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have studied the effects of IT on organizations, leading to a growing body of work in this area.

Thus, among areas of research, the structural effects of IT have been studied (Orlikowski and Robey, 1991), the links between investment in IT and performance (Brynjolfsson et al., 1994), and the interrelations between the human element and IT (Ross, Beath and Goodhue, 1996; among others). From a global perspective of business, the IT implementation and diffusion (Palvia, 1997) with emphasis in different cultures and countries (Enns and Huff, 1999; Davis, 1999; Palvia, Palvia and Whitworth, 2002) have been analyzed. From the formal point of view, the new technologies have been analyzed from practically all approaches and aspects of Economic and Organizational Theory. However, and despite the variety of work done, there has been little effort of integration to put forward a complete and global view of the knowledge accumulated during the past few decades.

In this study we attempt to make up for this lack of research, as well as giving a synopsis of previous work and an attempt to advance our understanding. We propose a series of future lines of research, the majority of them previously unexplored. To do this we have structured the work into a first part in which we analyze the specialized literature, pointing out the different theoretical perspectives from which the effects of IT on businesses have been studied. Secondly we organize the proposed research according to various formal criteria, and with regards to content. We end this study with an analysis and discussion of the proposed areas of research, and we draw some final conclusions.

2. Approaches in the study of IT in management

IT has long ceased to be a specialist area restricted to qualified professionals of strictly technical backgrounds. Even as early as the 1960’s a number of studies appeared that attempted to analyze – although in a very speculative manner – the importance that IT might have in the future in aspects such as inter-organizational communications (Kaufman, 1966) or the generic impact in human communication and business (Licklider, 1960; Licklider and
Taylor, 1968). Other authors were interested in problems concerning the management of information administration systems or more generally in general information systems (Dearden, 1966; Ackoff, 1967). Research began at that point which, from the point of view of Management, tried to explain the behavior of the new technologies in the business system and the effect it might have on the different characteristics of the company, such as size, structure, processes and performance (Barney, 1986; Prahalad and Bettis, 1986).

Specifically the literature has been concerned with studying three questions related to the presence of IT in the company (see Table 1). First, there was the need to resolve questions arising from the introduction of the new technologies into the companies, from a purely descriptive point of view, based on innovative companies and normally on the direct experience of the author. The question being answered was *what does this type of technology do, or what can it do*, in the company, paying attention to the different functions it carries out, its features, and how it develops within the company. They are highly explorative studies, whose principal objective is to instruct and inform the management about the business possibilities of the new tools, and they rarely use elaborate theoretical models that allow conclusive outcomes. We call this group of studies the *Explorative Focus* on IT in the company. We can distinguish two areas of research: description of successful cases and the use of the concept of the life-cycle to explain the evolution of IT in the company (see Table 1).

Second there is the research area concerned with the impact that IT has on business structure. These are studies that analyze the forces, which upon application of technological solutions, modify or alter the conditions in which companies organize internally. This research draws on studies with a long tradition in fields related to the structure of organizations, such as organizational design, the management of change, workgroups and intra-organizational communication, analyzing the effect that IT has on the various structural aspects. We shall call this area of research *Structural Focus*. This is one of the subjects most
frequently related to IT, that is, the analysis of the relationship between this type of technologies and the structure of the organization (Scott Morton, ed., 1991; Nault, 1998; Robey and Boudreau, 1999; Malone, 1997; Hitt, 1999), how investment in IT is related to variables measuring a company’s form, such as size, diversification, vertical integration and options of growth (Dewan, Michael and Min; 1998) or the impact of IT on jobs (Martinko, Henry and Zmud 1996; Barrett and Walasham, 1999). IT creates new options for organizational design, and the new organizational forms in turn provide new opportunities for the design of technology (Fulk and DeSanctis, 1995; 1999). Yates and Benjamin (1991) point out that IT has repeatedly played a role in the evolution of organizational structures and assert that *innovations in IT have made new organizational forms possible, and vice versa*. For their part, Galbraith and Lawler III (1993) consider that IT can lead to the marketplace becoming more efficient than the hierarchy in the market-hierarchy relation for the coordination and taking of economic decisions.

