TRANSITION TO CLICKS & MORTAR

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Ben Endy

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TRANSITION TO CLICKS & MORTAR

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ABSTRACT

The e-commerce boom has had a ripple effect on the way bricks-and-mortar retail stores operate their business. Bricks-and-mortar stores not only have to compete with one another in the physical world; they now have to compete with the pure Internet players. However, there are several issues that bricks-and-mortar stores must face before they can launch their online operations. The transformation strategy must be carefully planned.

In addition, bricks-and-mortar stores must face certain challenges those pure Internet players seldom or never encounter. First, they have to recognize that e-commerce users have become an important segment of consumers; if they decide to go online, they must take the endeavor seriously. Second, they need to determine the best way to integrate online and physical operations.

On the other hand, pure Internet players have also realized the benefits of a physical presence. Many have discovered that having outlets can improve their customers' overall shopping experience. For instance, Gateway Computers started as a catalog ordering company, but now the company has stores all over the country which serve as showrooms where customers can try out the computers. This combination has significantly increased Gateway's sales.

This thesis will explore the factors that lead to the need for "clicks-and-mortar". Furthermore, it will point out the challenges facing clicks-and-mortar companies and discuss them in detail. It will then elaborate on the transition process and then create three clicks-and-mortar models. Finally, it will make a detailed comparison of the three models in order to determine their benefits and limitations.

Thesis Supervisor: James M. Masters, Executive Director, Master of Engineering in Logistics Program
Chapter 1: Introduction

1.1 Background

Many bricks-and-mortar companies resisted e-commerce when it first started. These companies assumed that the trend was nothing more than a fad and that it would need a long time to become popular with consumers. They were soon proven wrong. Over the past few years, e-commerce has become a vital form of transaction for many consumers; it is here to stay. In order for bricks-and-mortar companies to retain their clientele and expand their customer base, they must utilize this new channel and compete directly with pure Internet players. In order to establish themselves online, however, bricks-and-mortar companies must first overcome several challenges. Next, they must decide whether they wish to integrate online operations with existing operations. Finally, bricks-and-mortar companies must find ways to integrate and adapt to the clicks-and-mortar model.

1.2 Objectives of the Study

The title chosen for this study -- Clicks-and-Mortar -- is an amalgam of the term "bricks-and-mortar" and the element of e-commerce. Most companies, regardless of whether they are bricks-and-mortar operations or pure Internet players, have discovered the advantages of integrating online and physical operations. The intention of this thesis is to assist bricks-and-mortar companies to identify the advantages and disadvantages of integrating their present operations with an online presence. I firmly believe that bricks-and-mortar retailers can outperform pure Internet players if they efficiently integrate online and physical operations. This is due to the fact that bricks-and-mortar operators possess assets that e-commerce operators lack, including long heritage and numerous outlets. I will thus present bricks-and-mortar retailers with three models meant to efficiently integrate their present operations with online operations through information technology and logistics, eventually transforming them into clicks-and-mortar companies.
1.3 Thesis Organization

The second chapter of the thesis will comment on the growth of the e-economy, especially on the four factors driving this growth. Chapter three will discuss the need for a clicks-and-mortar conversion. The fourth chapter discusses in greater detail the challenges facing clicks-and-mortar companies from the perspective of both bricks-and-mortar retailers and pure Internet players.

Chapter Five introduces the three models available to clicks-and-mortar companies in implementing their operations. A detailed comparison of the three models will be made in order to give businesses a better understanding of the advantages and disadvantages of each model. Chapter six will analyze the advantages and disadvantages of outsourcing the fulfillment service of the online operation. Finally, chapter seven will conclude the thesis.

Chapter 2: The Growth of the e-Economy.

![Bar Chart]

**Figure 1: Internet Users Purchasing Online**

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1 Source: Piper Jaffray; GVU Internet Survey; eMarketer
In just five years, electronic commerce has undergone a tremendous boom. In the beginning, people used the Internet primarily for research and e-mail. Eventually, more people began to rely on it for online shopping. In 1998, multi-channel merchants (who own bricks-and-mortar stores, catalogs, and Internet sites) more than doubled their sales volume over the previous year, reaching $2.3 billion. Internet-only companies generated over $5.3 billion. As shown in figure 1, the number of Internet users who purchase online has increased tremendously, from 10% in 1995 to 58% in 1999. It is projected that, in 2003, 85 million Americans will buy online, and 90 percent of online sales by 2002 will be products that people would have otherwise bought offline. Evidence of the growing e-economy is ubiquitous; e-commerce is projected to dominate the US GDP within the next five years (as shown in figure 2).

Figure 2: e-Economy vs. Industrial Economy

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2 Figures derived from the GVU Internet Survey; eMarketer
3 Projections provided by Juniper Communications.
4 Source: Marvin Zonis & Associates
According to Andersen Consulting, there are four mutually reinforcing factors that drive the development of the e-Economy.

![Diagram showing four factors driving e-Economy's growth](image)

*Figure 3: Four factors driving e-Economy's growth* 

### 2.1 Expanding Technology Infrastructure

The growth of the Internet has been primarily driven by the expansion in technology infrastructure. For instance, growth in software development enables transactions to be carried out over the Internet. There are increasing number of companies that provide business-to-consumer application for online secured transactions, web design applications, and e-commerce applications. These applications have enabled retailers to set up an online store quickly and have dramatically impacted both the speed and the

---

5 Source: Andersen Consulting

6 CyberCash, VeriSign, Networks Associates and CheckPoint Software Technologies.

7 Adobe Software, Macromedia, Net Objects and Microsoft.

8 InterShop, iCat and Microsoft.
volume of transactions. In addition, business-to-business application that provides tools and services to let suppliers and retailers track and share sales and order-related information has also increased in large number. In addition, it will align supply with demand to reduce inventory, improve service levels and increase sales for both parties.

