Business Informatics

Team Research Paper

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# Introduction

Business Informatics? Well, Business Informatics is a discipline combining information technology (IT), communication, informatics, and management concepts. Despite its relative unfamiliarity, Business Informatics can make or break a business’ future. In this research project, we looked at four separate industries looking for an implementation of a technology that set that company apart from another within that industry.

# Research Problem

What is the importance of Business Informatics? What technologies have positively and negatively affected business’ as a result of the successful or failed implementation of them? What can be taken information/models can be taken from Business Informatics?

# Methodology

1. We began our project by gathering requirements for the business’ amongst our industries.
2. Gather Information in other case studies.
3. Gather Information in other scholarly articles.
4. Transform information from steps 2 and 3 into a meaningful and important revelation about the importance/unimportance of Business Informatics

# Retail Industry

## Walmart

### About Walmart:

Walmart is a department store founded in 1962 in Rogers, Arkansas by Sam Walton. The department store has been publicly traded on the New York Stock Exchange since 1972 (NYSE Euronext). Walmart has grown into over 8,986 stores in 15 countries. In Walmart’s 2010 fiscal year, they brought in $405 billion in sales and the retail giant employs over 2.1 million people worldwide (WalmartStores.com-About Us).

### About Inventory Management:

Inventory management is a vital part of success especially for retailers as large as Walmart, whom at any given time manages an average of $32 billion in inventory. Inventory management systems have the ability to track sales and available inventory, communicate with suppliers in near real-time and receive and incorporate other data. Modern inventory management systems are based off of barcodes and radio frequency identification tags (Crosby).

### Walmart’s Problem:

Walmart’s CEO, David Glass, believed, “Technology would ultimately drive this business to be the size that it is.” The rapid expansion of Walmart has caused for there to be a need for a clear communication system throughout the company, in order to optimize the inventory management process.

### Walmart’s Solution:

In order to optimize the inventory process, Walmart has implemented many different systems that work together to make Walmart what it is today. An important part of Inventory Management Systems is the clear communication between Walmart and its suppliers. By implementing Retail Link, Walmart’s suppliers can plan, execute, and analyze their business. Retail Link shows suppliers information on their product in real-time. Suppliers can access the rate of sales per hour, day, and over the past year making it so that they have the ability to see the number of their products on every shelf in every store at that precise moment (WalmartStores.com-Requirements). Another technology that Walmart implemented to help their Inventory Management System is Radio Frequency Identification (RFID) tags for tracking and identification of products. RFID tags replace the use of barcodes and are read by a handheld scanner that then builds a database with all sizes and fits available (see Figure 1). 

Figure 1

Until August 1, 2010, Walmart had only used its RFID tags to track pallets of goods from the factory to the warehouse to the local outlet (Wolverton). Another part of inventory management that is important is reducing shrinkage, the loss of merchandise in a retail store through theft or damage. Walmart has a system through ADT/Sensormatic and TAG Company that provides them with disposable anti-theft labels, EAS labels. These labels are attached to merchandise at different levels: manufacturing, packing or distribution. These labels become deactivated at check out making it so the alarm system located at the front doors will not be sound. EAS labels are one of the many things Walmart requires of its suppliers. Experts say EAS labels reduce theft by 60% or more (HowStuffWorks- Electronic Article Surveillance).

### Walmart’s Results:

By implementing RetailLink into their Inventory Management Systems, Walmart has better communication with its suppliers and a more efficient way of keeping track of their inventory. When a barcode is scanned, the cash registers record and track every item sold. This keeps a computerized inventory that is updated in real time. The inventory is connected to the warehouse and vendors that supply the distribution centers. The replenishment of stock is automated in the stores, which makes it so reorders are immediate. This system ensures that stores are getting just the right number of product. RFID tags have made it so Walmart associates have all the information necessary to ensure that all shelves are stocked and inventory is tightly watched. RFID tags have caused a little bit of controversy because of privacy. Consumers are worried that unauthorized people will gain access to information on your identity and purchase history (including where you bought the items and how you paid for the ideas). Raul Vazquez, executive in charge of Walmart stores in the western United States, says, “this ability to wave the wand and have a sense of all the product that are on the floor or in the back room in seconds is something that we feel can truly transform our business (Bustillo).” Along with the RetailLink and RFID tags, the EAS system has helped optimize Walmart’s inventory management.

