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Les acteurs de l'entreprise à la recherche de nouveaux compromis ?
Construire le schéma d'analyse du GERPISA

Company Actors on the Look Out for New Compromises
Developing GERPISA's New Analytical Schema

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SOME CONTRIBUTIONS DERIVED FROM THE TELECOMMUNICATIONS INDUSTRY FOR THE DEVELOPMENT OF GERPISA'S NEW ANALYTICAL SCHEMA

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OBJECTIVE

Throughout the 20th century, the automobile industry was considered a paradigm, a front runner, in terms of industrial organisation. In the last decade, issues such as supply chain management, globalisation, partnerships, licensing, bidding, etc. were extensively researched and the outcomes certainly influenced the behaviour of other industries.

The authors, who were deeply involved in studies about the auto industry during the1990s, started a new research project in the year 2000, focusing on the Telecommunications industry. Here, they found a new type of industrial organisation, with different features, research issues and challenges, which demanded an specific analytical approach.

Although our research about the Telecommunications industry is still initiating, there are already some remarkable distinctions when we compare it to the auto industry. Since there are some scattered facts that suggest that there are chances that the industrial dynamics of the auto industry might become similar to the Telecommunications industry, we took the risks of writing this paper speculating about that hypothesis. We thought that it could be considered a contribution for the development of GERPISA´s new analytical scheme in the sense that it reflects a different reality and might bring new lights to the understanding of its basic assumptions.

In our analysis, we will consider two dimensions for the comparison of the Telecoms and the Auto industry.

Differently from the Telecoms industry, that is considered as having a "fast clockspeed", the structure and the relationships among the main players of the automobile industry can be considered relatively stable. However, there are possibilities of this being changed by the

emergence of disruptive technologies (Christensen, 1997) thus accelerating the rhythm of change of those relationships, making the evolution of the automobile industry become a fast clockspeed (Fine, 1998). This might have implications for eventual changes in the distribution of power among the participants of the network and the definition of governance rules and mechanisms.

A second point relates to the issue of Service and Servicing. The distinctive point in the comparison with the Automobile industry is that the Telecommunications industry delivers services for their clients. In doing so, the logic of Service production requires that Service companies (the network operators) and Manufacturing companies (the specialised equipment suppliers) adopt cooperative-competitive strategies. The increasing concern of the automobile producers with the characteristics of the service they are offering to their clients might require changes along the lines observed in Telecommunications. The comparative analysis will bring subsidies for an enhanced view of the way automobile companies are positioning themselves in terms of service production.

The paper is structured in three parts. Initially, we draw a fairly synthetic view of the evolution of the Telecommunication industry since the late 1980s, pinpointing the aspects that will be most relevant for the comparison with the Auto industry. Then, in the second part, we elaborate a more detailed analysis of the differences between the two industries. And, finally, in the third part, we sketch some suggestions for the structuring of the new GERPISA´s analytical scheme.

THE RECENT EVOLUTION OF THE TELECOMMUNICATIONS INDUSTRY

The privatisation process and other contextual influences

In most countries, Telecommunications used to be a public service, and as such, organised and evaluated according to social, more than economic or efficiency-related, indicators. Privatisation introduced radical changes.

On the supply side, the new privately-owned enterprises became responsible for the design and delivery of services in a competitive environment characterised by low entry barriers (Fransman, 2002), which has demanded from them the development of sound competitive strategies. At the same time, competition became regulated by national and regional governments, due to their concern in guaranteeing the continuous quality improvement of the services provided to the general public.

On the other hand, in the demand side, privatisation gave customers stronger voice, both in the definition of services and in the evaluation of the performance of the suppliers. Under these conditions, the performance of Telecommunications companies became intrinsically dependent on the appropriateness of the service offered in relation to the amount customers wish to pay.

Another essential aspect of the new environment of the Telecommunications industry is technological convergence: Telecommunications, Computing and Consumers Electronics deriving from a common technological base. The consequence is complexity, uncertainty and competitiveness.

Privatisation processes also led to an increasing internationalisation of the industry. In that industry, although Specialized Equipment Suppliers, like Ericsson, Siemens, NEC and others, were usually large transnational corporations adopting multidomestic strategies (Porter,

1986), Telecoms Network Operators were strictly national or sub-national companies. After privatisation, most of the Network Operators became transnational corporations too. International interorganisational networks began to take shape.

In each country, the role and importance of foreign enterprises was defined by the criteria chosen for the privatisation process. For instance, in Brazil (differently from what happened in many advanced countries), Federal and State governments opted for a complete withdrawal from their positions as the major controllers in the industry. As a result, the large local Telecoms enterprises became essentially of an European or North American origin.

