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The Postal Service Role in the Digital Age
Part 1: Facts and Trends

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Executive Summary

The Internet and the digital economy are fundamentally changing the worlds of communications, transportation, and commerce. Since the dot-com boom and bust of the early 2000s, the digital economy has continued to grow at a staggering rate, as both consumers and businesses adopt electronic processes across multiple domains. New digital technologies have been "disruptive innovations"[1] for traditional businesses and their business models. These disruptions in combination with the great recession of 2008 to 2009 have had a significant impact on postal organizations all over the world, resulting in a steep decline in the volumes of personal, business, and advertising mail. The diversion to digital channels is real and accelerating. As one leading new media expert proclaimed, "If it can go digital, it will."[2]

By 2020, 40 percent of the U.S. population will be digital natives,[3] born into new technologies. Digital natives' behaviors are ingrained in electronic alternatives with little or no desire to deal with hard copies. This group chooses online banking over checks; Evites over invitation letters; text messages or Twitter over e-mail; and e-books over physical books. As younger digital natives begin to enter the workforce, their behaviors will have an even more fundamental impact on how businesses leverage technology.

In this paper, we present our research of the most prominent societal, behavioral, and technological tendencies affecting the postal ecosystem, coupled with their associated commerce, communication, and media trends.

Key Trends

1. *There has been a progressive shift in communications moving from the physical to the digital. With every new technology, the speed and scope of communications have increased.*

2. *Businesses and governments are looking to move not only communications, but also transactions, to the digital world.*

3. *The digitization of bill presentment and payments (to varying degrees of adoption) is becoming mainstream as more households, including seniors, and people of varying income levels, are adopting the trend.*

[1] Christensen, C. "The Innovator's Dilemma," *Harvard Business Press*. 1997.
[2] Jarvis, J. *What Would Google Do?*, Collins Business. 2009.
[3] Booz and Company, "The Rise of Generation C – Implications for the World of 2020." January 2010.

4. *Control is shifting from the sender to the receiver, giving them greater choice in what, when, and how they receive communications.*

5. *The Internet has evolved from mass broadcast media to personalized conversations, hastened by the growth of social media sites.*

6. *Traditional players in print media (magazines and newspapers) have not disappeared, but are rapidly shifting their focus to online content.*

7. *Although traditional media still receive a majority of advertising expenditures, online and mobile advertising continue to grab market share.*

8. *Explosive growth of mobile devices increases consumption of content "on the go" and provides marketers the ability to get their content directly into the hands of individuals wherever they are.*

9. *New marketing tools, combining data of online activities with other demographic information and offline activity, allow advertisers to offer more targeted, personalized marketing communications to potential customers with an easy way for them to respond.*

10. *E-commerce is growing rapidly but has not reached its full potential. Participants are still working to improve trust and enhance associated logistics, return services, payment, and security.*

11. *Mobile commerce is positioned to grow significantly in the U.S. market as a tool for marketing, retail, finance, and payments.*

12. *Digital technologies have facilitated global commerce, allowing businesses to market and together with parcel delivery services, fulfill orders across borders.*

Shortcomings of the Ongoing Digital Revolution

New ways of doing business are rapidly taking shape, as the digital revolution continues to rage. There are still some fundamental gaps restricting the pervasive advancement of the digital economy, which has not settled into a state of equilibrium. These gaps include:

- *The Internet and all of its functionality is not available to <u>all</u> citizens to reap its economic benefits. There is a lengthening tail of digital refugees, which will only increase as the digital revolution progresses;*

- *There is a potential threat to the principle of "network neutrality," nondiscrimination in access to communications networks;*

- *There is still a lack of an adequate level of privacy, confidentiality, dependability and security in digital communications and transactions as desired by citizens, with the potential of involuntary profiling of consumers;*

- *The digital infrastructure has limitations in connectivity and bandwidth, provided by companies that could go out of business at any time;*
- *There are inadequate personal information management tools to effectively deal with the increasing volume of electronic communications and applications;*
- *There is still insufficient availability of affordable digital currency and secure and convenient financial tools to transact online; and*
- *There are limits of choice, even withdrawal of the physical option as companies push consumers into digital-only communications.*

Key Postal Impacts

The Postal Service has maintained its position in physical communications due to its reach and monopoly access; however, new competitors are bypassing this advantage, changing the "postal ecosystem."[4] No longer do hard copy providers solely drive this ecosystem. Disruptive digital companies like Google are suddenly everywhere, changing business models for advertising (Google Adwords), communications (Gmail Priority), and publications (Google Books). With the enhanced targeting capabilities of digital technologies, marketers are shifting towards behavioral and location-based advertising that enables a more direct linkage between awareness and response. Some of the main types of service providers in the digital economy today — platforms, Internet intermediaries, search networks, digital data providers, application providers such as social media, and mobile technology providers — look to maintain or grow their position as the digital economy evolves.

But the Postal Service can continue to play a significant role. Some of the gaps cited above divide rather than bind the nation together. Filling those gaps can provide some real opportunities. Over the past 236 years, the Postal Service has provided the secure, universally accessible platform for physical commerce and communications. The Postal Service can extend this intermediary trusted role to the digital realm. It could establish an enabling platform to bridge the digital divide and allow citizens to traverse from the physical to the digital, if they choose or are required to, in this new digital economy.

This role may take on many different forms, but by working with leading Web service providers, the Postal Service has the opportunity to shape and enforce industry standards that fill identified gaps in the digital marketplace. Given the rapid cycles taking place in the digital economy, the window of time for action is limited. The Postal Service must establish a pivotal role for itself in this new emerging world to ensure its future relevance.

[4] Postal Ecosystem is the term used for the markets, applications, and processes as well as sending and receiving customers, partners, and vendors that have traditionally involved the Postal Service in some way.

About This Project

Given the impact of a world going digital and the associated decline in mail volumes, the OIG has undertaken this project to understand the potential impact of electronic diversion on communications, commerce, and the Postal Service, and to identify future opportunities arising from these disruptive technologies.

This research provides critical background information for postal stakeholders to envision what the future in 2020 may look like, to understand the relevance of today's postal products and mandates, and to identify the market gaps that need to be filled in order to satisfy society's future needs. The white paper provides a description of the radical and fast changes affecting communications and commerce in the digital age. It provides facts and trends and discusses the impacts of the digital economy on the postal ecosystem. However, this paper does not prescribe a strategy for the Postal Service. This will be the focus of follow up work.

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Background

Changing Demographics and Consumer Behavior in the Digital Era

Markets have traditionally been segmented according to life stage models that follow a predictable pattern — think of the Baby Boomers and Generation X. The latest focus involves Generation Y, today's largest demographic group and most telling in terms of what the future may hold. This group, also known as "digital natives" or "Millennials," has been surrounded by technology their whole lives. This demographic has pioneered a user revolution where the balance of power is shifting from large, controlling businesses to more confident and informed consumers.