The growth in bandwidth, combined with greater variety of inexpensive hardware, also allows more computing activities to take place and transactions to be carried out faster over the web. Likewise, expansion in the wireless industry has helped to fuel the rapid growth of the Internet. Satellites and wireless communication equipment increase the ability of individuals to communicate with one another from every corner of the globe. The high stock prices of wireless equipment such as Nokia, Qualcomm, and Motorola attest to the expansion of the industry.

2.2 Cooperative Regulatory Environment

Governments all around the world have embraced the growth of technology, and in particular, the expansion of the Internet. Most governments do not impose tight controls over the function of the Internet, and taxes are not levied on sales made online. This has led to an exponential growth in the use of the Internet. Many government bodies even utilize the Internet to provide information for the general public. For example, the United States Internal Revenue Service (IRS) has a web site featuring information that the general public often inquires about, and it even allows the public to file taxes online. Not only has the Internet reduced the human resources needed to serve the public, it has also improved the overall productivity of government bodies.

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9 Commerce One, Ariba, Vignette and i2 Technologies.
10 Using applications provided by Intuit's Turbo Tax or by tax service firms such as H&R Block.
2.3 Compelling Consumer Value

There are seven trends driving customer interest in the Internet, and especially in e-commerce.

2.3.1 Higher Educational Levels

In recent years, the demand for college degrees has been increasing; at the same time, the acceptance of technology has been on the rise. Segments of the population with higher levels of education have already made the Internet a vital part of their lives, relying on it for information gathering, entertainment, and commerce.

2.3.2 Embracing Technology as Problem-Solver

More and more educated consumers are regarding technology as a problem-solver, and they believe that its benefits far outweigh its drawbacks. The Internet -- an important part of technology -- is already widely used for research and communications, and its uses have been expanding daily. In the future, when online privacy and safety can be more firmly ensured, more consumers will embrace the Internet as an important problem-solver.

2.3.3 An Easier Way to Accomplish Tasks

If the Internet continues to reduce the time and eliminate the hassle of carrying out transactions, it will no doubt attract more consumers. For instance, shopping for groceries in a supermarket takes, on average, thirty minutes, while online grocery shopping\(^1\) takes ten minutes. This kind of convenience leads more people to embrace the Internet.

\(^1\) WebVan, Peapod, and HomeRuns
2.3.4 *Allowing More Family Time at Home*

By shopping and running errands online, families can spend more time together at home. Family members can shop online for books\(^{12}\), stamps\(^{13}\), and prescriptions\(^{14}\) without the hassle of driving to the mall and queuing up to pay at the cash register.

2.3.5 *An Increasing Need for Networking*

More people are using the Internet to form interest groups and maintain personal support networks. The Internet is often used to find long-lost friends or relatives\(^{15}\), and it has become the cheapest and fastest tool to keep in touch with others\(^{16}\).

2.3.6 *The Consumer Has the Ultimate Power*

As consumers become more educated and better informed, they are increasingly able to carry out transactions on their own terms. Companies must be able to earn the support and trust of their customers in order to keep them. Using the Internet, any given company can more easily provide information before a purchase and a follow-up after a sale is completed.

2.3.7 *Demand Purchasing as an Experience*

More consumers are regarding purchasing as an experience rather than a transaction. They are keenly aware of the whole sales process, from beginning to end. A consumer who does not feel comfortable with a part of the process might not repeat a purchase. The

\(^{12}\) Amazon.com, Borders Online and Barnes & Noble.com

\(^{13}\) E-Stamp.com, Stamps.com and Pitney Bowes.

\(^{14}\) Drugstore.com, Rx.com and PlanetRx.com

\(^{15}\) Services such as USSearch.com and InfoSpace.com.

\(^{16}\) Online communication services such as AOL’s Instant Messaging, ICQ and Mail.com.
Internet can provide a better experience than traditional means of shopping because it requires less human interaction and works around the clock to service customers.

2.4 **Compelling Business Value**

The Internet has provided businesses with a new sales/distribution channel with which to reach their customers. For example, a small comic book store in the United States can sell to customers in Russia. In addition, the Internet has enabled companies to interact in real time, with lower costs. For instance, General Electric has used the Internet as a tool to communicate and collaborate with its customer in Japan to make real time changes to the blueprint of a product. The Internet has also allowed companies to cut operation costs and increase communication with suppliers and customers. By sharing critical sales forecasts and other useful information, inter-company integration can be carried out more easily and with greater success.

2.5 **Key Criteria for Online Purchase**

![Bar Chart](image)

*Figure 4: Key Criteria*

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17 Source: Jupiter Communication
Everyone operating an online business would like to find out exactly what makes consumer purchase online. According to a survey by Jupiter Communications, 80% of consumers choose the Internet over traditional means of transaction because of the lower prices offered by Internet retailers. Many items cost less when purchased online because intermediaries are eliminated from the sales-and-distribution process. By offering products at prices lower than those of their competitors, online businesses encourage consumers to make their purchases through the Internet. In addition, 48% of those surveyed indicated that product information and product availability determine whether they make purchases over the Internet. Searching for information the traditional way takes considerable time and resources, which has led many consumers to look to the Internet for speedy solutions. If online stores can ease the search process, consumers will tend to reward them with more purchases.

