Does innovation (really) matter for success? The case of an IT Consulting Firm

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DOES INNOVATION (REALLY) MATTER FOR SUCCESS? THE CASE OF AN IT CONSULTANCY FIRM*

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ABSTRACT

The paper discusses to what extent innovation is a crucial variable in explaining the success of NOVABASE, a Portuguese IT consultancy firm. In order to proceed with this discussion, the evolution of NOVABASE is described, emphasizing the most important steps in the firm's trajectory, which are shown to result from the joint influences of upstream technological change, downstream market opportunities, and the firm's strategic options. Then, the paper reviews some contributions stemming form studies of innovation in services, building on these to form the framework of analysis used in the empirical research. The main results of the empirical work are then presented, leading to the discussion of the possible answers to the question in title.

Keywords:
Innovation in Services; Firm's Growth; Industry Evolution; Competitive Advantage; Organizational Development; IT Consulting.

JEL – codes.
D21 - Firm Behavior. L86 - Information and Internet Services; Computer Software. O33 - Technological Change: Choices and Consequences.

1. INTRODUCTION[1]

In these days, to talk about successful firms is a risky – not to say suspicious – venture. Still, the entrepreneurial story told in this paper – the one of NOVABASE – has clearly been a successful one.

Started in 1989 by a few members of INESC – a Portuguese University institute dedicated to technological transfer activities in the field of information systems – NOVABASE presents itself today as an IT consultancy firm with an outstanding *curriculum*: between 1996 and 2000, its revenue grew from 5 million to more than 50 million Euro, and the number of employees reached one thousand (from no more than one hundred, five years before); it is now in a top position in terms of market share (just below Accenture and Case-Edinfor, another Portuguese firm owned by a big business group); it has been continuously diversifying its offer (including incursions into new, promising businesses, such as the interactive TV), growing both organically and through acquisitions; it started its internationalization to Brazil in 2000, and is opening its own facilities in Madrid; and, finally, it was recently considered to be the best Portuguese firm to work in[2] (which is definitely not a minor issue in an industry where human resources are a crucial asset).

The aim of this paper is to question the role of innovation dynamics in NOVABASE's remarkable trajectory. Three reasons justify the subject chosen and the perspective taken in this research.

Firstly, successful cases are examples to consider, even if you cannot assure they will not underperform in the near future. To understand how a University spin-off can give rise to a medium-large firm with the curriculum described above, in the short period of a decade, certainly provides useful tips to academics, investors and policymakers alike.

In this context, and secondly, it seems highly appropriate to analyze the role of innovation in the evolution of a services firm. Nowadays, it is generally accepted that innovation

[1] The research underlying this paper was partially financed by PROINOV, a Portuguese governmental program on innovation. I would like to thank: João Rodrigues for his remarks on an early draft; Manuel Mira Godinho and Vitor Corado Simões for their contribution on this study; and specially to my contacts in NOVABASE - namely, João Ranito, Manuel Beja, Margarida Gonçalves and Tiago Miranda – who provided me not only with important information, but also with inspiring insights, which I used in the present paper. Obviously, the usual caveats apply.

[2] Published in «Exame», a leading Portuguese business magazine, in 13/6/2001.

contributes to create sustainable competitive advantages in firms. Nevertheless, innovation studies have been mostly focused on manufacturing industries, leaving aside the role of innovation in the services sector. Innovation tends to be associated with the concept of material technology, leading many authors to the conclusion that innovation in services simply does not exist, or that it consists mainly in the adoption of new products developed in the manufacturing industries. In this view, innovations arising in the service activities are at best incremental and largely insignificant (Gallouj, 1998a). This starting point, together with the measurement problems in industries where both product and process are highly intangible, rend it unattractive to spent research time on studying innovation in the Tertiary sector. As a result, service-specific concepts and approaches are insufficiently developed - which seems a paradox, when we realize that service activities are now responsible for nearly 2/3 of employment and GDP in most developed countries.

Finally, one should note that IT consultancy firms – as most of the business services firms – are important not only for their growth potential in terms of employment and value added, but also for their dynamic links, and contributions to the competitiveness, of other industries (in both manufacturing and service sectors). The industry being studied here is part of the so-called Knowledge Intensive Business Services (KIBS), whose role in promoting innovation in their client organizations has been often highlighted in the past decade. In the expression of Miles et al. (1995), the KIBS play important roles such as: (i) *facilitators* – supporting their clients in the introduction of innovations, which were not developed by the supplier; (ii) *innovation carriers* – 'transferring' innovations from one firm/industry to another; and (iii) *innovation sources* – developing their own solutions, usually with inputs from client organizations. Thus, the development of IT consultants – in terms of product diversification, quality improvements, price reductions, increases in the productivity of both labor and capital, in sum, innovation in its various forms – has direct implications over manufacturing and other services activities, contributing to reduce costs to clients, to a better resource allocation in the economy, and to stimulate innovation in many activities (Rubalcaba-Bermejo, 1999).