## Meijer

### About Meijer:

Meijer is a department store that is privately owned and was founded in 1934 in Greenville, MI. Meijer has over 200 stores in Michigan, Ohio, Indiana, Illinois and Kentucky. Meijer not only has 200+ stores but they also have 177 gas stations, 6 c-stops, 2 car washes, 3 distribution facilities and 3 manufacturing facilities (Meijer Corporate- Company). Meijer is one of the nation’s largest privately held companies and their annual sales top over $13 billion (Integra).

### About Customer Service:

Customer service is an important area of all businesses. It is the practice of providing customers with a rewarding experience when they enter a business, the time they are in the business, and even after they leave the business (WiseGeek).

### Meijer’s Problem:

Meijer had relied upon Integra for all their printing needs for years. As Meijer began to expand and the number of stores began to grow the current system became inefficient. Some of the issues with the current system were that department managers at each location used a binder and a bar-code wand to scan each item or kits they needed for display. This became an issue because there were often times that the managers ordered the wrong items. Another problem with this system is that the printed goods were being sent with pallets of food and general merchandise out of the distribution centers. When items arrived, they were often damaged, misplaced or lost. This caused for there to be a delay in store promotions or for the promotions not to happen at all (Integra). . Meijer’s Director of Retail Systems, Elmer Robinson, says, “Meijer wants to continuously improve its relationship with our customers and we increasingly look for technology to help with that process.” Meijer wanted to improve this relationship with their customers at checkout and through mobile applications (Martinez).

### Meijer’s Solution:

In order to stop the negative impact Integra’s current system was having on Meijer, they analyzed the situation by sending team members to store locations to figure out the best solution for the problem they were having the printed goods. After doing some research, Integra decided to pull all fulfillment responsibilities from Meijer Distribution Centers and began using Mindwire technology. Mindwire technology is a website that allows managers to order items and kits that are available. The website also shows managers visuals of all products. Meijer also found a way to reach their customers besides the use of signage. Meijer created two mobile applications to better their customer’s experience in their stores. Meijer’s “Find-It App” is available for Droid and iPhone, iPod Touch and iPad users for free. The application has an interactive map that allows customers to find items on their grocery list, bathrooms and where they parked their car. Aside from locating items and place in the store for customers, Meijer also features weekly specials, promotions and sale items on this application. The other mobile application Meijer has is “mPerks.” This application is available to cell phone users with texting capabilities and allows users to use online coupons at check out (Martinez). Another system Meijer implemented to reach their customers was NCR and Tetradata’s Enterprise Offer Management package. This package allows Meijer to create, manage, execute and evaluate all promotional programs offered in their stores. Meijer’s Director of Retail Systems, Elmer Robinson, says, “Meijer wants to continuously improve its relationship with our customers and we increasingly look for technology to help with that process.” This system allows Meijer not only to reach its customers at check out but at workstations, kiosks, fuel pumps, websites and e-mails.

### Meijer’s Results:

Because of Integra’s new approach on promotional printing, Meijer is able to better serve its customers because they do not miss out in-store promotions. The new system has sped up delivery of materials to the stores. It was originally 2-3 weeks and is now 1-2 days. Upon delivery, the printed goods are not misplaced or damaged nearly as much and it reducing distribution costs by approximately 30% (Integra). Meijer’s goal of reaching its customers was also achieved with the deployment of its mobile applications. Over 5,500 people downloaded Meijer’s application within the first week. Meijer is looking to expand to the Blackberry platform and are currently working with a consulting group on how to better these applications for their customers (Martinez). The different components of the Enterprise Offer Management package have also helped Meijer in focusing on customer service. Tetradata CRM has made is so Meijer can understand the needs and preferences of different customer groups and automates the delivery of personalized communications. The Tetradata Offer Optimizer is an automated process that matches hundreds of Meijer products to millions of its customers (Kramer).

