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Work - in - Progress Paper

NETWORK ANALYSIS OF KNOWLEDGE-INTENSIVE SERVICES

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INTRODUCTION

There is the growing conviction that knowing about *knowledge* is critical to business success. The aim of this *work-in-progress paper* is to underline the importance of knowledge, focusing the attention on knowledge-intensive service firms. Starting from our conviction that knowledge is the source of a sustainable competitive advantage, we propose the new role of marketing within this firm in which people, their knowledge, their relationships, experience and capabilities are the most important invisible assets. In

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the “intangible economy”, marketing has to change its role: we see the passage *from a traditional vision of marketing to the function of building relationships*. What is the role of marketing in a firm, where people, relationship, knowledge are the most important asset? Where people are a crucial element of differentiation? What changes are expected inside the firm and outside in the network?

1. **Methodology**

The purpose of this paper is to discuss the Network Approach in the context of knowledge-intensive service firms. Not therefore service firms in general, but the focus is on those whose crucial assets are knowledge, competence and relationships.

This paper must be considered as a first insight in this context; a sort of first thoughts and reflections upon the strategic importance of relationships, network and the new role of marketing.

The thesis of this paper is the conviction that a firm’s competitive advantage relies on the position of the firm in its relationship network. In this network, the firm tries to obtain the resources and values to reach its strategic goals at better conditions than the competitors. The position in the relationship network is therefore the source of competitive advantage. Like any other source of competitive advantage, even the position in the relationship network is subjected to the action of time and competitors. That’s why it’s important to find out and sustain the key-resources of the firm.

Consequently, the firm must evaluate its resources and identify its crucial relationships. It has to map these relationships considering what they are able to transmit, why they are crucial to the firm and which relationship is important to reach which goal.

Possible developments of this paper could be the testing of different research methods judging their efficacy and efficiency according to the cognitive aim. Particularly interesting it seems to be the agent theory, the theory of book value (Guatri, 1997), the theory of the competitive advantage (Kotler, 1980,1995) and the network theory (Hakansson; Sneotha, 1991).

With a comparative analysis, supported by an empirical verification, we will try to single out the best theoretical and methodological approach and the potential applications.

2. A definition of knowledge-intensive service firm

Knowledge is becoming an important asset which can allow firms to reach or maintain their competitive advantage. Advantage is not that of companies with the biggest factories, but of companies that do the best to manage their intangibles.

The growing importance and diffusion of Internet and new media have contributed to an easy and rapid passage from an “old” to a “new” and “intangible” economy. Not only firms but *people* in general have access to a huge amount of information. *Who succeed in capturing and transforming data and information into knowledge achieves competitive advantage.*

The term “knowledge-intensive” imitates the usual labels of “capital-intensive” or “labour - intensive”. By labelling a firm knowledge-intensive implies that *knowledge* is the most important factor which can be an input but also an output. As consequence, *knowledge is a new form of capital: the human capital.*

Some considerations to sum up the features of knowledge-intensive service firms (Kisf):

1. A Kisf may not only be considered as information-intensive. Knowledge is a stock of experience, not only a flow of information and data. Knowledge is a value added information.
2. A Kisf is composed by skilled people with exceptional expertise.
3. A Kisf distinguishes itself for having a specific perceived core competence. A remark: every firm has got its own expertise. If we have to define a knowledge-intensive firm only as a firm with a specific knowledge and competence, every firm would be considered as knowledge-intensive. The difference is that a Kisf makes its knowledge as its “core product” and source of competitive advantage. Don't forget that knowledge and competence are strictly related to people.
4. A Kisf is strictly in touch with its environment. It changes according to its environment: as consequence environment and society reflect, “use”, influence these firms. They grow together.
5. In Kisf, the specific knowledge is not only “embedded” in people who work in, but also in firms' routine and culture. People convert their knowledge into physical forms when they write books, design buildings, create computer software. Conversely, people may gain knowledge by reading books, studying

buildings, running computer programs. People also translate their knowledge into firm's routine, job descriptions, strategies and culture.

Examples of these firms and work could be: consulting, financial analyst, research institute, university or layers, doctors, professors.

This kind of firms, which rely on intangible assets and people, have to build up a solid organisation: an organisation based on relationships, on company's value and culture, on behaviour and attitude shared not only inside, but also with their environment. Now we understand the importance of the concept of network for KISF very well.

2. The relationship network and the role of marketing

A network approach sees companies as members of a business network consisting of a large number of active and heterogeneous companies each interacting with others and seeking solutions to their different problems. Knowledge is transmitted by relationships. The even exclusive knowledge of a firm is dependent both on its internal relationship network and on relationships between the firm and its external network.