Bearing these three reasons in mind, the paper discusses to what extent innovation is a crucial variable in explaining NOVABASE success as a Portuguese IT consultancy firm. In order to proceed with this discussion, the evolution of NOVABASE since its beginning is described, emphasizing the most important steps in the firm's trajectory. Then, the paper reviews some contributions coming from authors who studied the peculiarities of

innovation in services, building on these to form a framework of analysis, which suits the current research. The main results of the empirical work are then presented, leading to the discussion of the possible answers to the question in title.

2. GROWING UP IN THE NEW ECONOMY

In order to understand the evolution of NOVABASE, one should first consider the dynamics of the industry to which it belongs. In this paper, the industry is referred to as IT consultancy. The activities characterizing IT consultants' output will be clarified in section 2.3.

2.1. An industry in the core of change

The IT consultancy industry finds itself in the interception of two relevant groups of activities: from a vertical perspective, it is at the bottom end of the IT value chain; from a horizontal perspective, as noted before, it is part of the so-called business services.

Immediately, one should note that both groups of activities are characterized by fast growth rates in recent years[3]. Actually, these are industries that take part in two main axis of the structural change occurring in the most developed countries, in the last two decades.

The first of these axes consists of the development of a new techno-economic paradigm (as coined by Freeman & Perez, 1988), which is based on the diffusion of new information and communication technologies (ICT) throughout the economy. The decrease in costs and the new possibilities in information handling, storing and transmitting, lead to the widespread diffusion of ICT in several domains of economic activity. The technological change favored the development of certain institutional (such as liberalization and globalization) and organizational (e.g., the adoption of new management practices and new production systems) trajectories, which, in turn, lead to

[3] According to EITO (European Information Technology Organization), the annual growth of the IT sector in Portugal was, in average, above 10% during the last decade. Similarly, according to INE (the Portuguese National Institute for Statistics), the value of the «other commercial services» group – which includes the business services - as a percentage of GDP grew from 20%, in 1988, to 23% in 1998, which denotes a growth rate above the average of the economy.

an increase demand for new ICT solutions, creating therefore an upward spiral in the growth of ICT industries. [4]

The second axis of structural change consists of the 'tertiarization' of the economy, particularly the increase in the demand for services by firms and public agencies (Gadrey, 1996). To a large extent, this increase is due to a rising complexity of production process at all levels, both internal (production equipment and systems, flexibilization, product diversity) and external (production environment, involving technical, economic, social and institutional factors). As a consequence, new and demanding needs - in terms of information, knowledge, research and training – arise, which organizations' internal competencies are often unable to meet. This favors the development of new specialized firms, that supply services adjusted to their clients' specific needs, but which can to a certain extent be replicated in organizations (therefore taking advantages of important economies of scale and scope).

As they interact with client organizations, the suppliers of specialized services become more experienced, learning about their clients businesses, refining and diversifying their products and methods, learning about new market opportunities (Hertog & Bilderbeek, 1998) – in sum, becoming sources of value to their clients, and growing accordingly. Thus, there is a tendency for organizations to limit their competencies to the needs of their core business, buying complementary services from specialized firms in the market.

In the case of IT consultancy industry, the two axes of structural change overlap, giving rise to a fast process of change and growth. This process is co-determined by the evolutions occurred at the technological level, upstream in the value chain, and by the urge to meet new clients' needs.

From the technological perspective, one should emphasize the surge (in the late 1980s) of new methodologies for software development, as well as the advent of network information systems, itself associated with the diffusion of new systems software. This changes contributed to the development of application software, which resulted in obvious advantages to organizations, in a context marked by increased sophistication of applications, rising development and upgrading costs, and specially scarcity of human

[4] In the business sector, this spiral was leveraged by the firms' perception that ICTs could be a source of competitive advantage, leading to a strong increase in ICT investments by individual firms, which were trying to follow, and possibly surpass, the competitors' moves in this domain.

resources. Furthermore, the new software packages met the needs for the integration of old systems in new architectures.

Therefore, the beginning of the 1990s was characterized by a flourishing industry of integration software packages,[5] which, to a large extent, took the place occupied before by tailor-made software. That kind of products aims at the automation of firms' back-office activities. More recently, those products started to comprise the supply- and demand-chain management, increasingly taking advantage of e-business solutions. Besides these developments, the 1990s also witnessed the rise in IT-based decision support systems, which have become crucial in *business intelligence* activities.

In sum, the IT consultancy industry strongly benefited from a continuous stream of technological advances, neatly adjusted to new organizational needs. The growing specialization and complexity of the services associated with those technologies (that is, designing, developing, applying and maintaining information systems adjusted to each organization's requirements), help to explain the growing outsourcing of IT professional service activities, giving rise to outstanding growth rates in the related industries.[6]

2.2. The evolution of NOVABASE

The story of NOVABASE in its first years is consistent with the general pattern just described for the industry as a whole.

NOVABASE started its activity in 1989, as a spin-off of a University technological transfer institute. During those years, its output consisted mainly of tailor-made information systems software, having a few governmental institutions as main clients.