Therefore, the Telecom industry is a very attractive field of research because:

- ✓ it is a "naturally" global industry where competition is regulated at the local level;
- ✓ it comprises both service and manufacturing companies operating in close interaction;
- ✓ as a service provider, it has to devote great attention to the characteristics of local markets;
- ✓ it is a fast clockspeed industry (Fine, 1998).

A sound analysis of the evolution of the Telecommunications industry in the last decade will be important for a better understanding of the causation and consequences of those features.

From state monopolies to international interorganisational networks

In the Old Telecoms Industry, "the engine of innovation was located in the central research laboratories of monopoly telecom operators, such as AT&T's Bell Labs, British Telecom's Martlesham Labs, France Telecoms's CNET Labs or NTT's Electrical Engineering Labs. Typically, after the central research laboratory did the initial research and developed and tested the initial prototypes, the task for further development was handed on to specialist equipment suppliers [SES hereafter]" (Fransman, 2001:10)In that context, SES had essentially a national character operating in conditions which, up to a certain point, resembles the current role of Manufacturing Contractors (Sturgeon, 1997).

By the end of the 1980s, "for different political-economic reasons, Japan, the UK and the US decided to end the monopolies of their monopoly network operators. The result was the birth of the original new entrants. [DDI, Japan Telecom and Teleway in Japan, Mercury in UK, Baby Bells, MCI and Sprint, in US]. ... Although liberalizing regulatory regimes provided a necessary condition for [the new entrants] rapid and successful entry, they were not sufficient. Equally important were low technological barriers created by the existence of specialist Telecoms equipment suppliers. These specialist technology suppliers provided the black-boxed technologies needed to construct and run their own networks. ... From the point of view of the specialist technology suppliers, liberalization created new markets for their accumulating knowledge and competencies". (Fransman,2001)

Therefore, the SES were facing new times where manufacturing according to the specifications defined by the network operators was not the only critical success factor: the supply of technology and turnkey projects became another important source of revenues.

The period 1990-1995 witnessed an interesting transition. Although the new entrants were not competent concerning both technology and manufacturing, some of them had a large experience in terms of servicing large household markets. That is the case of Vivendi, in France, that was part of the group Generale des Eaux, responsible for water distribution and sewage, Energis, in UK, the Telecoms subsidiary of the English electricity company, and thus, a subsidiary of Scottish power, among others.

The increasing competition in the marketplace justifies another inflection in the trajectory of the Telecommunications industry. "By the end of 1995, the now incumbent network operators [like British Telecom, France Telecom and Spanish Telefonica] made the decision to leave more and more of the R&D related to the network and its elements to the specialist technology suppliers". (ibid, p. 16) With this decision, they were able to concentrate on the development of competencies related to better servicing the markets: "Like AT&T, BT also accepted that its main competence lay in operating and developing Telecoms networks from elements developed by separate specialist suppliers and providing the services that customers wanted over these networks". (Fransman, 2002:86)

That implied that a new pattern of technological development, in the strict sense of R&D activities, in the New Telecom Industry would be essentially in the hands of the Specialist Equipment Suppliers and would evolve according to their competitive strategies.

More recently, that pattern is being redefined one more time. Due to changes upstream and downstream, SES are now considering their strategy as being "Integrated Solution Providers" (Davies et al., 2001). SES are trying to abandon the "old fashioned" approach to products and implementing a culture of service. This has two major implications. With the emergence of Manufacturing Contractors (Sturgeon, 1997), the more routinised Manufacturing and Operations activities and customer care services are now outsourced to newly created global companies such as Celestica, Solectron and others. At the same time, the scope of R&D activity is being deeply redefined in the sense that SES become an assembler of technologies rather than being a producer. Product or service innovation emerges from the dynamics between Operations and Marketing. The role of R&D is to develop the knowledge and assemble the technologies to make the service available.

Up to this point, two outcomes must be emphasised. First, the case of the Telecommunications industry illustrates the search for complimentarity and synergy in an extremely competitive environment where each firm exploits its particular competencies. The outcome is a fairly complex interorganisational network.. That fairly complex interorganisational network operates in an environment where technological change is fast, market uncertainty is high and local regulation is relevant.

Due to market ignorance and uncertainty, the large and powerful companies tend to adopt patterns of behaviour that include: i) selling services related to competencies in which they achieved a high standard, call centres being the most usual example; ii) incorporating, by acquisition, other firms that have developed competencies in specific market niches.

This brings additional traces of complexity to the analysis of the network. That pattern of behaviour might be justified by the fact that it is not trivial to predict which will be the profitable businesses in the service network.

