction Approach should be interpreted and applied in the high-velocity environment.

Introduction

The fast pace of technological development has increased complexity and risks in the information and communications technology (ICT) sector. Instead of few partnerships many firms operating in the emerging markets seem to have a *myriad of partnerships*. Also the *scope and depth* of the relationships seem to vary and in many cases also the relationship *tasks may be open* and emerging. Partnerships seem to be also more *tentative* and in some cases meant to be only temporary. Instead of the present products and services the partner's ability to leverage state-of-the-art *capabilities* also in the future is critical. In these conditions contracting may be challenging and the role of trust in both partners selection and as governance mechanism is accentuated. However, in this high-velocity environment there may not be a possibility for natural development of trust, which is considered to demand time, incremental investments and predictability.

The central proposition in this paper is that these context-specific features influence the partnership formation in various ways. To advance our proposition we have chosen to describe asymmetric technology partnership formation in the high-velocity ICT sector and evaluate how well the Interaction Approach (Håkansson 1982) fits with this high-velocity environment. Reason for this evaluation is thus rather simple - we want to raise a critical discussion about the relevance of context-specific features in theory development (e.g. how much is lost for good when all context-specific issues are aggregated into high-level abstract models that would apply to any context), and whether we should drive towards creating managerially useful normative tools that would help the management in decision making.

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The paper is organized in four parts. In the first part of the paper the characteristics of the ICT sector are illustrated. In the second part the nature of asymmetric technology partnership formation in the high-velocity environment will be described. The third part will describe the basic assumptions and propositions posed by the Interaction Approach. In the end we draw some conclusions of the suitability of the interaction approach and present some guidelines for further research on the asymmetric technology partnership formation in the high-velocity environment.

The ICT Sector as an Example of High-velocity Environment

Technological change seems to be the driving force behind the increased partnerships in the ICT sector. The key technological drivers, i.e. *the Internet and the wireless communications* act as drivers for technological change. Due to convergence, de-regulation and blurring industrial boundaries the telecom, media and information technology industries are going through a major transformation and developing to an ICT industry. In the ICT sector the R&D investments are higher than in other industries, often by a factor of about five (Measuring the ICT Sector 2001). Along the high R&D investments also the related risks are high and a clear motivating factor behind inter-organisational partnering. Also the *convergence* and *standardization* increase the need for technology partnering.

Technological Discontinuities

The high technological change creates incentives for innovation and entrepreneurs seeking opportunities. Technological discontinuities like the Internet bring new innovative players, which try to break the rules of competition and seek the niches not noticed by the incumbent players. For incumbents the discontinuities pose threat that may be turned to an opportunity through cooperating with innovative players and learning from them. The incumbents are building Internet capabilities through acquisitions², partnerships and Internet focused R&D projects. E.g. Microsoft, Cisco and Nokia have diversified their capabilities through acquiring start-ups with the Internet and content capabilities.

Convergence

The industry structure is changing and new industries emerge. The convergence of products, markets, technologies, firms and industries create needs for partnerships. Also, as Teece (1998, p. 61) argues, the convergence does “*by no means occur automatically and requires internal structures that are flexible and permeable.*” Various partnerships are established as knowledge and technology options as it is almost impossible to develop all the potentially needed capabilities in-house. Convergence and the subsequent consolidation are rapid and the whole ICT sector is going through a rapid restructuring where the roles of the players are changing. Computer, telecommunication and content *industries* (media, advertising) converge, materializing in networked computing and intelligent networks (Katz and Woroch 1997). At the *product-market level* the “telematics” products combine computer and telecommunications, at the *technology level* the fusion of microelectronics and software produce digital products, and at the *firm level* firms cooperate to combine their different knowledge bases (Duysters and Hagedoorn 1998, p. 16).

² Cisco has acquired over 50 firms and only 1999, Microsoft acquired shares in 44 firms (for USD 13 billion) and Intel in 35 (for USD 5 billion) (A New Economy? A New Economy, The Changing Role of Innovation and Information Technology in Growth).

As a result of this development the large and incumbent players have come to a situation where they must ceaselessly create, adapt and re-design new products and value-add-services in order to maintain their competitiveness. Incorporating technologies that are new to the traditional business is especially crucial in the converging industries. New technological competencies must be blended and absorbed in the company. Terminal manufacturers, whether they are designing cellular phones, PDAs or digiTVs, need to learn of the content, its display and delivery. Traditional media industries attempt to gain Internet and software capabilities in order to enhance their operations in the e-business sector. Traditional IT suppliers and integrators need to learn about the e-business and the related media and content industries. New business concepts in the emerging new industries demand versatile capabilities. E.g. *home banking* demands capabilities and access to banks (finance industry), communications technology (operators), information technology and digital media (front-end, consumer interface).