In the context of new developments in software and following the demand of the Portuguese market for IT systems, the firm positioned itself as a systems integrator. This allowed the expansion of its offer to new vertical markets (namely, finance, telecommunications and utilities), as well as the broadening of its client base. At the time, the biggest Portuguese organizations were starting to adopt applications such as ERP (Enterprise Resource Planning), but needed to integrate and standardize different

[5] The most successful example in this domain is probably SAP, a German firm that developed the most famous *Enterprise Resource Planning* (ERP) package. Other important ERP suppliers include Oracle, Baan and PeopleSoft, among others.

applications, which were previously developed. The new positioning as a systems' integrator allowed also for a sustainable growth, since that was a period when demand was directed to big projects involving all the dimensions of IT systems solutions (the so-called '*one-stop-shopping*' system). By then, NOVABASE abandoned its traditional hierarchical structure, adopting an organizational framework based on business units.

Since then, the evolution of NOVABASE's organizational model became a central issue to its leaders. Between 1997 and 1999, the firm begins to build a network of specialized suppliers, which is now one of its main characteristics. In each field where there is sufficient 'critical mass', a new, autonomous firm is created, being completely focused on its market segment. Each of these new firms is partially owned (in a minority share) by its managers, the rest of the capital being hold by the board of directors of the holding company.

In 1999, NOVABASE is formally transformed into a holding company, surrounded by a network of specialized firms. This step anticipates the IPO (Initial Public Offer) in the Lisbon Stock Exchange. In a few months, NOVABASE was included in the BVL30 and the PSI20 (the two reference indexes in the Portuguese equity markets), strongly increasing its public visibility.

Also in the year 2000, NOVABASE-Brazil is created, in what constitutes an important step towards the group's internationalization. Due to the easier access to financial capital, the firm's strategy for organizational development, from then on, included the acquisition of firms whose business and competencies showed signs of promising synergies with NOVABASE's. It is particularly noteworthy the acquisition of OCTAL, a firm specialized in hardware production (mostly related to interactive TV), in what constitutes an important step towards product diversification, in a firm whose offer was until then mostly based in IT services. The holding group also took the role of a corporate venture, supporting the start-up of new business projects, sometimes from within the group. Moreover, it has been establishing several alliances with firms coming from sectors such as telecommunications and health services, in an effort to reinforce its presence in these (and other) vertical markets.

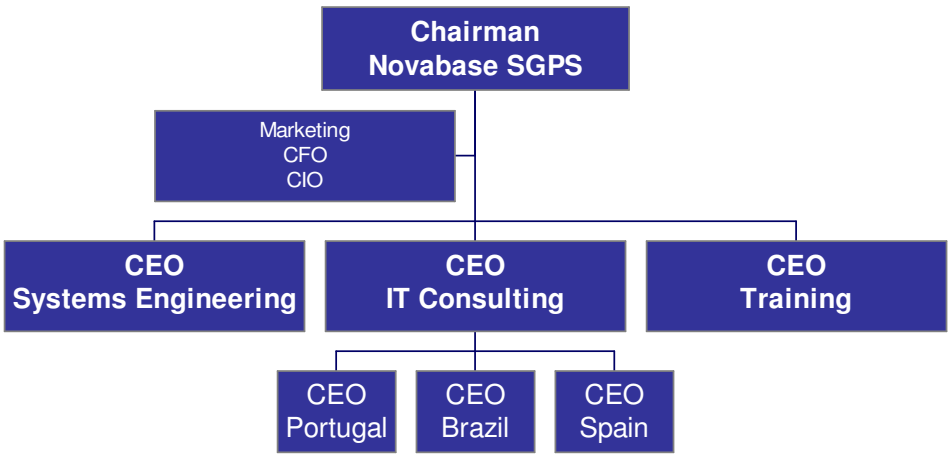
[6] According to INE (the Portuguese National Institute of Statistics), between 1996 e 1999, Portuguese IT professional services grew annually over 40% in value added at current prices (which corresponds to a real growth rate over 30%, whatever the deflation index used) and about 18% in employment.

In spite of the crisis which has shaken the so-called 'New Economy' business, NOVABASE was able to keep a remarkable track, with an average annual revenue growth of about 45%, between 1999 and 2001 (acquisitions excluded).

2.3. NOVABASE's products and organizational structure

In the last few months, NOVABASE adopted a new organizational structure, where three different lines of business are gathered under autonomous leaderships. The new organization chart is shown in Figure 1 below.

FIG.1 – NOVABASE'S ORGANIZATION CHART SINCE FEBRUARY 2002



Notes:
CFO – Chief Finantial Officer
CIO – Chief Information Officer
CEO – Chief Executive Officer

As can be seen in the chart, NOVABASE's three main business branches, as considered by its leadership, are: IT Consulting, Systems Engineering, and Training.

The «IT Consulting» branch includes those activities which have been the core of NOVABASE's business since the beginning, and which are still responsible for almost 4/5 of the group's revenue. Generally speaking, its offer consists of evaluating the clients needs in terms of IT systems, as well as designing these systems, integrating different software packages (sometimes complemented by the development of tailor-made programs) in a coherent architecture, applying and maintaining the whole solution in the client organization, and training the client's staff. These activities are complemented by

the recruitment and the availability of qualified human resources to work in client organizations.

