# Organizational Change in Aranzadi

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In this paper we analyze the process of technical and organizational innovation through which Aranzadi (the leading firm in the Spanish legal information sector) adapted to the changes in its environment in the late 1980s and early 1990s. After a theoretical introduction, we introduce the firm analyzed (Aranzadi) and study some of the factors that provoked the beginning of the innovation process in the late 1980s. Then, we analyze the main phases of the process of introduction of IT and organizational change in Aranzadi. Afterwards attention is focused on product and process innovation. Then, we consider the organizational change and the downsizing effect in the organizational structure. Finally, we draw the main conclusions of this case study.

## INTRODUCTION

In the current, changing context of accelerating globalization and technical change process, product and organizational innovation are very much related to the introduction of information technologies (IT). Both the structure of organizations and the relationships between organizations are evolving rapidly in this socio-technical process of change. The paradigm of individual productivity, based on the theory of postindustrial organization, does not offer a satisfactory framework for interpreting these processes. Attention is increasingly being devoted to the global optimization of the organization throughout IT-based coordination channels.

In this paper we analyze the effects of the introduction of IT in the main firm of the legal information sector in Spain. We have studied two types of issues. First of all, we have considered the effects of the introduction of IT upon both product and process innovation. Attention has been devoted to technical, organizational and strategic aspects of this process of change. As Rockart and Scott Morton (1984) point out, the impact of IT is not only conditioned by the technical and socioeconomic external environment, but also by the personality of the individual company and its own resources. This personality is defined by several characteristics such as the structure and organizational culture, the

chosen strategy, the processes and methods of transaction, the human potential and the roles that they perform, as well as the actual possession of the technology (Straub and Wetherbe, 1989; Tam, 1992).

The concept of level of IT introduction (or maturity) has been developed in a number of contributions which are based on the premise that the process of introduction, adaptation and use of IT in organizations is an evolutionary one involving a good deal of organizational learning. Nolan (1979; Gibson and Nolan, 1974) looks at three key aspects for understanding and appraising the introduction and development of IT in organizations: the growth of applications, the increase in specialized personnel and the management skills employed in each of the stages. Zuboff (1988) made an interesting contribution and concluded that there are three levels of IT introduction: automatization (and/or mechanization), "informatization" (extending information throughout the company) and organizational transformation. A review of the most relevant models can be found in Singh (1993). Gorry and Scott Morton (1989) focus on the supporting role of IT for decision making at executive level and classify IT systems and IT introduction levels according to the management tasks which they support: operational control, control of management and strategic planning, and decision making process. Benjamin and Blunt (1992) divide the types of potential opportunities between those that focus on the competitive marketplace and those that focus on internal operations. IT-based information systems (IS) can be used to improve traditional ways of doing business or to bring about significant structural changes in them.

In this paper we have adopted Galliers' (1992; 1993; 1994) model. According to this model there are three main stages of incorporation of IT: systems to automate processes (DP), systems to aid decision making (MIS) and strategic systems (SIS). The first stage consists of mechanizing data-related tasks which were previously carried out manually. The main objective is to increase efficiency by automating transaction processes. Decision support systems seek to meet all the information needs of the decision maker, extending information throughout the organization and achieving greater efficiency. Finally strategic systems are either those which are in line with the general strategy of the company or those whose objectives come to represent the strategic objectives of the organization. Their role is to improve the competitive edge of the company and provide it with specific advantages. This model has been adopted by other authors such as Wiseman (1985; 1992) or Ward, Griffiths, and Whitmore (1993). In our view, it is useful because of its simplicity and robustness.

In this paper we also make two further theoretical points about the organizational and work effects of IT. The first one refers to downsizing, and the second one is about the effects of IT upon work, especially professional work, at Aranzadi.

The popularity of downsizing as a management technique for restructuring organizations is still quite high. Downsizing is typically portrayed as a means to lower overheads, simplify bureaucracy, speed up deci-

sion making, facilitate communication, enhance entrepreneurship and increase productivity (Neil, Bartelsman, and Haltiwanger 1996; Palmer, Kabanoff and Dunford, 1997). In the face of continued prevalence of downsizing, and of identification of problems associated with its usage, two different responses have emerged within the management literature.