Furthermore, 39% of consumers feel that security plays a major role in creating a positive online shopping experience. When a web site can guarantee that the purchase will be secured and private information will be safe, consumers increase their frequency of online purchase. On the other hand, 31% of consumers noted the ease of receiving comparative information on web sites as a key to whether they make an online purchase. Last but not least, 25% of those surveyed regarded delivery time as one of the important factors for online shopping.

Chapter 3: The Need for Clicks-and-Mortar

3.1 Keeping Up with the Trend

From banking to grocery shopping, the Internet is the future. Almost everyone has a web site nowadays. Bricks-and-mortar retailers must go online in order to keep up with the trend and not lag behind their e-commerce counterparts. Consumers regard companies lacking web sites as old-fashioned and neglectful of the needs of today's consumers. Thus, all bricks-and-mortar companies must go online.
3.2 Consumer Preference

The number of people accessing the Internet has been increasing, and many already prefer web sites to traditional sales channels. Many consumers use the Internet to search for information before making a purchase either online or in a store. Therefore, it is crucial for bricks-and-mortar companies to establish web sites that allow customers to research the products and services offered by the company.

3.3 Bricks-and-Mortar Companies Must Retain Their Stores

Even though operating entirely online cuts operation costs and improves distribution productivity, bricks-and-mortar companies possess heritage and outlets that cannot simply be cast aside. Therefore, the best choice is to incorporate the online operation into the existing system and use it to complement the present operation.

3.4 The Most Sensible Choice

If a bricks-and-mortar company closes its physical stores and operates solely online, it will incur high costs, lose its long-term customers, and tarnish its reputation. On the other hand, if the company refuses to change and fails to introduce online operations, it will lose out to its competitors and be regarded as a company that cannot keep up with the trend. The most sensible choice is to become a clicks-and-mortar company, integrating both operations.

3.5 Expanding the Bricks-and-Mortar Company’s Sales Channel

Using the Internet as an additional channel, a bricks-and-mortar company can serve a different segment of the population and increase its revenue. In addition, the company can use the net as a service, information, or sales channel while retaining its physical store as a showroom or pick-up depot.
3.6 Lower Customer Acquisition Cost

Compared with pure online players, clicks-and-mortar companies have the advantage of lower customer acquisition cost because they can spread the cost of acquiring customer over several channels. Bricks-and-mortar companies can leverage their existing customer base by encouraging customers to shop online. Multi-channel retailers spend $22 per customer, while pure Internet retailers spend up to $42\textsuperscript{18}.

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\textsuperscript{18} Figures derived from a Shop.org survey done by Boston Consulting Group.

\textsuperscript{19} Source: Boston Consulting Group
4.1 The Transition

Transforming a bricks-and-mortar company into a clicks-and-mortar company requires strategic clarity, substantial planning, the commitment of additional resources, and determination to see the transition through the end. Implementation is the most important part of the process because it entails risk. In order to execute an effective change management, the company must ensure that its board members, shareholders, management and employees understand and embrace the need for a transition.

4.2 Preventing the Cannibalization of Existing Business

The company must make its online site into an additional sales/distribution channel in order to increase its sales and revenue. The "clicks" operation, in other words, must complement, rather than compete with, the existing business.

4.3 Information Technology

Many bricks-and-mortar companies already have legacy systems; in order to integrate its online operation with its existing sales and distribution system, the company must utilize a network integration system that can seamlessly integrate the two operations. The company must also determine what type of information or data has to be shared among centers to process customer orders.

4.4 Inventory

One of the most common problems facing operation managers is inventory planning. This is understandable because inventory usually represents a sizable portion of a firm’s total assets. Excessive money tied up in inventory is a drag on profitability. Clicks-and-mortar company must equip with a better inventory planning system to achieve an
optimal investment in inventory so as to minimize inventory related costs such as ordering costs, holding costs and shortage costs.

To determine the safety stock for the highly seasonal and fragmented online sales is the main challenge facing clicks-and-mortar. By utilizing historical sales data to forecast future sales and calculate reorder point can help the company to reduce inventory holding and reordering costs. The flow of inventory must be carefully mapped out to prevent any confusion or delay in fulfilling orders. Traditionally, the bricks-and-mortar company relies on a pre-determined delivery schedule to its various distribution centers. By incorporating the online operation, it must restructure itself for shipping thousands, or even millions, of orders to highly dispersed destinations.

In addition, reverse logistics will have a great impact on the clicks-and-mortar's way of structuring their operation. It will be an additional challenge to accept returns in-store, as an accurate inventory tracking and tracing system must be installed in order to ensure a smooth operation.

4.5 **Addressing Supplier Issues**

By transforming into clicks-and-mortar, many offline businesses have to address several supplier issues. One of which is the willingness to share data between both sides and in turn improves the forecast in demand and supply. Furthermore, both sides have to explore new ways to make its logistics work better.
4.6 Effects of Interdependent Forces

As shown in figure 6 above, there are several interdependent forces that affect the smooth operation of clicks-and-mortar. Internally, the company can use Information Technology as a central foundation to integrate the inventory and transaction system of both its real world and online business operations. Furthermore, it is essential that the company align all its functions that include marketing, finance, operation and logistics.