In this field, NOVABASE's organizational structure is matrix-like, with the columns corresponding to 'vertical' industries (such as telecommunications, finance, government, utilities, health services, among others) and the rows consisting of 'horizontal' competencies (related, for example, with IT structure and strategy, decision support systems, data quality and data mining, customer relationship management, supply-chain management, back-office and operating systems, middleware, etc.).

In line with NOVABASE's strategy for organizational development (see last section), many of the 'horizontal' business units became autonomous firms, within the network of specialized firms.[7] Within the vertical domains, there is only one case of a business unit becoming autonomous – the health services unit. In the rest of the cases, the coordination of activities from a 'vertical' perspective (whenever different autonomous firms are involved with the same client) is carried out by «NOVABASE Information Systems» - a firm that can be considered as the core of the network.

The two other main business fields, «Systems Engineering» and «Training», are promising paths which NOVABASE is beginning to pursue. In the former case, NOVABASE is trying its way in a business that is significantly different from what it has done until recently, but where the growth potential and, specially, the prospects for internationalization are great. The main bet here are products related to interactive TV solutions, namely, a set-top-box developed by OCTAL, a firm which was acquired by NOVABASE in 2000. In the field of «Training», NOVABASE is trying to leverage on its past experience with e-learning to enter new markets, mainly at the national level.

The rest of the paper is concerned almost exclusively with NOVABASE's activities in the field of «IT Consulting». This is justified not only because the other two main fields are rather recent in the firm's evolution and are still relatively insignificant in terms of revenues, but also because IT consultancy activities have characteristics which deserve special attention, if the role of innovation dynamics for performance is the focus. We will discuss the latter issue in the following section.

[7] The links between the firms in the network are kept by two main factors: the use of the holding company's brand name (for instance, the firm specialized in data bases is called NOVABASE DB; the same logic applies to most firms in the network); and the dominant position of the holding company in the autonomous firms' capital).

3. THE SPECIFICITY OF INNOVATION IN IT CONSULTANCY

In the introduction section, it was suggested that innovation studies have been mainly directed to the manufacturing industries, which led to an unsatisfactory development of concepts and approaches that take into account the specificity of services activities. Therefore, before proceeding with the analysis of innovation dynamics in NOVABASE, this section will present a brief reference to some contributions that are relevant for the present purposes, and on basis of which the empirical research (presented in the next section) was conducted.

Thus, the following subsections discuss: the nature of product and process in consultancy firms, the forms and types of innovations typically observed, and the organization of innovation in those firms.

3.1. Product and process in consultancy firms

When compared to more traditional manufacturing industries, knowledge-intensive business services – such as IT consultancy – tend to show distinctive features related to product, process and market organization. Among the most relevant features of consultancy firms (Gallouj, 1998a; Sundbo & Gallouj, 1998), the following can be emphasized:

(i) usually, their product (i.e., the services they supply) is intangible – the transferred knowledge is largely tacit and immaterial, even if partly incorporated in equipment, software, reports, blueprints, among other material forms;

(ii) since the product does not possess the quality of exteriority, it cannot be stored or moved from one place to another (which implies the need for physical proximity and direct interaction between supplier and user);

(iii) rarely existing outside the interaction between supplier and user, the supplied services tend to be more like a process then a result (what makes it difficult to distinguish clearly between product and process, since the former frequently takes the form of the latter);

(iv) the direct interaction between supplier and user brings about the concomitant transaction of information, knowledge, emotions, signs of civility, expressing relations of power, domination and reciprocal influence;

(v) the production frequently requires the client's active participation, giving rise to a situation of 'co-production';

(vi) each transaction can be considered unique, in the sense that it is customized to the client's needs, as a response to specific problems in distinctive environments – therefore the limits to standardization of the services provided;

(vii) the effects resulting from the services provided are expressed along a certain period of time, and thus cannot be felt immediately;

(viii) since the results of the transaction are not immediate, and given the relevance of the intangible and relational dimensions, it is difficult for the client to assess *a priori* the value of the services to acquire (that is, problems of imperfect and asymmetric information are pervasive in this industry).

Some important implications arising from these characteristics will be discussed in the following sections.

3.2. Forms of innovation

As already stated, the lack of services-specific innovation studies often lead to a misrepresentation of the role of innovation in the Tertiary industries.

Gallouj (1998a) mentions three sorts of myths related to innovation in services, namely, the ones which sustain that (i) innovation in services simply does not exist, (ii) it is strictly technological (and, thus, innovation means the acquisition of manufacturing equipment) or (iii) it is incremental and insignificant. Notwithstanding, it is hardly understandable that non-innovative industries could have experienced such strong growth as services activities did in the last decade.