There are multiple migration paths and in the development phase it is very difficult to estimate what the structure of a specific industry will be in the near future – or even whether a specific industry will exist in the future. Industry boundaries are blurring and future development may take surprising directions. Therefore companies prepare themselves not only to partnering to gain complementary competencies, but also to competition, which may arise from adjacent technological fields, and to new business logic what may not be possible to imagine today.

Standardization

New industries produce new standards as markets evolve. Common standards enable the networks, machines and users to communicate with each other. The role of open and non-proprietary standards, such as TCP/IP and HTML for www-pages used in Internet has been given as the most important reason for the great success of Internet (Cairncross 2001, p. 77). Standards are especially crucial in the ICT markets with strong *network effects* where customers value compatibility highly. Compatibility³ is crucial for the users (Teece 1998) and *interoperability* for the manufacturers and service providers. *Compatibility and interoperability* may be reached through proprietary control or open standards. E.g. a widely used operating system invites many applications, and operating system sellers want to combine their efforts with most used applications. Standards are critical for the evolution of markets and the competitive position of companies (Prahalad 1998, p.16).

Alliances, partnerships and looser industry cooperation are important and common tools in creating market-based industry standards. Shapiro and Varian (1999) label standard-based competition as standards war. *Expectation management* is common in the ICT sector standard creation⁴. Even competitors may build an alliance to develop and enforce a mutually useful standard. E.g. Philips and Sony cooperated to create the DVD standards, but compete in the DVD business (Prahalad 1998, p. 17). Small technology firms may utilize their large partners to push their technology towards *dominant design and standardization*. Large partners give credibility to the emerging new technology and small technology firms (see also Kotabe and Swan 1995).

³ Compatibility consists of standards and rules and rules that enable subsystems of products to work together without special modification (John et al. 1999, p. 81).

⁴ E.g. Sun Microsystems has gathered allies and advertised their alliances in Java coalition in full-page advertisements (Shapiro and Varian 1999, p. 20).

Global Network Economy

According to Castells (in Himanen 2001, p. 166) the network society is a social structure made of information networks powered by the information technologies. In the information society the power lies in the information, which only communication may turn into valuable knowledge and subsequent profits. Therefore the role of efficient communications technologies and the related human networks is paramount.

Due to globalisation and the infrastructure of developed communications the transparency of markets has highly increased, as buyers reach several alternative sellers and the market information flows more freely. The transparency of economic actors and the move towards “perfect markets” has also been called as “Nude Economy” (Cairncross 2001). According to OECD, (<http://www.oecd.fr/sge/au/risks.htm> 24062001) interconnectedness and the transparency seem to have an accelerating impact on the *speed of technological change* in the ICT industry. The developed communications networks enhance monitoring of emerging new innovations creating counter-effects for the later described first mover advantages. The ability to leverage diverse knowledge from non-redundant networks may be a key source for weak signals enabling early information on competitor action or new technological development. In order to gain a dominant position the players are seeking for a “hub” position in a network of complementary players.

In addition to physical networks also social networks are important for enhancing innovation by transmitting information, knowledge and resources. Social networks may even determine a firm’s chance for survival by giving quick access to external resources and know-how (Castilla et al. 2000, p. 222). In order to leverage the power in social networks, trust and related social capital⁵ between different parties is needed. In efficient networks both positive and negative information travels fast. In emerging fields like mobile commerce the players learn to know each other fairly fast. The actors’ behaviour and subsequent reputation become more transparent. For a partnering firm its reputation as a competent player and fair partner may become critical. Information of e.g. a poor supplier or an unethical principal may be distributed almost in real time. Reputation becomes an important asset not only locally but also in global arenas. This “fishbowl effect” (Economist 2000) exposes the firm’s management to the employees, external opportunities to the employees as well as the company “black box” to customers and suppliers connected with Extranets and supply chain management applications.

Interconnectedness has increased through globalisation and technological development. Despite of the positive effects (large markets to be reached through the Internet) this may also have major risks. E.g. the OECD has set up a Futures Project on Emerging Systemic Risks due to *increased interdependence*. Information on new issues spreads very fast due to effective search engines and specialized information services and low cost communications. Ford et al. (1998) describe such market dynamics as “*co-evolutionary*” demanding flexibility, as innovations and emerging relationships in the network continuously change the context.

⁵ Social capital is “the features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating co-ordinated actions” (Putnam 1993, p. 167).

Global Competition

In addition to strong technological development the liberalization and deregulation of markets have accelerated the global competition in the ICT sector. The increased competition has boosted innovation and cost-efficient services. Worldwide deregulation of telecommunications has been notable, e.g. between 1989 and 1999 the number of mobile operators increased from 35 to 94 (Paija et al. 2001, p. 18).

