Sustainable Competitive Advantage in E-Commerce and the Role of the Enterprise System

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ABSTRACT

Developing and sustaining a competitive advantage from the use of information technology is a topic of concern for information systems research. Mata et al. (1995) discuss the possibilities of IT as a competitive advantage and present a model that is founded on the resource-based view of the firm. The model is used in this paper to discuss factors that lead to competitive advantage in e-commerce companies. We explore factors that enable sustainable competitive advantages in B2C retailing. We base our analysis on a single in-depth case study of an Internet pioneer company (LeShop), which was observed by the authors since its inception more than 10 years ago. Our research data stems from a series of interviews with managers at LeShop as well as two case studies about the company from two different points in time (2000 and 2009). LeShop is an online pioneer, which began selling groceries on the Internet in Switzerland in April 1998. After a turbulent few years, LeShop is now one of the few successful e-commerce suppliers in the supermarket segment worldwide. Our discussion is not limited to the use of information technology (IT) but it includes an analysis of further critical resources of the company from a resource-based view.

Keywords: e-commerce, enterprise system, retail, food, B2C, resource based view, RBV
Introduction

Considerable research interest was directed at the topic of e-commerce in the period 1997-2003. The first influential articles on the topic focused on general discussion of the definition and influences of the Internet on company strategy (e.g. Wigand, 1997; Porter, 2001). The research literature about e-commerce and online grocery retailing in particular is dominated by research from the customer view. It focuses on the motivational factors for customers to engage in e-commerce, e.g. security, trust, convenience, prices and others (see e.g. Jarvenpaa & Todd, 1997; Elliot & Fowell, 2000; Khalifa & Lymayem, 2003; Wang & Emurian, 2005; Mukhopadhyay et al., 2008) or on the changes e-commerce brings about in the value chain, in particular channel management and disintermediation (see e.g. Gallaugher, 2002). Less research attention has been directed towards understanding how online retailers achieve success and a sustainable competitive advantage in a highly competitive, low-margin industry sector (in our case food retailing).

Using empirical data from a longitudinal in-depth case study, this paper contributes to a deeper understanding of the factors that enable a company to successfully operate in an e-commerce environment. We base our analysis on a longitudinal in-depth case study of a pure online player – a typical start-up company of the early e-commerce boom years (such as Dell and Amazon). Unlike these well-known American online players, this company (LeShop) is a small Swiss company which operates in the low margin segment of food sales. At the time of writing this case analysis, the authors have been monitoring the company for more than 12 years.

In our analysis we were interested in the factors that lead to success for an online player. Examining the existing literature we identified a lack of longitudinal case studies with a focus on the view of a pure online player. To provide a longitudinal view, we use the concept of sustainable competitive advantage as our scientific lens. We base our discussion on the framework by Mata et al. (1995), which uses the resource-based view as a basis to discuss the possibilities of IT as a competitive advantage. More specifically, we explore the factors that enable sustainable competitive advantages for our case company LeShop and seek to generalize our findings for B2C online retailing. Our research identifies important factors that online players might consider when defining their e-business strategy.

Our case analysis is situated in the online food market, which is a particularly challenging industry with low margins, high volumes and sophisticated supply nets. In this industry we find interesting failure stories such as the ones of PeaPod or Webvan, American start-up companies, the latter of which spent the impressive amount of 1 billion US$ in building up
an expensive infrastructure including a fleet of vans, automated warehouses and sophisticated devices for their delivery staff (Himmelstein & Khermouch, 2001) before it had to close down its operations. On the other hand, the same industry boasts a small number of successful companies such as UK-based Tesco that have been successful in extending their online business over the years (Delaney-Klinger et al., 2003). It is notable however that Tesco built from its already strong position as a brick-and-mortar grocery retailer.

Our case company, LeShop, is a small but fast-growing Swiss food retailer. The success of the company is particularly noteworthy due to its operations in the low-margin and logistically extremely demanding food and supermarket segment. The company has diversified increasingly over the last years and sees itself as an online shopping store for a wide range of products. This case study highlights the state of the business concept and its operational implementation after more than 10 years of operation in this industry. The aim of this paper is to provide an analysis of the development of LeShop and to investigate the factors that were decisive for its survival.

Research Method and Research Questions

In order to examine the factors that enable sustainable competitive advantage, an interpretive case study method was used. Our research steps meet the conditions defined for this method described by Yin (2003). Unlike in action research, the researchers were “outside observers” (Walsham, 1995) and had no influence on the company and its decisions. The development of the LeShop business model with its underlying business processes and the supporting technology is a contemporary phenomenon within a real-life context (Yin, 2003, pp. 5-13).

Our research rests on three pillars, which form the background for this research. The first is the existing literature in the field of sustainable competitive advantages in e-commerce. Wherever applicable we compare existing findings with our own analysis. The second pillar is our comprehensive data source. Over a period of 10 years we have been closely following the whereabouts of our case companies tracing the steps and decisions of the responsible management team along the way. The third pillar is our theoretical lens. For our analysis we are using the framework developed by Mata et al. (1995). The framework draws on the resource based view (RBV) of the firm. The authors claim: “For researchers, the model suggests the types of variables that need to be included in future empirical tests of the
relationship between IT and competitive advantage” (Mata et al., 1995, p. 488). The RBV has been criticized for its “narrow neo-classical economic rationality” (Kraaijenbrink et al., 2010, p. 2) but its strength is that it is easy to understand and has been successfully used in numerous research studies. The use of RBV for the analysis of the case study structures the discussion and differentiates the research results from “mere anecdotes” (Klein & Myers, 1999).

