Chapter XVII
Strategic Use of the Internet and Organizational Structure for E-Business:
“Celta” Case at GM Brazil

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ABSTRACT

The Internet provides a global network infrastructure that is shifting business models, strategies, and processes. Many authors reflect on the importance of incorporating e-business into the firm’s global strategy. This chapter deals with these issues in discussing the introduction of e-business activities by General Motors Brazil, specifically in connection with the launch of the Celta car, an entry-level car designed to be sold on the Internet. A historical examination of e-business strategy shows that many organizations have formulated excellent conceptual strategies for e-business but failed to deliver sound execution. A key to successful Internet strategies is the leadership shown by senior management. Technological demands may also conflict with the successful implementation of e-business initiatives, requiring greater interaction between the CEO and CIO. The organizational structure implemented for the launching and sales of Celta car warranted the integration between employees on the business side and in IT in the context of GM Brazil’s strategic objective of growing the market share for lower-priced cars.

INTRODUCTION

According to a study by McKinsey (2003), in the next 10 years, the automotive industry will be shattered by a third “revolution,” following the invention of the assembly-line production by Henry Ford and the lean production of Toyota. Customers expect “more car” for the same money, which means continuous cost pressure and innovation for OEMs. This fact leads to a range of
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transformations in the structure of the automotive supply chain. For example, in order to improve customer satisfaction and increase revenue growth and shareholder value, large OEMs and their suppliers are forced to build large automotive networks.

Cars are developed and manufactured by OEMs and their supplier networks, which produce as much as 70% of the value of a vehicle. Consequently, the cost and quality of a vehicle are a function of the productivity of a network of firms working in collaboration. As far as the tendencies in the automotive industry are concerned, Benko and McFarlan (2003) explain that the automotive industry is transforming itself, from the design studios of Germany to the modular assembly of cars in Brazil to the new relationships with suppliers in Detroit to the factory floors of Japan. Three trends stand out: (1) the manufacturer’s changing relationship with its customers; (2) new partnerships with suppliers; and (3) the reinvention of the factory floor. They represent a convergence of progressive thinking from major players around the globe.

Perhaps the biggest change in the auto industry is its relationship with its customers. Increasingly, customers are being given the opportunity to customize their purchases, including everything from the exterior shape to the interior features. In addition, as manufacturers and dealers build stronger relationships with their customers and better understand their needs, they can personalize their interactions with them. For both the manufacturer and the dealer, this opportunity is substantial.

The Internet has been a driver of change in business relationships. Electronic business enables consumers to interact directly with corporate information systems through the public infrastructure of the Web. The interconnectivity and interactive nature of the Internet make it a unique medium in a strategic context that differs from previous applications of information technology to business communications, such as electronic data interchange (EDI), which in its traditional form is based on rigid standards of information exchange over private networks between preexisting business partners.

According to Dutta and Biren (2001), the manufacturing sector, dominated by the automotive industry, has embraced the Internet as a new medium for growth and customer expansion. Customers purchasing a new vehicle spend a large amount of time researching the various models and making price comparisons among similar companies. Typically, approaching a car dealer to inquire about car features, or worse to negotiate price, is viewed as an unfavorable, often dreaded, experience. By providing consumers with the ability to shop and even finance a new purchase online (excluding actual signing of the final papers), the companies have managed to turn purchasing a car into a fun and interesting experience.

In this context, the Internet is able to provide an enormous amount of information about the client to the industry: persuasive evidence has described the strategic use of information resources in organizations; information systems are strategic to the extent that they support a firm business strategy.

Strategy can be defined as a “quest to match a firm’s resources and capabilities to the opportunities and risks created by its external environment” (Grant, 1991). During the 1980s the dominant Porterian competitive forces approach (Porter, 1980) emphasized the relation of a company to its external environment, while more recently the resource-based view (RBV) highlighted the need to consider the firm’s internal resources and capabilities. Barney (1991) adds that for resources to create sustained competitive advantage they must be valuable, rare, imperfectly imitable, and not strategically substitutable.

Strategic use of IS and related information technologies, such as Internet, can impact organizational-level variables such as entry barriers, suppliers and customers, industry rivalry, search

In this context, Internet and e-business emerge as a source of competitive advantage creation. Its emergence created opportunities for two types of firms: so-called “Internet pure plays” or start-ups, that is, firms that were born on the Internet and that had never had facilities of any kind in the physical world and they operate online; and conventional organizations, many of which saw a chance of increasing market share by expanding into e-business.

This chapter focuses on the latter category, discussing the specific case of an automotive manufacturer (GM Brazil) that used the Internet to achieve a strategic goal, that is, the growing of its entry-level car market share.

In this research, we address the results of e-business adoption within the domain of Internet enabled business initiatives.

When General Motors Brazil decided to increase its market share for entry-level cars, it opted for e-business as a means of making this possible; selling cars directly to consumers via the Internet in what is commonly called B2C, or business-to-consumer marketing.

This chapter has the objective of evaluating the applicability of a model of e-business operations in a company that has long operated in the physical world (“brick-and-mortar” company) and that has implemented business activities using the Internet.

The questions arose from the use of this e-business model are explained below:

How has electronic business addressed a market need? Which organizational structure was used to implement the e-business activities?

The case chosen to investigate these questions was the launching of Celta car by GM Brazil. This company was able to opt for direct marketing of its new entry-level car model, the Celta, without dealers or other intermediaries for two reasons.