Hamel (2000) argues that present globalisation, deregulation, technological development and availability of venture capital enhance new business models. He further believes that a synthesis and combination of traditional “bricks-and-mortar” virtues (e.g. efficiency and replication) and innovative aspects of “dot coms” (self-organization, networks, innovation and speed) may be a key to competitiveness in the 2000’s. Thus both the large firm traditional capabilities and small firm complementary capabilities are needed. According to his prediction, this would mean an increase in asymmetric technology partnerships between innovative start-ups and large incumbents.

Uncertainty and Complexity

Uncertainty and complexity increase the need for flexibility, adaptability and speed, which may be leveraged through partnerships. Technological, market and regulatory uncertainty are the key factors in uncertainty. *Technological uncertainties* are caused by simultaneous developments of several technologies, the pace and complementarity of which are almost impossible to forecast due to several interdependencies⁶ and multiple factors impacting the techno-economic development. In terms of the chaos theory, the changing landscape of the ICT industry networks has been characterized as a “dynamic fractal” where the whole image consists of countless little changes below the surface (Välämäki 2001). In the ICT industry the limits of the management’s “bounded rationality” is reached fast. Customer demand for new services i.e. diffusion patterns for new products and services is probably the greatest source for *market uncertainty*. New product versions might make older generations obsolete. Market uncertainty has increased the risks and costs of R&D. A third factor creating uncertainty for the ICT sector is the *regulatory policies*. Regulators at different countries are driven by different motives and the impact of politics may be notable. Due to varying government policy and uncertain politicians the bids for national 3G spectrum licenses created a major turmoil in the European markets.

The prevailing market uncertainty may be one driver for the tentative nature of partnerships for value-add services. If the services and applications become popular also the partnerships will be deepened in order to explore new opportunities. Partnerships bring the highly needed flexibility and options for the emerging future (Young-Ybarra and Wiersema 1999, Scharmer 2000). Large corporations may be able to impact on some of the regulatory officials through lobbying. Liberalization has opened the traditionally monopolistic competition to new entrants, also to small players. Small firms may need a large firm’s lobbying power and knowledge in order to push through deregulation for their business goals.

The simultaneous convergence of industries, technologies and equipment as well as the related demand for interoperability create complexity (Day and Schoemaker 2000), as do the

⁶ According to Teece et al. (1997) system level or architectural innovations often need new routines for task engineering and coordination. Productive systems may display high interdependencies and one level may not be changed without a change in another level.

simultaneous management of different technology generations (e.g. cellular technologies) and emerging new standards (Neuvo 2000). John et al. (1999, p. 80) note that monolithic products transform into *decomposable systems* with higher know-how intensity. Many of the ICT products are bundled together as systems, e.g. a personal computer, operating system and applications. The compatibility and *interoperability* of complex systems, services and products are crucial for emerging new industries. In addition, the know-how bases may be diffused widely across firms, industries, and users. The complexity and systemic nature of the services set a natural demand for partnerships with complementary suppliers. The lock-in effect may be managed through increased costs and e.g. dual sourcing commonly used among cellular phone manufacturers. The need for interoperability is especially high in the emerging industry infrastructure leading to cooptation (simultaneous cooperation and competition) between firms.

The major forces characterizing the knowledge-based competition can be suppressed to high pace of technological change, global network economy as well as the increased uncertainty and complexity. The other characters, inter-related to each other, are the information networks enhancing transparent markets, interconnectedness and global competition.

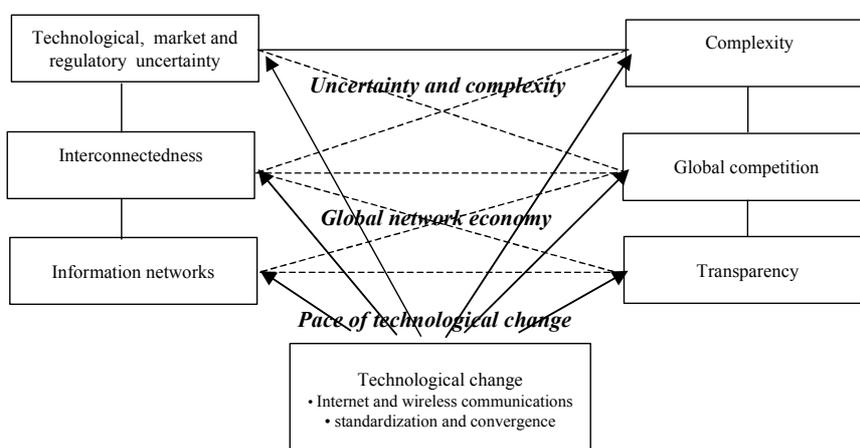


Figure 1. Characteristics of the Context for Competition in the ICT Sector (Blomqvist 2002)

As a summary, the ICT environment seems to have profound contextual qualities that actors must take into account in their strategic and operative behaviour and related relationship management. These qualities may also change companies partnering behaviour.