The first response involves the assumption that the negative effects of downsizing can be sustancially reduced if the restructuring process is appropriately managed (Cameron, Freeman, and Mishra, 1991). Some negative effects of downsizing have been associated mainly with job losses for production employees of closed facilities, but the purpose of downsizing programs is often to improve administrative processes by centralizing production and realigning managerial responsibilities (Dewitt, 1998).

The second response focuses on the relationship between downsizing and strategy. Hamel and Prahalad (1994) argue that cost cutting through organizational downsizing is at best a partial solution to many organizational problems.

The downsizing literature also indicates that three kinds of changes can be undertaken in order to accomplish the organization's mission: changes in work, in technology or in structure. The potential opportunities associated with downsizing are of three kinds: social, human and financial. Each company has to find its own way for adapting its structure in order to take advantage of these opportunities (Susskind, Miller and Johnson, 1998).

The effects of downsizing upon work are different across employee levels. Middle managers are particularly affected by downsizing and IT introduction. There are several reasons for explaining why IT might increase or decrease the number of middle managers, and when and how such changes might occur. Sorting out these explanations is difficult because empirical research has remained focused on IT as the single cause of organizational change (Pinsonneault and Kraemer, 1997). There are different views about the relationchip between downsizing and product innovation. For some authors there is a positive relationship between them, whereas others think that organizational structure downsizing may be in conflict with product innovation. Because the effect of downsizing upon product innovation is not clear, it is necessary to analyze in each particular case the implications for the different departments and processes. (Dougherty and Bowman, 1995). We believe that this discussion has to be validated with practical experiences and case studies.

After discussing Aranzadi's change process in the light of the downsizing literature, we will analyze the effects of IT introduction upon work. Particular attention will be devoted to the "intellectual core" of Aranzadi, that is the professionals who carry out the analysis of legal information. The effects of IT upon work organization and qualifications have been a matter of considerable debate. The labour process literature has underlined the uses of new technologies for increasing control upon workers, and for deskilling them and reducing their autonomy and responsibility levels at work. However, in our view, this emphasis

on control is often exaggerated, and it ignores the complexity of the interactions among the different actors who take part in the processes of IT development, implementation and use.

Other authors have pointed out that IT can be used for enriching the conceptual and creativity level of work, automating routine manual and non-manual tasks and increasing the number of higher abstraction level tasks (Emery, 1987; Cash, McFarlan and McKenney, 1988; Santodomingo and Carretero, 1996). The astonishing progress of IT in recent years (storage, processing, transmission, and even interpretation of information) means that organizations have an almost ilimited level of information and communications resources at their disposal, so that they can satisfy the communication needs created by the coordination of actions and decisions (Salas Fumas, 1987; Pablo López, 1989; Whitten and Bentley, 1998).

The structure of this paper is the following. First of all we introduce the firm analyzed (Aranzadi) and study some of the factors that provoked the beginning of an important innovation process in this firm in the late 1980s. Then, we analyze the main phases of the process of introduction of IT and organizational change in Aranzadi. Afterwards attention is focused on product and process innovation. The next section is about the organizational change induced by the IT introduction and the implications for the innovation product and process. We also discuss if this change can be considered such as downsizing. Finally, we draw the main conclusions of the case.

## EDITORIAL ARANZADI

Editorial Aranzadi (Elcano, Navarra, Spain) is a small-medium firm that belongs to the printing-editing sector. Its main activity is to edit periodically legal information. It also publishes specialized texts about the different realms of law. Aranzadi processes and analyzes Spanish law and jurisprudence information, and therefore its products are directed to the Spanish market. Its law and jurisprudence compendiums (volumes) have a great prestige and are very well known among Spanish lawyers. These compendiums are the standard legal information and classification tools for the lawyer profession in Spain.

Editorial Aranzadi is a medium-sized firm. Its sales in 1996 were 6,000 million pesetas (45 million US dollars). Aranzadi has got 248 employees, 100 external collaborators, and 100 distribution agents in twelve sales branches. It also has about 100 professionals participating in advisory councils. The firm is a limited company, but in practice it is owned and controlled by a family group, which directs the policy of the firm. Aranzadi was created in 1929 by Manuel de Aranzadi Irujo, a meticulous lawyer who started to build up a file of related cards with information about Spanish law and jurisprudence. These notes soon gained considerable recognition, and Manuel de Aranzadi started to edit and publish them. This is how Editorial Aranzadi started a process that has developed throughout time, in which Aranzadi has built the most important stock of legal and jurisprudence information (classifications, analyses, cross-references) in Spain.