# Financial Industry

## Intuit Turbo Tax

### About Intuit TurboTax:

Intuit is a publicly traded American software company that develops financial and tax preparation software for small businesses, accountants, and individuals. The company started when Scott Cook realized the personal computer was going to replace paper and pencil personal accounting. Cook went to find a knowledgeable programmer at Stanford University, he found Tom Proulx. The two became partners and Intuit was born. Tom Proulx coded the entire software program on Microsoft’s Compiler BASIC. Quicken was Cook and Proulx first successful software. Quicken is a program that helps users maintain a balanced budget. By 1988, Quicken became the number one selling software in its market. The money earned from the company’s sales on Quicken helped them expand into other areas, like personal tax. TurboTax is software created to make filing taxes as easy as possible. A company called ChipSoft originally owned TurboTax but Inuit acquired their company in 1993. This was the same year the company decided to go public.

### Intuit’s Focus:

Intuit has focused on a multitude of key concepts in order to better their software programs over the years. When TurboTax was released, it grew at a very fast rate and now reaches 20 million users. It is hard for any company to keep in touch with that many customers. However, Intuit places a great value on usability and customer feedback for all its software programs. Intuits latest and best achievement has been their search engine optimization campaign. It has been the best in their industry and has caused other companies, like H&R Block, to completely change their marketing focus.

### Intuit’s Problem:

Intuit’s problem, like most large corporations, was their ability to remain in touch with their client base. A company that needs to make sure 20 million people are content with their product is difficult. People really only use the tax software on average four months a year. The tax industry has to be incredibly prepared for any slip-ups during the four-month long season. Intuit wanted to be able to reach out to its customers and still remain cost effective. The company also wanted to remain a top searched tax software company on search engines.

### Intuit’s Solution:

Intuit conducted a survey and found that 50% of their TurboTax users had Facebook accounts and 8% had Twitter accounts. By using social websites to build a communication channel with customers, Intuit found they could strengthen both their ranking on search engines and strengthen their communication with customers. A website’s ranking on search engines has to do with the algorithm the search engine uses to rank websites. SEO is identifying what the algorithm targets then using that information to increase the websites ranking. Google’s search engine for instance ranks a page based on the number of links the page has tied to it, as well as the relevancy of the search query the user has typed into the search engine. Obviously the algorithm is much more complicated, but, in short, those are the two factors that matter the most. Intuit has always done a great job of keeping their ranking high and they have now discovered yet another way of keeping it high. By increasing the amount of people discussing their business on social websites they are simultaneously driving up the number of links the site has to their website. Essentially, TurboTax has the ability to read the discussion boards on these social websites, answer any questions consumers have, fix any glitches consumers run into, and while all this is happening drive up they are driving their page rank on search engines.

### Intuit’s Results

Intuit’s TurboTax continues to be the highest ranked search next to the IRS. According to Seth Greenberg who is the VP of Global Marketing and Digital Marketing, boasts an 11% growth in total returns for TurboTax this year and claims it has to with the innovative marketing technique.

## H&R Block

### About H&R Block:

Brothers Henry and Richard Bloch founded H&R Block in 1955 in Kansas City, Missouri. The brothers wanted to create a business that would help citizens file their taxes for an inexpensive price. In order to be more profitable, they moved to New York City and started their first franchise in consumer tax services. Since then, the company has grown to be one of the leading tax service providers. They have grown their business to also handle banking, business services and investments. The company has 12,500 retail stores in the United States and 1,400 abroad. Their 2010 Revenue totaled $3.8 billion and net revenue totaling $420 million.

### H&R Block’s Focus:

In 1986 H&R Block pioneered the electronic filing system with the IRA and since then has moved further into the digital world by providing do it yourself tax software called H&R Block at Home. The tax software market has been a very competitive field since it first came into play in 1986. H&R Block at Home has been a top competitor since the creation of this market.

### H&R Block’s Problem:

In 2007, H&R Block was struggling to compete with Intuit and their very similar TurboTax software. The company recognized that the majority of their business comes from a short four-month window when everyone is filing their taxes. Intuit was using a very aggressive online ad campaign. H&R Block had fallen behind when it came to their online marketing skills.