Characteristics of the Asymmetric Partnerships in the ICT sector

In this subchapter the specific characteristics of asymmetric technology partnership formation are summarized based on a PhD study where 8 small software firm asymmetric technology partnerships with 5 large firms were empirically analysed (Blomqvist 2002). Based on this study most of the partnering activities were recent and accentuated by the ICT convergence. Large firms were looking for complementary capabilities, technology options and flexibility. Small firms were looking for complementary resources, legitimacy and stability. Cooperation was arranged in projects and the continuation of the relationship was reconsidered after each project. The partners were evaluated after each project and they needed to earn trust by showing continuous capability and goodwill. Asymmetric technology partnerships were used more to explore the future possibilities than to exploit the present competencies.

In the following some of the specific characteristics of asymmetric technology partnerships are discussed and compared to the Interaction Approach.

From Present Knowledge and Resources to Dynamic Capabilities

In the converging ICT sector the partners' propensity to cooperate was related very much to the technological development as well as the partners' dynamic capabilities. The more path-dependent the large firm, the higher its propensity to establish asymmetric technology partnerships. Also, the more dynamic the small firm capabilities, the more interesting it as a partner was. The partners' capability to learn, adapt and renew themselves accentuate in the high-velocity environment and the potential partners' dynamic capabilities become more critical than the present knowledge and resources when evaluating the compatibility. Asymmetric technology partners make a joint effort to innovate and create value from diverse knowledge bases in the conditions of high risks, uncertainty and complexity. Partners' ability to adapt and change is critical as cooperative projects often change due to environmental and organizational factors. In accordance to the semantic usage and conceptualisation the time span in the Interaction Approach seems to be more in the present resources rather than the future development. It is proposed that *in the high-velocity context the term dynamic capability is more relevant than present resources and products.*

Diverse Strategic Intent – Technology Options and Legitimising Platforms

Conflicting motives and strategic intent characterize asymmetric technology partnerships – the large firms search for flexibility, efficiency and future options and the small firms legitimacy and predictability. It is proposed that *for the small technology firms the asymmetric technology partnerships with large firms are an important source for legitimacy and therefore strategic.* In a qualitative study of 8 suppliers and 5 large firms (Blomqvist 2002) no single small partner was strategic to the large firm. However, *a network of small firms could become strategic and a source for power also for a large corporation.* Therefore, in the asymmetric technology partnerships in the high-velocity industries the interdependence and reciprocity, as proposed by the Interaction Approach, cannot prevail at the organizational level. Instead, the mutual dependency or conceptualised as “double contingency” (Luhmann 1979, Blomqvist 2002) is only possible at the individual level. In general, the role of individual actors is highlighted in the knowledge-based industries like ICT sector, where the idiosyncratic knowledge of a single knowledge-worker may be critical for the competitive advantage. Also, the high velocity decreases the experienced institutional trust (Fukyama 2000). Therefore, it is proposed, that in the knowledge-based high-velocity industries the individual level of analysis should be included and highlighted in both the conceptual and empirical analysis.

Open and intense communication enhances asymmetric technology partnership formation

In asymmetric technology partnerships the individuals from diverse organizational contexts, with diverse and partly tacit (even interdisciplinary) knowledge bases and related asynchronous language and meanings need to create shared understanding. Also the emerging nature of the knowledge and future orientation of the task accentuates the role of communication. The boundary spanners may also have different basic assumptions e.g. of the nature of truth, human nature and interaction. This all creates anxiety and awakens self-defense mechanisms. The time pressure inherent in the task of creating technology-based services and products is also anxiety provoking. Because of the organizational heterogeneity and cultural diversity the asymmetric technology partnerships demand relatively more investments in relationship development, adaptation and coordination than symmetric

partnerships. Thus the capability to communicate effectively and efficiently may become a pre-requisite for asymmetric technology partnership formation. In the Interaction Approach the firm level heterogeneity is noted yet the increasing diversity at all levels of analysis in the high-velocity industries such as the converging ICT sector could be paid more attention to. As a result of the diversity *the need for open mindedness (mental framebreaking) and intense communication is highlighted.*

Matching Boundary Spanners Substitute Compatible Organizational Culture

Cultural compatibility cannot be found at the organizational level. Asymmetric partners' cultures are bound to be heterogeneous because of their different organizational and managerial cultures. However, partial compatibility may be found at the subculture level, when there are similar professional subcultures in the small and large firm, e.g. computer scientists, partner managers and business development managers. Boundary spanners from compatible subcultures may create individual-based trust. They may also behave in an equitable manner and become double contingent if their individual and (organizational) role-based interests are aligned. *Matching boundary spanners may interpret and translate the partner's reality and take care of mutual interest in his/her own organization.* The concept of boundary spanner has not been included explicitly in the original Interaction Approach. In a study from Blomqvist (2002) it was incorporated from the literature in technology management but may be useful in different areas of inter-organizational relationships in the era of increasing diversity.