Externally, the clicks-and-mortar must be constantly aware of its competitors’ actions and at the same time, position itself well and secure as many strategic alliances as possible. These businesses must work with their strategic alliances including customers and suppliers to ensure that everyone shares the same vision and goals by committing to implementation and alignment of resources.
The ability of a clicks-and-mortar to align all of these interdependent forces will determine the success of the company.

Chapter 5: The Clicks-and-Mortar Company

5.1 Background

Traditionally, a bricks-and-mortar company starts with one store outlet that is located in a city and serves customers living in that particular area. The store has no exposure outside the city because it lacks the infrastructure necessary to serve those customers. If the store intends to expand its business, it must open new outlets in other cities in order to acquire more customers. However, this expansion usually requires costly initial investment and is risky due to uncertainty in the demand. To lower the risk and capital investment, many operators end up engaging in partnerships with other stores in order to distribute their products.

As the business grows and it becomes more cost-efficient to operate its own outlets rather than form a partnership, the business will increase the number of new store outlets in different regions. The growing number of outlets will eventually require Regional Distribution Centers to serve the individual regions. Each Regional Distribution Center is in charge of purchasing and distributing to the outlets in its region. In turn, the several distribution centers interconnect with one another for product exchange and information sharing. For many years, this system has been working smoothly for the distribution of goods for many bricks-and-mortar companies.

Until recently, problems arose when the Internet was first introduced as a part of the company’s sale and distribution channels. The bricks-and-mortar company cannot efficiently operate both its physical stores and e-commerce store. At this point, the company is faced with the dilemma of either going online completely or integrating online operations with its existing system. Since going totally online or remaining
unchanged are often undesirable options, most bricks-and-mortar companies opt to transform themselves into clicks-and-mortar companies in order to incorporate online operations into their existing systems.

5.2 The Transition Process

5.2.1 Entry Point

Bricks-and-mortar has to break out of old paradigm and make parallel changes in management systems and structures in order to transform itself into a clicks-and-mortar company. First it has to recognize the kind of changes needed in the company’s key operational, organizational and administrative structures. Second, determine its ability to transform to any of the three models. There are three key factors that affect the choice to either directly go to a particular model or gradually adjust from one model to the other. These factors include the model’s fundamentals, process, and strengths and weaknesses. Third, it must set a goal, analyze the present distribution and sales channels, identify the opportunities and challenges present in the transition and secure strategic alliances needed to make the transition work. The whole process takes time, commitment, planning, and invariably changes the company’s operation, organization, and administration structure.

![Figure 7: Transition Stages](image)
5.2.2 The Stages

If a bricks-and-mortar company choose to gradually transform from one model to another, there are three stages involved. The first stage involves setting up a separate subsidiary for the online operation. Possessing a separate subsidiary allows both entities to operate and progress at their own paces. Minimal integration at the start will ensure minimum disruption to the existing operation. The new subsidiary will act as a Distribution Center and Online Processing Center for the processing and delivering of online orders. At this point, the company must determine whether it wants to outsource fulfillment activities.

As both operations progress and acquire more experience, the company can further integrate them by allowing the Online Distribution Center to interact with the Regional Distribution Centers. At this stage, cross-marketing can be carried out in large scale, while customers are allowed to both pick up and return online orders in-store. The Online Distribution Center also delivers to outlets, where customers can pick up their online orders. The Hybrid Model enables the distribution centers to integrate both ways by replenishing each other’s inventory.

In order to step up from stage one to stage two, more changes in the supply chain strategy are required. The company must identify its customers’ purchase and delivery needs and then design a system that can satisfy those needs. Customers who order online may choose to pick up their orders in-store, and the company must also address this issue. Furthermore, through special integrated marketing programs, the company can attract more diversified customers to the site and the stores.

The last stage of integration is reflected in the Interconnected Model, in which Regional Distribution Centers and outlets are equipped with pick, pack, and ship facilities for online orders. Fulfillment network systems can be used to integrate all the distribution centers and outlets. After the online order is processed at a central online processing
center, it is passed on to the appropriate center for fulfilling and delivered to the customer. This stage is complicated and requires great coordination among all the centers and outlets. Real-time inventory information, especially inventory status file, must be shared freely among all centers.

5.3 Modeling

![Figure 8: The Outlet's Functions](image)

This model showcases the activities that take place in an outlet. An outlet typically has three functions: retail, intracompany, and online. "Retail" refers to the retail sales that an outlet is set up to perform. "Intracompany" refers to the internal sales between outlets and Regional Distribution Centers. "Online" refers to the pick, pack, and ship activities that serve customers who order online and choose to pick up their orders at the outlet. The outlet may also ship to a Regional Distribution Center for consolidated shipment.
The circle represents the outlets in the model. Each outlet also acts as delivery depot for online customers.

This square denotes the Regional Distribution Center in the model. The center interact directly with the Online Distribution Center to fulfill online orders.

This hexagon refers to the Online Distribution Center in the model. This center will manage and process all online orders.

The **Online Processing System** is responsible for receiving and processing online orders. The system is linked to all distribution centers and even the outlets in the Interconnected model.

This icon denotes the **Online Distribution Center** and it also functions as a warehouse in the model. Online orders are pick, pack and ship from this center.

(A) is the **Regional Distribution Center** and (1,2,3) are the **outlets**. The center and the outlets are linked together for the center to replenish the outlets when needed.