Second, service becomes the main concern for the downstream enterprises (Network Operators, SES and even Manufacturing Contractors) and technological innovation moves upstream: it is more and more in the domain of basic components producers. The interesting point is that, due to technological convergence, new players come into this picture as Cisco and Intel.

EXTENSIONS TO THE AUTOMOBILE INDUSTRY

The unit of analysis and the governance assumption

The first contribution that an analysis of the Telecommunications industry might bring into the discussion of the GERPISA's analytical scheme concerns a basic assumption for the construction of the "Productive Model": the unit of analysis.

GERPISA's productive models, as portrayed by Boyer and Freyssenet (2002), are focussed on individual enterprises, primarily the global car manufacturers, the megasuppliers coming as a backstage. These are considered as the drivers for the whole industry.

In the Telecoms industry, that individualisation seems to be not valid. There are no uncontested leading enterprises and competitive performance depends heavily on temporary configurations of systems of enterprises.

Under what circumstances could there be a powershift in the the automobile industry? Up to a point it is possible to observe that the relationship between assemblers and megasuppliers is currently an issue that is being the focus of several researchers in the search for eventual modifications in power balance. The emergence of joint ventures between megasuppliers and Technology Information companies such as Texas Instruments, Motorola, and others, signals what Fine (1999) has predicted: the auto industry clockspeed will approach that of the electronics industry. If that eventually takes place, than power imbalances and changes might occur and the drivers of the auto industry will change too.

In line with this prediction is the argument raised by Christensen (1997) about disruptive technologies: "[Sustaining] technologies sustained the industry's rate of improvement in product performance and ranged in difficulty from incremental to radical. The industry's dominant firms always led in developing and adopting these technologies. By contrast, innovations [based on disrupting] technologies disrupted or redefined performance trajectories – and consistently resulted in the failure of industry's leading firms".

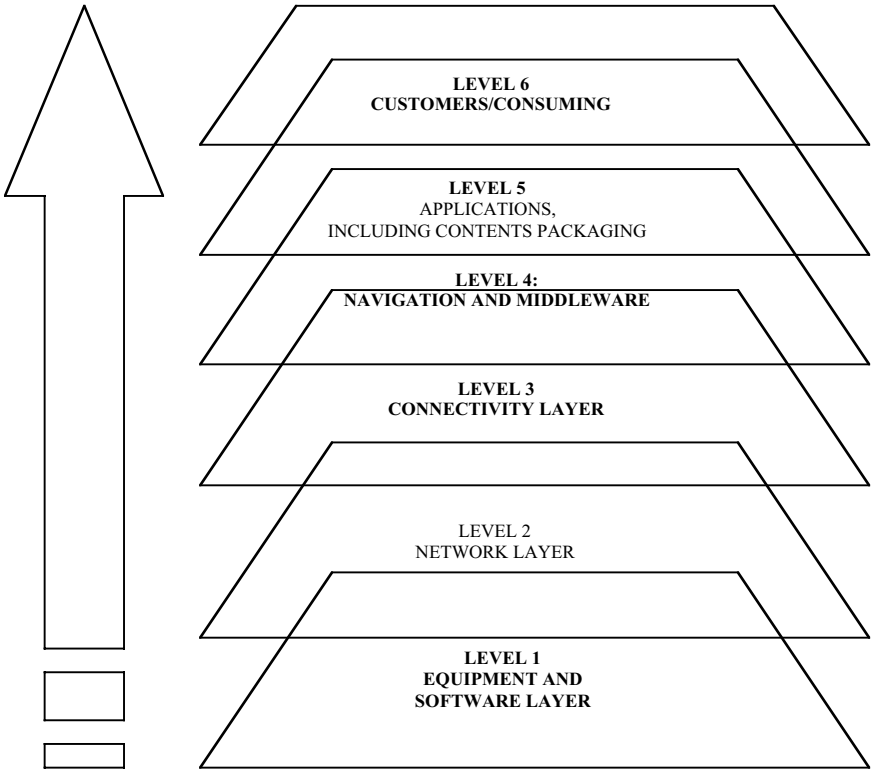
So, perhaps, it could be interesting if the new GERPISA's analytical framework departs from a different perspective, one in which the eventual causations of instability and radical change in the governance pattern would be a research issue.

About the analytical framework

The second point concerns the methodological approach. Whenever an interorganisational network has not a fairly clear governance, the chain model has some limitations. And, as Harland et al. (2001) observe "most of the cases [considered in interorganisational networks studies] to date have focused on large, powerful assemblers, centrally positioned in relatively high-volume, low variety supply networks and describe their influence over these types of networks".