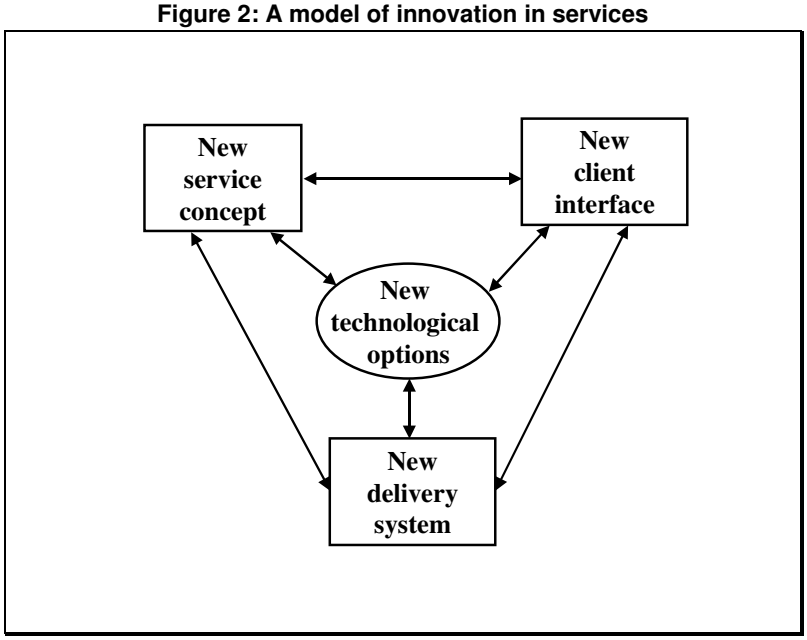
Instead, it is necessary to understand that innovation in services may assume different forms and that it can be organized differently from manufacturing industries. As Marklund (2000) shows, in most services industries it is basically useless to look at traditional

innovation indicators such as R&D expenses, R&D personnel or patent applications.[8] This is due to the fact that many relevant innovations are not technological-based (see below) and, even when they are, services firms tend to organize innovative activities without a formal innovation structure (see Sundbo, 1998)

In this line of reasoning, Den Hertog & Bilderbeek (1998) put forward a model of innovation in services, which considers four dimensions:

(i) a new service concept (ideas on how to organize a solution to a problem or need);
(ii) a new client interface (ways to interact with clients);
(iii) a new delivery system (organization and methods at the firm's level, related to the production and delivery processes);
(iv) new technological options (which support the other three dimensions).

Figure 2: A model of innovation in services



Source: adapted from Den Hertog & Bilderbeek (1998)

Focusing on the last dimension, it is important to clarify the role of new technological options in a firm's innovation dynamics. As figure 2 suggests, there are interdependencies between this and the three other innovation dimensions suggested. But this does not imply that innovation in services firms is determined by the adoption of

[8] This is certainly the case of NOVABASE, whose performance is mediocre when assessed by this kind of indicators.

technologies bought from equipment suppliers, for two main reasons: first, because services firms do not just buy technologies which are offered by suppliers in the market: they absorb those technologies by adapting them to their own needs; moreover, in IT service industries, firms develop their own solutions, taking advantage of their own competencies; secondly, because innovations related to the other three dimensions of the model do not need to be technology-driven (frequently, they are associated with organizational processes).

3.3. Types of innovation

From the above mentioned immateriality and relational dimensions of consultancy services, one can derive the conclusion that much of the innovation in this industries emerges from the current practice – more specifically, from the interaction with clients in the attempt to solve specific problems, or from the internal activity of project teams. Many of the innovations thus produced remain in a tacit form, even when the solutions developed for specific contexts are reproduced in solving future problems.

Nevertheless, sometimes those tacit innovations are subjected to codification by the innovative firm, in the form of manuals, blueprints, software packages, management models, and even new service concepts, which are sold autonomously in the market. The codification of 'emergent' innovations may help its re-utilization in the future, becoming part of the collective memory of the firm.

On the basis of their research on consultancy firms, Gallouj & Gallouj (1996) propose a typology in which the first case ('emergent' innovations that remain in a tacit form) are called '*ad hoc* innovations', and the second case (when those are subjected to codification) is designated by 'formalization innovations'.

One should note that the probability for *ad hoc* innovations to occur – as well as its economic value – strongly depend on the quality of the interaction with the client organizations. This, in turn, is associated with factors such as the regularity of interactions, the specific interfaces used, the skills of the parties involved, the trust and empathy established, among other aspects in which the influence of technology may be negligible.

In what concerns formalization innovations, its occurrence depends on the management will and the firm's capacity to identify methods, practices and solutions arising from specific projects, which can be successfully replicated in other contexts. The frequency of these types of innovation tend to be associated with issues such as the level of specification demanded by each delivery, the diffusion of information between individuals and between teams in the consulting firm, and the existence and adequacy of procedures for codifying current methods and solutions.

Gallouj & Gallouj (1996) mention a third type of innovation, which they call 'anticipatory innovation'. This consists on the development of expertise in knowledge domains that can be relevant for the solution of foreseen problems or clients needs (taking into account the present technological, economic, social, and institutional trends). The frequency and relevance of this type of innovations depends, correspondingly, on the firms' capacity to follow and understand the main current trends, and to design strategies adapted to them.

The models and concepts discussed in this section are the basis for the following analysis of innovation in NOVABASE.

4. INNOVATION DYNAMICS IN NOVABASE

The aim of this section is to analyze the innovation dynamics occurring in the studied firm. The framework for the analysis is given by the model put forward by Den Hertog & Bilderbeek (1998) – in which four dimensions of innovation are considered (new service concepts, new interfaces with clients, new delivery systems, and new technological options) – as well as by the typology of innovations suggested by Gallouj & Gallouj (1996) – that includes *ad hoc*, formalization, and anticipatory innovations.

