

Competing Through EDI at Brun Passot: Achievements in France and Ambitions for the Single European Market¹

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Abstract

To differentiate its customer service, Brun Passot, a small French company specializing in the distribution of office supplies, developed a set of telepurchasing applications. In 1982, it launched Bureautel, a videotex-based service that allows customers to electronically place their orders. In 1986, at the request of its large customers, it developed a PC-based service, then in 1989 an advanced electronic data interchange (EDI) application linking customers to its supply information system. These services allow data on product availability, price lists, orders, acknowledgement receipts, delivery notices, invoices, and related bank payments to be electronically transmitted. Using ISDN, they also make it possible to look up the photos of the 12,000 products that Brun Passot markets. This article illustrates how a small-sized company has used IT to improve the quality of its customer ser-

vice, shorten lead time and reduce management costs, as well as create new business opportunities in France. It also raises some issues related to the adoption and diffusion of EDI and presents Brun Passot's ambitions to use this technology as an essential enabler to expand its geographical coverage. The 1993 fall of mobility barriers within the European Community, leading to the formation of the single European market, presented for Brun Passot a unique business opportunity to further leverage its IT infrastructure and gain new markets.

Keywords: Strategic information systems; IT-enabled competitive advantage, electronic data interchange, single European market

ISRL Categories: CP110, GA0101, GA0102, GC01, GC06, HA07

Background

The office supplies industry in France is highly fragmented; the principal players are the manufacturers, the distributors, and the final customers. Many highly specialized manufacturers are often dedicated to a single product line. The distributors are of different sizes and degrees of specialization. The total number of distributors in France in 1992 was about 5,000; this figure sharply contrasts with the one in Great Britain, where approximately 100 distributors shared a slightly larger market.

Approximately 25 percent of the French office supplies distribution market is held by the four main companies: Guilbert, Gaspard, Saci, and Brun Passot; the remaining 75 percent of this FF11 billion² market is divided among numerous small players. The size of the European Community (EC) office supplies market is FF175 billion. The two main players are Germany and Great Britain, who have a share of FF35 billion and FF15 billion respectively. The 1993 fall of mobility barriers within the EC nations leading to the formation of the single European market has allowed some large American, German, and British firms to enter the French market. The high volume and global operating capabilities of these firms are likely to have a strong effect on the French industry.

Brun Passot

Brun Passot is a family business founded in 1949 near Lyon, France. The company initially specialized exclusively in paper processing. In 1970, it started diversifying into the distribution of office supplies and products related to computer and office equipment. In 1992, Brun Passot employed 160 people including a salesforce of 22 people. It had recently significantly enlarged its direct customer base to include major industrial and service organizations (e.g., Renault, Alcatel, Dassault, P echiney, Cr edit Lyonnais, Shell, Philips, and DEC France) as well as several government agencies (such as Electricit e de France, France T el ecom, the French Armed Forces, and the national railroad company SNCF). Through its network of 11 branches and one warehouse center, Brun Passot offered 12,000 products to 6,000 customers at 15,000 delivery locations throughout France. From a mere FF15 million in 1970, the company's turnover reached FF254 million in 1991.

The growth of Brun Passot over the years, coupled with higher diversification and more products and partners (customers and wholesalers), had increased the business complexity for the company. In 1978, the company networked the corporate headquarters with the central warehouse. Aware of the potential of this IT platform and at the stimulus of several large customers, Brun Passot established an electronic link between their purchasing departments and its supply information system. Several routine tasks, including order generation, inventory inquiries, and statistics, could now be handled in a more efficient, paper-free manner resulting in a number of benefits for both parties.

The Business Strategy

According to a national study,³ an employee of the service or manufacturing sector uses on average FF2,200 of stationery (i.e., writing materials) per year; this figure excludes the purchase of paper, preprinted forms, and computer-related equipment. Purchasing this stationery requires, on average, 16 purchase orders, each containing 70 product lines. Brun Passot has estimated the costs for companies, to process these orders and manage the subsequent inven-

tory, to range from 38 to 145 percent of the purchase value⁴ (see Table 1).

Table 1. Costs of Office Supplies for Customers

(for a purchase of FF2,200/office worker/year)

Activity	Percent %
Purchasing	61
Storing	16
Administration	14
Management	6
Negotiation	3

Source: Brun Passot

In 1980, aiming at enhancing its competitiveness, Brun Passot's top management sought to distinguish the company from its rivals by offering a distinctive customer service based on the concept of telepurchasing.⁵ The vision came from Jean Philippe Passot, deputy general manager and then head of IT, who thought that the company should offer a service and not just a product. Because of telepurchasing's potential for reducing the costs of acquiring, storing, and managing office products, Brun Passot saw it as a means to win the loyalty of existing customers (Christopher, 1993). Other customers, it was hoped, could be stolen away from its rivals. Such benefits are especially important in the highly competitive office supplies market where profit margins are small (approximately 3-4 percent) and price sensitivity very high.

Telepurchasing Applications

From 1983 through 1990, Brun Passot developed three telepurchasing applications: Bureautel, SICLAD, and Advanced EDI.

Bureautel

In 1983, Brun Passot adopted Minitel, the publicly available videotex platform, to develop its first telepurchasing application. There were three reasons that motivated management: First,

France Télécom provided the terminal free of charge; second, Minitel was increasingly used throughout France;⁶ and third, the Minitel terminal allowed for connection to a computer network. Bureautel was the first Minitel-based telepurchasing service offered in France.

Bureautel was developed in one year by four members of Brun Passot's nine-person information technology group. The system allowed the sending of electronic orders in a validated and secure way (each customer has an identification number and a password). The system also let Brun Passot managers make routine inquiries of Brun Passot's inventory and provided them with reports on the status of purchases to date as well as cash flow.

An enhanced version of Bureautel, developed in 1989, served as a management reinforcement tool; it supported customers in following up on their supplies. Based on the LECAM⁷ technology, it gave users direct access to Brun Passot's order entry application. Brun Passot issued its own credit card that had a predefined maximum purchase limit per customer department for a certain time period. As orders were placed, the value of the items was subtracted from the department budget. Using reports provided by Bureautel, users/departments were able to trace their expenses. This card was not used for actual payment; instead, orders resulted in the issuance of a regular invoice. The benefits of the system included: (1) it substituted for a purchase order and hence, reduced paper work, (2) users no longer needed to request management approval or go through a centralized purchasing department to order office supplies, and (3) users were able to carefully monitor the use of their office supplies budget since they could not exceed it without getting their supervisor's approval.