Mutual Commitment is Possible only at the Individual Level

In the fast-moving markets also Eisenhardt and Martin (2000, p. 1112) have identified non-exclusivity as a managerial boundary rule. Therefore the commitment in the partnerships may be less than in some more stabile business sector. Also in the asymmetric technology partnerships equal commitment cannot be found at the organizational level because of the diverge interest and power of the companies related to their different size. *Asymmetric technology partnerships may be mutually dependent (double-contingent) only if the dependence and the related commitment are created at the individual level.* Some of the small firm managers seemed to have "personalized" their relationships with the large companies through individual-based trust. Subsequently they received help and guidance from committed individuals even if the large company's contact-person had changed his/her position in the large company. In a similar vein the large firms may attempt to create small partnering units to establish personal relationships with asymmetric firm boundary spanners. This way the asymmetry in partner size can be broken down and relationships at a more equal and personal level become possible.

Individual-based commitment is critical for yet not sufficient for partnership formation. The Interaction Approach has not explicitly dealt commitment as a two-level concept including individual and organizational commitment. In according to a study by Blomqvist (2002), the individual-based commitment is proposed to be critical for partnership initiation yet organizational commitment will be needed for the relationship to institutionalise. We propose that also the concept of commitment should be conceptualised and operationalized at the individual and organizational level in the Interaction Approach.

Shared Vision is More Critical than a Goal Congruence

In the high-velocity context the concept of shared vision was found to be more appropriate than goal congruence. The inherent uncertainty, complexity and fast pace of technological change make prediction and ex-ante goal setting difficult. As a concept *the shared vision underlines the complexity, dynamic and open nature as well as the future-orientation of asymmetric technology partnerships*. Shared vision is not underlined in the Interaction Approach yet it is a dynamic concept demanding also interaction and rather deep understanding of each other's ideas. We propose that shared vision should be incorporated into the key concepts in the Interaction Approach.

Individual-Based Fast Trust as a Threshold for Experimentation

In the fast pace of global competition, shortening product and service cycles there is not enough time for the incremental evolution of trust. Time compression in relationship building is possible if the partners' behaviour is cooperative, equal, and ethical. In order to establish asymmetric technology partnership the actors need to reach mutual understanding, a shared vision and the related trust fast. The Interaction Approach interprets individual-based trust as resulting through organizational interaction and experience. It is proposed that *in the high-velocity environment the individual-based trust is the trigger for partnership formation and trust in the organizational level*. In similar vein as the concept of commitment, we propose that in the high velocity environment individual-based trust and organizational-based trust needs to be separated. Moreover, the time span in trust must be re-considered and more attention needs to be paid to the fast trust and not only on trust based on long-term interaction and incremental investments.

Blomqvist (2002) has conceptually divided the early partnership formation phase in asymmetric technology partnerships into framebreaking, synchronization and experimenting. Framebreaking is a necessary phase for the parties to "think out of the box" and to be able to appreciate the individual and organizational diversity. Subsequently, the actors may be able to relate to each other despite of diverse basic assumptions, managerial paradigms and organizational cultures. Framebreaking is needed to see the complementary value-add instead of seeing the diverse organizational cultures and processes (asymmetry) as a negative factor increasing costs and friction. In the synchronization phase the partners try to evaluate the other party's business model and position, "stand in the partner's boots" to understand why s/he thinks as s/he does. In the converging ICT sector the learning and absorptive capacity demand special effort, as the complementary partners' knowledge bases may be very different. The ultimate goal in this phase is to create a shared vision and an understanding of the potential common project. In the experimentation phase the partners have made an intuitive decision of a joint experiment under tacit knowledge and risk. *We propose that it would be useful also in the Interaction Approach to analyse processes and critical incidents in a holistic yet in short time frame*. The early phase has been noted as critical for partnership formation, yet there is not much conceptual or empirical research on the early and informal interaction phase.