The overall research question, originating from the RBV, which guided our research, is the following:

*Does LeShop possess resources or capabilities that are valuable, rare, inimitable, and non-substitutable? If so, what are these factors and can they be generalized for other pure online players?*

Following Barney (1991), we are using three sub-questions for the identification of a competitive advantage.

1. The role of history
2. The role of causal ambiguity
3. The role of social complexity

In the next step, the model suggests attention should be focused on the following four areas of the RBV to Information Technology (IT):

1. Access to capital
2. Proprietary technology
3. Technical IT skills
4. Managerial IT skills

We use the Mata et al. (1995) framework for our analysis but also argue that it does not include all necessary factors for a detailed analysis of an e-commerce company. This fact is also recognized by Meta et al. who state: “Future research will need to explore, in much more detail, the exact nature of these managerial IT skills, how they develop and evolve in a firm, and how they can be used to leverage a firm’s technical IT skills to create sustained competitive advantage” (Mata et al., 1995, p. 500). Our in-depth analysis of the LeShop case company identifies factors that are not fully discussed in their framework.

In summary, the specific research questions that motivated us to conduct the in-depth analysis are the following:

- Does LeShop have a *sustainable competitive advantage* over its competitors?
- Does the company possess a *sustained* or only a *temporary* competitive advantage?
- Is it possible to draw *general findings* for companies in other industry sectors from the LeShop analysis that go beyond the factors suggested by Mata et al. (1995)?
To address these questions data was collected in a series of personal interviews with the CEO and co-founder and the IT Director in the year 2009. The interviews were recorded and the text was examined using the above research questions. In order to study the longitudinal development of the company, we used the two case studies, which had been written about the company in the years 2000 and 2009 (Gisler, 2000; Wölfle, 2009).

**Case Company and Industry Segment “Online Supermarkets”**

An area of business-to-consumer e-commerce currently experiencing resurgence in interest and business activity is that of **online grocery retailing**. Whilst still a small fraction of the total retail grocery market, online channels are showing an increase in sales due to: increasing penetration of the Internet worldwide; consumer acceptance of the convenience of online grocery shopping; and increasing emphasis on online shopping by leading supermarket groups (Thomas, 2010).

The European online food sector is a fragmented and competitive environment with low margins (Schlautmann, 2010; Thomas, 2010). The UK has the largest percentage in online sales. In the year 2005, the UK had online sales amounting to the equivalent of 1,608 million Euros (74% of the total European market and 1.26% of domestic grocery sales). Switzerland was in fifth place with 47 million Euros (0.2% of domestic grocery sales).

Drawing from LeShop’s own research (LeShop Website), the Swiss population needs to spend an additional 250 million Euros per year to get to the same level of online shopping penetration as the UK.

There is a fierce competition in grocery retailing in the German speaking area, especially among German brick-and-mortar food retail chains (such as Aldi, Rewe, Edeka, Lidl) however none of these companies operates in the online space. According to the reports, the total turnover of German online food retailers was only 120 million Euros in 2009. In LeShop’s home market Switzerland, there are only two players that sell online, LeShop and Coop. Coop’s Internet sales had an increase of 22.4 percent in 2009 and reached an annual turnover of 67 million Euros. LeShop, on the other hand, who started its online business two years earlier than Coop, reached 90 million Euros in 2009. Therefore, online grocery sales in Switzerland amounted to 157 million Euros and are thus surprisingly higher than in Germany (a country that has 11 times the population of Switzerland).

Details of the full financial performance of LeShop are not available as the company is privately owned and does not have to publish their complete financial statements. It is known that LeShop has been trading in the black since the year 2006. Thus, it can be
regarded as a “success case”. Table 1 shows some key figures for the company (source: info.leshop.ch, 25/10/2010).

<table>
<thead>
<tr>
<th><strong>Company established</strong></th>
<th>October 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online launch</strong></td>
<td>April 1998</td>
</tr>
<tr>
<td><strong>Headquarters</strong></td>
<td>Ecublens (VD), Switzerland</td>
</tr>
<tr>
<td><strong>Logistics centres</strong></td>
<td>Bremgarten (AG) and Ecublens (VD)</td>
</tr>
<tr>
<td><strong>Shareholders</strong></td>
<td>Federation of Migros Cooperatives 90.5%, private investors 9.5%</td>
</tr>
<tr>
<td><strong>Market share</strong></td>
<td>estimate 67%</td>
</tr>
<tr>
<td><strong>Client base</strong></td>
<td>43,000 (regular customers), remark: Switzerland has a total population of 7.7 million</td>
</tr>
<tr>
<td><strong>Core target group</strong></td>
<td>Young families, working mothers</td>
</tr>
<tr>
<td><strong>Percent of customers ordering fresh produce</strong></td>
<td>92%</td>
</tr>
<tr>
<td><strong>Top 20 of sold products (2009)</strong></td>
<td>Max Havelaar bananas, organic butter, Chiquita bananas, cucumbers, tomatoes, zucchini, carrots, broccoli, cherry tomatoes, iceberg salad, chicory, onions, milk drink, organic eggs, lettuce, toilet paper, mocca yogurt, tinned tomatoes, sugar, avocados</td>
</tr>
<tr>
<td><strong>Number of orders/day</strong></td>
<td>average of 2,400 per day, mostly on Mondays and Fridays</td>
</tr>
<tr>
<td><strong>Product Range</strong></td>
<td>Supermarket and special shops with around 12,000 products. Supermarket: fresh produce such as fruit and vegetables, dairy products, bread and meat. Migros products and branded items: food and frozen foods, beverages, household and baby goods, body care, organic and fair trade items, international food, exclusive gourmet products and delicatessen, wellness products, home entertainment, perfumery, toys, flowers. Smokers’ requisites, wines and spirits.</td>
</tr>
<tr>
<td><strong>Delivery times</strong></td>
<td>Daily deliveries from Monday through Friday between 5 pm and 8 pm for orders placed the previous day before midnight. Delivery on Saturday morning for orders placed on Friday before 3 pm.</td>
</tr>
</tbody>
</table>