As consequence of the importance of knowledge and the relationship network, *marketing has to acquire a new role and function*. It has to manage the knowledge of the firm in an active way in order to transform the implicit into explicit knowledge and let the market know and recognise it. The critical issue is to make the internal competencies of the firm permeable with the competence of the market. This goal can be reached if only there is *complementarity of values between the internal and external market of the firm*. It's therefore important the "privacy" issue, because competencies are connected to the most deep and inner value of the company. To show off what most private and deep we have, it is likely to commercialise it; and when we commercialise a deep and personal value, it loses at the same time its real value.

Marketing has to connect the knowledge peers within the different departments of the firm and with different actors of the network. We support the idea of the shift from a *traditional vision of marketing to the new function of building relationships in a knowledge-based service firms*.

Now we propose two levels of analysis: an internal perspective and an external perspective.

The first one focuses the attention on the management of *internal knowledge*: the transformation from tacit into explicit knowledge and the importance of informal relationship network versus the formal structure of the organisation.

The second one focuses on the management of external knowledge: the knowledge of the actors in the network.

2.1 Internal perspective: managing internal knowledge. Informal network and social network analysis

According to the transformation of tacit into explicit knowledge (Polanyi M., 1966; Nonaka e Takeuchi, 1997), the problem for firms is to understand how knowledge and ideas of a person can become knowledge of the firm. Knowledge *per se* has got a limited interest for the firm: the interest increases if knowledge is integrated into the firm to use it with a specific goal. Knowledge of single workers and the capacity of firms to improve mechanism to use and measure this knowledge at an individual and organisational level are two determinant factors.

The *process of creation of knowledge* can be summed up in the following phases:

1. Creation of knowledge at the individual level (from tacit into explicit knowledge)
2. Codify knowledge (formalise the experience, explicating best practise)
3. Communication of this knowledge (newsgroup, team work)
4. Access and use of knowledge generated by other people within the organisation (diffusion of a culture codified to be followed).

Beside the process of creation of knowledge and the importance of transforming tacit into explicit knowledge, right to allow firms to "use" this resource, we must think about the different types of relationships in a firm, and in particular in KISF.

Relationships within firms aren't only related to the formal organisational chart. Much of the real work of companies happens despite the formal organisation. What needs attention is the *informal organisation* that is the network of relationships that employees form across functions and divisions to accomplish tasks fast. *The idea is that there is a strong tie that link informal networks to the competitive advantage and its*

sustainability. The more managers can map this social capital and try to find the best way to manage it, the more they can maintain their competitive advantage.

A KISF is based on people's knowledge and relationships: these relationships allow the transfer of knowledge, the creation of stable trust relationships, of "strong relationship" which are conditions for a "strong" organisation.

In a context of organisational changes, **internal marketing** can give a toolkit to:

- manage relationships
- develop knowledge
- transfer knowledge
- create conditions for a sustainable competitive advantage in a context of change and uncertainty

In this sense, it could be interesting to study what and how internal marketing can do to manage internal knowledge and relationship in our context of crisis and organisational changes.

Krackhard D. and Hanson J.R. (1993) studied informal network, using a network analysis which seems very interesting for KISF. Using network analysis managers could translate relationship ties into maps that show how the informal organisation gets work done. They proposed that managers have to diagram three types of relationship networks to have a good picture of the firm:

- the *advice network*, which shows the prominent players in an organisation on whom others depend to solve problems and provide technical information;
- the *trust network*, which tells which employees share delicate political information and back one another in a crisis;
- the *communication network*, which could reveal the employees who talk about work-related matters on a regular basis.

Mapping advice networks can help managers uncover the source of political conflicts and failure to achieve strategic objectives. Trust networks often reveal the causes of nonroutine problems such as poor performance by temporary teams. The communication networks can help identify gaps in information flow, the inefficient use of resources and the failure to generate new ideas.

As a consequence, relationships are critical for obtaining information, solving problems and learning how to do the work. Particularly in knowledge-intensive work, creating an

informational environment that helps employees solve increasingly complex and often ambiguous problems holds significant performance implications.

The *Social Network Analysis* (SNA) provides a rich and systematic mean of assessing informal networks by mapping and analysing relationships among people, teams, departments or even the entire organisation. By virtue of their position managers are frequently far removed from the day-to-day work interactions that generate an organisation's informal structure, and so they may have an inaccurate understanding of the actual patterns of relationships. Social Network Analysis can provide an X-ray of the way in which work is or is not occurring in these informal networks.

This approach:

- can help identify highly peripheral people who essentially represented untapped expertise and thus under-utilised resources for the group;
- can promote effective collaboration within a strategically important group;
- support critical junctures in networks that *cross functional, hierarchical or geographic boundaries*;
- ensure integration within groups following strategic restructuring initiatives.