Generation Y's current world revolves around entertainment, communication, and content. They are most likely to use the Internet to watch videos, play games,

Table 1: The Internet and Different Generations

Generation Name*	Birth Years, Ages in 2009	Percent of Total Adult Population	Percent of Internet-using Population
Generation Y (Millennials)	Born 1977 - 1990, Ages 18 - 32	26%	30%
Generation X	Born 1965 - 1976, Ages 33 - 44	20%	23%
Younger Boomers	Born 1955 - 1964, Ages 45 - 54	20%	22%
Older Boomers	Born 1946 - 1954, Ages 55 - 63	13%	13%
Silent Generation	Born 1937 - 1945, Ages 64 - 72	9%	7%
G.I. Generation	Born >1937, Age 73+	9%	4%

Source: Pew Research Center, 2008
* All generational labels used in this table with the exception of Younger- and Older- Boomers are the names conventionalized by Howe and Strausse's book Generations. Younger- and Older- Boomers is a terminology used by Pew.

and download music; communicate with friends and family through social networking sites and instant messages; or search for and contribute content to the Internet. It is therefore no surprise that social networks, online games, and e-mail are the top three activities consuming users' time online.[5] Though users are less open to receiving advertising on social networking sites where they feel the content is more personal, they are very receptive to marketing offers that they deem relevant to their interests and, even more so, if they come recommended by friends they trust.[6] Generation Y has come to rely heavily upon the Internet as a source of information gathering and sharing. Some of the most popular Internet websites have transformed traditional entertainment and communication media. For example, Wikipedia has become more popular than printed encyclopedias while Flickr and Picasa provide alternatives for printing and sending photos. YouTube, Netflix, and Google e-books are all transformational businesses that are challenging traditional models.

Masters at multi-tasking through several forms of multimedia, Generation Y wants everything "now."

Marketers must use a combination of media and content to get their attention.

Generation Y has a deep need for *immediacy* and like Generation X, they are naturals at multi-tasking, making use of consumer media in extremely fragmented ways. For business interactions, Generation Y generally prefers to patronize small businesses that they see as being more loyal to "people-over-profit."[7] From a sustainability perspective, Generation Y is all for the environment, as long as it comes with a consumer benefit.[8] This generation is aware of the perceived impact of hard copy mail on the environment; companies can reduce their environmental footprint through electronic solutions such as hybrid mail.

Mobile has become the communications method of choice for Generations X and Y who are "always on."

Baby Boomers were known as the wealthiest generation up to their time. Generation X was affected by economic and employment uncertainty. Generation Y has experienced the dot-com bubble in 2000 and the United States' housing bubble and great recession of 2008-2009. As a result, this group is trending away from credit cards in favor of debit cards and is more fiscally responsible than older demographics. They are the heaviest users of online banking. A 2010 study by Fiserv found that 80 percent of Generation Y had used online banking in the last month and most prefer online records, with growing

[5] "What Americans Do Online: Social Media And Games Dominate Activity," *Nielsenwire*. August 2010. *blog.nielsen.com/nielsenwire/online_mobile/what-americans-do-online-social-media-and-games-dominate-activity*
[6] "How Facebook Can Become Bigger In Five Years Than Google Is Today," *TechCrunch*, October 2010. *techcrunch.com/2010/10/02/facebook-bigger-google*
[7] "Why Gen Y prefers to patronize small businesses," *The Globe and Mail*. May 2010. *www.theglobeandmail.com/report-on-business/your-business/grow/customer-experience/why-gen-y-prefers-to-patronize-small-businesses/article1579809*
[8] "Go Easy on the Environment – And Our Wallets, Says Generation Y," *ScienceDaily*. January 2010. *www.sciencedaily.com/releases/2010/01/100121140345.htm*

interest in mobile banking via smartphones. Whereas only 11 percent of Baby Boomers had used mobile banking, 33 percent of Generation Y had used it in the last month.[9]

Because both Generation X and Y are "always on,"[10] mobile has become an efficient and cost effective way of staying connected. Youth, especially teens, are the largest users of SMS and MMS text messaging services. With 1.6 billion youth worldwide owning a mobile phone and spending a staggering $330 billion annually on mobile, the global mobile market is growing rapidly, especially in the developing world.[11] This global mobile growth may have a profound effect on bridging the digital divide (see Section 5), which, up until recently, was largely dependent on having personal computer access.

The Shift to E-commerce

Growth in Online Retail

Despite showing steady growth over the last decade, e-retailing still only accounts for about 4 percent of total retail sales in the United States (see Appendix A). [12] E-retailers include "pure plays," which are online-only stores, catalog, and mail order operations, as well as online stores of traditional brick and mortar retailers. A Forrester study showed that the two greatest barriers to online shopping are *concern over giving credit card information* (62 percent) and *the inability to see items personally* (55 percent).[13] One of the biggest trends in retail is consumers browsing and researching products online and then completing the sale in-store. The most recent Pew Internet Project Report (May 2010) shows that 58 percent of Americans have researched a product or service online, while 52 percent of the population have actually purchased products such as books, music, toys, clothing, or travel services online (see Appendix B). [14] In Finland, Netposti's (an online product of the Finnish postal service) response to credit card concerns was to sign a cooperation agreement with the leading online payment solutions provider that serves more than

Half of Americans have made a purchase online. Forrester forecasts double-digit growth for online retail in the U.S through 2014.

[9] "Fiserv Gen Y Research Reveals Fiscal Responsibility and Digital, Mobile Mindsets," *Fiserv*. March 2010. *investors.fiserv.com/releasedetail.cfm?ReleaseID=447863*
[10] "Traditionalists, Baby Boomers, Generation X, Generation Y (and Generation Z) Working Together," *United Nations Joint Staff Pension Fund*. *www.un.org/staffdevelopment/pdf/Designing%20Recruitment,%20Selection%20&%20Talent%20Management%20Model%20tailored%20to%20meet%20UNJSPF's%20Business%20Development%20Needs.pdf*
[11] "50 Mobile Youth Facts 2011," *MobileYouth.org*. 2010. *www.mobileYouth.org/download*
[12] "E-Stats: E-Commerce 2008," *U.S. Census Bureau. May 2010. www.census.gov/econ/estats/2008/2008reportfinal.pdf*
[13] "Why Some Consumers Don't Buy Online," *Forrester Research*. March 2005. *www.forrester.com/magazine/documents/Why%20Some%20Consumers%20Dont%20Buy%20Online.pdf*
[14] "Online Product Research," *Pew Research Centre*. September 2010. *www.pewinternet.org/~/media//Files/Reports/2010/PIP%20Online%20Product%20Research%20final.pdf*

1,500 Finnish online stores. Consumers are able to e-invoice their purchases directly to their NetPosti account and avoid using a credit card.[15]

Recent studies identify signs of continued e-commerce adoption. A Forrester study indicates more satisfaction for consumers who research and purchase online (82 percent) than for those who only research online and then shop in-store (62 percent). Forrester forecasts double-digit growth for online retail in the United States, expecting it to reach nearly $249 billion (6 percent of total retail sales) by 2014.[16] A 2010 survey taken in the state of Nebraska showed a significant increase in residents purchasing goods and services online (68 percent vs. 29 percent in 2000), particularly in rural areas. Those who did not shop online tended to come from areas with poor Internet coverage, suggesting that as Internet access improves, more consumers will choose to go online to find the best deals.[17] Despite this encouraging data, consumers will continue to finalize their sales in-person unless more effort is made to erode the barriers to purchasing online.

Shipping and Returns Logistics

Shipping and logistics are a huge component of e-commerce, leading to significant growth in parcel delivery for the Postal Service and its competitors. Moreover, in a world that caters to immediacy, shipping contributes significantly to the online shopping customer experience. Customers have developed higher expectations for their items to ship within 24 hours and arrive promptly, and returning products must also be easy.[18] Shoppers now consider free shipping the price of entry for their business rather than a bonus.[19] "Cart abandonment" worries e-retailers, as research suggests it should: 39 percent of shoppers in a Forrester Research study cited high shipping charges as the main reason for cancelling their purchases at checkout. Many e-retailers now offer free shipping either with or without a minimum purchase to entice online shoppers to complete their transactions online, while others offer a shipping subscription service (Amazon Prime).[20] Some online retailers such as Zappos.com attempt to differentiate their services by providing both free shipping and

Many e-retailers now offer free shipping or a "shipping subscription service" to entice shoppers to complete their transactions online.