### H&R Block’s Solution:

Richard C. Breeden, a chairman of the SEC, won a proxy fight to become a chairman of H&R Block after he argued with the board that the current methodology the company was using was not competitive with their competition from Intuit. He had the idea of starting an aggressive ad campaign for the company. However, after the late 2000’s financial crisis, H&R Block took a hard hit, similar to the entire financial market, and Richard C. Breeden resigned. After the crisis, the company has made great strides in improving their marketing campaign. Their main focus was to increase their presence on the Internet using a technique called search engine optimization, SEO. Search engine optimization is a technique websites use in order to remain a top search result on search engines like Google, Yahoo and Bing. COO Jonathan Ragals explains the reasons why the web is such a difficult place for the financial industry, “The seasonality of it is just a pressure cooker for operating. Competition for keywords is fierce. It’s also a ‘hyper’ competitive marketplace with a lot of players,” he adds. “As a result, there is a lot of competition among financial services companies for keyword phrases such as ‘tax preparation’, ‘taxes’ and ‘help with taxes’.” Most search queries use long-tail searches or search terms that can include a greater vocabulary. Tax information seekers use smaller search terms like; taxes, tax software, e-file, tax help etc. H&R Block realized that the programming necessary to increase their ranking was extensive so they hired an outside firm to help, 360i. The SEO specialist was going to help increase their organic search, which is the ranking of websites based on the terms an individual puts in the search engine, and increase their paid search, the ad space either at the top or on the side of the search engine page.

### H&R Block’s Results:

According to a case study performed by DMNews, H&R Blocks SEO campaign turned out to be quite a success. The company not only managed to increase their page ranks on search engines but they also cut costs in marketing. According to the article by DMNews,

“This year, working with 360i, H&R Block was able to optimize its keyword buys, paid search, page position and creative. Through these efforts, the company succeeded in decreasing its search-marketing budget by 50% compared to the previous year, Drum continues. As a result, the company was able to drive customers to its Web site at a lower cost per acquisition.”

# Social Media Industry

## Dell

### About Dell:

Dell is an American technology corporation with its headquarters in Texas and sells computers and computer related products. It was named after the founder, Michael Dell, who created the company in 1984 while running it out of his dorm room at the University of Texas. He later dropped out of school to focus on his business, and has become the company that it is today since then (Wikipedia).

### Dell’s Problem:

Dell could not engage as well as they wanted to with customer engagement. At the same time, social networking and social media has been rapidly expanding with its amount of users. Things such as blogs, forums, and communities are seeing much use, and sites such as Facebook and YouTube becoming companies worth billions of dollars due to the vast amount of people that use them. These are being used more and more often by companies to take advantage of and allowing them to receive feedback. This is an interactive way for companies to be able to converse with their customers and also gives a company access to customer service and product information which are part of a basic business model (Zhao). In 2006-2007, “Dell Island” launched in a game known as Second Life with the purpose of enhancing customer engagement. Second Life sold both real PCs and virtual machines. Dell revolves its business model around a fairly simple concept of maximizing the understanding of their customers’ needs, fulfilling those needs with good value, relevant technology, and superior service and technical support. They create computers how the customer wants them made and sells them directly with no middleman to both individuals and corporate customers. This allows Dell to reach more customers, reduce business costs, and ensure products are sold before they are produced (Zhang). But a challenge comes up because of changing conditions lately, and Dell’s low cost approaches that made the company so successful are becoming out of place in the present’s computer market. Their original no-middleman way of sales could no longer keep up with demand, and an increasing amount of companies are using the internet to market themselves and improve relations with their customers. All of this has made Dell operate differently than before. The other challenge was that HP was starting to catch up to their world market share, Dell having 19% and HP at 16%. This would be from HP’s Total Customer Experience which narrows the gap of efficiency in production process with Dell (Yue).

### About Second Life:

Second Life is an online virtual world in which players, called Residents, can do almost anything they can do in real life. Residents can build objects, make objects interactive, trade with other people, or buy things with the game’s own currency. This currency in the game is also something players can buy and sell in the real world for real money. Residents may also make their own homes, own property, attend religious gatherings, or go to school. Companies may also decide to go into this virtual world and make their company a part of the game itself. Since people may use real money to buy in-game currency, the in-game currency is as good as real money so it is possible to buy things in the game and then have them sent to one’s real life house. Second life currently has over 20 million user accounts (Wikipedia).