Mutually Enforcing Trust and Communication

Trust and communication can be seen as the key factors in relationship building. They are mutually enforcing. Intense and open communication may enable shared meanings and understanding. If individual boundary spanners are able to understand and appreciate each other's knowledge and communicate their company vision and understanding of the industry

development, a shared vision may emerge. A shared vision is a critical antecedent for fast and individual-based trust. Shared vision may also contain a seed for institutional trust. In the Interaction Approach, trust and communication are both acknowledged as key concepts, yet their relationship is usually acknowledged as causal, trust leading to communication or vice versa. We propose that *in the high-velocity environment and under compressed time span the critical interaction processes such as communication and emerging trust are highly inter-related and mutually enforcing.*

Innovation is Voluntary and Based on Mutual Trust

In order to gain competitive advantage through cooperation, the arms-length cooperation is changing towards more intense cooperation where the parties need to expose themselves to the partner. In the ICT sector the intellectual capital embedded in knowledge-workers is crucial for the innovation. In these conditions the innovation is always voluntary (Miles et al. 2000) demanding trust and respect.

Cooperative projects based on mutual knowledge need to be coordinated in increasingly close cooperation with both customers and partners and it is common that the suppliers have access to the principal's premises. Supplier's employees may mix with the principal's employees so that people do not make a distinction anymore. Such a close cooperation demands an open mindset and has certainly implications for the appropriability of the core capabilities and the level of demanded inter-partner trust. The Interaction Approach has included trust as a focal concept. We would however like to propose that *in the knowledge-based high velocity environment the role of trust is paramount and there may not be another as efficient and effective mechanism for knowledge creation and relationship management.* In fact, in the knowledge-based competition it may become the only useful mean for coordination as the global competition is very harsh. We propose that the roles of trust, reputation and social capital become key assets for those corporations incorporating intellectual capital from external sources e.g. universities and open source movement.

Tentative cooperation

Asymmetric technology partnerships seem to be tentative. Because of the complexity and uncertainty, constant re-interpretation and re-evaluation is needed. The contracts are short-term and made on non-exclusivity basis. Simultaneous cooperation and competition are rather common in the ICT sector. The Interaction Approach seems to propose that long-term relationships are a norm for the industrial partnering. However, *in the high-velocity environment it is not rational to build long-term relationships but rather to increase the flexibility.* Neither the simultaneously existing cooperation and competition prevailing in the ICT sector has not been accentuated in the Interaction Approach despite of some rather recent remarks by Ford (1998). The Interaction Approach provides very little managerial guidance for the conditions, where partnerships are only tentative and simultaneous cooperation and competition prevails.

Central assumptions and propositions in the Interaction Approach

It is hard to be comprehensive in analysing and describing such non-monolithic approach as the Interaction Approach, which has been influenced by channels research, organisational buying behaviour, resource dependency theory, social exchange theory and institutional economics. The central goal in the interaction approach has been to understand and explain

the functioning and development of dyadic buyer-seller exchange relationships, and to provide conceptual tools for the purpose (Turnbull et al. 1996). The past research has been trying to find answer to questions such as how are relationships created and managed, and how these relationships develop. The past research has been both empirically and theory driven while the methodology has been primarily historical case analyses and cross-sectional surveys (Möller and Halinen 2000). The main criticisms towards the Interaction Approach has been that it tends to be rather vague since it provides tools and concepts only to increase the understanding the problems of dyadic exchange relationships but very limited set of normative tools and rules for managing the relationships.

To proceed with our evaluation of the Interaction Approach in the high-velocity environment, we try to identify and capture the basic assumptions and propositions in the interaction approach. Faced with this extremely challenging task, we are greatly indebted to the previous research such as Möller and Wilson (1995), Turnbull et al. (1996), Ford (1997, 1998), and Möller and Halinen (2000) that have made past descriptions and critical reviews of the approach. These articles and papers have formed the basis for our evaluation.

There are few assumptions and propositions in the interaction approach that should be brought up to the front for our evaluative purposes (these assumptions and propositions are summarised in table 1). Some of these relate to the general characteristics of business market, while others go much further into the characteristics of inter-organisational relationships. The general business market characteristics include topics and assumptions such as the market consists a small number of organisational actors ranging from companies to non-profit and governmental organisations, and that all actors in a relationship are active players. The Interaction Approach makes also a strong justification that organisations cannot operate in isolation or in response to some generalised environment as ‘one-against-all’ but rather require and develop relationships with others (Håkansson and Snehota 1995). These, rather general, business market related assumptions and propositions seem to be in line the empirical reality in the ICT sector.

