

**Evaluate Innovative Strategies Leveraging Existing USPS Capabilities and Resources to Advance as a Vital 21<sup>st</sup> Century Service Organization**

By

**Isaac Sebastian Cronkhite**

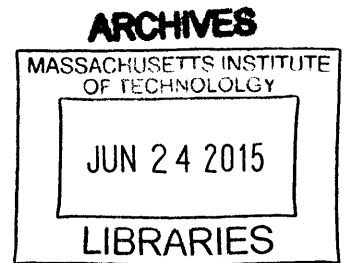
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# **Evaluate Innovative Strategies Leveraging Existing USPS Capabilities and Resources to Advance as a Vital 21<sup>st</sup> Century Service Organization**

By

**Isaac Sebastian Cronkhite**

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## **ABSTRACT**

For centuries, the United States Postal Service (USPS) has fulfilled its mission to bind the nation together by providing universal delivery service. The Second Machine Age has ushered in a new digital economy, which is transforming the way the world communicates and conducts business. Consequently, USPS faces unprecedented challenges, including nearly a decade of declining mail volume and inflexible business conditions that make it difficult to sufficiently react. The Postal Service must continue to transform and adapt to advance as a vital service organization. To fully understand the capability to adapt, this thesis will explore the long Postal Service history of embracing innovative technologies and organizational transformations to meet the changing needs of the American public. The Postal Service has been exploring innovative strategies to continue to adapt to a rapidly changing digital economy. For a new strategy to be successful it must align with the firm's industry positioning, competitive resources, organizational capabilities and existing business conditions. This thesis will analyze the USPS positioning within the two Industries that it currently operates, and examine existing Postal Service resources, positioning and capabilities to identify competitive advantages that can be leveraged to implement innovative competitive initiatives. This thesis will develop an understanding of its organizational capabilities and evaluate existing business conditions that impact the ability to implement new strategies. This thesis will then evaluate potential strategies based on their ability to leverage these competitive advantages, align with organizational capabilities, and navigate current business conditions. Finally, strategic frameworks will be applied to evaluate and prioritize strategies based on their industry attractiveness, viability and competitive sustainability. Ultimately the goal is to provide strategic recommendations to leverage organizational capabilities and resources and help the Postal Service advance as a vital 21<sup>st</sup> century service organization and meet the changing needs of the American public.

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## **Disclaimer**

The views expressed in this thesis are those of the author and do not reflect the official views,  
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No official United States Postal Service approval is expressed or implied.



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## **Chapter 1: Introduction**

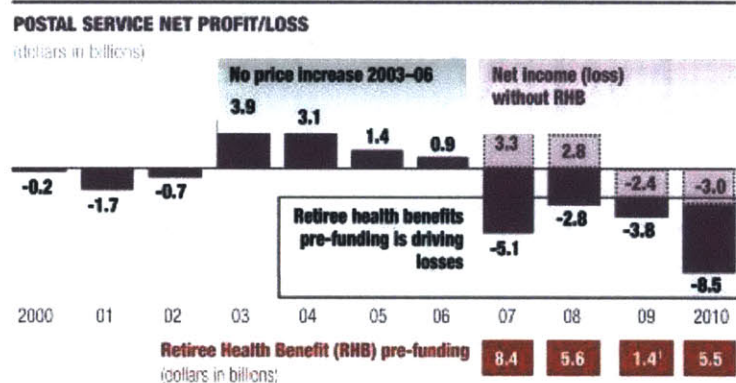
Throughout its 240 year history, the United States Postal Service (USPS) has continually adapted to the changing needs of the country. The Postal Service has transformed along with the country through the American Revolution, the Civil War, the Industrial Revolution, two world wars, the Great Depression, the Cold War and the computer age. Technology has continued to simultaneously threaten and strengthen the Postal Service. The Postal Service has a long history of change, having survived disruptive communication technologies like the telegraph, telephone, and fax machine and transformed with major transportation innovations like rail, airplanes, and automobiles. Once again, worldwide communication and transportation is being transformed, this time digitally. The digital economy has been the most significant threat to the Postal Service to date, but like previous threats it also provides significant opportunity. The United States' financial collapse of 2008, coupled with rising fuel prices, also had a major impact on the Postal Service. The combination of these threats led to a rapid decline in traditional mail volume, resulting in a sudden shift from surplus to deficit. Postal leadership reacted with significant consolidations and other aggressive cost-cutting initiatives. Despite all of the cuts, mail volume continues to decline and the organization has sustained seven years of losses. In the face of these challenges, the Postal Service maintains universal service to all American addresses six days per week by utilizing an unprecedented network of carriers, vehicles, retail units and processing facilities.

For several decades, USPS had enjoyed sustained mail volume growth peaking at 213 billion pieces delivered in 2006 (Appendix, Table 3). The 2008 financial crisis dramatically impacted the Postal Service, with a combined impact of continued electronic diversion of communication and bill payment, rapid decline of first class and standard advertising mailings (most noticeably was the evaporation of credit card and real estate industry mailings) and a major increase in operating costs due to rising fuel costs. The period from 2006 to 2009 saw total mail volume decrease by 36 billion pieces, with first class

dropping by 15 billion pieces and standard mail dropping by 21 billion pieces. In the six years following the financial collapse, the overall mail volumes declined by 25 percent from 213 billion to 158 billion in 2013 (Appendix, Table 3). Steve Masse, former USPS vice president of finance and planning, stated that, “Every 1-cent increase in fuel prices cost the Postal Service \$6.5 million annually” (Medici, 2011).

This situation was exacerbated by certain mandates contained within the 2006 Postal Accountability and Enhancement Act (PAEA), which was passed during a time of record revenue and profit. A major portion of the new legislation was designed to guide USPS to responsibly allocate surplus revenues, by mandating that USPS pre-fund retirement health benefits annually. The annual pre-funding mandate has averaged \$5.5 billion, significantly contributing to annual losses (Figure 1). This mandate may be logical during a time of surplus, but becomes a large burden when an organization faces declining revenues and end-of-year losses. Pre-funding retirement is non-essential, in fact no other government or corporate organization has such a mandate.

**Figure 1: Impact of RHB Pre-funding Requirement**



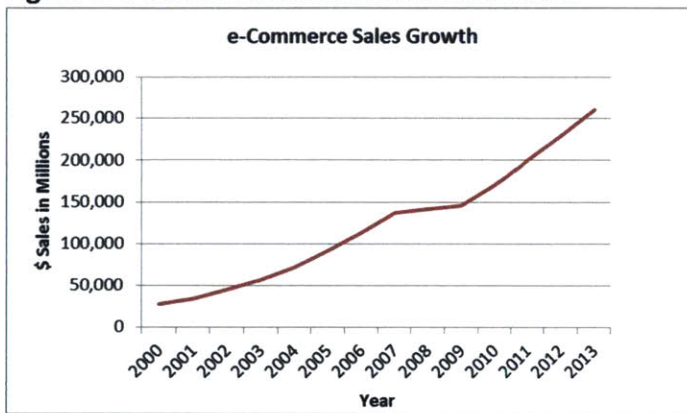
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As the ‘great recession’ subsides, standard advertising mail volume (also known as ‘direct mail’) has stabilized, but the first class mail erosion is permanent as electronic diversion continues (Appendix, Table 3). First class letter volume continues to decrease at four percent per year (Appendix, Table 7).

There is no doubt that the internet has had a major impact on USPS, but it is not all negative. While mail volumes decrease, internet e-commerce sales have increased by an average of 19 percent every year since 2000, resulting in an exponential surge in package volume (Figure 2). In the last five years, the annual USPS package volume has increased by 29 percent, or 900 million packages (Appendix, Table 3). However, the increase in package volume has not compensated for the decrease in first class mail, in either volume or contribution to the bottom line. For every dollar lost in first class mail revenue, it takes approximately three dollars in Package revenue to make up the difference (USPS, 2013, p. 11). To cope with the declining volume, USPS has taken a two pronged approach: first, to control and cut costs; and second, to seek new legislation to end the pre-funding mandate and increase organizational flexibility to adapt to the changing landscape. With significant declines in mail volume, the majority of processing and distribution centers had excess capacity and resources, and the volume did not justify the number of employees. The organization has successfully consolidated 353 facilities, removed nearly 4,000 pieces of equipment, along with \$1.9 billion in costs since 2006 (USPS, 2014a, p. 3). The last three years have seen the most aggressive consolidation effort, with the consolidation of 143 processing and distribution centers. In the 2014 annual report to Congress, USPS stated that “This rationalization of our network was highly successful, and resulted in negligible service impact, required no employee layoffs and generated annual cost savings of approximately \$865 million” (USPS, 2014b, p. 15). Another wave of consolidations is scheduled for 2015, contingent on the elimination of the overnight first class delivery. 78 percent of USPS costs are attributed to employee labor costs (GAO, 2014, p. 2). Without resorting to layoffs, USPS was able to downsize employee staffing using attrition and early retirement offerings. USPS has decreased the number of career employees by 28 percent, or 177,000 employees since 2008 (Appendix, Table 3). New collective bargaining agreements have permitted increased hiring and utilization of flexible employees, which means lower hourly wages and more flexible hours better suited for variable mail volumes. Many of the staffing reductions coincided with consolidations to help capture

savings. While efforts were taken to streamline and consolidate operations, reorganization and downsizing of administrative and headquarter functions also contributed to cost savings. The total operating cost of \$73 billion in 2014 (USPS, 2014b, p. iv) was \$5 billion lower than the \$78 billion spent in 2008 (USPS, 2009). Despite aggressive cost cutting activities, USPS has maintained high service performance levels while fulfilling the Universal Service Obligation (USO), which mandates that all American addresses have access to free mail delivery.

**Figure 2: e-Commerce Sales Growth since 2000**



Source: <http://www.census.gov/retail/index.html>

The beginning of the 21<sup>st</sup> century has seen the emerging digital economy radically change the way Americans communicate and conduct business. The Postal Service must continue its history of innovation and transformation to adapt to the changing needs of the nation. This is reflected in the organization’s mission and vision stated in the 2014 annual report to Congress (USPS, 2014b, p. 37):

***Mission and Vision:** Our mission of providing a universal delivery service to bind the nation together was established in the Constitution. It has been the foundation of Postal Service policy for over 200 years. Our vision has always been focused on continually adapting to best meet the changing needs of the nation and our customers.*



**Mission:** *The Postal Service mission is to provide a reliable, efficient, trusted and affordable universal delivery service that connects people and helps businesses grow.*

**Vision:** *The Postal Service is dedicated to improving its services, products and capabilities to adapt to the changing needs of customers in the digital age.*

In the face of declining mail volumes, there have been many potential USPS strategies proposed to help ensure future viability; for example, entering the same-day delivery market, processing and delivering 3D printing and providing financial services for underserved Americans. Innovative ideas and strategies have been proposed by postal leadership, congressional stakeholders, journalists, editorials, consultants, and USPS Office of Inspector General (USPSOIG) to continue to adapt in a rapidly changing economy. The question that this thesis will seek to answer is whether these strategies effectively leverage the competitive advantages and capabilities of the organization and align with the current business conditions to enable successful implementation. To fully assess potential innovation strategies we must first understand the history of transformation, current industry landscape, competitive advantages, organizational capabilities, and business conditions of the Postal Service. Effective strategic evaluation can be conducted once the current baseline understanding is established. The ultimate goal is to determine which innovative strategies should be pursued to help ensure the future vitality of the United States Postal Service into the 21<sup>st</sup> century.

## **History of USPS Transformation and Innovation**

On the eve of the American Revolution, the founding fathers worked to develop a system of democratic government that could unify the colonies and build a foundation for a prosperous new nation. A key component to that foundation was the Postal Service, which is the second oldest U.S. government agency. The Post Office Department was developed to unify the colonies by providing a

system of communication that enabled flow of information and supported the growth of commerce. In 1775, the Second Continental Congress appointed Benjamin Franklin, who had been a key figure in the development and improvement of the colonial posts, as the first Postmaster General (PMG). Ratification of the Constitution in 1788 gave Congress the power “To establish post offices and post roads” (US Const. art. I, sec. 8, cl. 7). Passage of a congressional act in 1789 continued the Post Office Department and made the PMG subject to the direction of the president. Samuel Osgood was appointed as the first PMG under the Constitution by President George Washington. Osgood presided over 75 post offices and about 2,400 miles of post roads that provided service to a population of four million citizens. In 1872, the Post Office Department was officially established within the executive branch of the federal government and designated the PMG as a cabinet level position. By 1860, the Post Office Department had grown to 28,498 post offices serving a population of 31.4 million. In the next hundred years, the Post Office Department grew in support of a rapidly expanding and changing United States (USPS, 2012a, pp. 3-11).

“The Industrial Revolution ushered in the first machine age – the first time our progress was driven primarily by technological innovation—and it was the most profound time of transformation our world has even seen” (Brynjolfsson & McAfee, 2014, p. 5). This first machine age was triggered by the dramatic improvements to the steam engine by James Watt, which dramatically effected most industries and changed the way products were manufactured and distributed (Brynjolfsson & McAfee, 2014, p. 5). During the Industrial Revolution, the country transitioned from agriculture to manufacturing and the Post Office Department transformed along with it. Throughout the long history of the Postal Service, there has been a tradition of innovation to improve speed, efficiency and the value of services provided to the nation.

A major component of the Industrial Revolution was dramatic improvements in transportation. The Post Office Department played a critical role in the adoption of new transportation technologies, as well as the development of the nation's transportation infrastructure. USPS has been on the forefront of the adoption of most transportation innovations, and subsequently transformed its infrastructure multiple times. Over the years mail has been moved via foot, horseback, mule, barge, steamboat, motorboat, hovercraft, ferry, train, subway, propeller plane, float plane, jet plane, helicopter, missile, pneumatic tube, automobile, scooter, motorcycle, Segway, electric vehicle, hydrogen fuel cell, and vehicles testing just about every type of alternative fuel (USPS, 2012b).

In its early history, the organization created post roads and utilized stagecoaches to transport mail over an ever increasing distance. In 1829, the Stourbridge Lion completed the first locomotive run in the United States. The Postal Service recognized that utilizing rail would dramatically increase the speed and reach of U.S. mail delivery. The Postal Service was quick to adopt rail transportation, and in 1832 awarded the first allowances to Pennsylvania stagecoach contractors to transport mail on the railroad. Similar contracts increased over the subsequent years, and in 1838 Congress designated all United States railroads as post routes, rapidly increasing rail utilization. In 1862, experiments were conducted with rail cars containing sortation cases, allowing mail to be sorted in transit. In 1864, the first U.S. Railway Post Office (RPO) route was established with a car equipped for general distribution between Chicago and Clinton, Iowa. Similar routes were established throughout the east coast. By 1930, more than 10,000 trains moved mail. Mail transport helped the rail industry develop nationwide infrastructure and flourish for over a century. In the decades following the Great Depression, the utilization of rail to move mail steadily dwindled with the adoption of other forms of transportation. Amtrak stopped transporting mail in October of 2004; however, some mail continues to be transported today using freight railroad intermodal service (USPS, 2012a, pp. 15-16).

Arguably the most significant contribution by the Postal Service to transportation innovation and adoption was aviation. In 1911, before the military examined flight as a potential new tool, the Postal Service conducted an experimental mail flight in Long Island, New York by testing the feasibility of dropping mailbags from the air. On May 15, 1918, the Postal Service began scheduled airmail service between New York and Washington. Airmail expanded and the Postal Service built small airports across the country and also tested the feasibility of night flights. By 1926, the Postal Service had gained congressional approval to implement twelve contracted commercial airmail routes. Charles I. Stanton, an early airmail pilot who later headed the Civil Aeronautics Administration, said about those early days of scheduled airmail service: "We planted four seeds ... They were airways, communications, navigation aids, and multi-engined aircraft... They are the cornerstones on which our present world-wide transport structure is built, and they came, one by one, out of our experience in daily, uninterrupted flying of the mail" (Moroney, 1967) (USPS, 2012a, pp. 29-32).

The rise of the automobile was also expedited by USPS efforts to increase the speed and efficiency of mail transport and delivery. The rise of the automobile also enabled the expansion of free home delivery. Resulting from an 1863 act of Congress, the Postal Service systematically implemented free city home delivery to cities that petitioned and satisfied infrastructure requirements such as sidewalks, lights, named streets and numbered houses. By 1912, requirements started to include a mail slot or mailbox to eliminate the need for people to be home when the mail carrier arrived with a delivery. In 1890, there was a significant push to add free rural delivery since 65 percent of the population, 41 million people at that time, lived in rural areas. After several congressionally subsidized tests, Rural Free Delivery (RFD) became a permanent nationwide service. This led to nationwide improvement in roads and infrastructure and paved the way for the adoption of the automobile as the primary vehicle of the Postal Service. The automobile enabled USPS to fulfill the expanding mandate to

provide delivery service to all Americans, including rural customers. The automobile dramatically improved the efficiency of delivery functions, allowing carriers to reach more delivery points in a shorter period of time. The American adoption of the automobile enabled population dispersion as families moved out of city centers with suburban expansion. The Postal Service expanded with the population and utilized the automobile to service urban, suburban, and rural customers (USPS, 2012a, pp. 20-25).

All of these transportation transformations helped establish a culture of innovation within the Postal Service. In 1893, USPS would experiment and implement subterranean pneumatic tubes below the streets of Philadelphia, followed by systems in New York City, Boston, Chicago and St. Louis. Pneumatic tube systems operated in those cities until 1922. New York and Boston resurrected service and operated the tube systems until 1953, when trucks finally replaced the pneumatic mail transport. (Cohen, Robert A, 1999) In 1959, the Postal Service tested guided missiles to send mail 100 miles from a submarine to an airstation in Mayport, FL (USPS, 2008).

The first machine age significantly impacted postal transportation; however, at the turn of the 20<sup>th</sup> century, mail processing still relied on antiquated mail processing methods, such as the pigeonhole method from the days of Benjamin Franklin. Rudimentary sorting machines were developed in the early 1900s and tested in the 1920s, the Great Depression and World War II postponed Postal Service adoption of mechanization until the mid-1950s. In 1956, the Post Office Department began pursuing mechanization projects to improve the speed and efficiency of mail sortation and distribution. In the late 1960s, the Post Office Department began to accelerate their mechanization program. In November 1965, high-speed Optical Character Recognition (OCR) machines were implemented, significantly increasing productivity. However, the Post Office Department business model made it difficult to invest in the necessary equipment to improve efficiency (USPS, 2012a, pp. 41-42).

The 20<sup>th</sup> century saw the Post Office Department become more established and expand their services. In 1911, the postal savings system was implemented to get money back into the financial system, help reestablish confidence in banks, cater to immigrants who were used to saving at post offices in their native countries and increase convenience for working Americans. Accounts could range from \$1 to \$500 and the interest paid on the deposits was 2 percent. Adoption was slow to start, but by the onset of the Great Depression in 1929, usage had increased and \$153 million was in the system. With the Great Depression in full effect, savings increased to \$1.2 billion during the 1930s. The system exceeded \$3 billion at its peak in 1947, during World War II. As the economy recovered after the war, bank interest rates increased and came with the same Federal Deposit Insurance Corporation (FDIC) guarantee offered by the postal savings system. Americans could also get better interest rates with U.S. savings bonds. These factors caused postal savings deposits to decline to \$416 million by 1964. In 1966, the Post Office Department began retiring the system by no longer accepting new accounts or deposits to existing accounts and systematically ending interest payments. After a half century of operation, the system was decommissioned on July 1, 1967.

In 1970, the Post Office Department experienced an incredible organizational transformation put into motion by difficulties earlier in the decade. In the mid-1960's, the Post Office Department was in the midst of a major financial crisis impacted by a lack of control over nearly every aspect of its business. Without sufficient control over postage rates, employee wages, facilities, logistics and workload the Post Office Department was headed for catastrophic failure. Mail volumes had tripled and antiquated facilities and operations could not handle the workload. The situation came to a head when the Chicago post office operation came to a halt, buried with 10 million pieces of mail with no available solution in sight. Congress intervened and worked with industry experts, postal unions, and postal leadership to reorganize the Post Office Department into a self-supporting government corporation

known thereafter as the United States Postal Service. The reorganization effort itself came to a head when 152,000 employees in 671 locations went on an illegal wildcat strike over wage stipulations being discussed by Congress. The Postal Reorganization Act of 1970 was passed after the unions agreed to a modified wage increase and ended the strike. By no longer reporting to the executive branch, patronage was eliminated which had controlled high-level management and postmaster appointments. The Postal Reorganization Act enabled the Postal Service to function more like a business; providing it with the financial ability to make investments in facilities and technology to improve operations. This reorganization opened the door for decades of innovation and much needed investment in mail processing technology (USPS, 2012a, pp. 38-39).

With newly established autonomy, the Postal Service was finally able to make the necessary business decisions to invest in technology and facility upgrades. The organization was incentivized to operate more efficiently and reduce the cost of mail processing and delivery. Despite the congressional mail monopoly, there have been numerous pressures from various competitive threats motivating USPS to keep costs low and develop alternative ways to increase the efficiency of mail processing and delivery. The monopoly status allows unfettered mail processing innovation without competitive concern of losing intellectual property or advantage. There is little threat of having other companies capitalize on mail processing research and development investments. The combination of internal and external research and development has been a strong component of Postal Service history. USPS does not design, manufacture, or produce processing equipment. However, it is heavily focused on developing process innovation, managing equipment integration and developing hardware and software engineering specifications. In 1978, the Postal Service also began to develop an expanded Zone Improvement Plan (ZIP) to reduce the average number of times each piece is handled. The expanded ZIP Code, with four add-on digits, enabled new automation equipment to sort mail to smaller geographic

segments, such as city blocks or a single building. The first deployment phase of the new single-line OCR channel sorters and Barcode Sorters (BCS) was completed by mid-1984. By the end of 1984, 252 OCRs were installed in 118 major mail processing centers across the country (USPS, 2012a, p. 43).

The Postal Service's 1988 Corporate Automation Plan was considered the 'cornerstone to achieving quality mail service at reduced costs.' Automation equipment processed mail at one-tenth the cost of manual processing. One of the most significant innovations in mail processing is the concept of using automation to sequence mail in delivery point order. To enable carrier walk sequence sortation, the nine-digit ZIP+4 code was lengthened by two digits in 1990. These additional digits represent specific addresses, called "delivery points." First tested in 1991, delivery point sequencing (DPS) utilized barcode sorting equipment and a new 11-digit barcode to sort letters in delivery order, eliminating costly manual sortation in the office. The Postal Service deployed the first Delivery Barcode Sorters (DBCS), in late 1991. DBCS machines were deployed nationally and once fully implemented nearly all city routes and 75 percent of rural routes received DPS. The Postal Service delivered 32 percent more mail with 9 percent fewer employees in 2006 compared to 1988, largely because of its successful implementation of mail processing technology. In 2009, USPS implemented Flats Sequencing System (FSS) to sort "flat mail" (large envelopes & magazines) in carrier walk sequence. Prior to DPS and FSS innovation, carriers would spend half their workday in the office sorting mail. Automated sequencing transformed delivery operations, where carriers now spend less than one hour in the office and can expand their route coverage and reduce labor costs (USPS, 2012a, p. 44).

In the modern era, the majority of all mail and packages are processed through 8,500 pieces of automated equipment throughout the country. These machines sort mail using barcodes which are either mailer applied or applied by mail processing equipment. The Postal Service is the world leader in OCR technology. The Remote Barcoding Computer System (RBCS) utilizes a sophisticated network of



optics, remote computer recognition, and remote encoding (using remote encoding centers where employees key ZIP code results from electronic images of mail) to resolve addressing information for 98 percent of all hand-addressed mail. Between 1997 and 2003, the percentage of machine-readable handwritten addresses jumped from less than 2 percent to about 80 percent. Improved address recognition and automation advances increased letter mail processing productivity by 50 percent from 1993 to 2001. Ink Jet Printer (IJP) barcode application enables one-time OCR and RBCS processing and improved efficiency in downstream operations. This OCR and barcoding capability enables sophisticated high-speed automated machines to sort up to 36,000 pieces of mail per hour. Stamped collection mail is automatically faced, cancelled, processed through OCR, barcoded, and sorted in the blink of an eye. After the anthrax attacks in 2001, the Postal Service worked with Northrup Grumman to develop a bio-detection cabinet that automatically conducts DNA screening of collection mail being processed in all of the mail processing plants, to prevent bioterrorism and ensure that the mail is safe (USPS, 2012a, p. 45).

According to Brynjolfsson and McAfee (2014, p. 6), we are now in the second machine age. "Computers and other digital advances are doing for mental power - the ability to use our brains to understand and shape our environments - what the steam engine and its descendants did for muscle power. They're allowing us to blow past previous limitations and taking us into new territory". The arrival of the internet triggered a massive transformation of the way business is conducted around the world. Entering the new millennium, the Postal Service found it increasingly difficult to operate using a business model established in 1970. Having experienced steadily increasing volume since the end of World War II, the electronic diversion of first class mail and remittance mail (bill payment) placed the Postal Service in unfamiliar territory. The Postal Service lacked the flexibility, or authority, to effectively react to the changing landscape. Competition in the package delivery market was intensifying and the rise in e-commerce package volume presented a huge opportunity for USPS. However, USPS had little

ability to change rates quickly, negotiate large volume discounts, or test new product innovations. USPS appealed to Congress to develop reform legislation to increase their flexibility to operate more like a business. Congress eventually passed the 2006 Postal Accountability and Enhancement Act which increased flexibility, but did still not provide enough latitude to effectively react and remain profitable. Additionally, the new law placed burdensome mandates for funding retirement benefits. All these issues culminated with the financial crisis of 2008. Despite these challenges, the Postal Service has worked within the confines of the PAEA law to explore new innovations to improve operations and meet the changing needs of customers.

The modern day Postal Service is the core of a \$1.3 trillion mailing industry that employs more than 8.4 million people. USPS is self-funded from the sales of postage and services which generate \$67 billion in annual revenue. If the Postal Service was a private sector company, it would rank 43th in the 2014 Fortune 500 (USPS, 2015b). Despite the large contribution to the United States economy the Postal Service is at a crossroads. The digital economy is advancing rapidly, and electronic diversion is causing the primary product, first class mail, to steadily decline in volume. Simultaneously, the digital economy is rapidly increasing e-commerce and package volume. While the Postal Service has adapted, transformed and adopted innovative technology throughout its history, it is faced with unprecedented level of uncertainty and competition. However, underneath the surface of a legacy organization are extremely unique capabilities and valuable competitive resources that no other United States organization possesses. Can USPS leverage these capabilities and resources and continue its legacy of transformation and innovation?

## **Chapter 2: Industry Analysis of Mail and Package Delivery Business**

Like any business in any industry, the Postal Service faces pressures from potential substitutes, suppliers, buyers, and existing competitors. In this chapter, established frameworks, including Michael Porter's five forces of industry attractiveness, will be utilized to conduct industry analysis and Postal Service positioning analysis.

### **USPS Market Dominant and Competitive Product Lines**

Once the PAEA law went into effect, the Postal Service divided its product lines into two categories: market dominant and competitive. Market dominant products include first class letters and flats, first class small parcels, periodicals letters and flats, and standard letters and flats; all of which are protected by monopoly status and no other organization has the right to deliver them. Legislation grants USPS monopoly status but with the USO mandate. Competitive products include package volume which competes directly with Federal Express (FedEx) and United Parcel Service (UPS). For the purposes of this thesis and the analysis contained within, these two product lines operate in two independent industries. Although USPS operates in two industries, mail delivery and package delivery, both utilize the same network of processing and delivery assets. These two industries experience very different pressures with different threats, suppliers, and other competitive forces. To account for these differences, two separate industry analysis will be conducted to properly assess the current business climate of USPS.

## **Analysis of Mail Industry**

### **Industry Lifecycle**

By all indications the mail industry has reached maturity, but with \$1.3 trillion in annual revenue, clearly it is still a relevant and utilized industry (USPS, 2015b). The question remains is how long it will continue to provide benefits that the internet and other media channels cannot effectively duplicate. For centuries, mail was the primary means of communication beyond the confines of the local town. During the late 18<sup>th</sup> century elaborate mail systems were developed and enhanced throughout the civilized world. These systems served as the primary correspondence until the adoption of the telephone in the second half of the 20<sup>th</sup> century. Depending on the urgency and the associated cost of long distance telephone calls, mail often continued to serve as the primary correspondence. Mail continued as a main source of personal correspondence until the availability of lower cost long distance in the mid-80s and widespread adoption of the internet and email in the mid-90s.

Aaron Montgomery Ward is credited with establishing the first mail-order business in 1872, with an innovative single-sheet catalog featuring 163 items. By 1904, Montgomery Ward was mailing catalogs to three million customers (Montgomery Ward, 2015). For the remainder of the 20th century, direct mail transitioned into a fully adopted advertising platform for companies across most consumer industries. USPS began offering presort rates in 1928 to lower the cost of direct mail. By 1967, presorting by ZIP Code became mandatory for second and third-class mailers. From 1976-79, discounts were offered for pre-sorted first class, second class, and third class bulk mail (USPS, 2012a, p. 33). These discounts combined with an increasing demand for direct mail caused mail volume to increase steadily.

Transaction mail is defined as mail sent from one party to another for the purpose of completing a transaction, which includes: paying bills, signing up for a service, applying to a program and sending

money. Although the telephone contributed to declines in first class mail correspondence, that technology did not eliminate the need for transaction mail. Bill payment and other forms of transaction mail flourished until the adoption of internet transactions like online bill payment. Even as first class correspondence started declining in the later part of the 20<sup>th</sup> century, and adoption of internet transactions increased in the first decade of the 21<sup>st</sup> century, direct mail advertising was increasing at a sufficient rate to compensate for electronic diversion. In 2006, USPS experienced the historical peak in total mail volume at 213 billion pieces.

Over the last 50 years, USPS has developed, implemented, and refined the infrastructure, systems and technology to process and deliver mail efficiently. This has enabled the Postal Service to become the most advanced postal system in the world, delivering 40 percent of the world's mail (USPS, 2015b). The 2011 Oxford Strategic Consulting report found that, "first ranked USPS delivers twice the mail per employee as its closest competitor and more than five times per employee than fifth-place Deutsche Post". The report ranked the postal services of the G-20 countries based on three metrics: 'provision of access to vital services,' 'operational resource efficiency,' and 'performance and public trust' (USPS, 2012d). The Postal Service has continued to invest in new technology and optimize its systems. New technology like the Intelligent Mail Barcode (IMB), which uses unique 24 digit barcoding to identify individual pieces of mail and containers of mail and enabling tracking through the entire processing system. This IMB technology provides direct mailers near-real-time processing data and analytics to allow mailers to synchronize their salesforce, operations, support and multi-channel advertising to optimize the benefit of their mailings. IMB capability improves mailer satisfaction by providing assurances that mail was processed and delivered and enables USPS troubleshooting and recovery efforts in the event mail is not processed timely. Intelligent Mail analytics and diagnostics enable USPS to improve their processes and identify bottlenecks before they become a problem.

Another innovation is the usage of Quick Response (QR) codes, which are two-dimensional barcodes that can be scanned with a smart-phone and provide quick access to websites and other online media. Implementation of QR codes links physical mail with virtual and social media, and enables companies to track response rates of their direct mail campaigns (USPS, 2014d).

### ***History of Industry Threats***

For over 175 years (ever since the invention of the telegraph by Samuel F.B. Morse in 1837), the mail industry has been facing technological threats. Despite the threats from the telegraph, telephone, radio, television, and fax machines, mail volume increased substantially. The internet has been the only threat that has challenged mail on its ability to provide personalized, secure, accessible and affordable two-way communication, and it has the added benefit of being instant. Electronic internet communication via websites, email, and social media continues to erode first class mail as well as threaten direct mail advertising. All communication media have overlapping uses and benefits, and aside from the telegraph, all other technologies continue to coexist in the 21<sup>st</sup> century. The internet combines many of the benefits of the various technologies and threatens each platform. The internet, combined with smartphones and mp3 players (iPod), have threatened the traditional radio industry. Yet satellite radio is a growing business thanks to integration with the automobile sector. Although internet streaming of audio and video content threatens the radio and television industry, both industries use the internet as an alternate channel for distribution. Voice over IP has threatened the telephone industry, but with the advent of smartphones the lines between telephone and internet are blurred. All of these platforms provide different communication channels that can coexist and complement each other as long as each platform adapts and remains sufficiently differentiated. The internet and mobile technology has the capability to eliminate all other communication media. However, the value-add of multi-channel media outweighs the benefits of utilizing a single source. The highest value creation

occurs when the various media channels are leveraged to complement each other and reach the largest possible audience.

### **Industry Attractiveness (Porter Five Forces)**

The mail industry is a \$1.3 trillion industry employing 8.4 million Americans with the \$67 billion USPS at the center (USPS, 2015b). The industry includes printers, direct mail advertising firms, distributors, consolidators, suppliers, and transportation companies. Despite the size of the industry and USPS monopoly status, the industry faces significant pressures that make it less attractive over time.

### ***Threat of Substitute Products or Services***

Although USPS has monopoly status for mail delivery, and no other organization can place anything in a U.S. mail box, it certainly does not eliminate the threat of substitute products or services. The internet continues to be a threat to first class mail, both in replacement of remittance bill payment with online bill payment and letter communication with email and social media. First class mail has previously dealt with the threat of the telegraph, telephone and fax machine; but the threat from email and online bill payment has been the only threat to cause a decline in first class mail volume. The 20 year period from 1980 to 2000 saw first class volume increase by 73 percent to a peak of 104 billion pieces in 2001. However, nearly all of those gains were erased with first class volume dropping by 63 percent and falling to 64 billion pieces by 2014. First class letter volume continues to decrease at four percent per year. There are certain uses for first class mail that have been less threatened by the internet, like holiday and birthday cards and wedding invitations. Millennials have embraced Christmas cards, “In spite of the fact there’s technology and new ways of communicating with people, they’re interested in continuing the connection” (Romalino, 2014). Customized and personalized photo holiday cards, which can be made with online applications and printed and shipped to their homes, have

become very popular (Krassner, 2012, pp. 2-3). Distribution of physical media such as credit cards, social security cards and access cards is most economical using USPS (although some of these are being replaced by Near Field Communication (NFC) innovations like Apple Pay).

Direct mail continues to be threatened by the internet. Direct mail has dealt with the threat of newspaper, magazine, radio, television, and billboards for decades. Not until the advent of digital advertising has a substitute been able to compete with the ability of direct mail to target specific customers (whether demographic, geographic, or based on previous business relationships). Now with social media, digital advertising is able to tap into contagion and socially driven adoption. The question of substitution comes down to effectiveness and access. There are some indications that physical mail is more effective at gaining customer attention. Robert G. Magee of Virginia Tech conducted a test of the effectiveness of the print and online versions of the university alumni magazine. According to Magee, "A lot of companies and organizations have switched from printed materials to going all digital. The ones I've talked to say it's to cut costs. I had a feeling that when they went digital, they lost readership and response." The prevailing wisdom from the internet marketing experts is that online is the way to go. The result of Magee's test was that 49 percent recall getting the online version, compared to 82 percent recall getting the print version. 77 percent of those receiving the print version opened the magazine, compared to 49 percent for the online version. Magee believes that these results indicate that print stands out, print is better remembered and print is better understood. "If you want more customers who respond better to your offers, then resist the temptation to cut costs by cutting back on or cutting print in favor of cheap online/digital media. Better yet, use print to drive the online engagement and you will benefit from it" (Freedman, 2014). In the digital age, many companies are choosing to use 'multi-channel' advertising by using a media mix of direct mail, media advertising, and digital advertising. An emerging edge for digital advertising is that it allows companies to track digital



advertising effectiveness, by tracking traffic and purchasing behavior on their website generated from various digital advertisements. With direct mail and other traditional advertising, businesses have to rely on correlated sales data or surveys to measure advertising effectiveness.

Historically, one key differentiator of direct mail was the ability to target specific customers within a specific geography. With the increase in mobile internet usage and social media, digital advertisement is becoming more sophisticated in its ability to target customers with location-based services. According to the Copenhagen Institute for Future Studies (2011, p. 38), location-based services target marketing communications better than mail, as location-based services can target the right message to the right customer at the moment in time closest to the purchasing decision. Apps like Foursquare leverage mobile location-based capabilities to let potential customers know what deals or promotions are currently being offered near their physical location. There are, however, entry barriers to capturing ad space on these digital platforms. A lot of digital platforms utilize auctions to sell advertising space and keywords to the highest bidder, potentially excluding customers with fewer resources. The mailbox does not have the same space limitations. Recent innovations in direct mail are focused on providing a simplified channel for small local companies to get their message to potential customers. Every Door Direct Mail (EDDM) is a low cost direct mail service that eliminates the need for addressing and targets all addresses within a specific ZIP Code or carrier route. This product allows local small businesses to advertise to specific segments of their community. Without EDDM they may not be able to afford other forms of advertising or be able to focus their campaign on such a small geography.

Catalogs and magazines are a significant portion of the mail industry. Both catalogs and magazines have seen major threats from electronic substitutes. Company websites provide customers with product listings and stylish photographs that potentially replace all of the functionality of a catalog; however, unlike websites, the physical catalogs are also used as advertisement to solicit repeat business

and attract traffic to the website. Recently, the look and feel of catalogs are becoming more advertisement and less product listing, focused on driving customers to stores and online platforms. Many companies are returning to catalogs to engage with their customers. “No one can argue the distinct advantage catalogs have through photography, paper and printing quality, size, use of models and share of customer attention. And, catalogs have proven to be the most successful driver of web traffic. There's no better way for a multi-channel marketer to target and acquire customers. It's extremely cost-effective to initially attract the customer through direct-mail while having them make their purchases online” (Ostroy & Wong, 2013). In 2015, after a five year hiatus, JC Penney will resume mailing catalogs. CEO Myron Ullman told the Wall Street Journal, “We lost a lot of customers.” According to the Direct Marketing Association, catalog mailings reached their volume peak of 19.6 billion in 2007, just before the 2008 financial crisis. Although volume has declined, catalog mailings increased in 2013 for the first time in six years to 11.9 billion (Elise, 2015).