The service concepts behind the products supplied by NOVABASE were broadly mentioned in sub-section 2.3. Before proceeding with the empirical analysis of innovation dynamics in the studied firm, the business procedures characterizing NOVABASE's activities will be briefly described, in order to help the discussion of innovation performance in the other dimensions (namely, the interface with clients, and the delivery system).

4.1. Interface with clients and delivery system in NOVABASE: a stylized illustration

Typically, NOVABASE's approach to clients takes advantage of the existence of informal channels, based on networks of personal contacts. Very often, it is through this channels that NOVABASE knows about the potential interest of some organization on the development of IT solutions for specific goals. These commercial opportunities are transmitted by the individual who became aware of them in the first place, to the people in charge of the 'vertical' fields of business – in what constitutes a crucial process for the firm's business. Alternatively (though less frequently), the opportunities are identified more formally, via public procurement official announcements or by direct request from the potential client.

From the moment when the opportunity is identified and considered interesting (what usually involves some first formal contacts with the potential client), NOVABASE proceeds with the drafting of the project – a more or less complex step, in which the client's needs are confronted with the supplier's competencies. If the size of the project is considerable (implying the participation of several firms from NOVABASE's network of specialists), this process tends to be highly sensitive inside the group, since each firm will try to maximize its contribution to the project.[9] The internal bargaining process, which aims at avoiding escalating costs to clients, has been until now coordinated by the 'vertical' sellers (who thus act as representatives of client's interests).

The next step consists in the pre-selling phase, when meetings between the potential client and the specialists from NOVABASE's different competence domains are held, for demonstration purposes. This is another crucial step, in which the capacity of NOVABASE's sellers and specialists to persuade clients becomes a critical asset. The success of this step leads to the closing of the contract.

From that moment on, the proper delivery process is started. Meetings are held with different departments of the client organization to assess specific needs (frequently, a moment in which NOVABASE's consultants are confronted with conflicting interests among the members of client organization), followed by the designing of conceptual models on which the parameterization and customization of the software to the specific

[9] This results form the incentive system, in which individual rewards are associated with the performance of the autonomous firm they belong to.

requisites is based. Before the systems are activated, tests are made and final users trained. NOVABASE's team stays in the field for a while, in order to support the operations and to correct possible bugs in the installed systems.

Frequently, during the maintenance period, new opportunities are identified within the client firm, giving rise to a new selling cycle, now shortened in its first steps. This constitutes an important way to keep established customers and increase revenues.

4.2. The introduction of innovations by NOVABASE

The assessment of innovations introduced by NOVABASE will now be done on the basis of the conceptual framework discussed in section 3, as shown in the figure below.

Figure 3: Framework for analysing innovation dynamics in NOVABASE

Type of innovation → / Innovation dimension ↓	***Ad hoc* innovation**	**Formalizing innovation**	**Anticipatory innovation**	**Pioneering diffusion**
Service concept				
Interface with clients				
Delivery system				
Technological options				

The aim of the empirical work was to fulfill the cells of the above matrix.[10] Starting from the *ad hoc* innovations in all the dimensions, one can immediately anticipate the difficulties associated with their empirical assessment. By definition, they consist in those innovations that were not subjected to formalization, what makes them hardly identifiable, even for NOVABASE's directors. And still, its presence can be said to pervade the firm's activities, both synchronically and diachronically.

As suggested in section 3.1, each project can be considered as unique, in the sense that it is tailor-made to meet specific needs, in interaction with clients, and in response to specific problems in specific environments. As each project develops, new interfaces and modes of interaction with clients are experimented (e.g., norms on who should contact whom to solve which problems, what are the communications means to use in each situation, etc.), new procedures for requisites' analysis and parameterization are

[10] The information was gathered through different methods, including: documental analysis of annual reports, internal memoranda, NOVABASE's internal and external publications, and national press news; and interviews with several people at different organizational levels (including a meeting with the board of directors to present and discuss preliminary results) and with industry experts.

developed, new forms of coordination within teams are tried, and even new technological options (such as software programs) arise, in order to respond to needs which were never clearly identified before. To a large extent, it is this adaptive capacity that is searched for and valued by customers, which makes *ad hoc* innovations a fundamental aspect for a consultancy firm's market acceptance (even though this capacity is largely invisible outside the context of each project). In this sense, one can suggest that an IT consultancy firm, such as NOVABASE, could hardly be successful without a positive performance in *ad hoc* type of innovations. In fact, evidence of this type of innovativeness (in all the four dimensions of the matrix in figure 3) can be found in the formal assessments of clients' satisfaction, in written reports of project teams, as well as in the firm's reputation as apparent in the specialized press.