### Dell’s Solution:

It is important to understand where and how to create value for an organization through all of the possible outlets of social media. Social media is a new platform for advertising, and Dell Island is a marketing tool on the organizational level. This is especially true in Second Life. Second life provides a secondary environment to the company to do their functional tests and profit evaluations with a lower risk because the new products and services can be shown in Second Life and customers can try the new goods online (Zhao). It is important to keep in mind that most of these customers will be younger people due to the circumstances. So, it is important for Dell to make the design of goods and their brand’s image as interesting and appealing as possible in Second Life. Second Life is one of the largest social media platforms that currently exist. Dell opened Dell Island in Second Life with a retail store where customers can actually order real PCs to be delivered directly to them. Customers of Dell Island could get more information and details about products and goods that are provided in Second Life. Their Second Life stores are also linked to Dell.com, which is an e-commerce site that allows people to customize their PC in the virtual world and get their own personally designed product in the real world (Zhang). This interaction allows Dell to also see where they need to improve and what they are succeeding with. There are many companies with a presence in Second Life, however Dell is the first company to have such a large presence and be successful in the end (Yue). This is a great example of social media promotion working well.

### Dell’s Results:

When Dell entered Second Life, it gained many new customers. There are many applications in Second Life where people may buy computer products in the virtual world that are most suitable. Dell used this model to gain more customers and increase their product coverage market, and increase profits. Also, this allowed managers of Dell to get useful information from customers because of Second Life applications telling them what type of computer is the most popular. Because of this information, they changed product strategies to sell more products (Liu).

## Starbucks

### About Starbucks:

Starbucks is the largest coffee shop chain in the world, having over 17,000 stores across the world. They sell mostly hot or cold coffee variations and snacks and pastries. They’re based out of Seattle and it was founded in 1971, as a local coffee shop. They started becoming quite popular in the 1990s and began growing at a rate of about one new store created every day. This continued until the 2000s and then in 2008 they started having to close stores.

### Starbucks’ Problem:

Back in early 2008, Starbucks was seeing its first-ever sales and traffic decline as a public company. It had announced early that year that it was going to be closing over 600 stores across the United States (Quelch). Founder Howard Schultz, who still handles day-to-day management, had even admitted that Starbucks had lost its soul, more specifically back in 2007 he had said, "Stores no longer have the soul of the past and reflect a chain of stores vs. the warm feeling of a neighborhood store." Schultz sought to bring good coffee and the Italian coffee house experience to the American mass market. Wall Street bought into the vision of Starbucks as the "third place" after home and work (Quelch). Eventually the special feeling of the Starbucks coffee house was no longer there and Starbucks needed to change something within their business model, or suffer more and more store losses across the country until it could no longer keep going.

### Starbucks’ Solution:

Return on investment with advertising and participating in social media is not just measured in things like Twitter followers or Facebook friends/fans, it’s measured in an important facet of how it has helped the business to be more successful than before, and it has done exactly that for Starbucks. Starbucks is considered by many to be one of the most successful digital marketers, which is a huge turnaround from when the company seemed to be deteriorating away back in 2007 and 2008. As part of Schultz’s plan to change the company for the better and allow it to do a complete turnaround, the chain launched the MyStarbucksIdea.com in late 2008 as a forum for customers and loyalists to make suggestions, vent frustrations, and ask questions. As of February of 2010, the website had gained 180,000 registered users, and over 80,000 submitted ideas. Over 50 of these submitted ideas have actually been implemented into the stores (York). Currently the chain has gained over 6 million Facebook friends and over a million followers on Twitter. Starbucks’ VP says he believes being able to amass such a large number of people over social networking sites was somewhat an unfair advantage against other companies trying to get a large number of people for their social networking because Starbucks in a way is already like a social network because people go there to hang out, talk to people, and share a common interest. More importantly, the store is not only seeing an increase in fans online, but an increase in sales following social networking media promotions (York).