The magazine business has taken a huge hit from the internet, and that has been amplified by the arrival of the tablet (iPad) and larger full-color smart phones that begin to rival the experience of a physical magazine. One of the most iconic magazines, Life Magazine, published its last issue in 2000 due to waning subscriptions. Hundreds of other magazines are now defunct, including once popular publications such as; Newsweek (2012), U.S. News and World Report (2010), PC Magazine (2009). Many other magazines have introduced online versions to stay competitive. The periodical magazine segment continues to decline at an estimated 1.5 - 1.8 percent per year (Copenhagen Institute for Futures Studies, 2011, p. 49). In 2014, USPS had \$1.7 billion in revenue from periodicals (USPS, 2015b). However, USPSOIG research shows that 40 percent of the U.S. population prefers to receive their magazines in physical form. However, accounting for age shows that younger generations are more comfortable with

digitized versions of magazines with only 20 percent preferring physical magazines (USPSOIG, 2013a, pp. 11-12).

### ***Bargaining Power of Suppliers***

There are many companies in the print and distribution business, but the two largest companies are RR Donnelly & Sons Company (10 percent market share) and Quad/Graphics Incorporated (4.1 percent market share). These companies print and consolidate a large portion of the catalog and periodical mailings in the United States (Moldvay, 2012, p. 4). Pitney Bowes Presort is a large consolidator supplier that collates smaller mailings into direct pre-sort trays that can bypass originating Postal Service processing and qualify for lower postage rates. The collective strength of the mailing industry suppliers is felt in the Postage Rate Commission's (PRC) rate increase hearings, Domestic Mail Manual (DMM) mail preparation guideline development, and during any congressional legislative debates. The industry has congressional lobbying capability to influence these decisions. Unlike traditional manufacturing suppliers, USPS does not purchase raw material or sell products to a customer after value added processing. Print logistic companies function as both a supplier and retailer of postal products to the end customer. This relationship eliminates the traditional aspect of vertical profit margin competition. Once USPS sets rates, then it is up to suppliers to determine how much they can mark-up the product to increase their margins. The prevalence of supplier competition prevents excessive mark-ups from any one supplier. Despite their lobbying capability, the suppliers are ultimately subject to USPS postage rates and mail preparation policy. USPS has very little control over market dominant rate increases since they are strictly controlled by the PRC and linked to the inflation-based price cap (Consumer Price Index for Urban consumers, CPI-U).

Transportation and equipment providers are another important supplier. USPS uses a large array of trucking companies to provide surface mail transport, but most have relatively little bargaining power since there is prevalent competition for those contracts. Most of the providers are regional or operate between specific city pairs. There are some major national surface transport suppliers, such as; Pat Salmon & Sons Inc., Eagle Express Lines, Inc., Hoovestol, Inc., Beam Brother Trucking, Inc., Midwest Transport, Inc. that all rank in the top 30 of most lucrative USPS contracts, but there is still sufficient competition to minimize bargaining power (Appendix, Table 5). Air transport is a more complicated supply sector. Ever since 1927, the Postal Service does not own or operate aircraft (USPS, 2012a, p. 31). For the rest of the 20<sup>th</sup> century, most mail was flown utilizing commercial passenger airlines. Since 2000, the Postal Service has utilized FedEx to fly packages, and it subsequently became efficient to also utilize FedEx to fly mail (Rohrlich, 2012). Currently, USPS has contracts with FedEx, UPS, and commercial airline carriers for air transport of mail which is assigned to flights depending on cost, capacity, and service-responsiveness. These services are also negotiated contracts, but there is more bargaining power on the air transport side than surface transport contracts since the necessary scale and service capability is limited to just a few providers. FedEx and UPS operate their own air logistics network to support their own distribution. Therefore, they have the ability to provide optimized logistics, including hub sortation and container transfer operations, making them more efficient providers compared to commercial air. Additionally, they are more service-responsive, provide better on-time service and have fewer delays than commercial airlines since they are express logistics companies. In many cases, it is also more efficient to utilize a single network for air logistics. For all of these reasons, FedEx is the largest supplier of air logistics for the Postal Service, with UPS and commercial air supplementing due to capacity and or cost. In fact, FedEx is the largest Postal Service supplier annually, receiving \$1.4 billion in FY2014 (Appendix, Table 5). It is more efficient to work with a single logistics provider, but doing so also increases the USPS switching costs and supplier bargaining power. However, FedEx does not want to

lose this valuable contract and must stay competitively priced. According to Alan Robinson, executive director of the Center for the Study of the Postal Market, the income generated by the USPS contracts "represents around 60 percent of FedEx Express's US domestic air freight revenue. Most of this revenue comes from flying mail and parcels during the day when FedEx airplanes would be otherwise parked" (Rohrlich, 2012). Overall, USPS has the majority of the bargaining power for transportation since there is competition in the market and switching costs are relatively low.

There are numerous companies who develop and manufacture mail processing equipment, including: Lockheed Martin, Northrup Grumman, Siemens and others who have the technology and capability to produce the equipment. Typically, there is stiff competition for contracts. Similar to military contracts, the Postal Service normally submits Request for Proposals (RFP) to solicit contracts to develop new mail processing equipment. In most cases, USPS stipulates in the contracts that they will own any intellectual property from any contracted research and development. USPS controls most of the bargaining power since companies competitively bid for these contracts. However, in some cases once the original contract deliverables have been satisfied, the supplier has increased bargaining power for additional equipment purchases since they have developed the exclusive capability to produce the equipment.

With 78 percent of the operating costs of the Postal Service devoted to employee compensation and benefits, the largest USPS supplier is the postal employees themselves. Without the mailhandlers, clerks, carriers, drivers, mechanics and technicians there would be no Postal Service. The majority of Postal Workers are members of the four major Postal labor unions, including: American Postal Workers Union (APWU), National Postal Mail Handler Union (NPMHU), National Association of Letter Carriers (NALC), National Rural Letter Carrier Association (NRLCA). The unions each periodically enter into negotiations to develop collective bargaining agreements (CBA), which govern wages, benefits, rights

and policies of their member's employment with the Postal Service. Chapter 73 of the federal code prohibits federal employees, including all postal employees, from even advocating the right to strike, and the bargaining power is relegated to the collective bargaining negotiations and congressional lobbying (Time Magazine, 1970). Once the CBA is in place, the employee and employer are bound by contract to provide the specified services for specified compensation. The unions do have the ability to lobby congress and influence elections, which provides them with some degree of leverage at the negotiation table. Their most significant influence is the ability to leverage political influence to prevent changes that negatively impact their membership. They do not always have the necessary political leverage to achieve their agenda, but they have more influence over Postal Service issues than any other supplier.

### ***Rivalry Among Existing Competitors***

With monopoly status, there are not any direct competitors in the mail industry. The competition is against substitutes and alternatives, particularly digital offerings. Therefore USPS has to keep its rates competitive with alternative advertising sources. As discussed, market dominant rates are strictly controlled by the PRC and CPI inflation. With market dominant postage rates tightly controlled, competitive pricing does not play a role. Competition with substitutes is based on service and effectiveness. Therefore it is important that USPS maintains satisfactory service levels on market dominant products to prevent customers from switching to alternatives. Unlike many monopolies that can optimize pricing to demand and extract the maximum profit, USPS has to manage controlled pricing and focus on cutting marginal cost to increase profit. Even with monopoly status, USPS has to focus on keeping costs low and market their products to encourage growth and prevent erosion to substitutes.

### ***Bargaining Power of Buyers***

Aside from lobbying the PRC to influence rates or product decisions, buyers and customers of postal market dominant products have no control over price. The only power the buyer has over USPS is whether to use substitute products. However, if a customer needs to send out a mailing, they have limited bargaining power since there is only one organization that is permitted to provide the service. Usage can be used as a bargaining tool, but the choice not use a product can cause harm to the buyer. Large customers have the ability to influence service and handling of their product. Large retailers like JC Penney have enough influence to get high level postal officials involved in ensuring high levels of service by putting focus on their products. Service pressure and the threat of non-usage is the extent of their bargaining power since price is non-negotiable.

### ***Barriers to Entry***

Due to legislation, it would be impossible for any other organization to attempt to enter the mail delivery industry. Even if legislation did not prohibit it, economies of scale would. Duplicating the processing and delivery capability at the necessary scale to compete with USPS would be extremely prohibitive. This would be especially true in rural areas or with attempts at universal service. High density, high volume urban areas might provide enough value to attract entry, but would likely only apply to organizations that already possess scaled up delivery services. In the long run, declining mail volume also serves as major barrier to entry. Overall, even without the monopoly, the barriers to entry are much too high for any organization to enter into the mail delivery market on a national scale.

## **Emerging Industry Trends**

Digital technology continues to rapidly evolve and improve both direct and digital marketing. Although digital is a threat to mail, technology is also able to improve physical mail with advances such as QR codes and Augmented Reality (AR); linking direct advertising with digital advertising. AR turns mail into a virtual experience and lets a customer interact with information. The mailpiece is held up to a computer or smart-phone camera to reveal dynamic virtual reality images, extending the use and impact of the mail. First class mail and periodicals will continue to decline as digital natives (individuals born after 1977 who came of age in the digital age) become a higher percentage of the population (Copenhagen Institute for Futures Studies, 2011, p. 43). As digital advertising achieves more sophisticated targeting with customer analytics, location-based technology and social contagion (leverage of viral sharing of advertisements on social media) the threat to direct mail becomes more pronounced. There is still value in a physical channel, but direct mail must adapt by utilizing analytics to improve targeting and focus on providing a physical complement within multi-channel advertising campaigns. Direct mail does provide small businesses, which are otherwise limited in their ability to compete with national chains, with a low cost, local targeting option with EDDM and other products. Integrating digital technologies like QR codes and AR with traditional mail can appeal to the Digital Natives and increase the value of direct mail. Postal digital products, such as providing customers the option to receive digital copies of their physical mail, are under development. Although digital products would enhance physical mail and improve competitiveness, they would not replace mail or directly enter the digital communications and marketing space. With increasing digital competition, the Postal Service must be focused on the changing landscape by exploring new innovations and leveraging analytics and the synergies of multi-channel advertising to increase the value of direct mail.



## **Industry Summary**

Considering that the Postal Service has monopoly status, this is not a normal application of Michael Porter's frameworks. USPS is a governmental organization that is not designed to maximize profit or increase shareholder value. With declining volume, the mail industry is steadily becoming less and less attractive for the incumbent monopoly. The fact that the barriers to entry are nearly impossible, the suppliers and buyers have little bargaining power, and there is no direct rivalry counteracts the threats of substitutes and pricing restrictions placed by the PRC. However, the only truly attractive aspect of the industry for the incumbent is that no one else can enter the market. It is a difficult market to operate in with pricing limitations, USO and significantly declining volume.

## **Analysis of Package Delivery Industry**

While mail volume continues to decline, package volume has been increasing at a significant rate. In the past two years, the USPS package volume has increased by 15 percent from 3.5 billion to 4 billion pieces, with the associated revenue increasing by 20 percent from \$11.5 billion to \$13.7 billion in 2014. Parcel revenue comprises 21 percent of the Postal Service \$67 billion total revenue (USPSOIG, 2015a, p. 5). The e-commerce explosion has driven significant worldwide package growth, with 2015 sales projected to increase by 20 percent, reaching 1.7 trillion. The North American Business to Consumer (B2C) sales are projected to increase by 11 percent, from \$483 billion to \$538 billion (eMarketer, 2104).

## **Industry Lifecycle**

While the USPS monopoly status for domestic mail service has been firmly established since the country was founded, package delivery has a much more complicated history. The 20<sup>th</sup> century saw the rise of package delivery competition and missed opportunities for the Postal Service. Technological

advances in transportation and commerce continue to drive the evolution of the package industry. The industry is nowhere near maturity, as it is in the midst of the transformative e-commerce revolution and faces potential disruptive transportation technologies in the near future. As the package industry continues to grow, the Postal Service is aggressively trying to increase market share and adapt to the changing landscape.

As the first machine age ushered in the ability to manufacture products and populations began to disperse with improving transportation, there became an increasing demand for package delivery. Between 1878 and 1882, an international parcel post system was established. The Post Office Department agreed to deliver parcels sent from other countries, but declined to institute a domestic service. This opened up opportunities for private express companies to start operations throughout the country and satisfy the increasing demand for package delivery. One of these companies was the American Messenger Company which was started in 1907, in Seattle, Washington. This small company expanded into retail delivery and steadily acquired other express companies as it expanded on the west coast, officially becoming the United Parcel Service in 1919. One of the defining contributions to the success of UPS was the adoption of “common carrier service” which included daily pickup calls, additional delivery attempts and streamlined documentation with weekly billing.

Private express companies were profiting significantly from the demand for packaged goods in rural America. After the 1896 congressional establishment of rural free mail delivery, and the rise of the mail-order catalog businesses like Montgomery Ward and Sears, Roebuck and Company, farmers began to demand more affordable delivery of packaged goods. While the topic of establishing Parcel Post service by the Post Office Department was being debated in Congress, one of the major express companies declared a large stockholder dividend. Public outrage at the excessive profits prompted Congress to resolve the issue quickly. Parcel post service began in 1913 and was immediately successful,

with a significant effect on the national economy. With the advent of parcel post, catalogs became known as the 'The Homesteaders Bible' and mail order catalog businesses became widely adopted and extremely profitable. The automobile was transforming the country, and the Post Office Department deployed a large fleet of trucks in 1918.

UPS was able to survive and flourish due its common carrier service and rapid adoption of new technologies like conveyor belts and delivery trucks, which allowed it to operate efficiently and compete with parcel post rates. UPS expanded to the east coast with a business model focused on retail delivery for department stores. As the adoption of the automobile became more widespread, customers started shopping at new large shopping malls with ample parking, enabling them to take merchandise home with them instead of requiring delivery. Realizing that retail delivery would eventually decline, UPS began attempting to get common carrier rights to deliver packages between private and commercial customers throughout the country. This attempt placed UPS in direct competition with the Post Office Department and in opposition to the Interstate Commerce Commission (ICC) regulations. Based on variation in state laws, UPS was legally able to operate in some states starting in 1952. For over 30 years, UPS would fight legal battles with the ICC to obtain the right to deliver packages freely within the contiguous United States. In 1975, the ICC granted UPS the authority to transport and deliver freely across state lines.

The next transportation transformation for the industry was the utilization of airplanes to transport packages. Once established, air transport significantly reduced cross-country package transit time. In 1948, the Post Office Department established air parcel post service utilizing commercial passenger flights. In 1953, UPS established air operations, achieving 2 day delivery for most of the United States. UPS also utilized commercial airline cargo space. Seeing a need for expedited shipping, Fred Smith had an idea to build a private airline for transport and delivery of overnight packages and

envelopes. Federal Express officially began operations in 1973 and rapidly expanded. In the mid-1970s, Federal Express lobbied for air cargo deregulation. 1977 deregulation enabled Federal Express to use larger aircraft and spurred rapid growth. Today, FedEx has the world's largest all-cargo air fleet. In the 1980s, deregulation expanded into the commercial airline industry resulting in reduced flights and routes, and severely threatened UPS service dependability. However, deregulation also opened the door for UPS to develop its own airline and grow its business. Since the Postal Service does not own or operate aircraft, commercial airlines continued to be utilized to transport of mail and packages. USPS also began contracting air cargo services such as Emery Worldwide Freight Services. After the terrorist attacks of September 11, 2001, packages over a certain weight were no longer permitted to fly on passenger aircraft. USPS immediately shifted package air transport to non-passenger freight carriers. Since 2001, FedEx has been the prime contractor for USPS Priority and Priority Express air transport (Smithsonian Libraries, 2015); (UPS, 2015a); (FedEx, 2015a).

While the past 30 years have not generated any major changes to package transportation, the industry has been completely transformed with the arrival of the internet and e-commerce. The way people shop and receive merchandise has completely changed. Platforms like eBay enable people to buy and sell C2C goods from anywhere in the world. Amazon.com has created a massive marketplace, helping people become more and more comfortable purchasing goods online. Mobile technology has created another wave of e-commerce expansion where people are able to buy goods and services on-the-go with a simple swipe of a finger. With the increased convenience of web-based and mobile shopping, the demand for delivery services is rapidly increasing.

## **Industry Attractiveness (Porter Five Forces)**

### ***Threat of Substitute Products or Services***

Historically, a major substitute to package delivery has been brick-and-mortar retail; however, with the continued growth of e-commerce, demand is trending towards delivery. The rapidly increasing package volume has attracted several alternatives to the traditional package delivery companies. Regional package delivery services like OnTrac and Lasership are emerging in an attempt to provide more flexible, faster, regional shipping solutions. “The delivery giants are facing growing competition in the market at a time when they’re struggling to find a way to make e-commerce deliveries more profitable. While still less than 3 percent of the market, regional delivery companies have been picking up more e-commerce business in recent years” (Stevens, 2014). These services are a hybrid between courier and traditional package delivery. They utilize independent contractors and ‘per delivery’ wage strategies to reduce cost and increase incentives for speed and efficiency. Combining lower employment costs, operating exclusively in profitable areas, targeting higher margins for customized courier services and adding scale by working with e-commerce retailers makes companies like OnTrac and Lasership major threats at the regional level. While these companies do not provide nationwide service and avoid unprofitable areas, there is potential that similar regional companies could network together to provide the scale to directly compete with the national delivery services. Even without threatening national scale, these regional delivery services could skim from the high margin profitable routes, leaving less profitable or even costly routes in the hands of USPS. These regional players also recognize the ‘Last-mile’ capability of the Postal Service. In November 2104, OnTrac announced a partnership with USPS, becoming the first regional carrier to use the Postal Service for last-mile delivery (Stevens, 2014).

## ***Bargaining Power of Suppliers***

Analyzing suppliers in the package delivery industry is complicated due to interdependencies between competitors. Ever since 1927, the Postal Service does not own or operate aircraft (USPS, 2012a, p. 31). After 9/11, due to concerns over the potential danger to passengers, packages over a certain weight were no longer permitted to fly on passenger aircraft. In an effort to secure more non-passenger airfreight capacity, USPS began exploring contracts for air logistics with FedEx. Since 2001, FedEx has been the prime contractor for express air transportation for USPS. In 2013, USPS and FedEx signed a renewed seven year agreement worth \$10.5 billion (Case & Credeur, 2013). Currently, all USPS packages (over a certain weight) are flown on FedEx. In turn, both FedEx and UPS utilize USPS for last-mile delivery in more sparsely populated areas, since it would cost UPS or FedEx more to deliver it themselves. Strategically, USPS is the only shipping company with the capability to go to every address, every day. In this current business climate, horizontal competitors are also vertical suppliers. Utilizing available capacity on aircraft and lower density delivery routes makes sense from an optimization perspective (arguments could be made to explore more optimization between the three organizations). The key competitive question is: who owns the customer and therefore the bargaining power? Since most of these logistical handoffs are transparent to the customer, these arrangements do not shift bargaining power in any direction, except to potentially blur the lines of differentiation and drive customers to be more price sensitive. Overreliance on any single supplier can be problematic, but from the Postal Service perspective there is always the alternative to shift some air logistics to UPS. In the 2013 contract negotiations, UPS reportedly put forth a competitive bid and were disappointed not to gain USPS business (Case & Credeur, 2013).

Another category of supplier is the transportation and equipment companies. USPS uses a large array of trucking companies to transport mail, but they have relatively little bargaining power since

there is heavy competition for those contracts. There are many surface transportation suppliers, and most of the contracts are handled at the local and area level. FedEx and UPS utilize their own surface transportation for long haul transfers between processing facilities. Manufacturers of package processing equipment have three domestic customers and there are numerous companies such as Lockheed Martin, Northrup Grumman, Siemens, and others who have the technology and capability to produce the equipment; and there is significant competition for those contracts. These suppliers do not have significant bargaining power except in cases where the supplier has increased bargaining power for additional equipment purchases.

A major supplier in the package delivery industry is the employees. Residential delivery is a labor intensive industry. Each of the three major national package delivery organizations has different labor conditions. Founded as an express delivery company, FedEx regulation falls under the Railway Labor Act which was designed to avoid critical commerce interruptions and has stipulations preventing local unionization. Since national labor organization is far more difficult to establish, FedEx has remained largely un-unionized. UPS, on the other hand, was founded as a ground delivery service and is regulated under the National Labor Relations Act, which permits local labor organization. UPS employees are represented by the International Brotherhood of Teamsters who has the ability to strike and conduct walkouts. In 1997, UPS teamsters conducted a 15 day strike which significantly harmed UPS profits. UPS employees have more bargaining power, resulting in higher compensation (Wall Street Journal, 2010). 78 percent of the operating costs of the Postal Service are devoted to employee compensation and benefits. As previously discussed in the Mail Industry Analysis, USPS is unionized and has significant limits to the levels of flexible workforce. Unlike the UPS Teamsters, federal employee unions are not legally permitted to strike. Approximately 20 percent of the USPS workforce are part-time flexible (increased from just 13 percent in 2010). UPS employs a 53 percent part-time workforce and FedEx

remains around 40 percent part-time (USPSOIG, 2010). Part-time flexible workers are lower-waged employees who also enable more efficient staffing to accommodate volume fluctuations. Considering the variation of the labor conditions, UPS has more flexibility but has the lowest degree of bargaining power with their employees' demonstrated willingness to strike. FedEx is the best positioned with a high degree of flexibility and with a relatively high bargaining power with its largely non-union workforce. USPS has the least flexibility and has moderate bargaining power through the collective bargaining agreement constructs.

Another category of suppliers are package consolidators. There are several USPS approved shipping consolidations package consolidators, including: DHL Globalmail, FedEx Smartpost, UPS Mail Innovations, Newgistics, Legacy Supply Chain Services and several others (USPS, 2015c). These companies collect packages from local businesses and mailers and consolidate them into presorted containers to bypass USPS originating or destinating operations at discounted postage. Medicine and other small parcels are often shipped through such consolidators.

Large retailers are one of the primary suppliers in the package delivery industry. Amazon has characteristics of a supplier, though in their case since they own the customer, it might be more appropriate to view the package delivery companies as suppliers for Amazon. Most customers utilize Amazon without any concern about which company delivers their merchandise. From a vertical competition perspective, Amazon would have the leverage and capability to decide to utilize one supplier over another. Presently they use sophisticated algorithms to select the carrier offering the best price for each individual shipment. Amazon utilizes all three of the large shipping organizations, as well as smaller regional carriers. "Sanford C. Bernstein & Co. analysts project that about 18 percent of Amazon's estimated 608 million deliveries last year were handled by regional delivery companies. USPS handled 35 percent, UPS 30 percent and FedEx 17 percent" (Stevens, 2014). Amazon has 14 large



fulfillment warehouses located around the country to improve delivery speed and reduce shipping costs (Amazon, 2015a). E-commerce customers are looking for the fastest, cheapest shipping options. Amazon's location of their fulfillment centers enables them to utilize lower-cost ground shipping and Parcel Select options (pre-sorted pallets dropped at post offices for last-mile delivery). These fulfillment centers bypass portions of the traditional package delivery process and capture more of the profit margins. With Amazon Prime membership, customers get unlimited free shipping, making the customer even less concerned with which company delivers or the actual cost of shipping. Overall, Amazon will continue to utilize the package delivery companies as long it can be done at a lower cost than any alternatives. Economies of scale and cost are the biggest factor in the package delivery business and play a major role in the vertical supply chain competition.

### ***Rivalry Among Existing Competitors***

The United States package delivery business is a highly competitive growth industry. However, some companies have had to exit the market because they could not compete. Airborne Express was the third largest express package delivery company in the United States until DHL purchased the sales and ground network of Airborne Express in 2003. ABX Air became an independent company, entering into contracts with DHL to continue providing service (ABX Air, 2015). DHL pulled out of the U.S. domestic market in 2008 'to minimize future uncertainties.' DHL announced cutting 9,500 jobs, on top of 5,400 previous reductions, as it discontinued U.S. domestic delivery operations. DHL continues to operate international express delivery between the United States and other nations. DHL shutdown all ground hubs and reduced the number of stations from 412 to 103 (Smith A. , 2008).

This leaves FedEx, UPS, and USPS in the national domestic package delivery industry. The three organizations each introduced specific expertise and strengths to the industry. UPS is traditionally

focused on ground package processing and delivery. FedEx is traditionally focused on air logistics and overnight express delivery. USPS has the most expansive retail and delivery network. USPS also has more processing capability and delivery capacity for low-weight, low-cost parcels. Over time, all three organizations have expanded their capabilities to provide very similar service. FedEx was an early pioneer of scanning and tracking capability, Federal Express introduced a hand-held package scanning system in 1986, called SuperTracker® (FedEx, 2015a). By 1992, UPS provided tracking for all packages. In 1994, UPS.com went live, and demonstrated soaring consumer demand for package transit information (UPS, 2015a). USPS was behind the curve in package scanning and tracking, however over the last couple of years has leveled the playing field. Despite the recent advancements by USPS, the long history of scanning and tracking provided by FedEx and UPS helped create the perception that they provide more reliable service. Recent results and studies have shown that USPS has closed the gap on scanning and service. According to a February 2014 report published by Stamps.com, USPS has 3.36 average scans per package compared to 3.21 for FedEx and 2.47 for UPS. The same report measured the average total days to deliver packages, with USPS taking 1.79 days, compared to 2.21 days for FedEx and 2.75 days for UPS (Appendix, Table 6). In December 2014, Consumer Reports published ratings, on a scale from 0-5, of the three domestic shippers and rated USPS at 3.8, versus 3.1 for FedEx and 2.6 for UPS (Consumer Reports, 2014).

Both FedEx and UPS have historically focused on Business to Business (B2B) and to a lesser extent Business to Consumer (B2C) shipping, but have significantly expanded customer to customer (C2C) retail presence in the last decade. In 2001, UPS acquired Mail Boxes Etc., Inc., which was the world's largest franchisor of retail shipping, postal and business service centers. Within two years, the 3,000 Mail Boxes Etc. locations in the United States were re-branded as The UPS Store® (UPS, 2015a). In 2004, FedEx Corp. acquired Kinko's for \$2.4 billion, which expanded retail access to FedEx services to

over 1,200 stores. In 2008, the FedEx Kinko's retail locations were re-branded as FedEx Office® (FedEx, 2015a). However, the expanded retail reach of UPS and FedEx still does not compete with the 35,641 USPS retail units nationwide (Appendix, Table 3).

In the current business climate, there is little to differentiate the three companies' shipping capabilities, with all three now providing similar package services. Since neither FedEx nor UPS publish service performance statistics, reliability is inferred based on experience or reputation, with both UPS and FedEx having the edge based on historical capability and early adoption of tracking and scanning. The only measureable differentiation is accessibility and price. Comparing prices can be complicated with variation in service standards by product (days to deliver) and pricing options (flat rate vs. dimensional rate vs. weight rate). The Stamp.com report compares cost of 'normal' shipping of a 2 pound package across multiple zones, with an average cost of USPS at \$7.34 compared to \$10.40 for FedEx and \$10.45 for UPS. Both categories tilt in USPS favor with more retail access (35,000 vs. 3,000 vs. 1,500) and consistently lower prices (Appendix, Table 6). Regardless of the data from these reports, pricing differentiation is relatively difficult. The consumer value of brand increases when there is increased difficulty of search or less searchable differentiation (Kuksov, 2007, p. 2). The USPSOIG worked with Premier Quantitative Consulting (PQC), experts in brand valuation, to estimate the 2013 value of the Postal Service brand at \$3.6 billion. The Postal Service \$3.6 billion valuation is significantly lower than the brand values estimated for the other package delivery companies which range from about \$9 billion to \$43 billion. The results from these valuations demonstrate that many customers choose shipping primarily based on brand and reputation (USPSOIG, 2015b).

Although the three organizations have very similar capabilities the differences are most noticeable in pricing and product offerings. Where FedEx and UPS hold a significant edge is the ability to negotiate bulk rates for B2B or B2C shipping. With the PAEA LAW, USPS gained the ability to offer

volume discounts to shippers. In 2008, USPS unveiled commercial based pricing which offered volume discounts. In 2014, commercial plus pricing was introduced and lowered the volume threshold on Priority to 50,000 pieces annually. In 2009, USPS introduced 'If it fits it ships' flat rate boxes, which proved to be an effective strategy to simplify shipping and differentiate their services. In 2013, USPS revamped its Priority service by adding free insurance and tracking, enhanced real-time scanning and day-certain delivery. There has also been a lot of press recently about FedEx and UPS switching to dimension pricing, which charges rates based on the size of the package instead of the weight. This is in response to an increasing trend toward larger packages. Customers are buying a wider range of products online like flat-screen televisions. At the same time consolidators are shipping smaller and lighter items in half empty boxes filled with air. USPS is maintaining weight pricing. The net effect is that the new dimension based pricing of FedEx and UPS will increase shipping rates, while USPS rates will remain steady. According to Rick Jones, President and CEO of LSO, a regional parcel carrier in Austin, Texas, and former UPS executive, "FedEx and UPS may be willing to shed large numbers of B2C parcels that are marginally profitable on a per-stop basis; that's because many of those transactions involve one package per stop and rob carriers of the economies of scale that come with handling multiple packages per stop, which is the hallmark of B2B deliveries. FedEx and UPS would love to purge their systems of much B2C traffic so they can reset their operations and focus more attention on B2B traffic, historically their bread and butter" (Solomon, 2014). The fact that USPS already goes to every address to deliver mail complements the strategy to increase more B2C and C2C market share.

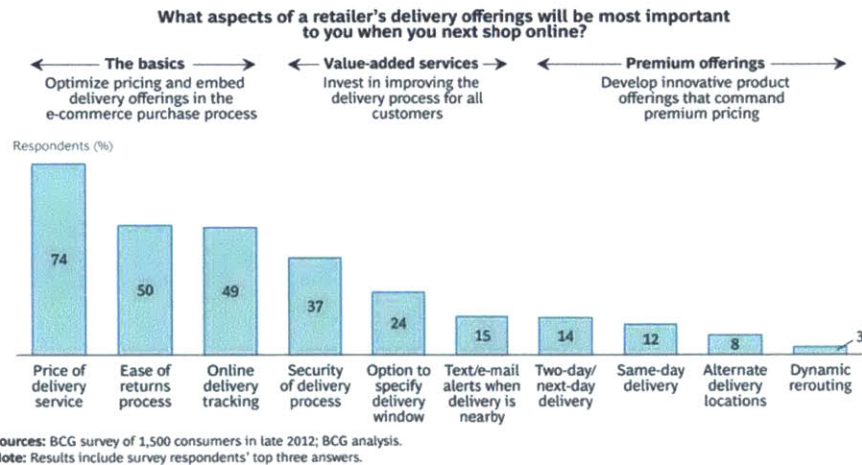
Another way that USPS leverages its mail delivery system and differentiates its services is weekend package delivery. USPS is required to deliver mail on Saturday, which naturally enables efficient delivery of packages. Even cost-cutting proposals to eliminate Saturday mail delivery include a strategic commitment to maintain surcharge free Saturday package delivery. USPS has begun testing

Sunday delivery in 20 major city markets. During the 2014 December holiday peak season, USPS implemented Sunday delivery of packages in major cities throughout the country (Wahba, 2014). USPS leadership believes that weekend delivery will be a strategic advantage moving forward. Both UPS and FedEx charge a \$16 per package surcharge for Saturday delivery and do not offer Sunday delivery (FedEx, 2015b); (UPS, 2015b).

Overall, the three organizations have become less differentiated but have demonstrated the ability to coexist. While the three organizations have redundant capabilities and make deliveries in the same neighborhoods, with the growing e-commerce sector there is enough volume to sustain all three. Each organization has different pricing strategies utilizing different delivery standards and pricing options to capture value. Although there is a lot of price competition between the three companies, each attacks slightly different segments and product offerings to avoid direct price wars across homogenous product lines. Since USPS carriers already go to every address to deliver mail, adding additional volume does not inflate delivery cost. The USPS delivery network requires a large number of smaller vehicles to service more delivery points, which makes them better utilized and more cost effective during low package volume periods and allows them to deliver to places that the competition cannot afford. Research, by The Boston Consulting Group (BCG), shows that package delivery customers are most concerned with the price of delivery service and other basics such as returns and tracking, than other value added options or premium offerings (Figure 3

**Figure 3).** All three carriers are competitive on the basics and have expanded into value-added services, such as security and delivery notification. The most uncertainty is related to consumer willingness to pay for premium services. At present, this appears to be a niche market segment with relatively low demand, however, all three carriers are exploring and testing these premium offerings (The Boston Consulting Group, 2013).

**Figure 3: What Do Package Delivery Customers Care About?**



Source: (The Boston Consulting Group, 2013)

### ***Bargaining Power of Buyers***

Buyers in the package delivery industry have the ability to leverage a certain degree of price competition to determine which company to use. Large volume shippers can use their package volume to negotiate price discounts and terms. Prior to PAEA in 2006, USPS was unable to negotiate volume discounts. This put USPS at a major disadvantage with pursuing large contracts. Although USPS obtained the ability to provide large volume discounts, there are still major limitations to the price flexibility that can be offered. For example, USPS is required to price according to the actual cost to deliver a product, however, the competition can take a loss on certain products to increase market share and make up the difference on higher margin products. The Postal Service is asking Congress for more pricing flexibility in future legislation. With the high level of competition, dissatisfied buyers have options with minimal switching cost. Companies also have the ability to use all three carriers and use computer algorithms and bots to determine the best individual shipment price for a desired service standard (number of days until delivery). When USPS lagged behind in scanning and tracking, many companies would choose FedEx or UPS based on the scanning capability. A major factor in this industry is the principle of ‘Bertrand competition’, which predicts that a direct price war would result in prices falling to the

marginal cost of providing the service. In an established competitive environment like package delivery the incumbents avoid direct Bertrand competition. Within the package delivery industry, the margins are already thin and revenue is primarily driven by scale, which results in limited price flexibility and buyer bargaining power.

### ***Barriers to Entry***

The scale required to enter the national U.S. domestic package delivery market is prohibitive. The infrastructure of vehicles, distribution centers, employees, aircraft and logistics contracts required to provide nationwide delivery service are an enormous barrier to entry. A significant portion of the market share would be required to finance scale-up. This industry is a classic example of economies of scale prohibiting new entry. When DHL attempted to enter the U.S. market, the only way it could achieve the necessary scale was to acquire an existing delivery company (Airbourne Express). And even when it achieved national scale, DHL struggled to compete and withdrew from the market.

The only organization that could attempt to enter the nationwide delivery market would be Amazon since they already have the necessary package volume to support scale-up. However, Amazon would likely concentrate on high volume urban markets, where delivery is more cost effective. For a company like Amazon, the only reason to become a delivery company is if they can cover the margins they currently pay to existing companies.

### **Emerging Industry Trends**

There are emerging threats to traditional delivery services with retailers entering the delivery market and start-up companies utilizing 'crowdshipping'. Amazon has recently leveraged its logistics footprint and entered into the same day delivery market in select high volume, urban areas. Google, in

an aim to compete with Amazon, has introduced GoogleExpress which is a similar entrant into the same day urban delivery market (Perez S. , 2014a). Amazon has also made headlines revealing plans to eventually utilize drones to deliver packages in areas within close geographic proximity to their fulfillment centers. Amazon is currently negotiating with the Federal Aviation Administration (FAA) to loosen regulations on autonomous drones, and has received an FAA waiver to begin testing in the U.S (Levin, 2015).

Crowdshipping is a derivative of the larger 'crowdsourcing' movement, which utilizes mobile technology to link available people with desired tasks. A prime example of crowdsourcing is Uber, which is a disruptive platform in the taxi industry, utilizing a two-sided mobile platform to link demand (riders) to supply (drivers) for a 20 percent fee. This successful approach negates the need to develop and invest in infrastructure, enabling faster scalability with much lower overhead. Two-sided mobile platforms have recently entered the package delivery space, including: Uber, Postmates, Zipments, Deliv and several others. These platforms link demand (packages) to supply (drivers). Most of these services are not complete substitutes for traditional national package logistics, but instead are potential substitutes for: daily errands, local express shipping, local courier services, and the emerging same-day delivery services. They do not have the scale or logistics to truly compete with a nationwide package delivery service. However this threat could potentially siphon off a large portion of localized package delivery and e-commerce. Roadie is a new entrant that is attempting to link long distance travelers with potential shippers. They recently announced a deal with WaffleHouse to use their 1,750 locations in 25 states as meeting points. Roadie says its app, "connects people with items to send with drivers who are already heading in the right direction" (Rosenberg, 2015). The ultimate question with 'crowdshipping' is whether it can compete on price. Rates for transporting single packages can only go so low before the crowdsourced driver is no longer interested in the proposition. Traditional carriers have economies of



scale transporting and delivering hundreds of packages along their route and can offer lower rates per package. Additionally, crowdshipping presents major concerns related to reliability, security, and privacy (USPSOIG, 2014a, p. 3).

With technology rapidly advancing, there is no doubt that the package delivery industry has not reached maturity or discontinuity. Incumbents must adapt to the changing landscape or new entrants will siphon off profitable volume and revenue. Prevalent Wifi technology enables the Internet of Things (IoT), which could have an enormous impact on e-commerce. Amazon has introduced Dash Replenishment Service to enable automatic order replenishments, by using IoT sensors imbedded in dispensers or IoT enabled buttons to reorder things like laundry detergent when supplies are running low (Amazon, 2015b). Mobile and location based technology is transforming e-commerce, but also has the potential to transform package delivery with crowdshipping platforms, drones and driverless cars that could eliminate or reduce the need for traditional delivery drivers.

## **Industry Summary**

From an incumbent perspective, the package delivery industry has been attractive, with high entry barriers and increasing volume. However, heavy competition, thin profit margins and decreasing differentiation reduces the attractiveness as customers become more price conscious. Although rivalry and competition is stiff, the growth of the package volume is enough to sustain all three incumbents. The projected 10 to 20 percent annual package growth is attractive enough that other organizations are interested in getting into the market, however, mostly focused on more profitable urban segments. The barriers to national entry are near impossible and solidify incumbent positioning. There is a significant threat of regional or crowdshipping competitors skimming from the profitable routes and leaving less profitable or even costly routes to the national companies. It is important to focus on improving quality and efficiency to remain competitive. Organizations like Amazon could leverage their scale and further

expand their vertical integration, but entering the delivery market at a national scale would be unlikely. Incumbents must keep an eye on potentially disruptive substitutes like crowdshipping, drone delivery and autonomous vehicles. Outside of large scale companies like Amazon, the bargaining power of suppliers and buyers are weak to moderate. With decreased differentiation between competitors, there is a danger that the service can become commoditized with decreasing profit margins. However, since all three organizations understand Bertrand competition principles, direct price wars are unlikely.