[15] "Finnish online store invoices now available in NetPosti," *Itella website*. June 2010. *www.itella.com/english/current/2010/20100610_itella_netposti_en.html*
[16] "Forrester Forecast: Double-Digit Growth for Online Retail in the U.S. And Western Europe," *Forrester Research*. March 2010. *www.forrester.com/ER/Press/Release/0,1769,1330,00.html*
[17] "More Nebraskans Shopping Online Than Anything Else," *ZippyCart*. October 2010. *www.zippycart.com/e-commerce-news/1519-more-nebraskans-shopping-online.html*
[18] "Catering to Affluent Shoppers Online," *eMarketer*. September 2010. *www.emarketer.com/Article.aspx?R=1007943*
[19] "Retailers hope free shipping turns you into a regular," *USA Today*. November 2009. *www.usatoday.com/money/industries/retail/2009-11-16-freeshipping16_ST_N.htm*
[20] "Amazon's free-shipping secret," *cnet reviews*. December 2010. *http://reviews.cnet.com/8301-18438_7-20024644-82.html*

returns, a policy that has no doubt contributed to its being ranked number one out of 150 e-retailers in a recent study of online customer service.[21]

New research in the United Kingdom demonstrates just how important a hassle-free returns policy is when it comes to keeping customers, since almost half of those surveyed check the returns process before completing their purchases. More self-service logistics solutions have launched in Europe for senders to label and ship out packages and for receivers to pick up their purchases at their convenience. For example, DHL has a network of 2,500 Packstations servicing over 1.5 million customers in Germany, offering 24/7 access (see Appendix C).[22]

Establishing Trust in E-commerce and Facilitating Transaction Processing and Payment

An important consideration for the success of e-commerce is establishing trust, since buyers and sellers may never meet and accountability can be low. Larger retailers can provide trust to consumers through their established brand names and safeguards such as product ratings or guarantees. However, smaller businesses often struggle to appear credible online and must find other ways to establish trust. Social networking and e-commerce consolidator sites such as eBay are helping to build trust through establishing consumer reviews and exchange forums. Having credible payment processing is a very important requirement for e-retailers and one which has limited availability today.

The majority of transactions are still conducted using credit cards and processed through traditional, offline payment networks that link merchants and cardholders. There are many electronic payment alternatives being developed globally but the industry is still trying to build standards, and none have yet gained widespread acceptance among merchants or consumers. Paypal is the most widely used non-bank payment mechanism. Additionally, there is some consolidation in suites of e-commerce capabilities. One example of this trend is the recent purchase of SecurePay by Australia Post.[23]

Facilitating Cross-Border Commerce

There is considerable opportunity for increased growth in e-retailing through international export and import (cross-border shopping) as businesses look to market their products globally. In the United States, Amazon and eBay have shown significant growth in international sales with over 54 percent and 47 percent of revenue respectively stemming from international sales.[24] Until recently, many retailers viewed

[21] Betts, M. "Zappos.com earns top score for online customer service," *Computerworld*. June 2010. *www.computerworld.com/s/article/350085/Zappos_Earns_No._1_Ranking_for_E_retailing*
[22] "More capacity at DHL Packstations," *Market Flash*. Issue 415, 21 September 2010. *www.ipc.be/~/media/Documents/PUBLIC/Market%20Flash/401-500/MF415.ashx*
[23] "Australia Post Strengthens ecommerce presence," *Australia Post press release*. December 2010. *www.auspost.com.au/about-us/australia-post-strengthens-ecommerce-presence.html*
[24] "International E-commerce Expansion Benchmark Study," *J.C. Williams Group*. September 2009.

international expansion as an all-or-nothing proposition. The few incremental international orders were not viewed as enough of an incentive to deal with the complexity of entering new markets. This is changing, due to advances in technology, which includes international shopping cart solutions with local market payment options, translation capabilities, and more seamless fulfillment and logistics through third-party specialists.

53% of the largest US e-commerce companies accept international orders, but many admit to a poor cross-border customer shopping experience.

As an example, Canadian retail sales have been averaging 3 percent to 4 percent ahead of the U.S. market in recent years, but Canadian retailers have been slower to embrace the online channel, providing an opportunity for American chains to move north of the border.[25] Gap, for example, has just launched an online shopping site that takes care of the currency conversion, duties, and taxes for Canadian consumers to provide hassle-free sales for its Gap, Banana Republic, and Old Navy divisions. According to a J.C. Williams report, as of spring 2009, 53 percent of the largest e-commerce companies in the United States (more than $100 million in revenues) were accepting international orders, but many of these companies would likely admit that their international customers often suffer from a subpar shopping experience.[26] A retailer will first test the waters with international transactions through a third-party service provider (such as FiftyOne) that will provide the cross-border logistics and fulfillment in an e-commerce lifecycle. The retailer will later move to an in-country model of warehousing and fulfillment. Canada Post has successfully launched a managed cross-border e-commerce logistics service with its Borderfree program.[27]

[25] Flavelle, D. "Higher Canadian retail sales attract U.S. stores," *The Star*. October 2010. *www.thestar.com/business/article/875744--higher-canadian-retail-sales-attract-u-s-stores*
[26] "International E-commerce Expansion Benchmark Study," *J.C. Williams Group*. September 2009.
[27] "Selling to Canada Adds Up," *Canada Post Corporation*. *canadapost.ca/cpo/mc/business/solutions/borderfree.jsf*

Key Trends in the Evolution of Communications

Given the changes in demographics and consumer behavior, the exponential growth in e-commerce, and the use of innovative technologies, it is no surprise that electronic forms of communication are supplanting hard-copy communications among some consumers. From the personal to the corporate world, the Internet has transformed our ability to send messages, share knowledge, and conduct transactions more quickly and economically than ever before. This communications shift is having an impact on individuals, business, and government, forcing many to radically change how they adapt to this world and how fast they adjust.

The Shift from Physical to Electronic Communications Is Real

We are now visibly in the digital age where almost any communication that was traditionally executed in a physical manner can be conducted electronically. The cost savings can be significant, since digital delivery via the Internet avoids the cost of delivering a hard copy of many products. This transition to "e" has been particularly pervasive in the world of correspondence, where physical letter mail for both personal and business purposes is declining rapidly as digital methods of communication become mainstream.

The Postal Service's relevance could be eroded without a radical change in its role in the new economy.

The convergence of communications media formats, the increase in collaborative sharing of consumer knowledge, and the growing importance of declaring, tracking, and managing preferences have also contributed to the electronic shift. The impact of the electronic shift is directly felt by postal services around the world with significant declines in mail volumes (see Appendix D), and the Postal Service is no exception. The Postal Service's role as a primary platform for exchanging communications has declined in parallel with the drop in mail volume. While the volume and growth of First-Class Mail was traditionally linked to Gross Domestic Product (GDP) growth, new technology has diminished that relationship. The Boston Consulting Group (BCG) forecasted a drop in total mail volume for the Postal Service between 2009 and 2020 (see Appendix E).[28]

[28] "Projecting U.S. Mail Volumes to 2020," *Boston Consulting Grou*p. March 2010. *www.usps.com/strategicplanning/_pdf/BCG_Detailed%20presentation.pdf*

Table 2: Mail Volume Forecasts in 2020

Consumer-Sent Mail	Business-Sent Mail
▪ Consumer-sent mail to fall 39 percent overall with the greatest decline in payments sent. ▪ Consumer-sent mail to account for 8 percent of total mail sent (compared with 10 percent in 2009). ▪ Consumer "personal/social" mail to remain at 3 percent of all mail sent.	▪ Business-sent mail to fall by 15 percent overall, with the greatest decline in bank statements and payments. ▪ Business mail sent to consumers to fall 38 percent; to other businesses by 25 percent. ▪ Catalogs and magazines sent to fall by 20 percent. ▪ Ad mail sent to increase by 4 percent.
▪ Parcels sent by both consumers/businesses to increase by 40 percent.	