Despite the limited level of consensus that exists in the field (Nault, 1998), it is interesting to review the different structural aspects which could be modified by the implantation and development of IT. Among these we could find the following effects, which we set out as areas of research within this approach (see Table 1):

1. The reduction in the number of hierarchical levels and flattening out of business structures.
2. The disappearance of routine jobs.
3. The integration of departments.
4. The formation of workgroups.
5. The reduction of distance between executives and subordinates.
6. The possible implantation of telecommuting.
7. The relationship between IT architecture and organizational structure.
Third, we will refer to work attempting to analyze the impact of IT on strategic management in the company, especially to the relation between the implantation of IT, strategy and performance. There are distinct approaches which respond to the different objectives of analysis of the strategic schools that have developed in the past decades: Industrial Organization, Organizational Economics, Resource Based View, Population Ecology, Institutional Theory, Strategic Networks Perspective, etc. We shall use the generic term *Strategic Focus* to refer to the work done in this area.

The analysis of the relation between IT, organizational strategy and the gaining of competitive advantage, began to reach maturity in the early 1980’s with the work of McLean and Soden (1977); Parsons (1983); McFarlan, McKenney and Pyburn (1983); McFarlan (1984); Benjamin *et al.* (1984); Rackoff, Wiseman and Ullrich, (1985); Cash and Konsynski (1985); Bakos and Treacy (1986); Culnan and Markus (1987), and, especially, Porter and Millar (1985). This work could all be considered under the technical framework of Industrial Organization, after the fundamental work of Porter (1980, 1981, 1985), and of his theory of competitive advantage. Subsequently, the different paradigms would have influence on the researchers that were trying to explain the relation between IT and Strategic Management.

Thus we can consider the following research areas as coming within this strategic approach: Industrial Organization and IT (at the industrial, company and strategic levels); Organizational Economics and IT (efficient size of organization, influence of IT on structures; IT and organizational size); Productivity Paradox; Strategic Necessity Hypothesis and the Resource Based View and IT. In the last case we consider the joint behavior of resources and IT; the analysis of strategic resources complementary to IT; the impact of IT on the diffusion and management of organizational knowledge. As other perspectives, we highlight the Upper Echelon Focus and IT; the Dynamic Capabilities Framework and IT; and the Perspective of the Stakeholders and IT (see Table 1). Also, is highlighted the focus on Global Information
Technology Management that analyzes the IT implementation and adoption differences among different cultures and countries (Palvia, Palvia and Whitworth, 2002).

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The Internet as part of the new paradigm

In the past few years there has been a growing interest among researchers in Business Management in the impact that the appearance of TCP/IP technologies are having on companies at the beginning of the 21st Century, since the Internet has meant a fundamental change in the way organizations are managed and structured (Rayport and Sviokla, 1995). For companies, the Internet is an international network of computers providing the possibility of interchanging information internally or communicating with other organizations (Águila and Padilla, 2000). The technological revolution that the Internet has brought about has resulted in the appearance of a high number of expressions that, more or less accurately, refer to the impact of the Internet on the organization. Among them we could cite e-business, e-commerce, e-tail, e-shift, e-procurement, e-government, e-recruiting, e-fulfilment, e-branding, e-logistics, virtual organization, etc. (Águila and Padilla, 2001). With the aim of clarifying the terminological question, we shall try to define and delimit the most important concept mentioned: e-business. The term e-business can be defined as the way in which companies and individuals gain value through the use of the Internet and related technologies. Therefore e-business consists in redefining the processes of the company by interconnecting them with their members, clients and suppliers (Hackbarth and Kettinger, 2000). That means reorganizing the company so that it has the ability to interchange goods, services, money and knowledge digitally, that is by using Internet-based IT. The use of the term e-business, as well as the practical application of it, has grown considerably with the development of business applications on the Internet, and especially on the World Wide Web. In this context, the following might be considered to be covered by the term e-business (Riggins and Mitra,
2001): Intranet applications (business-to-employed); business-to-business applications (extranet); electronic mail for the interchange of information and knowledge between companies; business-to-consumer (internet): on-line orders of products and services, interchange of information about the product, joint development of products, customer services etc. Other similar ideas refer to the specific use of the Internet (WWW), which affects a specific field of business management. Electronic commerce or e-commerce is the electronic interchange of data and information corresponding to an electronic transaction, which fundamentally covers commercial activities realizable on the Internet:

1. The establishment of contacts between clients and suppliers.
2. The interchange of goods and services.
3. The interchange of commercial information.
4. The on-line provision of digital products, like music, or books.
5. The electronic payment.
6. The provision of services on-line.

Despite the huge number of studies carried out on the Internet and its role in the company, few of them have dealt with the problem from a formal approach within Management. One of the pioneering, and most relevant study among those carried out recently has been due to Rayport and Sviokla (1995). These authors institutionalized the terms virtual value chain, and marketspace, asserting that current businesses are competing in two “different worlds or environments”, one being the physical world, of resources, which executives can see and touch – the marketplace – and the other, a virtual world or marketspace, arising from the almost exclusive use of IT and data transmission tools (Rayport and Sviokla, 1995). It is also their view that the Internet will affect the elements of the virtual value chain, and that it might make more flexible support and primary activity. By way of example, the Internet may modify the organizational structure of the company, and eliminate intermediate hierarchical levels. With respect to primary activity, e-logistics, e-fulfillment and
are terms denoting means by which the traditional value chain may be affected by the Internet. Subsequent to the work of Rayport and Sviokla, numerous studies in this field have appeared, which we summarize in Table 2.

By way of synthesis we might say that the area of research, theoretical as well as practical, on the impact of the Internet on the company, is still in its infancy. Many of the studies are of an extremely speculative nature, with confusing terminology; they are directed at the professional public with the principal aim of expounding the potential advantages of using TCP/IP technologies. Nevertheless there is an emerging area of research aiming to identify the circumstances in which the new technologies exercise a positive impact on the company, and that is connected to the school that explains the behavior of IT in function of its combined action with a series of complementary resources, of a human or business nature (Powell and Dent-Micallef, 1997; Bharadwaj, 2000).

3. Discussion and future areas of research

Bearing in mind the above considerations, we aim to identify in this section the new theoretical and empirical research lines. For this, in Figure 1 we have brought together the theoretical approaches that may prove significant in explaining the organizational impact of IT. In the interest of providing a more orderly vision of the problem, we have placed the problems of future research in each one of the approaches analyzed in this chapter. These approaches have been classified according to two criteria. In the left part of the graph, we point out the origin of each approach, whether it be Economic Theory or Organizational Theory. In the right part of the graph each approach is analyzed in relation to its implications, whether strategic, structural or of explorative character. Additionally we have differentiated that research that has more to do with e-business than the rest. Finally, and as a result of the
discussion of the theoretical schools that we have undertaken in this work, we propose 21 areas of research.

The Economic Theory is the origin of the approaches Population Ecology, Resource Dependence Theory, Industrial Organization and Agency Theory. Most of these approaches, except the Ecological, pose implications for strategic management of IT. Population Ecology (Hannan and Freeman, 1977; Aldrich, 1979; Brittain and Freeman, 1980; Soo, Oliga and Puxty, 1980; McKelvey and Aldrich, 1983; Freeman and Boeker, 1984; Baum, 1999) may provide progress in explaining the impact of the processes of technological discontinuity on organizational survival, or the substitution of some technologies for others over a period of time. According to the precepts of Ecological Theory, the introduction of new IT may favor the survival of some organizations in a sector as opposed to others, especially in cases where the management of information has a significant effect on the value chain. These effects have been analyzed in relation to other technologies related to the productive system, although we cannot find any study that analyses the impact of IT.