SICLAD

Customers with no computer equipment were attracted to Bureautel, but others found it less appealing due to the limited functionality offered. Some larger customers pushed Brun Passot into developing a PC-based telepurchasing system. This system, called SICLAD (Système Informatisé de Commande Locale pour Approvisionnement Décentralisé), was developed in-house in 1985 by a five-member team; it had

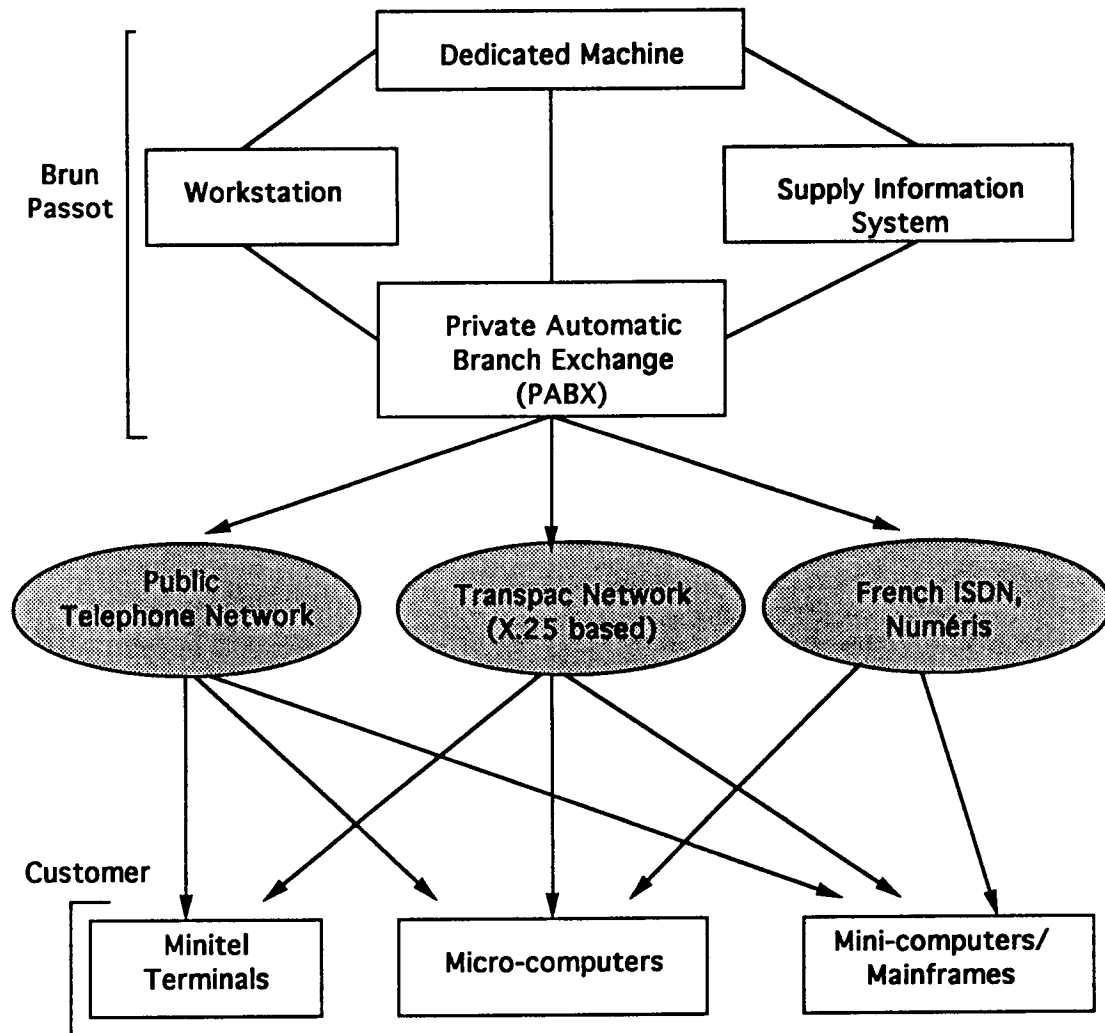
several advantages over Bureautel: (1) it was cheaper for customers since, with the PC, data input is free;⁸ (2) compared to Minitel, the PC is faster and more user-friendly; and (3) it offers memory storage and networking capabilities (allowing file management operations and LAN configuration set up).

The LAN version of SICLAD supported up to 32 customer PCs, with anyone permitted to access the external network. This provided centralized control over placing orders, while still giving customers the convenience of generating orders from multiple offices. SICLAD allowed customers three ways to access the Brun Passot server by way of the customer's private automatic branch exchange: first, over the telephone network through the use of a modem; second, over the TRANSPAC⁹ network; and third, over the French ISDN network Numéris (see Figure 1). The choice of the path depended mainly on the volume of transactions that a customer had with Brun Passot. Customers could use SICLAD to send purchase orders electronically and to receive receipt acknowledgements. Invoices and catalogues were not available over the network.

Three technical limitations restricted electronic distribution of the catalogue and invoices. First, the typical PC did not have sufficient memory space to store a huge volume of data.¹⁰ Second, more sophisticated software would have been required. Third, incompatibility of data formats would have required customers to rekey invoice data.

EDI system

An enhanced version of SICLAD, developed in 1989, used Numéris, the French ISDN service. It provided color photos of each product using an image database. Customers accessed this database either by locally looking up the images of the 200 products¹¹ stored on the hard disk of their PC, or by remotely connecting to Brun Passot's workstation. In the latter case, the entire image database for 12,000 products was accessible. In spite of the added functionality, ease-of-use, and convenience that the various versions of SICLAD brought over Bureautel, some of Brun Passot's large customers still did not adopt it because they wanted multi-supplier telepurchasing services rather than proprietary, bilateral services such as Bureautel and SICLAD.



Source: Adapted from *Laidet*, 1990.

Figure 1. Access Methods to Brun Passot's Telepurchasing Applications

In order to further enhance its telepurchasing service, Brun Passot developed, in late 1989, an advanced EDI application through which it electronically sent product files, delivery status reports, purchase quotes, shipping notices, invoices, payments and related bank details, as well as e-mail messages. However, a hard copy of each invoice was generated for archival purposes since the French judicial system did not yet recognize electronic invoices.