Therefore, what would be at stake would be the GERPISA´s analytical framework. In the case of the Telecoms industry, that framework must be essentially systemic, encompassing a wide range of players that are organised in international interorganisational networks. Interdependence, or mutual dependence, is a key concept. Roles are not strictly defined and positions of individual enterprises in the industry layers present distinct configurations. For short, the Telecommunications industry is not so much ordered as the Auto industry: it is more diverse, unequal, dynamic. This requires an specific analytical framework.

In the Telecoms literature, there is one analytical framework proposed by Martin Fransman (www.telecomvisions.com) which, although heavily criticised for its handicaps, is the most utilised and referred to. It consists of six layers as pictured in Figure 1, below.



For Fransman (2002[a]) "the main purpose of the layers model is to develop of a cognitive framework that will facilitate an understanding of the 'evolution of the structure of the Telecoms industry'. It is useful as a cognitive framework for organising the [researchers] work and knowledge interdependencies".

The author also highlights the pros and cons of the model. He lists as positive: industry boundaries/subsectors, modularization and hierarchy, industrial organisation (issues of vertical and horizontal specialisation and integration), the location of R&D, entry barriers and the role of consumers/consuming. The points that will become obscure when the layers model is applied would be: dynamics of change, modes of co-ordination, intra-layer diversity, interacting institutions and the cognitive dimension.

Despite the eventual deficiencies of the layers model, it is our experience that it is a very important and useful device for the analysis of the Telecoms industry and its application for the Auto industry might bring interesting insights.

The production versus service debate

It is our understanding that the arguments developed to clarify the eventual distinction between Production and Service does not apply in the case of the Telecommunications industry. Overall, we tend to agree with Johnston and Clark (2001:6) when they argue that "most of the activities of an organisation, be it in the service or manufacturing sector, fall under the classification of service operations".

In our opinion, the "fuzzyness" in the distinction between Production and Service might be traced back to a very broad modification in the world productive and economic system, when productive capacity became larger then demand. The market regime changed from seller's market to buyer's market. The Quality movement followed soon and the position of the client as the main concern of corporate strategy became predominant. From then on manufactured products began to incorporate more and more "service" in the sense of adding value to the client.

That "plus" that is implicit in the above mentioned is not easily defined "During the late 1980s and 1990s, service has emerged as an order winner during an era in which basic manufacturing performance in the forms of cost, quality, delivery and flexibility targets became order qualifiers. Increasingly, customers turn to manufacturers who are able to provide value added services above and beyond core product and delivery expectations". (Youngdahl and Loomba, 2000). New approaches were developed such as the "Service Logic" (Kingman-Brundage et al., 1993), that contrasts industrial organisations, legal-bureaucratic organisations and service organisations, and the Service Factory Concept (Youngdahl and Loomba, 2000) that intends to reorient the activities of the different organisational functions, more specifically Manufacturing, R&D and Marketing. Other authors such as Rust et allii. (2001:18) propose a radical shift in the managerial perspective, from product management to client management: "Profitability has to be considered in relation to the client, because profitability is the outcome of a long term relationship with the client".

On the other hand, the so called pure service providers, for different reasons, were operating in environments where competitiveness was gradually increasing. Consequently, the application of Operations Management concepts and techniques became a basic requisite. Actually, the literature on Service Operations Management focuses primarily the organisations that are classified as the tertiary or service sector of the economy.

We follow the proposition of Zarifian (2001, p.69), for whom we are currently witnessing the emergence of a "industrial production of service model", that it is the production of a service that incorporates in its technologies, social organisation and performance criteria, principles

which are similar to the ones that are found in the large industry, modified according to the specific features of the service sector.

This assumption was relevant in our analysis of the Telecoms industry because the question: “who is providing what service for whom?” does not have an straightforward answer, due to the non existence of uncontested leaders and to the somehow “chaotic” organisation of the industry, as mentioned before.

The application of the service concept to the Telecommunications industry is pervasive and elusive. Pervasive in the sense that it seems to be spreading everywhere. Elusive in the sense that its qualities seem to be difficult to grasp. Notwithstanding, this is opening a new perspective for the development of new knowledge in the industrial organisation field.

In the current GERPISA´s analytical model the focus is on production. It seems to us that if the new GERPISA´s analytical scheme puts a greater emphasis on the Service dimension, this would bring new perspectives in the analysis of the auto industry.

FINAL COMMENTS

As we mentioned in the presentation, the aim of this paper is to instigate the debates around the development of the new GERPISA´s analytical scheme by bringing some insights from the current discussions about the Telecommunications industry.

We believe that comparative studies are extremely relevant for the evolution of knowledge. Although a sound analysis of the eventual similarities and dissimilarities between the Telecoms and the Auto industry will only come from a deeper reflection, perhaps the most evident aspects, as highlighted in this paper, might bring some food for thought.

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