This icon denotes the **Search Process System** responsible for locating items across all distribution centers and outlets.
5.4 Determinants of Choice

Six criteria can help a company choose between the three models. These criteria include speed, brand awareness, inventory, size, investment, and shipping cost.

**Speed** - refers to how fast the company can deliver an online order.
**Brand awareness** - refers to the ability to leverage present brand power for the online operation.
**Inventory** - refers to how many inventories the company must hold. Certain models allow companies to hold a smaller number of inventories than others.
**Size** - refers to the business size -- for instance, how many distribution centers or outlets a company possesses.
**Investment** - refers to the additional investment a company prepares to make on its online operation.
**Shipping cost** - refers to the internal shipping cost incurred to offer customers consolidated shipping.

5.5 Subsidiary Model

5.5.1 The Fundamentals

![Figure 9: Subsidiary Model](image)
The Subsidiary Model is one way a clicks-and-mortar company can organize its online operation. The Online Distribution Center is created as a separate entity from the company’s existing operation to centralize orders and distribution activities. It takes charge of all online transactions, from order processing to order delivering. The present Regional Distribution Centers and its outlets interact among themselves to carry out the traditional sales at the physical outlets.

The Regional Distribution Centers have no interaction with the Online Distribution Center. Figure 10 shows that, although all the Regional Distribution Centers and outlets are connected, there is no direct link between the Online Distribution Center and the other Regional Distribution Centers. This model lowers the risk of interrupting the existing operation.

Figure 10: Subsidiary Model Flow Chart
5.5.2 The Process

1. The process begins when a customer’s online order reaches the Online Processing System. The system logs in the order and then searches for the items in the Online Distribution Center. If the items are found, the ordering system sends out an order to the center manager for fulfilling. Once the center manager receives the order, he assigns the order to be picked, packed, and shipped.

2. Once the order is ready for shipping, the Online Distribution Center ships it directly to the customer’s specified address.

3. On the other hand, if the customer prefers to pick up, the order is shipped to the outlet most convenient for the customer to pick up.

4. However, if the Online Distribution Center is out of stock, the ordering department sends a purchase order directly to the supplier for replenishment.

5. Once the Online Distribution Center receives the items, the process of pick, pack, and ship starts. Next, the order is shipped according to the customer’s wish; either directly to the customer’s home or to an outlet.

6. In this model, all the Regional Distribution Centers are in charge of re-stocking the outlets in their regions; when out of stock themselves, they in turn order stock directly from suppliers. There is no link between the Online and Regional Distribution Centers.

5.5.3 Strengths and Weaknesses

The strengths of this model include the speed of delivery, the savings in the shipping costs, and the flexibility in the size of the business, which can be small, medium, or large. When the Online Distribution Center is out of stock, it re-orders directly from the supplier instead of going through the Regional Distribution Centers. This system can speed up delivery to customers and cut down internal shipping costs between the distribution centers. In addition, this model fits business of all sizes. Although it is more
cost efficient for large business to use the Subsidiary Model, small business can use it as well.

**SUBSIDIARY MODEL**

![Diagram of Strength & Weakness]

*Figure 11: Strengths & Weaknesses: Subsidiary Model*

On the other hand, this model possesses certain weaknesses, including the necessity of a duplicate inventory, the requirement for large investment, and the inability to leverage the existing brand power. Creating a totally independent online operation requires a huge investment, and the payback period may be longer. Furthermore, this model duplicates inventory, since the Online Distribution Center and the Regional Distribution Centers are not integrated and do not replenish one another when they run out of stock. This model also increases re-order costs because distribution centers re-order directly from suppliers when they run out of stock. Finally, creating a separate entity for online operation keeps the company from leveraging its existing brand power. Most bricks-and-mortar companies have long heritage, being unable to leverage this advantage in their online operations represents a significant waste of resources.

In summary, the Subsidiary Model possesses both strengths and weaknesses; therefore, its efficiency largely depends on the criteria a company looks for while deciding which model to use.
5.6 Hybrid Model

5.6.1 The Fundamentals

The Hybrid Model showcases the second way a clicks-and-mortar company can integrate its online operation with its existing operation. In this model, the Online Distribution Center is still in charge of order processing and order delivery. However, if the Online Distribution Center runs out of stock, it relies on the other Regional Distribution Centers for replenishment. The Regional Distribution Centers do the same when they run out of stock. They seek out the inventories of other Regional Distribution Centers and the Online Distribution Center before going to the supplier.

Figure 12: Hybrid Model

The diagram represents that all of the Regional Distribution Centers interact both ways with one another, while 2 represents the links between all Regional Distribution Centers and the Online Distribution Center.
5.6.2 The Process

In this model, a fulfillment network system is used to integrate the Online Distribution Center and all the Regional Distribution Centers. Online orders are received and processed by the ordering system at the Online Distribution Center. Once an order arrives, the ordering system logs in the order and then does a search for the items in the warehouse. If the items are found, the ordering system sends out an order to the warehouse manager for fulfilling. Once the warehouse manager receives the order, he assigns the order to be picked, packed, and shipped.
Once the order has been packed, the Online Distribution Center ships it directly to
the customer's specified address.

If the customer choose to pick up, the order is shipped to an outlet for pick up.
The outlets in this model are equipped with the facility to handle online orders.
Whenever there is an order to be picked up, the outlet is notified by the Online
Distribution Center.

However, if the warehouse is out of stock, the ordering system searches the
databases of its Regional Distribution Centers.