From the perspective of the Resource Dependence Theory (Aldrich and Pfeffer, 1976; Pfeffer and Salancick, 1978; Pfeffer, 1982) it is possible to analyze the function of IT as a scarce resource of the environment and its influence on the strategic pre-eminence of some organizations against others. This view claims that the possession or control of certain key resources by an organization can result in the dependence of the rest of the organizations on the first organization (Inkpen and Beamish, 1997). Additionally it asserts that there are three critical factors in determining the dependence of one organization on another, and therefore its relative power (Medcof, 2001):

1. The importance of the resource, such that the more relevant the factor is, the stronger will be the dependency relations of the organizations that lack it.
(2) The existence of alternatives, such that the power of the company that possesses the key resource decreases with an increase in the possibility of choice that dependent organizations enjoy.

(3) The unlimited ability to take decisions that affect the resource, such that the company with greater capability for decision will enjoy a privileged position. In a broad sense the idea that underlies the Resource Dependence Theory is related to the concept of scarcity and value in the Resource Based View, which explains why they have recently been used jointly.

It is precisely from the relationship stated in point three that it becomes possible to apply the Resource Dependence Theory to the field of strategic use of IT. Following the framework of this theory, power relationships can be constructed between the organizations that possess a key resource. If it is empirically demonstrated that this resource corresponds to a specific IT resource, it follows that this technological tool is generating value for the organization. If, additionally, it complies with the conditions of scarcity and inimitability, it will lead to a sustainable competitive advantage.

Of the approaches we propose, Porter’s Competitive Strategy and Industrial Organization (Porter, 1980; 1981; 1985; 1991) have been the ones that have left most impression in the IT area (Ward, Griffiths and Whitmore, 1990), which is why the model has been said to have lost relevance in recent times (Duhan, Levy and Powell, 2001; Amit and Zott, 2001, p. 205). Nevertheless there is research open which is revising the theoretical framework with the aim of explaining the effect of IT on the value chain in companies that are IT intensive (Earl, 1989). We might suggest as unexplored areas of research to explain the influence that variables of the industry external to the company might have, on the implantation, development and competitive performance of IT (Bruque, 2001). In this sense, it would be interesting to find out if factors like number of competitors, the intensity of
competitive rivalry, the level of innovation or the fluidity in the circulation of information within the industry, determine the real competitive capability of IT.

Agency Theory (Jensen and Meckling, 1976; Eisenhardt, 1989) has been very little used up till now in research relating to IT, so that it is necessary to learn more about the organizational behavior of IT that may be explained thanks to this theoretical paradigm. It would be possible to analyze the relationships existing between the capital structure of the company, the level of technology and the technological performance (Karake, 1995). Research could be done on the link between the level of commitment of the executives towards the company – shown in their investment of capital in the company stock – and the use of IT, especially those tools that have most impact on performance. It would be likely in this case that those executives most committed to the company would show more explicit support for the introduction and development of IT and telecommunications tools, in an attempt to achieve two aims: increase control over their management, on the one hand and increase the profitability of the processes that involve intensive use of IT, on the other. Also, from the perspective of Agency Theory it would be possible to study the influence of the composition of the Board of Directors on the level of technology of the company and on its technological performance. From the Agency perspective, the Boards can be used as tools of control by the owners, which might affect the technology policy of the company, increasing, for example, the computing systems of management control. An empirical justification for the proposition requires, however, a deeper analysis, because the few research that have been carried out have not found conclusive results.