Source: Boston Consulting Group 2010.

With First-Class Mail volume expected to decline further, the Postal Service may become almost entirely a one-way broadcast distribution medium rather than a two-way communication exchange medium.[29] American mailboxes currently receive an average of four pieces of mail each day,[30] and entire households average only one personal correspondence each week compared to almost 18 pieces of marketing mail.[31] Americans increasingly perform their day-to-day tasks online. The convenience of *any time, any place, and any format* digital media ensures that the shift will continue to grow rapidly. By 2020, 40 percent of the U.S. population will be digital natives, whose communications behaviors are primarily digital. They will replace a previous generation with a preference for traditional mail communications.[32]

Studies show that consumers continue to value physical mail, but as the digital world advances, companies will need to find ways to identify and communicate through the customers' preferred channel.

Although declining First-Class Mail volume has been a hot topic in postal circles, physical mail should not be entirely discounted. In fact, 36 percent of U.S. respondents across all ages trust the mail more than e-mail — up from 29 percent in 2008.[33] A recent study commissioned by Pitney Bowes showed that approximately 60 percent of consumers still prefer to receive catalogs, bills, and bank statements by physical mail,[34] and a study by Epsilon Targeting[35] confirmed that young people prefer to learn about marketing offers via postal mail and newspapers rather than online sources (see Appendix F). These findings indicate the need for companies to better understand the communications needs of their customers and to communicate with them via their preferred channel of delivery. Hybrid mail services that

[29] "Implications of Declining Mail Volumes for the Financial Sustainability of the Postal Service," *USPS Office of Inspector General Risk Analysis*. September 2010.
[30] "Postal Service: End Saturday delivery in 2011," Chicago Breaking News. March 2010. *www.chicagobreakingnews.com/2010/03/postal-service-end-saturday-delivery-in-early-2011.html*
[31] "The Facts About Junk Mail," ForestEthics. *www.donotmail.org/section.php?id=3*
[32] Webb, J. "Three Numbers, 30-60-100, Foreshadow What's Ahead," October 2010. *whattheythink.com/articles/article.cfm?id=47075*
[33] "Direct Mail Beating E-mail for Young Adults," *Target Marketing*. September 2010. *www.targetmarketingmag.com/article/direct-mail-becoming-more-relevant-than-e-mail-young-adults-says-epsilon-survey/1#utm_source=tipline&utm_medium=enewsletter_continue&utm_campaign=2010-09-01*
[34] "Physical Mail Still Preferred by Many," *ZDNet*. May 2010. *www.zdnet.com/blog/doc/physical-mail-still-preferred-by-many/1367*
[35] "Finding the Right Channel Combination: What Drives Channel Choice," *Epsilon Targeting*. September 2010. *www.epsilon.com/pdf/med_pref_report_081610_FINAL_DRAFT.pdf*

convert electronic mail to physical or physical mail to electronic are emerging, such as Swiss Post Box, offered in partnership with Earth Class Mail.

The Shift from Paper to Digital in Business and Government

Technology innovation and an emphasis on protecting the environment is changing the way people live and work, driving cost-efficiency with the added benefit of improved sustainability. In the past, business communication was about sending memos, writing business letters, and holding face-to-face meetings. Contemporary business communications and processes have evolved to include all the latest technologies, such as e-mail, instant messaging, teleconferencing, videoconferencing, and even social networking. As businesses and governments evolve digitally, they have gone from offering websites with static content to basic e-commerce-enabled sites to fully interactive and collaborative Web 2.0.

The U.S. Government is going digital — the IRS plans to stop mailing income tax forms in 2011 and most government benefit payments will be made through direct deposit by 2013.

The progression for some has been slower than for others, largely due to cost, complexity of execution, and concerns about security. The recession of 2008-2009 encouraged many to speed up their efforts to save money. For example, in 2005, the U.S. Army made an effort to remove paper processes across the Army by moving to a fully electronic, Web-based solution, including e-forms that resulted in savings of $1.3 billion estimated per year and 30 minutes per person each day.[36] Apple has been marketing the iPad to hospitals as a paperless way to access medical records, gaining widespread enthusiasm from emergency room physicians.[37] Once a business has made the investment to go electronic, it is not likely to go back to paper processes.

Governments around the world are leveraging the digital economy as a way of engaging in more two-way dialogue with their citizens to help improve their quality of service. The U.S. Government, however, has been relatively slow to move from sender control to receiver control in the services it provides. State initiatives have advanced further than federal through online applications for services such as taxes, motor vehicle registration, and business licensing. The Obama administration has actively pursued its open government mandate by establishing conversations with its constituents through a number of federal portals and instant updates through the Government Notifications Dashboard.[38] Recent initiatives by the IRS and the Treasury Department are indicators of the government going digital. What seems most important is implementing standards to ensure operability across agencies for a more seamless user experience for citizens.

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[36] "Army evolves to e-forms," All Business. April 2005. *www.allbusiness.com/management-companies-enterprises/1088598-1.html*

[37] "The iPad makes its first hospital rounds," *ZDNet*. August 2010. *www.zdnet.com/blog/healthcare/the-ipad-makes-its-first-hospital-rounds/3880*

[38] U.S. Government Notifications Dashboard. *notifications.usa.gov*

Postal operators overseas are already offering a full spectrum of e-government services. Poste Italiane is supporting several e-government initiatives, which leverage the convergence of physical infrastructure and electronic platforms.

Trends in Finance, E-billing, and Payments

One notable area of electronic transformation is in finance, billing, and payments. In the United States, paper checks have declined from 61 percent of all payments in 2000 to just 26 percent in 2010, while online bill payments have grown from 12 percent to 45 percent of all payments.[39] Once preferred only by tech-savvy young males, the digitization of billing is becoming mainstream as more households, including seniors, and people of all income levels are adopting the trend. Currently in the United States, electronic payments are evenly split between two models, *payment at the biller website* (Biller Direct), and *payment through online banking*. According to Javelin Research, about 50 percent of U.S. households, or 43 million people, now pay bills through online banking each month.[40]

About 50 percent of U.S. households pay bills online each month.

Regardless of the perceived benefits of e-billing for the environment, cost savings, and consumer experience, e-billing adoption rates continue to fall short of market expectations.[41] While there are several limiting factors such as registering with each company website and lack of convenience in retrieving online bills, most consumers are complacent and simply cannot be bothered to make the effort to go paperless. Others still feel a need to receive a paper bill as a trigger to take action. Businesses and governments are using negative reinforcement, such as charging consumers for physical statements, in order to force consumers to make the switch (see Appendix G) with the goal of eventually eliminating paper-based bill presentment all together. The negative reinforcement is actually having positive effects for businesses as they move into transpromotional marketing opportunities based on customer purchasing habits.