When the items are located in more than one of the Regional Distribution Centers,
the ordering system first locates the nearest center. Then it notifies that regional
distribution center to ship the item back to the Online Distribution Center. After
the Online Distribution Center receives the items, it consolidates all the items and
ships either directly to the customer's address or to an outlet for customer pick up.

At this point, it is important to point out that the sole purpose of the Online
Distribution Center is to facilitate and centralize the ordering and delivering
service to online customers. The Online Distribution Center does not act as a
distribution center for Regional Distribution Centers or the outlets. The link
between the Online Distribution Center and the Regional Distribution Centers is
established so that the centers may replenish one another before placing a reorder
request with the suppliers. When all distribution centers are out of stock, the
ordering system places a purchase order directly with the supplier.

5.6.3 Strengths and Weaknesses

The Hybrid Model offers the strengths of lower inventory cost, brand awareness, and
size. Even though an Online Distribution Center is still needed in this model, it need not
be as large as the one required by the Subsidiary Model. This is because when the
warehouse for online orders runs out of stock, it can rely on the Regional Distribution
Centers for replenishment. This not only reduces inventory cost but also cuts re-ordering
cost. Furthermore, by integrating online and existing operations, the company is able to leverage the brand power of the existing operation. The online operation can become an additional channel instead of a competitor that cannibalizes existing sales. Finally, this model also carries the advantage of flexibility: it adapts to businesses of any size. Using this model, businesses with one regional distribution center or ten Regional Distribution Centers can integrate their Online Distribution Centers.

**HYBRID MODEL**

<table>
<thead>
<tr>
<th>STRENGTH</th>
<th>WEAKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVENTORY BRAND SIZE</td>
<td>INVESTMENT SPEED SHIPPING</td>
</tr>
</tbody>
</table>

*Figure 14: Strengths & Weaknesses: Hybrid Model*

On the other hand, this model also possesses certain weaknesses -- a sizeable investment is required, the speed of delivery is lower, and the shipping costs are higher. The Hybrid Model still requires the company to set up an Online Distribution Center, which needs a significant amount in initial capital investment. Secondly, since the Online Distribution Center has to interact with various Regional Distribution Centers for replenishment, it may take a longer time to consolidate orders. This, in turn, raises the shipping costs because the items available across several Regional Distribution Centers must be sent individually from the different locations.
In summary, the Hybrid Model may have the advantages of leveraging the brand power, lower inventory cost, adaptability to various business sizes; however, it also has the disadvantages of slower delivery, higher shipping costs, and a sizeable investment.

5.7 Interconnected Model

5.7.1 The Fundamentals

The third model to integrate online operation with existing operation is the Interconnected Model. One distinct difference for this model is that all distribution centers and outlets are linked with a fulfillment network system. The Regional Distribution Centers still assume their traditional responsibility of replenishing outlets that are out of stock.

\( \text{\textbullet} \) represents that all of the Regional Distribution Centers and outlets are part of a company while \( \text{\textbullet} \) represents the links between all Regional Distribution Centers and outlets.

Figure 15: Interconnected Model
The Process

1. In this model, the Online Distribution Center, the Regional Distribution Centers, and all outlets are equipped with pick, pack, and ship facility. Once an online order arrives, the ordering system logs in the order, determines whether the order is to be shipped or to be picked up, and then carries out a search for the items across all distribution centers and outlets.

2. When the items are found in either a regional distribution center or an outlet, the ordering system sends out an order to that particular center or outlet. Sometimes the items are available in different distribution centers or outlets. When this happens, a consolidation of shipping is required.
If the order is to be picked up, all the items found in different locations are shipped separately from the distribution centers or other outlets to the outlet nearest to the customer. This particular outlet is notified before the order arrives. When all the items arrive at an outlet, the outlet is responsible for packing and passing the order to the customer.

To pick up an order, the customer must bring a printed receipt to the outlet.

However, if the items are to be shipped to the customer’s address, all the items found in the different locations are shipped to the regional distribution center nearest to the customer’s address for consolidated shipping.

The consolidated order is then delivered to the customer’s address.

5.7.3 **Strengths and Weaknesses**

![Strengths & Weaknesses: Interconnected Model](image)

*Figure 17: Strengths & Weaknesses: Interconnected Model*

The Interconnected Model is suitable for businesses prioritizing brand awareness, lower inventory costs, and minimal investment. This model relies on the existing Regional Distribution Centers and outlets to fulfill the online orders. In order for this to work, both operations must be integrated; this process, in turn, allows the possibility of leveraging
the existing brand power. In addition, the inventory cost in this model is low because there is no duplication of inventory. It works by equipping the existing distribution centers and outlets with the pick, pack, and ship facilities for fulfilling online orders and then integrating them through networking and information sharing. All of these factors translate into an advantage of minimal capital investment.

On the other hand, this model has the limitation to work better with small to medium size operations. This is because it is less complex and less inexpensive to integrate small to medium size operations. In addition, shipping costs to consolidate orders are high, and it takes longer to fulfill orders. When the company reaches this stage, it must entirely integrate all its distribution centers and its outlets for performing the fulfillment activities. This translates into investing in networking systems and equipping all distribution centers and outlets with pick, pack, and ship facilities. Drawing inventory from across all distribution centers and outlets is a complicated task. Filling even just one order may incur a high shipping cost. It may also take longer to consolidate each order, because each order can only be shipped once the items to arrive from different locations.

In conclusion, the Interconnected Model works best with smaller size businesses, but it takes a solid networking system to make it work efficiently.