The Interaction Approach proposes that organisations develop relationships and interact with each other to get access and some extent control the resources possessed by other organisations (Turnbull et al. 1996). The assumption behind this proposition is that each organisation has only limited set of resources, which are to a large extent determined by historical reasons and can only be changed slowly and often at considerable cost (Ford et al. 1998). The limitedness and heterogeneity of resources forces companies to create exchange relationships with each other and simultaneously creates reciprocal interdependency, which may vary from weak to strong. The interdependency also makes the partner switching more difficult. One would assume that it would be easy to change the resources that an organisation has access to by finding partners with new ones and disentangling from old relationships. However, it seems that existing relationships also tend to bring in severe limitations to what the organisation can do. These constrains may arise since any organisation has limits on the resources it can devote to creating exchange relationships, and also because partners may have expectation for fidelity. Thus, with the increased interdependency comes the strategic vulnerability. Relationships are at the heart of an organisation’s survival and development but they also restrict its ability to change and create a cage that imprisons it (Håkansson and Ford 1999). Organisations should thus recognise not only benefits but also disadvantages in having a relationship with any particular organisation. This issue is especially prevalent in the high-velocity ICT environment, where one of the basic motivations behind partnerships is to

increase flexibility and create options. In such situation multiple and partly divergent objectives should be managed simultaneously – speed and stability, independence and interdependence as well as flexibility and commitment.

The Interaction Approach also makes strong justification that exchange between organisations does not happen in isolation, and cannot be fully understood if studied as autonomous events (Håkansson 1982). In other words, the history matters in understanding any particular relationship – past experiences and learning from the specific relationship and from other relationships together with future expectations influence the relationship between actors (Turnbull et al. 1996). In industrial settings this has led to preference of long-term relationships as an ideal way to reduce the risk. In high highly volatile environment, such as the ICT sector, organisations also seek to reduce risk but also to increase flexibility through tentative partnering and without long-term commitments. In the ICT sector there seems to be a constant lack of time, especially in the areas where the product cycles are short and competition especially harsh. According to Blomqvist (2002) the threshold condition for partnership formation in the ICT sector is fast and individual-based trust leverage. This can be interpreted in the light of the managerial context, where they live in a compressed time and overwhelming amount of information and possibilities. The ideal type of relationship is not necessarily long-term since also short-term relationships may be strategically critical for example to leverage new relationships. The value of existing relationship may also easily turn out to be zero, if another technological break-through will make the partner's competencies irrelevant. The need for organizational flexibility is accentuated in the ICT sector by the high pace of technological pace as well as market and technological uncertainty.

In accordance to the Interaction Approach the parties of a relationship are also required to make some mutual adaptations and investments in the relationship in various forms (Turnbull et al. 1996), creating, at the same time, inertia to initiate new ones while disengaging from the existing ones. In industrial settings, changing the counterparts often takes a long time and involves considerable investments, whatever form they take, contributing thus inertia to change. Organisations are thus likely to change their portfolio of relationship slowly over while continuing to work with existing ones (Håkansson and Ford 1999). However, in the high-velocity environment partners may not be able or even willing to invest in the relationships but only hold options if the technological development opens fruitful possibilities in the relationship.

A central proposition in the Interaction Approach has also been that an organisation's portfolio of relationships is the outcome of its strategy and action but the organisation is also the outcome of its relationships and what has happened in them (Håkansson and Ford 1999). Thus it should be possible to analyse any organisation by analysing the relationships it has from the premise that the organisation determines its relationships, or is being determined by them. Competition, conflicts and co-operation are the primary forces shaping relationships, and co-exist. Although the Interaction Approach assumes that the human nature is relatively more trustworthy than opportunistic, all inter-organisational relationships are seen as simultaneously exhibiting conflict and co-operation with guile and self-seeking (Ford et al. 1998). In the ICT sector both competition and cooperation prevail. The role of trust is partly a philosophical and cultural issue, yet seems also absolutely critical for partnership formation and actor reputation. It may also be a source for sustainable competitive advantage (Barney and Hansen 1995).

The capability to manage relationships with other organisations is highlighted in the Interaction Approach as organisations try to manage and control the relationships they possess to achieve their own aims making it one of the key forces in relationship development. However, in the high-velocity environment the organization's capability for partnership management is accentuated along the increased complexity due to compressed time frame and turbulence. Håkansson and Ford (1999) also propose that the actors that are most committed to the relationships are also likely to drive the relationship development. In the high-velocity ICT sector the use of control seems to be useful if the partnership is close to the company core competence. In the more explorative areas it may be wise to "let loose" and build trust as a governance mechanism for the partnership (see also Miles et al., 2000).

Conclusions and implications

The evaluation indicates that the Interaction Approach provides appropriate conceptual framework for understanding dyadic inter-organisational relationships in general. The theory has strength in dynamics, which not only reveals the key concepts but also attests the connections between these concepts. However, the general and parsimonious nature of the theory makes it abstract and applicable basically to any situation, which we consider also as a problem. The theory provides very general and descriptive tools for conceptualizing and understanding the partnership formation dilemmas but as a tradeoff it lacks normative tools that would help management to make the partnership related decisions. Thus, the Interaction Approach as such seems to be sufficient for describing the general partnership formation dilemmas but not for creating managerial advice.