*Table 1: Key figures about LeShop (LeShop Website, info.leshop.ch)*

Sustainable Competitive Advantage in E-Commerce and the Role of the Enterprise System
Our case company LeShop currently only has one recognizable competitor, Coop’s online business (coop@home). While LeShop is a pure online player, Coop is using the Internet as an additional channel. This means that LeShop had to build up a brand, which Coop on the other hand just extended to its online channel. The difference is comparable to the difference between Compaq and Dell. Both, LeShop and Coop, offer their products at the same prices as in the physical stores (Migros/Coop retail stores) thus avoiding a channel conflict as discussed by Gallaugher (2002, p. 90) but LeShop does not profit from the brand name of Migros as is the case for the Coop@home online store. LeShop’s relationship with Migros came after the company was established; it is thus justified to view LeShop as a pure online player even if today Migros is supporting the business in the background. It would be interesting to perform a comparative study between Coop@home and LeShop. Unfortunately, there is little to no information available about the Coop online business. In 2009, company representatives at Coop were still hoping to be profitable with their online business within the coming year (Gold Interactive, 2007). Since then, no news about this expected profitability has been released. It can thus be assumed that it is still not operating in the black. Due to the lack of detailed information, it is not possible to perform a comparative study between the two players.

LeShop is the market leader in the online supermarket sector in Switzerland and contributes greatly to the fact that Switzerland is in fact second only to the UK worldwide in terms of the amount of turnover per head of population in this market segment. LeShop expects a further lasting growth of the e-commerce share of consumer expenditure in the supermarket range. In this, the inspiration is drawn from the UK, where the e-commerce share already constituted 2.2% of all retail in 2008, a good four times the share in Switzerland. LeShop wants to maintain its leader role in its original supermarket range and also to selectively expand it. The average shopping cart value at LeShop was 228 Swiss Francs (172 Euros) in 2009. The number of new clients was 39,300. More than 35,000 households shop regularly at least once a month at LeShop (LeShop, 2010; Wallace, 2009).

The limited company LeShop SA has been in majority ownership by Migros, the largest Swiss retailer, since 2006. Private investors still hold a share of just under 10%. Even after the takeover by Migros, LeShop retained substantial freedom of operations and organization.

LeShop sells solely on the Internet and only in Switzerland. In 2008, 200 employees processed 500,000 orders. LeShop has two logistic centres, one at the headquarters in Ecublens in the French-speaking canton of Vaud and one in Bremgarten in the German-
speaking canton of Aargau. Delivery is carried out by Swiss Post; the delivery area covers 90% of Swiss households.

LeShop’s core product range comprises supermarket products, supplemented by some special departments such as, for example, underwear. In total, around 12,000 unique products are sold, of which fresh products such as fruit and vegetables, dairy products, bread and meat have a large share. The range of goods covers various customer tastes: in addition to regular Migros products and branded articles, other items are offered such as organic products, fair trade products, international specialties, exclusive gourmet products and M-Budget products (Migros own brand) for price-oriented customers. A unique selling point comes from the distinctive feature that LeShop cannot only offer the Migros own brand (which is very popular in Switzerland) but also sell branded articles and other non-Migros articles such as alcohol. No competitor has this combination of goods on offer, not even in physical stores.

The Swiss retail market is a saturated market, which has only grown at a rate of about 1% per year during the past 20 years. E-commerce sales in general amount to an estimated market share at around 5% of the whole Swiss retail market in 2008. In the grocery and supermarket sector, the e-commerce share is much smaller: LeShop estimates the e-commerce share is still at 0.5%. The reason for the lower share lies in the particularly high logistic demands caused by the heterogeneous and often perishable products. Contrary to many other product segments, e-commerce cannot boast price advantages for groceries and so concentrates rather on service-oriented customers. Online merchants in this market segment can successfully charge delivery costs to the customers. Nevertheless, for some years the market volume of this segment has risen between 20 and 40% per year. LeShop reported a rise in turnover of 17% in the first half of 2009, which is attributed to additional new customers. For these customers, home delivery of their regular main shopping seems to be the most important reason for their Internet order. Not surprisingly, LeShop perceives young families and working mothers as their core customer base. By ordering online they are looking to save time otherwise spent in the car or in the supermarket; they do not even have to carry the goods into the house themselves. Doing one’s main shopping online results in high bills, which are then honoured by LeShop in the form of low delivery costs.
Sources of Competitive Advantage at LeShop

As mentioned above, we analyzed a series of interviews and two case studies (from 2000 and 2009) about LeShop with the focus on finding sources for competitive advantage. Our in depth-analysis is presented in the following section in the form of five main findings.