## **Chapter 3: USPS Competitive Advantage**

### **USPS Competitive Advantage**

#### **Resource Advantage**

To deliver a daily average of 500 million packages and pieces of mail, six days per week, to 153 million delivery points, USPS maintains an extensive logistics infrastructure with 320 processing facilities, 211,000 vehicles and 244,000 delivery routes (Appendix, Table 3; Table 4). The Postal Service owns the vast majority of the mail processing plants and owns 27 percent of all facilities that serve as distribution hubs and retail units throughout the country. USPS owns 196 million square feet and leases 78 million square feet of real estate (Appendix, Table 8). In total, 67 million square feet, or 24 percent, of the interior facility space is surplus and is available for other purposes (USPSOIG, 2012, p. 1). USPS owns all of the mail delivery vehicles and information technology infrastructure.

The Postal Service has the largest network of brick-and-mortar retail in the country with 35,641 retail units (including post offices, stations, branches, carrier annexes, contract postal units, community post offices, and village post offices), which is more retail locations than McDonald's, Starbucks and Walmart combined (USPS, 2015a). The retail units are geographically dispersed into nearly every city

and town in the country. Other retailers may have heavier concentrations in urban areas, but no one is in more places than USPS. In some towns the post office is the only retail business. The Postal Service owns 8,583 of the post office facilities throughout the country and has long-term leases on the majority of the remaining facilities (Appendix, Table 8). The leased post offices are wholly operated by the Postal Service. Contract postal units, community post offices and village post offices are not operated by postal employees and are contracted within local businesses. These smaller retail units are located in areas that do not have enough business to justify a regular post office. These small business owners receive incentives to sell and accept postal products on behalf of the Postal Service. No organization is permitted to sell postal products without explicit permission. The retail presence is wholly owned or controlled by USPS.

To support this physical infrastructure, the Postal Service has one of the world's largest information networks with 35 petabytes of data storage to handle address recognition and tracking of 127 billion packages and mail pieces annually, 310,000 handheld scanning/tracking devices, 142,000 computers, 12,500 smartphones, 97,000 phone lines, 45,500 point-of-service terminals, and 8,500 mail processing equipment (USPS, 2014c, p. 13). The number of access points attached to the Postal Service information network is extremely unique and differentiated. No other information network has 310,000 handheld scanners being used to track deliveries in every neighborhood and street in America. This includes, 263,000 new Mobile Delivery Devices (MDD) which provide real-time scanning capability for all carriers (USPS, 2014e). No other civilian organization has resources on this scale or would be remotely positioned to develop the necessary scale.

One of the most important resources of the Postal Service is its 617,254 employees (USPS, 2015b). While critics of USPS accuse the organization of having overpaid, underproductive, unionized employees, since 1972 (the year USPS began tracking productivity) the Total Factor Productivity (TFP)

has increased by 24.4 percent, with 16 points attributed to improvements since 2000 (PRC, 2013, p. 44). Postal employees are accustomed to meeting tight dispatch deadlines and operate with a sense of urgency. Employees know how to work in high pressure situations and get the job done.

### **Positional Advantage**

The legislative monopoly designation on mail delivery solidifies the USPS competitive positioning within the mail industry. If the monopoly status was lifted, the only probable competition would be smaller organizations competing over mail distribution in profitable, high density locales. However, the USO mandate requires service in low density areas. The monopoly is certainly valuable; the Postal Regulatory Commission (PRC) published a report in 2008 that estimated the annual monetary benefit of the letter mail and mailbox monopoly to be \$3.5 billion. However, the monopoly comes with the USO, which the PRC estimates costs the Postal Service \$4.4 billion annually (PRC, 2008, p. 5). There are many unprofitable routes and post offices that, unbound by the USO, might be eliminated to increase profits. However, it is the USO and entirety of the mail volume that necessitates the scale of Postal Service processing, distribution, and delivery resources. The combination of monopoly status and USO scale provides USPS impenetrable competitive positioning within the mail industry.

The factor that differentiates the USPS information network from other large commercial networks is that as a governmental organization there is a different expectation for security, privacy and independence. The Postal Service is a custodian of sensitive address information and must abide by specific laws and governmental regulations. This requirement instills a higher degree of trust from the American public. The USPS brand carries the benefit of governmental association in terms of security, privacy, and trustworthiness. Even as a government institution, it is consistently the highest ranked agency in trustworthiness surveys. The Ponemon Institute ranked the Postal Service as the fourth most

trusted company of 704 entries from 25 industry sectors. The institute also ranked USPS as the most trusted government agency 7 years running (Ponemon Institute, 2013).

The Postal Service brand is unique and symbolizes trust, reliability, service and national pride. As previously mentioned, the value of the brand has been analyzed by USPSOIG to conservatively value the brand at \$3.6 billion. Customer and supplier relationships are also an asset. Many people know their Postal Service carriers and have developed levels of trust in them. Carriers often develop personal ownership and provide personalized service. Postmasters and clerks are often integral parts of small towns and communities. These relationships can increase switching costs to other delivery services and can be leveraged when introducing new products or services.

On average 3.2 million customers visit post office lobbies every day, six days per week (USPS, 2015b). Post offices also provide other services; issuing 97 million money orders and accepting 5.2 million passport applications in 2014 (USPS, 2015b). Leveraging the scale and convenience of 35,641 retail units enables USPS to heavily pursue customer package acceptance in the C2C and C2B space. Usps.com receives 3.4 million visitors each day (USPS, 2015h), with positioning to advertise new products to existing customers.

Due to economies of scale, USPS is able to provide national shipping at lower cost. USPS utilizes its massive network to deliver an average of 13 million packages daily (Appendix, Table 3). Since USPS is the only delivery company to go to every address every day, it owns the last-mile portion of the delivery supply chain and is able to provide last-mile delivery options to other organizations. Leveraging the scale of carriers enables USPS to maintain low cost per delivery and also efficiently provide free carrier package pick-up. No organization is better positioned to handle national, daily home delivery than the Postal Service, and the economics do not support any other organization scaling up to obtain that

positioning. One of the key goals for the Postal Service is to become the last-mile delivery provider of choice. According to Logistics Viewpoints, “Last-mile delivery is the final leg of the supply chain... It is generally the most expensive, least efficient and most problematic part of the overall delivery process” (Cunnane, 2015). A primary basis of the USPS strategic advantage is ‘We are going there anyway’, and the Postal Service is examining a number of strategies to leverage its last-mile positioning.

### **Capability Based Advantage**

Modern postal and package delivery operations are inherently complex with an intertwined network of machines, transportation logistics, communication systems and the humans who operate, maintain, and manage them. Managing this complexity develops capabilities that can be leveraged and applied to other products and services. These experience-based capabilities include reporting, analytics, command and control, communication and coordination, capacity management and contingency planning. Knowledge-based capabilities are achieved through technical training and cumulatively building upon existing knowledge. Such capabilities include mail processing engineering, equipment maintenance, information systems architecture and delivery optimization. All of these capabilities are a result of developing and managing operations over the history of the Postal Service. Many capabilities may be complementary to the implementation of additional products or services, potentially minimizing the learning curve and increasing competitive advantage. Potential competitors would have to develop these capabilities on their own, or gain them through acquisition or partnership.

The Postal Service has developed the capability to standardize and manage the country’s largest retail and delivery footprint. The retail management includes developing and deploying marketing and sales standard operating procedures on a massive scale. Recently, the Postal Service managed the system-wide upgrade of 45,500 Point of Sale (POS) terminals, followed by deployment of over 3,000 new mobile Point of Sale (mPOS) systems (consisting of an iPod, a portable receipt printer and a postal

printer) (USPS, 2014e). USPS developed experience-based capabilities when it rebranded the entire Priority line including new pricing, packages, and additional services offerings across the entire retail platform. To improve the customer experience, tremendous focus has been placed on reducing 'wait-time in line' by standardizing retail procedures and communicating these initiatives to postmasters and clerks in all 35,641 locations. The Postal Service has developed the capability to manage a delivery network of over 200,000 vehicles and 244,000 delivery routes to service 153 million delivery points. This includes monitoring and enforcing utilization of 310,000 handheld scanning scanning/tracking devices.

The Postal Service has information systems architecture, design and implementation management capability through the development of one of the world's largest information systems. The Postal Service operates a 35 petabyte information system with an expansive network of over 600,000 devices. The information systems capability includes managing web and mobile application design and implementation. The Postal Service is has developed and is expanding its data-warehousing and analytics capabilities. No other civilian organization has demonstrated the organizational capability to deploy or manage information system resources on this scale. The information systems capability includes extensive experience with cyber-security development as well as monitoring and prevention capability; there are nearly 1.3 million email messages blocked monthly due to viruses and more than 210,000 blocked due to content (USPS, 2015j). These information systems capabilities could potentially be applied to new product offerings to compete in the digital economy.

The Postal Service internal maintenance function is a distinct knowledge-based capability that is a result of extensive on-site and off-site technical training. Technicians and mechanics are trained to maintain and repair sophisticated high-speed mail and package processing equipment, including OCR and IJP components. Technicians also have extensive computer, software, server and telecommunication skills. Vehicle mechanics have extensive knowledge and experience fixing trucks and

other vehicles. Building maintenance mechanics have significant HVAC and building systems maintenance capabilities. All of these well trained employees work in high pressure situations when equipment downtime can lead to severe operational failure. No other package delivery or logistic company has this level of maintenance capability.

Mail and package processing and distribution is an extremely complex operation, utilizing an array of machines, software platforms, and mailflows in 320 processing and distribution centers. These systems have taken decades to develop and perfect. Mailflows are so complex that it takes years for newly hired Industrial Engineers to develop a working knowledge. These complex systems and processes have reduced the cost of processing a single letter tenfold versus manual sortation. Many of the clerks and mailhandlers have technical capabilities to operate user interfaces and operate advanced machinery. Processing packages requires much larger automated equipment, over ten times the size of letter processing equipment. The primary package sorting equipment that USPS uses is the Automated Package Processing System (APPS) machine which was developed by Lockheed Martin. The APPS is a large football field-sized, multi-million dollar machine with sophisticated address recognition capability that processes 10,000 packages per hour. The APPS is more capable of sorting small, lightweight packages than competitor's automation.

USPS has become the most capable organization handling small, lightweight packages by leveraging the small package processing capability and the last-mile delivery capability. This allows USPS to deliver these lower margin packages more efficiently than the competition. USPS has leveraged these capabilities with a product called SmartPost where consolidators and other package delivery organizations can utilize the USPS last-mile delivery capability to deliver their small packages at a very low cost. The USPS capability to profitably process and deliver small, lightweight packages at low postage rates is an advantage that could be leveraged as American's continue shipping a larger volume



of diverse products. This trend is increased by the 'Prime Effect', which is caused by customers with Amazon Prime unlimited free shipping who order more frequently. Since they are no longer concerned with shipping costs, they no longer bundle multiple products into a single order, which results in an increased volume of small light-weight packages. Based on research by Christensen Associates, the Postal Service currently delivers over 60 percent of the commercial lightweight packages to their final destination (USPSOIG, 2014c, p. 11).

## **Chapter 4: Analysis of USPS Organizational Structure and Design**

### **Organizational Structure**

From its inception in 1792, the Post Office Department was a pure governmental agency, then nearly two centuries later, the 1970 Postal Reorganization Act installed the modern structure of the United States Postal Service. That transformation combined with the subsequent changes prescribed by the 2006 Postal Accountability and Enhancement Act, resulted in a unique organization that is part business and part governmental agency. The complex structure of governance provides robust oversight, but as USPS strives to become more like a business, the bureaucracy and politics of the federal government can become an impediment to further transformative change. While USPS does not answer to shareholders or bear responsibility to increase shareholder returns, legislative oversight prevents the necessary flexibility to respond to changing market conditions. Although the organization has not received any tax payer subsidy since 1982 (USPS, 2015d), the organization is often scrutinized in the public eye as if it relied on taxpayer funding. Considering that it is the country's second largest employer and the fact that every American is a customer, USPS bears a large responsibility to the nation it serves. Although it is often criticized for being a typical, inefficient, governmental organization, it would rank number 43 on the Fortune 500 and has been recognized as the world's most efficient post.

## **Oversight and Regulation**

A major component to the unique organizational structure of USPS is its governance. In place of traditional ownership or market oversight, a unique blend of congressional oversight, independent regulation and board control has been developed. This governance strives to balance responsibility to the American people with operational efficiency. USPS is not a government owned corporation like Amtrak, instead it is legally defined as an "independent establishment of the executive branch of the Government of the United States" (39 U.S. Code § 201).

### ***Congressional Oversight***

The Postal Service is explicitly established by the United States Constitution which states "The Congress shall have the power to... establish post offices and post roads" (US Const. art. I, sec. 8, cl. 7). The Post Office Department was established in 1792 and functioned for 178 years as a cabinet level, governmental agency. The 1970 Postal Reorganization Act marked the transition to the modern oversight format. Originally, there was a Congressional Committee on Post Office and Civil Service, but in 2000 Congress reorganized committees, establishing the Committee on Government Reform which included Postal Service oversight (house.gov, 2006). The committee was renamed the Committee on Oversight and Government Reform and the USPS oversight now falls under the subcommittee on Government Operations. 1982 marked the last time that USPS received a tax-payer subsidy, and the committee oversight no longer includes appropriations. The committee hears testimony from Postal Service officials and drafts potential legislation. Current legislation is codified within the United States Code under Title 39, which establishes governance, structure, policy, and mission.

*The United States Postal Service shall be operated as a basic and fundamental service provided to the people by the Government of the United States, authorized by the Constitution, created by Act*

*of Congress, and supported by the people. The Postal Service shall have as its basic function the obligation to provide postal services to bind the Nation together through the personal, educational, literary, and business correspondence of the people. It shall provide prompt, reliable, and efficient services to patrons in all areas and shall render postal services to all communities. The costs of establishing and maintaining the Postal Service shall not be apportioned to impair the overall value of such service to the people (39 U.S. Code § 101).*

The committee is responsible for drafting proposed legislative changes; however a bill has to go to the floor and pass in both the House of Representatives and Senate before becoming law. There is a larger constituency component to congressional oversight. Every Congressman and Senator represents USPS stakeholders; every American citizen and organization is a USPS customer and every state and district has significant numbers of Postal Service employees as constituents. Potential legislative changes can have a large impact on constituents, making the legislative process very political and localized. Every member of congress can agree that the USPS network needs to be consolidated, but politically it is difficult to permit local employment or service impacts. Additionally, there are influential lobbies that have varying interests surrounding USPS legislation. The Postal Service is not permitted to lobby Congress, but they are granted the opportunity to provide committee testimony and briefings to defend their interests.

### ***USPS Board of Governors***

Established by the Postal Reorganization Act of 1970 and codified within United States Code Title 39, the board of governors of the Postal Service is comparable to a board of directors of a private corporation. The board is comprised of nine governors along with the PMG and the Deputy Postmaster General (DPMG). The nine governors are appointed by the president of the United States and approved by the Senate. The board is responsible for appointing the PMG, who joins the governors in selecting the

DPMG. Originally, governor terms were for nine years, with no professional prerequisites. The PAEA law changed appointment terms to seven years and added professional requirements to the positions. The purpose and function of the board are as follows:

*The Board directs the exercise of the powers of the Postal Service, directs and controls its expenditures, reviews its practices, conducts long-range planning and sets policies on all postal matters. The Board takes up matters such as service standards and capital investments. It also approves officer compensation (USPS, 2015e).*

### ***Postal Regulatory Commission***

The Postal Rate Commission was originally established by the Postal Reorganization Act of 1970, and codified within United States Code Title 39. The PAEA law changed the name to the Postal Regulatory Commission, and expanded the regulatory oversight responsibilities. The PRC is comprised of five commissioners appointed by the president of the United States, and approved by the Senate. Commissioners are appointed to six year terms, with a possible one year extension until a successor is confirmed. No more than three of the five commissioners may be from a single political party. A chairman of the commission is appointed by, and serves at the pleasure of the president of the United States.

The original Postal Rate Commission was an independent agency of the executive branch, with primary responsibility to review and approve proposed rate changes along with some additional regulatory oversight. The rate review process includes public hearings. The regulatory oversight included public hearings on proposed mail classification changes, major service changes, and board of governor recommendations.

The PAEA law changed the name and expanded the regulatory role of the Postal Regulatory Commission to monitor the increased rate and product flexibility granted to USPS, expand regulatory oversight and mandate regular reporting to congress. The legislative changes are focused on empowering the PRC to enforce the segmentation of approved monopoly and competitive products, control USPS pricing flexibility, and specify reporting requirements. The following list of clauses taken directly from the PAEA law, describe the significant changes to the PRC oversight responsibilities:

- *Directs the PRC to establish a modern system for regulating rates and classes for market-dominant products”, Directs the PRC to promulgate (and from time to time revise) regulations to: (1) prohibit the subsidization of competitive products by market-dominant products; (2) ensure that each competitive product covers its attributable costs; and (3) ensure that all competitive products collectively cover what the Commission determines to be an appropriate share of Postal Service institutional costs.*
- *(Sec. 203) Authorizes the Postal Service, under specified terms and conditions, to conduct market tests of experimental products, requiring notice to the PRC of the nature and scope of each test. Prohibits a market test from exceeding 24 months, but allows the PRC to extend such period for up to 12 additional months. Allows the PRC to limit the amount of revenues the Postal Service may obtain from any particular geographic market as necessary to prevent market disruption.*
- *Authorizes the PRC, following specified criteria, to change the lists of market-dominant products and competitive products by adding or removing products, or transferring products between lists. Prohibits the transfer from the market-dominant category of products covered by the postal monopoly. Requires the Postal Service to notify the PRC whenever it requests to add a product or to transfer a product to a different category. Prohibits a product that involves the carriage of letters, printed matter, or packages from being offered by the Postal Service unless it has been assigned to the market-dominant or competitive category of mail.*

- *(Sec. 204) Requires the PRC to report annually to the president and Congress on PRC operations under this title, including an estimate of the costs incurred by the Postal Service in providing certain services.*
- *Requires annual reports from the Postal Service to the PRC which: (1) analyze Postal Service costs, revenues, and rates; and (2) provide product information and measures of quality of service afforded by the Postal Service in connection with such product. Requires such report information to: (1) be audited by the USPSOIG; and (2) include information relating to workshare discounts. Requires the PRC to make annual determinations of Postal Service compliance with regulatory requirements and to evaluate annually whether the Postal Service has met certain goals.*
- *Requires that the Postal Service file with the PRC certain audit and funding reports required under the Securities Exchange Act of 1934.*
- *(Sec. 701) Requires a report from the PRC to the president and Congress, at least every five years, concerning: (1) the operation of amendments made by this Act; and (2) recommendations for improving the effectiveness or efficiency of U.S. postal laws.*
- *(Sec. 702) Requires a report from the PRC to the president and Congress on universal postal service and the postal monopoly in the United States, including the monopoly on the delivery of mail and access to mailboxes.*

(Library of Congress, 2016)

The new expanded role of the PRC is focused on establishing and monitoring the classifications of products, specifically the new division of market dominant and competitive products. This expanded oversight role is designed to monitor new flexibility under the competitive designation and ensure that it is not improperly applied to monopoly protected products. The specific language permitting controlled market tests of new products allows product experimentation but limits test duration and market disruption. This additional oversight role potentially affects USPS strategies to expand beyond the core

mail and package delivery business. Since passage of the law, there have been some market tests that provide precedence for future product exploration. Beyond the oversight role, the PRC is directed to provide transparency and promote improved public understanding of Postal Service.

### ***USPS Proposed Legislative Changes***

In the years following the PAEA law becoming effective, the Postal Service has been limited by certain stipulations that prevent it from being profitable and operating as an efficient business. There has been significant discussion about the deficiencies of the PAEA law. The following list of proposed legislative changes comes directly from the USPS FY2014 annual report to Congress:

- *Require within the Federal Employees Health Benefit Program a set of specific health care plans that would fully integrate with Medicare and virtually eliminate the retiree health benefits unfunded liability.*
- *Adjust the FERS payment amount using Postal Service-specific demographic and salary growth assumptions and refund any existing surplus.*
- *Adjust delivery frequency (six-day packages/five-day mail).*
- *Streamline governance model and eliminate duplicative oversight.*
- *Provide authority to expand products and services.*
- *Require defined contribution retirement system for future Postal Service employees.*
- *Require arbitrators to consider the financial condition of the Postal Service.*
- *Reform Workers' Compensation.*
- *Allow the Postal Service the right to appeal EEOC class action decisions to Federal Court.*

(USPS, 2014b, pp. 29-30)

These proposed legislative changes are focused on four categories, including: eliminating unnecessary financial burdens, expanding operational flexibility, streamlining oversight and reforming

labor relations policies. The relief from unnecessary financial burdens includes eliminating the prefunding retirement and healthcare benefit requirement, adjusting FERS payments based on updated statistics, and incorporating Medicare into USPS healthcare plans. The proposals on increasing operational flexibility include the ability to eliminate Saturday mail delivery and introduce new products and services outside of the current limitations. The labor relations policies are focused on providing the Postal Service with the ability to reduce costly expenses related to workers compensation, employer retirement contributions, collective bargaining agreements and EEOC class action decisions. The USPS workers' compensation program is administered by the Department of Labor (DOL), which results in comparably less control than a private company would have with a workers' compensation insurance provider (PRC, 2013, p. 87). All of these issues represent a significant opportunity to reduce total operating costs and return to profitability.

### ***Political Conditions***

The political conditions facing the Postal Service are a significant factor for the future of the organization. Congress is a complicated stakeholder due to the combination of their oversight responsibility, constituency effect, and presence of lobbyists who seek to use contributions and power to influence decisions in alignment with their agenda. Although there may be conflicting interests between local politics, lobbyist influence, and the long-term needs of the organization, Congress does not want to see USPS fail. Failure would result in some combination of tax subsidies or elimination of up to 600,000 jobs. The PAEA law transferred some oversight responsibility from Congress to the PRC. This enabled less political and more responsive oversight capability. The political nature of Congress splits the Postal Service reform agenda along party lines. The Democratic Party tends to support labor concerns, especially related to proposed network consolidations or policies that may affect employment. The Republican Party tends to be more demanding in terms of seeking efficiency and



performance improvements from Postal Service management and is generally more concerned with anti-competitive policy. The majority party potentially impacts the direction Postal reform legislation may take. As the Postal Service reform debate continues, USPS must take heed of the political conditions prior to making any major policy change. In 2011, faced with several years of financial losses and no movement on legislation, USPS proposed closing 3,600 low revenue post offices to mitigate the financial situation. Such drastic measures might not have been necessary had new legislation been in place, but USPS was seeking solutions that were within their control. Despite the lack of movement on reform legislation, there was an immediate backlash from Congress. Due to overwhelming pressure from lawmakers and citizens, the Postal Service changed course. In May 2012, USPS announced POStPlan (Post Office Structure Plan), which was projected to save \$500 million annually by cutting operating hours of 13,000 underutilized post offices instead of closing them (Kuo & Stephenson, 2012). In 2012, USPS announced a two phase consolidation plan that it would eliminate the overnight service standard for local mail delivery, which would enable the consolidation of hundreds of mail processing plants by 2014 (USPS, 2012f). After subsequent debate and deliberation by Congress and PRC, the necessary service standard changes were delayed with phase 1 effective July 1, 2012 and phase 2 effective January 5, 2015 (USPS, 2015g, p. 1). Eventually, in January 2015, USPS moved forward with the overnight service standard change, which will allow the closure of 82 mail processing plants and a projected annual savings of \$750 million (USPSOIG, 2014b). Much of the Postal Service reform discussion takes place in the public eye with the national and local press serving as the debate forum. USPS is often caught between the politics and economics of policy decisions.

Certainly one of the primary political issues facing the Postal Service is the PAEA requirement to make prefunding payments toward the retirement system. This \$6 billion requirement has greatly contributed to recent budget shortfalls over the last seven years. This has harmed the national image of

USPS due to frequent references of financial troubles that are exacerbated by the pre-funding requirement. Although USPS has a positive image in terms of trust and reliability, by default it carries a reputation for being an inefficient government organization. The constant press on financial troubles serves to validate this perception. USPS management faced the dilemma of elevating the urgency for Postal Service reform legislation with the potential of hurting its national reputation. The congressional gridlock accentuates this problem by prolonging the debate over legislative. The longer the situation remains unaddressed, the worse the financial problems and negative perception of the Postal Service will become. Concern and debate over the impact on constituency is prolonging the resolution and ultimately harming the constituents.

The Postal Service is not permitted to lobby Congress, but its private sector competitors, unions, and industry associations do have significant lobbying efforts. Package delivery companies are concerned with any portions of legislation pertaining to pricing flexibility or new competitive products. In 2014, FedEx contributed over \$2 million to political parties and campaigns and spent over \$13 million on lobbying activities, including: immigration reform, labor laws, regulation, and Postal Service policy. Comparatively in 2014, UPS contributed over \$3 million and spent over \$7 million in lobbying. Both organizations rank in the top 50 out of over 4,000 U.S. government lobbies. The postal unions are all involved in campaign contributions and lobbying activity to help advance their agendas (Center for Responsive Politics, 2015). The unions concern themselves with any legislation potentially affecting their membership, including: ensuring a relevant USPS, consolidation flexibility, postal oversight and employee benefits. The unions have the ability to join forces with other labor unions and wield a heavy endorsement capability that can influence voter turnout and election results. The mailing industry is comprised of a wide array of printers, distributors, suppliers, associations and customers that wield varying degrees of influence on the politics surrounding USPS operations and legislation.

## **Human Resources**

The Postal Service is the nation's second largest civilian employer, behind Walmart which has approximately 1.3 million U.S. employees (Hess, 2013). As of February 2015, USPS has 617,254 total employees, of which 486,822 are career employees and 130,432 are non-career employees (USPS, 2015b). Postal employees are government employees covered by the rights and regulations of the federal Office of Personnel Management (OPM). Career postal employees have access to the Federal Employee Health Benefit (FEHB) program. Postal employees participate in federal retirement programs including Civil Service Retirement System for employment beginning prior to 1984 and the Federal Employee Retirement System (FERS) for employment commencing thereafter.

Most employment positions do not require any training or education beyond high school. This lack of prerequisite includes most management positions, aside from engineers or specialists. Degrees are a bonus for promotions and career development, but it is not uncommon to have high level managers and executives without a college degree. Although many positions require skills or knowledge, they are mostly obtained through on-the-job training. USPS does perform most maintenance functions in-house, and as a result has a large staff of highly trained mechanics and technicians capable of fixing state-of-the-art equipment. The Postal Service does use testing to ensure that potential employees have basic language and number skills. Maintenance positions require employees take a specific maintenance exam which is more challenging and technical than the regular postal exam. The majority of Postal Service EAS and PCES executives started their postal career as an entry level employee and worked their way up through the organization.

## ***Bargaining Unit Employees***

The majority of USPS employees are classified as bargaining unit employees. These employees have the right for union representation, and compensation, rights and benefits negotiated through collective bargaining agreements. This employee classification is also known as a 'craft' employee. There are several classifications of career employees divided by function, including: clerk, mail handler, motor vehicle operator, mechanics/electronic technician, city carrier, and rural carrier. These employees are represented by several unions and associations, including; American Postal Workers Union (APWU), National Postal Mail Handler Union (NPMHU), National Association of Letter Carriers (NALC) and National Rural Letter Carrier Association (NRLCA).

The Postal Service has sought to increase employee flexibility to accommodate variable mail volume and scheduling needs. The USPS is well behind its competitors in terms of employee flexibility; with only 20 percent part-time flexible employees (increased from just 13 percent in 2010), compared to 53 percent for UPS and 40 percent for FedEx (USPSOIG, 2010). Recent negotiations with the NALC, NPMHU, NRLCA and APWU have resulted in the creation of the following categories of non-career flexible employees (resulting in an increase from 13 percent to 20 percent); City Carrier Assistant (CCA), Mailhandler Assistant (MHA), Rural Carrier Associate (RCA) and Postal Support Employee (PSE). There are multiple types of PSE, including: sales, service, and distribution associate, mail processing clerk, post office clerk, data conversion operator, motor vehicle operator, and custodians.

Historically, all full-time bargaining unit employees had to pass the postal exam to be a candidate for employment. With the addition of the new flexible categories, comes the requirement that all candidates pass a postal exam (PE 473e) and are hired in order of their score. 90 percent of all Postal Service positions require passage of postal exam 473e, which has an 80-90 percent failure rate.

The exam tests ability to check addresses, fill out forms to complete coding, and memory tasks (Postalexam.com, 2015a).

Maintenance positions do not necessarily require technical training or certifications, but they do require certain skills and passage of a more challenging maintenance exam to be eligible. The current Postal exam 955 applies to positions such as building equipment mechanic, maintenance mechanic, electronic technician, area maintenance technician, and mail processing equipment maintenance mechanic. The exam includes the 'multicraft' section focused on mechanical and electrical skills and knowledge, and the 'spatial relations' section focused on matching parts and figures and spatial visualization (Postalexam.com, 2015b). Once hired (or promoted), mechanics and technicians receive extensive training at the National Center for Employee Development (NCED) to obtain the specific skills necessary to troubleshoot and repair sophisticated electronic and mechanical equipment.

### ***Non-bargaining Unit Employees***

Management employees are classified as non-bargaining unit employees since they are not represented by unions and do not have collective bargaining agreements. Management employees are broken into two main categories; Executive and Administrative Schedule (EAS) and Postal Career Executive Service (PCES). These categories are analogous to General Schedule (GS) and Senior Executive Schedule (SES) classifications in the Federal Government. The EAS category includes supervisors, analysts, specialists, engineers, postmasters, and managers. The EAS employees are represented by the National Association of Postal Supervisors (NAPS), National Association of Postmasters of the United States (NAPUS) and the National League of Postmasters of the United States (League). These associations work with USPS leadership to develop and enforce policy as it pertains to EAS employees. They also represent individual EAS employees in hearings, mediations, and arbitrations. The PCES

classification includes categories of PCES I – Executive and PCES II – Officer. Title 39 in the U.S. Code includes the following clause: “As an employer, the Postal Service shall achieve and maintain compensation for its officers and employees comparable to the rates and types of compensation paid in the private sector of the economy of the United States” (39 U.S. Code § 101). Considering the size and scope of Postal operations, comparably sized companies typically provide top executives with compensation packages valued at several million dollars. Despite the comparability requirement, Postal law imposes compensation caps based on the compensation of high ranking government officials. The compensation limitations make it difficult to bring in outside talent from comparable organizations. The majority of Postal management starts their careers as bargaining unit employees and move up through the ranks. In fact, the last three PMGs (Potter, Donohue, and Brennan) started their postal careers as bargaining unit employees. While these conditions may limit the influx of talent into the organization, a leadership culture developed from within gains enormous understanding and appreciation of the organization’s capabilities and culture.

### ***Labor Conditions***

USPS has decreased the size of its workforce through attrition to compensate for volume declines. During the period from 2006 to 2013 the workforce was reduced by 22 percent, or approximately 178,000 employees. This coincided with a total work hour reduction of approximately 24 percent, decreasing by 450,000 to 1.1-billion hours in fiscal year 2013. However, total expenses period did not decline because average hourly wages and benefits increased due to cost-of-living allowances, rising health benefit costs, and wage increases negotiated in collective-bargaining agreements. Personnel costs are projected to continue rising by \$2 billion in 2015, compared to fiscal year 2014. 78 percent of the operating costs of the Postal Service are devoted to employee compensation and benefit. To expedite attrition between 2010 and 2013, USPS has offered various voluntary separation incentives

to encourage retirements within certain employee categories (Table 1). During this period, nearly 53,000 career employees took advantage of the incentive programs, resulting in additional long-term savings for the Postal Service. Many of the staffing reductions were enabled by consolidations. With the next phase of consolidations resuming in 2015, the Postal Service expects to be able to reduce by another 15,000 in full-time equivalent employees (GAO, 2014, pp. 11-13).

**Table 1: USPS Separation Incentives (2010-2013)**

**Table 1: U.S. Postal Service Separation Incentives Offered to Employees (Fiscal Years 2010–2013)**

Fiscal year initiated	Employees affected	Monetary incentive per employee	Number of employees accepted	Total one time expense
2010	APWU Members and Mail Handlers	\$15,000	20,800	<b>\$312 million</b>
2011	Administrative	\$20,000	2,055	<b>\$41.1 million</b>
	Administrative	\$20,000	189	<b>\$3.8 million</b>
2012	Postmasters	\$20,000	4,192	<b>\$83.8 million</b>
	Mail Handlers	\$15,000	3,025	<b>\$45.4 million</b>
2013	APWU Members	\$15,000	22,609	<b>\$339.1 million</b>
<b>TOTAL</b>			<b>52,870</b>	<b>\$825.2 million</b>

Source: (GAO, 2014, p. 12)

Approximately 90 percent of Postal Service employees are members of the four major Postal labor unions, including: APWU with 238,269 members, NPMHU with 154,559 members, NALC with 264,814 members, and NRLCA with 102,165 members (The Center for Union Facts, 2015). The unions each periodically enter into negotiations to develop collective bargaining agreements (CBA), which govern wages, benefits, rights and policies of their members’ employment with the Postal Service. Chapter 73 of the Federal Code prohibits federal employees, including all Postal employees, from even advocating the right to strike (Time Magazine, 1970). However antistrike laws are difficult to enforce, as demonstrated by the 1970 Postal worker strike. Outside of illegal wildcat strikes, the bargaining power is relegated to the collective bargaining negotiations and congressional lobbying. Once the CBA is in place, the employee and employer are bound by contract to provide the specified services for specified compensation. If a CBA cannot reach agreement in negotiation, the resolution will be decided in

arbitration. The inability to strike prevents the unions from leveraging their membership to influence CBA results. Management conduct and union membership trends during the previous CBA have a large impact on the union's willingness to negotiate. Without the threat of strike or lay-off, mutual agreement, compromise or concessions are typically required to achieve changes to the CBA. Most of the bargaining power lies with the threat of going to arbitration and concerns over ramifications over potential arbitration decisions. Under current law, arbitrators cannot consider the financial conditions of the Postal Service in making their decisions (39 U.S. Code § 1207(c)). Arbitrators focus heavily on precedence and intent of previous agreements and actions. The unions do have the ability to lobby congress and influence elections, which provides them with some degree of leverage at the negotiation table.

One major point of contention with the CBA negotiations is the ability to control the size of the workforce. The agreements currently in place contain provisions that limit the ability to reduce the size of the workforce. Reductions in the size and cost of the labor force are necessary to offset the effects of declining volumes and revenues. The ability to negotiate contracts that provide the ability to control labor costs is essential to maintaining financial stability. Another major issue at the negotiation table is the percentage of flexible employees permitted within each CBA. A predominately full-time workforce is limited in its flexibility to match the workload and account for seasonal volume variation. Although recently negotiated collective bargaining agreements include increased allowances for higher percentages of flexible employees, there still remains a large discrepancy (20 percent versus 40 to 53 percent) between USPS and its competitors in the percentage of flexible workforce. This discrepancy results in higher employment costs for USPS (USPSOIG, 2010).

Outside of the CBA negotiations, the unions are probably the most influential on the pursuit of new products and services. This influence can be manifested in two ways: first, by applying political

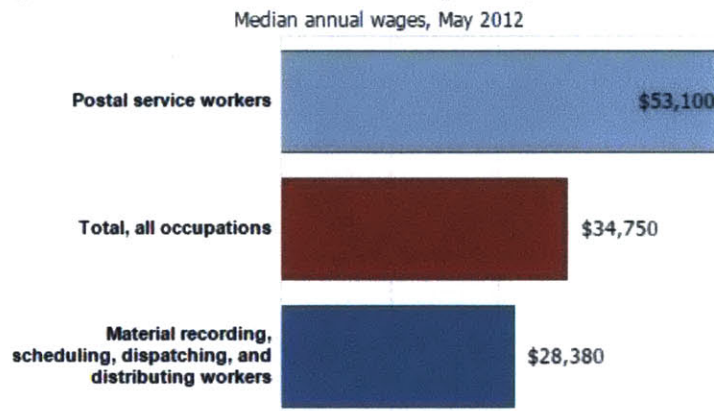


pressure on congress during legislative debates, and second, by leveraging public opinion. Recently, the APWU was able to stop a pilot program to implement small postal counters in 82 Staples stores through protest and boycott initiatives. The APWU argued that the initiative was designed to eliminate postal worker jobs and the Postal Service felt it was a way to add new business and supplement post office revenue (Kumar, 2014). Any new initiative or innovation that threatens Postal jobs will draw the attention of the applicable union. Even if the intent of a new initiative is to help sustain the organization and protect jobs in the long term, union membership does not react kindly to short term concessions. Ironically, the unions have the ability to stand in the way of progress and protect their membership in the short-term, but by doing so may potentially jeopardize the long-term future of the organization. The unions and management do not always agree on what is best for the long-term viability of the Postal Service. The unions have accused recent consolidations of being harmful to service and the future of the organization. The postal unions are all involved in campaign contributions and lobbying activity to help advance their agendas in 2014. The NALC contributed over \$4 million and spent \$260,000 on lobbying. The APWU contributed over \$2 million to political parties and campaigns and spent over \$860,000 on lobbying activities. The NRLCA contributed over \$780,000 and spent \$500,000 on lobbying. The NPMHU contributed over \$290,000 and spent over \$30,000 on lobbying (Center for Responsive Politics, 2015). The unions concern themselves with legislation or policy potentially affecting their membership.

As a governmental organization, there are set limitations to compensation based on predefined pay scales relative to other government positions; including the president of the United States. This results in issues attracting and retaining upper management talent. The pay for technical employees, executives and officers does not match the compensation levels for comparable organizations. While public companies are able to offer stock options and other incentives, USPS is unable to provide profit sharing incentives. Private industry simply offers more money than the Postal Service, particularly for

the higher level positions. On the other hand job security and opportunities for advancement are intangible benefits that some employees value more than direct financial compensation. Alternatively with a unionized workforce, craft employee salaries exceed industry averages (**Figure 4**) and also receive excellent healthcare and retirement benefits which incentivize long term employment. The current CBAs include mandatory cost-of-living adjustments (COLA), which are linked to the Consumer Price Index – Urban Wage Earners and Clerical Workers (CPI-W). Although CPI-W has been relatively low since 2008, when it generated a \$1.1 billion total pay increase, a resurgence of inflation would have a significant impact on labor costs (PRC, 2013, p. 11). These factors result in a higher USPS cost per employee compared to its competitors. However, this does improve craft employee retention which in turn lowers training costs and enhances the experiential knowledge factor. The average age of Postal employees is over 50 years old, which raises concerns relative to employee stamina and efficiency with positions requiring significant levels of physical exertion or manual labor. Long term employees can make culture change more difficult due to the development of deeply rooted behaviors.