The French subsidiary of Digital Equipment Corporation (DEC) was the first Brun Passot

customer to use the advanced EDI application.¹² Shortly after this pioneering implementation, other large customers connected to the system including Electricité de France, Elf Aquitaine, Péchiney, Matra, and Spie Batignolles.

The EDI linkage between Brun Passot and its customers was made via a value-added network (VAN), France Télécom's ATLAS 400. VANs are best suited for a company that deals electronically with hundreds of business partners since they provide good security measures.¹³

Establishing an EDI link between a customer purchasing department and Brun Passot's order entry system required commitment and trust from both sides as well as a good understanding of the customer operating procedures. As Brun Passot's deputy managing director put it: "In a business as banal as that of office supplies, you tend to get a lot of what I call flirtation between big companies and their suppliers. With EDI, you need the commitment of true love. Before we set up an EDI link with one of our customers, we study their logistics for as long as a year. This requires trust and openness from both parties. In the end, we know their supply patterns better than they do. In order for the system to really take root in major companies, we need to set up a real partnership with the Computing Department as well as the Purchasing and Finance Divisions of our customers. This means that the system is integrated into the client company so it can evolve while taking into account the future needs of the users."¹⁴

Organizational changes induced by EDI at Brun Passot

Three actions by Brun Passot top management helped diffuse customers' adoption of the telepurchasing applications while building internal commitment. These actions, which also led to some organizational changes inside the company, were:

- **Creating a new Marketing unit (1989)** exclusively in charge of promoting the diffusion of SICLAD and, in particular, its Numéris version. This unit, which had 3 full-time members, had been participating in a variety of fairs and industry shows throughout France, hence, helping the company salesforce.
- **Establishing a new financial bonus (1990)** to reward each salesperson who would convince a customer to adopt the basic EDI system (SICLAD) or the advanced one. The bonus was paid in addition to the already existing financial reward for winning new customers.
- **Offering SICLAD free of charge.** Brun Passot top management believed that their business was to sell office supplies, not computer software, and that by giving the software

and its related services (training, update, maintenance) for free, the company could attract new customers.

Over a two-year period (from September 1990 through September 1992), the number of corporate SICLAD users drastically increased, from 15 to almost 100. Moreover, all the new large customers¹⁵ have adopted either SICLAD (80 implementations) or the advanced EDI service (seven implementations). The larger number of SICLAD implementations was due to one of three factors: First, companies who adopted SICLAD did not have the required computer equipment for the advanced EDI service. Second, they were in the process of restructuring their information systems and did not want to add a new major operation. Or third, they found the investment too heavy.

The advanced EDI service had also affected the organizational relationship of Brun Passot with some of its customers, especially the large ones. The company became in 1990 the single supplier of office products to DEC France, and shortly after that, a similar change in the relationship¹⁶ happened with other large customers (such as Péchiney in Grenoble and Matra Espace in Toulouse). Customer benefits from having Brun Passot as a single supplier result from eliminating warehousing and inventory management, getting lower prices due to larger order quantities, and reducing negotiation time and effort since they have only one supplier to deal with.

Investment in telepurchasing and resulting benefits for Brun Passot

For Brun Passot, the initial investment made for Bureautel and SICLAD amounted to a total of FF250,000 (FF150,000 for acquiring additional hardware to the existing large computers¹⁷ and FF100,000 for developing the software). Subsequent investment to purchase microcomputers as well as to use EDIFACT and Numéris amounted to FF300,000. Maintenance costs reach approximately FF100,000 per year, an expense covered by the FF280 monthly subscription fee to the system that only Bureautel users pay.

The return on this investment became visible rapidly. In 1984, Bureautel contributed 2 percent

(or FF4.5 million) to total turnover, with 18,000 electronic orders processed, a figure that reached 22 percent (or FF27 million) in 1988, corresponding to a volume of 180,000 electronic orders. In 1992, the contribution of all three telepurchasing applications reached 40 percent of total turnover¹⁸ or a value of FF120 million, with Bureautel contributing FF41 million, SICLAD FF28 million, and the advanced EDI application FF44 million. Brun Passot's management thought that, although the contribution of Bureautel reached a ceiling, SICLAD and especially the advanced EDI application would continue to increase. For the 1993-1996 period, they expect a gradual slight decrease of the contribution of Bureautel because some of its users will switch from the Minitel-based application to the PC-based SICLAD, and also some SICLAD users will migrate to the advanced EDI application. Moreover the company management expects the number of SICLAD and EDI users to almost double by 1996.

The introduction of the telepurchasing applications at Brun Passot simplified the supply procedure and the related administrative work. This freed up 25 people to do more sales and customer visits. Telepurchasing also enabled the company to predict more accurately customer needs and, consequently, to have a better idea of what goods to order from the wholesalers and when it should be done. This improvement led to faster stock rotations (from nine times in 1977 to 11 times in 1983 to 16 times in 1989) and to reduced inventory management costs (7 percent).

Qualitative benefits were also achieved. The telepurchasing applications helped Brun Passot improve its personnel productivity; for example, salespeople no longer make field visits to take orders but to promote products and sell more. Telepurchasing also enabled the company to differentiate itself from its competition (Porter and Millar, 1985) by first establishing Brun Passot as an innovative user of new technologies and then by sustaining this advantage over time through the continuous enhancement of these applications (Feeny and Ives, 1990). The telepurchasing service has also helped Brun Passot attract new customers, as well as create and maintain client loyalty.