Finding 1: Business Processes

A key aspect of LeShop’s operational excellence is the efficiency of their business processes – especially the processes in the internal warehouse (warehouse management, picking and packing, delivery). The goods processing and the assembling of customer orders are work-intensive tasks and particularly critical for success. This efficiency is decisive for the question, whether a profit can still be achieved, despite the complexity of goods handling. The orders, broken down into partial orders, are assembled in different zones and stored in paper bags. Fresh products are packed in cool bags, which are also equipped with a cool pack in the form of a plastic bottle filled with frozen water. Bread and flowers are processed on a make-to-order basis and are always delivered to the logistics centre early in the morning. After that, they are, like the other items, simply taken from the shelves according to the order (picking). Paper bags and cool bags are stored in transport boxes, in which the space is used to best advantage. Frozen products are assembled on a make-to-order basis in a specialized area and made ready for the LeShop distribution centres in special deep-freeze boxes. The deep-freeze boxes are already labelled with the final address label and are assigned for delivery in a cross docking process, that is without being opened or repacked. Once all the partial orders are complete, the order is put together and loaded on to one of 34 delivery routes.

A carrier takes the grouped shipments in refrigerated vehicles to the distribution centres of Swiss Post (LeShop’s delivery partner), and the last stretch is delivered to the customer as an express delivery. The delivery takes place in a time frame of three hours. For LeShop this represents a reasonable compromise between logistics costs and service. Once they arrive at the customer, the bags are taken out of the boxes and handed over so that the boxes can be returned immediately to the depot. Should the customer not be at home, the delivery is either taken to a neighbour (if specified) or simply left outside the front door. The deep-freeze boxes cannot, however, be taken back in this case. The customers can return the boxes and cool bags at the next delivery and receive the deposit back then. The processing and delivery status of the orders can be recorded at every stage with the help of barcode scanners. The post service conveys the updated delivery data to LeShop, so that LeShop has a clear view of the whole delivery.
Longitudinal view: In the start-up phase of LeShop, warehousing and distribution was outsourced first to the Swiss Post and later to a specialized company called Planzer Transport AG (Gisler, 2000, p. 161). LeShop later realized that this had to be changed and that these business-critical processes had to be carried out by the company itself.

Finding 2: Continuous Innovation

Over the last 10 years, LeShop has been continually redesigning its processes and services. An important and not easy to realize innovation in 2009 was the expansion of the range to include own-brand frozen products which we will use as an example of the way the company deals with innovation. The decision to include own-brand frozen products in the range first came up when a solution was found for how LeShop could deal with the additional demands. In summary, the idea/breakthrough is a separate transport box with dry ice, so that the cold chain can be maintained uninterrupted right to the customer. The freezer box is filled on a made-to-order basis in a separate deep-freeze storage warehouse, provided with final shipment labels and located with other transport containers in a cross docking process.

There are considerable additional costs associated with deep-freeze logistics. One of the reasons is the price of the freezer box itself, for which a deposit of 30 Swiss Francs (20 Euros) is charged for each order. This correspondingly requires stock management and accounting logistics. Another reason is the additional logistic effort; for an order of a single package of ice cream these costs would be out of proportion with the value of the good itself. This is why LeShop makes the logistics costs for a box clear and charges the customer an additional 10 Swiss Francs (6.50 Euros) when they order small quantities of frozen products. If, on the other hand, the customer orders enough frozen products to fill the box, the additional costs are reduced in steps along the fill level to zero (full box). This correlation is shown in a dynamic display under the shopping basket symbol for the customer during the ordering process. The price is thus transparent to the customer and can be actively influenced – a fact that Swiss customers value highly.

Longitudinal view: LeShop follows the principle of continuous innovation in all business areas. In the beginning phase, the implementation of an “out-of-the-box” standard software solution (One-to-One by BroadVision) was seen as an advantage (Gisler, 2000, p. 172). Over the years, the development gradually shifted away from this “starting configuration” to a completely individualized software solution (comparable to other successful players such as Amazon or Dell). Today, the platform is the core of LeShop’s operations. In the spring of 2010, the company launched an iPhone app which supports the order process and which has been a great success since then.
Finding 3: Cautious Investment Decisions

In the twelve years that LeShop has been in business, many e-commerce companies have been founded and many had to give up. We see the way in which LeShop approaches projects and solves problems as one of their success factors.

Over the course of years, some ten million Swiss Francs (7.1 Mio. Euros) have been invested in LeShop; the exact figure has not been made public. The management emphasizes, however, that the sum of investment is much smaller than in comparable companies in the USA and in Great Britain. LeShop has always had to be cautious with capital. The idea was initially implemented on a comparably small scale – with 1,500 dry products – and then successively expanded and optimized (Gisler, 2000). “LeShop was not a company which would receive money from the stock exchange”, says the long-serving general manager and co-founder, its way was “I must first try and see how it goes”. On the stock market, one might have to tell other stories, which are not always well-founded. It is indisputable that LeShop needed much more money for the development of expertise and infrastructure than they had available at the start. Not every idea turned out to be right and sometimes a project had to be abandoned, e.g. activities abroad. However, luck was on their side when they needed to come up with yet more capital at the last minute. The great turning point came in 2006, when LeShop in the first trimester covered their costs for the first time and Migros secured 80 % of the capital. The way was paved towards growth and at the same time a second logistics centre was opened.