Although Aranzadi's compendiums have already a long tradition, at the end of the 1980s the firm underwent a process of innovation and change which is analyzed in this paper. This process was catalyzed by three factors. First of all, as a result of the democratization of Spain and the emergence of a new legal framework, in the mid-1980s there was a big increase in the amount of legal information to be processed and analyzed by the firm. Secondly, at about the same time, new competitors emerged in the legal information sector. Thirdly, there was a change in the management structure of the company. Estanislao de Aranzadi, a young person who combined the traditional know-how of the firm with organizational change, became new Director of the firm. Throughout many years Editorial Aranzadi had been the only company doing classifications and analyses of legal information using a system of references and indexes. This situation changed dramatically in the 1980s with the emergence of new competitors such as Ledico and La Ley-Actualidad.

Ledico came to the market with product similar to Aranzadi's one, covering the whole field of legal and jurisprudence in Spain. This company stayed in business for a few years until it was closed because of distribution problems. Ledico could develop a product similar to Aranzadi's, but it could not match this firm's commercial distribution network. This network, which has been built up by Aranzadi throughout the years, guarantees fast and reliable distribution of Aranzadi's products throughout the country. (Aranzadi's products are distributed weekly, fortnightly, monthly, every three months, and yearly, in a complex process of updating of information.) Ledico's distribution problems generated mistrust among its clients, because they could not get reliable and fast enough information.

The founders of Ledico started a new firm, Europea del Derecho, which offers a different, non exhaustive product (a fortnightly journal). The main advantage of such a product is price. The objective of this strategy seems to be to gain some market share in order to sell it either to national companies from the sector or to international companies who want to introduce themselves into the Spanish legal information market. In any case, Europea del Derecho has not completely overcome Ledico's distribution problems. Its distribution chain is much behind Aranzadi's one, and this creates problems of speed and reliability.

The second competitor to appear was La Ley, a company of Argentinean origin which started to publish legal information in Spain in 1981. La Ley applied its Argentinean model to Spain and generated a product with a new structure. La Ley publishes a daily newsletter with law and jurisprudence information, as well as specialized articles about legal doctrine. The important difference with Aranzadi is that they do not include the full text of sentences, but an abstract of them. Another important difference is that there is only one compendium, instead of the different, thematic compendiums (volumes) of Aranzadi. Apart from this, it is important to point out that in 1987 La Ley, along with Colex Data, were the first companies to introduce a data base format for classifying legal information. This product had important advan-

tages with respect to Aranzadi's paper-made compendiums, and they gained an important market share in the sector.

The main problem of La Ley's product has been its lack of exhaustiveness. The resumes of sentences sometimes lack all the tingeing and details that are necessary for lawyers' work. In fact, since 1997, La Ley has started to publish the full texts of sentences in the same way as Aranzadi does. They have also adopted a system of classification of sentences and references. La Ley is Aranzadi's strongest competitor, both in market share and in strategy for gaining new clients and guaranteeing their fidelity.

A third competitor was Colex Data, a company that developed an on-line legal information product in the early 1990s. Colex Data had two types of problems with this product. On the one hand, the telecommunications infrastructure (the telephone line) was not good enough at that time. Connections were difficult and slow. On the other hand, it was perhaps too early to offer a high tech product to the law profession. Spanish lawyers' culture was quite separate from technology, and they (and Spanish society in general) were not used to "pay-per-use" culture. Apart from the technical problems just mentioned, the on-line product was too far from the usual paper-made volumes to which Spanish lawyers were used. Because of these difficulties, Colex Data turned to the CD format, as La Ley and Aranzadi did. Nowadays, after the rapid expansion of internet from the mid-1990s onwards, the situation is more favourable for on-line systems, but in the early 1990s these systems were abandoned in favour of the CD option.

## INFORMATION SYSTEMS IN ARANZADI

Towards the late 1970s and early 1980s editing sector firms started to use information technology (IT) for text composition and edition. It was "poor informatics" (by today's standards), basically sophisticated word processing. Legal information processing applications arrived to Spain in the early 1980s, but they were run in big macrocomputers. The systems were very expensive, and therefore there was no possibility of producing IT-based products for the wide public. Later on, between 1985 and 1987, documentary data base software was developed which could be run in smaller, micro or personal computers. It is in this moment, under the circumstances mentioned in the previous section, and with the arrival of Estanislao de Aranzadi to the Director's Office, when Editorial Aranzadi started an important process of organizational and vision change. The new Director departed from the inertia of the earlier period and started an important process of change in three aspects: automatization of the production process of the compendiums (the basic Aranzadi legal and jurisprudence information products), introduction of documentary informatics and development of the Marketing Department of the firm. The 1987-1990 period can be seen as experimental phase in the process of introduction of IT in Aranzadi. The decision of introducing legal information processing IT and developing IT-based products was not taken until 1990.