The Speed and Scale of Communications Has Changed — the Need for "Now"

The velocity of communications changes with the launch of every new technology. When e-mail first moved to the mainstream in the mid-1990s, it was considered a very fast mode of communication, mirroring the speed of a fax at a much lower cost. But in the span of just two decades, e-mail has begun to be perceived by younger generations as slow, mainly because more accessible and immediate methods of conversation have emerged like SMS text messaging, instant messenger, Twitter, and social networking. These modes of communication tend to result in

The Wall Street Journal reports that usage of Facebook and Twitter are outpacing e-mail.

[39] "Online bill payment and e-bill adoption takes off in U.S.," *The Paypers Survey*. May 2010. www.thepaypers.com/news/e-invoicing/online-bill-payment-and-e-bill-adoption-takes-off-in-us-survey/741286-24
[40] "Going paperless can stop fees from banks," *The Post and Courier*. August 2010. www.postandcourier.com/news/2010/aug/22/going-paperless-can-stop-fees-from-banks
[41] "E-billing: Understanding the Adoption Barriers," *Striata*. www.tmforum.org/ArticleEbilling/8746/home.html

shorter, more direct messages that better capture the receiver's attention and elicit a faster response. Users are no longer expected to respond immediately to an e-mail since other methods of communication are preferred when an answer is needed right away. While it is true that social networks have gained in popularity with 48 percent of Americans using Facebook or LinkedIn[42] as a communications tool, e-mail is still entrenched in our daily lives, mainly for professional communications (work and business) and increasingly for preference-based marketing messages. For some, this communications intensity has created a challenge in being able to manage the volume and types of communications across all channels. Businesses and organizations are just starting to provide the tools to help individuals manage their connections.

When it comes to understanding the relevance of different methods of communication, views vary. Some reports claim that e-mail is outdated and unfashionable.[43] *The Wall Street Journal* reports that Facebook and Twitter are replacing e-mail as the "king of communication."[44] However, e-mail remains a very popular online activity, especially among older Internet users.[45] Despite its slower delivery and higher cost, physical mail is also valued for emotional correspondence, direct marketing, and legal standing. While older demographic segments may not hesitate to pay to send a letter, Generation Y will generally not pay for postage when e-mail, text messaging, and social networking sites are readily available free alternatives.

Generation Y will not pay for a stamp when "free" electronic alternatives are available.

Consumer Power — Communications Control Shifts from Sender to Receiver

A fundamental shift is occurring in the communications market, where control is shifting from the sender to the receiver. There is an inverse relationship between provider control and consumer trust, something that businesses and governments must understand and accept in the digital age. In other words, businesses need to trust their customers and give them control (and they will use it); otherwise people will walk away."[46]

Figure 1 depicts the emerging dynamic or the interplay between trust and control. This further illustrates the receiver taking more control over the channel while senders continue to explore new methods for communication.

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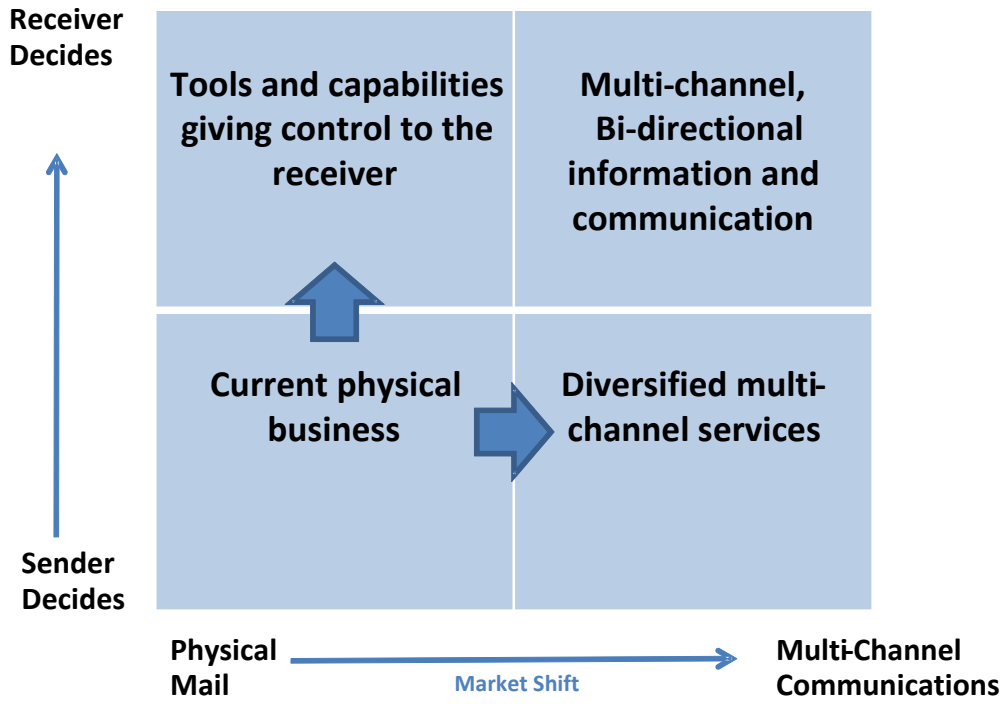
[42] "Online Product Research - 58% of Americans have researched a product or service online," *PEW Internet*. September 2010. *www.pewinternet.org/~/media//Files/Reports/2010/PIP%20Online%20Product%20Research%20final.pdf*
[43] "Generation Y: 'E-mail is unfashionable and outdated'," *ZDNet*. August 2009. *www.zdnet.com/blog/igeneration/generation-y-e-mail-is-unfashionable-and-outdated/2561*
[44] "Open Thread: The End of E-mail?," *Fast Company*. June 2010. *www.fastcompany.com/1661288/the-end-of-e-mail*
[45] "Generations Online in 2009," *PEW Internet Study.* January 2009. *pewinternet.org/Reports/2009/Generations-Online-in-2009/Generational-Differences-in-Online-Activities/4-Older-generations-use-the-internet-as-a-tool-for-research-shopping-and-banking.aspx*
[46] Jarvis, J. "What Would Google Do?, *"Collins Business*. 2009, p.82-83.

Figure 1: Shifts in Control and Mode for Communications



Source: Tomlinson, J., Innovapost, 2010.

Before the Internet, companies and institutions thought that maintaining control over content, policies, processes, and products would lead to winning the public's trust. In the digital age, we have seen the complete opposite. Content sites such as weblogs and social community boards give users the chance to produce content based on their real-life experiences. TripAdvisor, for example, has become an incredibly powerful and trusted source of travel information that is directly influencing consumer behavior. Through collaborative conversations, this shift in control is creating transparent markets where users become participants in the companies with whom they choose to do business. Companies such as Microsoft,[47] give users the opportunity to try new products in Beta release and then comment publicly with their recommendations for the next release, thereby gaining both credibility and consumer trust. That credibility and trust then grows throughout that consumer's social community, making transparency, credibility, and customer service a new form of advertising.

Through online collaboration, consumers are gaining more control over the products and services they receive from businesses.

This shift in control is also having a significant impact on the mail industry. As users become more aware of the amount and type of communications they are receiving through all channels, they are beginning to demand more relevant content tailored to their individual needs. This becomes directly relevant to First-Class and Standard Mail,

[47] Microsoft website. *connect.microsoft.com/Connect*

since individuals who feel they receive too much advertising are beginning to look for ways to control what information they receive and how they receive it.