**Figure 4: Postal Service Workers Wage Comparison**



Source: <http://www.bls.gov/ooh/office-and-administrative-support/postal-service-workers.htm#tab-5>

## **Organizational Design**

The organizational design of the Postal Service is a lean hierarchy, derivative of a typical governmental or military organization, but streamlined to operate as an efficient business. The military influence is evident with the PMG designation as the 'general' of the Post Office Department. The organization is also permeated by the notion of public service. Many employees started their public service career with military service. To this day, chain of command and the significance of level (rank) are important components to the DNA of the organization. The title of CEO has been added to the PMG title and each manager has titles, similar to comparable corporate operations, in addition to specified levels. Although hierarchical, the organization is designed to operate efficiently at a massive scale. Due to the geographical scale and local variation, the organization also relies on local autonomy and initiative to effectively provide service to every American.

### **Lean Hierarchical Control**

In 2003, Unisys/Watson Wyatt was commissioned to conduct a study of USPS management structure to determine if it was effectively designed to realize the efficiency requirements of the transformation plan. The study found that "the fundamental management structure of the USPS – consisting of Headquarters, Functional Staff, and Operations – is appropriate for an organization that is committed to operational excellence. The current management structure is appropriately lean... few levels separate the front-line manager and the top USPS executive. This leanness is consistent with contemporary best practice that suggests flattening the organization to minimize bureaucratic decision-making and thereby enhance responsiveness and flexibility" (Unisys & Wyatt Watson, 2003, p. 3).

The military influence is evident in the importance of rank. Most of the employees are aware of the level of the EAS and PCES employees that they interact with, and specifically who has the highest

level. This reinforces the importance of chain of command and delegation of authority. The hierarchy enables clear decision making capabilities with little doubt of who is in charge. The notion of delegation of authority enables quick decision making in the absence of higher level managers. Like most hierarchal organizations, there is a structured reliance on organizational charts that reinforces reporting designations, chain of command, levels, and delegation of authority. Similar to the military and other governmental organizations, 'details' are utilized to temporarily fill vacancies with people 'acting' in the role. This allows the organization to stay lean within the hierarchy, without having redundant duplication of responsibility. In 2011-12, the Postal Service reduced headquarters management positions and the number of Area and District Offices. The redesign included the reduction of field management positions by 1,946, or 26 percent, with an estimated annual savings of \$150 Million. This effort reduced layers in the hierarchy and made the Postal Service more efficient (GAO, 2012, p. 19).

### ***Centralized Headquarters***

Management and operation of a large scale processing and delivery organization requires a strong centralized headquarters. The PMG leads the Executive Leadership Team (ELT) which is comprised of the DPMG and six Executive Vice Presidents (EVP). The ELT is collectively responsible for developing and implementing strategy, policy, and leading day-to-day operations. In total, there are 37 officers, with 30 in headquarters and seven leading field operations in each of the regional areas. Strong centralized control enables effective policy implementation, organization wide technology implementations and process standardization across a massive organization. Centralized control is essential to maintain the scope and scale of the Postal Service information technology systems and platforms. It is critical that systems across the organization are effectively integrated and coordinated.

## ***Field Configuration and Control***

Due to the large geographic area of the United States, Postal Service operations are divided into seven areas, including the Northeast, Eastern, Capital Metro, Southern, Great Lakes, Western, and Pacific Areas. Area Vice Presidents (AVP) are officers (PCES II) designated to lead each of the areas. AVPs report directly to the Chief Operating Officer (COO), and have autonomous decision making authority within the policy and system integration constraints of headquarters. Despite the high levels of centralized control, AVPs have the authority to develop management processes, set targets, prioritize initiatives, make management staffing decisions, coordinate activities between Districts, allocate resources and budgets, develop leadership culture and communicate performance expectations. AVPs directly manage District Managers (DM) and have a team of PCES and EAS managers in the area office. Field executives at the district level do not have much interaction from headquarters and take most direction from area management. As mail volume declined, USPS consolidated areas to reduce management overhead and cost. Since 2008, two areas have been eliminated, along with the associated management positions. The New York Metro Area and Southeastern Area were merged into the Northeast Area and Southern Area, respectively. There have been studies and strategic conversations about further area consolidations, but the current structure seems to be set for the foreseeable future.

There are currently 67 districts in USPS operations, each led by a DM, who is a PCES I reporting directly to the AVP. DMs have autonomous decision making authority within the policy and system integration constraints of Headquarters and the Area. The DM is responsible for all delivery and mail processing operations within the district. The DM directly manages the PCES Senior Plant Manager (SPM) and PCES Postmasters (in large cities) along with EAS operations and support managers. As mail volume continues to decline there have been district and plant consolidations to streamline operations, reduce mail processing cost and reduce management overhead. Since 2008, USPS has consolidated 13

districts and 141 plants with an estimated annual savings of \$865 Million. In January 2015, the Postal Service eliminated overnight first class mail service. This change increases the processing window across mail processing equipment and enables additional plant consolidations. There are currently plans to consolidate up to 82 additional plants in an effort to streamline processing operations, with projected annual savings of \$750 million.

### **Initiative vs. Coordination**

There are trade-offs between organizations that are designed to drive initiative versus establishing coordination. In a perfect world, organizations want to achieve both, but in reality the very structure that encourages one, tends to preclude the other. Organizations with high coordination typically have strong centralized command with strong hierarchical control throughout. These organizations value standardization and process control, which often does not leave room for innovation and local initiative. Key ingredients to drive local initiative include autonomy and less defined structure to allow local employees to develop their own strategies and solutions. Innovation is achieved by pursuing bold ideas, often without the guarantee of success. One of the most important aspects of effective innovation is the freedom to fail. The more freedom within an organization to experiment and fail typically results in higher levels of innovation. Typically the organizational structure that achieves standardization and control does not tolerate deviation or failure. Coordination is focused on results and initiative is focused on solutions. The Postal Service has a strong centralized headquarters that establishes standardized processes and goals throughout the network. According to the president's 2003 commission on the United States Postal Service management structure study, "[USPS is] structured as a command-and-control organization. We acknowledge the strength of centralized decision-making in driving standardization and consistency in order to maximize operating efficiency for such a vast

organization” (Unisys & Wyatt Watson, 2003, p. 9). There is high coordination with lean hierarchical control. Goals, targets, and process are well defined, and failure is often not an option.

### ***Standardization at Scale***

High levels of centralized control, standardized equipment and common operations should theoretically result in every plant and post office being completely standardized with identical processes and configurations. However in the case of USPS, there are many local differences that make each district, processing plant and delivery unit unique and customized within a standardized operational framework. Each geographic area has a unique demographic and population density resulting in varying mail volume profiles. Population density and geography dictates the number and size of post offices within a plant distribution area; resulting in a unique number of ZIP Codes, carrier routes, and delivery points. To accommodate these differences, each plant has a unique configuration utilizing standardized equipment. Each plant will have a different quantity and configuration of machines depending on mail volume and workroom floor layout.

The process that controls how mail is sorted and transferred between machines is known as mailflow, and each plant has a very specific customized mailflow. Mailflow design can be very complicated and often has to be changed due to equipment upgrades, consolidations, or simply to improve efficiency. Differences in population density, demographics, geography, mailflow, equipment sets, and configurations permeate the entire district operation. These variables dictate clearance times, capacity, efficiency, operating plan and processing windows. No two post offices or delivery routes are the same. Each town has unique characteristics that effect delivery operations, including: geography, terrain, climate, demographics, population density and local politics. There are also numerous route configurations including mounted delivery (vehicle), park and loop (walking delivery from a vehicle),

walk-out routes (walking delivery from relay boxes on the route), and high-rise delivery (office suites and apartments) that introduce local variation. Routes are individually customized using optimization methodologies to reduce travel and delivery time.

The sheer scale of the network results in significant communication barriers to establishing effective standardization. Communication is challenging, with seven areas, 67 districts, 31,662 post offices and 320 mail processing plants covering the entire geography of the United States. The Postal Service uses a wide range of media and technology to communicate with the network, including: mailings, newsletters, email, bulletin boards, teleconferences, videos, in-person meetings and town-hall meetings. Every one of these techniques is essential to overcome the challenge of reaching over 600,000 employees dispersed across the country.

### ***Local Customization and Initiative***

Within a highly coordinated Postal Service network there is a layer of local customization that requires high levels of local initiative. According to the USPS management structure study, “Management fundamentally follows a command and control structure with significant policy and operational decisions made at headquarters. The “field” (all organizational components outside of Headquarters) is charged with implementation, but is managed within relatively narrow constraints. In essence, headquarters controls the ‘what,’ and the field controls the ‘how’” (Unisys & Wyatt Watson, 2003, p. 10). The ‘how’ often comes down to local customization or optimization. The process of designing mail flow or delivery routes is a very complicated activity, requiring: observation, technical knowledge, and innovation. There is no centralized blue-print or baseline to reference; success is derivative of local talent and process control. Making it more complicated is that implementing process changes cannot interrupt mail processing or delivery. One factor that does limit more radical innovation



is the fear that changes may result in failure. District and AVP failure tolerance becomes a big factor in optimization. Often, long-term service performance is based on local initiative and the capability to effectively pursue changes despite the risks. Nearly every new equipment deployment requires high levels of customized integration, affecting mailflow, plant configuration and route optimization. The recent increase in consolidations has generated a substantial amount of change throughout the organization, forcing redesign of old mailflows and delivery configurations. In turn, this has led to local optimization and efficiency improvements.

Local success depends heavily on the available skill and expertise to solve these complicated problems and implement solutions. Recently, there have been high levels of attrition due to the average age of Postal employees exceeding 50 years old and several recent early retirement incentive package offerings. Declining mail volumes and subsequent consolidations have resulted in hiring freezes. Overall, there has been a depletion of talent, knowledge, and experience throughout the country, which has impacted the capability to implement the necessary process changes. Nationally, Industrial Engineers have been hired to replenish these skill sets and develop additional optimization capabilities. The upside to losing institutional knowledge is that challenges are being addressed with fresh perspectives, which increases the potential for process innovation. There is also recognition within the Postal Service that change is needed. Highly motivated individuals have the opportunity to take initiative to develop and implement large scale solutions, improve operations and develop their careers. With the recognition of the need for change, there is a noticeable shift within the organization from just celebrating results to also celebrating process improvement and innovation.

## ***Autonomy of Scale***

Another USPS factor that drives local initiative is the sheer scale of the network, which results in a lot of employees working without direct supervision. Postmasters of small post offices work independently without seeing a manager for months or longer. Carriers work 6 to 7 hours of their day on their routes without direct supervision. Tracking systems such as Managed Service Point (MSP) and GPS provide managers the capability to monitor performance. The MSP system logs when carriers scan barcode checkpoints along their route and generates reports that supervisors can use to identify and recognize performance. Many Postal vehicles now have GPS tracking capability to provide data and reports on vehicle travel. However, these systems are not always used effectively and only give supervisors a small portion of oversight capability. As a result, the level of service is contingent on the level of individual initiative of many carriers and postmasters. These employees are the face of the Postal Service to customers. Often they take individual ownership of their office or route, taking the initiative to provide outstanding service without direct supervision. This ownership enables these employees to handle the unique characteristics of their office or route and develop local solutions to local problems. However, this autonomy potentially compromises service standardization, resulting in variation in quality.

Due to the combination of scale of volume and absence of direct oversight, USPS has implemented extensive quality testing and visibility systems. Nearly every piece of mail is tracked through mail processing operations with Mail History Tracking System (MHTS), which allows managers to monitor mail flows, processing quality, and service timeliness. For packages, the USPS Tracking system is utilized to track processing and delivery service performance. For mail delivery, USPS contracts external auditing of end-to-end delivery service accuracy and timeliness. These systems establish control and coordination to ensure service is maintained at a massive scale, without direct oversight.

## ***Balance between Coordination and Initiative***

The combination of headquarters and area coordination with local customization and autonomy has resulted in an organization that is capable of both coordination and initiative. Although there is autonomy to optimize locally, there is only a certain level of flexibility within the network standardization. This balance between coordination and initiative has enabled the Postal Service to successfully coordinate numerous system transformations, including: transportation overhauls, transition from Post Office Department to USPS, automation implementation, delivery point sequencing, scanning and tracking, consolidations and data analytics.

Lean Six Sigma (LSS), is a process that has been implemented throughout the Postal Service, that is derivative of the famous Toyota quality control and continuous improvement methodology. The LSS methodology is a perfect fit with the USPS organizational structure, leveraging the balance between coordination and initiative. LSS utilizes a standardized methodology to facilitate local field level engagement in continuous improvement and process innovation. The OIG has found “Lean Six Sigma to be useful in automating processes, shortening process cycle time, reducing paper usage, and improving high-volume and high-usage databases. Eliminating waste and strengthening processes results in cost savings and improved efficiencies” (USPSOIG, 2013c).

Overall, USPS has a unique blend of coordination and initiative. The very elements that make control and standardization difficult result in increased local autonomy and initiative. Awareness of these characteristics can leverage the various benefits of coordination and initiative. Effectiveness is contingent on proper two-way communication. One direction of communication aligns employee incentives and channels local initiative with the goals of the organization. The other direction of communication allows local process improvement, lessons learned, and best practices to be transferred

back to headquarters so that the whole organization can benefit. Optimization is achieved with the right balance of local flexibility and system standardization. The Postal Service appears to have the organizational structure and local capability to pursue that balance. It is this balance and demonstrated capability that provides a foundation to potentially enable future transformations.

## **Chapter 5: Evaluation of Potential USPS Strategies**

To find solutions to unprecedented challenges, several innovative strategies have been proposed by stakeholders to help the Postal Service improve its positioning in a rapidly changing economy. To enable successful implementation these strategies must effectively leverage the competitive advantage, be consistent with the capabilities of the organization, and align with the current business conditions. This chapter will evaluate three notable strategies, utilizing frameworks to ultimately determine which innovative strategies should be pursued to help ensure the future vitality of the United States Postal Service.

### **Introduction to Potential Strategies**

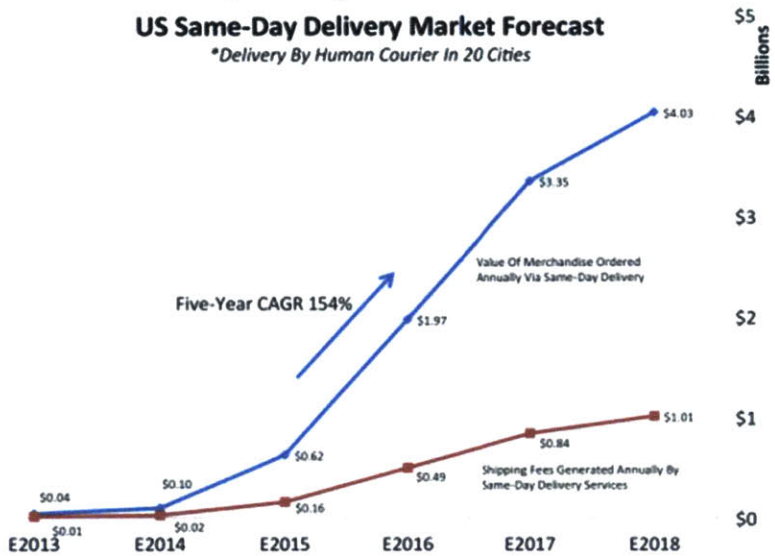
Ideas on how to leverage USPS infrastructure and resources have been proposed by postal leadership, congressional stakeholders, journalists, editorials, consultants and USPSOIG. Although these ideas would be new strategies for USPS, most of the ideas are not entirely new. Throughout the world, International Posts are dealing with the many of the same issues resulting from a similar loss of mail volume and impacts from electronic diversion. Many of these Posts have explored and implemented various strategies to leverage their assets and positioning by introducing new products and technologies. For example, many International Posts have extensive banking services, including: Japan Post, Postal Savings Bank of China, Brazil's Correios, and India Post (UPU, 2015). Other International

Posts, like Swiss Post and La Poste (France Postal Service), are testing drone technology to deliver mail and packages (Nield, 2015); (GeoPost, 2014). However, it is less important whether a strategy works for an International Post and more important whether a strategy aligns with USPS capabilities. This Chapter will analyze innovative strategies, including: same-day delivery, 3D printing services and postal financial services. The evaluation of these strategies will assess the effective leveraging of competitive advantages and resources, consistency with organizational capabilities, and alignment with business condition implications and ultimately provide strategic recommendations.

## **Same-Day Delivery**

One of the hottest buzzwords in the e-commerce industry is same-day delivery. Himanshu Sareen, founder and CEO of Icreon, stated, "As groundbreaking as the emergence of leading online retailers was in the 1990's, the impending disruption that will result from same day delivery will be greater" (Sareen, 2013). BI Intelligence projects that by the end of 2018, the sales of same-day delivery merchandise in the U.S. will reach \$4 billion and generate fees of \$1 billion (Figure 5). However, there are two significant challenges with same-day delivery. The first challenge is the market: how many people would pay extra for same-day delivery and what is their willingness to pay? The second challenge is the logistics: how much will it cost to implement same-day delivery logistics? The key in this market is how much can you charge and how much will it cost to deliver. As with any last-mile delivery service, scale is the most important factor. Can the Postal Service leverage its last-mile capability in the emerging same-day delivery industry?

Figure 5: US Same-Day Delivery Market Forecast



Source: BI Intelligence Estimates, (Smith C. , 2014)

### Industry Description

Same-day delivery products can be broken down into three categories: perishables, high value items, and urgent convenience. Delivery of perishables mostly covers groceries, but could be expanded to include specialty goods from butcheries, bakeries or florists. The same-day demand for delivery of high value items is based on two factors; instant gratification and relative cost of delivery compared to the purchase price. The demand for instant gratification potentially increases with impulse buys and or high value purchases of electronics, jewelry or fashion where the customer is eager to receive the good and begin using it. The relative cost factor occurs when the additional surcharge for same-day delivery is negligible compared to the high cost of the product. Urgency dramatically increases customers' willingness to pay for immediately necessary items like medicine and medical supplies, but also includes last minute items like gifts, home improvement supplies or critical office supplies. Each of these product lines garners a higher willingness to pay for the convenience of same-day delivery (AlixPartners, 2014).

There is a potential perception factor that could influence customer purchasing decisions and motivate companies to enter the same-day delivery market. “Even if the immediate economics do not justify offering same-day benefits, customer loyalty and the potential for an even larger share of wallet from top customers may make the service worth pursuing”. According to BCG research, consumers are more likely to purchase from a retailer that offers same-day delivery even, if they are not willing to pay extra to utilize the service. Survey results show that a same-day delivery option would have a very positive influence on 38 percent of respondent’s perception of an online retailer. There is a potential that same-day delivery becomes a necessary component in a delivery company service portfolio and brand perception (The Boston Consulting Group, 2013). Although the perception factor could potentially lead to an ‘arms race’ in same-day delivery, currently only 13 percent of domestic online shoppers expect same-day delivery options (Statista, 2015a). U.S. online shoppers are far more concerned with free delivery and lower prices than same-day delivery options (Figure 6). Depending on the type of product, 44 to 48 percent of customers would not be willing to pay more for same-day delivery and the majority of those willing to pay were only interested if the fee was five dollars or less (Figure 7 **Figure 7**). The BCG research corroborates this hypothesis, demonstrating that customers viewed \$6 to \$10 as a fair shipping price for same-day delivery (Figure 8). Offering the same-day service at this price will leave very limited margin for retailers and package delivery companies. All of this research indicates that outside of high-end niche markets, entrants must achieve scale to survive in a same-day delivery environment. The best way to create market demand is to target affluent Millennials, who are 56 percent more likely to pay for same-day delivery than the average online consumer (The Boston Consulting Group, 2013).

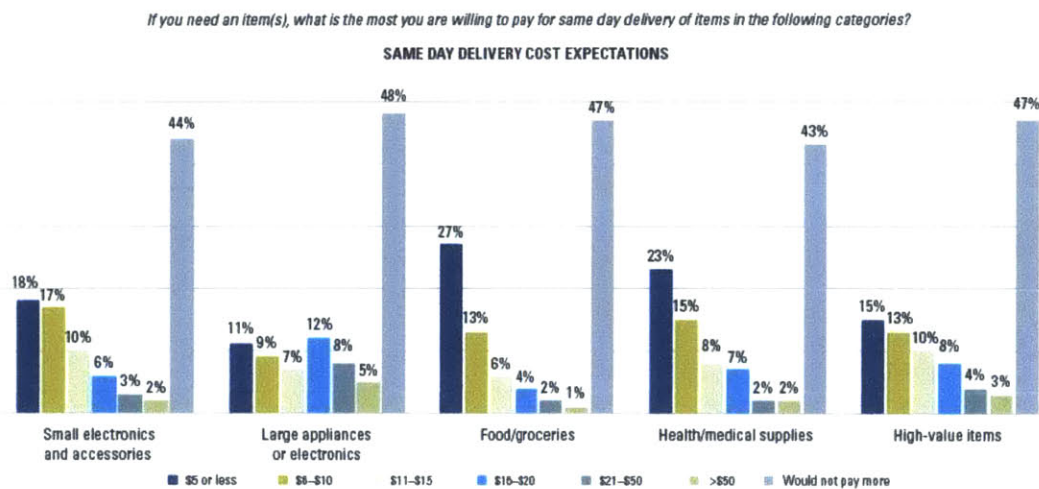
**Figure 6: Free Delivery and Lower Prices More Important than Same-Day Delivery**



Sources: BCG survey of 1,500 consumers in late 2012; BCG analysis.  
 Note: Percentages include the top three choices made by respondents.

Source: (The Boston Consulting Group, 2013)

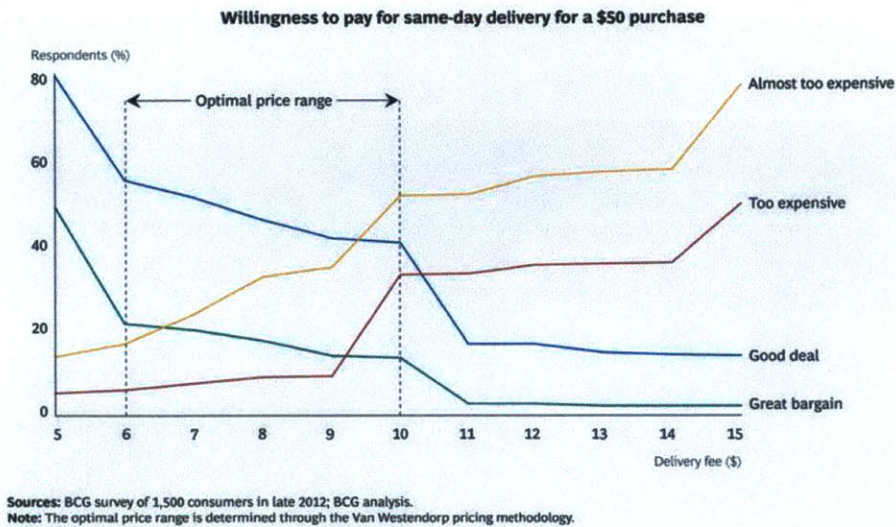
**Figure 7: Consumers' Willingness to Pay for Same-Day Delivery**



Source: (AlixPartners, 2014)



**Figure 8: Optimal Fair Price Range for Same-Day Delivery**



Source: (The Boston Consulting Group, 2013)

## Industry Attractiveness

### *Threat of substitute products or services*

Since same-day delivery is an emerging industry, most of the substitutes are the established commerce norms that society currently uses to obtain goods quickly. These substitute options certainly include brick-and-mortar stores that almost always offer the ability to take merchandise home immediately, without the additional delivery cost. Since that possibility is always there, people have a relatively low willingness to pay for same-day delivery. Next-day and two-day delivery options also compete against same-day. It comes down to how valuable their time is and how long they are willing to wait. Traditional convenience stores will also continue to compete with same-day delivery over price and convenience in specific urgent or replenishment product lines. Traditional mainstays aside, there are some innovations that also compete with same-day delivery and will help keep the convenience surcharge in check. Some brick-and-mortar retailers offer convenient free in-store pickup of goods purchased online, which can satisfy the needs of customers looking for the ease of online shopping and

provide near-instant gratification with no delivery surcharge. Self-service kiosks, such as those found in airports provide small electronics or other small high-end products with the convenience and low overhead cost of a vending machine. Drone technology could potentially disrupt the current version of the emerging same-day delivery industry. 3D printing will also threaten same-day delivery with an increasing array of product lines that can be manufactured right in your own home. While the 3D printing industry is still in its infancy, many of same affluent, tech-savvy Millennials that are demanding same-day delivery will be the first to adopt the new technology. Certainly there are limitations to what products 3D printing can fabricate, but as technology advances, who knows what consumers will be able to create in the comfort of their own home.

### ***Bargaining power of suppliers***

Same-day delivery is far more localized than traditional package delivery and consequently sheds layers of the supply chain, moving the product closer to the last-mile delivery segment. For the most part, the long-haul trucks and aircraft that are such critical suppliers in normal package delivery logistics are removed from the supply chain. The retailer becomes the primary or even solitary supplier, to the same-day delivery service. There are two types of same-day delivery retailers, those that are online marketplaces with distribution warehouses, and traditional storefronts that leverage their brick-and-mortar locations as localized distribution centers. Most, if not all, traditional retailers do not have the capability, scale or expertise to provide last-mile delivery. Those capabilities would be relegated to large e-tailers like Amazon and Google Express or traditional retailers like Walmart with the scale and resources to contemplate entry into last-mile delivery. Depending on whether the retailer provides their own last-mile logistics, the key suppliers become the product companies themselves. Depending on how successful or aggressive any attempted entry into last-mile delivery is, retailers could potentially own the entire same-day delivery supply chain from product receipt to delivery. Combining a network of

warehouses or brick-and-mortar stores with last-mile delivery capability would mean that the only suppliers would be the product manufacturers and distributors. In that scenario, the retailer would likely own the customer and the bargaining power with product manufacturers or distributors. For the retailers who remain suppliers for same-day delivery providers, they would likely still own the customer and the bargaining power.

Until autonomous technology becomes feasible, a key internal supplier of any delivery operation is people. With wide variation in employee models, there are different advantages and constraints across the various potential same-day delivery competitors. Companies like UPS and USPS have unions which introduce challenges of motivation, higher wages, and contract limitations. Both organizations do have flexible part-time employees that would be a good fit for same-day delivery. Companies like Amazon, Google, and Walmart are looking to hire drivers to build their delivery fleet. These hiring efforts could be affected by the U.S. Commercial Drivers License (CDL) driver shortage. According to Bob Costello, American Trucking Association chief economist, "The driver shortage - which we now estimate to be between 35,000 to 40,000 drivers - is getting more pervasive in the truckload sector" (PRNewswire.com, 2015). Although delivery truck drivers are not required to have a CDL, increasing pay and incentives in the CDL trucking sector could trickle down to drivers in other sectors. This would increase the hourly costs of delivery logistics and increase the bargaining power of drivers. The 'independent contractor' approach of the crowdshipping start-ups and regional package companies like Lasership could face labor issues resulting from drivers getting less pay than promised or find better opportunities elsewhere. As independent contractors, there is little to prevent drivers from quitting or switching companies. In many cases, drivers can work for multiple companies and perform delivery services for the highest bidder. This could create a pricing war to secure the necessary drivers to maintain the network. Without drivers, start-up delivery services would lose customers. Autonomous

technologies like drones or driverless cars would eliminate many of these issues and benefit the companies with the resources and capabilities to leverage those options.

### ***Rivalry among existing competitors***

In the emerging same-day delivery market, the competition is complicated. There are a limited number of companies that have entered or begun testing in large metropolitan cities. Large cities offer a higher concentration of demand within a smaller geography. There are a diverse array of competitors from the traditional package delivery companies, regional package delivery providers, established crowdsourced ride-sharing companies, crowdshipping start-ups, traditional couriers, large scale e-tailers, and a host of hybrids entering or testing the market.

The traditional package delivery companies have all entered the same-day delivery market to varying degrees. FedEx offers same-day delivery options to their existing commercial customers, with customizable options, including city-to-city same-day service, with pricing provided in the form of customized quotes. (FedEx, 2015c). UPS lists several same-day delivery options under their 'UPS Express Critical' product line with rate and options quotes handled by a UPS Express Critical representative (UPS, 2015c). Both of these services appear to be relatively expensive and customizable options to meet existing demand. USPS has been conducting market tests of its Metro Post same-day delivery service since December 2012. The first test was in San Francisco, and by commercial standards was not successful with only 95 packages delivered in 5 months; it was subsequently suspended on March 1, 2013. This failure demonstrates the difficulty on the demand side of the same-day delivery. However, it is an example of being willing to fail on a small scale, which is a critical component of innovation. "You could spend millions of dollars," says Gary Reblin, USPS vice president for new products and innovation. "If it doesn't work, that's a big loss. Our exposure is a lot less this way." For a network as ubiquitous as

the Postal Service, the logistics are feasible; it is the demand side of the equation that is more difficult to solve. In December 2013, the Postal Service started another Metro Post market test in New York City (Leonard, 2014). USPS recently expanded Metro Post into Washington D.C. on January 15, 2015 (USPS, 2015f). The Postal Service has an enormous fleet of vehicles that could be in the best overall position to handle the logistics of same-day delivery on a large nationwide scale. "Starting around 4 p.m., it has vehicles largely sitting in parking lots," said Harry Whitehouse, chief technology officer and co-founder of Endicia (Bowman R. , 2014b). Competitors would have to invest in the vehicles and drivers. Another advantage is that, unlike most of the competition, the Postal Service is not tied to any single marketplace, and would have the ability to provide same-day delivery for all the major retailers. "It has the ability to be a player whenever this market opens up," Whitehouse said. "If this becomes a major paradigm shift, they're the ones that will win" (Bowman R. , 2014b).

Crowdshipping start-ups are aggressively trying to get into the same-day delivery business. There are many start-ups testing the market, all utilizing location-based mobile technology and two-sided platforms, but each with a different angle. Uber, the company that popularized crowdsourcing, is preparing to make a large scale entrance into the delivery business with UberRUSH. "It's not hard to imagine Uber combining these verticals — fresh food, restaurant food, home goods, online purchase orders, and more — into a single logistics framework that is dispatched to its thousands of drivers and couriers. A driver could theoretically have Johnny's pizza in the front seat, Jenny's new Louis Vuitton bag in the trunk, and you in the backseat" (Crook, 2015). UberRUSH leverages the Uber network, capability, and brand in response to same-day delivery start-ups that have entered the market using the Uber model. Postmates is an example of an Uber style platform operating in 20 metropolitan areas, linking individual contractors with customers who want to purchase just about anything. The 'Postmates' then travel to the store, make the purchase and then deliver to the customer (Postmates, 2015). Starting at

five dollars, the Postmates delivery fee increases based on distance traveled and demand, with a nine percent service fee (Sagon, 2014). Deliv uses a similar approach but has concentrated on working with retailers to integrate their service into existing store websites and partnering with specific malls to provide same-day delivery service. Deliv is currently operating in eight metropolitan cities, charging based on distance for as little as \$6.25 per delivery (Deliv, 2014). USPSOIG stated in a whitepaper on same-day delivery, “Big retailers realize that the bulk of their potential customers are within five miles of their stores. By partnering with a crowdshipper, they can turn their vast networks of physical stores into distribution hubs for online purchases, giving them a competitive advantage in the race for same-day delivery.” It continues, “If crowdshippers crack the code of same-day delivery, and can do it for less than the Postal Service, UPS, and FedEx, it could eat into local package delivery volume, particularly in major metropolitan areas. The more market share crowdshippers gain, the worse it would likely be for the existing package business — one of the biggest areas of growth for the Postal Service in recent years” (USPSOIG, 2014a).

Google Express has launched in eight metropolitan cities. The service requires membership of \$10 per month or \$95 per year, and provides free same-day delivery on ‘qualified’ orders over \$15 (Google, 2015). Google is using its own vans and fleet of Prius complete with Google logo to make deliveries. (Bowman R. , 2014a). EbayNow has launched a same-day delivery service in four metropolitan markets, offering delivery of products purchased from local stores for a fee of five dollars per store (eBay, 2015). EbayNow uses their own fleet of small cars and has recently purchased Shutl, which is a British based provider of same-day delivery (Bowman R. , 2014b). Both models rely on drivers to enter stores, make purchases and deliver the products to the customer. “It’s a very expensive option,” said Rob Howard, founder and chief executive officer of Grand Junction, a cloud-based software

platform that supports local courier companies. “The delivery model is not sustainable [unless you] have large volumes” (Bowman R. , 2014a).

As the domestic e-commerce market leader, Amazon has a massive marketplace, an extensive user network of customers locked in with Amazon Prime, with low prices and efficient distribution. If Amazon is able to develop and scale low-cost delivery logistics they will be extremely well positioned in the same-day delivery market. Amazon is currently offering same-day delivery to 13 metropolitan cities in the U.S. for a \$5.99 delivery fee for Amazon Prime members (Amazon, 2015c). Amazon has utilized regional delivery providers like Lasership to make same-day deliveries, but there are concerns with using independent contractors. Lasership employs drivers who supply their own uniforms, vans, gas, and insurance for a percentage of the shipping rate. The incentive to make rapid deliveries is there; however, accuracy, training, and customer service are concerns (Kaufman, 2014). Amazon is preparing to launch their own fleet of vehicles and contracted drivers for metropolitan same-day delivery operations. With so much volume, Amazon can afford to invest in delivery infrastructure. “I absolutely believe that it is a viable business model for them,” said Howard, “They have so much more volume than anyone else” (Bowman R. , 2014a).

Grocery delivery is its own segment within the same-day delivery market. According to Packaged Facts, online grocery sales will reach \$23 billion in 2015 and quadruple in five years. Peapod has been in the grocery delivery business for over a decade, but has not started same-day service. Postmates includes grocery delivery in their mobile powered courier services, with a distance-based delivery fee and nine percent service fee. Google Express will also deliver groceries, but excludes non-perishable items (Sagon, 2014). Uber has tested grocery delivery in Washington D.C., with UberEssentials and lunch delivery in Santa Monica with UberFresh (Crook, 2015). Instacart is a crowdsourced personal shopper service currently offered in 15 cities (Instacart, 2015). Instacart charges a percentage markup of the

groceries on top of a delivery fee of \$3.99 to \$5.99, depending on the delivery window. Instacart Express Service charges a \$99 annual membership for free delivery of orders over \$35, but still has a mark-up on the product purchases. Amazon Fresh works directly with the stores to provide delivery service and charges an annual \$299 membership fee (but also includes the regular Prime service valued at \$99). The grocery store chain Safeway provides delivery service through a mobile application, with delivery rates of \$9.95 to \$12.95 depending on the order value (Bishop, 2014). Walmart has joined the same-day grocery delivery market, offering its services in five markets including Bentonville, AR and Huntsville, AL which is a deviation from the normal metropolitan markets that other entrants are operating in (Walmart, 2015). Walmart charges between \$5-7 for delivery of orders over \$30 and does not offer membership options. However, the biggest challenge that Walmart might present is its new curb-side pickup service that is a hybrid model that combines convenience and value (Perez S. , 2014b). In September 2014, the Postal Service partnered with Amazon Fresh to test grocery deliveries in San Francisco, "To determine if delivering groceries to residential and business addresses would be feasible from an operations standpoint and could be financially beneficial for the organization," according to a USPS spokeswoman (Bensinger & Stevens, 2014). Deliveries are made between 3 a.m. and 7 a.m., before trucks are needed for mail delivery. Since Amazon uses insulated tote bags for perishable groceries, deliveries can be made without refrigerated trucks (Bensinger & Stevens, 2014).

### ***Bargaining power of buyers***

The buyers of same-day delivery services are residential and business customers. These customers have incredible bargaining power simply because they have so many options and very low switching costs (except for membership programs offered by Amazon Fresh or Google Express). Customers will tend to choose the most economical option and potentially cause significant price competition between providers. With prevalent competition, a price war would enable those with the



lowest marginal cost and sufficient scale to stay in business. Customers can quickly decide that they do not want to pay extra for same-day delivery, and return to using more affordable options. If the economy were to relapse, luxuries like same-day deliveries would be the first to be cut from the weekly budget. Customers may also be curious and try these services a couple of times, then stop using the services after losing interest or having bad experiences. Membership pricing models would be an effective way to lock customers into the service. Amazon Fresh offers free delivery after paying the \$299 annual fee. Amazon Prime customers are charged a \$5 same-day delivery fee in addition to the membership price. Google Express currently charges \$95 for membership with free same-day shipping thereafter. However, these pricing strategies could backfire if customer adopt frequent purchasing habits and surpass the breakeven point on delivery costs.

### ***Barriers to entry***

Four critical components are needed to implement same-day delivery: a marketplace, an ordering platform, last-mile logistics infrastructure, and scale. Some entrants already have some of the components and are working to develop the ones that they do not have. Other entrants are looking to partner with companies that have one or two of the components. The crowdshipping model reduces the entry barriers required to assemble the last-mile logistics, since they do not have to invest in vehicles or use a traditional hiring process. However, crowdshippers still have to recruit drivers, develop the platform, grow the scale, and form relationships with retailers. Large retailers like Amazon and Walmart already have the marketplace, ordering platform, the scale, and need to either invest in their own last-mile infrastructure or partner with other last-mile delivery providers. Investing in the infrastructure for a market test in a couple cities is one thing, but scaling up a national delivery network is a large entry barrier. No existing or potential same-day delivery competitor has all four components.

## ***Attractiveness Summary***

Same-day delivery is an emerging market and industry attractiveness depends heavily on the actual market demand. Depending on demand, it ranges from an unattractive industry with only certain attractive geographic niches, or an extremely attractive national industry with the benefits going to whoever can achieve sustainable low-cost scale. To date, no organization has achieved significant scale and it remains to be seen how large and sustainable the same-day demand is. It is unclear how much people will be willing to pay long-term to get same-day service, and whether it will be enough to sustain the necessary scale to provide nationwide same-day delivery. Even if same-day delivery is only viable in metropolitan areas, scaling up to that level would still require significant last-mile logistics infrastructure. There is the possibility that it is merely a fad, and once the novelty wears off, price-conscious customers will return to more affordable alternatives. With so many competitors entering the market, the buyers have bargaining power which may drive revenues below the marginal cost for some providers and force them out of the market. If profit margins become razor thin, then companies that already have several of the necessary components for a successful same-day delivery enterprise will have the advantage. Partnerships may be the key, allowing organizations to join forces and leverage existing resources, keep costs low and achieve the necessary scale to compete. In the current environment, Amazon has the advantage with the marketplace, platform, and scale. The Postal Service has the advantage in the last-mile logistics scale, particularly if same-day delivery expands outside of high demand, high density urban areas. Amazon may have the necessary resources to scale up their own last-mile logistics, but their best strategy may be to partner with the lowest cost last-mile providers. They could pursue a hybrid model where they ramp up their own logistics in high demand urban areas and partner with other providers in the less profitable areas. The Postal Service has to explore partnerships since they do not have a marketplace, platform or product scale. Crowdshipping provides

an intriguing twist on last-mile logistics that can potentially overcome barriers to entry that were previously impenetrable by small startups. Technological advances such as autonomous vehicles, drones and 3D printing could eventually disrupt the same-day delivery market, but in the meantime many players are attempting to get in on the action.