Since then IT is a central of Aranzadi's new strategy, which is aimed at being leader in both technology and market share by developing new, differentiated products. One of the main basis for this new strategy has been the creation of the IT Department, which has become a central department, alongside the Publications Department and the Marketing Department. It is important to stress that IT has not only been used for improving the production process (the physical production of the texts), but also, very importantly, for developing new products based on technological formats such as CD-ROM disks or, more recently, on-line systems. In order to analyze the process of introduction of IT in Aranzadi, it is important to consider both the type of applications introduced and the organizational changes provoked by this process. As shown in **Table 1**, the process of IT introduction and implementation has evolved from aspects related to administration towards the consideration of IT as strategic for the firm.

**Table 1.** The Process of Introduction of IT in Aranzadi

| | Organizational Approach | | | | | |
| | Management | | Operative | | Strategic | |
| | Organizational Change | Applications | Organizational Change | Applications | Organizational Change | Applications |
|---|---|---|---|---|---|---|
| Up to 1985 | Continuity | Subcontracted to an external firm the applications related to business administration | | | | |
| Period 1985/87 | | Internal applications: invoicing, accountancy, payroll | Generational change Emergence of new competitors Big increase in the amount of legal information | | | |
| Period 1987/92 | | Photocomposition and edition: the physical production | IT Department was created | Documentary informatics: database software | | |
| Period 1992//97 | | | | | IT status of first level department | CD-ROM product Aranzadi rooms |
| From 1997 | | | | | New change in the direction | On-Line system |

Up to 1985 the activity of Aranzadi can be described as a continuation of the tradition and know-how of the firm, which goes back to the 1930s. This know-how was the basis of Aranzadi's leadership of its sector up to the 1980s. In this period IT did not exist in the company. The applications related to business administration were subcontracted to an external firm, because Aranzadi did not have internal computer resources to carry out such applications.

After the arrival of the new Director to Aranzadi, these IT-based administration functions were internalized by the firm. The first computers were bought, along with standard applications for invoicing, pay roll

and accountancy. But the most important thing was the organizational and vision change. Aranzadi evolved from a crafts workshop (so to speak) into a modern, professionalized company, from following traditional methods to establishing innovation and leadership as a permanent objective, from traditional linotype printing to computerized text composition.

The 1987-1992 period can be seen as the period of change in the rhythm of introduction of IT and in Aranzadi's perception of the importance of this technology. As a first step in the decision in favour of an advanced level of IT introduction, the IT Department was created and the Head of this department was hired. Throughout a R&D project, the company introduced itself into the world of legal informatics. It was a pilot project in documentary informatics, aimed both at improving productivity with respect to the traditional production method and at considering the possibility of developing new products. These new, CD-ROM-based products did not exist in Spain at the time, but the were already being used in the United States. A data base and its software were bought to an American supplier, and they were adapted and developed for Aranzadi's needs.

Finally, the main feature of the third, 1992-1997 period is the strategic use of IT for developing new, CD-ROM based products. The importance of IT in the new strategy is also reflected in Aranzadi's decision to open the so-called "Aranzadi rooms" in fifteen Spanish universities, with a view to presenting its new products to the future, potential clients (students of law in Spain). From an organizational point of view, it is important that the IT Department acquired the status of "first-level department", linked directly to the Direction of the firm in the same way as the Department of Publications, which up until then had been the core of the organization. Moreover, since then both process and product became very much IT-based in Aranzadi, and therefore the two departments (Publications and IT) had to work together. Right now there are 21 employees in the IT Department. The functions of this department are not usual in firms of the size of Aranzadi. It covers different functions related to IT: administration applications, legal information processing, advise and attention to subscribers of the CD-ROM products, and integration of IT systems (production, administration, and legal information processing).