As we pointed out before, work has been done that is concerned with the savings in transactions resulting from the introduction of IT in the value chain in the company. The theoretical framework of Transaction Cost Economics (Williamson, 1975, 1979, 1985) can be especially efficient in predicting the success of IT systems aiming to reduce costs in the value chain (Powell and Dent-Micalef, 1997) by creating economies of time or resources in the
links that are intensive in information. The system of Computer-Aided Design and Computer-Aided Manufacturing – CAD and CAM – are clear examples of the increase in efficiency in production processes by using IT. But IT can also reduce transaction costs with clients because it may reduce uncertainty in taking a commercial decision: the complexity of such a decision, the asymmetry of information that the client sometimes faces, and the disadvantages provoked by the loss of power of negotiation in a situation of “small numbers” (Williamson, 1975). IT may also reduce the indirect costs of transaction, such as the cost of adverse selection or of moral risk (Amit and Zott, 2001).

In the field of relationships between companies, Clemons and Row (1991) undertook an analysis of the circumstances in which IT could reduce transaction costs. Inter-company collaboration (Dyer, 1997) may be one of the principal means by which IT reduces transaction costs between companies, especially after the introduction of TCP/IP technology (Amit and Zott, 2001). It would also be of interest to analyze how transaction costs behave in the long term, bearing in mind that it has been shown that certain IT tools only lead to benefits in the medium to long term (Brynjolfsson and Hitt, 2001). Although various authors have suggested the importance of studying the creation of value by IT by means of a reduction in transaction costs (Powell and Dent-Micallef, 1997), empirical evidence for this is still scarce, and the area of research is still open.

We analyze, in the second group, the approaches originating in the Organizational Theory, among which Institutional Theory, Resourced Based View and its most recent derivations, and the Inter-Organizational Networks Framework. First, according to the Institutional Approach (Selznick, 1957), companies act in a social environment that imposes norms, values and behavior patterns which indicate what is acceptable and what is not from the point of view of social behavior (Oliver, 1997). Thus the reasons for human behavior, and therefore for that of organizations, go beyond the limits optimal from an economic point of view, and can be explained in some cases in terms of social justification. The process by
which companies adopt standard behaviors, ignoring the question of whether it is economically optimal, is known as *legitimation* (Scott, 1987) and can give rise to decisions that are ill thought out, the result of the determinism of the environment. This theoretical framework may have strong research implications concerning IT, since in our opinion, it may explain the phenomena of the automatic adoption by a company of certain new technologies whose potential to create value is doubtful, to say the least. This approach would be useful to throw light on some recent problems like the massive introduction, and lack of success, of a large number of models of businesses based on the Internet. The Institutional Approach can also provide a complementary explanation in the cases where, as we shall detail later, the Resource Based View proves to be inadequate in explaining the success or relative failure of the technological modernization of a company.

The Approach Based on Resources, or the Resource Based View (RBV) (Wernerfelt, 1984, 1995; Barney, 1986, 1991, 1995, 1996; Rumelt, 1987; Grant, 1991; Peteraf, 1993) has been the dominant view in the development of the strategic approach in recent times (Hoskisson *et al.* 1999), so that it has been used to explain various aspects regarding business administration (Vicente-Lorente, 2001; Pettus, 2001). As we have already pointed out in this chapter, a large number of analyses have related the creation of value by means of IT with the gaining and maintaining of competitive advantage (Ross, Beath and Goddgue, 1996; Powell and Dent-Micaleff, 1997; Bharadwaj, 2000; Byrd and Douglas, 2001; Duhan, Levy and Powell, 2001). The options for further research in this area consist in the identification of new resources complementary to IT, and the description of the conditions under which IT behaves as a valuable resource. We believe, with regards to this last point, that the Resource Based View is insufficient, because it does not provide a definitive explanation for the effect by which some companies introduce technology but then do not create value, or when they do create value, they cannot take advantage of it. It would be useful to supplement the RBV with other approaches, such as the above-mentioned Institutional Theory (Selznick, 1957), or that
of the appropriation of value by stakeholders (Coff, 1999). Despite this weakness, the RBV Theory, complemented with the Dynamic Capabilities Framework (Teece and Pisano, 1994; Teece, Pisano and Shuen, 1997; Makadok, 2001), can serve as a basis from which to explain the competitive impact of IT over a time period, an area with little empirical evidence so far.