First, it had a flexible manufacturing facility with assembly lines configured to allow small modifications in accordance with a certain amount of customization and configurations selected online by the consumer. The second key facilitator of direct sales was the Internet.

The key management-related factors were the commitment of senior executives to the idea (which actually came from the marketing director of GM Brazil), and the existence of a clearly defined business model on which it was based the strategy, coupled with an organizational structure tailored to the pursuit of this objective.

LITERATURE REVIEW

E-Business as a Strategic Tool

Contemporary organizations are aligning IS and business strategies to improve organizational performance (Kearns & Lederer, 2000).

Charles Schwab and Amazon.com have leveraged existing processes with online access and employed a first-mover strategy to realize record online revenues.

Dell Computer, in a first–mover strategy, has achieved success by aligning its core competency in supply-chain expertise with Internet technology.

In this context, the Internet and e-business emerge as a source of competitive advantage.

According to Turban (2000), e-business is the delivery of information, products and services, or payments via telephone lines, computer networks, or other electronic means. Cunningham (2001) defines e-business as commercial transactions conducted over public or private networks, including public and private transactions that use the Internet as the means of implementation. These transactions include funds transfers, online exchanges, auctions, product and service distribution, supply chain activities, and integrated corporate networks.
This new way of doing business produces instruments that enable many things to be done, from developing Internet portals for the buying and selling of products and services to supply chain management, customer relationship management (CRM), and even integration of different business units within the same organization via Intranets (i.e., using Internet technology in enterprise mode so as to restrict access to members of the organization via a firewall).

According to Barua et al. (2004) any customer with access to the Internet is able to gather information interactively regardless of time and location, (possibly) customize and order products/services, change orders dynamically, check order status, and seek online advice.

In theory, according to a study by Freeland and Stirton (2000) for The Boston Consulting Group, many established companies with solid experience in the “real world” or traditional “brick-and-mortar” companies are well positioned to succeed in e-commerce. They have critical assets, such as strong brands, customer relationships, and logistics systems that can give them an edge over startup competitors. In practice, however, traditional bricks-and-mortar firms will not be able to exploit these assets unless they are effectively organized for e-business. Indeed, for large firms the most difficult challenges of e-business are not so much strategic as organizational.

During the process of migration to the Internet by traditional companies, they will face a number of challenges such as corporate culture and leadership, channel conflicts (bricks-and-mortar vs. online), cost savings, the need to find suitable professionals to work in e-business, and the need to invest in IT infrastructure. In tackling these challenges, firms have to consider and experiment with a “portfolio” of potential e-business initiatives. The literature presents several business models designed to assist them in this migration process and evaluate the results.

According to Applegate (2001), a business model describes succinctly how the business is structured, what kind of people is needed for that business, and what roles they perform. Thus the description of a firm’s e-business activities in its business model facilitates the analysis of this business structure and of the roles people play in it.

The model proposed by Applegate (2001) was used for this study, a model that consists of three components: business concept, capabilities, and value.

Chesbrough and Rosenbloom (2001) stresses that the creation of a business model differs from the conventional notion of developing a strategy, since a business model is more than an attempt to hypothesize an exploratory initiative within a given market, rather, it is a fully worked out, well-defined plan of action.

Most large corporations have not one but many e-business initiatives. In such cases a business model can be useful to coordinate e-business activities, set out their overall goals, and serve as a framework for evaluating their results, particularly measuring whether the results match the goals set in the model.

As for aspects relating to organizational structure, according to Oliveira (2001), it describes the arrangement and grouping of activities and resources to achieve the established goals and results.

When a firm decides to implement e-business as an additional activity it will have an impact on existing processes and operations. According to Freeland and Stirton (2000) in their analysis of a study by The Boston Consulting Group on organizing for e-business, the most difficult challenges are organizational rather than strategic. The success of a company’s e-business strategy depends on its ability to organize appropriately, these authors conclude. In many situations a sound strategy founders on organizational problems. More and more large firms are focusing on getting their online organizations up and running but many of them neglect to make the changes and linkages to their offline businesses that are necessary for success in both.
One of the factors that make e-business different from traditional business is the need for convergence, that is, convergence in technical platforms and convergence in business proper. The possible organizational arrangements that can be adopted when implementing e-business depend on broader issues, such as what the company aims to do with its online business. In other words, how can e-business help the firm achieve its overall objectives, as established in its general business strategy? Thus it is important to bear in mind that the company’s overall strategy and global objectives are the foundation on which its initiatives are based on every direction, including the approach adopted when implementing e-business.

Several authors (e.g., Kalakota & Robinson, 1999; Lientz & Rea, 2001; Plant, 2000; Robert & Racine, 2001; Tapscott, Lowy, & Ticoll, 1998; Turban et al., 2000) stress the importance of integrating the firm’s objectives and global strategy with the e-business design adopted. Success in e-business requires that investment in technological infrastructure for e-business be linked to the organization’s plans, strategies, and tactics. The organization must be clear about all the requirements for success in accomplishing its goals in both online and offline operations.

The key strategic issues that should be raised by top management include: How can we transform the old firm into a new one? How can we build a bridge to fill the capability gap between the physical needs of today and the digital needs of tomorrow?

According to Plant (2000), successful implementation of e-business by a firm derives from a business model that entails every content-providing area of the organization contributing to the global business model. In terms of organizational structure, any firm engaged in e-business contains various content owners, that is, members of the organization who deliver the information posted on the Web site or whose functions are affected by the site and its use (e.g., logistics, purchasing, services).