In 1997 there has been a new change in the Direction of Aranzadi because of the early death of Estanislao de Aranzadi. His sister, María de Aranzadi, became new Director, and the property remained within the Aranzadi family. It is expected that the company will continue along the same organizational and technological tracks and, with the popularization of internet, will start offering its products in this new format. With Aranzadi On Line, the company will maintain three versions of its products: the traditional one, the CD-ROM disks, and the "on line" version.

# PRODUCT INNOVATION

The development and commercialization of new, IT-based products is one of the most interesting aspects of the recent process of innovation undertaken by Aranzadi. As it was stated earlier, the main Aranzadi products are the Spanish law and jurisprudence books or compendiums. These books provide two types of information. On the one hand they reproduce the complete text of law or sentences as published by the original source (parliament or government in the former case, or justice court in the latter). Aranzadi introduces quotes within this text for making references to previous norms and sentences. On the other hand, Aranzadi includes its own classificatory and analytical information. This is the value that Aranzadi adds to the original legal information, and it is made up of different types of information: descriptive (date of approval, court number, judge, date of enforcement, etc.), classificatory (thematic, chronological, alphabetical and numerical indexes), and analytical (a brief analysis of the sentences and provisions, including main concepts, an abstract, and information about the relationships between the document and other documents, such as modification, abolition, etc.).

All this information is sent to the subscribers weekly, fortnightly, monthly, quarterly, and yearly. This implies a continuous and complex process of modification of classifications, indexes and analyses at Aranzadi's Department of Publications. Traditionally all this information was arranged in a manual system of files of paper cards. As new norms and sentences were produced in the courts, the Publications personnel had to add new cards to the files and modify the affected existing cards. This made the updating of the information increasingly difficult. Under the conditions of the mid-1980s (increase in the production of legal information in Spain), this manual system could not be maintained without an important increase in the amount of Publications personnel.

In 1989 Aranzadi decided to develop its CD-ROM products, which were finally launched to the market in 1992. As it was mentioned earlier, at that time there were two technological options CD-ROM and on-line. Aranzadi favoured the former, because of both the situation of the telecommunications infrastructure and the difficulties of using an on-line data base. However, the traditional, printed version was not abandoned.

Even though Aranzadi offered a free CD-ROM reading device and free aftersale technical service, the reception of the CD-ROM product was not easy in the beginning. On the one hand there was the problem of the price of initial subscription, as well as the need to have a computer, although in the long term the CD-ROM version is cheaper than the traditional one. Aranzadi had to overcome the initial resistance of many clients to new technologies. The Aranzadi volumes (or aranzadis, as they are usually called) had become a symbolic part of the environment of the law profession. It looked as if a lawyer's office without the aranzadis was not a real lawyer's office (when a lawyer's photograph

appears in the media, the Aranzadi volumes usually appear in the background, symbolizing seriousness and professionality).

The main advantages of the CD-ROM products are memory capacity and new possibilities for information links and searches. Another advantage is physical space (which is very expensive in downtown office buildings). For example, since 1979 Aranzadi's main jurisprudence collection (compendium) has published 87 volumes, which creates quite a logistic, storage problem.

Aranzadi's internal information structure (the files of manual cards mentioned earlier) has also been transformed. The company now has a computer thesaurus made up of more than 100,000 concepts linked to each other in a multilevel, branch-like structure. One important part of the process of innovation and organizational change in Aranzadi (to be analyzed in the coming section) relates to the introduction of this computer thesaurus and its linkage with the physical production of the volumes.

As it was mentioned earlier, Aranzadi's important efforts in distributing and commercializing its new products have given this firm a considerable advantage with respect to its competitors. The distribution process also reflects Aranzadi's strategy of protecting its information: the updated CD-ROM disks are given by hand to the subscribers, and the distribution personnel collects the old disks (so that illegal CD uses or resales are avoided). Clients of the Aranzadi volumes are encouraged to turn to CD-ROM products by distribution personnel who has been trained in both the technical and the legal information aspects of the new products. The sales agent shows the advantages of new product to the client, gives him/her information about financing possibilities, and helps in the start-up process. If the client buys the product, he/she receives a free training course about the new products. Finally, Aranzadi has a telephone service for technical and professional assistance. Another interesting aspect of Aranzadi's commercialization efforts is the opening of rooms for displaying its products to law students in fifteen Spanish universities.