Customers' use of telepurchasing and resulting benefits

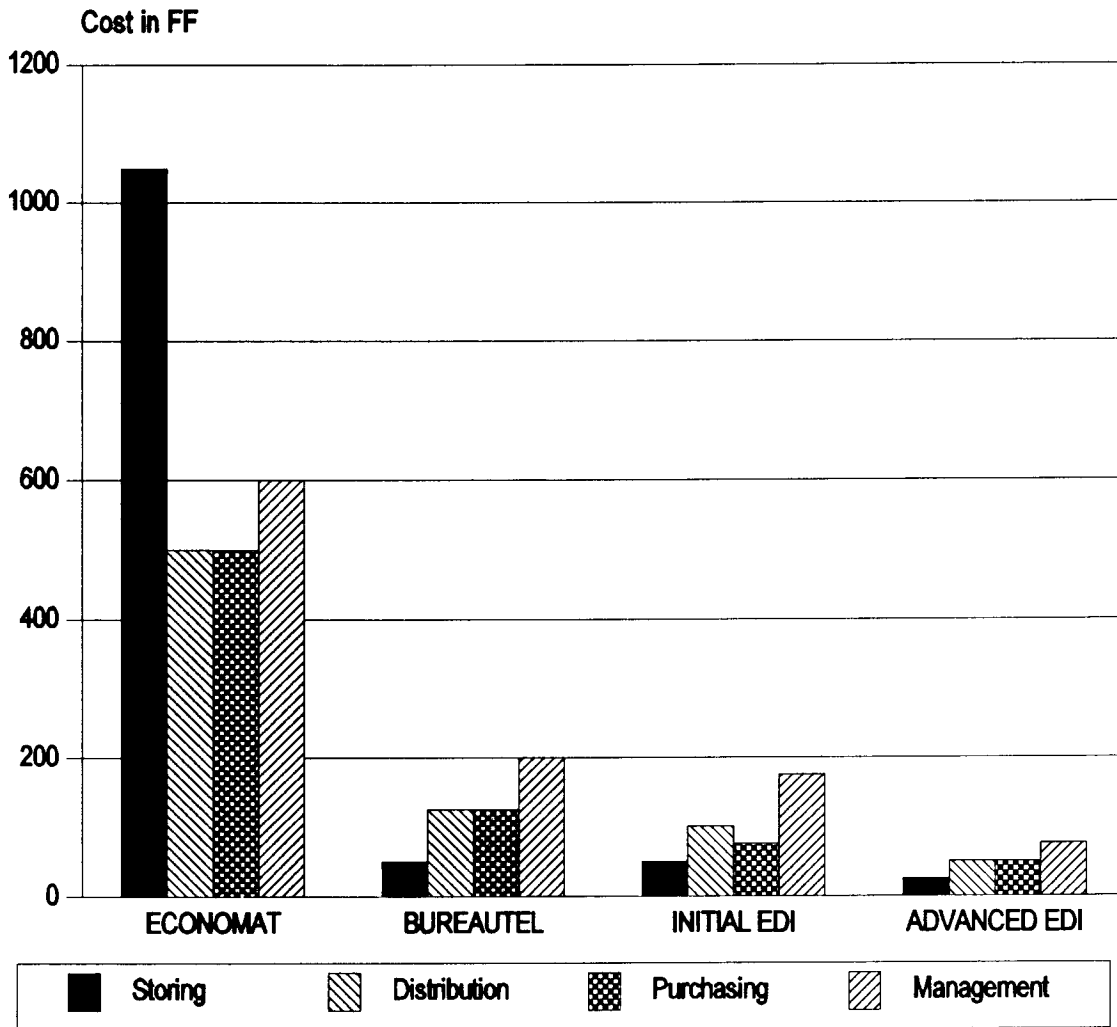
Today, Brun Passot's telepurchasing applications are used by 1,120 customers who connect to the system on an average of 400 times every day (approximately 10,000 times each month) for a duration of about seven minutes per connection. The applications are mainly used for placing orders (78 percent of the traffic), but also for generating control reports (8 percent), sending e-mail messages (8 percent), and getting cash flow statements (6 percent).

Brun Passot claims that, based on a survey of 50 of its customers,¹⁹ its telepurchasing services can save companies 20 to 60 percent of their present office supplies budget.²⁰ Compared to the traditional paper-based procedure, these services decrease the lead time by two-four days and reduce the rate of errors (due to rekeying the information contained in the paper documents) by a factor of five.²¹

Figure 2 shows costs incurred by Brun Passot customers through the four different ways of acquiring office supplies: Economat (which refers to the traditional paper-based method), Bureautel, SICLAD, and the advanced EDI application. These costs are related to a purchase value of FF2,200 and are given for each associated function, i.e., purchasing, storing, distribution, and management accounting. The costs of the EDI acquisition method are only a small fraction of the corresponding Economat costs.

Users' Perspective on SICLAD

Customers are convinced of the benefits of adopting the telepurchasing applications. For example, COGEMA (Compagnie Générale des Matières Atomiques) has for the last two years been using the simplest version of SICLAD, which operates on a stand-alone PC station. According to COGEMA's Purchasing Department manager, users in his company like the Brun Passot system because it is a good and fast service, based on a simple procedure. The investment was very minimal (mainly the cost of a modem and telephone charges), but annual savings were quite significant: 30 to 40 percent of the cost of the paper-based procedure. The savings are due to the reduction of inventory and the



Source: Brun Passot.

Figure 2. Costs of Office Supplies for Customers Based on Four Purchasing Methods (for a purchase value of FF2,200)

elimination of one staff position as well as mailing costs. Aware of the additional benefits to be gained from eliminating the paper-based documents filled by the internal users, COGEMA implemented the network version of SICLAD in late 1993.

The Toulouse division of Matra Espace, an aeronautics company employing 2,000 people, installed the network version of SICLAD. The

company, which purchases office supplies worth FF2 million from Brun Passot annually, has been using SICLAD as part of its new purchasing procedure. Throughout the week, secretaries key in their office supplies orders on the company computer network. On Friday evening, the purchasing manager reviews these orders and then transmits approved orders to the Brun Passot server. The following Tuesday, Brun Passot

delivers the ordered products to the company offices in Toulouse. Since the adoption of SICLAD, the benefits to Matra Espace have reportedly been impressive: an annual savings of FF700,000 to 800,000, which corresponds to 35-40 percent of the office supplies budget. Benefits are attributed to the reduction of personnel needed to prepare the paper-based documents and to the elimination of duplicating and mailing costs. The system has also eliminated the need to follow up, by phone or fax, on the purchased orders. Moreover, Matra management find the statistics they get from SICLAD very helpful in knowing what has been expended. In the Summer of 1993, in order to benefit from the enhanced telepurchasing capabilities, the Toulouse division of Matra Espace started using the advanced EDI application of Brun Passot, now its single supplier of office products.

The successful experience of the Toulouse division of Matra Espace with Brun Passot has attracted other divisions of the company. For example, Matra Vélizy has recently adopted SICLAD, and other companies of the Matra Group are considering switching from their current supplier (who uses the traditional, paper-based approach) to Brun Passot.