Traditional firms with a predominance of horizontal command and control structures are not suitable for online operations, which require a far more adaptive structure where the functional head of e-business is central. The author suggests a Web-centered organizational structure, in which the head of e-business or e-commerce is well-served by having close and agile relationships with other management groups.

In this structure there is a Vice President for E-Commerce with several subordinates who provide content relating to their respective areas. These are the content owners mentioned above. The head of IT for e-commerce does not need to have a technical background. This area often needs to be run by a creative person rather than a technician.

Another solution is to outsource e-business activities, keeping minimal in-house staff and naming e-commerce groups in the contractor as needed. The profile of the people involved in e-commerce should combine technical aspects and aspects related to business management.

As for the question of governance, Freeland and Stirton (2000) suggest the creation of a small e-commerce center with decision-making authority within the organizational structure. In the early phases of e-commerce, many companies had several business or functional units pursuing e-commerce strategies with relatively little coordination, they note. The approach was to “let a thousand flowers bloom” on the theory that this was the best way to encourage experimentation, learning, and fast responses to new competitive threats. Now, however, many companies have discovered that this decentralization leads to waste and duplication and may also compromise the effectiveness of their e-commerce efforts. Thus, as the authors found in their study of hundreds of large firms in several sectors, there is a tendency to create a small but powerful central unit to coordinate e-commerce, led by a senior executive who reports directly to the CEO.
Barua et al. (2004) propose a model of business value for Internet-enabled business transformation that suggests that Internet-enabled business performance is ultimately judged by traditional financial performance measures such as revenue per employee, gross profit margin, return on assets, and return on invested capital. Further, they posit that the improved financial performance is a result of day-to-day excellence in interactions with customers, suppliers, and other business partners.

Operational excellence measures (e.g., % online business, % online procurement, % customers service provided online, etc.) are “intermediate” level performance measures that are conceptually similar to critical success factors. The strength of the relationship between operational excellence and financial performance may depend on factors such as channel conflict, competitive response, and economic conditions that are beyond the scope of their study.

**RESEARCH METHODOLOGY**

The present study can be considered as having an exploratory nature due to the contemporary character of the phenomenon studied and because of the limited amount of academic knowledge accumulated on the topic to date. Therefore, resulting from the genre of the research undertaken, there is no concern here in establishing relations between dependent and independent variables in order to prove or disprove predetermined hypotheses.

Exploratory studies are conducted with the objective of providing overviews of an approximate nature regarding a given phenomenon. The present research was based on a case study method that focused on the launching of the Celta, a small and low cost car produced by GM Brazil and studied in depth by Zilber and Vasconcellos (2005). According to Yin (1990) the case study is the preferred strategy when the questions are presented in the form of “How?” or “Why?,” which is the present case, where the questions are: “How is the e-business structured?” and “Why was a given model adopted for the e-business operations?”

It was decided to adopt the business model proposed by Applegate (2001) for studying the issues proposed in this study. That author sums up the importance of business models with the following chart showing the building blocks of a business model and the relationships among them.

The categories of analysis for each component of the model are shown below:

An organization’s **business concept** defines its market opportunities, products and services

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**Figure 1. Components of a business model**

![Diagram of business model components](source: Applegate (2001))
offered, competitive dynamics, strategy for capturing a dominant position, and strategic options for evolving the business.

An organization’s capabilities are built and delivered through its people and partners, organization and culture, operating model, marketing/sales model, management model, business development model, and infrastructure model.

Value is measured by benefits returned to all stakeholders, benefits returned to the firm, market share and performance, brand and reputation, and financial performance.

The factors selected from this model of study were:

- Within the “business concept” component: market opportunities, competitive dynamics, and strategic options to lever business
- Within the “capabilities” component: organizational structure and marketing/sales model
- Within the “value” component: financial result

The case chosen to be studied in depth was that of General Motors Brazil and, more specifically, its launching of the Celta, a lower-priced automobile. This choice was made, in the first place, because this car was sold entirely over the Internet, which constitutes a case of the use of the Internet in a strategic way for carrying out the company’s business.

Managers and directors of GM were interviewed whose activities had been affected by e-business operations. They were persons responsible for IT areas in the company, as well as of the areas of marketing, purchasing, sales, and the e-business area, defined as such. These interviews were based on a semistructured guideline, drawn up with the purpose of obtaining replies to the questions being studied.

CASE PRESENTATION: THE LAUNCHING OF THE CELTA BY GM BRAZIL

The Role of the Company’s Global Strategy in Defining the E-Business Model

There are two major blocks of e-business operations at GM Brazil: a) B2C operations, which involve direct sale of cars on the Internet, including the case described in this chapter, the launching of the Celta, a lower-priced car that was released with sales only on the Internet; and b) business-to-business (B2B) operations, which involve the company’s purchasing area and its relationships with suppliers.

There is no business coordinator for all e-business operations. Therefore, B2C activities are coordinated by an area subordinated to the marketing department, while B2B operations are subordinated to the purchasing area, with no specific coordination. It is interesting to note that, right from the conception phase, the sale of the Celta on the Internet was an idea generated by the company’s senior marketing board, with backing from upper management. An organizational structure dedicated to this project was created, which, even after having been concluded, continued to operate by providing maintenance to the routine e-business operations related to B2C. This new area was also responsible for generating new ideas.