To sum up the importance of this internal analysis, we can say that managing internal knowledge is critical. An important resource embedded in the organisation is the knowledge that workers bring to work on a day-to-day basis. But there has been little effort put into systematic ways of working with the knowledge that is embedded in social networks. Given the extent to which people rely on their own knowledge and contacts to solve problems, the introduction of *Social Network Analysis* can help understand how a given network of people create and share knowledge and make it visible and actionable. Understanding how knowledge flows across these various boundaries within an organisation can yield critical insight into where management should target efforts to promote collaboration that has a strategic payoff for the organisation. As a result, assessing and supporting strategically important informal networks, besides the formal structure of the firm, can yield substantial performance benefits.

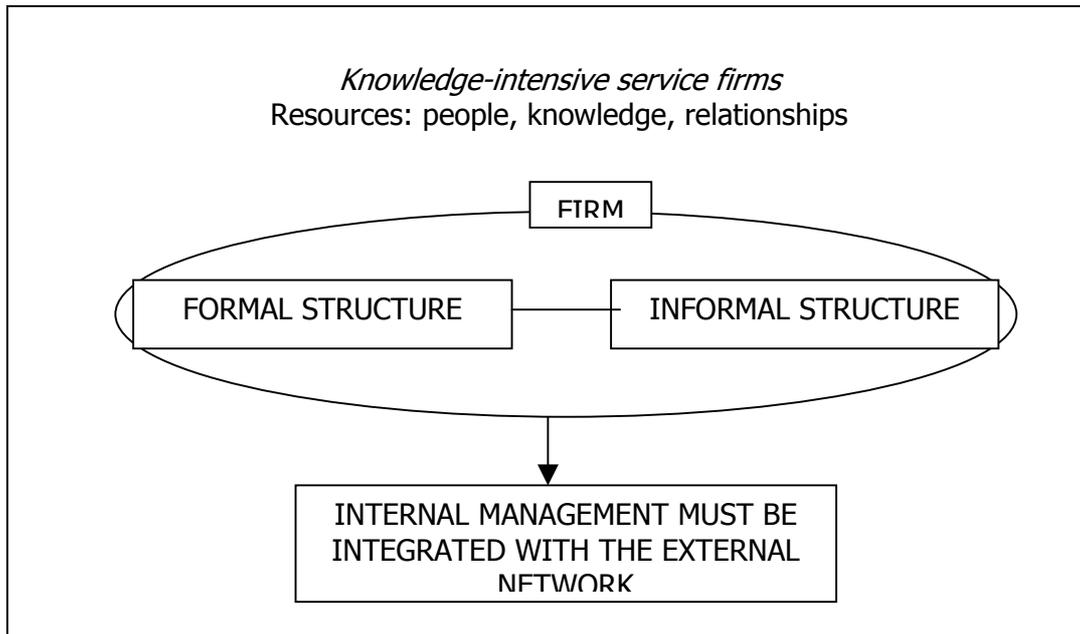


Figure 1: Integration of formal and informal structure of a firm

2.2 External perspective: managing knowledge and relationships of the network.

If people, relationships and knowledge are the most important resources of knowledge-intensive service firms; if it is truth that the firm's identity is created by itself and by its relationships with the firms in the network, and that it can't be seen without the other actors of the network; if the values of the firms must be tuned with those of customers'; if the position in the network assure stability and competitive advantage in time, *then*:

- people with their knowledge and competence have to be managed;
- internal relationships- formal and informal- have to be managed;
- *the internal perspective* - the analysis of formal and informal networks- has to be integrated with the network of the firm - *the external perspective*.