## **USPS Strategy Analysis: Same-Day Delivery Industry**

### ***Resource Advantage Alignment***

There is no doubt that the existing last-mile logistics infrastructure of 320 processing facilities, 211,000 vehicles and 35,641 retail units would be extremely complementary to same-day delivery. In fact, these assets are idle or minimally utilized during the prime operational window required for same-day delivery. Although much of the same-day delivery volume would not assimilate within the existing mail and package delivery process, the same resources that achieve regular delivery could be utilized to provide a new service and capture additional value. The marginal cost for providing this extra service would be low, with hourly labor and fuel being the only additional costs. With 67 million square feet of surplus interior facility space across the network, there would be ample space to store additional packages, and could even serve as micro-warehousing possibilities for retailers who do not have the space themselves. The information system of the Postal Service is complementary to the tracking requirements and possibly developing applications to support same-day delivery. 263,000 recently deployed Mobile Delivery Devices (MDD), could provide the real-time tracking information that many same-day delivery customers demand. This strategy would also leverage the extensive human resources of the Postal Service, many of which understand the urgency and customer service required to provide expedited services. Overall, this strategy aligns with a majority of the resource advantages owned or controlled by the Postal Service.

### ***Positional Advantage Alignment***

With its well established positioning in the last-mile logistics, the Postal Service would be well positioned as a low-cost, scalable, independent same-day last-mile delivery service for retailers and partners. The new CCA workforce is a perfect fit for the non-traditional hours and flexible delivery windows required by same-day delivery. Most of the 211,000 Postal Service vehicles are idle after completing their daily routes and can be utilized for same-day delivery in the late afternoon and evening. The USPS brand is already well established and since it symbolizes trust, reliability, service and national pride it would be well suited for same-day delivery and particularly competitive against potential trust issues with independent contractors that are being utilized by regional carriers and crowdshipping start-ups. The relationships that Postal Service employees have developed over the years could be leveraged to establish new business in the same-day delivery market. Existing relationships with suppliers could precipitate vertical partnerships, which appear to be a major key to executing a viable and sustainable same-day delivery strategy.

With an existing extensive last-mile logistics network already in place and since the Postal Service is 'Going there anyway', it is well positioned to scale same-day delivery service wherever and whenever there is sufficient demand. No other organization has the resources or positioning to scale service to any region in the nation without requiring significant last-mile infrastructure investment and lead-time. USPS is positioned to overcome market uncertainty by having the capability to remain in standby and enter quickly once a market is established. Leveraging its economies of scale, USPS may also be the only competitor that can afford to operate in less urban areas. The Postal Service has an extensive network of processing facilities and carrier units that can serve as drop-off points or micro-warehousing for same day delivery volume. The Postal Service network is optimally designed and positioned for same-delivery; however it is not positioned as a same-hour courier service. It would not

be well positioned to enter the high-end, same-hour courier segment of the same-day industry. However, USPS could integrate emerging location-based technologies with existing assets to provide enhanced services and flexibility. Overall, the strategy is very well aligned with the Postal Service's positional advantages.

### ***Capability Advantage Alignment***

The Postal Service is the last-mile delivery expert, with significant knowledge-based capabilities resulting from managing an expansive delivery operation combined with extensive delivery experience in every neighborhood in the country. This eliminates the normal learning curve that many other entrants would have to overcome. Depending on the scale and operating window, the APPS and other package sorting equipment may also be utilized to improve the efficiency of same-day package distribution, particularly in the small package category. Dynamic routing capability has been developed and implemented for other delivery services and would provide the necessary flexibility and efficiency to optimize routes for same-day delivery. Dynamic routing is already being used to deliver Amazon packages on Sundays. The Postal Service has organizational capability to manage the implementation of a new process on a massive scale. USPS has the capability to develop information systems, but not in the e-commerce arena. The Postal Service should consider a partnership with retailers that have an established marketplace. Additionally, USPS capabilities do not align with the customizable same-hour courier services currently being provided by crowdshippers. Development of location-based applications would improve the attractiveness of the Metro Post service and may be necessary to compete with the crowdshipping options. Overall, the same-day strategy aligns with many of the capabilities of the organization.

### ***Initiative vs. Coordination***

The Postal Service's previously discussed balance between initiative and coordination aligns well with the same-day delivery strategy. A well-coordinated national strategy could be developed and implemented throughout the country, while relying on local autonomy and initiative to customize the service to the needs of local retailers. USPS carriers and postmasters have existing relationships with local businesses and can fine tune the same-day logistics to meet their specific needs. Existing local last-mile logistics have already been customized to meet the unique needs of the geography, demographics and community. Utilizing flexible CCAs reduces any concerns with misaligned incentives. These employees do not receive overtime and USPS would not have to worry about disincentives effecting expedited delivery. The incentives however would not be comparable to the incentives that independent contractors have with per-delivery compensation. It would be important to focus on local monitoring and motivation to promote the highest levels of expedited customer service.

### ***Political Considerations***

Politically, there are some concerns with the Postal Service being permitted to create a new same-day delivery product. As noted in the section on Postal Regulatory Commission, legislation and PRC regulations permit market tests. The Postal Service has been authorized to conduct three separate market tests of Metro Post. And although the PRC has the ability to approve new competitive product lines, such authority has never been exercised, and there is no guarantee that such a request would be approved. There are political concerns with public and congressional anti-competitive sentiment, and there might be potential lobbying efforts aimed at preventing USPS from entering a new market.

### ***Labor Considerations***

There is union support for entering the same-day delivery market, since it would result in additional workhours and utilization of carriers. USPS would likely continue to utilize CCAs to implement

Metro Post, which allows flexible scheduling and keeps the hourly rate at \$16 per hour, compared to \$27 for full-time carriers. The CCAs are represented by the NALC and there is union leadership support to utilize these new employees for non-traditional work. There may be union resistance if the Postal Service pursued developing location based applications to provide better visibility to Metro Post customers. This technology may potentially evoke safety concerns with customers having the ability to track the movement of employees delivering packages. Also the union may be concerned with management using the tracking capability to discipline employees over efficiency concerns. Other than potential concerns over the location-based applications, there is relatively little concern with union interference with same-day delivery implementation (Leonard, 2014).

### **Strategy Recommendation**

The Postal Service should continue isolated market tests of Metro Post to further develop the capability and identify any potential issues or necessary adjustments. It may be beneficial to run a market test in a smaller city where USPS may be better positioned than other competitors to provide same-day service. Since the same-day market is just now emerging, it may be beneficial to remain in standby to see how the market continues to develop. There are major questions regarding the precise demand and there is a possibility that this is a niche market in only a few select major urban markets. There is also a possibility that the market never emerges at a scale necessary to provide a significant revenue stream. However, it is just as likely that a very large market will emerge and the Postal Service should be prepared for entry. The Postal Service is well positioned with the last-mile capability and organizational experience deploying new products and services. The organizational capabilities do not align with the same-hour express courier market segment that many of the crowdshippers are attacking. Pursuing large retailer partnerships is highly recommended. A partnership with Amazon, Google, or Walmart would form an excellent complementary combination of online retail distribution and last-mile

delivery. Even if these large retailers develop their own last-mile capability in certain markets, the Postal Service could form partnerships in other markets that the retailers do not have the capability to enter. Staying independent may be advantageous for the Postal Service, since not being tied to a single retailer or platform might enable larger scales of economy by providing simultaneous service for multiple retailers (Bowman R. , 2014b). Since existing resources would be utilized, with minimal investment, the Postal Service could afford to enter or exit any market as the demand conditions change.

Since grocery delivery is the segment with the most market demand, the Postal Service should investigate portable refrigeration or cooling methods. The market test with Amazon Fresh utilized insulated bags and delivered the groceries early in the morning before the regular mail delivery route. However, the best way to leverage the last-mile capability would be to deliver groceries (or other same-day delivery products) on the regular route, which in the case of groceries would require refrigeration.

Overall, the Postal Service is well positioned for same-day delivery and should make the necessary preparations to be ready for market entry. This would include getting PRC authorization. Since the PRC process to authorize new competitive products is largely untested, it is recommended that USPS has conversations with key stakeholders in preparation for market entry.

## **3D Printing and Distribution**

### **Industry Description**

3D printing is the commercial term for additive manufacturing or fabrication. Additive fabrication involves systematically adding material in precise layers to create an object. Most traditional manufacturing uses subtractive methods to remove material from a raw form by milling or cutting to create the desired object (Keating, 2014, p. 379). 3D printing is a technology that takes digital models or images, whether drawn using Computer Aided Design (CAD) or a 3D scan of a real object, and uses a



layering technique to manufacture the object using additive materials (rt.com, 2015). The worldwide 3D printing market, including printers, supplies and services, was \$3.3 billion in 2014 and is projected to grow by 56 percent to \$5.2 billion in 2015. The industry is projected to grow at a compound annual rate of 44 percent over the next five years and reach \$20 billion in 2019. "As we expected, the 3D printing market has grown substantially over the past few years," said Canalys Research Analyst Joe Kempton. "We have seen improving print speeds, a wider range of materials and new forms of additive manufacturing methods. In the next five years, more companies will move in to establish their own niches, as 3D printing begins to permeate across more sectors" (Canalys, 2015).

3D printing technology originated as 'rapid prototyping' in 1986 and has been substantially improved over the past 19 years (rt.com, 2015). Traditionally, 3D printers have been limited in size, printing time, and materials. Printers are normally the size of a home appliance and produce small handheld objects 'limited to under a few cubic feet'. Printing time has been a limitation, with small objects taking hours and even days to print. There are material considerations related to 'cure mechanisms and stability'. "However, this dimension limitation is not permanent. Both on the macro and micro level, new additive techniques are poised to disrupt existing industrial techniques for construction and micromechanical fabrication through novel features, material integration, and customizability" (Keating, 2014, p. 381). More recently, the technology has been developed for a variety of scales and applications with everything from macro-scale industrial or construction applications with printers that have reach over 80 feet diametrically, to nano-scale for photon level printing and 'biological fabrication using growth systems of synthetically designed cells' (Keating, 2014, p. 380). The technology can now utilize a wide range of materials including plastics, waxes, ceramics and metals and combine them into single objects, potentially eliminating assembly. The applications within traditional manufacturing are rapidly expanding, 'where 67 percent of manufacturers are already using 3D printing'

according to PriceWaterhouseCoopers (rt.com, 2015). 3D printing enables fabrication of designs and objects that were previously impossible to manufacture.

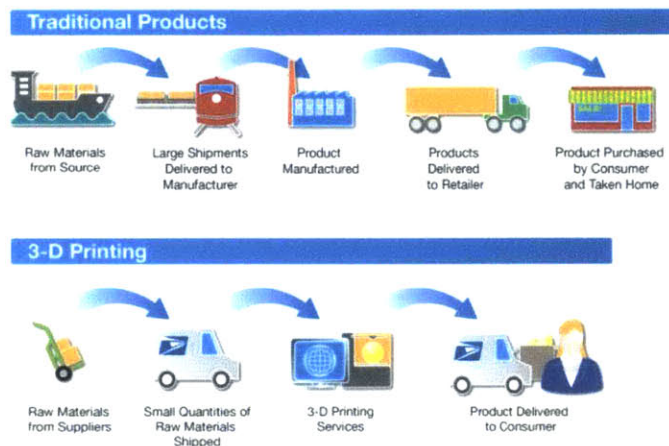
3D printing is a factor in a recent onshoring trend of U.S. companies bringing back manufacturing operations from places like China. Over the last several decades, companies have been offshoring their manufacturing to low-wage geographies like China. However, as the Chinese economy has developed and emerged, wages have gone up and reduced the previous benefits. At the same time, American wages have stagnated and demand for employment has increased. Coupling these trends with other considerations such as shipping costs, customs fees, loss of quality control, and difficulty connecting design innovation with production have resulted in offshoring being less cost-effective. Additionally, improved technologies such as robotic and 3D printing are automating the manufacturing process and subsequently reducing the cost of manufacturing in the United States. All of these factors combine to make a convincing argument for American companies to onshore their manufacturing (The Economist, 2013).

This technology is not just a new form of fabrication that incumbent manufacturers can utilize to improve efficiency and enable innovative design previously impossible to mass produce. The segment that we are most interested in exploring is the commercial and consumer applications that could potentially revolutionize retail distribution. Combining 3D printing technology with the internet can be extremely transformative, “Now everything can be downloaded and printed at home. Additive manufacturing allows people to print real-life products and part replacements in their home or office” (rt.com, 2015). Researchers at Microsoft are envisioning a world where electronic devices can be printed by combining the emerging technologies of 3D printing and printable electronics. Researchers in the field of printable electronics have demonstrated the capability to print the components of electronic devices, including: circuit boards, transistors and light emitting diodes. “Advances in materials and

fabrication techniques will continue to increase the performance and affordability of both technologies. These two technologies have been largely independent, but combining them would enable exciting new possibilities that extend the ‘personal factory’ concept to functional [electronic] objects” (Sarik, Butler, Villar, Scott, & Hodges, 2012, p. 2).

These technologies could enable a shift from ‘global mass production to local mass customization’ and completely disrupt the traditional retail supply chain, ‘bringing production to a local, and often individual level.’ This type of shift would transform the supply chain from global logistics to local first and last-mile logistics (USPSOIG, 2013b, pp. 5-6). A new supply chain model would eliminate the intermediary logistics of shipping large quantities of raw materials to manufacturers and large quantities of product to retailers. These intermediary logistics would be replaced with shipments of small quantities of raw materials to a massive scale of 3D printing manufacturers (commercial or residential) and last-mile delivery of finished goods (Figure 9). Prices of 3D printers (and 3D printed materials) are steadily dropping, with basic desktop version now available for a couple hundred dollars and more advanced versions available for a couple thousand dollars (Shah, 2014). With the technology becoming more accessible, “innovative artisans, entrepreneurs, and everyday people... can use 3D printing to bring their digital creations into the physical world” (USPSOIG, 2014c, p. ii). There are two potential models for the commercial 3D printing industry: centralized, where goods are produced by businesses and shipped to customers; and decentralized, where residential customers print goods at home. These two models (centralized and decentralized) each could have enormous impact on the manufacturing supply chain as well as delivery logistics (USPSOIG, 2014c, pp. 12-14).

**Figure 9: Potential 3-D Printing Impact on Supply Chain.**



Source: (USPSOIG, 2013b, p. 6)

In the centralized segment, startup companies have begun to take advantage of the lower entry barriers and are utilizing industrial grade printers, along with the power of the internet to produce and sell high quality customized goods. Their small scale enables them to utilize shipping logistics instead of retail distribution logistics. This also opens up the door for retailers and shipping companies to invest in the production portion of the centralized 3D printing vertical supply chain. Centralized 3D printing could provide a significant boost to shipping volumes (USPSOIG, 2014c, pp. 12-14). In the decentralized segment, there is no doubt that with the falling prices of consumer 3D printers that demand will increase and more customers will be printing objects from their homes. According to Gartner, Inc.'s latest forecast, worldwide shipments of 3D printers are projected to double in 2015 reaching 217,350 units and continue to more than double every year reaching more than 2.3 million units by 2018 (Gartner, 2014). The question is: will this proliferation of 3D capability disrupt the retail supply chain? This depends on what types of items are printed and how frequently. Due to consumer printer limitations and attitudes, it is unlikely that these devices will eliminate retail commerce. Regardless of the level of disruption, there would be a shipping volume increase in the new 3D printer materials market, which could potentially more than offset any reduction in e-commerce package delivery.

Whichever direction the industry takes, there will likely be an impact on e-commerce and the package shipping industry.

### **Industry Attractiveness**

As stated in the introduction, the most interesting segment of the 3D printing industry is not the potential enhancements to manufacturing capabilities, but the commercial segments that have the potential to impact or disrupt the existing retail supply chain. This includes two segments: 3D printing services and home 3D printing capability.

### ***Threat of substitute products or services***

3D printing is an emerging industry, most of the substitutes are the established commerce norms that society currently uses to produce and deliver retail goods. These substitute services certainly includes existing brick-and-mortar and e-commerce retailers, with or without the potential value add of same-day delivery. For 3D printing to eliminate retail, or even production, from the product supply chain, there would have to be substantial technological improvements and the value proposition would have to exceed the existing retail distribution options. The longer it takes for the technology to match the quality of existing retail products, the longer existing retail substitutes would remain the predominant choice. There would be four main features that the consumer 3D printing industry would aim to provide potential customers, including: novelty, customization, convenience and lower cost. If, and when, the quality improves to match existing retail products, these four features would determine the exact level of disruption. For the following analysis, we will assume that the quality is sufficient to disrupt the retail supply chain.

Two features of 3D printing are very difficult to substitute: novelty and customization. Novelty certainly plays a role in this industry, but those factors alone will not be enough to disrupt the industry.

Customers' curiosity about 3D printing alone might drive people to try 3D printing services or buy a home 3D printer. There is no substitute for the novelty of 3D printing. However, once the novelty wears off it would not add enough to the value proposition, and consumers may resort to purchasing products through more traditional outlets. Customization is one of the key features of 3D printing and is difficult to achieve with substitutes. Limited numbers of manufacturers have introduced customization capabilities in their products, but most are relegated to optional features, color choices or personalization with imprinted names or monograms. The current customization options in retail products are no match for the limitless customization possibilities provided by 3D printing technology. The technology enables customers to make choices on nearly any aspect of design. In fact, they have the capability to go beyond the constraints of current products and create their very own design.

Convenience and low-cost are likely to be the most significant features in determining the overall value proposition of 3D printing compared to potential substitutes. In theory, convenience is a major benefit to home 3D printing. Instead of going to a store or waiting for a product to be shipped to you, products can be printed 'immediately' without leaving home. However, the difficulty in the case of 3D printing is that 'immediately' actually takes hours, if not days, depending on the product complexity. Immediacy is also dependent on whether the consumer has the necessary materials to print the desired product. E-commerce is a suitable substitute for the convenience of 3D printing, since with just the click of a button or swipe of a screen, many goods can be delivered to your door in one to two days. The emerging same-day delivery market can rival, if not beat, the convenience of 3D printing. 3D printing is also a lot more complicated than online shopping. There are specifications and configurations involved that require technical knowledge and programming time. Customers would still need to shop for the necessary 3D print files. The printers require setup, cleaning, loading of material, and troubleshooting if there is a technical problem. Considering those potential difficulties, brick-and-mortar can also compete

with the convenience of 3D printing. Convenience becomes more of a factor for products with less demand, lack of prevalent inventory or longer lead-times. In rare cases, there would be a convenience factor when a customer needs something urgently in the middle of the night or outside the window of availability, but you still have to consider print time. Considering all of these factors, the convenience factor of 3D printing is overhyped.

The low-cost feature would likely be the biggest factor to determine whether people choose 3D printing over traditional goods. In the end, the mass market will choose the product with the highest quality at the lowest price point. 3D printing would have to deliver comparable products at similar or lower cost for it to truly disrupt the retail supply chain. Theoretically, 3D printing removes a lot of the manufacturing and distribution costs of traditional retail products and should make the products cheaper to produce. The cost of the raw materials, equipment (including maintenance), last-mile delivery, and most importantly the rights or access to the 3D print files must be factored in. The fact that traditional manufacturing will also continue adopting 3D printing technology to reduce costs would also play a factor. If the overall cost of 3D printing exceeds the cost of traditional retail goods, then same-day delivery, traditional e-commerce and brick-and-mortar will be valid substitutes for 3D printing. Overall, for the 3D printing market to become disruptive, it would take all four features combined with comparable product quality, to create a value proposition that exceeds traditional retail. Customization and novelty will only go so far if the cost or convenience is not competitive with traditional retail.

### ***Bargaining power of suppliers***

A major portion of the value proposition of 3D printing services and home 3D printing capability is the removal of suppliers from the retail supply chain, as illustrated In Figure 9.

The logistics, product manufacturers, product distributors and brick-and-mortar retailers would all be eliminated from the supply chain. The remaining suppliers would be the suppliers of 3D printers and materials, developers or owners of the 3D print files, 3D printing service providers, marketplace suppliers and delivery logistics. In some cases, the first three or four suppliers could be vertically integrated into a single company. This is the case with many of the 3D printing services startups. There is also the potential for all five pieces of the supply chain to be vertically integrated into a single supplier that manufactures and owns the 3D printing equipment, owns rights to key 3D files, has an established marketplace and has last-mile delivery logistics. For the purposes of analysis, the bargaining power of each of the five supplier categories will be analyzed separately.

The developers of 3D print files are the universal suppliers in the industry. These files control the form, function, and value of the technology. Without these files, all that is left is a fancy, expensive machine with limited capability to disrupt any major facet of the retail supply chain. There would be high levels of competition within this segment of the supply chain. This segment would be similar to the mobile application development sector. Many companies and individuals are capable of producing high quality digit images and files, resulting in an extensive network of content providers. Bargaining power and willingness to pay would be based on the quality of the programming, originality of design, and the protection of the intellectual property. Some product files would be easy to replicate and others would take significant time. In general, more intricate and elaborate design would result in a higher price points. The bargaining power would be relatively low for more generic items that anyone could replicate. Modeling it off of the open source development concept would be logical. Open source would mean that anyone, including the home 3D printers themselves, could develop their own product files. This model has allowed the mobile application sector to capture network effects of numerous developers, but still provide the opportunity for companies and individuals to profit. Some of the most



profitable new companies are in the mobile application sector; of course, the size of the 3D printing network would be a lot smaller than the mobile space. Regardless, it would be a mistake to have closed source development, fail to protect intellectual property, or charge too much for files. Intellectual property protection would play a major role in this segment of the supply chain. Piracy would be a concern, similar to music or video files. In many cases, existing manufacturing companies would enter the product design business for 3D printing. This would be analogous to the music industry switching from physical to digital, or the software world shifting from proprietary to open source. Like any content based supply, the higher quality, higher demand products will have a higher price point. The more valuable content a supplier owns, the more bargaining power they bring to the table.

Without the 3D printing equipment or materials, there is no value or industry. Certainly without files there is no product, but the number suppliers capable of generating files greatly exceed the number of suppliers capable of designing and building 3D printers. That being said, there are dozens of 3D printer manufacturers competing in the space. Whether the equipment suppliers own the customer comes down to whether there is a 3D services supplier or marketplace middleman. Chances are, if there is a middleman, the marketplace or service owns the customer due to an existing customer base or easy to use platform. In those scenarios, the end customer may not even have knowledge of the equipment or the equipment provider. In the case of home 3D printing, the equipment provider clearly owns the customer since the only other suppliers are delivery providers and the 3D print files. The quality of the equipment is the single biggest factor in the value of the product. The technology involved is rapidly improving, involves technical complexity and intellectual property. Although there is extensive competition between the equipment manufacturers, there is so much disparity between specifications and capability that there is minimal price competition. As capabilities become more standardized and the differentiation decreases, the bargaining power will decrease. The materials also become very

valuable. Once the customer is locked into a specific printer, their only option is to purchase materials from that vendor. This is similar to the ink jet printer industry, which uses a two-part tariff pricing strategy, charging once for the printer (fixed cost) and then charging for print cartridges replenishment (variable costs). Often in a two-part tariff, the fixed cost is kept lower (even selling at a loss) to lock customers in and charging a high variable cost to extract maximum value from the customer. The usage of a two-part tariff pricing strategy would increase the bargaining power of the equipment supplier.

3D printing services own and operate the equipment; however, this alone does not generate sufficient bargaining power. They are the ones investing in the technology and they can determine pricing based on their investment time horizon, but providing the service alone does not mean they own the customer. Smaller providers with smaller customer base would have less bargaining power against the supplier of equipment and printing material. Larger scale service providers would increase their bargaining power with the equipment suppliers. However, they would all be at the mercy of the owner of the marketplace. The supplier who owns the marketplace provides the connection between the product and the customer. They bring value to the industry by connecting with customers. Marketplaces with access to large numbers of customers would hold the most bargaining power and likely get major discounts from the service and equipment providers due to the high customer access.

Last-mile delivery suppliers hold the lowest level of bargaining power. There are product delivery alternatives that the suppliers can utilize. Product delivery is the lowest portion of the value chain. There are benefits to the speed and accuracy of delivery, but with so many viable alternatives the bargaining power is minimal. Of course, vertical partnerships can change the dynamic. Last-mile suppliers that can also provide retail or workroom floor-space, enhance their bargaining power. Overall the supplier bargaining power goes to whoever owns the marketplace. In a scenario without a service provider the bargaining power reverts to the equipment provider. As mentioned, in many cases the

suppliers are vertically integrated. After understanding who holds the bargaining power, it is easier to understand which vertical combinations create the most value. It becomes obvious that large marketplace owners operating their own 3D printing services would have major bargaining power over the equipment suppliers due to the potential scale they offer, especially if they have integrated logistics. 3D printer equipment suppliers who also provide 3D printing service would increase their bargaining power, but a large marketplace would still own the customer.

### ***Rivalry among existing competitors***

The 3D printing services industry is in the very early stages, but there are a large number of 3D printing service companies in operation in the United States and Europe. These companies include: ExOne, getitmade, GXSC, Moddler, Cubify, iMaterialize, Mixee Labs, Offload Studies, 3DLT, PartSnap, PrintTo3D, Sculpteo, IMAKR and Shapeways. Shapeways may have the most market share with a large product library of over 1,000 items and a user community over 400,000. There are two companies that are leveraged vertically; each owned by major players in the 3D printer industry: RedEye On Demand, which is owned by Stratasys; and 3D ProParts, which is owned by 3D Systems (3Ders, 2015). None of these companies have achieved significant national scale. Most provide their service with online user interfaces and shipping for product delivery. There are some companies that also provide physical access to printers. This remains a niche business with numerous companies competing for business. Based on service reviews, there are inconsistencies on user interface, print files, print quality, and delivery times. Many of the top 3D printing services print and ship from Europe, which extends the delivery time. There are clear advantages to using a service over owning your own printer, such as: no investment cost, less technical knowledge, and access to higher quality printers and options. However the drawbacks include: waiting for delivery, lack of direct interaction with the printing, dimension issues,

and mistakes or issues that are not known until the product is delivered. Many of these issues would be eliminated with faster delivery service.

UPS and Amazon are two prominent entrants in the 3D printing service space that may have the capability to achieve national scale. UPS is vertically integrating 3D printing services, its UPS Store marketplace, and last-mile logistics to establish excellent positioning in the emerging market. Amazon is partnering with 3D printing service providers and leveraging its extensive online marketplace. UPS initially launched 3D printers at six different UPS Store locations as a market test. Following the success of the market test, UPS announced that it will be expanding its 3D printing services to nearly 100 locations nationwide. The expansion is largely due to high demand from small business owners. "We are committed to offering small business owners, entrepreneurs and consumers high-tech solutions in order to assist with all of their business needs," said Michelle Van Slyke, vice president of marketing and sales at The UPS Store. "We launched the pilot to evaluate if there was demand for 3D print and we're excited to be announcing an expansion, giving even more small business owners access to high-quality, professional 3D printing. We look forward to being a part of the future of the 3D printing industry." The UPS Store is the first nationwide brick-and-mortar retailer to offer 3D printing services (Phillips, 2014). Two main advantages are faster shipping due to collocation and the ability to go to the store and interact with the printing, receive personalized advice, and increase the speed of iteration.

In July 2014, Amazon unveiled its 3D Printing Store, which offers hundreds of customizable 3D printed products, including toys, jewelry and home decorations. "The introduction of our 3-D Printed Products store suggests the beginnings of a shift in online retail - that manufacturing can be more nimble to provide an immersive customer experience," said Petra Schindler-Carter, Amazon's director for marketplace sales. Amazon has partnered with 3D printing production firms 3DLT and Mixee Labs. Mixee co-founder Nancy Liang said the new marketplace "has the potential to become the app store for

the physical world." (O'Toole, 2014) By leveraging its massive online marketplace, it has access to millions of customers, which has the potential to dramatically increase the market size. With so many 3D printing services that are very difficult to differentiate, the Amazon brand name and dedicated customer base is very valuable. Additionally, Amazon's focus on fast and cheap (free with Prime) delivery makes it an easier service to use.

Home 3D printers are becoming less expensive and more capable. The industry experts at Canalys predict that the true growth will occur when well-known IJP companies like HP enter the market. Currently MakerBot and 3D Systems are the most widely recognized 3D printing companies. XYZSystems is targeting home users, hobbyists, and teachers and students with its new introductory single color model, the \$499 da Vinci 1.0. "Our goal is to lower the entry barrier for regular users, to instigate a conversation, to get users to start using 3D printing," said Phair Tsai, a marketing specialist at XYZSystems. Advanced 3D printers capable of creating larger objects with more materials are becoming less expensive. In the past three years, X Objects' Up Plus has dropped by \$2,500 to \$1,500. Their least expensive model, the Up Mini, sells for \$880. The price goes up for multi-color printers. "We continue—as with all the other 3D printer manufacturers—on the path to improve the product and the design, and making the ... assembly more efficient," said Mike Duma, chief technology officer and co-founder of BotObjects. So far home 3D printers have been used mostly by hobbyists and early technology adopters. 3D Systems President Jerry Castanos is skeptical about 3D printers for everyday home use. "I see it in the business side. Entrepreneurs, small business, a guy with his own storefront," Castanos said. "3D printers are more like copiers, with people going to the nearest store to have 3D objects printed, rather than doing that at home" (Shah, 2014).

USPS has the last-mile logistics along with a few other complementary resources that would potentially position them for entry into the 3D printing market. However, no market tests have been

conducted or proposed. Overall, there are numerous competitors in the 3D printing industry, but none of the companies have developed significant scale or revenues. UPS has implemented a successful program in its UPS Stores, but it has not yet developed into a significant revenue source. Amazon has the best positioning with its massive marketplace and webhosting capability. The home 3D printing market is growing, but the capabilities are changing so quickly that there are no market dominant products. The market is extremely new and there is a long way to go before any one competitor establishes a major national presence and significant scale.

### ***Bargaining power of buyers***

The buyers of 3D printers and 3D printing services are residential and business customers, many of them are hobbyist, artists or entrepreneurs. With a highly competitive market and numerous consumer options, the customer has significant buying power. However, the market is still very new and customers are willing to pay a premium to try the service a few times, out of curiosity or for the novelty. The ability to customize products may entice repeat business. Regardless, as the service becomes more mainstream, ease of use, quality, delivery speed and price will become major factors for survival. The winners will likely all have a good combination of ease of use and quality, and the differentiators may come down to delivery speed and price. The market will likely remain a niche market with a relatively high willingness to pay. If quality and ease of use are relatively equal, customers will choose the lower price and faster delivery. Companies should look to stay competitive on quality and ease of use in the short-run, but in the long-run, position themselves in terms of price and faster delivery. As the price of home 3D printers drop, printing services need to stay competitive on either price or quality. Overall, with so many options, the customer has a lot of choice and a lot of bargaining power.

### ***Barriers to entry***

The barriers to enter the 3D printing services sector are relatively small, as demonstrated by the large numbers of competitors. With a relatively small investment, a start-up can buy 3D printers, build a website and be in business. Building a community of users helps grow a 3D print library quickly, with minimal cost. Scaling the business and developing a customer base is probably the most difficult entry barrier. With companies like Amazon getting into the business, the entry barriers would likely increase. Developing partnerships along the vertical supply chain would be extremely beneficial in these early stages of the market. It is important to combine technical capability and access to customers.

### ***Attractiveness Summary***

There is no doubt that 3D printing, and specifically 3D printing services, is a growing business. Market experts expect the industry to almost double every year for the next several years and surpass \$20 billion worldwide by 2020 (Canalys, 2015). While home 3D printing is a major portion of the projected industry growth with printers becoming more affordable, experts believe that the industry will resemble the photo-copy industry, with most customers choosing to use services instead of investing in expensive, hard to use and maintain equipment (Shah, 2014). While there are bold predictions that 3D printing will revolutionize the retail supply chain, there are many substitutes that provide more cost-effective convenience. The appeal of 3D printing is the ability to customize, which could be the largest driver of growth in the industry. Customization alone is not likely to make a significant impact on the retail supply chain. The most difficult aspect of the industry is obtaining a customer base. Whoever owns the customer base, owns the bargaining power. A large customer base is the key to achieving the industry growth potential. Aside from access to customers, the entry levels to 3D printing services are relatively low. This has created a tremendous amount of competition, increasing customer buying power

and making the industry less attractive for new entrants, unless they have a major differentiator or inherent access to a large customer base. Since no entrant has achieved national scale and significant market share, there is room in the market for companies that can leverage existing competitive advantages to achieve national scale and access to customers. Partnerships within the vertical supply chain that combine technical capability and access to customers would be very valuable. Same-day delivery is an emerging market, and industry attractiveness depends heavily on how the actual market demand develops. Overall, the attractiveness of the 3D printing services industry ranges from an unattractive industry with a relatively small customer niche, low entry barriers and excessive competition; or an extremely attractive national industry with the benefits going to whoever can achieve access to a national customer base and develop accessible scale.

### **USPS Strategy Analysis: 3D Printing and Distribution**

There is a potential for the Postal Service to enter the 3D printing and distribution market and generate much needed revenue. USPS would not be the first Post to get into the market. The United Kingdom's Royal Mail started a trial of in-store 3D printing in December of 2014. According to Royal Mail chief customer officer Mike Newnham, "3D printing is an emerging technology that has many applications and offers an innovative way to create unique or personalised objects. It can be prohibitively expensive for consumers or small businesses to invest in a 3D printer, so we are launching a pilot to gauge interest in 3D printing to sit alongside Royal Mail's e-commerce and delivery capability" (Russon, 2014).

Christensen Associates analysis predicts that the centralized 3D printing scenario could lead to an '18 percent increase in commercial package volume for the Postal Service... and \$485 million in additional annual revenue'. This also opens up the door for retailers and shipping companies to invest in the production portion of the centralized 3D printing vertical supply chain. Retailers like Amazon and



shipping companies like UPS have already entered the market. The Postal Service could leverage its 67 million square feet of unused industrial floor space and partner with 3D printing companies to lease space to house their 3D printer operations and reduce logistics costs. Either way, centralized 3D printing could provide a significant boost to shipping revenues (USPSOIG, 2014c, pp. 12-14).

If home 3D printing takes off, there could be a reduction in e-commerce, potentially reducing package volume and negatively impacting the Postal Service. However, home 3D printing would create a new market for shipping 3D printer materials, which would align with USPS capabilities. At a low level of disruption, this scenario could result in a net increase of 12 percent in the Postal Service's commercial package volume and a \$357 million increase in revenue (USPSOIG, 2014c, p. 14).

### ***Resource Advantage Alignment***

There is no doubt that the existing last-mile logistics infrastructure of 320 processing facilities, 211,000 vehicles and 244,000 delivery routes would complement 3D printing services delivery. The additional 3D printed volume would fit within the existing mail and package delivery process. The same resources that execute regular delivery could generate additional revenue. As costumers become more concerned with delivery time, 3D printing services may need to achieve faster product shipment. According to the USPSOIG, "The Postal Service could encourage these businesses to locate near or even inside postal processing plants, which often have excess industrial space" (USPSOIG, 2014c, p. 13). Those companies would better serve customers by entering products seamlessly into the mail. With 67 million square feet of surplus interior facility space across the network, there would be ample space to house 3D printing operations, either by lease, partnership or procurement.

With such a highly technical operation and high variability of results, customers may find value in being able to physically interface with printers and printer experts. The Postal Service could

potentially provide that retail access. Select retail units out of the 35,641 retail units could be chosen to provide retail space for 3D printing retail services similar to the UPS Store model. The Postal Service has one of the world's largest information networks with 35 petabytes of secure data storage that would be capable of hosting a web portal for 3D print designs, with the necessary security to protect the Intellectual Property. The information system is also complementary to the tracking requirements on the delivery side. 263,000 recently deployed Mobile Delivery Devices (MDD), which enable real-time scanning capability, would provide the necessary tracking capability for deliveries. Overall, this strategy aligns with a majority of the resource advantages owned or controlled by the Postal Service.

### ***Positional Advantage Alignment***

With its well established positioning in the last-mile logistics segment of the package delivery industry, the Postal Service would be well positioned as a fast, low-cost delivery provider for 3D printed products. The existing Priority Mail service, with its 'If it fits it ships' flat rate boxes is well suited for affordable, expedited delivery of 3D printed goods. The USPS brand is already well established and since it symbolizes trust, reliability, service and national pride, it would be well suited for handling 3D print files with intellectual property concerns. Existing relationships with suppliers could precipitate vertical partnerships, which appear to be a major key to executing a viable and sustainable 3D printing services strategy. By leveraging key resource advantages, namely its extensive logistics network, USPS is well positioned to partner with 3D printing service providers. USPS may be the only competitor that can afford to operate in less urban areas, where customers could be more interested getting 3D printed materials delivered. The Postal Service also has an extensive network of processing facilities and carrier units that can serve as drop-off points for local distribution of 3D printed volume. The Postal Service is positioned to gain customer access through its extensive brick-and-mortar retail presence; it is also positioned to access online customers on its website and mobile applications. On average, 3.2 million

customers visit post office lobbies every day, six days per week. Usps.com receives 3.4 million visitors each day, and could add a portal to 3D printing services on the main page. There would be some concern with customer access positioning for e-commerce customers. USPS is not established as an e-commerce company and it would be a challenge to compete with Amazon.com's 5.6 million daily visitors shopping for products and merchandise, many of whom are locked into Prime memberships (Statista, 2015b). Partnerships with an established e-commerce customer base would improve the positioning. Overall, this strategy is very well aligned with the Postal Service's positional advantages.