But the B2B operations were not centralized in a single dedicated organizational structure. They were inserted into the existing organizational structure. Perhaps for this reason, they failed to attain the same financial results as the B2C. Therefore, there is an e-business management totally dedicated to B2C operations, subordinated to the director of marketing. Under this e-business management are staff and technical areas, including a total of approximately 10 persons.
On the IT side, there is an e-commerce management that is also fully dedicated to these activities. Other e-business initiatives are exercised in the area of purchasing (B2B) but do not have the volume of business generated by the B2C area.

The business model used was a value creation model based on business-to-consumer (B2C) retailing and using metrics for results and infrastructure suited to e-business. B2C means direct sales via the Internet. Results are to be measured using a specific set of metrics for e-commerce. The model also calls for investment in e-business infrastructure in the form of close links between the company’s IT department and the business units involved in direct marketing of entry-level cars via the Internet.

The project triggered changes in the company’s organizational structure, including hiring of new personnel and the creation of new units. It is worth noting the clear evidence of a link between company strategy and the formulation of the e-business project. The idea of selling cars via the Internet arose from the strategic goal of increasing market share in the entry-level segment. GM Brazil invested more than $800 million in the Celta, which therefore embodied significant confidence in the Brazilian market on the part of this manufacturer over several years. The aim was to improve GM’s positioning against its competitors and in particular to challenge its main competitor, the market leader in the entry-level segment.

The success of the new car would also mean the difference between the success and failure of a strategy established in 1992. At that time GM Brazil decided to expand its offering to include products for all segments from entry-level cars to heavy-duty trucks. The strategy proved successful. GM’s market share in Brazil rose 21% to 25%. The problem was that the strategy could be sustained without a significant presence in the market for small or entry-level cars, which accounts for 70% of all car sales in Brazil. The aim of the Celta project was to increase GM’s competitiveness in this segment. The price would be higher than that of its competitor, but GM expected superior design and technology to offset the higher price.

In addition to superior technology, GM focused on using a low-cost production process rather than an inexpensive design. This was achieved by implementing a modular plant in consortium with suppliers and flexible production methods to turn out 120,000 units per year. GM’s modular consortium has 17 suppliers strategically located in the same plant and connected in real time. This enables suppliers, for example, to know just when their products are needed on the assembly line.

The purpose of this short introduction before our detailed presentation of the B2C model developed by GM Brazil is to highlight the connection between the carmaker’s e-business initiative and its very clear strategy of growing market share using technology that enables a product to be sold directly to the consumer.

When the project began at GM around 2000, there was a worldwide movement in favor of giving priority to e-business and the parent company created a new structure called “e-GM.” Thus the initiative of direct sales via the Internet matched the parent company’s expectations. A directive clearly came from headquarters, indicating that subsidiaries should “invest in e-business projects.” At the same time, the Brazilian subsidiary adopted a strategy of becoming a market leader in entry-level cars.

The marketing director of GM Brazil then had the idea of combining the two policy directives—investment in e-business worldwide and growing market share in small cars in Brazil—with the existence of a new plant in Brazil that made flexible manufacturing possible. The initial idea was to use the “e-shop” system already put in place by the parent company in the U.S. This system assisted the buyer in configuring the product, calculated the price, and told the buyer where the product was located. However, it did not enable direct sales via the Internet.
The marketing department in Brazil was bolder. It created a Web site that completed the process by adding direct sales to configuration and pricing. Thus GM Brazil created a structure dedicated to developing this project of direct marketing via the Internet.

The next section describes the process for direct sales of small cars to consumers via the Internet developed by GM Brazil marketing department in collaboration with IT area.

**GM Brazil’s Process for Selling the Car “Celta” Online**

The business model for the B2C project to sell the Celta online had four pillars:

- Consumers were to be billed directly and not through dealerships.
- Pricing was to be unified for the entire country (prices may now differ depending on the region).
- Rapid delivery.
- Given the need to develop IT systems for this strategy, it was decided to use the Internet. The expected volume of customer interactions was large, justifying an automated and integrated process. A concrete benefit would be direct knowledge of consumer wants and needs.

Dealerships were involved only in final delivery of the car to the purchaser.

The selling process was direct to the final consumer but delivery remained in the hands of dealers in order to avoid channel conflict. The system adopted by GM Brazil includes rather than excludes dealers. The consumer buys a car and can select the dealership that will deliver it. Dealers receive a delivery fee, which is smaller than the commission on traditional sales but may be commercially more attractive since the dealer is not required to hold inventory. However, dealers need to have a good costing system to realize that the new procedure is more profitable.

**The system presents a number of advantages for GM:**

1. GM saves 5% of the commission normally paid to dealerships, transforming this saving into a discount on the price to the consumer;
2. Producing cars for delivery by dealers means holding inventory, and inventory equals cost. Producing for direct sale to consumer reduces inventory and hence cost; 3) Direct contact with consumers enables GM to obtain customer information, which can be used to improve CRM. The type of information relates to color, model, and accessories. This goes into a customer database and becomes business intelligence for use in future transactions; and 4) Direct marketing leads to better knowledge of customers wants and needs, reducing the number of models and options required, and facilitating production, which can be tailored to demand.

**Advantages for consumers:** The consumer pays less (thanks to pass-through of the manufacturer cost saving) and gets faster delivery.

**Dealership’s Involvement in Online Sales**

- Customers with Internet access make choices online, save the configuration, and go to the dealership to pick up the car.
- Customers without Internet access go to a dealership to use the sales site, configuring the car they want to buy. The benefit to the dealer is selling cars without needing to have them physically on the premises.