The Resource Based View has a number of things in common with other theoretical frameworks, like the Upper Echelon (Hambrick and Mason, 1984), Knowledge Management (KBV) (Nonaka, 1991, 1994; Kogut and Zander, 1992, 1996; Hedlund, 1994; Bohn, 1994; Nonaka and Takeuchi, 1995; Grant, 1996; Spender, 1996; Hansen, Nohria and Tierney, 1999) or the Organizational Stakeholders Approach (Coff, 1999).

According to the KBV (Eisenhardt and Santos, 2001) IT utilization may potentiate the positive effects of internal and external knowledge transfer. Knowledge is considered socially constructed and the creation of meaning occurs in ongoing social interactions grounded in working practices and in collaborative mechanisms. Those social interactions can be encouraged by IT utilization. Various studies have pointed out the relevance of IT utilization as a key element in the diffusion of organizational knowledge (Carneiro, 2000; Swan et al., 1999).

Apart from KBV, the Upper Echelon and the Stakeholders can be further developed in the future. The first (Pinsonneault and Kraemer, 1997; Pinsonneault and Rivard, 1998) may be able to explain the interrelation between the characteristics of management, age, previous experience, technological knowledge, international experience and the effective introduction of the new technologies. It should be noted that there is a strong complementarity between this approach and the Resource Based View because the personal and career characteristics of the executives can be resources that are valuable, scarce and difficult to imitate, and in combination with IT they may have a positive and lasting effect on competitive position. The second may be able to explain the situations in which IT generates value although the organization cannot take advantage of it in the form of income, benefits, or in general,
increase in competitive advantage. In these cases it is certain powerful groups in the organization (stakeholders) that absorb the resource’s capacity for creation of value.

Strategic Networks (Freeman, 1979) are stable inter-organizational links that are strategically important for the participating companies. They can take the form of strategic alliances, joint ventures, associations in the long term between suppliers and customers, etc. (Gulati, Nohria and Zaheer, 2000). There are some analyses that discuss the impact of IT on the structure and effectiveness of strategic networks (Sproull and Kiesler, 1986; Fulk and Desanctis, 1995), regarding IT as an enabler element on the network and a promoter of the reduction of transaction costs between elements in the network, which, in turn, lead to the advantages attributed to this type of structure. Among these advantages are for example gaining the effects of learning, economies of scale and scope, cost cutting via a distribution of risks and subcontracting parts of the value chain and certain company functions (Gulati, 1999; Anand and Khana, 2000).

Little empirical work has been done, however, that analyses the influence of IT on the structural variables of the network, such as centrality, size and network density. If, as is likely, IT has an effect on these variables (Gulati, Noria and Zaheer, 2000) it will affect the learning capability of company members of the network, and also the blocking and unblocking of new alliances, lock in and lock out. In this way the new technologies may provide new opportunities for global alliances, for example with companies geographically far apart, and at the same time they may create problems for existing alliances. Thus, for example, the introduction of new telecommunications tools may leave outside of the network companies that do not use the new technology. The same effect occurred after the decline in UNIX as a standard operating system, leading to the dismemberment of various strategic networks designed to lead the operating systems market (Gomes-Casseres, 1994).
Finally there are various approaches within the field of Business Administration which may add new ideas to the problem of the behavior of IT in organizations. We are referring to the Human Relations Framework (Mayo, 1945) and the Social Systems Focus and Socio-technical Systems Focus (Trist and Bamforth, 1951; Emery and Trist, 1965). These approaches attempt to explain the combined effects of technologies and the human element within organizations. In the case of IT itself, the Socio-technical Focus has been used to underline the necessity to adequately fit together the company culture, employee training and the motivation towards the adoption of the new technologies, for a satisfactory final performance of the technological tools (Davenport, 1999). As can be seen, this idea has been extended and structured in later approaches which adopt the complementarity between the human and technological elements, especially the Resource Based View, which we have already outlined.