5.8 Comparison of the Three Models

There are several differences among the three models. For the Subsidiary Model, an Online Distribution Center must be set up. Since the central and Regional Distribution Centers are not integrated, they end up holding duplicate inventory, which eventually drives up the inventory cost. It would take the company twice the time and effort to liquidate all inventories. Furthermore, the re-ordering cost is high because all distribution centers re-order directly from suppliers instead of replenishing using one another’s inventory.
Since the online operation is a totally separate business from the existing operation, there is no synergy. In this case, customers who buy online is usually not allowed to pick up or return their orders in-store. This tends to create confusion for the customers when both separate operations are using one company name. One way in which the company can overcome this situation is by creating a new identity for the subsidiary. However, this means that the company has to invest time and resources in building the new brand. Furthermore, this model requires a substantial capital investment for a new building, inventory, order processing system, and inventory management system. Additionally, the model does not require consolidated shipping. Orders undergo the process of pick, pack, and ship from a single location -- the Online Distribution Center.

The second model is the Hybrid Model, in which an Online Distribution Center is established or an existing distribution center is turned into the Online Distribution Center. The location of this Online Distribution Center has a great impact on investment and operating costs, thereby affecting profits. It, therefore, has to be strategically located to link with the other Regional Distribution Centers and the customers. The main difference

<table>
<thead>
<tr>
<th>Subsidiary</th>
<th>Hybrid</th>
<th>Interconnected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory cost</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Re-ordering cost</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Synergy</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Additional Investment</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Consolidated Shipping</td>
<td>External</td>
<td>Internal</td>
</tr>
</tbody>
</table>

*Table 1: Comparison of the Three Models*
between the Subsidiary and Hybrid models is that, in the Hybrid Model, the Online Distribution Center is linked to all the Regional Distribution Centers and outlets. As the Online Distribution Center is integrated with the Regional Distribution Centers, inventory carrying costs can be lowered as inventories are shared among all the distribution centers. Furthermore, the re-ordering cost can be reduced, since the distribution centers replenish one another before turning to suppliers for re-stocking.

There is synergy between the two operations because they are aware of each other's inventory levels and cross-promotion can be carried out to increase sales in both channels. Even though investment in an Online Distribution Center is still required, the size of this center can be smaller, since the warehouse need not hold as much inventory as that required by the Subsidiary Model. In this case, some items ordered by a customer may be available at two different locations; therefore, consolidated shipping is usually required.

The third model is the Interconnected Model, in which the company utilizes its present distribution channels to deliver online orders. Since online orders are filled by inventories available in the Regional Distribution Centers or outlets, this model incurs the lowest inventory cost. The re-ordering cost in this case is also lower than that in the Subsidiary Model because the centers only re-order from suppliers when all internal inventories are exhausted. Since the online operation is closely linked to the existing operation, a high synergy is created. This model also requires additional investment to set up an Online Distribution Center and to equip other distribution centers and outlets with pick, pack, and ship facility. In addition, the internal shipping cost can be considerably high due to the necessity to consolidate customer orders.

Chapter 6: Fulfillment

The Online Distribution Center in the three models also acts as warehouse and fulfillment center for online orders. There are two ways a company can fulfill online orders:
outsourcing and insourcing. Companies handling 10,000 orders per day can use fulfillment order companies such as Finger Hut to help them through the process. Many fulfillment companies provide a range of services -- from online customer service to shipping -- that are especially useful for companies lacking prior experience in fulfillment service. By outsourcing fulfillment to a third party, the company can concentrate on generating sales and increasing profit.

There are a few factors that determine whether a company should outsource:

The company needs to know the break-even point of orders and the pace of growth in the business
Most fulfillment companies require a minimum number of orders. If the company does not have sufficient orders or is unsure of the growth of its business, it may need to insource.

The experience a company has with regard to fulfilling orders
The more experience the company has, the faster it can organize the whole infrastructure, and the fewer errors it will incur.

The level of control a company wants
Fulfillment is one of the most important parts of the supply chain because customer satisfaction depends on the speed and accuracy of orders fulfilled. Some companies may want to do it by themselves in order to ensure quality control.

The partner available to work with the company
It is no easy task to find a third party that thoroughly understand the needs of the company and can work towards the common goal of providing satisfactory services.
The most cost-efficient choice—outsource or insource

Before any decision is made, the company must consider financial factors and decide which method is the most cost-efficient to the whole operation.

6.1 The Advantages of Outsourcing

- The company can benefit from the experience of the fulfillment services if it has limited experience in fulfilling large number of small orders.
- It is more cost efficient to outsource if orders are not large enough to insource but are too much for the company to handle on its own.
- The company does not need to invest its resources in maintaining a fulfillment center.

6.2 The Disadvantages of Outsourcing

- Less control over the delivering process of the supply chain.
- Relying on a third party to take care of one of the most important parts of the supply chain can create problems if the third party leaves.
- The fulfillment company has vast control over companies that utilize its services. Retail companies are at the mercy of the fulfillment operator if they want to raise prices or change their operation process in the short run.