The Internet Has Evolved from Mass Broadcast Media to Personalized Conversations

In a recent book, one digital authority noted that the mass market is dead — replaced with the mass of niche markets.[48] People gravitate towards their own interests. Thanks to the vast Internet content creation tools, people now have much greater opportunity to search for and find what they are looking for or create it themselves. Advertising has had to adapt to this notion, and as a result, many traditional forms of media are in decline. Spending on mass media, such as newspapers, magazines, catalogs, and TV, is shifting to more interactive methods of holding conversations with customers.

Social media offers brands more than just an outreach platform and are becoming increasingly popular as a marketing vehicle. Brands are finding ways to tap into peer-to-peer conversations to listen, learn, and act on the information they gather, allowing customers to shape the brands. Today's consumer wants validation and reinforcement from other consumers, and the opinions of their peers are more important than the same words from a company spokesperson. While return on investment (ROI) has been difficult to calculate, it is clear that social media has been an effective method of boosting brand awareness. Services like Twitter have allowed companies to see what consumers are saying in casual conversation without the need for expensive focus groups or consumer polls.[49]

National retailers like Walgreens and JCPenney are leveraging social media by incorporating electronic weekly flyers into Facebook pages.

Many U.S. industries and top companies have shifted significant marketing dollars into social media. The auto industry will spend $1.2 billion this year on social media advertising.[50] A top marketing executive recently stated that Facebook is playing the same marketing role that television played in the 1960s.[51] By incorporating electronic weekly newspaper flyers into Facebook pages, advertising becomes interactive. Viewers can enlarge and print barcode-enabled coupons as well as provide comments on products and specials. Users can also click a "share" button for each individual coupon or special to include in their personal newsfeeds.[52]

Refer-a-friend techniques can be very effective in the social media environment. ExactTarget, an interactive marketing provider, polled 1,500 consumers for a study to determine consumers' motivations for engaging with companies through e-mail,

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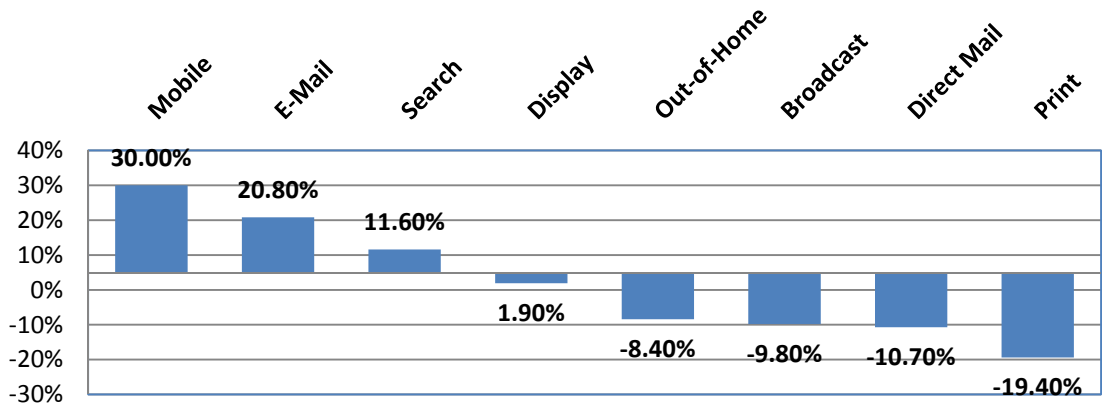
[48] Jarvis, J. "What Would Google Do?, *"Collins Business*. 2009, p.63-65.
[49] "Best Global Brands 2010," *Interbrand Study*. *www.brandwizard.com/Best_Global_Brands_2010_US.pdf*
[50] "Nissan's Social Media Strategy: Hire 'Nobodies'," *Fast Company*. October 2010. *www.fastcompany.com/1693652/nissan-turns-to-virtual-nobodies-for-social*-media-*strategy*
[51] Facebook Sells Your Friends, September 25, 2010, *http://www.businessweek.com/magazine/content/10_40/b4197064860826.htm*
[52] "Big Brands Using Weekly Circulars on Facebook", ClickZ, August 4, 2010. *www.clickz.com/clickz/news/1726606/big-brands-using-weekly-circulars-facebook?WT.rss_f=News+-+ClickZ&WT.rss_a=Big+Brands+Using+Weekly+Circulars+on+Facebook*

Facebook, and Twitter. The study found that consumers aged 15-to-24 may show their affinity for their favorite brands on Facebook, but they turn to e-mail for deals, offers, and coupons. For example, 56 percent of young consumers say they subscribe to a brand or retailer's e-mail newsletter in search of on-going deals, compared with 28 percent who turn to Facebook for deals. Consumers reported that they keep engaging in e-mail because it is private. They are able to receive exclusive, personalized offers, and they can respond to the message at their leisure.[53] Where advertisers use print marketing, more advanced printing techniques are evolving to enable more personalized mail, catalogs, and magazines.[54]

Traditional Print Media Move Online

The marketing and advertising industry, a major sector of the U.S. economy accounting for 2 percent of national GDP, is undergoing a fundamental restructuring where the lines of responsibility are blurring as traditional media migrate to digital platforms.[55] Figure 2 shows the trend in annual U.S. marketing spending by channel for 2007-2009.[56]

Figure 2: Changes in Marketing Spending by Medium



Source: *Winterberry Group*. 2010.
www.winterberrygroup.com/sites/default/files/Global%20Trends%20--%20DMA2010.pdf

[53] "Young consumers use e-mail to find deals," *Internet Retailer*. July 2010 *www.internetretailer.com/2010/07/01/young-consumers-use-e-mail-find-deals*
[54] "Press to Expand and Enhance Tribune Direct Marketing's Capabilities in One-to-One Communications," *Market Watch*. September 2010. *www.marketwatch.com/story/kodak-prosper-press-to-expand-and-enhance-tribune-direct-marketings-capabilities-in-one-to-one-communications-2010-09-27?reflink=MW_news_stmp*
[55] "Advertising Industry in the Digital Age," *Congressional Research Service*. November 2009. *www.fas.org/sgp/crs/misc/R40908.pdf*
[56] "Outlook 2011: Global Trends in Direct & Digital Marketing," *Winterberry Group*. October 2010. *www.winterberrygroup.com/sites/default/files/Global%20Trends%20--%20DMA2010.pdf*

The chart below shows the change in expenditure by media channel from 2008 to 2010.

Table 3: Direct Marketing Expenditure by Medium, 2008-2010
(in billions of dollars)

Direct Mail Advertising Expenditures (by Medium)	2008	2009	2010	2008-09	2009-10
Mobile	$0.20	$0.20	$0.30	49.60%	45.60%
Internet Other	$3.60	$3.60	$4.20	0.30%	15.20%
Commercial E-mail	$0.60	$0.60	$0.70	1.50%	11.20%
Social Networking	$1.20	$1.20	$1.30	2.50%	10.40%
Internet Search	$10.80	$11.20	$12.20	3.50%	8.90%
Internet Display	$7.30	$7.20	$7.80	-1.20%	8.00%
Other	$2.70	$2.40	$2.60	-10.00%	6.10%
DR Television	$22.20	$19.40	$20.30	-12.60%	4.70%
Direct Mail (Catalogue)	$18.90	$15.10	$15.60	-20.20%	3.10%
Insert Media	$0.90	$0.80	$0.80	-11.00%	2.40%
Direct Mail (Non-Catalogue)	$33.60	$29.30	$29.90	-12.90%	2.20%
Telephone Marketing	$41.80	$39.40	$39.50	-5.70%	0.10%
DR Magazine	$8.20	$6.70	$6.60	-18.20%	-1.30%
DR Radio	$4.30	$3.30	$3.30	-21.80%	-1.50%
DR Newspaper	$11.90	$8.90	$8.40	-25.30%	-5.40%
Total	$168.10	$149.30	$153.30	-11.20%	2.70%

Source: Direct Marketing Association, 2010.