**Possible Problems that could Arise from this Sales System**

- Resistance on the part of the consumer public, used to “trying out” the product.
on dealers premises, where they can get into the car and check its equipment, take test drives, and have other types of direct personal contact
• Resistance on the part of the dealers, who would receive a lower commission for delivering cars sold on the Internet than if they made the sales themselves.
• Since consumers can configure certain items according to their needs and preferences, the factory could run into problems if it was not flexible enough, and this could cause delays in delivery.

The results obtained with the launching of the Celta went far beyond expectations: sales exceeded initial estimations and the company sold more products directly to consumers in this way, some months later. The site has to be updated every time a new product is included. There are also logistics issues that have to be analyzed carefully before new models are put on the market. Thus, this e-business model is intrinsically related to the company’s strategy in the sense that it is directly linked to its core-business.

In 2002, 30% of GM Brazil’s total sales were carried out online. In 2001, sales of the Celta via the Internet accounted for almost half the revenue generated by B2C overall in Brazil.

Organizational Structure for Online Car Sales

One of the first difficulties encountered in the implementation of the project was the fact that the company organizational structure at the time had no area that could be responsible for the project of setting up B2C operations in the company, more specifically, the sale of cars directly over the Internet.

For this reason, the e-business structure has evolved as follows, in terms of B2C:
• 1998 – Internet area set up inside strategic marketing
• 1999 – two departments set up exclusively for e-business

Figure 2 shows the organizational structure in 1999:

The dotted box around Sales Support recalls that in late 2001, the director of e-business was promoted to a job at the parent company and this department was incorporated into Sales Support. Two new departments were set up in the same year: a department of e-business reporting to the CIO, and a department of e-business reporting to the director of marketing and sales.

The e-business director in the marketing area was already a GM employee. He was formerly a marketing manager and was reallocated to this position. The e-business director in the IT area was hired from outside with a specific remit to implement the online selling project. In 2001 the e-business director acquired control over sales support in general, not just Internet sales support.

The new area was set up to increase the hierarchical status of e-business and the focus on online selling of the Celta.

This entire new structure originated with the idea of selling the new small model (Celta car) directly to consumers via the Internet. The marketing director of GM Brazil had the idea, which was approved by the parent company executive committee, together with a global budget, resulting in a world pilot of e-commerce and direct online marketing.

The project organizational configuration was as follows. The “business owners,” that is, those responsible, were the CIO and the director of marketing and sales. They reported to hierarchical superiors (regional and global) if any problems arose. The Brazil project manager, another business owner, took operating decisions on Web site design and the entire selling process involving
both the company and end users (customers). The next level down was the program management office (PMO), comprising project managers whose function was to integrate the various activities. Each unit responsible for a given functionality included a person responsible for IT and another for marketing (business). Most IT personnel worked for contractors (outsourcing).

This e-business project structure was put in place at the end of 1999. The B2C Web site was launched in the second half of 2000. The project was up and running in less than a year. Once it went live the e-business area was conserved as originally created with the addition of a new unit for IT maintenance (the IT e-business director plus one or two other people).

GM partnered with UOL, one of Brazil’s largest Internet service providers, in communication and hosting of the institutional site for other cars. At the end of 2001, the director of e-business in Brazil was promoted to a position with the parent company and the e-business structure was merged into sales support. There are synergies between these areas because of Internet sales.

The e-business area needs information from other parts of the company, such as brand or product management, pricing, vehicle distribution (which cars can be delivered where, deciding how many cars go to distribution centers), billing and accounts receivable, and sales. E-business personnel are constantly working to familiarize themselves with the day-to-day operations of other areas and make or collect suggestions on new projects.

Figure 3 shows the structure of the e-business group (B2C) at GM Brazil (2002).

The e-business manager has a certain amount of decision making authority, but in certain cases issues are resolved by the head of department, director, board and so on, depending on the type of decision required.

The e-business director in the marketing area was already a GM employee. He was formerly a marketing manager and was reallocated to this position. The e-business director in the IT area was hired from outside with a specific mandate to implement the online selling project. In 2001, the e-business director acquired control over sales support in general, not just Internet sales support.

The new area was set up to increase the hierarchical status of e-business and the focus
on online selling of the Celta. This entire new structure originated with the idea of selling the new entry-level model directly to consumers via the Internet. The marketing director of GM Brazil had the idea, which was approved by the parent company’s executive committee, together with a global budget, resulting in a world pilot of e-commerce and direct online marketing. The world’s first direct sales e-commerce site for entry-level cars went live in September 2000, selling the Celta.
The fact that there was a centralized structure for B2C operations allow the information coming in from the content providers to be analyzed and made use of, keeping information from becoming obsolete and allowing periodic input into this information, updating the sites of sales, and communication to consumers.

Figure 4 shows the organization chart of GM Brazil and the e-business areas in early 2002.

ANALYSIS OF GM-CELTA CASE

This section presents the conclusions of our analysis of GM Brazil’s Celta project from the standpoint of the e-business model implemented.

The business model adopted in this work was that conceived by Applegate (2001), where a business model describes succinctly how the business is structured, what kind of people are needed for that business, and what roles they perform. This model consists of three components: business concept, capabilities, and value. We will analyze some of these components in the Celta case, as following.