### ***Capability Advantage Alignment***

The Postal Service is the last-mile delivery expert, with significant knowledge-based capabilities resulting from extensive delivery experience in every neighborhood in the country. This eliminates the normal learning curve that many other entrants would have to overcome. Priority packages containing 3D printed products would be no different than any other Priority package, and as such, the APPS and other package sorting equipment would likely be utilized to maintain the efficiency and low cost of Priority package delivery. The 3D print materials would likely be small lightweight packages of powders or spools of resin. The Postal Service currently delivers over 60 percent of the commercial lightweight packages to their final destination. The USPS capability to sort and deliver lightweight packages could be leveraged to handle an increased volume of 3D print materials.

The extensive maintenance capability of the Postal Service could be leveraged to provide maintenance support for industrial 3D printers. This would be helpful if USPS were to purchase 3D printers or partner with a 3D printing service. Many of the maintenance technicians and mechanics have extensive experience with industrial IJP applications and computer software interfaces. This maintenance capability could prove unnecessary if the 3D printing service provider handled their own

maintenance. Within the maintenance departments there would be an internal need for 3D printed replacement parts. Partnerships with 3D printing services could satisfy that internal demand and expand the scale of the business, while reducing internal maintenance costs. No other competitor would have the capability to supply the maintenance support or become a customer for internal 3D printed parts.

The Postal Service has the organizational capability to manage the implementation of a new process on a massive scale, and local management has the capability to optimize the new processes based on local conditions. The Postal Service has a long history of implementing new technical processes and systems. Mail processing clerks and mailhandlers have experience operating advanced machinery, which could be complementary to operating 3D printers. Many of the machines currently operated by clerks and mailhandlers involve clearing jams, resetting equipment, and operating user interfaces. The USPS information systems capability can be leveraged to develop web and mobile based interfaces for storage, retrieval, and uploading of 3D print files. However, the Postal Service does not have any direct experience-based capability in the 3D space pertaining to operations, software interface, or technical support. Extensive training would be required to familiarize operations and maintenance with the technical aspects of 3D printing. This operational capability could prove unnecessary if the 3D printing service provider handled their own operations.

Local sales capability would likely struggle to develop a local retail 3D printing business. So, while 3D printing is a perfect fit for the logistics capabilities, the skills required to manage a new customer facing product do not align with existing capabilities. USPS is not a product sales company, and is much better suited as a processing, distribution and delivery service provider. Recognizing these capability deficiencies, it would be best to develop partnerships with companies that provide 3D printing technical capabilities and user interface capabilities. Overall, the 3D printing strategy aligns with many of the organizational capabilities, but partnerships would be needed to fill in the capability gaps.

### ***Initiative vs. Coordination***

To analyze how the Postal Service's balance between initiative and coordination aligns with the 3D printing services strategy, the strategy will be broken into two segments, including: deploying 3D printers to select post offices, and partnering with 3D printing service providers. A well-coordinated national strategy could be developed and implemented to install 3D printers in post offices throughout the country. However, relying on local autonomy and initiative to customize the service to the needs of local customers would be a concern. The concerns are lack of technical capability to interact with printers and a lack of incentives to increase sales and provide adequate service. The typical post office clerk would not have enough initiative or capability to provide the necessary level of sales and support. The only way that the UPS Store model would work is to contract out the local sales and support component, or lease unused post office space directly to a 3D printing service provider. It is uncertain whether plant clerks and mailhandlers would have the necessary levels of initiative or incentive to operate 3D printers. Due to the technical requirements it may be best to contract out that function or lease out unused industrial space to a 3D printing service provider. The Postal Service has the necessary levels of coordination to manage the logistics components of the 3D printing services business.

### ***Political Considerations***

Politically, there are concerns with the Postal Service being permitted to enter the e-commerce market or purchase 3D printing equipment to compete directly with Amazon or other 3D printing services. With proper notification and approval from the PRC, the Postal Service would be able to conduct a market test of 3D printing services. However, the portion of the legislation concerning disruption could be problematic for gaining approval. There are political concerns with public and congressional anti-competitive sentiment, and there might be potential lobbying efforts aimed at

preventing USPS from entering a new market. Establishing partnerships with 3D printing service providers would be a lot less difficult, politically. There may be anti-competitive concerns providing a private company collocated space on Postal Service property, which could be construed as giving them an unfair advantage in the marketplace. Similar concerns may arise with hosting a 3D printing marketplace on USPS.com or Postal Service servers. It would be less concerning to provide a link on usps.com to a 3D printing services website or marketplace. Politically, there would not be any concern with establishing partnerships and providing logistics for 3D printing services. Those partnerships would not be any different than existing shipping partnerships with Amazon or other major retailers.

### ***Labor Considerations***

There would likely be union support for entering into partnerships with 3D printing services due to the associated increase in package volume. The only difficulties might arise if equipment is collocated on Postal Service property and the unions pursue jurisdiction over any of the work. The capabilities of clerks, mailhandlers, and maintenance employees are potentially complementary to operating 3D printing equipment, and while there may be strategic or economic benefits of utilizing postal employees, in all likelihood, it would make sense to have the 3D printing services handle their own operations. Other than potential jurisdictional issues in a collocation strategy, there is little concern with union interference in implementing 3D printing services.

### **Strategy Recommendation**

While experts project that the 3D printing industry will continue to grow rapidly, it is not the most attractive industry due to constantly changing technology, excessive competition and uncertain demand. The Postal Service is well positioned to provide last-mile logistics for 3D printing services. This service could be completely integrated within the current package delivery function. While utilizing

unused industrial square footage within plants sounds like an optimized solution, the political and labor resistance would likely make that strategy infeasible. Due to the lack of technical capability directly related to 3D printing, establishing partnerships with 3D printing services would be recommended to fill in the capability gaps. Partnering with a 3D printing service provider with an established e-commerce presence would improve customer positioning. 3D printing services could benefit from an USPS partnership due to the access to 3.4 million daily usps.com visitors, improved delivery service, efficient returns, internal Postal Service 3D printing business, and potential access to post office retail or industrial space and labor. In the current market, there are numerous 3D printing services that are all struggling to differentiate themselves, leveraging the USPS brand could help provide additional customer access. The Postal Service should also pursue partnerships with 3D printer equipment manufacturers to leverage its lightweight package capability by providing return service and material fulfillment. If USPS cannot establish partnerships with 3D printing services, a partnership with Amazon would also increase revenue. Pursuing partnerships leverages key Postal Service competitive advantages, like last-mile logistics, customer access, and brand, without taking on large capital investments and undue political or labor resistance. The 3D printing industry is growing quickly, and the Postal Service can play a key role in delivery of 3D print products to customers throughout the country, if it leverages its capability to provide last-mile logistics.

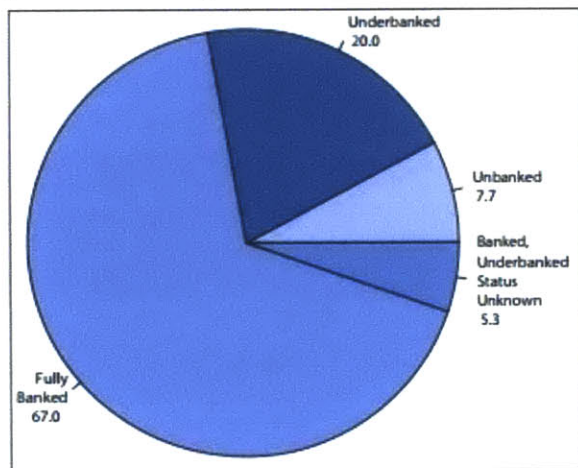
## **Postal Financial Services**

### **Industry Description**

In 2013, there were 9.6 million households that were unbanked, which is eight percent of United States households, and includes nearly 17 million adults and 9 million children. 20 percent of U.S. households, nearly 51 million adults and 17 million children, fell into the underbanked category, which means that they used Alternative Financial Services (AFS) even though they had a banking account

(Figure 10). The majority of the unbanked (53 percent) had never had a bank account, and (37 percent) had an account previously, but had gone without one for over a year. According to the biennial FDIC survey, “the highest unbanked rates continued to be found among non-Asian minorities, lower-income households, younger households, and unemployed households” (FDIC, 2014, pp. 4-7). All indications are that the problem of unbanked and underbanked citizens mostly affects the poor and unemployed, with 57.5 percent of respondents citing not having enough money as a reason and 16.8 percent citing issues with identification, credit, or banking history problems (Figure 11). People also do not trust the banking system, with 34 percent citing lack of trust in banks and 26 percent citing privacy concerns. Making the problem worse is the exit of commercial banks from low income neighborhoods. According to Bloomberg analysis, “Banks have shut 1,826 branches since late 2008, and 93 percent of closings were in postal codes where the household income is below the national median” (Bass & Campbell, 2013).

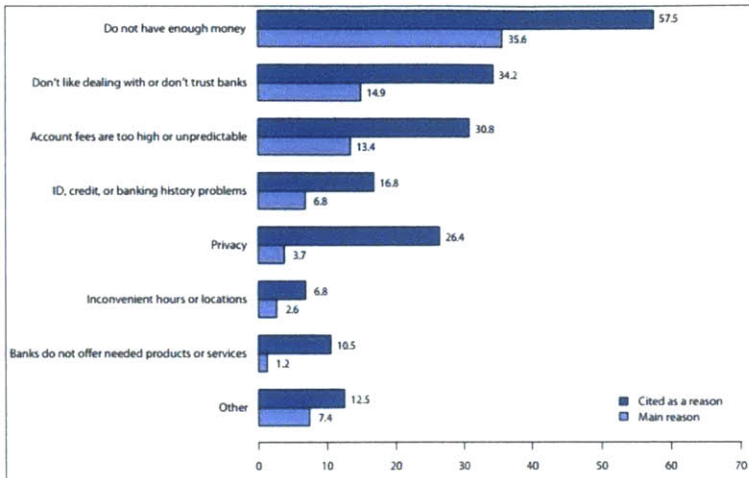
**Figure 10: Banking Status of U.S. Households, 2013**



Source: (FDIC, 2014, p. 4)



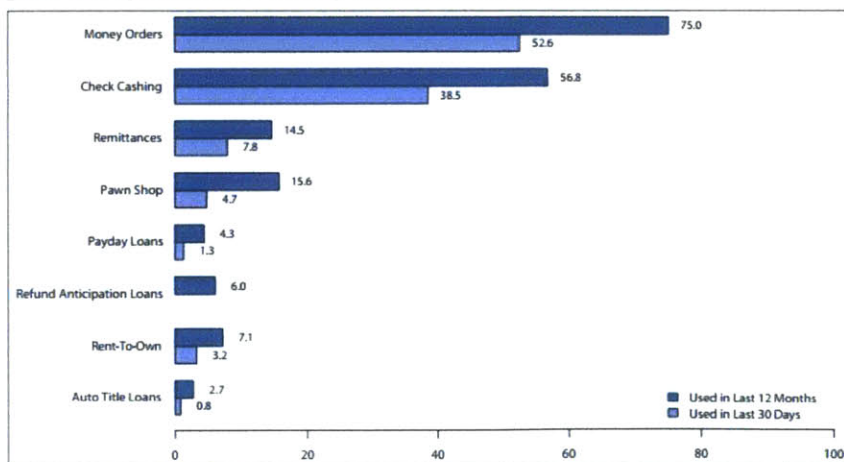
**Figure 11: Reasons Households Were Unbanked**



Source: (FDIC, 2014, p. 7)

25 percent of all households and 63.2 percent of the unbanked households stated that they used AFS services in the last 12 months. 47 percent of unbanked households cited AFS usage in the last 30 days. When asked about AFS check cashing locations, 37.8 percent used a 'grocery, liquor, convenience, or drug store,' 31.4 percent used a large retail or department store and 24.3 percent used standalone AFS providers. The top three uses of AFS were by unbanked in the last 12 months were 75 percent purchasing money orders, 57 percent using check cashing services and 16 percent using pawn shops (Figure 12). Meanwhile, 80 percent of banked households have direct deposit.

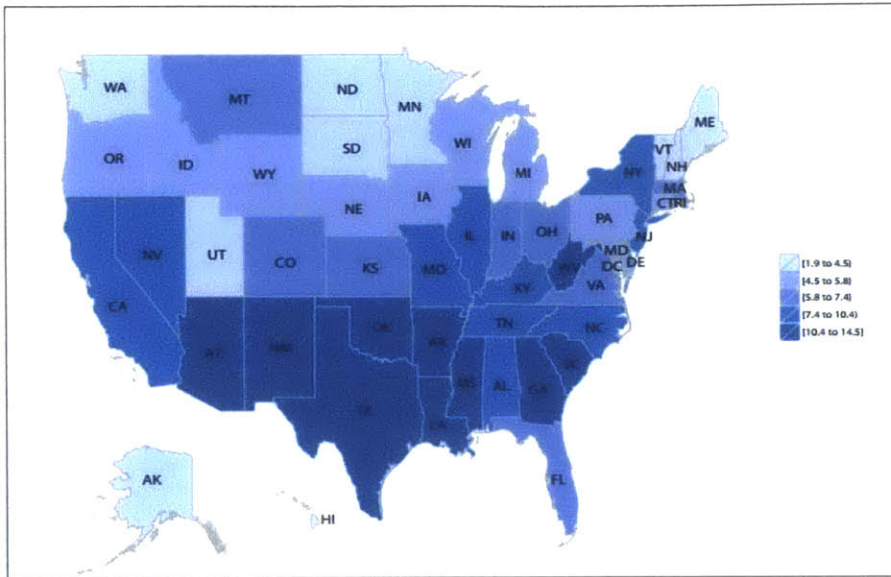
**Figure 12: Specific AFS use by Unbanked in Last 12 Months**



Source: (FDIC, 2014, p. 46)

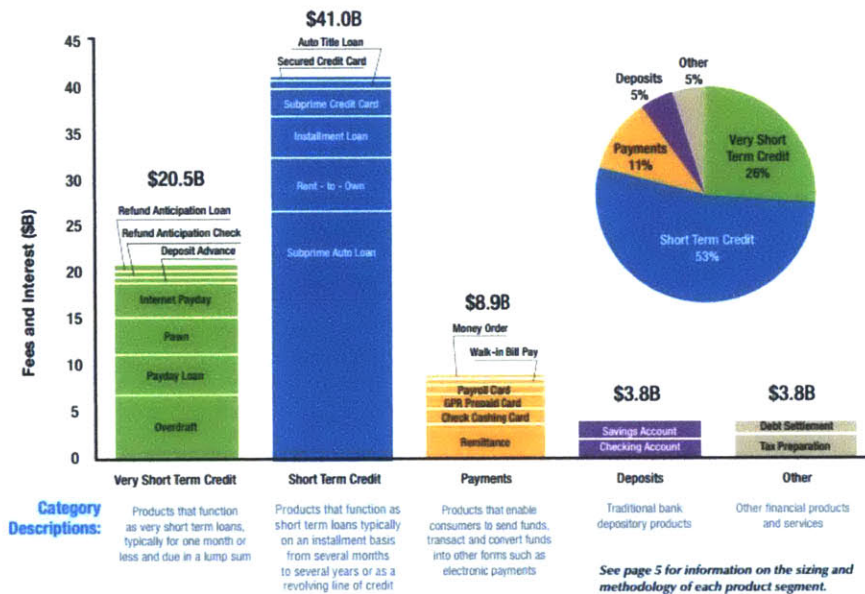
The underserved population is dispersed throughout the entire country, though the percentage is higher (up to almost 15 percent) in the southern and western states (Figure 13). Low income urban areas are also particularly hard hit (Bass & Campbell, 2013). There is a sizeable market that currently serves this unbanked and underbanked population. The Center for Financial Services Innovations estimates that the size of this population is 68 million people, and that the fees and interest that they paid across financial services such as credit, payment, deposit and nine other products totaled \$78 billion in 2011 (CFSI, 2012, p. 1). This averages out to \$1,147 in fees and interest per person, per year. The total underserved market is comprised of nearly 45 million households, with the average underserved household total income at \$25,500. Each household pays approximately 7 percent of their annual income in fees and interest payment, or \$1,733 per year. The total aggregate income of the underserved population is approximately \$1.3 trillion. In 2010, over half of the underserved population had a FICO credit score of 600 or less, representing a shift of over 16 million wage-earning adults from average credit, to damaged credit over a four year span (KPMG, 2011, pp. 2-3). The two largest segments of the industry with the highest revenue are 'very short term credit' and 'short term credit' (Figure 14). The very short term credit segment includes overdraft, payday loan, pawn, and internet payday loans which brought in almost \$21 billion in 2011. The short term credit segment includes subprime auto loans, rent-to-own, installment loan, subprime credit cards which brought in \$40 billion. Those two segments generate 79 percent of the underbanked revenue. The largest revenue segment was subprime auto loans, which was 35 percent of the underbanked revenue at \$27 billion. (CFSI, 2012, pp. 1-2)

**Figure 13: Unbanked Rates by State 2013**



Source: (FDIC, 2014, p. 19)

**Figure 14: Industry Revenue by Category and Segment in 2011**



Source: (CFSI, 2012, p. 2)

All of this combines to be a major problem, with 28 percent of the American public underserved by banks and paying thousands of dollars of their income in fees and interest to gain access to their money and survive between paychecks. Americans without bank accounts do have a several options to cash checks, but most options came with fees. Check-cashing stores will often charge a flat fee around

five dollars and a one percent service fee, or \$15 for a \$1000 check. Some banks will cash checks issued by that bank for free, and others charge a five dollar fee. Retailers like Walmart will charge a three dollar fee to cash checks under \$1,000 for and six dollars for checks between \$1,000 and \$5,000. Prepaid card accounts often charge a five dollar monthly fee to cash checks at ATMs (Zhen, 2015). These fees can add up, costing between \$60 and \$390 annually to cash a \$1,000 paycheck every two weeks.

For so many Americans living paycheck to paycheck, one unexpected expense can threaten the ability to pay the bills. Consequently, many Americans resort to payday and auto title loans to bridge the gap. The average payday loan is only for \$392, but with such short repayment periods averaging 18 days, the Annual Percentage Rate amounts to 339 percent (Table 2). To make matters worse, borrowers tend to recycle the loan and pay only the interest and fees, known in the industry as ‘churn’. The churn of existing loans every two weeks accounts for 75 percent of all payday loan volume and results in an additional \$3.5 billion in fees each year. The average payday borrower has nine loan transactions annually, and only two percent of the volume is attributed to non-repeat loans. Politicians and industry watch groups are concerned. Consequently, 18 states and the District of Columbia have recently enacted double-digit rate caps on payday loans; however, triple digit APR rates are permitted in the other 32 states. “Studies have shown that payday borrowers are more likely to have credit card delinquency, unpaid medical bills, overdraft fees leading to closed bank accounts, and even bankruptcy” (Center for Responsible Lending, 2012). More than two million Americans utilize auto title loans every year. These loans use the title of the car as collateral and are plagued with many of the same issues and ramifications of payday loans. Auto title loans are not permitted in every state, and the pattern correlates with the geographical trend of underserved Americans, with southern and western states allowing them (Figure 15). Auto title lenders charge excessive fees, on average costing borrowers \$1,200 per year on a typical \$1,000 loan. Lump-sum payments typically consume half of the borrower’s monthly

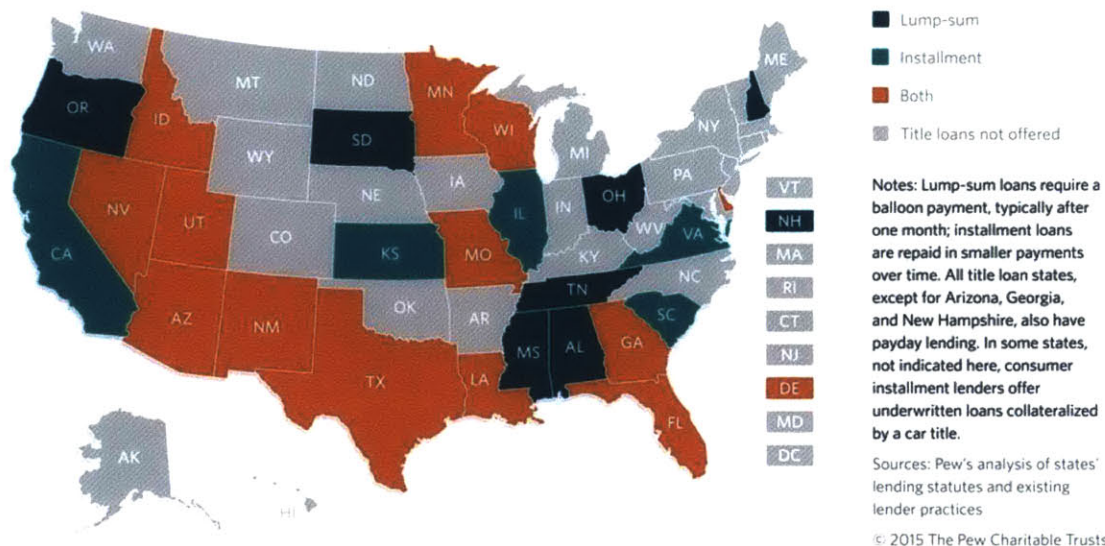
income. Since the loans tend to be larger, on average, auto title borrowers spend twice the annual amount in fees than payday borrowers. To make a tenuous situation worse, the borrower also risks losing their primary source of transportation, at a six to eleven percent repossession rate (The Pew Charitable Trusts, 2015).

**Table 2: Summary of Payday Loan Characteristics**

	Mean	Median
Loan amount	\$392	\$350
Fee per \$100	\$14.40	\$15
Duration	18.3 days	14 days
APR	339 percent	322 percent

Source: (CFPB, 2013, p. 17)

**Figure 15: Auto Title Loan Availability by State**



Source: (The Pew Charitable Trusts, 2015)

Despite the growth of electronic accounts, cash remains a key component of the American economy, especially with the underserved. Over 25 percent of all US retail transactions still utilize cash. 47 percent of underserved individuals report that they prefer to pay with cash, be paid in cash and consider paper money their primary mode of payment. The lack of fees makes cash particularly

attractive to the underserved. Yet as many businesses and financial providers move away from the hassle, risk and expense of handling cash, the underserved are being forced to become reliant on electronic channels for purchases, bill payments, paychecks and government payments (CFSI, 2013, p. 9). Prepaid debit cards are an option for the underserved, with 22 percent of unbanked and 13 percent of underbanked households citing that they have used prepaid debit cards in the last 12 months. 79 percent of the unbanked prepaid card users cited their reasons for using them were, 'to pay for every day purchases or bills' or 'receive payments'. Comparatively, only eight percent of all households reported using prepaid debit cards (FDIC, 2014, pp. 4-7). There are trends towards mobile banking options and there are financial technology (fintech) startups looking to leverage mobile technology to improve banking access for the underserved. Based on the 2012 survey results, 91 percent of underbanked households had access to mobile phones, and 65 percent had access to smartphones, both of which are actually higher than the banked households (87 percent mobile and 59 percent smartphone) and unbanked households (68 percent mobile and 33 percent) (FDIC, 2014, p. 10).

As wealth disparity in the United States widens, politicians and Non-Governmental Organizations (NGOs) are seeking solutions to help underserved Americans gain financial stability and end the cycle of repeatedly spending high percentages of their income on subprime financial services. Some believe that the United States Postal Service can help solve the problem by reinstating postal banking. At the same time, the financial sector has also taken notice of the large percentage of underserved Americans and the potential revenue that they represent. They are working on developing new products and leveraging fintech to better identify less risky customers in the underserved market and develop win-win alternatives.

### ***Threat of substitute products or services***

In an industry dominated by payday and auto title lenders, prepaid debit cards, pawnshops, standalone AFS locations, convenience stores and liquor stores there are few good alternatives for underserved Americans to gain access to basic financial services. Of course, one substitute is the traditional banking system, but for most underserved Americans this option does not work for them. Banks could adjust their requirements and develop products better suited for the less financially secure. Banks can also attract people back to the system with promotions for new accounts. The only other substitutes underserved customers have are bypassing the system all together by storing cash at home or 'living off the grid', bartering, black market options like loan sharks and illegal gambling, and or resorting to crime. Each of these options comes with significant risks and for most underserved Americans they feel like they have no choice but to pay high fees for basic financial services.

### ***Bargaining power of suppliers***

Traditionally, there have been few suppliers in this industry since check cashing and small loans were primarily provided by small independent shops. They generated the lending capital and mitigated the risk of declined checks and defaulted loans by charging customers very high fees. In these cases, the only supplier involved was the property owners and landlords who could bargain with business owners over leasing fees. This bargaining power has little to do with the level of the AFS fees charged to customers. Today, large regional or national companies dominate the market. These companies are often categorized as "monoline" lenders that provide only payday loans and multi-service lenders that offer an array of AFS products such as payday loans, check cashing, money orders, and bill paying services. These companies also have limited suppliers and continue use high fees to mitigate risk and finance their lending capital.



In some states, the market is changing due to new regulations designed to limit predatory payday lending and the exorbitant interest rates and fees. In those states, commercial banks are becoming active in the industry, by supplying capital to lenders and even entering into partnerships, known as 'rent-a-charter' deals, to originate payday loans. This practice of using commercial bank brokerage circumvents these new regulations by invoking federal preemption through the Federal Deposit Insurance Act. Some federal and state regulators are working to close the loopholes and improve the regulation (Center for Responsible Lending, 2012). According to the FDIC, "Some insured depository institutions have failed to properly assess and control the risks associated with their payday lending programs. The consequences of deficiencies in risk management practices for payday lending programs can be severe. The risks of payday lending are challenging for bankers and merit the continuing attention of depository institution supervisors" (FDIC, 2003). In the cases where banks become brokers and suppliers of payday loan capital, they wield significant bargaining power since the payday lenders now have limited options to get the capital they need to originate their loans.

### ***Rivalry among existing competitors***

The national check cashing/payday loan industry has annual revenue of \$11 billion a year employing 90,000 employees and nearly 15,000 businesses. The leaders in the industry are AARC and Cash America International (IBISWorld, 2015). The pawnshop industry is a \$7 billion industry with 5,500 business and nearly 29,000 employees (IBISWorld, 2014). While convenience stores, liquor stores, and some large retailers provide check cashing and prepaid debit card services. The industry is dominated by stand-alone payday and auto title lenders and pawnshops. Once primarily comprised of independent stand-alone AFS providers and pawnshops, national and regional companies have taken control of the market. State and federal regulations have recently placed some limits on their ability to provide predatory loans which has caused some shifts within the market.



### ***Bargaining power of buyers***

The buyers in this industry are the underserved customers looking for AFS. They have extremely low bargaining power, which is evident by the exorbitant fees and interest they are willing to pay to get a loan. According to the Center for Responsible Lending (2012), "The typical two-week payday loan has an annual interest rate ranging from 391 to 521 percent." With competition there is some ability to shop around for rates, but the rates are consistent amount the primary competitors. With the economic issues following the 2008 financial collapse, even more people found themselves unemployed or underemployed, making them even more desperate for AFS options.

### ***Barriers to entry***

Historically, barriers to entry in the AFS market were extremely low. To validate this statement, one only needs to notice how prolific AFS providers are. Nationwide, there are 15,000 check cashing payday loan businesses, which is over twice the number of Starbucks locations (IBISWorld, 2015); (Center for Responsible Lending, 2012). With desperate cliental willing to pay high fees and 521 percent interest, the margins were high and the resources to setup shop were minimal. However, large regional and national chains have saturated the market and made new entry a lot more difficult. Very little prevents small businesses from cashing checks, but the bulk of the money is in loans. The economies of scale and positioning achieved by the national and regional monolines and multi-service lenders make competitive entry difficult. Regulations have dramatically increased the entry barriers in many states. This regulation significantly reduces the margins and makes entry more difficult.

There is an emerging segment providing fintech solutions that utilize mobile technology to provide new options for the underserved. The entry barriers in this emerging sector of the industry are

relatively low. Aside from regulatory hurdles, all it takes is a good mobile application to achieve immediate market penetration.

### ***Emerging Industry Trends***

According to Kevin Tynan, senior vice president of marketing at Liberty Bank for Savings in Chicago (2014), “Financially underserved customers are a natural fit for community banks. The segment greatly resembles the original populations that gave birth to many Main Street banks and savings & loans. Smaller banks and credit unions can tap into this booming market by rethinking their concept of checking accounts and offering a low-cost, low-maintenance product.” Statements like this are an indication of a recent trend of commercial banks recognizing the potential of catering products to segments of the underserved population. Much of the focus moving forward is on using better information to conduct risk assessment and credit approvals. In many cases, they are finding that some customers in the underserved category are not as risky as they appear when using traditional credit analysis. Financial consultant KPMG (2011, p. 4), illustrates an example of a ‘rebuilder’ customer who would normally be excluded with traditional assessments, “a middle manager who has been unemployed for 4 out of the last 24 months; has a family and children; lacks savings; may have experienced a setback such as a divorce, high medical expense, or foreclosure; had an above-average credit score before the setback; and now rents a home.” Fintech analytic innovations enable utilization of social media to analyze online activity to identify reliable consumers overlooked by traditional credit rating methods. These innovations are being scrutinized by regulators to consider ‘aspects of information privacy, fair lending laws, and Fair Credit Reporting Act (FCRA) compliance.’ Companies such as Sociogramics and Kabbage are developing data mining tools to analyze social media profiles and online interactions. Others startups, like SoMoLend, utilize applications that enable crowdsourcing loans for small businesses. Emerging companies like SmartyPig and Piggymojo use mobile applications and

networks to facilitate savings by utilizing reward incentives and social networks for motivation. Motozuma's application connects let first-time and low-income car buyers with social networks to gain support and funding, and even qualify for matching funding for auto dealers (CFSI, 2013, pp. 7-8).

Despite the growth of electronic accounts, 25 percent of all US retail transactions still utilize cash. 47 percent of underserved individuals prefer cash. Yet, as many businesses and financial providers move away from the hassle, risk and expense of handling cash, the underserved are being forced to become reliant on electronic channels for purchases, bill payments, paychecks and government payments. Fintech providers are expanding consumer access to electronic accounts by facilitating improved cash conversion applications. Several startups have developed cash conversion applications services. Tio Networks uses mobile technology, self-serve kiosks, and point-of-sale bill payment to enable cash conversion. Plastyc offers debit cards that allow customers to load cash at 50,000 locations, deposit checks remotely and buy mobile phone minutes. Wipit's mobile payment network enables purchases, payments, cash loading, and mobile remittance. Nexxo provides stand-alone kiosks to load remittances, pay bills and convert cash. New electronic transfer services including iSend, Boom Financial, PayNearMe and ZipZap provide access to online transactions and money transfers utilizing cash on the front end. Even PayPal is entering the cash conversion market, by partnering with Coinstar and MoneyGram to provide 'offline loading venues'. Chexar has implemented technology that enables account holders to instantly access funds by taking a picture of a check with a mobile phone. Immediate access to funds is particularly valuable for underserved consumers, who often carry low balances and hold off paying bills. (CFSI, 2013, pp. 9-11).

Fintech innovations in the B2B2C area are developing synergies that can help the underserved get access to electronic funds and connect to appropriate loan providers. Prepaid provider Plastyc, powers H&R Block's Emerald Card MasterCard platform for tax refund delivery, which helps expand

usage of both services. ReadyForZero partners with banks to funnel at-risk customers to its debt management services. BillFloat partners with bill payment channels like, MetroPCS/T-Mobile, Comcast and GEICO, to offer short-term credit options. BillFloat uses consumer data from past utility bill history and other payment activities to assess credit risk (CFSI, 2013, pp. 16-17).

A number of these emerging solutions will likely help many underserved households avoid traditional AFS products. However these solutions will not assist everyone, there will still likely be a percentage of unbanked households that do not have access to mobile technology that would be forced to rely on AFS products to get by. The improved credit assessment analytics will help many customers regain access to the banking system, but this would only remove a segment of the underserved, leaving the worse-off behind.

### ***Attractiveness Summary***

The AFS market comprises 28 percent of American households and 68 million people, with nearly \$80 billion in revenue from fees and interest. The total aggregate income of the underserved population is approximately \$1.3 trillion. This is a huge market, even exceeding USPS revenue, and the poorest Americans are paying the price with over seven percent of their income going to AFS fees and interest payments. Many companies in the check cashing, pay day loan, auto title loans, and pawnshop industry have made a lot of money in this sector. The business model is certainly risky, but the astronomical fees and interest charged for these AFS products more than mitigates the risk. Once primarily comprised of independent stand-alone AFS providers and pawnshops, national and regional companies have taken control of the market. State and federal regulations have recently placed some limits on their ability to provide predatory loans which has caused additional shifts in the market. The loan segment generates 79 percent of the underserved revenue, totaling \$61 billion.

Currently, there are very few substitutes, enabling AFS providers to charge excessive fees to customers that have no bargaining power or options. Controlled by a few regional and national companies, the barriers to entry are increasing due to regulation and saturation. Regulation is making traditional predatory AFS entry more difficult. However, regulation is contributing to a changing industry landscape that includes numerous fintech innovations and mobile based solutions that are beginning to provide options to the underserved. These solutions mesh well with the relatively high mobile and smartphone adoption rates among the underserved. Improved analytics are also enabling commercial banks to rethink their credit and loan approval process, based on new information that allows them to make better assessments and tap into the underserved market. With all of these changes, there is still predatory lending and high fee AFS businesses spread throughout the United States. This is an unattractive industry for new entrants utilizing a traditional AFS model; however, there is major demand for more equitable solutions that provide relief to the underserved. This demand for change presents a lucrative opportunity to capitalize on a major segment of the economy. This is a very attractive industry for entrants with alternative solutions, particularly those in the mobile space or that help tie households into the cashless economy.

### **USPS Strategy Analysis: Postal Financial Services**

Based on the Industry Analysis, there is no question that there is a fundamental need for inclusion and better financial options for underserved Americans. It is also clear that this is a huge market and presents an opportunity to generate additional revenue. The question is: what is the best solution? According to the USPSOIG (2014d, p. 9) whitepaper on postal financial services, "Postal financial services could assist underserved families in making steps toward the mainstream financial system, possibly building up savings, and eventually embracing offerings from traditional retail banks. Moreover, postal financial services would fit well with the Postal Service's founding mission to serve

citizens and support the growth of commerce.” International posts around the world offer postal banking, and it has been a major factor in expanding inclusion of underserved in the world financial system. Alliance for Financial Inclusion (AFI) Policy Associate Ernesto Aguirre stated, “Through a combination of appropriate public sector policies and regulations, private sector support and available technologies we today have the possibility to meet the demand of millions of people from the poorest segments of society” (Kugemann, 2009). According to a Consumer Postal Council (2013, p. i) report on universal postal service in major economies, “Banking and insurance activities have generated the majority of alternative postal revenue.”

The USPSOIG proposal suggests implementing a ‘Postal Card’ that could serve as a prepaid debit card that would enable customers to: make mobile, online, and in-store purchases; load cash or funds onto card, pay bills online, withdraw money at ATMs, transfer money internationally, take out small loans and conduct mobile transactions (Figure 16). These services would help underserved Americans convert cash to digital funds, utilize mobile e-commerce, interface with an increasingly cashless society, and potentially gain access to small affordable loans to help ensure financial stability.

Other industrialized nations have enabled their posts to begin offering credit. In 2003, the French postal bank, La Banque Postale, saw the need to begin offering credit to help the underserved population and help its own economic future. “The creation of the postal bank was done in a complex environment; everything had to be compatible with rules in place,” explained Philippe Bajou, deputy director general of La Banque Postale. “We are a bank like no other bank,” he said. “We have values of universality, proximity and accessibility” (Kugemann, 2009, p. 13). USPSOIG proposes a simple hypothetical small loan process that charges a reasonable interest rate (28 percent) and automatically deduct bi-monthly payments from the customer’s direct deposit paycheck. In this scenario, the customer would save \$472 in interest and fees, compared to typical payday loans (Figure 17). The

USPSOIG even has an answer for what happens if a postal loan borrower stops making payments on her loan. They suggest that “the Postal Service could potentially utilize the Treasury Department’s offset program, which allows federal agencies to collect debts from the tax refunds of debtors. Because a high proportion of the “working poor” get tax refunds this collateral could serve as a built-in insurance policy that would significantly reduce the risk that Postal Loans would go unpaid” (USPSOIG, 2014d, p. 14).

While this service would potentially provide financial access to the underserved, and improve society, it would also generate revenue. USPSOIG estimates that postal financial services could capture 10 percent of the AFS market, resulting in \$8.9 billion a year in revenue. This estimate is consistent with the 14.5 percent revenue contribution that international posts typically generate through financial services. 14.5 percent of existing USPS revenue equates to \$9.5 billion (USPSOIG, 2014d, p. 16).

**Figure 16: USPSOIG Proposed Postal Financial Services**



Source: (USPSOIG, 2014d, p. 10)

**Figure 17: Postal Loans vs. Payday Loans**

	Payday	Postal
Loan amount	\$375	\$375
Average months to repay	4.5	5.5
Average bi-monthly payment	\$99	\$38
Total interest and fees	\$520	\$48
Effective annual interest rate*	391%	28%

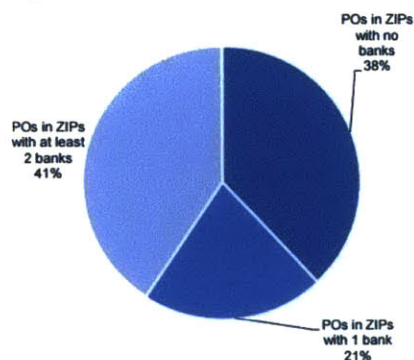
Source: (USPSOIG, 2014d, p. 13)

## Resource Advantage Alignment

There is no doubt that the 35,641 USPS retail units would be extremely complementary to implementing postal financial services. The retail coverage would double access compared to existing 15,000 AFS retail locations. Additionally, 38 percent of post offices are located in ZIP Codes that do not have banks, and another 21 percent only have one bank within the Zip Code (**Figure 18**). Over 21,000 Postal Service locations would significantly expand convenient access to financial services in underserved ZIP Codes. The question is whether a physical financial services network is relevant in an increasingly digital and mobile industry?

A full-fledged postal financial service system would require a safe and secure information system and could potentially leverage the existing system. The Postal Service currently issues 320,132 postal money orders daily (USPS, 2015i) and processes 363 million credit and debit card transactions daily (USPS, 2014c). However, being the steward of personal address information is very different from storing and transmitting financial transactions. Existing information systems may not be compliant with laws and regulations governing financial transactions. Financial services have nothing to do with the core delivery structure and would not utilize the logistics capability. Overall, this strategy aligns with just a few of the resource advantages owned or controlled by the Postal Service.