Forrester expects digital advertising, which now accounts for about 12 percent of the U.S. advertising spending, to reach a 21 percent market share by 2014. Companies have been shifting their marketing budgets from traditional to new media tools such as corporate websites, blogs, and social media. However, even if online advertising doubles by 2014, traditional media will still account for the largest share of spending, dominated by TV (see Appendix H).

Print Advertising and Direct Mail to Internet Advertising (Including Direct E-mail)

Internet advertising includes online publications, video, search engine keywords, and e-mail, and its share of advertising revenue will increase almost 10 percent in 2010 to exceed that of print advertising. This trend is similar to how online ad spending

outpaced radio advertising in 2008.[57] Search advertising accounted for approximately half of all digital ad revenues in 2008 and was dominated by a few large firms such as Google and Yahoo (see Appendix I).

This shift to online channels is having an impact on direct mail volume growth for the Postal Service. ICH Global Insights predicts a modest increase of 2.2 percent for direct mail in 2010, as the economy begins a slow recovery.[58] BCG has projected that total advertising mail volumes will grow slightly (4 percent) through 2020. More specifically, BCG forecasts a moderate increase in Standard Mail (18 percent by 2020) and declines in heavier pieces such as catalogs and magazines (-29 percent and -17 percent, respectively).[59] The rationale for the continued, more moderate growth in direct mail is that physical direct mail offers a better guarantee that marketing messages will make it through the clutter at a time when electronic filters are becoming increasingly successful in blocking unsolicited e-mail. [60] The most successful direct marketing campaigns combine the physical and the digital.

BCG found that increasing use of online search ads and banner ads is reducing acquisition direct mail (to acquire new customers), while e-mail to existing customers is replacing retention direct mail (to keep current customers). A study by e-mail marketing vendor ExactTarget[61] found that 56 percent of young consumers, especially women, subscribe to a retailer's e-mail newsletter in search of ongoing deals and 28 percent turn to Facebook. The average American consumer receives 44 e-mails a day, 12 of which they signed up to receive from companies. Consumers have become more particular about what they choose to receive; thus, e-mail must be relevant or consumers will unsubscribe (see Appendix J).

Books to E-books

E-book sales now make up 9 percent of the consumer book market, up 193 percent over a year ago, according to the Association of American Publishers. The growth in e-books, similar to other transforming technologies, arises out of desire to decide where, when, and how to read books. Amazon reported in 2010 that it was selling almost two times as many e-books for every hardcover book,[62] and sales via

2010 was the year that e-books and e-readers turned a corner, selling faster than hardcover books at Amazon.

[57] "Is 2010 the Year Digital Will Eclipse Print Ad Spending?" *Wired*. March 2010. *www.wired.com/epicenter/2010/03/is-2010-the-year-digital-will-eclipse-print-ad-spending*
[58] "*The Power of Direct Marketing, ROI, Sales, Expenditures and Employment in the U.S., 2009-2010 Edition,"* DMA.
[59] "Projecting U.S. Mail Volumes to 2020," *Boston Consulting Group*. March 2010. *www.usps.com/strategicplanning/_pdf/BCG_Detailed%20presentation.pdf*
[60] Hooper, R., et al. "Modernise or decline, Policies to maintain the universal postal service in the United Kingdom." Department for Business, Enterprise and Regulatory Reform, December 2008.
[61] "Young consumers use e-mail to find deals," *Internet Retailer*. July 2010. *www.internetretailer.com/2010/07/01/young-consumers-use-e-mail-find-deals*
[62] "Amazon: Kindle sales accelerating; Demand tipping point?," *ZDNet*. July 2010. *www.zdnet.com/blog/btl/amazon-kindle-sales-accelerating-demand-tipping-point/36891*

the Kindle store are expected to grow 195 percent to $701 million this year, according to a study by Cowen and Co.[63]

Catalogs and Publications to Websites

One of the reasons that online shopping has been so successful in the United States is due to its long history with catalog shopping. However, many large U.S. retailers are beginning to reduce their use of catalogs due to the high cost of production and delivery. JCPenney announced the elimination of its traditional catalog, but will continue to use print to drive customers to its online store with category-targeted "Look Books," containing less merchandise and having no pricing details.[64] Publications such as *The New Yorker* magazine offer digital versions, which leverage the interactivity of the Internet with animated covers, slideshows, and bonus content.[65]

Newspapers to Online News

The newspaper industry faces declining advertising revenues and circulation. Electronic media threatens its relevance and publishers must reinvent their businesses to remain successful. Newspapers have also lost lucrative classified ads to online sites such as Craigslist that charge very few fees. However, the Pew Internet Report has identified a trend in the synergy of multiple media that may help prolong the life of the newspaper industry whereby more than a third (36 percent) of Americans gets their news from both digital and traditional sources. News Corp., owner of the *New York Post*, is planning to introduce a new national digital newspaper distributed exclusively via mobile handsets and connected devices including Apple's iPad.

The Future Is Always "On" — Mobile Technology Means Local Content, for Me, Right Now

Explosive growth of smart phones, iPads, netbooks, and other mobile devices has increased consumption of content on the go and allowed marketers to get their content directly into the hands of individuals wherever they are. The reality of mobile is that it enables customers to take on a more participatory role in the communications they receive. In this new world, businesses need the ability to enable relevance control. For small businesses, in

Google predicts that half of all web traffic will be through a mobile device by 2013.

[63] "Kindle, iPad Aren't Mortal Enemies," *PC World*. December 2010. *www.pcworld.com/article/212235/kindle_ipad_arent_mortal_enemies.html*
[64] "J.C. Penney to Quit Catalogs," *Print CEO*. September 2010. *printceo.com/2010/09/jcpenney-catalogs?utm_source=printceo&utm_medium=e-mail&utm_campaign=weeklynewsletter*
[65] "New Yorker Magazine Rolls Out iPad Edition," *Print CEO*. October 2010. *printceo.com/2010/10/new-yorker-magazine-rolls-out-ipad-edition?utm_source=printceo&utm_medium=e-mail&utm_campaign=weeklynewsletter*

particular, the next wave of digital marketing trends includes several new ways to build closer customer relationships:[66]

- Better local ad targeting through geography-based advertising together with standard demographic or keyword targeting (e.g., Local.com, Facebook, Groupon, LinkedIn).
- More timely, relevant marketing through mobile tactics (SMS, MMS, e-mail and Mobile Web).
- Better ROI through online ad pricing based on customer action taken rather than cost per click.
- Wider exposure through online retail consolidators and highly targeted consumer retail sites.
- Increased brand credibility through social media advertising and unique applications.

According to ComScore, smart phone penetration is now at 19 percent in the United States with 45 million active smart phones[67] and an expected annual growth rate of 20 percent through 2013 (see Appendix K). [68] Almost one-third of customers currently choose a smart phone over a regular phone, and Nielsen reports that smart phone penetration will exceed 50 percent in the United States by 2011.[69] Gartner recently reported that by 2013, the combined installed base of smart phones and browser-equipped enhanced phones will be greater than the installed base of personal computers. Google claims that there has been a 500 percent[70] growth in mobile search in the past two years and boldly predicts that by 2013, half of all web traffic will be mobile.