In summary, the company must carefully explore both the opportunities and the challenges of outsourcing. Factors such as the growth pace of the business, the cost efficiency of the choice, the experience the company possesses, the level of control the company wants, and whether the company can find a suitable business partner all play a role in the decision-making process.
Chapter 7: Conclusions & Further Research

7.1 Conclusions

In conclusion, the need for clicks-and-mortar companies increases as e-commerce grows. Bricks-and-mortar companies do not want to be left out while e-retailers cut into their market shares. Metamorphosing from a bricks-and-mortar business into a clicks-and-mortar company requires far less extreme adjustments than becoming a pure Internet player. Such a company can also utilize its web site as an additional sale and distribution channel to reach both present and potential customers. This, in turn, will allow the business to expand and serve a different segment of the consumers.

However, clicks-and-mortar companies face substantial challenges, and it takes meticulous planning and efficient execution to make the clicks-and-mortar model a success. First, the clicks-and-mortar company must determine how to integrate its existing business with its online operation. Questions such as what kind of system to use and what criteria are important to the business must be answered. Next, the company needs to resolve the perceived channel conflict that it has with its existing distribution partners. Lastly, the clicks-and-mortar company must know how the inventory is going to flow through the system that it has chosen to use.

These models work well on their own even though they possess strengths and weaknesses unique to themselves. Gradually progressing from the Subsidiary Model to the Interconnected Model entails lower risks of failure, since the company is able to acquire sufficient knowledge and experience to proceed with confidence. However, companies already on stage two must step up to stage three rather than starting all over again. By starting from stage two, the company has already built the infrastructure for integration and has worked with this integration for a period of time. Therefore, stepping up to stage three will require less effort and time. It is essential that, before making the decision on
how or where the company wants to progress, it determine the stage it is in and sets its next objective.

7.2 Further Research

This thesis provides a framework that can be used as a starting point for further research on understanding the workings of the three models, namely Subsidiary, Hybrid and Interconnected.

Each of the three models can be explored in detail through a separate study. It will be useful to expand the perspective to include the actual costs incurred in the shipping and maintaining a distribution center. The location of the online distribution center has a great impact on investment and operating costs, and therefore, a capital budgeting has to be done to make sure the investment has the minimum payback period.

The decision on fulfilling the orders by outsourcing or insourcing can be explored in greater depth with actual costs included. It is also essential that a more full proof inventory forecasting method be created for the highly seasonal and fragmented online orders so that the company does not have to incur high holding or shortage costs.

A study project to determine the kind of hardware or software system to implement has to be carried out. In addition, the decision on whether the company should develop software from scratch or use third party software to support the system should also be made. By using the third party software will benefit the company tremendously in term of time and investment. However, in the case where a third party software is used, the issue of integration has to be addressed in detail.
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GLOSSARY

Break-even Point
The level of sales revenue that equals the total of the variables and fixed costs for a given volume of output at a particular capacity use rate.

Bricks-and-Mortar
Refers to a company that has presence such as a chain of outlets in the real world. Outlets are the primary channels of sale for the company.

Cannibalization
In this case, it refers to one channel of sale is reducing the sales in another channel. For example, the Internet has reduced the sales in the physical stores.

Clicks-and-Mortar
Refers to a company that has presence in the real world and has a digital business model.

Core Competency
One of a company’s primary functions, which is considered essential to its success.

Distribution
Outbound logistics, from the end of the production line to the end user.

Distribution Center
A post-production warehouse for finished goods.

E-Commerce
Commercial activity that takes place by means of connected computers. Electronic commerce can occur between organizations or between customers and businesses, through an on-line information service, the Internet, a BBS or electronic data interchange (EDI).

Electronic Data Interchange (EDI)
The paperless exchange of standard business transactions or information by electronic computer-to-computer transfer, generally requiring little or no human intervention likes interpretation or retyping.

Fulfillment
In this thesis, it refers to the act of doing what is required (by a contract etc.) to accomplish a task such as logistics.

Handling Costs
The cost involved in moving, transferring, preparing, and other handling inventory.
Inventory
Raw material, work in process, finished goods and supplies required for creation of a company’s goods and services.

Inventory Carrying or Holding Costs
A financial measurement that calculates all the costs associated with holding goods in storage, usually expressed as a percentage of the inventory value. It includes inventory-in-storage, warehousing, obsolescence, deterioration or spoilage, insurance, taxes, depreciation and handling costs.

Inventory Status File
File indicating how many inventories is on hand or on order.

Information System (IS)
Managing the flow of data in an organization in a systematic, structured way to assist in planning, implementing and controlling.

Information Technology (IT)
A general term used to refer to all aspects of computing and communications technology, including hardware and software (both system and application software) that encompasses the creation, storage, processing, distribution and display of information for a variety of uses, including business, educational, artistic, scientific, recreational or personal.

Integration
The extend to which constituent elements of the business system (e.g., technology) are organized into a coordinated whole.

Leverage
The use of an investment or resulting asset to gain a return.

Logistics
According to the Council of Logistics Management (CLM), logistics is the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.

Outsourcing
Organizations contracting out the ongoing management of certain internal processes to outside service providers.

Payback Period
The length of time required to recover the amount of an initial investment.
Replenishment
The process of moving or re-supplying inventory from a reverse storage location to a primary picking location, or to another mode storage in which picking is performed.

Reverse Logistics
A segment of logistics is focusing on the movement and management of products and resources after the sale and delivery to the customer.

Safety Stock
The inventory a company holds above cycle stock as a buffer against uncertainty in supply chain.

Supply Chain
A network of inter-linked organizations including suppliers, manufacturers, distributors, retail outlets and consumers through which and organization delivers its products or services to its customers.

Tracking and Tracing
Monitoring and recording shipment movements from origin to destination.