### Starbucks’ Results:

Starbucks posted its first same-store sales gain in two years last quarter during a time when the company decided to rely on social and digital media promotions instead of spending a lot of money for television ads. It had partnered with famous internet-radio Pandora to sponsor holiday playlists and offered a Facebook sing-a-long and made its partnership with Project RED to redirect traffic to a dedicated microsite. Its stores also offered a free CD with any fifteen dollar purchase. Starbucks VP acknowledged that the company is benefitting from a trend “toward this intersection between digital and physical.” “We’re seeing the beginning of that experiences you have online can translate to rich offline experiences.” (York). The first time the VP, Bruzzo, had noticed this “intersection” was last year when they offered their first “free pastry day.” This was done by offering coupons to print off and cut out by being a friend on their Facebook page. He decided to visit several stores that day to see how the free pastry day had turned out and he was amazed to see how many people he saw standing in line holding coupons for the free pastry. He said the impetus for free pastries was the volume of faithful online followers asking to be included on new products or other company news. Part of the secret of Starbucks’ success using social media is that fact that they’re more relaxed about it. They didn’t aim for getting a million friends on Facebook so that they could start throwing offers and promotions at them. The VP, Bruzzo, said, “We built up a community of people who enjoy engaging with our photo albums from our trip to Rwanda, who loved to have these shared moments around their favorite drinks.” The fans all wanted to know what they were doing and how they could be included in it (York). The social media also gives them other benefits which can indirectly help the business. One of these being the ability to quickly dismiss or manage false rumors that could be going around. One rumor that had occurred last year was that the company’s stores in Israel were donating their profits to the Israeli army, but the truth was that they weren’t and they don’t actually even have any stores in that country (York). It wasn’t too bad of a rumor but it was still something that could have prevented some people from buying from the store had they believed the rumor to be true.

# Logistics Industry

## FedEx

FedEx is a logistics service company, based in the United States, with its headquarters in Memphis, Tennessee. FedEx was founded in 1971 formerly known as Federal Express until 2000. Today, FedEx is organized into operating units, each with its own ‘wordmark’ that identifies what division it is from. The color of the ‘Fed’ and ‘Ex’ in FedEx differ amongst each operating unit. Units of FedEx include FedEx Office (formerly Kinkos), FedEx Freight, FedEx Ground, and FedEx SmartPost. In 2010, FedEx had a revenue of $34 billion with a net income of $1.2 billion.

## Customer Satisfaction:

In a period when time is of such importance, FedEx strives to please its customers to make sure packages, that include such items as medicine or important letters, are delivered on time, and that shipments are never lost.

## Problem:

As technology was rapidly advancing in the late 1990’s and early 2000’s, FedEx’s workflow model of its logistics services had been becoming outdated. The internet had opened up a new avenue of revenue for the logistic service companies with e-commerce. Companies such as Dell, IBM, and HP began selling customized desktops and laptops that were built to order (BTO) and Configure to Order (CTO). This greatly reduced the lead time that would be required for FedEx to ship the product from the materials supplier to the manufacturing plant, and finally to the customer. In an industry where customer satisfaction is vital to the success of the company, FedEx had to change its model to maintain its high quality assurance, responsiveness, reliability, and availability.

## Solution:

FedEx employed a new business model between the shipper and the carrier known as collaborative transportation management (CTM). CTM is a holistic process that brings together supply chain trading partners and service providers to drive inefficiencies out of the transport planning and execution process. CTM focuses on enhancing the interaction and collaboration between three principle parties (a seller, a carrier, and a buyer).



Figure 1 shows a model of the interactions and collaboration between the shipper, carrier, buyer, and FedEx (3PL – Third Party Logistics Provider).

In order to implement this model, FedEx and the other actors involved in the process must share key information to successfully order forecast and order generate. This required a significant amount of new technology and organizational infrastructure. Information Technology provided the link between the carrier and the manufacturer. Since, global supply chain is a highly dynamic system and any changes to it would impact the logistics of the services being provided, FedEx implemented the CTM in Figure3.



## Results:

Today, FedEx is the second largest logistics service providers, only behind the United Parcel Service. FedEx’s stock price is at $93.31 a share compared to $34.45 a share that we saw in late 2001. As FedEx continues to maintain and establish new IT facilities for information exchange between parties, they will continue to grow and establish itself in an industry that accounts for %5.5 of the United States GDP.

## United States Postal Service

The **United States Postal Service** (**USPS**) is an independent agency of the United States Government, established in 1971 as an "independent establishment of the executive branch", responsible for providing postal service in the United States. Despite the USPS originally being funded by the Government, it has been operating independently without tax payers’ dollars since the Postal Reorganization Act. Currently, the USPS is a direct competitor of private package delivery services such as FedEx, UPS, and DHL. In the year 2010, the USPS had negative revenue of $67.05 billion and net income in the red $8.51 billion.