In what concerns formalization innovations, its existence can be more easily detected, since they consist of *ad hoc* innovations that were subjected to a codification process in the firm. Notwithstanding, in NOVABASE there is no global view on the various formalization innovations that have been introduced. That can be explained by the fact that they result from the initiative of project teams, and are therefore frequently ignored beyond the borders of the autonomous firm (or business unit) to which those teams belong. Nevertheless, when careful reading the internal memoranda and other documents, on can identify numerous examples of such a type of innovations.[11]

Finally, NOVABASE does not seem to show relevant examples of anticipatory innovations – to recall, this were defined in sub-section 3.3 as the development of expertise in knowledge domains which can be relevant for meeting future needs, considering the present technological, economic, social, and institutional trends. Apparently, NOVABASE's innovative role in this field is limited to the pioneering introduction of new service concepts and organizational models developed in other countries (namely, the US).[12]

[11] A non-exhaustible, though reasonably long, list of such formalization innovations introduced by NOVABASE is presented in another paper (Mamede, 2002).

[12] NOVABASE reclaims a pioneering role in the supply of IT solutions to the Portuguese market such as decision support systems, data quality, hospital information systems, CRM (Customer Relationship Management)or ASP (Application Service Provider).

5. THE ROLE OF INNOVATION IN EXPLAINING NOVABASE'S SUCCESS

To a certain extent, NOVABASE's commercial success is itself an indicator of its innovative performance. As mentioned above, IT consulting firms' business consists mainly in finding solutions for each client's requisites. Thus, each transaction can be considered as unique, in the sense that it is tailor-made for specific needs, in interaction with a particular client, and in response to specific problems in peculiar environment conditions. Each project imply some level of experimentation in such domains as: the ways to interact with clients, the methods used to analyze and parameterize the requisites, the technological options for solving problems found by the client organizations or by the project teams, among others. Such flexibility and capacity to adapt to peculiar circumstances give rise to various forms of *ad hoc* innovations, which are highly valued by clients. In this sense, a successful IT consulting firm is, in principle, an innovative firm.

If the former sentence is put in the conditional form, it is because we are dealing with a market in which imperfect information is pervasive. This makes it hard to assess rigorously, both *a priori* and *a posteriori*, the value of the delivered services. This is so to the extent that those services involve a strong relational element - the effectiveness of a specific solution depends not only on the quality of the services supplier, but also on the interactive process that underlies the specification of requisites, and on the clients' competencies. Moreover, the effects of the provided services can only be felt in the medium- or long-run (this makes it hard to distinguish between the results of the installed systems and the influence of other factors that interfere with the client organization's performance). Given these problems in assessing the exact value of transactions, the success of an IT consulting firm could possibly result, to a large extent, from its commercial and marketing strategies, rather then from its actual abilities in technological up-grading and problem-solving, when compared with its direct competitors.

In this respect, it should be said that NOVABASE took advantage of competencies it masters outside the strictly technological domain of IT systems. It was noted before that consulting services imply the active interaction between supplier and customers, carrying over the transaction of information, knowledge, emotions and signs of civility, and expressing relations of power, dominance and reciprocal influence (Gallouj & Sundbo, 1998). That happens even before a transaction contract is established, meaning that informal networks and empathy between parties may be decisive for getting a new

contract. In this venue, NOVABASE has been able to take advantage of a 'community' (possibly related to individuals trained as electronic and computing engineers, who pursued similar academic and/or professional trajectories), which is present in key-points of this industry's business system (namely, in the information systems departments of both private and public organizations). On the other hand, NOVABASE was able to pursue an adequate management of its image as a 'network of specialized firms' in the field of IT systems, which benefited its performance.

Still, identifying NOVABASE's commercial and marketing competencies is not enough, *per se*, to exclude any possible contribution of innovation to the firms' success. Several aspects may help to understand this statement.

To start with, one should note that there is a cumulative causation between many of the issues mentioned above. Namely, the development of actual projects is an important source of experience and knowledge: by interacting with clients, consultancy firms learn about their clients' business, refine and differentiate their products and methods, get aware of new business opportunities, etc. (Den Hertog & Bilderbeek, 1998). This means that a firm's market success, whatever the factors that first determined it, lead to a learning process that favors excellence in the corresponding business field. This excellence, in turn, helps to consolidate the firm's competitive advantages and, therefore, its commercial success.

From the moment a firm is able to accumulate a significant portfolio of experiences with clients from different industries, building a specialized competence base becomes a matter of the firm's learning-related strategies. Concerning such strategies, there are several paths NOVABASE pursued which are worth mentioning.

The firm' human resource policy deserves special reference. Since the beginning, NOVABASE followed a successful strategy based on: a careful and demanding recruitment policy (rooted not only in technical qualifications, but also in social skills and compatibility with the firm's dominant values); an appealing reward system (which includes wages above average, additional incentives according to – partially, self-evaluated - performance, stock options, among others); a continuous investment in building a pleasant working environment (with regular assessments by employees, the support of an 'employee-care' department); the implementation of various channels for internal diffusion of information (newspapers run by employees, institutional *intranets*,

widespread use of *e-mail*, weekly forum for project teams' presentations); informality in personal relations and a flattened hierarchy; good prospects of upward mobility for employees with an entrepreneurial profile, and, in general terms, the active (and apparently effective) promotion of a general sense of belonging among the personnel. This policy resulted in the retention (and attraction) of qualified personnel, and favored the active investment in training (by decreasing the risk of staff turnover, which would possibly benefit NOVABASE's competitors).