Considering the business model concept, the basic concept in the Celta case was direct marketing of small cars using the Internet and delivery of value to the customer via B2C, with clearly defined metrics to measure results and the use of an appropriate IT infrastructure to ensure connectivity with consumers, besides guarantee the updating of information by the content providers. B2B activities do not use the same model and are not centrally coordinated.

The market opportunity was identified to increase the market share in the small car segment.

The small car segment in Brazil is extremely competitive, with many competitors, and the price factor is essential for success.

Strategic options for levering business are shown with the use of the Internet for direct sales of cars to final consumers; a lower final sale price is possible because of the use of electronic channels to reach the final consumer. The possibility for final consumers to configure the car according to their preferences is a factor that gives the model a competitive advantage in relation to the competition.

Considering the business model capabilities, capabilities were sought in house and from outside, including reallocation of executives to e-business and hiring of an outside IT specialist to head IT for e-business. IT infrastructure is outsourced.

In terms of organizational structure used, it could be seen that to develop the project for selling the Celta on the Internet, a matrix structure was set up with persons from the head office and the branches involved, and the decisions were taken jointly by one person responsible for the IT area and another for the business area. The operation of sales activities over the Internet uses a centralized structure dedicated to e-business, with a central coordinator of e-business operations who responds directly to the company senior management of marketing.

There is coordination of the IT operations related to sales on the Internet by a director of IT dedicated to e-business.

There are other factor that could be seen as advantage for GM. There is a flexible factory using the concept of modular consortium for the production of the Celta. The Celta car was conceived to be produced in this “modular” factory, which was a new plant with a new concept; in this way, there were no problems of integration of new IT applications with the legacy ones and new business processes with existing ones once the planning of the car production was conceived since the beginning to be made at this flexible plant.

In terms of value delivered by the model, it was seen that revenue generation was via direct sales and the financial results went beyond expectations from the first month of sales. Other value aggregated was more and better customer relationships, faster processes, and cost savings to GM.
The dynamics involving the launching of the Celta shows an identification of a market opportunity, specifically, the possibility of increasing the market share of small cars which, in Brazil, is one of the automotive industry most important segments. It is a segment where, until then, GM Brazil had not been competitive and held no significant slice in it.

The director of marketing at the time had the strategic objective of increasing the company’s share in this segment and it was this guideline that oriented the company’s efforts. The use of the Internet to make direct sales available to final consumers proved to be a very innovative possibility at the time, because the maximum that was done abroad was for the final consumer to configure the model, without carrying out the entire sale.

This operation allowed a reduction in costs, since one tax on the transactions was excluded (i.e., the IPI Tax on industrialized products), thus reducing the cost of the car by about 5%, and this reduction was passed on to the final consumer, generating a competitive advantage for GM, since the popular car segment is very price sensitive.

The company built into this model a concern for metrics and for the integration of its IT infrastructure, providing added value to the customer. It thus showed a concern for clear results; the initiative of e-business must be related to results. In this regard, the concept of value chain, developed by Porter (2001), was used, with the need to connect all operations in a way that would deliver distinctive value to the customer.

According to Amit and Zott (2001), value is created by e-business through the way in which transactions are carried out. The authors drew up a model to evaluate the creation of value in e-business where there are four conductors of value: efficiency (reducing asymmetry of information between sellers and buyers, speed of transmission of information, etc.); complementarity (when a set of factors provides more value than each of them individually); retention (value in e-business is increased to the extent that consumers are motivated to buy again); and novelties or innovations (such as setting up value by connecting parts that were not connected before the innovation).

Analyzing the model used by GM from the point of view of these authors, the company was seen to be efficient in using the Internet as a way to facilitate transmission of information among manufacturer, customer, and dealer (for delivery of the car); a high level of retention was attained, since buyers were able to customize details of their cars by configuring them on the Internet, besides the innovation of having the customer connected directly to the manufacturer.

In terms of the abilities of the model, GM has a new factory in southern Brazil that uses more flexible processes, a fact that allowed sales over the Internet. Customers can order customized details thanks to this flexibility of the factory and to the use of modular consortium (suppliers inside the factory) that guarantee faster manufacturing.

In this aspect, Brazil was the pioneer in the model of direct sales to consumers, since, in other countries, customers can only configure the car over the Internet, even though the respective sites are known as direct sales channels.

According to Timmers (1998), the definition of innovative operation on the Internet is where the use of the Internet allows measures to be taken that would be impossible without it. Direct sales to consumers would be very difficult for an assembly plant were it not for the facilities afforded by the Internet.

Another aspect to be observed was the fact that the use of executives in the business area coming from the company itself and the employment of partnerships with consolidated companies in the IT area, outsourcing of technical aspects of IT. But to coordinate these partners there was an IT director fully dedicated to the e-business project inside the company. The construction of this model took into consideration the establishment of strategic alliances with successful partners on the Internet (such as AOL, edmunds.com, etc.). This made it possible to:
Facilitate the generation of traffic.

Promote GM products in a favorable way, that is, construct a presence of the company that became widespread.

Establish a partnership with “first class” companies in the area of the Internet.

The objectives of GM Brazil for e-business can be described as to increase and broaden relationships with consumers, see growth in revenue, respond to consumers faster, and show leadership. These objectives were attained with the sale of the Celta on the Internet. To demonstrate the importance of the Internet for GM, the company’s worldwide CEO reports that 52% of the consumers go shopping for a car first, and go to a dealer later. The expectation at the time was that this number would rise to 75% in two years, representing approximately 11 million vehicles whose purchase processes began with the Internet.