The stimulus for the project to introduce their own frozen products came from LeShop’s finance director. This is on the one hand surprising because this is not a typical concern for the finance department. On the other hand, it is characteristic of LeShop because every member of the four person directorship feels responsible for the company as a whole and also contributes to other departments, if one has new ideas or in times of need. The starting point was the first deliberations on how the great logistical challenges could be solved. They were the basis for a series of workshops which were described as “excel-dominated” by the IT director later responsible for the implementation. With Excel the project was calculated through, in doing so a timeframe of three years was applied and the estimates were tended towards the conservative. LeShop always begins with the simplest scenario in these situations, in this case with a high degree of outsourcing. But these calculations did not add up. Other scenarios were therefore developed, market targeting was undertaken with partners and partial solutions were devised, until a concept with an appropriate ratio of profit, costs and risks was found: A cool box with dry ice enables the uninterrupted cold
chain from the LeShop warehouse to the customer's front door. This is how it is possible for frozen products to be delivered alongside other products in one LeShop delivery.

*Longitudinal view:* In the year 2000, LeShop had expanded into the Spanish and Argentinean market plus had decided to enter the German market within the year 2000 (Gisler, 2000, p. 162). All these activities were later stopped. LeShop’s owners have traditionally played an important role. The company’s shares were first owned by its founders, in 1993 the Swiss Bon appétit Group bought 33.3 % of the shares, followed later by the Migros investment (which thus “bought” an online channel but left LeShop independent and let it keep its original name). Little spending and cautious investment decisions made its survival possible. The supermarket Spar (www.spar.ch) who was the first to open an online supermarket in Switzerland (Gisler, 2000, p. 164), has long since stopped its deliveries and returned to being a pure brick-and-mortar player. The original investment (up to the year 2000) had only amounted to 10 Million Swiss Francs (7.3 Million. Euros) and had been raised from Venture Capital. Unlike other companies such as Webvan or PeaPod, LeShop stayed parsimonious and focused on quickly achieving a sustainable business based on its own revenues. In the prosperous boom year of 2000, break even was expected to happen by the year 2002. In reality, it eventually took four years longer but it happened after all.

**Finding 4: Outsourcing Decisions**

At the start of its business LeShop had originally wanted to keep the complexity of its activity small through extensive outsourcing and establishing standard solutions. This also affected logistics and informatics.

In *logistics*, a strategic partnership with Swiss Post was put in place. Swiss Post together with partners carried out warehousing and commissioning of orders in the early years. However, it became evident that the logistics requirements in e-commerce with their heterogeneous and complex small parcel shipment were clearly different to the pallets and large cargo shipments that the partners’ logistics were oriented towards. The integration of the IT systems was also no easy task as, at the end of the 1990s, these were not as yet designed for flexible cross-company cooperation. The appropriate balance between performance and cost could not be achieved in this configuration, so LeShop took over these functions themselves in 2001 and opened their first warehouse in Bremgarten.

In terms of *software* they started with the system One-to-One from the then highly respected US supplier BroadVision. LeShop was a reference customer for BroadVision in Europe. It was decided to collaborate and further develop the solution together. Accordingly, LeShop
had complete access to the source code of the software. One-to-One was primarily front-end orientated, functionality for the e-commerce logistics was lacking. Virtually every element of the application was configurable, resulting in a huge level of complexity in adjustments. Moreover, there were performance problems with the object-oriented application. LeShop quickly gained experience, which was reflected in clear specifications on the system functionality. For example, for fruit, vegetables or meat the actual variable weight and also the price should be displayed on every order. The final value of an order then varied from the original value. The standard software did not allow for such details to be displayed. Adaptations and expansions turned out to be too complex and costly, not least because of the high demand on external consultants. In order to be in a position to put their own demands more quickly and efficiently into effect, they began to replace One-to-One with their own developments in Java. Because One-to-One is compatible with Java, a gradual replacement was possible. In a first step, the product search in the shop was replaced, next the shopping basket. Successively, all modules from One-to-One were replaced and new functionalities for the inventory management and the “machine” were developed. LeShop refer to the “Machine” as the logistical infrastructure, consisting of guide rails, switch plates and scanners.

Longitudinal view: Particularly in logistics, it had been attempted to bring in experienced external experts. These were, however, so set in their ways that they were not considered suitable for a newcomer like LeShop. So, LeShop was forced to come up with the logistics for the e-commerce in the supermarket segment themselves. Ultimately the entire functionality of the software used today is self-defined and devised. In the development of software, LeShop is anxious to keep the systems simple and flexible. Adaptations must be possible, because “LeShop is ready every day to achieve a better process”. From the beginning onwards the IT director has built up the LeShop system in its current form with his team. He knows it inside out and is, therefore, a key person.

Finding 5: Partner Network

Another key issue for LeShop has been the building up of strong ties with partners. These range from partners for advertisement and logistics to close bonds with their suppliers.

Because one does not simply come across an online shop as you would with a physical shop in a pedestrian zone, opportunities for contact have to be created by means of continuous advertising campaigns. LeShop runs advertisements on television and radio as well as in print media. Other offline advertising instruments include inserts in mail from advertising partners or personalized content in the Cumulus Program letter which members of the
Migros customer loyalty program regularly receive. In online advertising, search engine marketing, banner campaigns and affiliate partner programs play an important role. As an incentive, time limited competitions and price reductions are also offered within the advertising materials. Recipes are a content-led link to potential customers. These are available both on the LeShop website and also interspersed in the program of the LeShop Internet radio station LeShop.fm, which started in 2008 (also another example of continuous innovation). The cross-channel advertising potential with Migros offers therein still more in unused potential. The possible shift of some of the purchases from Migros branches to LeShop is not seen by LeShop as detrimental to the Migros group. Unlike their competitor Coop, LeShop can supply both Migros products and branded products so that the cannibalizing effect is rather a disadvantage to Coop, if anyone.