Users' Perspective on the Advanced EDI Application

The Research Center of Péchiney, a major chemicals company, employs 400 people in its Grenoble offices. A pilot installation of the Brun Passot advanced EDI application was set up over an 18-month period; then, three months later, the use of the system to the entire Center was generalized. The company employees are predominantly knowledge workers, mainly engineers and technicians, who, because of the nature of their work, are big users of office products. A lot of coordination and time was needed to acquire and manage these low-priced products. Now, with telepurchasing, users are responsible for their own purchases.

Today, purchasing of office supplies is decentralized at Péchiney with each department managing its own budget. Once a week, each department secretary looks up the Brun Passot catalogue on his or her computer screen, keys

in the products to order, and transmits them via the EDI system to Brun Passot. The latter delivers the ordered products directly to each requesting department. According to a corporate manager, the EDI investment was small, but the reduction of the overall office supplies budget was significant; for example, there are no misuses or abuses (such as "the start of schools" phenomenon) anymore. There was also significant time savings since everything is now done directly between Brun Passot and the final user without going through the Purchasing Department.

Péchiney stopped acquiring office products from the small suppliers it used to deal with and now does all its business with Brun Passot. However, the company does not think that the EDI system caused a "lock-in" effect vis-à-vis Brun Passot. It believes that it can easily switch to other players in the market such as Guilbert or Gaspard.

The issue of customer independence/lock-in has been central to the ongoing debate at Brun Passot. Some managers prefer to further "push" SICLAD because they think the proprietary nature of this software would lock in customers. Other managers favor diffusing the advanced EDI application because of the additional capabilities and enhanced customer service it provides.

DEC France, another user of EDI with Brun Passot, has an annual volume of 8,000 orders, averaging a value of FF700 per order. These orders total about 60,000 item lines generated from over 1,000 internal departments within DEC France. In the past, four paper-based documents were generated per order: the purchase order, the receipt acknowledgement, the shipping notice, and the invoice. The associated procedure was error-prone (due to rekeying the data), costly, and time consuming. Since October 1989, about 1,100 terminals located in 24 sites within DEC France have been connected through the company network to the Brun Passot server. Through these terminals, users place their office supplies orders in an autonomous, yet controlled manner, without having to go through a centralized purchasing department. According to a manager at DEC France headquarters in Evry, the achieved benefits to the company consist of a time saving of eight-12 days for processing an order, which corresponds to a gain of FF400,000 to FF700,000 per year.

Brun Passot guarantees delivery of the ordered products to the customer premises within 48 hours of receipt of the electronic purchase order. This factor allowed Spie-Batignolles, a major construction company employing 3,500 people, to go one step further than DEC France and the other customers. It decided to abolish its FF2 million stock of office supplies, which required 10 full-time employees (the freed individuals were given other job assignments). Since then, Brun Passot delivers three to four tons of products daily to Spie-Batignolles.

Facilitators and Barriers to the Use and Diffusion of the EDI Applications

The analysis of the telepurchasing applications at Brun Passot, from the idea creation stage through system implementation, reveals that several facilitators and barriers have helped or hindered the development, use, and diffusion of the company's various EDI-based services.

Facilitators

Some of the facilitators were due to a clear business strategy and sound management decisions; others were just the result of good timing and luck. These were:

- **A strong business pull** (as opposed to a technology push) at the very start and throughout the development of all the telepurchasing applications. This pull came from some large customers who recognized a need for shifting to just-in-time procurement and believed in the benefits of establishing an electronic link with Brun Passot. For the top management at Brun Passot, the strong business pull constituted the first and most important facilitator for developing the EDI-based services.
- **The availability of new technologies** (such as TRANSPAC, Numéris and ATLAS 400) developed by a public third-party (France Télécom). This factor, thought of by Brun Passot top management as the second most important facilitator, has made the development of SICLAD and the advanced EDI application easy, fast, as well as quite

inexpensive, and therefore feasible for the company.

The two factors mentioned above formed the critical pillars on which the Brun Passot telepurchasing strategy rested. In this context, the company's vision consisted of anticipating the increasing importance of these factors and taking the leadership in France (in spite of Brun Passot's small size, its financial weakness, and non-strategic business sector) to develop telepurchasing applications. Had the company failed to first recognize and then capitalize on these factors, not only would it not have been able to be a first-mover in the industry and therefore seize new business opportunities, but it would have been put in a harder survival position than the one it was in during the early 1980s. Other facilitators were:

- **The perception of telepurchasing and EDI as the core of a business strategy** and not just an IT project. This perception represented a major attitude change within the company since top management moved from considering IT as just a support function to thinking of it strategically (Cash, et al., 1992). (For a discussion and specific examples of the strategic/competitive use of IT in Europe, see Jelassi (1994) as well as Ciborra and Jelassi (1994).) Moreover, some education and training programs were set up in order to enforce this attitude change especially in the Marketing and Sales unit.
- **The long-term commitment and involvement of Brun Passot top management.** Jean-Philippe Passot, the 39-year-old deputy general manager with a background in law and management, has been a fervent champion of the telepurchasing projects since he joined the company in 1980. For example, he was the key sponsor of these projects at Executive Committee meetings, defending them and winning approval for their development and funding.²²
- **A "motivated" organizational environment** for developing the EDI applications, due to the already available Bureautel service. Moreover, SICLAD helped launch the advanced EDI application. This motivation also stemmed from the strong message sent throughout the company by the top executives who were able to

convince Brun Passot employees of the crucial importance of telepurchasing.

- **The adoption by Brun Passot of an evolutionary approach** to allow for future enhancement and growth of its inter-organizational relationship (see Figure 3). This approach was coupled, on one hand, with strategic technology alliances with France Télécom (for adopting the Minitel platform to develop Bureautel and for using Numéris as the basis for the ISDN-based SICLAD) as well as DEC (for setting up the Advanced EDI service); and, on the other hand, with a continuous enhancement of the skills of the IT Group to keep it abreast of the latest advances in the field. The IT Group was divided into three teams, each having a specific field of expertise (i.e., videotex, PC, or EDI systems) and focusing on one telepurchasing application (Bureautel, SICLAD, or Advanced EDI respectively).
- **The close interaction with customers** to define the "what, where, when and how" of the product supply chain so that both customer and supplier can benefit from the added value; also customers' reactions to a promising tool that simplifies procedures and reduces time and cost were important in developing the systems and their enhancements.
- **Competitors' late development of telepurchasing.** The other major players in the French office supplies market already have their own Bureautel-like system but not yet an EDI-based service. Guilbert, the market leader, has just developed (with the help of a software development company) GUILTEX400, a SICLAD-like system; however, it has not really attracted many customers so far because of its high cost and the 486-chip PC required.