**Figure 18: Post Office Locations Relative to Banks**



Source: (USPSOIG, 2014d, p. 6)



## ***Positional Advantage Alignment***

The USPS brand symbolizes trust, reliability and service and would be complementary to financial service offerings. The brand would be particularly effective in counteracting the prevalent trust issues that Americans currently have towards commercial banks. According to a Gallup poll (2014), only 26 percent of Americans have confidence in banks, which is well below the pre-recession level of 41 percent. This lack of trust is prevalent among the unbanked population, with 34 percent citing lack of trust in banks and 26 percent citing privacy concerns as a reason that they do not have a bank account (**Figure 11**). The USPS brand carries the benefit of governmental association in terms of security, privacy, and trustworthiness. It is consistently the highest ranked government agency and fourth highest ranked U.S. company in trustworthiness. The Postal Service's positioning as a governmental agency can also help establish integration with the U.S. Treasury Department, Internal Revenue Service, Social Security and other governmental financial and social services. The Postal Service already partners with the U.S. Census Bureau, Federal Voting Assistance Program, and the Department of State to provide public services. The American public places its trust in the Postal Service to securely handle sensitive personal information by annually submitting five million passport applications at local post offices (USPS, 2015b).

In addition to its history with the postal saving system, the Postal Service is already accustomed to providing limited financial services. According to USPSOIG (2014d, p. 7), the Postal Service is the U.S. market leader in paper money orders, with 70 percent market share. The Postal Service issued 97 million money orders in 2014. However, the Postal Service lacks positioning in the e-commerce and mobile space. There are a number of new fintech entrants in the mobile environment that have established early positioning, and are providing alternatives to traditional AFS options. The Postal Service's positioning relative to digital financial integration is a concern. Partnerships with fintech providers could gain mobile positioning in exchange for access to physical locations for cash conversion

purposes. Otherwise, the strategy is well aligned with the Postal Service's positional advantages in terms of national retail presence, information systems and trustworthiness. This strategy also does not leverage USPS positioning with last-mile logistics or universal service obligation.

### ***Capability Advantage Alignment***

The Postal Service has the demonstrated organizational capability to manage system implementations on a massive scale, as well as the capability to standardize and manage the country's largest retail footprint. This capability includes communicating new initiatives to postmasters and clerks across 35,641 retail locations. The USPS information systems architecture, design and implementation management capability could be leveraged to help implement a new financial services platform. The cyber-security, monitoring and prevention capability would be complementary. The concern is that the existing web and mobile application development capabilities may not integrate with fintech platforms. The best option may be to partner with an established fintech company to leverage their mobile financial systems development capabilities and leverage the USPS capability to manage large scale system implementation. The Postal Service also lacks competency in the credit and banking sector. This includes lack of knowledge on complicated financial regulations and security requirements. Partnering with established lending institutions would fill in the capability gap. Overall, the capability to manage a large retail footprint and manage implementations on a nationwide scale would be beneficial. And although there are some information systems capabilities that can be leveraged, there are major capability gaps pertaining to mobile financial application development and financial cybersecurity requirements. Partnerships would be essential to make implementation plausible.

### ***Initiative vs. Coordination***

A well-coordinated national strategy could be developed to implement financial services in post offices throughout the country. This strategy is mostly a backend platform strategy that would require standardization at scale and minimal levels of local initiative. The typical post office clerk would have sufficient initiative and capability to support this strategy. The implementation for this strategy would be highly coordinated and standardized across the entire retail platform. The most significant concern would be the levels of coordination to communicate the technical details of the services to clerks and postmasters in 35,641 post offices. However, based on success with previous implementations, the Postal Service has sufficient coordination capabilities.

### ***Political Considerations***

Politically, there are concerns with the Postal Service being permitted to offer loans and other financial services. But since the Postal Service is the market leader in money orders, it could be viewed as an expansion of existing services. According to the USPSOIG, “given that the Postal Service is already providing money orders and other types of non-bank financial services, it could explore additional options within its existing authority” (USPSOIG, 2014d, p. 9). Legislation and PRC regulations would potentially permit the Postal Service to request permission to conduct a market test of postal financial services. The same legislation allows the PRC to ‘limit the amount of revenues the Postal Service may obtain from any particular geographic market as necessary to prevent market disruption.’ This clause is particularly interesting since this strategy is predicated on disrupting the existing AFS market.

There is political support for this concept within the congressional ranks. Senator Elizabeth Warren (D-MA), who serves on the Senate Banking Committee, stated in a blog post, "If the Postal Service offered basic banking services - nothing fancy, just basic bill paying, check cashing and small

dollar loans - then it could provide affordable financial services for underserved families, and, at the same time, shore up its own financial footing." However, on the other side of the political spectrum, Rep. Darrell Issa (R-CA) was critical of the idea, "Gambling on a massive expansion of the USPS's mission to support unnecessary infrastructure is irresponsible. Rather than trying to find a new mission for an oversized agency, the goal should be to rightsize the agency to adjust to diminishing demand" (APWU, 2015a). With Congress already in gridlock over Postal Service reform legislation, there is little chance that something definitive could be passed regarding postal financial services.

Comments for representatives from the banking industry illustrate potential corporate resistance, "We're deeply concerned that the U.S. Postal Service is trying to drive the creation of a new [government-sponsored entity] engaged in banking services, which is not subject to the same level of regulation," said Ken Clayton, chief counsel of the American Bankers Association, a lobbying group. "This new entity could be perceived by many as a government-endorsed and preferred provider of financial products," he said. "The impact on banks already serving these communities would be substantial" (Douglas, 2014). The check cashing and payday loan industry that currently brings in \$11 billion in revenue and employing 90,000 people might also have something to say about this strategy.

There would be political concerns with public and congressional anti-competitive sentiment, and there might be potential lobbying efforts aimed at preventing USPS from expanding its financial services. Establishing partnerships with fintech providers and commercial lenders could reduce these concerns. Concerns may arise with hosting mobile financial service applications on USPS.com or Postal Service applications. It would likely be a lot less contentious to provide a link to fintech applications or websites on usps.com. Public opinion may play a role in this debate as well. When 1,000 Americans were asked if they would favor USPS offering basic financial services like bill-paying, check-cashing and small loans, 44 percent were in favor, 37 percent were not, and 19 percent were not sure (YouGov, 2104).

## ***Labor Considerations***

There is direct labor support for postal financial services. At his swearing-in ceremony in November 2013, APWU President Mark Dimondstein championed the idea, "To protect our jobs, we must enhance postal services. Services such as basic, non-profit banking would be a great and real benefit to the people of this country, and a good answer to what I call 'the Wall Street Banksters,' who devastated the economy and with it the lives of millions of people." Dimondstein continued, "The Postal Service would better serve the needs of potential customers - and the nation - because it won't victimize customers. Non-profit postal banking could help struggling families - and the USPS - achieve financial stability. It would be a tremendous step forward for the country" (APWU, 2015a). In January 2015, the APWU along with 14 other organizations (including the other postal unions) announced a formal 'Campaign for Postal Banking' (APWU, 2015b).

## **Strategy Recommendation**

The unbanked and underbanked sector of the economy presents a great societal challenge and a potential opportunity for the Postal Service. The entire AFS sector is a \$78 billion industry, which clearly represents possible financial benefits, even with a modest entry in the market. 79 percent of the industry revenue is in the very short term and short term loan sector. Therefore, in order for a financial services strategy to become a significant revenue stream for the Postal Service, it would need to include a loan option. Check-cashing and prepaid debit cards alone would bring in only modest revenue and would not address the root of the problem for the underserved.

Aside from the politics involved with implementing postal financial services, the most significant problem for this strategy is the shift toward mobile banking services. For a financial services option to work, it would have to have a large mobile component with cash conversion options. There is a lot of

fintech start-up entry in this sector that can provide options for the underserved. This trend aligns well with the underserved who have higher mobile adoption rates than the banked. The Postal Service does not have the root competency to function as a lender or develop mobile applications for cash-to-digital conversion. However, the retail footprint is clearly an asset and could provide front-end access points for cash conversions and provide a physical supplement in ZIP Codes without bank access.

The best strategy would be to enter into partnerships with fintech mobile application companies and combine the strength of mobile innovation with a ubiquitous physical retail footprint. Many of these fintech companies have partnered with retail storefronts like 7-Eleven and there would be no reason that the Postal Service could not do so as well. The Postal Service brand could be leveraged to help endorse and advertise these products and gain the trust of a skeptical, marginalized and underserved population. Other basic transactional services, like check cashing and prepaid debit cards, could be added to complement the fintech financial products, which would provide all of the basic financial services that the underserved community is currently paying excessive fees to obtain. The Postal Service could potentially serve as a physical portal connecting mobile financial services to government agencies. These fintech innovations will potentially help a lot of customers who currently do not have bank accounts and rely on cash. Many of these services will help provide access to small loans at more reasonable rates. But there will still be a segment of the population that resorts to payday loans, and auto title loans. There may still be an opportunity for a basic loan service like the one proposed by the USPSOIG, to fill in the gap. However the program would need partnerships with financial institutions or the government to make it work. USPS does not have the lending competency, and once again partnerships would be the best strategy. An effective partnership would leverage the Postal Service retail footprint and brand with an established financial services backend and a Treasury Department safety net, using tax returns as collateral.

Market tests could be developed to gauge consumer demand and compatibility with partners. Another approach would be to introduce check-cashing and pre-paid debit cards, which are likely permissible without congressional or PRC approval, to gauge consumer demand and obtain feedback. Pursuing partnerships would certainly reduce the potential revenue, but would also mitigate a risky endeavor into a sector that is outside of the organizational capabilities.

## **Chapter 6: USPS Strategic Recommendations**

### **Embracing a History of Transformation**

The United States Postal Service has helped build a nation and transition it through the first machine age. Now, in the midst of the second machine age, the organization is at a crossroads that will determine whether it will continue its history of adapting to the changing needs of the American people. The Postal Service is a communications company that has adapted with two centuries of technological innovation that continues to transform the way Americans communicate and conduct business. Abiding by its mission, USPS provides reliable, efficient, trusted and affordable universal delivery service to bind the nation together. Along the way, it has developed an expansive logistics network that reaches every corner of the nation, specializing in last-mile delivery. The Postal Service has developed resources and capabilities that support the ongoing USPS mission and uniquely position it to connect the digital age with the physical world. By leveraging these resources and capabilities the Postal Service can help ensure the entire nation has affordable access to the benefits of modern convenience and innovation.

Throughout USPS history, dramatic improvements in communication technology have both threatened its core business and presented an opportunity to become more efficient. The internet and mobile technology are no different: while they significantly threaten the benefits of mail

correspondence, they have led to enormous growth in package delivery and provided the digital infrastructure to enable the Postal Service to become the most efficient post in the world. As the digital economy emerged, the Postal Service was impacted by electronic diversion and declining mail volume that was exacerbated by the worse financial crisis since the Great Depression. In the 21<sup>st</sup> century, the mail industry is a challenging and declining industry, and the Postal Service must continue to right-size the mail processing infrastructure to match the resources to the workload. The organization has successfully consolidated 353 facilities along with \$1.9 billion in costs since 2006. The plans to consolidate an additional 82 facilities in 2015 should position the Postal Service to save another \$750 million annually and streamline the organization, with a continued dedication to maintain world-class service levels. In addition to continued cuts, the Postal Service should continue to implement and explore the integration of physical and digital. Personalization and potential innovations such as the digital mailbox can serve as a way to harness the power of mail, in a platform that digital natives can embrace. The advancements in personalization, QR codes and AR serve as a way to enhance the tangible benefits of physical mail with the information and connectivity of digital technology. Enhancements like EDDM help ensure that small businesses have targeted access to customers and the ability to compete in the market place. First class mail volume continues to decline by 2 to 4 percent per year, therefore the strategy to consolidate resources while continuing to innovate is both prudent and visionary.

The Postal Service has played a key role in two centuries of transportation transformation. As the nation moved from steam and rail to automobiles and planes, the Postal Service embraced those technologies to improve its ability to provide efficient delivery service to the nation. The second machine age is poised to radically change transportation with autonomous vehicles and alternative fuels. The Postal Service is yet again positioned to be on the forefront of transportation evolution and should harness the capability and efficiency of new technologies. Where would the Postal Service be



today if it did not take bold, innovative steps to sort mail on trains or drop mail from planes? The extensively dispersed retail footprint and last mile logistics network could serve as incredible platform to leverage the benefits of autonomous vehicles and overcome their challenges of range and diseconomies of scale. Workhorse Group Inc. has presented an option that 'could involve a drone that can deliver packages while the mail carrier works their normal route.' Duane Hughes, director of sales at Workhorse Group, Inc. said in a statement, "We feel very confident that our integrated drone technology on top of our electric truck is the best solution for the Postal Service as well as give them the lowest total cost of ownership" (Medici A. , 2015). This solution addresses some of the limitations and concerns with drone technology, regarding range and the safety and logistical issues of flying drones from remote distribution centers. This would be a good way to leverage existing resources and integrate new technologies to improve efficiency and value to the customer. This is the type of transportation innovation that has helped the organization successfully transition through two centuries of change.

### **Seizing Opportunities, Leveraging Capabilities and Mitigating Liabilities**

The package delivery industry is rapidly growing at 15 to 20 percent per year and rapidly changing with new technological advances, particularly in the mobile space. Competition and vertical cooperation place the three national package delivery incumbents in a position of interdependence and converging differentiation. However, these partnerships effectively leverage each organization's capabilities, improving the efficiency of the entire industry and further elevating the barriers to national entry. The Postal Service should continue to leverage its small package processing and delivery capability, which integrates nicely with the e-commerce trend of smaller, more frequent packages. As package volume continues to increase, the Postal Service should continue to invest in its package processing capability. Clearly, the most significant resource is the expansive last-mile network. The Postal Service should pursue strategies that leverage this competitive resource advantage. The Postal

Service should also continue to focus on weekend delivery, which provides differentiation in an industry that is becoming more homogenous. While other delivery companies may be willing to distance themselves from B2C and C2C delivery, the Postal Service should continue to develop ways to make package delivery more convenient for customers, with carrier pick-up, returns, notification and other value-add options. The focus on weekend delivery and last-mile logistics positions USPS to continue key strategic partnerships with Amazon. This becomes critical as Amazon explores and tests entry into the same-day delivery segment. The Postal Service should continue to develop its brand. The USPSOIG brand valuation of \$3.6 billion shows that while there is value in the brand, there is also a large gap between the other competitors in the market. Continuing to elevate service and scanning performance will help to continue to shift the perception of Priority mail service and grow the value of the brand.

A major factor in the current financial situation is the ramification of the PAEA law that mandates pre-funding of retirement and healthcare benefits. In addition to the shortcomings of the PAEA law, there are other needs that reform legislation could address, such as: eliminating unnecessary financial burdens, expanding operational flexibility, streamlining oversight and reforming labor relations policies. In addition to eliminating the retirement and healthcare benefit prefunding requirement, reconciling FERS payments and incorporating Medicare into USPS healthcare plans could save the Postal Service billions of dollars. Permitting the flexibility to eliminate Saturday mail delivery and introduce new products and services outside of the current limitations would enable the Postal Service to adapt to the changing needs of the nation. Reform on labor relations policies would allow USPS to address major costs related to workers compensation and binding arbitration decisions. All of these issues represent a significant opportunity to reduce total operating costs. Despite the political gridlock, the Postal Service should continue to work with Congress to develop and pass legislative reform that increases the capability to return to profitability.

The Postal Service should continue to invest in its competitive resources, like purchasing new vehicles, maintaining its unprecedented retail footprint, and updating its information systems to harness the power of technological advances. The USPS retail footprint is by far the largest in America, which could potentially be leveraged by leasing space and permitting retail collocation. The Postal Service presence in towns and communities, that otherwise do not have direct retail access could be expanded to include other goods and services. Continuing to invest in human resources is vital to the future of the organization. Training and engagement programs should be emphasized to improve employee capability and leverage local initiative of employees to foster a climate of innovation and local customization. The Postal Service should continue to invest in maintaining and developing capabilities within maintenance, systems engineering and management; these capabilities can be leveraged to support future product implementations and strategies.

The Postal Service has a unique organizational structure that enables it to manage an expansive organization and still provide a foundation that enables innovative process improvement. As part governmental agency and part business, the current lean hierarchy is an effective way to combine the benefits of a strong centralized headquarters with field autonomy and initiative. The balance between coordination and initiative enables the Postal Service to achieve the benefits of standardization and drive organizational efficiency, and the ability for local customization to optimize local performance and improve operational efficiency and service. The LSS capability is a great methodology that uses a standardized approach to implement local optimization initiatives. This methodology should be applied to any new strategy to reduce waste and unnecessary bottlenecks before they negatively impact implementation. The Postal Service should also continue to invest in technology that improves the monitoring capability of its delivery operations to manage the autonomy of scale and provide additional visibility to the customer.

The future rests on the Postal Service's ability to navigate the complicated and intertwined web of oversight, regulation, politics and labor relations. Understanding the motivations of the various political stakeholders can help form strategic roadmaps to align stakeholder interests with the strategic vision of the Postal Service. This is a very difficult task, since labor and management often disagree on how to best ensure the long-term USPS viability. Congress is divided between protecting a public service and the employment of thousands of constituents, and enforcing organization efficiency and controlling market competition. Continuing to communicate the difficulties and justifications for policies and process improvements helps keep stakeholders informed and build understanding. This becomes particularly important when considering new products and services.

A primary reason for such a comprehensive analysis of Postal Service history and the evolution of the industries in which it operates, is to gain historical perspective on the capabilities of the organization and gain understanding on how such a large legacy organization can continue to adapt to changing technology. It is through this lens that we apply Michael Porter's strategic frameworks and analyze potential strategies. Upon comprehensive analysis it is clear that the primary USPS competitive advantages are its last-mile logistics and massive retail footprint. These two resources are unique to the Postal Service and difficult to duplicate since they leverage the economies of scale necessitated by the universal service obligation. These resources are tied together by the Postal Service's employees and information systems that operate on an equally impressive scale.

## **Pursuit of Innovative Strategies**

While there have been countless ideas and proposals suggested by Postal Service stakeholders, three strategies continue to garner the most discussion: same-day delivery, 3D printing services and postal financial services. One of the fundamental questions that this thesis aims to answer is whether

these strategies effectively leverage the competitive advantages and organizational capabilities of the Postal Service. One of the main reasons these strategies keep getting discussed is that each of them leverages either the Postal Services last-mile logistics, or retail footprint, or both. Upon further analysis, all three of these strategies effectively leverage the unique competitive resources, positioning, and capabilities. However, each one of these strategies has key capability gaps that might require strategic partnerships. Each of these strategies involves entry into either an emerging industry, or an established industry that is on the verge of transformation. There is massive demand uncertainty in each of these industries, as well as questions on whether the USPS political or labor conditions would result in strategic roadblocks. After analyzing and assessing all of these variables and factors, these strategies can be prioritized and ranked according to potential impact and likelihood for successful implementation.

### **Prioritization of Strategies**

The strategy that presents the largest industry opportunity is postal banking services, with the entire domestic AFS industry bringing in \$78 billion in fees. A modest entry in that industry could result in billions of dollars in additional revenue, with the USPSOIG estimating between \$8.9 and \$9.5 billion in potential revenue for the Postal Service. The other two industries have a lot less opportunity for the Postal Service in terms of volume. The current world-wide 3D printing industry is currently at \$5 billion and although it is projected to grow exponentially and reach \$20 billion by 2020, considering the percentage that the Postal Service would be able to capture classifies this as less than a billion dollar revenue stream. Christensen Associates estimates just under \$500 million in potential annual revenue from USPS implementing 3D printing services. The domestic same-day delivery market is projected to reach \$4 billion by 2018, with an estimated \$1 billion in delivery fees. This puts USPS potential revenue in the \$100 million range. To put this all in perspective, the Postal Service lost \$5.5 billion in FY2014. The 3D printing and same-day delivery markets are growing fast and may be the future of the e-commerce

industry and are certainly worth pursuing, but these strategies will not provide an immediate solution to the financial conditions of the Postal Service. On the other hand, the financial services strategy could negate the current budget shortfall; however, the growth opportunity is far less than projected as the market is on the verge of being transformed by the digital economy. Overall the most intriguing market is financial services, but that may be the least complementary and the most difficult to implement.

The most complementary strategy to the Postal Service's organizational capabilities and competitive advantages is the same-day delivery strategy. This strategy fully leverages the USPS last-mile logistics and package delivery capabilities. The fact that these resources are already in every city and town in the country positions the Postal Service to wait for the demand to materialize and enter a specific market very quickly. There is no doubt that the Postal Service is fully capable on the logistics side of the same-day delivery equation. However, the demand side presents some capability concerns related to establishing the necessary retail relationships and developing applications to provide customers with a user interface comparable to the competition. The most beneficial strategy would be to partner with retailers that have existing customer facing resources and focus on the back-end logistics.

The postal financial services strategy perfectly aligns with the expansive USPS retail resource. The fact that 38 percent of post offices are located in ZIP Codes that do not have a bank is indicative of the opportunity. The concern is that, other than selling money orders and running a postal saving system in 1966, the Postal Service does not have the organizational competency to offer loans and other more complicated financial services. The existing organizational capability supports cashing checks and selling prepaid debit cards; however, the revenue opportunity is in short term loans. The other capability concern is that with the emergence of mobile financial service options, the Postal Service does not have the capability to compete with emerging fintech startups in mobile application development.

In the case of both concerns, the only thing that would make this strategy feasible would be establishing the right partnerships.

The 3D printing services strategy aligns with both the last-mile logistics and retail footprint resource advantages. Although the Postal Service has extensive maintenance capabilities and employees who have experience and capabilities operating technical machinery, the concern is that these capabilities are not directly complementary to 3D printing. Strategic partnership with existing 3D printing services would be the advisable approach.

### **Partnerships are Key**

Entry into any market by an organization that lacks experience-based or knowledge-based capabilities requires a strategy to obtain those capabilities. There are three options: first, develop the capabilities internally, which requires time; second, acquire the capabilities through acquisition, which requires authority and capital; or third, enter into partnerships or joint ventures with companies that possesses the capability, which requires relationships and bargaining power. In all three strategies, there is a capability gap that must be addressed in order for the implementation to be successful. In all three strategies, the Postal Service likely does not have the time or resources to develop the necessary capabilities internally. In each market, there are already entrants that already have the desired capabilities. The Postal Service certainly does not have the authority to acquire companies. That leaves partnerships as the only viable strategy to obtain the necessary capabilities.

The Postal Service is no stranger to partnerships. It has a long history of working with stagecoach operators, early aviators, FedEx, UPS, Amazon, AmazonFresh, Netflix, Pitney Bowes, Staples, numerous retailers for stamp sales, stamps.com, consolidators, several federal agencies, and a host of local business partners. The nature of each partnership is different. Some partnerships are simple

agreements, others are full-fledged contractual partnerships, and others are outsourcing contracts. To be successful in any of these strategies, the Postal Service will have to form key partnerships with retailers, 3D printing services, and financial institutions. Any partnership has to be mutually beneficial, and the Postal Service has a lot to offer partners in return for the necessary capabilities. Granting potential partners access to the most extensive last-mile logistics and retail footprint is a valuable proposition. The terms of any partnerships would have to be negotiated, but the potential is there to join forces and leverage complementary capabilities for a mutual benefit. The other major benefits of partnerships include: reducing risk, reducing investment costs, and, in the case of the Postal Service, making it a lot easier to get approval for entering into markets. The Postal Service should be aggressive and begin pursuing potential partnerships across all three markets.

### **Political and Labor Considerations**

The labor unions would likely support all three strategies since none of them involve staffing reductions. All of these strategies would involve additional workload in growth sectors, which would help secure long-term jobs for union membership. There may be some jurisdiction arguments relative to collocated 3D printing services. In the case of postal financial services, the APWU is actively promoting implementation of this strategy and have assembled a coalition and a public relations campaign to convince the public, Congress and postal leadership to pursue this strategy to help protect underserved Americans and postal jobs.

Politically, there are clauses in the existing legislation that allow market tests and some untested language referring to the capability to add new products. The Postal Service is already conducting approved market tests of same-day delivery, and it is likely that they could gain approval to add Metro Post as a competitive product since it fits within the current package delivery function. Entering the 3D



printing market would be more complicated depending on which approach the Postal Service took. Purchasing 3D printers and directly entering the market would be problematic politically. Whereas, partnering with existing 3D printing services would be an extension of existing services. Hybrid solutions like collocation or hosting may also cause political issues and prevent approval due to anti-competitive concerns. The Postal Service could pursue partnerships and conduct specific market tests to measure the benefit of hybrid options before choosing to pursue a strategy. Pursuing postal financial services would be politically contentious, with forces on both sides of the spectrum. According to the USPSOIG, the Postal Service may already have the authority to enter into financial services since they already sell money orders and provide other services. Check cashing and pre-paid debit cards may be a lot easier to implement without garnering any political heat. Another option would be to pursue a more aggressive financial services strategy under the assumption that USPS has the authority and let a gridlocked Congress battle it out. There is also the chance that the APWU and its coalition could convince Congress to pass a law instructing USPS to begin offering financial services. The best possible strategy is to pursue a fintech partnership, although there may be political resistance from both sides of the aisle.

## **Recommended Action**

All three strategies leverage some of the USPS competitive advantages and capabilities, making them all worth pursuing to some degree. Out of all of the strategies, same-day delivery is the most likely to succeed considering the potential market, organizational capabilities, and political and labor conditions. Although this strategy may have the lowest revenue capability, it aligns very well with existing capabilities and could help improve the market perception of Postal Service package delivery. This strategy could prove more valuable with the partnerships in the retail sector. It would also be beneficial to prevent new entrants from gaining a foothold in the larger package delivery market. The final recommendation is to continue market tests, pursue partnerships, and prepare logistics for quick

market entry if, and when, the demand materializes. The postal financial services strategy is intriguing due to the market potential. However, there are serious concerns with capability gaps, particularly concerning mobile financial service applications and the loan sector. Initial market tests for cash checking and pre-paid debit card services might help gauge market demand. These services are similar to money orders and many other non-bank retailers offer these services. Exploring potential fintech partnerships would also be recommended to determine if there is any opportunity or interest. Any entrance into the loan sector would have to be done carefully with government and or financial services partnerships. There does appear to be a need and an opportunity to leverage the Postal Service retail footprint and provide financial services to the underserved. 3D printing services does not offer a large market opportunity and only integrates with USPS capabilities in a partnership scenario. The Postal Service should explore shipping provider partnerships with 3D printing services and potentially expand the partnership based on future demand analysis.

All of these strategies align with USPS resources and capabilities and demonstrate promise. The recommended course of action is to pursue all three strategies as previously described. The focus should be on implementing same-day delivery and exploring partnerships in all three markets. The Postal Service has demonstrated the ability to transform with the changing needs of the nation, and all three strategies present opportunities to continue that legacy. With uncertain demand and challenging business conditions, continuing the dialogue and conducting small market tests will help determine the best courses of action. The most important thing is continue exploring innovation, working with Congress to implement reform legislation, implementing mail processing consolidations, working to grow and improve the package business, establishing the Postal Service as the premiere last-mile logistics provider and striving to provide the absolute best service possible for the American public.

## Appendix

Table 3: Decade of Facts and Figures

Source: <https://about.usps.com/who-we-are/postal-facts/decade-of-facts-and-figures.htm>

	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Annual Revenue	\$87.8 B	\$87.3 B	\$85.2 B	\$85.7 B	\$87.1 B	\$88 B	\$74.9 B	\$74.7 B	\$72.7 B	\$69.9 B
Total Career Employees*	486,822	489,727	522,144	551,570	583,908	623,128	663,238	684,762	696,138	704,716
Total Mail Volume	155.4 B	158.4 B	159.9 B	168.3 B	170.9 B	176.7 B	202.7 B	212.2 B	213.1 B	211.7 B
Total First-Class Mail Volume	63.6 B	65.8 B	68.7 B	72.5 B	77.6 B	82.7 B	90.7 B	95.9 B	97.7 B	98.1 B
First-Class Single Piece Mail Volume**	21.5 B	22.6 B	23.2 B	25.8 B	28.9 B	31.6 B	35.4 B	42.3 B	44.4 B	45.9 B
Total Shipping / Package Volume***	4 B	3.7 B	3.5 B	3.3 B	3.1 B	3.1 B	3.3 B	—	—	—
Standard (Advertising) Mail Volume	80.3 B	80.9 B	79.5 B	84.0 B	81.8 B	81.8 B	98.4 B	103.5 B	102.5 B	100.9 B
Delivery Points	153.9 M	152.9 M	152.1 M	151.5 M	150.9 M	150.1 M	149.2 M	148.0 M	146.2 M	144.3 M
Total Postal-Managed Retail Offices	31,662	31,702	31,857	31,900	32,028	32,552	32,549	32,169	32,583	32,355
Total Retail Offices	35,641	35,074	35,369	35,756	36,222	36,496	36,723	36,721	36,826	37,142
Total Retail Customer Visits	948.7 M	989.1 M	986.2 M	1.02 B	1.06 B	1.12 B	1.16 B	1.18 B	1.24 B	1.23 B
Total Retail Revenue	\$19 B	\$18.3 B	\$17.5 B	\$16.9 B	\$17.5 B	\$17.7 B	\$18.7 B	\$18.5 B	\$17.8 B	\$17.3 B
Postal-Managed Retail Office Revenue	\$10.7 B	\$10.8 B	\$10.6 B	\$10.9 B	\$12.1 B	\$12.7 B	\$13.7 B	\$14 B	\$13.9 B	\$13.9 B
Alternate Access Revenue	\$8.3B	\$7.5 B	\$6.8 B	\$6 B	\$5.4 B	\$5.1 B	\$5 B	\$4.4 B	\$4 B	\$3.4 B
Alternate Access Revenue Percentage	43.7%	41%	39.1%	35.5%	30.7%	28.6%	26.8%	24%	22.2%	19.7%
Online Revenue – usps.com****	\$1 B	\$873.3 M	\$787 M	\$704 M	\$643 M	\$581 M	\$586 M	\$454 M	\$343 M	\$249 M
Online Customers	500 M	435.4 M	366.8 M	423.6 M	373.2 M	204.4 M	—	—	—	—
Total Delivery Routes	244,365	225,152	227,000	228,160	230,600	232,900	244,800	246,500	244,700	243,000
Total Vehicles	211,264	211,654	212,530	213,881	215,625	218,684	221,047	219,522	216,004	214,146

Table 4: USPS Processing Facilities since 2005

Source: <https://about.usps.com/news/electronic-press-kits/our-future-network/assets/pdf/ofn-phase-2-faqs.pdf>

PROCESSING FACILITY TYPE		2013	2012	2011	2010	2009	2008	2007	2006	2005
Processing and Distribution Centers	P&DC	205	241	251	260	269	269	269	269	269
Customer Service Facilities	CSF	28	84	115	164	195	195	195	195	195
Network Distribution Centers	NDC	21	21	21	21	21	21	21	21	21
Logistics and Distribution Centers	LDC	10	10	10	13	14	14	14	11	11
Annexes	—	39	43	46	51	64	64	56	66	66
Surface Transfer Centers	STC	9	10	10	11	20	20	14	17	14
Air Mail Centers	AMC	1	1	1	1	12	20	29	77	79
Remote Encoding Centers	REC	2	2	2	2	3	6	10	12	15
International Service Centers	ISC	5	5	5	5	5	5	5	5	5
<b>Total Processing Facilities</b>		<b>320</b>	<b>417</b>	<b>461</b>	<b>528</b>	<b>603</b>	<b>614</b>	<b>623</b>	<b>673</b>	<b>675</b>

Table 5: Top 30 USPS Suppliers FY2104

Source: [http://www.huschblackwell.com/~media/files/industries\\_services/services/government percent20contracts/postal percent20service percent20contracting/top percent20usps percent20suppliers/uspsuppliersfy2014.pdf](http://www.huschblackwell.com/~media/files/industries_services/services/government percent20contracts/postal percent20service percent20contracting/top percent20usps percent20suppliers/uspsuppliersfy2014.pdf)

Rank	FY13	Supplier Name	FY14 Amount	City	State
1	1	Federal Express Corporation	\$1,408,985,575.12	Pasadena	CA
2	2	EnergyUnited Electric Membership Corporation	\$433,947,370.45	Statesville	NC
3	4	Pat Salmon & Sons, Inc.*	\$226,058,006.23	Little Rock	AR
4	14	Victory Packaging	\$214,456,360.01	Houston	TX
5	3	Kalitta Air, LLC*	\$196,546,191.37	Ypsilanti	MI
6	5	United Airlines, Inc.*	\$176,568,690.27	Pasadena	CA
7	6	Hewlett-Packard Co.*	\$171,703,627.38	Atlanta	GA
8	8	Accenture Federal Services	\$170,856,752.85	Chicago	IL
9	9	Wheeler Bros., Inc.	\$159,298,582.16	Somerset	PA
10	7	Northrop Grumman Corporation*	\$154,790,095.31	Merrifield	VA
11	16	Universal McCann Worldwide, Inc.*	\$140,062,861.27	New York	NY
12	10	United Parcel Service Company, Inc.*	\$123,402,155.89	Louisville	KY
13	13	Eagle Express Lines, Inc.	\$119,821,516.37	South Holland	IL
14	11	International Business Machines Corporation (IBM)	\$113,135,676.32	Atlanta	GA
15	12	Delta Air Lines, Inc.	\$95,543,129.73	Atlanta	GA
16		Citibank, N.A.	\$81,605,800.31	New York	NY
17	17	AT&T Corporation*	\$78,329,389.52	Phoenix	AZ
18		[Undisclosed]	\$76,442,849.52		
19	40	Hoovestol, Inc.*	\$73,858,605.85	Eagan	MN
20	22	Deloitte LLP*	\$65,899,693.76	Philadelphia	PA
21	21	Tangoe, Inc.	\$63,708,673.84	San Diego	CA
22	19	Beam Brothers Trucking, Inc.	\$62,120,268.48	Mt. Crawford	VA
23	26	Jasper Innovative Solutions	\$61,990,718.21	Jasper	IN
24	23	Midwest Transport, Inc.	\$57,208,628.54	Robinson	IL
25	25	American Airlines, Inc.	\$50,461,125.37	Philadelphia	PA
26	27	W.W. Grainger, Inc.	\$50,038,045.97	Lake Forest	IL
27	29	Verizon Communications, Inc.*	\$46,073,326.25	Philadelphia	PA
28	28	Parsons Corporation	\$42,834,448.88	Pasadena	CA
29	36	New Breed Leasing of New Jersey, Inc.	\$41,817,173.68	High Point	NC
30	34	PAE	\$41,173,531.86	Arlington	VA

Table 6: Comparison of Package Tracking Events, Delivery Times, and Cost

Source: Stamps.com Who's Winning the Shipping War? Evaluating the USPS, FedEx, and UPS on Tracking Events, Delivery Times and Overall Costs, February 2014

**Average Package Scans per Day**  
(Total Package Scans/Total Delivery Days)

Carrier	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Average
UPS Ground	3.17	4.50	3.40	2.47	1.39	1.82	1.67	1.33	<b>2.47</b>
FedEx Home Delivery	4.50	4.75	4.31	3.25	2.82	2.23	2.15	1.78	<b>3.21</b>
USPS Priority Mail	4.67	3.94	3.11	3.22	3.44	3.11	2.89	2.46	<b>3.36</b>

Source: Stamps.com: Who's Winning the Shipping War? Evaluating the USPS®, FedEx® and UPS® on Tracking Events, Delivery Times and Overall Costs February 2014 p. 8.

**Average Total Days to Delivery by Shipping Zone**  
Normal Delivery (Shipped on Monday)

Carrier	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Average
UPS Ground	1.00	1.00	1.33	2.00	3.00	3.67	4.00	6.00	<b>2.75</b>
FedEx Home Delivery	1.00	1.00	1.33	2.00	2.33	3.00	3.00	4.00	<b>2.21</b>
USPS Priority Mail	1.00	1.33	2.00	2.00	2.00	2.00	2.00	2.00	<b>1.79</b>

Source: Stamps.com: Who's Winning the Shipping War? Evaluating the USPS®, FedEx® and UPS® on Tracking Events, Delivery Times and Overall Costs February 2014 p. 11.

**Average Total Days to Delivery by Shipping Zone**  
Including Weekend Delivery (Shipped on Thursday)

Carrier	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Average
UPS Ground	1.00	1.00	2.00	4.00	5.00	5.33	6.00	6.33	<b>3.83</b>
FedEx Home Delivery	1.00	1.00	1.00	2.67	3.00	5.00	6.33	6.00	<b>3.25</b>
USPS Priority Mail	1.00	1.67	2.00	2.00	2.00	2.00	2.00	4.00	<b>2.08</b>

Source: Stamps.com: Who's Winning the Shipping War? Evaluating the USPS®, FedEx® and UPS® on Tracking Events, Delivery Times and Overall Costs February 2014 p. 13.

**Shipping Costs by Zone**  
Two-Pound Package to Residence

Carrier	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Avg Total
UPS Ground	\$9.78	\$9.78	\$9.78	\$10.27	\$10.42	\$10.81	\$10.91	\$11.19	<b>\$10.45</b>
FedEx Home Delivery	\$9.73	\$9.73	\$9.73	\$10.22	\$10.38	\$10.76	\$10.86	\$11.14	<b>\$10.40</b>
USPS Priority Mail	\$5.32	\$5.32	\$5.44	\$5.84	\$7.55	\$8.26	\$8.98	\$9.97	<b>\$7.34</b>

Source: Stamps.com: Who's Winning the Shipping War? Evaluating the USPS®, FedEx® and UPS® on Tracking Events, Delivery Times and Overall Costs February 2014 p. 17.