## Customer Service:

The USPS has been a staple of American logistics since its establishment. The USPS provides letters/small packages directly to one’s mailbox, a feature that is illegal for other private package delivery services. Until the time of the internet and e-commerce, USPS was the best option for individuals to ship letters across the country.

## Problem:

The USPS has been losing significant amounts of revenue ever since the creation of the internet, e-mail, and e-commerce. The USPS lost out on the foot race to establish dominance in the e-commerce sector, struggling to develop a logistical model and the assets to carry out the process. Enhancing the problem further, is the inability to accept larger packages, something that is pushed off onto the private competitors such as FedEx and UPS. In turn, e-mail has greatly reduced the percentage of First Class mail being sent through USPS by 29%. However, this is a problem that cannot be fixed by allowing larger packages to be shipped, or any other solution that is prohibited due to Article 1, Section 8, Clause 7 of the United States Constitution which regulates the operations of the USPS. The problem lies in the inefficiencies of the current logistical model and the features that cannot be provided that are being provided by their competitors, such as tracking shipments.

## Solution:

The Intelligent Mail Barcode (IM Barcode). The IM Barcode is a 65 barcode that is intended to provided greater and better information, and better functionality than the previous solutions of POSTNET and PLANET (older barcode tracking solution). In the figure below, is an example of the IM Barcode which is intended for implementation in May 2011.



The IM Barcode has 5 unique features that are responsible for its strong expected benefits, such as improved delivery rates and customer access to information about their shipment. The first unique feature of the IM Barcode is the **barcode identifier** which is a two-digit value that indicates the degree of pre-sorting the mail piece receives before being presented for mail delivery. Next, is **the service type identifier**, a three-digit value representing both the class of the mail (such as first-class, standard mail, or periodical), and any services requested by the sender. Then there is **the mailer ID**, A six or nine-digit number assigned by the USPS that identifies the specific business sending the mailing. Higher volume mailers are eligible to receive six-digit Mailer IDs, which have a larger range of sequence numbers associated with them; lower volume mailers will receive nine-digit Mailer IDs. To make it possible to distinguish six-digit IDs from nine-digit IDs, all six-digit IDs begin with a digit between 0 and 8, inclusive, while all nine-digit IDs begin with the digit 9. Furthermore, is the **sequence number**, a mailer-assigned six or nine-digit ID specific to this piece of mail, in other words, to identify the specific recipient or household, which the mailer must ensure is unique for a 45-day period after it is sent. The Sequence Number is either six or nine digits, based on the length of the Mailer ID. If the Mailer ID is six digits long, then the Sequence Number is nine digits long, and vice versa, so that there will always be fifteen digits in total when the Mailer ID and the Sequence Number are combined. Finally, **delivery point ZIP code,** a section that may be omitted, but if it is present, the five, nine, or eleven-digit forms of the [ZIP code](http://en.wikipedia.org/wiki/ZIP_code) are also encoded in the Intelligent Mail barcode. The full eleven-digit form includes the standard five-digit ZIP code, the ZIP + 4 code, and a two-digit code indicating the exact [delivery point](http://en.wikipedia.org/wiki/Delivery_point). This is the same information that was encoded in the [POSTNET](http://en.wikipedia.org/wiki/POSTNET) barcode, which the Intelligent Mail barcode is intended to replace.

## Solution:

Although the IM Barcode is not intended to be implemented until May of 2011, the information that results from this innovation will certainly help it compete with the private package delivery services. Despite its anticipated implementation, it is clear that the USPS lagged behind its private competitors as it is clear in the numbers since the economic recession. The USPS is projected to bounce back, but it failed to stay ahead of the curve in the implementation of business informatics solutions.

# Conclusion

Although Retail, Logistics, Computers and Financial are all different industries, they have found a value in Business Informatics. One of the main ways these industries have found use for business informatics is to improve communication throughout their business: Business 2 Business (B2B), Business 2 Customer (B2C), Customer 2 Business, Product 2 Database, Database 2 Suppliers, and Customer 2 Customer. In today’s society, time and efficiency is of such importance to the success of a business. By improving these avenues of communication, businesses have been able to remain competitive and become more efficient.