In 2002, 30% of GM Brazil’s total sales were carried out over the Internet.

The respondent did not say, however, if there is an evaluation as to whether sales over the Internet are less expensive than conventional sales.

This case of success showed that some of the critical factors for successful sales over the Internet are: 1) compatibility between the core competences of the company and the use of e-business operations; 2) level of commitment of upper management regarding the implementation of e-business; and 3) and adequate organizational structure that guaranteed that the decisions taken could be effectively concluded for the efficient functioning of the e-business operations.

This enterprise—direct sales over the Internet—surpassed expectations in terms of results. With a deduction of 5.5% in sales of this popular model of car over the Internet, GM Brazil registered a total 2,050 units sold (50% of the total number produced) in the first 14 days operating on the Web. The results of the initiative had worldwide repercussions and are used by the CEO at the company’s headquarters as an example of a successful undertaking in the area of e-business.

The success of this initiative prompted a “race” by competitors to also carry out their sales over the Internet. The sales of this car on the Internet were equivalent to almost half of the revenue generated by B2C business in 2001 in Brazil.

The importance of the involvement of upper management in the project of selling cars on the Internet was commented above. The idea started from the senior management of marketing and was a tool to put a strategic objective into operation; it increased the company’s market slice, and more specifically, increased the sales of entry-level cars in Brazil. As a result, as Porter (2001) has commented, the Internet is nothing more than a powerful tool that serves to attain the company’s strategic objectives.

GM Brazil’s upper management perceived the usefulness of this instrument for attaining effective competitive advantage ahead of its competitors. The direct sale of cars on the Internet produced a reduction in the price due to lower costs (no middleman), in the first stage, besides responding to the objective of providing buyers with customizing services by which they can use the Internet to configure their car the way they want. The company’s upper management had the responsibility of guaranteeing the resources needed for this project (sale of cars directly on the Internet) in order to make it successful, both in the sense of supporting an organizational structure dedicated to e-business, in causing changes in the existing structure in a way that would provide the status needed for e-business operations, and in providing financial and human resources (hiring of persons and the allocation of funds where necessary), as well as technological resources, with the engaging of partners in the IT area.

The organizational structure created—with an e-business manager subordinated to the marketing division—guaranteed that the decisions taken could be effectively concluded for the adequate functioning of the e-business operations.
GM Brazil made use of a matrix-type structure for its e-business project to sell the Celta directly via the Internet, but with a combination of e-business structure, IT, and business resources, plus an area called “customer experience” to provide the required customer focus. Resources were allocated by the parent company in the U.S., including capital and specialized personnel. IT was also given priority, with the structure clearly showing the necessary integration between the business and the IT areas.

The e-business project to sell cars directly online involved approximately 250 people at GM Brazil and GM United States, besides partners responsible for developing the Web technology. The project organization was highly sophisticated, with a project manager known as a Process Information Officer (PIO) in charge of overall coordination, and several “business owners.”

Since the project was successful, with success being measured through the results obtained with sales, a small team was maintained, with a central coordinator for e-business operations, in order to sustain, update, and continue to prospect new operations in e-business. It is interesting to note that only the activities related to direct sales on the Internet have this coordinator. Other e-business operations, such as B2B (relationship with suppliers, and procurement) and others of B2C (such as post-sales relationships) remain decentralized throughout the company, responding to the functional managers of areas that already existed before the advent of the e-business operations.

The results obtained with these activities are lower than those for the direct sale operations in terms of financial gain, showing that a small structure of coordination of these operations can bring about positive results.

CONCLUSION

The main objective of this chapter was to analyze the implementation of e-business operations in a company that has long operated in the physical world, by making use of an e-business model that especially took into account the following dimensions:

- In regard to the business concept component: business opportunities and competitive dynamics
- In regard to the capabilities: the organizational structure for e-business
- In regard to the value component: financial results

The segment studied was the automotive industry, which, in terms of its dynamics, is highly competitive, with its players all looking for innovations and opportunities that will give them competitive advantages over their competitors. The segment of small and entry-level cars is responsible for 70% of car sales in Brazil, and GM Brazil had no significant share in this segment, before the Celta car. There was, therefore, an attractive opportunity for growth and the company went looking for strategic options that would lever its sales in this segment.

GM Brazil was able to opt for direct marketing of its new entry-level model, the Celta, without dealers or other intermediaries, for two reasons. First, it had a flexible manufacturing facility with assembly lines configured to allow small modifications in accordance with a certain amount of customization, with configurations selected online by the consumer. The second key facilitator of direct sales was the Internet.

It was an innovation in the clear definition of “core competence” of the assembly plant. To put this direct sales initiative into practice, one of the company strategic options was to present a clear link between e-business initiatives and corporate strategy. The aim of the B2C project was to increase sales of small cars, and this strategic alignment brings competitive advantage to the company according to many authors (e.g., Chan & Huff, 1993; Henderson & Venkatraman, 1993; Kearns & Lederer, 2000).
The competitive dynamic of this segment shows that price is a fundamental factor in consumers’ final decisions. Therefore, the use of the Internet as a tool enabled a reduction in the price of the Celta; through reduction in costs (reduction in the IPI Tax because of direct sale, and reduction in the fees paid to dealers) proved to be a form of obtaining competitive advantage.

Besides the price factor, the possibility of the final consumer of configuring the car before delivery proved to be an extra factor that adds value. It is important to emphasize that this type of configuration was only possible due to the existence of an innovative manufacturing model at the plant, which employs a flexible production process.