Table 7: History of First Class Volumes since 1926

Source: <https://about.usps.com/who-we-are/postal-history/first-class-mail-since-1926.pdf>

Year	Pieces
1926	15,266
1927	16,284
1928	16,706
1929	17,170
<b>1930</b>	<b>16,901</b>
1931	15,824
1932	14,598
1933	10,878
1934	11,557
1935	12,498
1936	12,731
1937	13,882
1938	14,226
1939	14,657
<b>1940</b>	<b>15,224</b>
1941	15,989
1942	16,972
1943	--
1944	20,510
1945	21,009
1946	20,059
1947	20,665
1948	21,948
1949	23,206
<b>1950</b>	<b>24,500</b>
1951	25,578
1952	26,502
1953	27,257
1954	27,085
1955	28,713
1956	30,078
1957	31,561
1958	32,218
1959	32,274
<b>1960</b>	<b>33,235</b>
1961	34,289
1962	35,333
1963	35,833
1964	36,943
1965	38,068
1966	40,422
1967	41,998
1968	43,183
1969	46,411
<b>1970</b>	<b>48,640</b>
1971	50,036
1972	48,933
1973	50,965
1974	51,594
1975	51,373
1976	52,108
1977	53,654
1978	55,981
1979	57,926
<b>1980</b>	<b>60,276</b>
1981	61,410
1982	62,200
1983	64,247
1984	68,429
1985	72,440
1986	76,187
1987	78,869
1988	84,749
1989	85,855
<b>1990</b>	<b>89,270</b>
1991	90,285
1992	90,781
1993	92,169
1994	95,333
1995	96,296
1996	98,216
1997	99,660
1998	100,434
1999	101,937
<b>2000</b>	<b>103,526</b>
2001	103,656
2002	102,379
2003	99,059
2004	97,926
2005	98,567
2006	98,016
2007	96,297
2008	90,671
2009	82,727
<b>2010</b>	<b>77,892</b>
2011	72,522
2012	68,674
2013	65,834



Table 8: USPS Real Estate Inventory

Source: <https://about.usps.com/publications/annual-report-comprehensive-statement-2014/annual-report-comprehensive-statement-2014.pdf>

**Real Estate Inventory (Fiscal Years Ended Sept 30)**

Real estate inventory	FY2014	FY2013	FY2012
Owned properties	8,583	8,598	8,606
Owned interior square feet	195,617,292	196,956,774	197,324,325
Leased properties	23,649	23,814	23,998
Leased interior square feet	77,838,427	79,045,620	81,401,414
GSA/other government properties	296	297	300
GSA/other government interior square feet	2,001,667	2,005,330	2,035,494

**Real Estate Inventory Actions**

Inventory actions	FY2014	FY2013	FY2012
Lease actions (alternate quarters, new leases and renewals)	5,282	3,487	2,507
Property disposals*	30	44	49
New construction (AQ, NCO, NCL, and expansion)**	70	29	22
Repair and alteration projects (expense)	46,961	45,040	42,489
Repair and alteration expense totals	\$159,000,000	\$156,000,000	\$176,000,000
Repair and alteration projects (capital)	6,431	4,178	3,268
Repair and alteration capital totals	\$226,000,000	\$195,000,000	\$207,000,000

## References

3Ders. (2015). *3D Print Services - Online 3D printing*. Retrieved from [www.3ders.org: http://www.3ders.org/3d-printing/3d-print-services.html](http://www.3ders.org/3d-printing/3d-print-services.html)

ABX Air. (2015). *About ABX*. Retrieved from [www.abxair.com: https://www.abxair.com/about/history.cfm](https://www.abxair.com/about/history.cfm)

AlixPartners. (2014). *Going the Last-mile*. Retrieved from [www.AlixPartners.com: http://www.alixpartners.com/en/Publications/AllArticles/tabid/635/articleType/ArticleView/articleId/1415/Going-the-Last-Mile.aspx#sthash.UmJv8QLG.C1YvD9xE.dpbs](http://www.alixpartners.com/en/Publications/AllArticles/tabid/635/articleType/ArticleView/articleId/1415/Going-the-Last-Mile.aspx#sthash.UmJv8QLG.C1YvD9xE.dpbs)

Amazon. (2015a). *Global Locations*. Retrieved from [www.amazon.com: http://www.amazon.com/Locations-Careers/b?ie=UTF8&node=239366011](http://www.amazon.com/Locations-Careers/b?ie=UTF8&node=239366011)

Amazon. (2015b). *Dash Replenishment Service*. Retrieved from [www.amazon.com: https://www.amazon.com/oc/dash-replenishment-service](https://www.amazon.com/oc/dash-replenishment-service)

Amazon. (2015c). *Get it Today with Same-Day Delivery*. Retrieved from [www.amazon.com: http://www.amazon.com/b?node=8729023011](http://www.amazon.com/b?node=8729023011)

Bensinger, G., & Stevens, L. (2014, September 4). *U.S. Mail Delivers Amazon Groceries in San Francisco*. Retrieved from [www.wsj.com: http://www.wsj.com/articles/u-s-mail-to-deliver-amazon-groceries-in-san-francisco-1409854499](http://www.wsj.com/articles/u-s-mail-to-deliver-amazon-groceries-in-san-francisco-1409854499)

Bishop, T. (2014, December 17). *Grocery Delivery Wars: How Amazon Fresh, Instacart and Safeway stacked up in our tests*. Retrieved from [www.geekwire.com: http://www.geekwire.com/2014/grocery-delivery-wars-amazon-fresh-instacart-safeway-stacked-tests/](http://www.geekwire.com/2014/grocery-delivery-wars-amazon-fresh-instacart-safeway-stacked-tests/)

Bowman, R. (2014a, May 6). *Battle Intensifies for Local and Same-Day Delivery Service by Amazon and Its Rivals*. Retrieved from [www.forbes.com: http://www.forbes.com/sites/robertbowman/2014/05/06/battle-intensifies-for-local-and-same-day-delivery-service-by-amazon-and-its-rivals/](http://www.forbes.com/sites/robertbowman/2014/05/06/battle-intensifies-for-local-and-same-day-delivery-service-by-amazon-and-its-rivals/)

Bowman, R. (2014b, January 14). *Why the U.S. Postal Service Can Win the Battle for the Same-Day Delivery Market*. Retrieved from [www.forbes.com: http://www.forbes.com/sites/robertbowman/2014/01/14/can-the-u-s-postal-service-win-the-battle-for-same-day-delivery/](http://www.forbes.com/sites/robertbowman/2014/01/14/can-the-u-s-postal-service-win-the-battle-for-same-day-delivery/)

Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. W. W. Norton & Company.

Canalys. (2015, April 15). *Global 3D printing market to reach \$20.2 billion in 2019*. Retrieved from [www.canalys.com: http://www.canalys.com/newsroom/global-3d-printing-market-reach-202-billion-2019](http://www.canalys.com/newsroom/global-3d-printing-market-reach-202-billion-2019)

Case, B., & Credeur, M. J. (2013, April 2014). *FedEx Wins \$10.5 Billion Postal Contract as UPS Shut Out*. Retrieved from [www.bloomberg.com: http://www.bloomberg.com/news/articles/2013-04-23/fedex-to-fly-mail-for-postal-service-for-10-5-billion](http://www.bloomberg.com/news/articles/2013-04-23/fedex-to-fly-mail-for-postal-service-for-10-5-billion)

Center for Responsible Lending. (2012). *Fast Facts--Payday Loans*. Retrieved from [www.responsiblelending.com](http://www.responsiblelending.com): <http://www.responsiblelending.org/payday-lending/tools-resources/fast-facts.html>

Center for Responsive Politics. (2015). *Influence and Lobbying*. Retrieved from [www.opensecrets.org](http://www.opensecrets.org): <http://www.opensecrets.org/orgs/>

CFPB. (2013, April 24). *Payday Loans and Deposit Advance*. Retrieved from [files.consumerfinance.gov](http://files.consumerfinance.gov): [http://files.consumerfinance.gov/f/201304\\_cfpb\\_payday-dap-whitepaper.pdf](http://files.consumerfinance.gov/f/201304_cfpb_payday-dap-whitepaper.pdf)

CFSI. (2012, November). *2011 Underbanked Market Sizing Study*. Retrieved from [www.nybdc.com](http://www.nybdc.com): [http://www.nybdc.com/img/uploads/file/CFSI\\_2011\\_market\\_sizing\\_report.pdf](http://www.nybdc.com/img/uploads/file/CFSI_2011_market_sizing_report.pdf)

CFSI. (2013, May). *Financial Technology Trends in the Underbanked Market*. Retrieved from [cfsinnovation.s3.amazonaws.com](http://cfsinnovation.s3.amazonaws.com): [http://cfsinnovation.s3.amazonaws.com/Financial\\_Technology\\_Trends\\_in\\_the\\_Underbanked\\_Marketplace\\_Report\\_e-version\\_May\\_2013.pdf](http://cfsinnovation.s3.amazonaws.com/Financial_Technology_Trends_in_the_Underbanked_Marketplace_Report_e-version_May_2013.pdf)

Cohen, Robert A. (1999). *Postal History: The Pneumatic Mail Tubes*. Retrieved from [about.usps.com](http://about.usps.com): <https://about.usps.com/who-we-are/postal-history/pneumatic-tubes.pdf>

Consumer Reports. (2014, December 17). *Shipping comparison: FedEx vs. UPS vs. U.S. Postal Service*. Retrieved from [consumerreports.org](http://www.consumerreports.org): <http://www.consumerreports.org/cro/news/2014/12/shipping-comparison-fedex-vs-ups-vs-us-postal-service/index.htm>

Copenhagen Institute for Futures Studies. (2011). *Role of Mail 2020*. Retrieved from [www.ipc.be](http://www.ipc.be): [http://www.ipc.be/~media/documents/public/cifs\\_roleofmail.pdf](http://www.ipc.be/~media/documents/public/cifs_roleofmail.pdf)

Crook, J. (2015, April 28). *Uber Is Quietly Testing A Massive Merchant Delivery Program*. Retrieved from [www.techcrunch.com](http://www.techcrunch.com): <http://www.techcrunch.com/2015/04/28/uber-is-quietly-testing-a-massive-merchant-delivery-program/#.x2rp3v:ecT>

Cunnane, C. (2015, April 1). *E-Commerce Growth Brings Last-mile Headaches*. Retrieved from [www.logisticsviewpoints.com](http://www.logisticsviewpoints.com): <http://www.logisticsviewpoints.com/2015/04/01/e-commerce-growth-brings-last-mile-headaches/>

Deliv. (2014). *Deliv Announces Major Expansion with New Cities, New Malls and New Partners*. Retrieved from [www.prnewswire.com](http://www.prnewswire.com): <http://www.prnewswire.com/news-releases/deliv-announces-major-expansion-with-new-cities-new-malls-and-new-partners-502514240.html>

eBay. (2015). *ebay Now*. Retrieved from [pages.ebay.com](http://pages.ebay.com): <http://pages.ebay.com/ebaynow/>

Elise, A. (2015, January 15). *JC Penney Will Bring Back Its Catalog After Five-Year Hiatus, Company Will Focus On Home Goods*. Retrieved from [International Business Times](http://www.ibtimes.com): <http://www.ibtimes.com/jc-penney-will-bring-back-its-catalog-after-five-year-hiatus-company-will-focus-home-1787980>

Elliehausen, G., & Lawrence, E. (2001). *Payday Advance Credit in America: An Analysis of Customer Demand*.



eMarketer. (2104, February 3). *Global B2C Ecommerce Sales to Hit \$1.5 Trillion This Year Driven by Growth in Emerging Markets - See more at: <http://www.emarketer.com/Article/Global-B2C-Ecommerce-Sales-Hit-15-Trillion-This-Year-Driven-by-Growth-Emerging-Markets/1010575#sthash.CEKGfHlu.d>*. Retrieved from [www.emarketer.com](http://www.emarketer.com): <http://www.emarketer.com/Article/Global-B2C-Ecommerce-Sales-Hit-15-Trillion-This-Year-Driven-by-Growth-Emerging-Markets/1010575>

FDIC. (2003, January 29). *An Update on Emerging Issues in Banking*. Retrieved from [www.fdic.gov](http://www.fdic.gov): <https://www.fdic.gov/bank/analytical/fyi/2003/012903fyi.html>

FDIC. (2014, October). *2013 FDIC National Survey of Unbanked and Underbanked Households*. Retrieved from [www.fdic.gov](http://www.fdic.gov): <https://www.fdic.gov/householdsurvey/2013report.pdf>

FedEx. (2015a). *About FedEx: Our Story*. Retrieved from [about.van.fedex.com](http://about.van.fedex.com): <http://about.van.fedex.com/our-story/history-timeline/history/>

FedEx. (2015b). *Value Add Options: Saturday Delivery*. Retrieved from [www.fedex.com](http://www.fedex.com): [http://www.fedex.com/us/service-guide/our-services/options/index.html?qgroup=toggle-c6&qid=Saturday\\_Delivery](http://www.fedex.com/us/service-guide/our-services/options/index.html?qgroup=toggle-c6&qid=Saturday_Delivery)

FedEx. (2015c). *Service Guide: Our Services*. Retrieved from [www.fedex.com](http://www.fedex.com): <http://www.fedex.com/us/service-guide/our-services/us/index.html?qgroup=toggle-c1>

Freedman, P. (2014, October 9). *Virginia Tech Study Shows Digital Only Marketing/Advertising Is A Dangerous Temptation*. Retrieved from The Freedman Company: <http://thefreedmancompany.com/virginia-tech-study-study-shows-digital-only-marketingadvertising-is-a-dangerous-temptation/>

GAO. (2014, November). *U.S. Postal Service Status of Workforce Reductions and Related Planning Efforts*. Retrieved from [www.gao.gov](http://www.gao.gov): <http://www.gao.gov/assets/670/666884.pdf>

Gartner. (2014, October 27). *Gartner Says Worldwide Shipments of 3D Printers to Reach More Than 217,000 in 2015*. Retrieved from [www.gartner.com](http://www.gartner.com): <http://www.gartner.com/newsroom/id/2887417>

GeoPost. (2014, December 19). *GeoPost experiences the drone technology*. Retrieved from [legroupe.laposte.fr](http://legroupe.laposte.fr): <http://legroupe.laposte.fr/Espace-Presses/Liste-des-communiqués/GeoPost-experimente-la-technologie-drone#>

Google. (2015). *Express Membership*. Retrieved from [www.google.com](http://www.google.com): <https://www.google.com/shopping/express/#MembershipMarketingPlace>

Hess, A. E. (2013). *The 10 largest employers in America*. Retrieved from [www.usatoday.com](http://www.usatoday.com): <http://www.usatoday.com/story/money/business/2013/08/22/ten-largest-employers/2680249/>

house.gov. (2006). *Committee on Government Reform*. Retrieved from [house.gov](http://house.gov): <https://web.archive.org/web/20060520153535/reform.house.gov/UploadedFiles/grchistory.pdf>

IBISWorld. (2015, January). *Check Cashing & Payday Loan Services in the US: Market Research Report*. Retrieved from [www.ibisworld.com](http://www.ibisworld.com): <http://www.ibisworld.com/industry/check-cashing-payday-loan-services.html>

Instacart. (2015). *Delivery Areas*. Retrieved from [www.instacart.com](http://www.instacart.com/locations): <https://www.instacart.com/locations>

Kaufman, A. C. (2014, December 26). *Amazon's Enormous Same-Day Delivery Growth Comes At A Price*. Retrieved from [www.huffingtonpost.com](http://www.huffingtonpost.com): [http://www.huffingtonpost.com/2014/12/26/amazon-same-day-delivery\\_n\\_6383312.html](http://www.huffingtonpost.com/2014/12/26/amazon-same-day-delivery_n_6383312.html)

Keating, S. (2014). *Beyond 3D Printing: The New Dimensions of Additive Fabrication*. Retrieved from [dspace.mit.edu](http://hdl.handle.net/1721.1/95739): <http://hdl.handle.net/1721.1/95739>

KPMG. (2011). *Serving the Underserved Market*. Retrieved from [www.kpmg.com](http://www.kpmg.com): <https://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/Documents/serving-underserved-market.pdf>

Krasny, J. (2014). *Meet the Companies That Are Reinventing Same-Day Delivery*. Retrieved from [www.inc.com](http://www.inc.com): <http://www.inc.com/magazine/201403/jill-krasny/same-day-delivery-startups.html>

Krassner, K. (2012). *2012 Card Market Outlook*. Retrieved from [www.greetingcard.org](http://www.greetingcard.org): <http://www.greetingcard.org/LinkClick.aspx?fileticket=ddnQ5crX77c percent3D&tabid=154>

Kuksov, D. (2007, January). *Brand Value in Social Interaction*. Retrieved from [www.chicagobooth.edu](http://www.chicagobooth.edu): <http://www.chicagobooth.edu/research/workshops/marketing/docs/Kuksov-Brand percent20Value.pdf>

Kumar, D. K. (2014, July 15). *Staples, USPS end program to set up mini-post offices in stores*. Retrieved from [reuters.com](http://www.reuters.com): <http://www.reuters.com/article/2014/07/15/us-staples-deals-idUSKBN0FK03820140715>

Kuo, L., & Stephenson, E. (2012, May 9). *U.S. drops plan to close rural post offices*. Retrieved from [www.reuters.com](http://www.reuters.com): <http://www.reuters.com/article/2012/05/09/us-usa-postal-rural-idUSBRE8480YV20120509>

Leonard, D. (2014, February 13). *The U.S. Postal Service Tests Same-Day Delivery*. Retrieved from [www.bloomberg.com](http://www.bloomberg.com): <http://www.bloomberg.com/bw/articles/2014-02-13/the-u-dot-s-dot-postal-service-tests-same-day-delivery>

Levin, A. (2015, April 24). *Amazon Wants to Show U.S. Drones Can Safely Deliver Cargo*. Retrieved from [www.bloomberg.com](http://www.bloomberg.com): <http://www.bloomberg.com/news/articles/2015-04-25/amazon-seeks-chance-to-show-u-s-drones-can-safely-deliver-cargo>

Library of Congress. (2016). *H.R.6407: Postal Accountability and Enhancement Act*. Retrieved from [thomas.loc.gov](http://thomas.loc.gov): <http://thomas.loc.gov/cgi-bin/bdquery/z?d109:HR06407:@@D&summ2=m&>

Medici, A. (2011, May 19). *Agencies juggle rising fuel costs with cost-cutting*. Retrieved from [Federal Times](http://archive.federaltimes.com): <http://archive.federaltimes.com/article/20110319/FACILITIES03/103190301/Agencies-juggle-rising-fuel-costs-cost-cutting>

Moldvay, C. (2012, August). *IBISWorld Industry Report 32311*. Retrieved from [www.morrisanderson.com](http://www.morrisanderson.com): [http://www.morrisanderson.com/images/uploads/documents/32311\\_Printing\\_in\\_the\\_US\\_industry\\_report.pdf](http://www.morrisanderson.com/images/uploads/documents/32311_Printing_in_the_US_industry_report.pdf)

Montgomery Ward. (2015). *Welcome to Montgomery Ward*. Retrieved from [www.wards.com](http://www.wards.com):  
[https://www.wards.com/custserv/custserv.jsp?pageName=About\\_Us](https://www.wards.com/custserv/custserv.jsp?pageName=About_Us)

Moroney, R. L. (1967). *Above and Beyond, The Encyclopedia of Aviation and Space Sciences*. Chicago: New Horizons Publishers, Inc.

Nield, D. (2015, April 26). *Swiss Post set to test mail delivery by drone*. Retrieved from [www.digitaltrends.com](http://www.digitaltrends.com):  
<http://www.digitaltrends.com/cool-tech/swiss-post-set-to-test-mail-delivery-by-drone/>

Ostroy, A., & Wong, P. (2013, November 24). *Why e-commerce companies are creating catalogues*. Retrieved from [www.huffingtonpost.com](http://www.huffingtonpost.com): [http://www.huffingtonpost.com/andy-ostroy/why-ecommerce-companies-a\\_b\\_3983952.html](http://www.huffingtonpost.com/andy-ostroy/why-ecommerce-companies-a_b_3983952.html)

O'Toole, J. (2014, July 29). *Amazon launches 3-D printing store*. Retrieved from [money.cnn.com](http://money.cnn.com):  
<http://money.cnn.com/2014/07/29/technology/innovation/amazon-3d-printing/>

Perez, S. (2014a, October 14). *Google Shopping Express Expands To More Cities, Rebrands As "Google Express"*. Retrieved from [www.techcrunch.com](http://www.techcrunch.com): <http://techcrunch.com/2014/10/14/google-shopping-express-expands-to-more-cities-rebrands-as-google-express/>

Perez, S. (2014b, January 28). *Walmart Begins Testing Online Grocery Shopping With Local Store Pickup Option In Denver*. Retrieved from [www.techcrunch.com](http://www.techcrunch.com): <http://techcrunch.com/2014/01/28/walmart-to-go-denver-grocery-test/>

Phillips, S. (2014, September 24). *UPS beats USPS with Stratasys 3D printers*. Retrieved from [www.inside3dp.com](http://www.inside3dp.com):  
<http://www.inside3dp.com/ups-beats-usps-stratasys-3d-printers/>

Ponemon Institute. (2013, January 28). *2012 Most Trusted Companies for Privacy*. Retrieved from [www.ponemon.org](http://www.ponemon.org): [http://www.ponemon.org/local/upload/file/2012 percent20MTC percent20Report percent20FINAL.pdf](http://www.ponemon.org/local/upload/file/2012%20MTC%20Report%20FINAL.pdf)

Postalexam.com. (2015a). *Postal Exam 473 / 473E*. Retrieved from [www.postalexam.com](http://www.postalexam.com):  
<http://www.postalexam.com/postal-exams/details/postal-exam-473-473e/>

Postalexam.com. (2015b). *Postal Exam 955*. Retrieved from [www.postalexam.com](http://www.postalexam.com):  
<http://www.postalexam.com/postal-exams/details/postal-exam-955/>

Postmates. (2015). *On-Demand, 24/7*. Retrieved from [postmates.com](https://postmates.com): <https://postmates.com/>

PRC. (2008, December 19). *Report on Universal Postal Service and the Postal Monopoly*. Retrieved from [www.prc.gov](http://www.prc.gov): [http://www.prc.gov/Docs/61/61628/USO percent20Report.pdf](http://www.prc.gov/Docs/61/61628/USO%20Report.pdf)

PRC. (2013, November 15). *2013 Report on Form 10-K United States Postal Service*. Retrieved from [prc.gov](http://www.prc.gov):  
[http://www.prc.gov/Docs/88/88279/2013\\_USPS\\_ percent20FORM\\_10K\\_FINAL.pdf](http://www.prc.gov/Docs/88/88279/2013_USPS_percent20FORM_10K_FINAL.pdf)

PRC. (2015). *Mission, Vision, Guiding Principles, and Strategy*. Retrieved from [www.prc.gov](http://www.prc.gov):  
<http://www.prc.gov/mission>

PRNewswire.com. (2015, April 1). *Truckload Turnover Remained High in Fourth Quarter*. Retrieved from [www.prnewswire.com](http://www.prnewswire.com): <http://www.prnewswire.com/news-releases/truckload-turnover-remained-high-in-fourth-quarter-300059594.html?SG1Ref>

Rohrlich, J. (2012, August 3). *Why FedEx and UPS Want the Postal Service to Survive*. Retrieved from [www.minyanville.com](http://www.minyanville.com): <http://www.minyanville.com/business-news/editors-pick/articles/postal-service-usps-post-office-post/8/3/2012/id/42951?refresh=1>

Romalino, C. Q. (2014, December 16). *Millennials embrace sending Christmas cards*. Retrieved from [Courier Post](http://www.courierpostonline.com):  
<http://www.courierpostonline.com/story/news/local/south-jersey/2014/12/16/millennials-embrace-sending-christmas-cards/20517669/>

Rosenberg, Y. (2015, February 24). *U.S. Postal Service, FedEx Have New Competition...from Waffle House*. Retrieved from [www.thefiscaltimes.com](http://www.thefiscaltimes.com): <http://www.thefiscaltimes.com/2015/02/24/US-Postal-Service-FedEx-Have-New-Competition-Waffle-House>

rt.com. (2015, May 1). *Wave of future: 3D printing industry to quadruple by 2020*. Retrieved from [www.rt.com](http://www.rt.com):  
<http://rt.com/business/253785-3d-printing-industry-growth/>

Russon, M.-A. (2014, December 8). *Royal Mail to trial in-store 3D printing services in London post office*. Retrieved from [www.ibtimes.co.uk](http://www.ibtimes.co.uk): <http://www.ibtimes.co.uk/royal-mail-trial-store-3d-printing-services-london-post-office-1478551>

Sagon, C. (2014, December 9). *Why go to the store, when the groceries can come to your doorstep?* Retrieved from [www.washingtonpost.com](http://www.washingtonpost.com): [http://www.washingtonpost.com/lifestyle/food/why-go-to-the-store-when-the-groceries-can-come-to-your-doorstep/2014/12/08/f163a368-7c0f-11e4-9a27-6fdb612bff8\\_story.html](http://www.washingtonpost.com/lifestyle/food/why-go-to-the-store-when-the-groceries-can-come-to-your-doorstep/2014/12/08/f163a368-7c0f-11e4-9a27-6fdb612bff8_story.html)

Sareen, H. (2013). *Once Refined, Same-Day Delivery Will Be Commonplace*. Retrieved from [www.wired.com](http://www.wired.com):  
<http://www.wired.com/2013/05/once-refined-same-day-delivery-will-be-commonplace/>

Sarik, J., Butler, A., Villar, N., Scott, J., & Hodges, S. (2012, February 19). *Combining 3D printing and printable electronics*. Retrieved from [research.microsoft.com](http://research.microsoft.com): <http://research.microsoft.com/pubs/189096/07-sarik.done.pdf>

Shah, A. (2014, April 4). *3D printer price drops could lure home users*. Retrieved from [www.pcworld.com](http://www.pcworld.com):  
<http://www.pcworld.com/article/2140360/3d-printer-price-drops-could-lure-home-users.html>

Sharma, R. (2014, September 30). *3 Companies That Could Become The Kinko's of 3D Printing*. Retrieved from [www.benzinga.com](http://www.benzinga.com): <http://www.benzinga.com/general/topics/14/09/4877269/3-companies-that-could-become-the-kinkos-of-3d-printing>

Smith, A. (2008, November 10). *DHL to cut 9,500 U.S. jobs*. Retrieved from [CNNMoney.com](http://money.cnn.com):  
<http://money.cnn.com/2008/11/10/news/companies/dhl/?postversion=2008111009>

Smith, C. (2014, November 7). *SAME-DAY DELIVERY: E-Commerce Giants Are Battling To Own The 'Last-mile'*. Retrieved from [www.businessinsider.com](http://www.businessinsider.com): <http://www.businessinsider.com/e-commerce-and-same-day-delivery-2014-9>

Smithsonian Libraries. (2015). *Parcel Post: Delivery of Dreams*. Retrieved from [www.sil.si.edu](http://www.sil.si.edu): <http://www.sil.si.edu/ondisplay/parcelpost/intro.htm>

Solomon, M. B. (2014, September 8). *The Postal Service rolls the delivery dice*. Retrieved from [www.dcvelocity.com](http://www.dcvelocity.com): <http://www.dcvelocity.com/articles/20140908-the-postal-service-rolls-the-delivery-dice/>

Statista. (2015a). *U.S. same-day delivery merchandise value and shipping fees 2013-2018*. Retrieved from [www.statista.com](http://www.statista.com): <http://www.statista.com/statistics/272496/us-same-day-delivery-order-value-shipping-fees/>

Statista. (2015b). *Most popular retail websites in the United States as of 3rd quarter 2014, ranked by visitors (in millions)*. Retrieved from [www.statista.com](http://www.statista.com): <http://www.statista.com/statistics/271450/monthly-unique-visitors-to-us-retail-websites/>

Stevens, L. (2014, November 20). *Regional Delivery Company OnTrac Teams Up With USPS for Deliveries*. Retrieved from [blogs.wsj.com](http://blogs.wsj.com): <http://blogs.wsj.com/corporate-intelligence/2014/11/20/regional-delivery-company-ontrac-teams-up-with-usps-for-deliveries/>

The Boston Consulting Group. (2013). *Same-Day Delivery: Not Yet Ready for Prime Time*. Retrieved from [www.bcgperspectives.com](http://www.bcgperspectives.com): [https://www.bcgperspectives.com/content/articles/retail\\_transportaion\\_travel\\_tourism\\_same\\_day\\_delivery\\_not\\_yet\\_ready\\_for\\_prime\\_time/](https://www.bcgperspectives.com/content/articles/retail_transportaion_travel_tourism_same_day_delivery_not_yet_ready_for_prime_time/)

The Center for Union Facts. (2015). *The Center for Union Facts*. Retrieved from [www.unionfacts.com](http://www.unionfacts.com): <https://www.unionfacts.com/>

The Economist. (2013, January 19). *Reshoring Manufacturing Coming Home*. Retrieved from [www.economist.com](http://www.economist.com): <http://www.economist.com/news/special-report/21569570-growing-number-american-companies-are-moving-their-manufacturing-back-united>

Time Magazine. (1970, March 30). *1970 USPS strike: the strike that stunned the country*. Retrieved from [libcom.org](http://libcom.org): <https://libcom.org/library/1970-usps-strike-strike-stunned-country>

Tynan, K. (2014, September 15). *Why Community Banks Should Be Courting the Underserved*. Retrieved from [www.americanbanker.com](http://www.americanbanker.com): <http://www.americanbanker.com/bankthink/why-community-banks-should-be-courting-the-underserved-1069863-1.html>

Unisys & Wyatt Watson. (2003, July 8). *United States Postal Service Management Structure Study*. Retrieved from [govinfo.library.unt.edu](http://govinfo.library.unt.edu): <http://govinfo.library.unt.edu/usps/offices/domestic-finance/usps/pdf/project9.pdf>

UPS. (2015a). *Company History*. Retrieved from [www.ups.com](http://www.ups.com): <http://www.ups.com/content/us/en/about/history/>

UPS. (2015b). *Value-Added Services*. Retrieved from [www.ups.com](http://www.ups.com): [http://www.ups.com/media/en/value-added\\_pricing\\_retail.pdf](http://www.ups.com/media/en/value-added_pricing_retail.pdf)

UPS. (2015c). *Same Day Delivery*. Retrieved from [www.ups.com](http://www.ups.com): <https://www.ups.com/content/us/en/shipping/same-day-delivery.html>

UPU. (2015). *Posts facilitate financial inclusion*. Retrieved from [new.upu.int](http://news.upu.int): <http://news.upu.int/insight/backgrounders/postal-financial-inclusion/>

USPS. (2008, July). *Postal History: Missile Mail*. Retrieved from [about.usps.com](http://about.usps.com): <https://about.usps.com/who-we-are/postal-history/missile-mail.pdf>

USPS. (2009). *2009 Annual Report to Congress*. Retrieved from [about.usps.com](http://about.usps.com): [http://about.usps.com/who-we-are/financials/annual-reports/fy2009/ar\\_2\\_027.htm](http://about.usps.com/who-we-are/financials/annual-reports/fy2009/ar_2_027.htm)

USPS. (2012a, November). *The United States Postal Service: An American History 1775-2006*. Retrieved from <https://about.usps.com/publications/pub100.pdf>

USPS. (2012b). *Postal Facts: Fun Facts*. Retrieved from [about.usps.com](http://about.usps.com): <https://about.usps.com/who-we-are/postal-facts/fun-facts.htm>

USPS. (2012c, April). *U.S. Postal Service Field Offices' Role in Cost Reduction and Revenue Generation Efforts*. Retrieved from [www.gao.gov](http://www.gao.gov): <http://www.gao.gov/assets/600/590404.pdf>

USPS. (2012d, February 6). *United States Postal Service Ranked No. 1 in the World*. Retrieved from [about.usps.com](http://about.usps.com): [http://about.usps.com/news/national-releases/2012/pr12\\_023.htm](http://about.usps.com/news/national-releases/2012/pr12_023.htm)

USPS. (2012f, May 17). *Postal Service Moves Ahead with Modified Network Consolidation Plan*. Retrieved from [about.usps.com](http://about.usps.com): [http://about.usps.com/news/state-releases/sc/2012/sc\\_2012\\_0517.htm](http://about.usps.com/news/state-releases/sc/2012/sc_2012_0517.htm)

USPS. (2013, April). *Five Year Business Plan*. Retrieved from [about.usps.com](http://about.usps.com): <http://about.usps.com/strategic-planning/five-year-business-plan-2012-2017.pdf>

USPS. (2014a). *Phase 2 Network Rationalization - Frequently Asked Questions*. Retrieved from [about.usps.com](http://about.usps.com): <https://about.usps.com/news/electronic-press-kits/our-future-network/assets/pdf/ofn-phase-2-faqs.pdf>

USPS. (2014b). *2014 Annual Report to Congress*. Retrieved from [www.prc.gov](http://www.prc.gov): [http://www.prc.gov/Docs/91/91029/FY14.17\\_Annual-Report-Comp-Stmnt.pdf](http://www.prc.gov/Docs/91/91029/FY14.17_Annual-Report-Comp-Stmnt.pdf)

USPS. (2014c). *Postal Facts 2014*. Retrieved from [about.usps.com](http://about.usps.com): <https://about.usps.com/who-we-are/postal-facts/postalfacts2014.pdf>

USPS. (2014d). *Postal Facts: Innovation in the Mail*. Retrieved from [about.usps.com](http://about.usps.com): <https://about.usps.com/who-we-are/postal-facts/innovation-in-the-mail.htm>

USPS. (2014e). *Innovative Technologies*. Retrieved from about.usps.com: <https://about.usps.com/who-we-are/postal-facts/innovative-technologies.htm>

USPS. (2015a). *Top 10 Things to Know*. Retrieved from about.usps.com: <https://about.usps.com/who-we-are/postal-facts/top-10-things-to-know.htm>

USPS. (2015b). *Postal Facts: Size and Scope*. Retrieved from about.usps.com: <http://about.usps.com/who-we-are/postal-facts/size-scope.htm>

USPS. (2015c). *Shipping Consolidators*. Retrieved from www.usps.com: <https://www.usps.com/business/shipping-consolidators.htm>

USPS. (2015d). *Postal History: Significant Dates*. Retrieved from about.usps.com: <http://about.usps.com/who-we-are/postal-history/significant-dates.htm>

USPS. (2015e). *About the Board of Governors*. Retrieved from about.usps.com: <https://about.usps.com/who-we-are/leadership/board-governors.htm>

USPS. (2015f, January 5). *NOTICE OF THE UNITED STATES POSTAL SERVICE OF EXPANSION OF METRO POST MARKET TEST*. Retrieved from www.prc.gov: <http://www.prc.gov/Docs/91/91125/Notice.MP.DCExpansion.pdf>

USPS. (2015g, January 15). *Network Rationalization Service Standard Impacts*. Retrieved from about.usps.com: <http://about.usps.com/news/service-alerts/NRC/2015/NR-Service-Standard-Impacts-2015-0115.pdf>

USPS. (2015h). *This Post Office is always open*. Retrieved from about.usps.gov: <https://about.usps.com/who-we-are/postal-facts/always-open.htm>

USPSOIG. (2010, July 5). *Workforce Flexibility – Would it Work for the Postal Service?* Retrieved from www.uspsoig.gov: <https://www.uspsoig.gov/blog/workforce-flexibility-would-it-work-postal-service>

USPSOIG. (2012, February 9). *21st Century Post Office: Opportunity to Share Excess Resources*. Retrieved from www.uspsoig.gov: <https://www.uspsoig.gov/sites/default/files/document-library-files/2013/DA-MA-12-003.pdf>

USPSOIG. (2013a, May 21). *What America Wants from the Postal Service: A Survey of Internet-connected Americans*. Retrieved from www.uspsoig.gov: <https://www.uspsoig.gov/sites/default/files/document-library-files/2013/rarc-wp-13-009.pdf>

USPSOIG. (2013b, June 3). *The Global Logistics Revolution: A Pivotal Moment for the Postal Service*. Retrieved from www.uspsoig.gov: <https://www.uspsoig.gov/sites/default/files/document-library-files/2013/rarc-wp-13-010.pdf>

USPSOIG. (2013c, May 21). *Learning from Lean Six Sigma*. Retrieved from uspsoig.gov: <https://uspsoig.gov/blog/learning-lean-six-sigma>

USPSOIG. (2014a, February 12). *Issue in Focus: Using the Crowd to Delivery Packages*. Retrieved from www.uspsoig.gov: [https://www.uspsoig.gov/sites/default/files/document-library-files/2014/using\\_the\\_crowd\\_to\\_deliver\\_packages.pdf](https://www.uspsoig.gov/sites/default/files/document-library-files/2014/using_the_crowd_to_deliver_packages.pdf)

USPSOIG. (2014b, August 18). *Network Consolidation Reboot*. Retrieved from [www.uspsig.gov](http://www.uspsig.gov):  
<https://www.uspsig.gov/blog/should-postal-service-continue-its-consolidation-plan>

USPSOIG. (2014c, July 7). *If It Prints, It Ships: 3D Printing and the Postal Service*. Retrieved from [www.uspsig.gov](http://www.uspsig.gov):  
[https://www.uspsig.gov/sites/default/files/document-library-files/2014/rarc-wp-14-011\\_if\\_it\\_prints\\_it\\_ships\\_3d\\_printing\\_and\\_the\\_postal\\_service.pdf](https://www.uspsig.gov/sites/default/files/document-library-files/2014/rarc-wp-14-011_if_it_prints_it_ships_3d_printing_and_the_postal_service.pdf)

USPSOIG. (2015a, April 13). *U.S. Postal Service Revenue: Is the Glass Half Empty or Half Full?* Retrieved from [www.uspsig.gov](http://www.uspsig.gov): <https://www.uspsig.gov/sites/default/files/document-library-files/2015/rarc-wp-15-008.pdf>

USPSOIG. (2015b, January 28). *The Value of the U.S. Postal Service Brand*. Retrieved from [www.uspsig.gov](http://www.uspsig.gov):  
<https://www.uspsig.gov/sites/default/files/document-library-files/2015/rarc-wp-15-005.pdf>

Wahba, P. (2014, November 6). *USPS to deliver 7 days a week during holiday season in fight with FedEx, UPS*. Retrieved from [fortune.com](http://fortune.com): <http://fortune.com/2014/11/06/usps-to-deliver-7-days-a-week-during-holiday-season-in-fight-with-fedex-ups/>

Wall Street Journal. (2010, April 26). *The Big Brown Union Bailout*. Retrieved from [www.wsj.com](http://www.wsj.com):  
<http://www.wsj.com/articles/SB10001424052748704133804575198232906957778>

Walmart. (2015). *Grocery shopping made easy*. Retrieved from [www.walmart.com](http://www.walmart.com):  
<http://delivery.walmart.com/usd-estore/m/home/anonymouslanding.jsp>

Zhen, S. (2015, February 20). *How to Cash a Check Without a Bank Account*. Retrieved from [money.usnews.com](http://money.usnews.com):  
<http://money.usnews.com/money/blogs/my-money/2015/02/20/how-to-cash-a-check-without-a-bank-account>