### Business to Business:

In Business-to-Business (B2B), electronic communications between companies is highlighted. A case discussed earlier in logistics is the role FedEx plays in the B2B model. FedEx is the logistical link between a wholesaler and a manufacturer. For example, the wholesaler of computer parts and a Dell is an example of B2B. With the emergence of e-commerce, Dell began selling customized orders that were Built-to-Order (BTO) and Configured-to-Order (CTO), greatly reducing the lead time by 15-20 days to complete the process, beginning with the order placement, the delivery of individual parts, the manufacturing, and finally the delivery to the customer. Through the use of FedEx and its extensive logistical infrastructure, the manufacturer of parts and Dell are able to successfully communicate with one another, and deliver on the tight lead time to required to provide a product according to the promise.

### Business to Customer:

Business to customer communication is one of the more traditional marketing techniques; however social media and search engines have broadened this communication model to encompass an entirely new forum for businesses to reach out to their customers. Intuit’s TurboTax has done a remarkable job expanding its B2C communication model to social networks like Facebook and Twitter. The company surveyed their customers and found that 50% had a Facebook account and 8% had a Twitter account. So TurboTax has started to utilize these sites to communicate with their customers. Since the implementation of the new marketing strategy TurboTax revenue has gone up 8%. By enhancing the ease of communication between business and customer, it is much easier to remain involved with the customer’s satisfaction before, during, and after the sale of the software.

### Product to Database & Database to Suppliers:

In 1985, Walmart implemented Retail Link to create a better communication system throughout their corporation. This system improved communication from product to database and database to suppliers. Retail Link improved their product to database communication with its way of keep a computerized inventory in real time. As a product was brought into the warehouse or a product was purchased at checkout, the product would be identified by either its RFID tag or barcode. Using the barcodes and RFID tags makes it so the product can report back to the database. This is how Walmart has such an accurate inventory. This same database also reports to Walmart’s suppliers, which improved the communication from Walmart’s database to the suppliers. All of Walmart’s suppliers are required to use Retail Link. When the inventory of a certain product is low, the database notifies the supplier to ship more, also known as automatic reimbursement. Another application that has improved communication between the database and the suppliers is Meijer’s project with Integra. Meijer managers now order signage off of an online catalog. Once they place an order with the signage catalog, the database notifies the supplier. This makes it so the supplier can get the signage to the store in 1-2 days. The catalog is updated with only the most current Meijer signage, making it so there are less inaccurate orders. The catalog also has pictures, which also assists managers in choosing the correct signage. Meijer did not only improve the communication from their database to the supplier but by implementing this system, Meijer was able to cut distribution costs by approximately 30% (Integra).

### Customer to Business:

Another example is the Customer-to-Business model. This is a model that has been revolutionized by social media. Before, word of mouth about how people talked about a product was important, but now more than ever does this have an effect on companies and their potential success simply because of how easy it is to find customer reviews and to talk to others about what one thinks about a certain product. Starbucks, for example, was able to bring its business back from its over 600 store closings back in 2008 with social media alone. Their first attempt at it with mystarbucksidea.com started off a bit slow at first but eventually took off and a couple years later they had about 200,000 registered users on the forum. In this forum people talked about the product, how much they liked it, what they liked about it, and what they thought could be good improvements for the company. Around 50 of these suggestions from forum users were actually implemented into the stores. Eventually the company decided to also get involved on popular social networking sites such as Facebook and Twitter. Starbucks has a massive 6 million fans on Facebook and over a million followers on Twitter. All of this online advertising and positive reviews and beneficial suggestions cost the company basically nothing, and what they gained from it was enormous.

### Customer to Customer:

Customer-to-Customer communication models typically result in product critiques. Product critiques are extremely valuable to any business willing to listen. When customers are talking with other customers they are usually talking about products they own or want to purchase. Consumer Reports is a magazine that simply researches customer’s reviews of products. Twitter has become a forum for many companies like Intuit’s TurboTax where consumers of tax software can share their opinions of the products benefits and flaws. When Intuit’s staff can see what the customers are saying about their software, they can then fix the critiqued portion of the software and enhance the customer’s satisfaction. Customer-to-Customer communication model is very valuable to businesses these days, especially because today’s fast paced society requires fast feedback in order for products to remain competitive.

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