4. Conclusion

As we have shown in this work, the analysis of IT as an active element within the company constitutes an interesting and multifaceted area of research. We have structured these areas of proposed research, leaving aside the work of an explorative nature, into two parts: on the one hand those approaches that refer to the impact on the structure of the company, and on the other hand, those that analyze the interactions of the technology on the company’s strategy and performance. In the last group we have been especially interested in those approaches which might throw some light onto the problem of the conversion of the implantation and development of computing and telecommunications technologies into performance or sustainable competitive advantage. This precisely has been the area that has most been studied in recent years. In the strategic as well as the structural issues we have reviewed the most significant approaches in the literature. In each of them, we have identified the criteria for when they are useful for the problem of the company management of IT, underlining the research which we consider to be still unexplored and which may provide
material of interest for future research. As a result of the process, and taking into account the limitations in terms of theoretical work, we can conclude that each one of the approaches studied can provide useful explanations, in academic research as much as in management. We should also stress that the area of analysis is a complex field in which studies may be especially useful that use in a combined form a number of the approaches that we have proposed.

Finally the irruption of the Internet and the so-called Digital Economy has revived the interest in the areas of research of this work in all its forms. The latest studies are particularly trying to find causes that explain the conversion of Internet technologies into competitive advantage, and at the same time, find the solution to the reverse problem: why do these technologies not always lead to better performance. Empirical research, the integration of the proposed approaches in this chapter, and new ideas from Social Psychology or Marketing may provide solutions to this problem.

REFERENCES


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<th>Focus</th>
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<td><strong>Explorative</strong></td>
<td>Answer of what IT can or could do in the company</td>
<td>- Description of best practices</td>
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<td>- Cycle of life</td>
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<td>- Downsizing and flattening of the businesses structure</td>
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<td>- Study of strategic resources complementary to IT</td>
<td>Keen (1993); Benjamin and Leivonson (1993); Kettinger et al. (1994); Mata, Fuest and Barney (1995); Ross, Beath and Goodhue (1996); Henderson and Venkatraman (1993); Venkatraman (1994); Powell and Dent-Micaleff (1997)</td>
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<td></td>
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<td>- Others perspectives</td>
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<td>- The impact of IT on the diffusion and management of organizational knowledge (KBV)</td>
<td>Junmarkar and Brown (1997); Gurteen (1998); Swan et al. (1999); Carneiro (2000)</td>
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<td>- Upper echelons and IT</td>
<td>Karake (1995); Pinsonneault and Rivard (1998); Martins and Kambil (1999)</td>
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<td></td>
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<td>- The Dynamic Capabilities Framework and IT</td>
<td>Miller and Shamsie (1996); Makadok (2001)</td>
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<td>- Stakeholders and IT-value appropriation</td>
<td>Amit and Zott (2001)</td>
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<td>- Global Information Technology Management</td>
<td>Palvia (1997); Emts and Huff (1999); Davis (1999); Palvia, Palvia and Whitrwalkh (2002).</td>
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<td>Author</td>
<td>Research Line</td>
<td>Description and most important contributions</td>
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<td>Poon and Swatman (1995); Poon and Strom (1997); Schwarzkopf (1997); Ba, Whinston and Zhang (2000); Lemer (2000); Chan and Chung (2002)</td>
<td>Impact of Internet on small and medium-sized companies</td>
<td>Use of Internet as a tool of collaboration with other companies, with less cost of communication; as an instrument of direct marketing, with better access to the company for potential clients, and improving image of the company.</td>
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<td>Benjamin and Wigand (1995, 1997); Rayport and Sviokla (1995); Nouwens and Bohwman (1997); Stenfield, Kraut and Plummer (1997); Grover and Ramanlal (1999); Addaar (2000); Stenfield, Chang and Kraut (2000); Amit and Zott (2001)</td>
<td>Impact of Internet on coordination mechanisms, organization and market, electronic organizations and markets</td>
<td>Impact of Internet on coordination mechanisms, organization and market, with electronic organizations and markets, with inter-organizational information systems that link the companies. In the relation between providers and clients: reduction of distance between both and of the profit margin of the provider; increasing of the change cost as a consequence of the approaching between client and provider by electronic tools.</td>
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<td>Haley, Carte and Watson (1996); Lawrence and Hudson (1996); Bloch, Pigneur and Segev (1996); Ho (1997); Watson, Akselsen and Pitt (1998); Dutta and Segev (1999); Jarvenpaa and Tiller (1999); Venkatraman (2000); Gual and Ricart (2001)</td>
<td>Internet presence and its strategic planning</td>
<td>Point out the advantages of organizations moving into the virtual space and strategies for developing strategic planning.</td>
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<td>Malhotra (1993); Fulk and DeSanctis (1995, 1999); Orlikowski (2000).</td>
<td>Impact of Internet on the structure of organizations</td>
<td>Analyses the impact of Internet on the organizational structures from the results of the studies about IT and organizational strategy field. All the authors agree about the impact but not about its results.</td>
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<td>Bakos (1991); Kling (1994); Lederer, Mirchandani and Sims (1997); Peterson, Balasubramanian and Bronnenberg (1997); McWilliam (2000); Bakos and Brynjolfsson (1999); Dewan, Freimer and Seidmann (2000).</td>
<td>Internet Based Marketing</td>
<td>Explains how Internet improves the performance of marketing strategies of distribution and promotion.</td>
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<td>Quelch and Klein (1996); Bento and Bento (1996); Koh and Balthazar (1997); Hoffman, Novack and Chatterjee (1997); Sarkar, Butler and Steinfield (1997); Timmers (1998); Rayport (1999); Rappa (2000); Amit and Zott, (2001); Dai and Kauffman (2001); Figueiredo (2001); Eisenmann (2002).</td>
<td>Business Models</td>
<td>Develop classifications of business models of companies with Internet presence. There are two basic approaches: transactional or operational focus and informational focus.</td>
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<td>Carley (1999); Kling and Lamb (1999); Orlikowski (1999); Zimmerman and Koerner (1999); Brynjolfsson and Kahin (2000); Haltiwanger and Jarmin (2000); David (2000); Smith, Bailey and Brynjolfsson (2000); Zimmerman (2000); Orlikowski and Iacono (2000).</td>
<td>Digital Economy</td>
<td>Describes the characteristics of the new economy, or digital economy, with technological interaction among the agents.</td>
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FIGURE 1. IT Management. Perspectives integration and new research lines