LeShop is proud of its relationships with suppliers. These are established with a view to the long-term and included in the continual improvement process. Although LeShop’s sales volume is relatively small, it still has access to company management even at very large suppliers because of its role as an e-commerce pioneer. LeShop had to develop new performance characteristics and processes, which would have been impossible without constructive teamwork with their suppliers. One tries to achieve progress not by putting suppliers under pressure but by including them in the project.

LeShop could even make a difference in such a large company like Swiss Post (delivery partner). Quality data is exchanged, KPIs (Key Performance Indicators) are discussed and better solutions are sought together. This is how suppliers are transformed with LeShop; a large post service is treated in exactly the same way as the butcher and baker from Weingarten, for whom LeShop has become the most important customer. The principle is give and take. LeShop gives its suppliers, for example access to a part of the anonymised data so that they receive direct information from the market. The postal workers at Swiss Post receive a Christmas present with a letter and a “thank you” for their efforts – many employees do not even receive that from their own employer.

Longitudinal view: LeShop started using the complete logistics services of Swiss Post (including warehouses), then changed to a complete outsourcing to yellowworld and is today operating two self-owned, independent logistics centres. Only the delivery is still performed by Swiss Post. Over the years, LeShop has purposefully extended its partner network, including payment gateways and even small local bakeries. The business intelligence in their network is a result of years of building up mutual trust.
Case Analysis Using the Mata et al. Framework

The following chapter discusses the findings in the context of the Mata et al. framework. First, we look at LeShop’s strategic positioning regarding the generic Porter strategies (Porter, 1985). We then discuss existing resources and capabilities. The main part analyzes the factors for competitive advantage as suggested by Barney (1991) and Mata et al. (1995).

LeShop’s Strategy

Information technology has a fundamental significance for the e-commerce supplier LeShop – not only for the online shop. The IT director, member of the four-person executive board, described LeShop as a logistics company with a website as customer interface. All primary business processes are linked to their IT systems, naturally also the “Machine“, as they call the logistical infrastructure internally. Operative performance is a central success factor in the low-margin business; all movement of goods and operations are directed towards it.

<table>
<thead>
<tr>
<th>Generic strategy</th>
<th>LeShop’s position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost leadership</td>
<td>Yes. Keeping logistics and operating cost low is a key issue.</td>
</tr>
<tr>
<td>Price leadership</td>
<td>No. No price flexibility/discrimination possible in the online supermarket segment.</td>
</tr>
<tr>
<td>Product differentiation (unique product)</td>
<td>No/Yes. No for core products (supermarket articles are commodities); yes for complementary performance system (website, home delivery service, repeat buy shopping lists, customer service) and assortment of brands (including Migros’ brands).</td>
</tr>
<tr>
<td>Product diversification</td>
<td>Yes. LeShop sees itself as an online shopping store for a wide range of products.</td>
</tr>
<tr>
<td>Strategic alliance</td>
<td>Yes. With investor Migros, delivery service provider Swiss Post, and selected suppliers.</td>
</tr>
<tr>
<td>Information technology</td>
<td>Yes. The individually programmed software and logistics system is “the machine”.</td>
</tr>
</tbody>
</table>

Table 2: LeShop and strategies for competitive advantage (Porter, 1985; Porter, 2001)

LeShop follows a continuous growth strategy, which has been adjusted to the development of recent years. Already in 2006, a second logistics centre was opened, with the belief that the potential was far from being exhausted. The management shows a great amount of agility: things are constantly questioned, improvements are sought, new approaches are created and
where necessary tried out. Numerous operating figures are measured and are the foundations for a continuous improvement process, in which all employees and suppliers are included. The optimization takes place in small steps, and is never completed. The LeShop team has learned to seek and find the correct solutions itself. In the past, various consultants were called in or some subtasks were outsourced. The results achieved from this were not always satisfactory. The achievements and activities described in this case study were predominantly carried out by LeShop themselves; the development also took place largely in-house. In order to understand the company background, it is necessary to introduce the main shareholder company, Migros. LeShop shows the following position on Porter's generic strategies for competitive advantage (cf. Table 2):

**Resources and Capabilities**

In this section we investigate and discuss whether LeShop's resources and capabilities are valuable, rare, inimitable, and non-substitutable. LeShop possesses numerous resources and capabilities that other competing firms do not have and cannot imitate without an extensive amount of time or cost. Among these are the following:

- Software and logistics system is a self-developed (bespoke) software
- Business processes (such as warehouse management, cross docking, logistics) that cannot be analyzed from the outside
- A management team with more than 10 years of experience in the field
- A developed partner network that cannot be easily copied, e.g. advertising partner, suppliers

**The role of history**

LeShop’s skills and capabilities are all showing the signs of a development over time.

The *e-commerce capabilities* developed by LeShop cannot be developed over the short term. Setting up the background processes and the partner network (including interfaces) takes time.

The *founders* carry the experience of 10 years of e-commerce development (skills, know-how, partners’ trust in LeShop).