Barriers

There were only a few barriers to the use and diffusion of Brun Passot's EDI applications. Although important, these barriers did not critically affect the company's successful implementation of its telepurchasing strategy. They were:

- **The rapid success of Bureautel** (i.e., its wide adoption by customers and its rapid contribution to Brun Passot total turnover) as well as

the decision to keep offering it (even after introducing SICLAD and Advanced EDI) constituted a barrier for the diffusion of the EDI applications. The rationale for this decision was keeping customers, who had a small transactions volume and who were especially sensitive to costs, for whom Bureautel was best suited. Although Brun Passot did not discontinue its Bureautel service, it has heavily promoted the SICLAD and Advanced EDI applications by demonstrating to customers their enhanced capabilities (as compared to those of Bureautel) and explaining the differential benefits they can get from them.

- **The relatively weak bargaining power of Brun Passot vis-à-vis its customers** because of the non-strategic nature of the products it markets. This barrier was especially strong in the early 1980s; however, the company was able to alleviate it starting in 1989 when it became the exclusive provider of office supplies to several large firms.
- **The relatively heavy investment needed on the customer side** to use the Advanced EDI application (Scala and McGrath, 1993). This investment has been decreasing mainly due to the ever-improving IT cost-performance ratio, hence reducing the importance of this barrier.

Strategic Business Initiatives

Brun Passot has already started leveraging its EDI infrastructure through several ongoing projects. As reflected in an internal document, the company intends to use EDI as an essential enabler for further growth. "At Brun Passot, EDI spells the future. It is 'paperless trading' relying on 'peopleless administration' . . . The beauty of these [EDI] applications is that they need not be confined to the procurement of office supplies, but can be developed to encompass all purchasing undertaken by the company." Brun Passot has actually started expanding into other business lines by offering complementary products such as office furniture and cleaning materials as well as computer accessories. This larger product portfolio will allow Brun Passot to extend its telepurchasing applications into a broader electronic market place (Malone, et al., 1987; 1989), hence implementing its "one-stop shopping" concept.

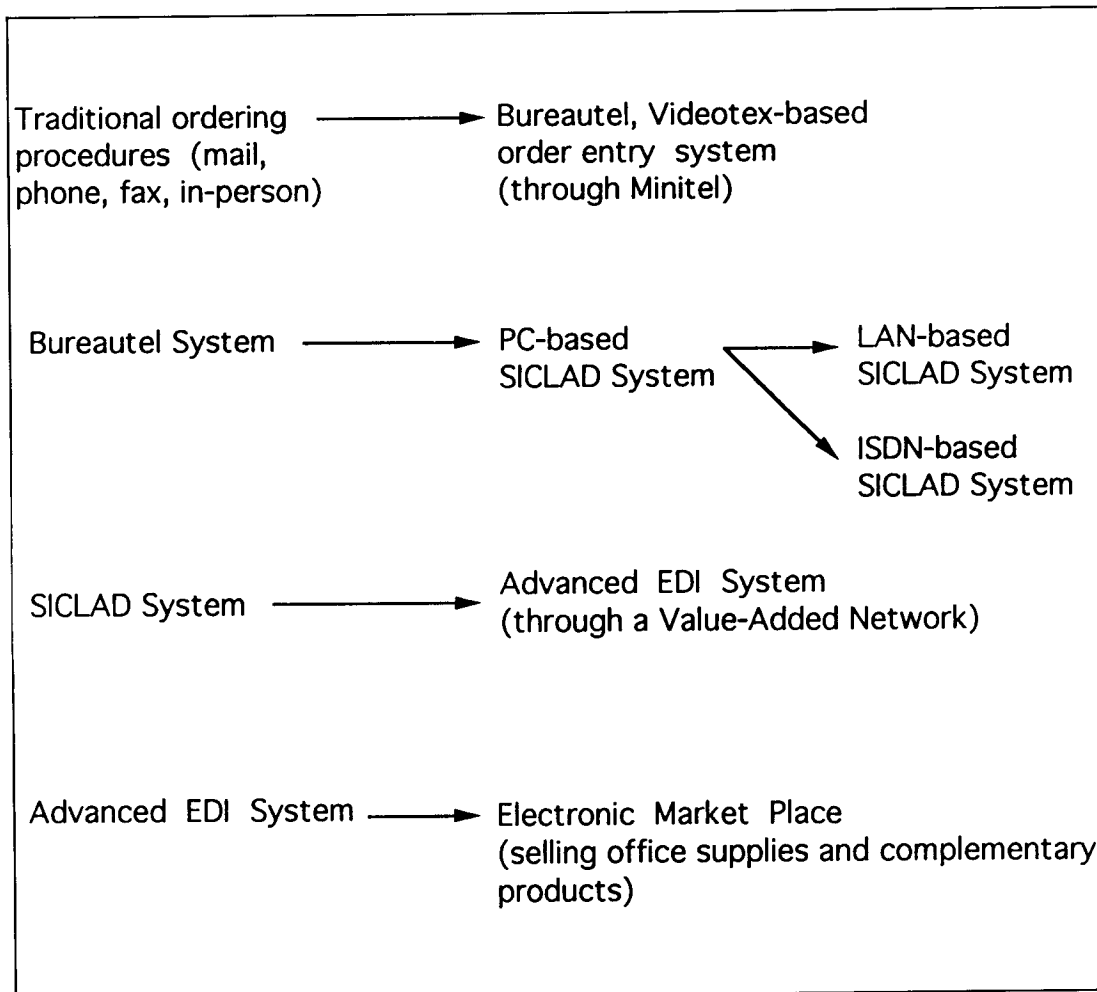


Figure 3. Evolutionary Development Approach of Brun Passot Inter-Organizational Applications

Expand product diversity and penetration through tight linkage to suppliers

Brun Passot has started extending its information system backwards to suppliers (the wholesalers) in order to get access to a more diversified product offering (from the current 12,000 to 120,000 products). Both parties would benefit from this electronic linkage since Brun Passot could increase the products penetration rate with its customers.