The strategy for organizational development must also be highlighted. As mentioned before, since 1997 NOVABASE pursued an organizational strategy based on the development of a network of autonomous firms, through the spin-off of every business unit that showed signs of outstanding competencies in a particular field (both at the technical and the leadership levels), as well as good growth prospects. This resulted in an increased performance at all levels, thanks to the distribution of decision power and responsibility throughout the organization, and also as a consequence of an incentive system that rewards individuals in accordance to their (autonomous) firms' performance. Furthermore, this organizational development strategy contributed to the success in retaining highly qualified personnel (who had, by this means, the opportunity to develop their own entrepreneurial project, with the help – and within the borders - of NOVABASE group). All these aspects promoted individual initiative, a crucial element for creativity and ability to adapt to clients' needs and demands.

On the other hand, NOVABASE's acquisitions policy, as well as its role as a corporate venture, was systematically oriented towards complementing the existing competence base of the group and creating synergies between proximate technological domains.

In sum, even if NOVABASE does not show an outstanding performance in what was called before formalization and anticipatory types of innovation, its top management strategies towards human resource and organizational development strategies clearly favored innovative aspects which are valued by the market (namely, *ad hoc* type of innovations in all dimensions – service concepts, interfaces with clients, delivery system and technological options).

6. CONCLUSIONS

In the sections 2 and 3, the relevance of consulting firms for the overall economies' innovative dynamism was highlighted. This relevance is related to the role of such firms as 'carriers' of new technologies, organizational and business practices. Thus, consulting firms play a key-role in the absorption and diffusion of knowledge externalities generated in national and international innovation systems (Marklund, 2000).

From this perspective, NOVABASE's performance seems positive. The industry to which it belongs, is characterized by rapid technological and product cycles, demanding clients (namely in industries such as finance, telecommunications, among others), and fierce competition from both national and multinational firms. In that context, in the period of a decade, NOVABASE was able to reach a top position and to establish its trademark in the Portuguese market. This could hardly be done without NOVABASE having a strong learning capacity, allowing the firm to follow both the technological trends and the evolution of its clients' needs.

Although NOVABASE's record in the development of more radical kinds of innovations is not overwhelming, it shows a significant capacity to rapidly adapt to clients needs and changing requirements related to IT systems. Moreover, the firm has been playing an important role as what can be called 'pioneering diffusion' of IT solutions in the national market. In fact, very often the service concept behind the solutions provided by consultancy firms in a specific market, are not developed by those firms. They first appear in technologically more advanced countries, and eventually diffuse to other markets more or less freely (given the problems of most intellectual property rights regimes to protect 'service concepts'). Still, the introduction of a specific solution in a new market involves the need for adaptation to specific client needs and competencies, carrying over significant creativity efforts from the part of the 'diffusing' firm – and, accordingly, giving this pioneering firm a competitive advantage towards its direct competitors. In this sense, it is reasonable to consider such market moves as containing an important innovative dimension from the point of view of the market under analysis.

One could question, nevertheless, to what extent can a firm remain successful in IT consultancy without strengthening its capacity to develop what was called formalization and anticipatory types of innovations. Specially, in the context of its internationalization to Brazil, Spain, and other countries – generally speaking, markets in which NOVABASE

has to build its competitive position from the start, based either on reputation or on costs to clients – the firm may face the need to: (i) take advantage of economies of scale and scope associated with the adoption of knowledge management models - which demands intensive formalization of *ad hoc* practices (see Hansen et al., 1999); and (ii) to build an image of innovativeness through the development of original solutions to existing, and not yet clearly understood, problems (which implies the need of more formalized organizational structures in fields such as business intelligence, strategic marketing and technological scanning).

Finally, one could also question the sustainability of what have been until now NOVABASE's most relevant competitive factors – namely, its human resource and organizational development strategies. In both cases, NOVABASE's options were supported by the strong growth in the IT consulting industry during the 1990s. This growth was spurred by the recurrent surge of new technologies that neatly fitted client organizations' needs, which, together with the strong growth of aggregate demand in Portugal (specially, the in second half of the decade), resulted in high investment rates in IT systems. The resulting rapid growth in NOVABASE's revenues favored an organic growth based on spin-off firms (which would not be adequate with low levels of turn-over in the different segments of NOVABASE's offer). In this sense, economic stagnation (or even slowdown) may reduce the range of opportunities for this kind of organizational development model.

In the same context, the slowing down of the industry's growth rates can have important effects in NOVABASE's human resource policy. A significant drop in revenues could exert tremendous pressure on the firm's (generous) rewarding system, or create the need for staff dismissing. Moreover, the decreasing price of NOVABASE's shares in the stock market, even if reasonably less striking then other similar 'new economy' equities, has already made stock options unappealing to employees. All these aspects could have devastating effects in a firm that was able to present itself until now as 'the best place to be' for many Portuguese IT services workers. Given the sensitiveness of IT consulting firms' performance to the capacity to retain and motivate highly qualified human resources, NOVABASE will have to go through its possible first labor crisis – probably, even more then to improve its innovative record – in order to prove the sustainability of its past success.

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