**The role of causal ambiguity**

We argue that the actual Web shop is not the primary source of competitive advantage. It can be examined and copied by competitors and the mere interface can be easily re-engineered. It is all the more surprising that a lot of research in the area of e-commerce is focused on the Web shop interface (Wang & Emurian, 2005).
Causal ambiguity is a source of sustainable competitive advantage for LeShop. Their background processes are not fully known or even visible to the competitors and cannot easily be copied. Also, LeShop has “invisible assets” (Itami, 1987) such as its operating procedures and its culture.

The whole body of rules and regulations comprises a vast amount of know-how and includes rules about minimum orders, delivery times and costs, deposits etc. LeShop has arranged its conditions in such a way that the mechanics of the logistics costs are quickly transparent and customers can easily see that they benefit from a reduction in their proportion of logistics costs when they make an order with a higher value.

**The role of social complexity**

The established *partner network* is socially complex and the trust relationship is often built on people working in the company. LeShop puts an emphasis on collaboration with partners. Customers can for example pay with UBS Keyclub points at LeShop which stem from the largest Swiss bank’s customer loyalty program. Customers participating in the Migros customer loyalty program Cumulus, also receive cumulus points for their purchase of Migros products at LeShop. Particularly good customers occasionally receive a gift or invitations to special events. The success of the customer retention measures is shown in the fact that more than 35,000 Swiss households do their main shopping between once and several times a month at LeShop.

LeShop has a base of *highly motivated employees*. Every commission procedure is recorded with a mobile scanner and is registered with a time stamp. From this basic data, weekly performance figures are formed for each person and team. Errors in commissioning are traced back so that the responsible area also receives feedback here. Good performance figures are rewarded at the individual level as well as the team level in the form of bonus payments. The teams therefore are *self-motivated* to try to perform well. Most of the employees can greatly improve their basic salary, which is in line with the industry standard, through their performance. The organizational culture is innovative and self-improving.

**Access to capital**

The brick-and-mortar retailer Migros played an important role for the development of LeShop. In 2006, when LeShop was almost forced to give up, Migros saved LeShop and took over 80% of the capital owned. Until that point LeShop had managed to develop of
their own accord, which is very unusual for a pure online player. As a principle, they did not want to be financed with costly and “risky” money. In this respect, it can be argued that the competitor Coop had an advantage over LeShop before 2006. While LeShop started as a pure Internet Business, coop@home is “just” an online channel of a traditional retail company and thus has always had access to money from its parent company. However, coop@home was only started in August 2006 and thus after the takeover of LeShop by Migros.

Proprietary technology

Proprietary technology is another area of competitive advantage for LeShop. As Mata et al. state: “Clearly, if a firm possesses valuable proprietary technology that it can keep secret, then that firm will obtain a sustained competitive advantage.” (Mata et al., 1995, p. 497)

As described above LeShop started with the commercial off-the-shelf (COTS) software One-to-One provided by BroadVision. Over the years, they transformed the software into a self-developed bespoke software system that is now powering “the machine”. No other competitor can buy or quickly reverse engineer this software system.

If there is one central element of the infrastructure that represents LeShop’s business concept, it is the IT platform with the business software. It carries the business concept as front-end to the customers and allows an automatic control of the order logistics and accounting without media discontinuity. Apart from goods handling, no human assistance is needed in the standard process. The own-brand range is being extended with externally managed complementary ranges, which are only integrated over data and from this the market potential is broadened. Far-reaching innovations such as the introduction of their own frozen product range can be achieved comparably quickly. In every transaction, data is collected, saved and evaluated. Carefully managed customer information is used in a long-term customer relationship to optimize supply and communication. The KPIs are the basis of the continuous learning and improvement process. LeShop’s business software was individually developed because standard software offered no acceptable solutions and because LeShop sees its strengths precisely in the agile and accurate organization of its range and its processes. It will be a challenge, however, to continue this solution that has grown in so many small projects in such an agile and competent way if the key personnel from the first years are no longer available.
Technical IT skills

The availability of technical IT skills is another factor that stood out in the analysis. Successively, all modules from One-to-One were replaced and new functionalities for the inventory management and the “machine” were developed. Particularly in logistics, it had been attempted to bring in experienced external experts. These were, however, so set in their ways that they were not considered suitable for a newcomer like LeShop. So, LeShop was forced to come up with the logistics for the e-commerce in the supermarket segment themselves. Ultimately the entire functionality of the software used today is self-defined and devised. The programmers have the necessary skills and the knowledge about the system. In the development of software, LeShop is anxious to keep the systems simple and flexible. Adaptations must be possible, because “LeShop is ready every day to achieve a better process”. The conceptual considerations are documented in a Wiki; the implementation is specified directly in code. The IT director has built up the LeShop system in its current form from the beginning on with his team. He knows it inside out and is, therefore, a key person.

Especially for a small company such as LeShop it is essential to have and retain their own technical skills. They are not able to simply hire new employees as suggested by Mata et al. 1995 (p. 498) because they do not have the necessary financial resources.

LeShop’s flexible approach of developing their own software runs the danger of a continually increasing complexity in the organization and the IT systems. However the business management has undertaken to keep it simple. Moreover, the technology-dependent company is reliant on robust and permanently available systems. In this way, ideas are thoroughly filtered. The IT director has the role of a gatekeeper. The company director joked that he was the most-hated man in the company because he ultimately decides what is feasible and what is not.