Reduce inventories through tight linkage to suppliers

A just-in-time (JIT) purchasing system can generate savings (due to reduced inventories) for both Brun Passot and its suppliers. Operationally, this JIT purchasing system is used as follows. Because of its strong knowledge of the nature and quantity of products its customers order, Brun Passot needs to send, for replenishment purposes, electronic orders to its suppliers only once a week. In some rare cases where a

customer requests an exceptional quantity of products, Brun Passot places an urgent order immediately with its supplier(s) without waiting for the regular weekend consolidation.

Brun Passot aims by the end of 1994 to conduct 80 percent of its sales turnover with suppliers through EDI. It considers setting up an electronic link with a supplier as an opportunity to assess its business performance in terms of logistics costs, quickness of delivery, and quality of service. In some cases, this assessment led the company to stop doing business with some traditional suppliers.

Answering customer requests through rerouting of product information

In order to provide customers with accurate, up-to-date product information (extracted directly from its source), Brun Passot has opted for "rerouting." The idea consists of setting up "electronic bridges" using TRANSPAC or Minitel, which would allow customers to access, through a single connection to the Brun Passot network, different servers related to a given market. For example, a user connected to one of Brun Passot's telepurchasing applications and requesting some information on product lines (e.g., those of 3M France) that Brun Passot markets gets automatically rerouted to the server of that company. Rerouting takes place while the customer is still logged on to the Brun Passot system; once he/she completes all inquiries about those product lines, he/she is disconnected from the host server and taken back to the original telepurchasing application.²³ Moreover, this new capability alleviates Brun Passot from having to include such data on its server.

New business opportunity: Productizing EDI expertise

The availability in France of a large, diversified telecommunications network²⁴ allows many companies to install or to enhance intercompany electronic communication through EDI. However, many suppliers are small or medium-sized enterprises that often lack the financial basis and the technical expertise necessary for implementing

EDI systems. Having been a pioneer and an innovative user of telepurchasing over the last decade, Brun Passot has decided to leverage its expertise in this area through SATELITE, a new subsidiary set up to offer services in the development and implementation of EDI systems.

Eliminating the costs of banking transactions

Brun Passot aims at eliminating the costs of banking transactions for both customers and suppliers by offering "Financial EDI" applications. The company believes that it makes no sense to separate the commercial and physical exchange of documents from the financial payment. Once business partners communicate with each other using the same mode, e.g., EDIFACT, they can process all their transactions operations.

Brun Passot Ambitions for the Single European Market

In order to seize the new business opportunities that the single European market offers outside France, Brun Passot has initiated a set of actions aimed at exploiting the elimination of trade and customs barriers within the EC member states. Moreover, these actions are also aimed at strengthening the company's position in the new competitive landscape.

Formation of the single European market

The single European market, established by the 12 EC nations on January 1st, 1993, consists of 344 million consumers, which is 50 percent more than in the U.S., and has the potential to grow even larger.²⁵ Although the formation of this \$4-trillion market seems inevitable and beneficial to the European economy (Cecchini, 1988; MAC Group, 1988), full implementation is being delayed because of many remaining fiscal (taxation policy), legal (antitrust law), monetary (possible single EC currency) and operational problems (e.g., passport controls). Nevertheless, the elimination of customs and all other barriers that prevent the free flow of goods and capital has already started, and many companies have prepared themselves for increasing competition

as new players (both European and non-European) enter or expand their operations in the EC market (Gogel and Larréché, 1991). The formation of the single European market has resulted in major investments in Europe and in a wave of corporate restructuring and mergers within those industries most directly affected, such as banking, insurance, and airlines (Héau, 1991).

Brun Passot action plan

- **Raise Entry Barriers by Forming Strategic Alliances for Sharing Telepurchasing.** In the office supplies market and taking advantage of the 1993 event, some American companies that have already established themselves in England (such as BasicNet) as well as some British and German firms (e.g., Spicers and Herlitz, respectively) have expanded their operations in Europe. In response to the threat such a move represents to the market share of French companies, Brun Passot merged in 1992 with SACI, another distributor of office supplies with similar market share. Fiducial, the new, larger group, aims at increasing profitability margins by benefiting from economies of scale, strengthening bargaining power vis-à-vis wholesalers and customers, as well as further leveraging Brun Passot telepurchasing applications.
- **Expand Business Scale Beyond France Through Multilingual Telepurchasing.** After having strengthened its competitive position in its home market and in order to become a European service provider, Brun Passot is working on expanding its geographical coverage to other European markets. As part of its action plan, it developed a multilingual (English and Spanish, in addition to French) version of its telepurchasing applications that uses the X.25 packet-switched networks already available in several EC member states. This new application is needed in order to provide integrated service to national as well as pan-European corporate customers.
- **Increase Market Share Through the European Subsidiaries of Multinational Customers.** Brun Passot approached some of its multinational customers who have expressed their interest in reducing the number of suppliers they are dealing with across Europe. It plans to start its European operations with DEC, who has decided to centralize on a single computer (located in Geneva, Switzerland) all the purchase requests generated at its different European subsidiaries. The information system residing on this computer would then select, based on the geographic location of the requesting party, the best-suited supplier to provide the goods. Brun Passot considers "winning" the European subsidiaries of its present multinational customers as a good business opportunity for quick penetration of the single European market.
- **Enhance Logistics Operations to Meet European Market Needs.** In preparation for its European expansion and the subsequent increase in customer orders, Brun Passot has made significant investments to upgrade the performance of its logistics center located in Heyrieux (France).²⁶ It doubled the size of the facility and installed a fully automated picking system managed by a computer through barcode readers located alongside the conveyor belt. It also installed an automated packing system using a thermo-fusion procedure and a set of robots that automatically wrap the packages.
- **Acquire Some National Companies and Integrate Them Through IT.** Among management plans to implement the geographical coverage expansion are acquiring, or joint venturing with some national companies, as well as setting up some distribution centers near potential new European customers. The challenge for Brun Passot is to be able to move products around the continent as efficiently as it is done at present within the French borders and to offer bottom-line savings to the new European customers. Meeting this challenge requires an intense physical and informational interdependence among geographical units (Doz, 1991), including a sound organizational design for IT (Jarvenpaa and Ives, 1993). For Brun Passot, as well as for any company that wants to be pan-European, these are strategic ingredients for any future gain from the development of the single EC market.