These commercialization, distribution and client attention efforts have been rather successful. In 1996 Aranzadi had 20,000 subscriptions to CD-ROM products and 30,000 subscriptions to the traditional hard back compendiums *(El País,* 1997). It is important to note that many of these subscriptions are made by offices, firms and institutions, and that, therefore, they are used by more than one person (there are 120,000 lawyers in Spain). Aranzadi's volumes are also received in the main Spanish legal institutions (provincial courts, regional courts, Supreme Court, etc.), as well as in the governing body of the law profession (the CGPJ). Aranzadi's products are the standard information tools of the law profession in Spain.

# PROCESS INNOVATION

The introduction of IT in Editorial Aranzadi has affected both the process of elaboration of the analytical indexes and the process of physical production of the volume books.

**Figure 1** represents the main parts of the process of production of Aranzadi's volumes before and after the changes provoked by the introduction of IT. The first step consists of copying the information from the original (law or jurisprudence producing) source. Before IT was introduced, this was done by typists, mostly external to the firm although, in some cases, this was done by the internal typists from the Photocomposition Department. After the introduction of IT, computer scanning and, when this is not possible, scanning and manual typing are combined. This has allowed a reduction in the amount of typing needed, with fewer errors.
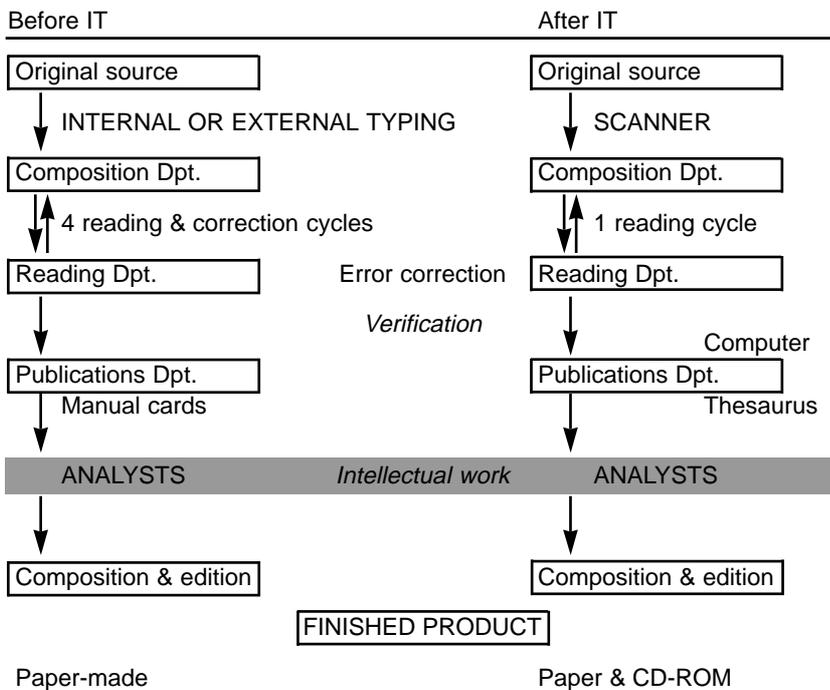
| Before IT | | After IT |
|---|---|---|
| Original source | | Original source |
| ↓ INTERNAL OR EXTERNAL TYPING | | ↓ SCANNER |
| Composition Dpt. | | Composition Dpt. |
| ↕ 4 reading & correction cycles | | ↕ 1 reading cycle |
| Reading Dpt. | Error correction | Reading Dpt. |
| | *Verification* | Computer |
| ↓ | | ↓ |
| Publications Dpt. | | Publications Dpt. |
| Manual cards | | Thesaurus |
| ↓ | | ↓ |
| ANALYSTS | *Intellectual work* | ANALYSTS |
| ↓ | | ↓ |
| Composition & edition | | Composition & edition |
| | FINISHED PRODUCT | |
| Paper-made | | Paper & CD-ROM |

**Figure 1.** Process Innovation: Aranzadi's Compendiums

In the second step the Reading Department makes quality controls to the information introduced by the typists. One person reads the texts loudly while a second one listens and compares it with the original. Before IT four reading cycles were made in order to eliminate errors and obtain maximum quality texts. After IT and its new possibilities for error correction, one reading is enough to get the same quality.

Once the texts are typed, they are sent to the Department of Editing and Publications, where the analysts do the classification and analysis

work. After the analytical indexes are finished, they are sent to the Reading Department for proof-reading and correction. Afterwards, the texts are revised once again by the analysts and the administrative and technical assistants of the Department of Publications. Then the texts are sent to the Composition Department, where the final products (leaflets and hardback volumes) are produced.