Managerial IT skills

Every member of the executive board has an area of responsibility, in which they are responsible for the observation of KPIs and the optimization of the processes. But the employees are also a source of many ideas and initiatives for improvements. If an idea is considered promising, it is first finalized theoretically. If appropriate a prototype is set up and functions are tested in live tests. The new functions are only programmed when the concept is approved. The processes are then adapted and transferred into ongoing operational use. Usually, however, there are even more changes in the end; almost any solution can be improved.
According to Mata et al. “Examples of important IT management skills include: (1) the ability of IT managers to understand and appreciate the business needs of other functional managers, suppliers, and customers”. (Mata et al., 1995, p. 498). As shown above, the LeShop management exercises these skills in their constant search of innovations. They have proven that they know how to design ideas and test them on economic feasibility as demonstrated in the introduction of the frozen food segment. The business case worked in the end. The same applies to the new iPhone app. This means that “close working relationships among those in IT and between IT and other business functions are not all that common” (Mata et al., 1995, p. 499) but they are at LeShop.

Conclusions

Given the duopoly in the online grocery sector in Switzerland it would be interesting to perform a comparative study with LeShop’s competitor Coop@home. This is not possible due to a lack of accessible information about Coop’s online business.

On the occasion of the prize giving at the Best of Swiss Web Award 2009, the company director spoke of the luck that LeShop has had and that LeShop could have easily disappeared like many other e-commerce pioneers when the Internet bubble burst. This can easily be imagined. However, it cannot have been luck alone. LeShop “invented” the supermarket segment in Swiss e-commerce. Neither in the business concept nor the logistics nor the business software could they call upon an established role model. In this respect, LeShop as a whole is a specialty, which, as so often in innovations in business, cannot be traced back to one or a few clear definable factors. Rather, the success of LeShop consists of a meaningful combination of several decisions and actions taken over a long period which taken in isolation, are not at all exceptional.

Due to this expertise, LeShop as David managed to team up with the Goliaths and infiltrate a market that is characterized by increasing concentration. It succeeded along with Migros, which as main shareholder, now makes possible a speedy advancement. Migros contributes an attractive product range and brings in support services in logistics and informatics. It also succeeded with the Swiss Post, with whom they searched over some years to find suitable e-commerce logistics. It succeeded with large suppliers such as Nestlé and small ones, like a baker who has tailored his business largely to meet the demands of LeShop.
Overall, one of the main conclusions is that LeShop maintains its sustained competitive advantage through a constant improvement process. The company is continually developing new concepts and ideas. It has the necessary flexibility and the organizational culture for constant change and innovation. Its main business is selling food online – it is not a mere channel in a traditional retail company.

When one looks at LeShop and sees how it was developed with a great deal of expertise and how the infrastructure was built up, it is a little easier to understand why so many start-ups of the new economy failed at the beginning of the 21st century. Many really believed that fundamentally, with a clever customer front-end in the form of a website or an online shop, they could quickly be in business. In the back-end of the order processing and logistics, one would have been glad to rely on the apparent commodities of the old economy. However, in truth and in practice, the dependencies are larger. Successful business concepts must be integrated and perfected through the whole value creation chain, also when they begin in the Internet. To develop this required more time, expertise and capital than the most start-ups ten years ago were able to muster.

The authors believe that the findings from the LeShop case can be generalized for other companies. None of the five findings is limited to a specific condition in the Swiss context or to the industry sector when discussed in the light of the resource based view. Table 3 summarizes the findings of our analysis.

<table>
<thead>
<tr>
<th>Finding</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1: Business Processes</td>
<td>The study underlines previous research that shows that business processes are a focal point of e-commerce operations.</td>
</tr>
<tr>
<td>#2: Continuous Innovation</td>
<td>The continuous search for improvements and the keeping up to date with latest technological development (such as iPhone apps) is important for technology-supported businesses such as e-shops.</td>
</tr>
<tr>
<td>#3: Cautious Investment Decisions</td>
<td>Overzealous concepts and huge spending proved to be detrimental for many start-up companies (see examples such as PeaPod and Webvan).</td>
</tr>
<tr>
<td>#4: Outsourcing Decisions</td>
<td>The LeShop case supports prior studies which show that key business processes (which enable competitive advantage) cannot be outsourced.</td>
</tr>
<tr>
<td>#5: Partner Network</td>
<td>Companies which are dependent on a partner network, e.g. for delivery or special supplies, encounter barriers in new markets. Trust among business partners is developed over years of good mutual practice.</td>
</tr>
</tbody>
</table>

*Table 3: Summary of the findings*

The Mata et al. (1995) framework has proven useful for our analysis. It inspired our research questions and guided us in the analysis of the data from the interviews and the two case studies. We can fully support the authors’ view when they say: “For researchers, the
resource-based view of the firm suggests that the search for IT-based sources of sustained competitive advantage must focus less on IT, per se, and more on the process of organizing and managing IT within a firm” (p. 500). Many visions failed in the Internet start-up era but the management at LeShop developed the right skill set and realized that their company was operationally, above all a logistics company. Characterized by low margins and as challenging as the supermarket range is, it is about making the most of every opportunity and designing the range in such a way that it can be dealt with logistically and economically. Exactly how this is done, the management had to figure out first. With confidence and a great deal of persistence, a continuous learning process was established and sustained. Such a path is associated with many unpleasant situations, in which mistakes and uncertainty must be discussed.

Few e-commerce studies had the opportunity to study a company over more than 10 years. It is especially interesting to see how decisions had to be revised and how the scope of business activities was extended and responsibilities gradually insourced while the company was maturing. Even if the findings from our paper cannot be generalized for all e-commerce companies the findings are a valuable contribution to the existing body of literature due to their longitudinal nature.

References