Summary and Concluding Remarks

In the early 1980s, Brun Passot, a French family business with a small market share in the distribution of office supplies, sought a differentiation strategy that would allow it to offer a superior customer service. Central to this strategy was the development of a set of telepurchasing applications through which customers can electronically view catalogue and product images, send purchase orders, as well as receive acknowledgement receipts, delivery notices, and invoices. These applications are based on videotex and EDI technology; the most advanced one was completed late 1989.

Telepurchasing allowed customers to eliminate paper work, improve data accuracy and timeliness, as well as reduce (sometimes even abolish) inventory, resulting in significant savings. It has also helped Brun Passot gain market share by winning new customers or becoming the single provider of office supplies to several large companies. The results achieved by Brun Passot (tripling gross revenues in five years, while maintaining constant manpower) are rather remarkable given the non-strategic nature of the products it markets. Critical success factors of the telepurchasing project at Brun Passot include: business pull (as opposed to technology push) as the main EDI driver, top management commitment and involvement, an evolutionary approach to adopting and diffusing new technologies, and the perception of EDI as a business/marketing project.

The formation in 1993 of the Single European Market and the consequent fall of entry barriers within the European Community member states represent a unique business opportunity. Aware of the potential this opportunity presents, Brun Passot top management has taken several steps to foster the firm's competitiveness: they merged with another distributor, broadened the company's product portfolio, and developed a multilingual version of the telepurchasing applications. Brun Passot wants to use EDI as an essential enabler to expand its geographical coverage to other European markets. By the end of 1994, it aims at achieving a turnover of FF800 million, with 80 percent of its transactions electronically

made and processed, and with only 15 percent of personnel increase!

Acknowledgements

The authors would like to thank the senior editor for many valuable comments and suggestions, as well as three anonymous referees for their substantive feedback on an earlier version of this paper. Helpful discussions with members of the SISNet Group, particularly Jon Turner (New York University) and Claudia Loebbecke (University of Cologne, Germany), are acknowledged.

This research work has been conducted under the auspices of the 1992 Trade EDI Systems (TEDIS) program of the Commission of the European Communities. One output of this research program is the book edited by Krcmar, et al. (1995) in which an earlier version of this paper will appear.

Endnotes

¹ A previous version of this paper was an award winner in the Society for Information Management's Annual Paper Award Contest.

² Though the exchange rate of the French franc (FF) has fluctuated in the last decade between 4 and 10 FF per American dollar (US\$), its trading "band" is typically between 5 and 6 FF/US\$. The average value over the last decade has been close to FF5.15 per US\$.

³ A study made in France in 1989 by the Institut National des Statistiques et des Etudes Economiques (INSEE), Paris.

⁴ These figures are based on a representative sample of 80 customers, with a total number of employees ranging from 300 to 5,000.

⁵ For a discussion of how to gain a competitive advantage with inter-organizational information systems, see Johnston and Vitale (1988).

⁶ There were 120,000 Minitel terminals distributed in 1983. This number increased to 531,000 by December 1984, to over 2 million in 1986, and has reached 7 million today. In addition to the electronic telephone directory, Minitel terminals offer information services, professional databases, banking services, electronic mail, order processing, cash management, portfolio management, and accounting. (For more information on the development and diffusion of Minitel, see Cats-Baril and Jelassi (1994); for examples of business applications of Minitel, see Jelassi and Loebbecke (1994) and Jelassi and Murthy (1994).)

⁷ LECAM (Lecteur de Carte à Mémoire) is a device that can be attached to a Minitel terminal to read magnetic-stripe cards.

⁸ With Minitel, customers pay for the phone connection while keying in their purchase orders. With the PC, these orders are keyed in a file and then electronically transmitted over the network.

⁹ TRANSPAC (Transmission par Pacquets) is based on the X.25 packet-switching standard.

- ¹⁰ Storing just the 12,000 products catalogue would have required a minimum of 10 megabytes.
- ¹¹ This figure represents the average number of office supplies frequently purchased by large customers and that correspond to products of ongoing consumption. These products slightly differ by customer (by a factor of 10 percent).
- ¹² It was also the first EDI experience of this nature for the French subsidiary of DEC.
- ¹³ Exchanged messages between the sender and the receiver were on the EDIFACT format.
- ¹⁴ "Electronic Documentation Offers Greater Efficiency," *The International Herald Tribune*, March 14, 1991.
- ¹⁵ Large customers account for about 90 percent of Brun Passot's client base.
- ¹⁶ For a discussion of the change of buyer-seller relationships affected by EDI, see Cunningham and Tynan (1993).
- ¹⁷ The telepurchasing applications run on a PRIME 6350 computer (with a processing power of 10 MIPS), connected locally to a VAX 3400 (having 4.5 MIPS) and remotely to five other PRIME computers. There are 150 terminals, local and distant, connected to the network, as well as over 1,000 videotex terminals.
- ¹⁸ The remaining contribution comes from sales made through the traditional modes (i.e., mail, telephone, and fax).
- ¹⁹ In 1989 Brun Passot commissioned a French business school, the "Ecole Supérieure de Commerce de Lyon," to conduct this survey. The latter was based on a mail questionnaire that, in some cases, was followed up by telephone interviews.
- ²⁰ Source: *Une Entreprise, Une Application Télétel, France Télécom*, No. 19, February 1990.
- ²¹ *ibid.*
- ²² The corporate IT budget at Brun Passot has been since 1982 approximately 4-5 percent of turnover, a figure that is double the average IT budget in the industry.
- ²³ Rerouting can be thought of as a multiwindowing facility through which, for example, a software package gets called upon or executed from an already activated application.
- ²⁴ Industry analysts consider the French telecommunications system better than that in other western countries (see, for example, Nguyen (1988)). This is due to the availability of a fully digitized telephone network as well as a nation-wide videotex, ISDN, and packet-switched networks.
- ²⁵ Jacques Delors, European commission president, is already envisioning a European Community that will eventually include Western European countries and Eastern Europe, as well as the former Soviet republics.
- ²⁶ This Brun Passot logistics center is geographically close to the European headquarters and purchasing center of DEC, located in Geneva.

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