This process has been simplified with the introduction of IT. Before IT, when a typographic error was detected, all the affected indexes had to be corrected manually. That is, is one error was detected in an analysis or classification text, all the related indexes had to be modified: chronological, descriptive, classificatory, etc. After IT, the indexes are linked to each other in a branch-like structure. When a piece of information is modified, this information is automatically corrected in all the affected documents.

The introduction of IT brought about many changes in typing and index composition (and continuous re-composition process). IT also allowed the integration between these activities and the physical production of the volumes. With the legal information data base applications, indexes and classifications are generated (edited) automatically from the analysis and classification work carried out by the analysts.

So far, this section has focused on the changes provoked by IT-related product and process innovations, but it is important to note that there is also continuity in some of the central activities of Aranzadi, such as the work carried out by the analysts, which could be considered as the "intellectual core" of the company. Information storage and processing activities have been largely automatized, but the more analytical tasks (such as those carried out by the analysts) are still carried out by specialized, experienced analysts.

The analysts study the sentences and carry out the classification, analysis and abstract work. For this they use their experience, their knowledge and their systematization and analytical capacity. In so doing they generate new, highly value-added information. Legal information data bases and applications help analysts in their work and provide them with very powerful information processing tools, but they do not substitute them, neither do they diminish their qualifications or their importance in the firm.

## ORGANIZATIONAL CHANGE: DOWNSIZING?

Apart from introducing product and process innovations, Aranzadi's main transformations have been organizational. The process of change at Aranzadi has had a double, organizational as well as technical, character. Aranzadi's organizational structure has undergone important modifications in aspects such as number of employees, time frame of contracts and skill level.

One of the main effects of downsizing is job reduction in absolute terms. Nevertheless, job level is also linked to the level of activity developed or looked for by the reorganizing firm. In Aranzadi's process of

IT introduction there have been two phases regarding the evolution of employment level. In the first phase the number of workers from departments such as Editing and Production (physical production of the books) was reduced. These workers were relocated in other functions within the firm. During the second phase new workers were hired because Aranzadi's activity increased after the development of the new political and legal system in Spain in the late 1970s and 1980s. In ten years Aranzadi's turnover has doubled. The evolution of job level from 1989 to 1998 appears in **Table 2**. There has been an increase of 20 % in total job level over this period.

Nevertheless job evolution in different departments has been diverse. The Production and IT departments are the opposite extremes. Job level at the Production Department has decreased by 45%, whereas in the IT Department jobs have gone up by 820%, from 5 to 46 people. This is of course linked to the process and product innovation processes undergone by Aranzadi.

**Table 2.** Evolution of Job Level for the 1989-1998 period

| Departments | 1989 | 1998 | 1989-1998 Variation |
|---|---|---|---|
| Production | 123 | 68 | - 45% |
| Editing | 30 | 56 | + 87% |
| Commercial | 34 | 57 | + 68% |
| Administration | 32 | 38 | + 19% |
| IT | 5 | 46 | + 820% |
| Madrid Office | 8 | 13 | + 63% |
| TOTAL | 232 | 278 | + 20% |
| Permanent jobs | 195 | 241 | + 24% |
| Temporary jobs | 37 | 37 | 0% |

The number of temporary workers has remained the same over this period, whereas the number of permanent jobs has increased, reaching 87% of all the jobs in 1998. Aranzadi's recent human resource policy has been directed towards hiring people with high and specific skills levels.

We would like to turn now to a second aspect of Aranzadi's process of organizational change, namely the evolution of skill levels. **Table 3** shows the evolution of qualification levels from 1993 to 1998. New jobs have been of a high qualification (university) level. These are specialized personnel who carry out high added value tasks related to IT and information analysis. Aranzadi's human resource policy is directed to keeping these employees ( the "intellectual core" of the company) inside the firm. Low skill jobs for routine tasks such as typing or information correction have been reduced.

**Table 3.** Skill Levels of Aranzadi's Workers: 1993-1998 period

| Qualification | 1993 | % | 1998 | % | Variation |
|---|---|---|---|---|---|
| University | 61 | 25% | 112 | 40% | +84% |
| Tech. School 2 | 50 | 21% | 52 | 19% | +4% |
| Tech. School 1 or Secondary School | 64 | 26% | 59 | 21% | -8% |
| Unskilled | 68 | 28% | 55 | 20% | -19% |
| TOTAL | 243 | 100% | 278 | 100% | +14% |

Aranzadi has organized a voluntary training scheme outside working hours. The costs of this scheme is fully paid by the firm. In 1997, 152 people attended courses within this plan.