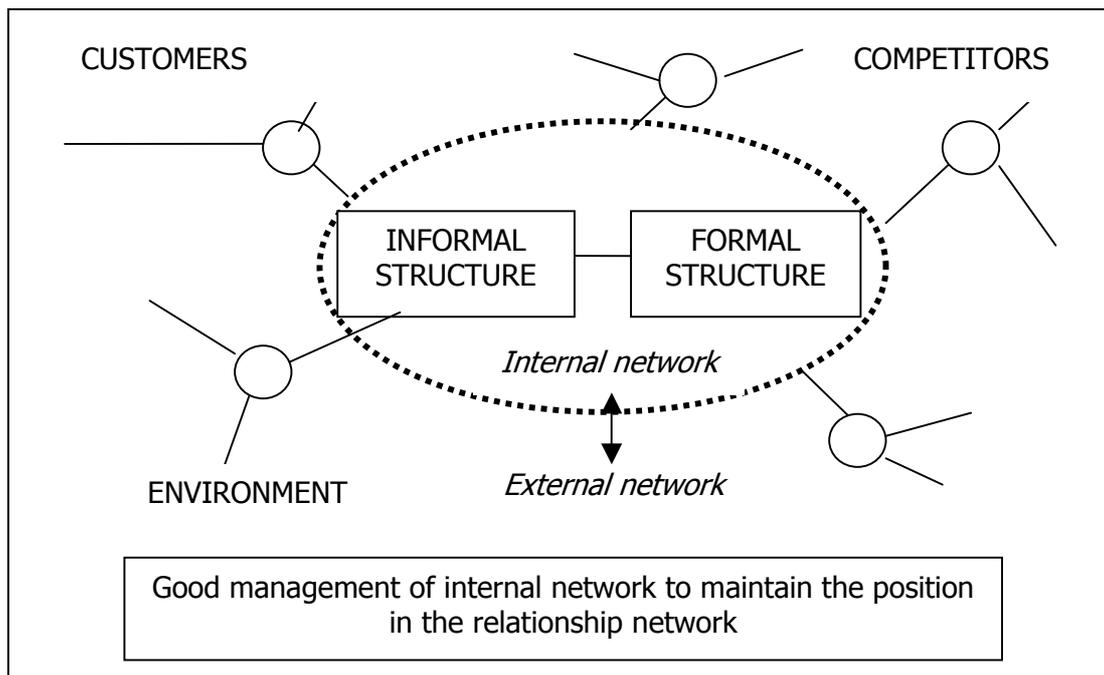


Figure 2: Integration of internal and external networks and the role of marketing

Marketing has to connect the knowledge peers within the different departments of the firm and with the different actors of the environment/network.

Everything a firm does to manage its internal network has to be communicated outside: if not, it's worth nothing. If I work together with my external network, I give a sense to the effort of managing internal knowledge and I give also the possibility to understand the work done; this kind of relationship is source of competitive advantage. It becomes a *structural bond* because the firm and the actors of its network- clients, suppliers...- grow together.

Marketing becomes the master of the “knowledge network”, as connector of the knowledge peers in a relationship strategy.

Berry e Parasuraman (1992) proposed four strategies of relationship marketing according to the different levels of the firm-customer-relationship:

- financial bonds
- social bonds
- customisation bond
- structural bonds

For the first level - *financial bonds*- the relationship between customer and firm is based on economical benefits but only in the short run. The second level - *social bonds*- aims to build up a relationship not only based on economical benefits but also on advantages due to a lasting relationship and personalisation. The third level – *customisation bond* - is even more complex, because the aim here is to satisfy customers' needs through one-to-one solutions. The strategies used are the customer intimacy and the mass customisation. Customer intimacy stands for knowing customers so well to border on the threshold of the intimacy. Mass customisation means offering a customised products or services at the price of standardised mass product or service thanks to a flexible organisational structure. The fourth and last level - called *structural bonds* – includes the first three and it can't be imitated so easily. The bond is so deep because it offers a value added that the customer can't give up. Structural bonds represent the strategy to build up long-term relationships.

If the firm works with this logic and with its network, it'll give value to the great internal investment in analysis of informal networks and of the knowledge peers achieving a long-term competitive advantage.

5. Conclusion

The recent evidence is that most industries and economy in general are experiencing important changes as a result of the diffusion of information and new technologies making more intensive knowledge flows across firms. Intangible assets were not considered in the past, because firms were stable, workers were little skilled, products were standardised: the physical capital was enough to account for productivity and performance. Nowadays *intangible assets* and capital have become key factors for competitiveness and the productivity and performance of firms can't be assessed by the physical and financial capital alone.

Firms are undertaking organisational changes that make them look like **networks**, characterised by decentralisation of decision-making and multiple nodes since the network is constituted both *internally* - informal networks and relationships within the different departments - and *externally* - relationships with competitors, suppliers and distributors. *Intangible assets represent the capability of firms to adapt to changes.*

This is particularly true for the firms which rely mostly on intangible assets: the *knowledge-intensive service firms*. The advantage of these organisations may stem primarily from their ability to co-ordinate knowledge. Our idea is that this ability is matter of marketing. Marketing has to manage internal and external knowledge and networks to improve mechanisms to use and measure this knowledge at an individual and organisational level.

Everything done inside the firm has to be integrated to the effort and function of marketing towards the network outside the firm. Marketing has to connect the knowledge peers of the different actors in the network.

The integration of the management of the internal with the external perspective, recognising the importance of knowledge and relationships, can be source sustainable competitive advantage.

The importance of managing internal relationship and of integrating them with the external network is not only matters of *knowledge-intensive firms*, but the network analysis and the implication of marketing as relationship builder, could be applied to the industrial sector as well.

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