Also, if we want to understand the complex reality of the management and partnership formation in the high-velocity environment, we need to be able to understand and describe more in-depth both the environmental context and the actors, the content of the cooperation and processes. For example Blomqvist (2002) attests that the specific features of the context have high relevancy concerning partnership formation. In the high-velocity ICT sector relationships seem to be more tentative and the nature of the business perhaps more opportunistic than in the stable industrial sector. Therefore, maybe a more context specific or some sub-theory of the Interaction Approach to the high-velocity environment is recalled. Contextual applications with context-specific concepts and models would help the management both to understand and deal with the complex reality. Some typologies of the comparable decision-making situations might also be useful for the management in the high-velocity environment.

We also propose that more attention should be given to the special characteristics of high-velocity environments and especially to its implications described in the paper. For example, a clear distinction between individual and organizational levels is critical for understanding asymmetric technological partnership formation. According to Blomqvist (2002) the *individual-based fast trust* and *individual-based commitment* are seen as critical in asymmetric technology partnership formation. Another concept brought up by Blomqvist (2002) from the area of technology management is *the boundary spanner*, the role of which is accentuated in asymmetric situations.

The relationship management in the high-velocity environment seems to demand exceptionally sensitive and intense coordination as a large number of potential relationships need to be managed, yet their potentiality depends strongly on the contextual development (of

technologies, markets, regulation and competition). Since our evaluation reveals that the relationships in the high-velocity ICT sector seem tentative and treated as “future options”, the managerial challenge of how to establish, manage and dissolve such relationships and simultaneously maintain a good reputation for a potential partner on the markets arises. Miles et al. (2000) refer these issues as a meta-capability for cooperation and critical for the era of innovation.

This creates additional managerial challenges as the individual’s responsibilities are large in today’s lean organizations and subsequently the available time and effort scarce. Managers live in a compressed time setting where also the high complexity demands speed and risk-taking in decision-making. Because of the high risks and uncertainty in the ICT sector, one potential area for further research would be to combine the real (strategic) options theory originating to dealing with decision-making on risky investments to the Interaction Approach. Real options theory could give some implications for partnering in the conditions of high risks and uncertainty where a large portfolio of partners is needed. In this area some managerial advice and even tools can be expected.

Because of the interconnectedness of actors, technologies and markets, the industrial network approach could give a more comprehensive approach since it acknowledges the systemic aspects of the ICT sector competition and cooperation. Thus, our aim is to describe and evaluate the high-velocity ICT sector also from a network theory perspective at a later time.

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Table 1. Summary of the interaction approach

The Interaction Approach	
Basic goals	Theoretically aims to understand and explain the functioning of dyadic buyer-seller relationships. Managerially aims to provide understanding on the development process of inter-organisational exchange relationships for their better management.
Methodological orientation	Both empirically and theory driven. European emphasis (IMP Group) on understanding through historical case analysis and cross-sectional surveys; North American emphasis on explanation through hypothesis testing by multivariate analysis.
Disciplinary background	Influenced by channels research, organisational buying behaviour, resource dependency theory, social exchange theory and institutional economics.
View of human nature	Human nature is seen as relatively more trustworthy than opportunistic. Primarily voluntaristic orientation.
Key conceptual tools	Interaction processes, exchange atmosphere, events, episodes and relationships, adaptation and investments in relationships, heterogeneous resources, interdependence and reciprocity, trust and commitment, relationship outcomes and phases of relationships
Assumptions and propositions about relationships	Relationships exist between different types of actors (firms, organisations, individuals), who exchange all kinds of resources. Relationships are seen as vehicles for accessing and controlling resources, and creating new resources. All actors in a relationship can be active. Reciprocal interdependence between actors is caused by heterogeneity of resources, which makes partner substitution difficult. Co-operation and competition exist simultaneously. Capability to manage (initiate, develop, maintain and sometimes dissolve) relationships is seen as crucial for development and success of organisations.
Level/unit of analysis and contextuality	Actors (organisation, person) and dyadic exchange relationships. Transactions are episodes in the long-term relationship – the present if understood through history and the future.
Focus on structure vs. process	Dynamic perspective, focus on both structure (content) and processes (how dyads evolve).
Prominent sources	Håkansson et al. 1976, Ford 1980, Håkansson 1982, Campbell 1985, Cunningham and Homse 1986, Ford et al. 1986, Wilson and Mummalaneni 1986, Möller and Wilson 1995
Potential limitations	Main contributions in the industrial sector potentially less explanatory power on the technology as content and context for knowledge-based competition. Models typically highly abstracted and have low support for contextual specific issues.