Proposed research lines:
1. Technological discontinuity as an explicative factor of organizational survival (Population Ecology)
2. IT as an environmental resource and its influence on inter-organizational dependence (Resource Dependence Theory)
3. IT as the foundation of differentiation and focus strategies (Competitive Theory)
4. IT influence on the industry structure and on the inter-organizational performance (Industrial Organization)
5. Business Models efficiency based on IT (Transaction Cost Economics)
6. Institutional Environment influence on the implementation and development of new IT (Institutional Theory)
7. Strategic Networks features and IT value generation (Inter-organizational Networks)
8. IT, complementary resources and sustainable competitive advantage (Resource Based View of the Firm)
9. Personal, cultural and professional features of top management on the implementation and development of new IT (Upper Echelon)
10. Link between IT and knowledge management (Knowledge Management)
11. IT value appropriation by organizational stakeholders (Organizational Stakeholders)
12. IT as a generating factor of new dynamic capabilities (Dynamic Capabilities Framework)
13. Strategic business models based on TCP/IP technologies
14. Design of Internet strategies
15. Information Systems structure and Institutional legitimation (Institutional Theory)
16. IT as a generating factor of Strategic Networks. IT and structural features of the network (Inter-organizational Networks Focus)
17. Social Systems and IT interaction (Social Systems Focus and Socio-technical Systems Focus)
18. Internet impact on the organizational structure
19. Internet impact on co-ordination, market and organization mechanisms
20. Description of the impact on the firm of new IT
22. Description of new Internet business models