There is also a second training scheme directed towards new skills which are directly related to work tasks in Aranzadi. In this case the courses are also paid by the firm but people attend them within working hours. This scheme has been used for training in information systems, quality management and risk prevention.

In sum, IT introduction in Aranzadi has had very important organizational effects in Aranzadi, even though the mission of the firm remains the same since its foundation in 1929. Changes at managing director and board of director levels and the emergence of new competitors triggered a process of both technical (product and process innovation) and organizational change in the firm. In a first moment there was some downsizing and restructuring of the firm at intermediate (e.g., information correction tasks) and production levels. However these workers were are not laid off. From there on, as the firm's economic activity increased, the displaced workers were relocated and new workers were hired (there was a total job level increase of 20%). Skill levels have also changed. Aranzadi is now a highly qualified and professionalized firm with important levels of inside-the-firm training.

Introduction of IT in Aranzadi has had important organizational effects which have been compensated to a considerable extent by an increase in the economic activity of the firm. Aranzadi's professionalized board of directors has timely guided an innovation process based on IT introduction and organizational change. The firm's long-term strategy maintains the initial vision which guided the creation of the firm. In order to maintain its market position, Aranzadi will have to undertake further changes such as the introduction of on-line products and services. Aranzadi seems to be prepared for this and other organizational changes which may be necessary in the future. If the human resource policy of the firm is maintained, it is highly unlikely that those changes will be related to orthodox downsizing.

# CONCLUSION

The introduction of IT in Editorial Aranzadi has brought about an important transformation of this company from an organizational as well as technical viewpoint. IT was first used for automating routine, administrative tasks. Then it was increasingly related to organizational change and it became a core element of Aranzadi's strategy and a source of competitive advantage.

Two aspects of this process of change deserve special attention. On the one hand IT has been used for the development of new products. Although subscription to these products entails some important costs for lawyers' offices, Aranzadi's CD-ROM compendiums have important advantages over its traditional volumes (information storage and processing capabilities, information searching capabilities, etc.).

On the other hand, IT has provoked important changes in the production process. The "intellectual" (legal information storage, processing and analysis) and "physical" (composition and production of compendium books) functions of the firm have been linked. Aranzadi's central information Stock (or thesaurus) is now a data base made up of interconnected computer nodes representing law and jurisprudence information. The introduction of this IT-based thesaurus has made possible to link the analysis work, the index generation work, and the composition and physical production work. In this paper we have analyzed the change from the traditional, manual system of cards and files for storing and classifying information to this new, computer-based system.

The changes in products and processes contrast with the continuities in Aranzadi's "core of intellectual activity" (so to speak): the classification and analysis work carried out by the firm's experts, which is the main source of added value for the firm. Aranzadi's information analysis experts now have much more potent tools for information storage and processing, but their classification and analysis tasks remain very much the same. The effects of IT introduction for these professionals have not been those announced by the labour process literature. Legal information storage and processing systems have automated the routine work carried out by administrative and technical assistants, but analysis tasks (and the most difficult of these, jurisprudence analysis) have not been automated. There are important difficulties in reducing the complexity of the tasks of classification and analysis of jurisprudence information to parameters which can be formalized in Artificial Intelligence (IA) systems. Jurisprudence is constantly evolving as a response to social change and to the emergence of new types of legal conflicts.

We can say that, in Aranzadi's case, there has not been downsizing in the narrow sense of the term. A deep reorganization process has been carried out, but total number of workforce has not been reduced and there have not been any dismissals. The number of production activities workers has been reducedm but this has been compensated by increasing levels of analysis and information processing departments personnel (the "intellectual core" of the firm).

In sum, in the late 1980s and early 1990s Aranzadi underwent an important process of technical and organizational innovation which has allowed this firm to continue to fulfill its basic mission in an environment that is very different (in terms of volume of information to be processed, market and technology) from the one in which the firm started its activity in 1929. The continuities in the work methodology of Aranzadi's small analyst core (and the network of external collaborators) contrast with the technical and organizational transformation of the company. These changes have been necessary so that Aranzadi can go on fulfilling its mission in a radically different environment.

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