Top management involvement was total, with the original idea coming from the marketing director of GM Brazil. The project was successful in financial and marketing terms, exceeding expectations. This success was apparently due to the combination of an appropriate business model and a highly committed top management.

Partnering with dealerships played a fundamental role by avoiding channel conflict. The role allotted to dealers was to deliver cars purchased on the Web. As noted by Weil and Vitale (2001), one way of avoiding channel conflict is to realign the distributor functions.

Porter (2001) comments on the complementary role that should be played by the Internet show that this tool reinforces the competitive advantage of the “real” part of the business. When this is the case, results are satisfactory. This conclusion undoubtedly applies to the case of GM Brazil, where the e-business initiative was in line with a clear strategic objective, that is, to increase market share in the small car segment. This was the first project in the world to sell cars directly online, stimulating global acclaim and recognition by the parent company.

Also in terms of strategic options used to lever business, the company made an innovative use of the Internet. In fact, linking consumer to manufacturer for direct marketing of passenger cars would have been practically impossible without the Internet. In addition, the Internet suits the strategies that the automotive car automobile manufacturers are currently pursuing, according to a study by Santos and Medeiros (2001) on differentiation (e.g., the Internet facilitates differentiation in services), associations and alliances (facilitated by online interconnectivity), and, above all, geographic expansion (the Internet is a global network).

In their constant pursuit of lower cost and higher profit, the automakers have begun using a new global division of labor in which emerging-country subsidiaries have considerable importance. This favors Brazil, enabling subsidiaries here to offer personalized models for direct sale over the Internet, as discussed in this chapter.

In regard to the capabilities, the e-business initiative made a significant difference, as reflected in the organizational structure utilized. The company created (and has kept in place), especially for this project, a dedicated IT unit to support direct sales of this small car model via the Internet, thus guaranteeing adequate IT infrastructure. On the business side, a dedicated structure was also created to guarantee the necessary functionalities and meet the needs of customers, dealers, and manufacturing.

As for the use of structures by project, GM Brazil provides an excellent example of joint coordination of the e-business project by the IT and business areas. The project implementation methodology was completely formalized and created entirely in house on the basis of project management concepts covering every stage, such as scope, planning, design, construction, implementation, support, and maintenance. A structure was used where the integration of IT operations with business operations created more competitive business.

In terms of delivery of value, of special importance is the establishment of precise metrics to evaluate the results in each phase of the project, which made it possible to identify problems in a
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precise way and help solve them, delivering an efficient final result.

CONTRIBUTIONS

The following aspects of the Celta case can be tallied up as contributions to the understanding of the mechanism of implementation of e-business operations in a company that until then had only operated in the physical world:

- The fundamental role of the company’s global strategy in defining the model to be adopted for e-business. This strategic objective (increased sales of small cars) oriented the implementation of the B2C operations, that is, direct sales via the Internet.
- Involvement of top management in providing the needed resources, including financial, technological, and human.
- The e-business project to sell cars directly online involved approximately 250 people at GM Brazil and GM United States, besides partners responsible for developing the Web technology. The project organization was highly sophisticated, with a project manager known as a PIO in charge of overall coordination, and several “business owners.”
- Use of an adequate organizational structure in conception and implementation stages of the matrix structure project, with central coordination of the e-business operations by one person responsible for IT and another for the business area.
- Resources were allocated by the parent company in the U.S., including capital and specialized personnel. IT was also given priority, with the structure clearly showing the necessary integration between the business and the IT areas.
- After the project of direct sales online finished, a small team was maintained, with a central coordinator for e-business operations, responding directly to the marketing director, in order to sustain, update, and continue to prospect new operations in e-business. This structure guarantees the necessary functionalities and meets the needs of customers, dealers, and manufacturing.
- Excellent communication between the area responsible for e-business and the content providers. This fact allowed for updating of information and searching for new opportunities in e-business. This communication was facilitated by the centralized organizational structure with a centralized coordinator of e-business operations.
- Existence of an assembly plant that has a concept of modular consortium and flexible production which allows changes in the production line, and let customers configure their cars over the Internet according to their needs.
- The company was efficient in using the Internet as a means of facilitating the traffic of information between manufacturer, customer, and dealer (for car delivery). A high level of retention was attained by allowing customers to customize the details of their cars over the Internet, besides having offered innovations by putting customers into direct contact with the manufacturer.
- The innovative use of the Internet, which, until then, had been used worldwide only to let customers configure the model of the car but not for complete processing of the sale over the Internet, as was the innovative case of the Celta car in Brazil.
- Conflicts in channels were avoided, with the involvement of the dealers in the process of configuration, test drives, and delivery of the cars to the customers; there was payment of a fee to the dealers for each delivery handled.
- GM Brazil showcased its own use of the Internet as a marketing tool.
In 2002, 30% of GM Brazil's total sales were carried out over the Internet, showing the success of this new activity (sales online).

The following can be considered the main limits involved:

- Centralizing of all e-business operations under a single coordinator. For example, B2B operations have a decentralized coordination, and post-sale operations do not use the same structure. Results obtained through these operations were not as successful as those attained through sales over the Internet.

- Measurement of other e-business operations: Direct sale over the Internet generate revenue, whereas other operations that consist purely of relationships are harder to measure.

- Competitors have since launched their own direct sales sites. Therefore, GM is no longer the sole reference for this innovation.

REFERENCES


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