According to Forrester, 5 percent of mobile phone owners research products, 2 percent receive coupons and promotions each month, and 2 percent purchase via mobile.[71] Though these rates are low, the industry is set for significant growth. The mobile market is very much a moment-of-need concept because it is time and location specific, making it ideal for location-based search, services, and advertising. Location data, together with weather and traffic, census data, demographics, psychographics, and customer relationship management, is starting to be mined to build place profiles that can be used to inform consumers about what is available to them where they are. Location-based

[66] "The Next Wave of Digital Marketing Trends," *Entrepreneur*. May 2010. *www.entrepreneur.com/marketing/onlinemarketing/article206418.html*
[67] "45 million U.S. Smartphone Users," *comScore*. April 2010. *metrics.admob.com/2010/04/45-million-us-smartphone-users-comscore*
[68] "Best Global Brands 2010," *Intebrand Study*. *www.brandwizard.com/Best_Global_Brands_2010_US.pdf*
[69] "Nielsen: U.S. Smartphone Penetration to Be over 50% in 2011," *GPS Business News*. March 2010. *www.gpsbusinessnews.com/Nielsen-US-Smartphone-Penetration-to-Be-over-50-in-2011_a2154.html*
[70] "Google Outlines Mobile Trends at Advertising Week DC", *The Huffington Post*. September 2010. *www.huffingtonpost.com/eric-shutt/post_904_b_735621.html*
[71] "Millions of Americans are engaging in m-commerce, Forrester study finds," Internet Retailer. September 2010. *pre.internetretailer.com/2010/09/23/millions-americans-are-engaging-m-commerce-forrester-says*

services are expected to grow to $12.7 billion by 2013 and attract 18 percent of mobile users, while mobile local ads are expected to grow to $2.02 billion in 2014.[72]

As mobile technology advances, there is a blurring of the lines between traditional laptops and mobile phones, as device capabilities *converge* in new products such as the iPhone and other smartphones. Companies know that developing applications that can run on any device is important in a world where people are living multi-device lifestyles. Amazon, for example, is seeing success by formatting its Kindle books to be read on multiple devices and platforms such as Android, iPad, iPhone, or Mac.[73] The marketing and business world is responding by creating integrated advertising strategies and cross-promotional concepts that focus on placing advertising messages in *multiple channels* (including both print and digital) using tools such as "quick response" codes — a type of bar code placed on advertisements, department store displays, restaurant menus, and other material — that can be scanned with a mobile device. Consumers can use the codes to download coupons, ads, or product information, while companies can track individual responses.

Broader use of mobile devices is also a growing trend among business users. According to the Yankee Group, there are approximately 78 million business wireless subscribers in the United States, and this figure will grow to more than 90 million by 2013.[74] Most noteworthy is the shift in the types of devices and applications preferred by business users. BlackBerry smart phones, long considered the cornerstone of enterprise mobility since they launched in 2002, are beginning to lose popularity and market share to Apple and Android phones.[75] BlackBerry has held onto share due to its enterprise security platforms, but as users begin to blur their personal and work activities, they are beginning to demand more user-friendly devices and applications in both the office and at home. This convergence of technologies will no doubt have an impact on the competitive technology landscape in years to come.

[72] "Mobile local ads are projected to hit $2.02 billion in 2014," *Internet Retailer*. September 2010. *www.internetretailer.com/2010/09/30/mobile-local-ads-are-projected-hit-202-billion-2014*
[73] "Why Amazon's Kindle Will Eventually Win the e-Book Wars," *Gigaom*. June 2010. *gigaom.com/2010/06/21/why-amazons-kindle-will-eventually-win-the-e-book-wars*
[74] "Sprint Ranks Highest among Large Business Users in Wireless Voice and Data Satisfaction, Outperforming AT&T, T-Mobile and Verizon in Study," *Business Wire*. 2010. *www.thefreelibrary.com/Sprint+Ranks+Highest+among+Large+Business+Users+in+Wireless+Voice+and...-a0216898355*
[75] "Business smartphone users moving away from BlackBerry, study finds," *Visage Mobile*. September 2010. *www.visagemobile.com/news/news/mobile-strategy-and-policy-news/5262/business-smartphone-users-moving-away-from-blackberry-study-finds*

More Targeted, Personalized, and Measurable Marketing through Behavioral Advertising

A major benefit of electronic marketing tools is the ability to offer more targeted, personalized marketing communications to potential customers with an easy way for them to respond. Advertisers must now consider many more simultaneous channels. Internet advertising has evolved from basic banners and keywords to a more advanced form of behavioral targeting that allows advertising networks to collect information about the online activities of a consumer for the presentation of relevant ads. These networks gather data by observing millions of consumers and tracking the sites visited and length of stay. These online firms claim that no personal data is stored, so each individual is anonymous. Companies such as Yahoo, Google, and Akamai Technologies offer behavioral ad targeting, which is expected to be a significant ad segment in the next few years.[76] Digital advertising is powerful in that it lends itself to quantitative analysis and measurable results. Canada Post has recently launched a digital direct marketing network that delivers local offers and advertisements to consumers using location and behavioral targeting.

The new battleground for marketers is ensuring consumers receive content that is meaningful to them.

As mobile devices continue to drive a linkage between the digital and physical worlds, mobile search is set to become a high driver of in-store traffic. Research firm eMarketer expects U.S. mobile ad spending to rise from $648 million in 2008 to more than $3 billion by 2013. The keys to successful mobile marketing lie in the ability for a marketer to grow their customer database and locate the target segments while leaving the consumer more in control of the actual marketing content they receive (see Appendix L).

The promise of mobile location-based advertising and marketing has been fairly slow to materialize but is now gaining momentum as large national brands and local businesses alike are racing to partner with innovative mobile service providers. The recession has resurrected the *coupon* as a way for retailers to drive traffic into their stores. Groupon is an example of a mobile advertising provider that targets, promotes, and sells coupons for future purchases at local businesses, thereby generating immediate revenue for the advertiser. In one case, Groupon ran a promotion for a small Boston restaurant that resulted in the purchasing of discount vouchers by some 6,700 people in one day.[77]

[76] "Case study: Consumer Tracking on Levis.com," *BehavioralTargeting.Biz*. April 2010. behavioraltargeting.biz/case-study-consumer-tracking-on-levis-com
[77] The rise of Location-Based Personalized Shopping, Mobile Marketer, September 20, 2010. www.mobilemarketer.com/cms/opinion/columns/7386.html

M-commerce Is the Way of the Future

Although mobile commerce (m-commerce) has developed slowly, the category is set to grow significantly as a tool for marketing, retail, finance, and payments. Mainly used for information gathering to date, retailers are now starting to leverage mobile technologies to convert browsers into buyers. According to Deloitte's 25th Annual Holiday Survey 2010, 17 percent planned to use their mobile phones during the holiday shopping process, and among those, more than half plan to use their phones to compare prices or find store locations compared to 46 percent that plan to look for product information and 42 percent that will actually make purchases.[78]

Mobile commerce ("m-commerce") is considered to be the next big thing for marketing, commerce, and payments in the evolution of the digital world.

While mobile payments are well-established in other countries, they remain at an early stage in the United States. To encourage mobile payments, Visa has released a contactless payWave payments technology pilot for commuters in New York and Los Angeles. A small electronic chip embedded in the mobile phone or payment card communicates with contactless readers at the fare gate and on the bus so that transit riders can make payments by simply holding their device up to a fare reader. One may reload the phone or cards online or over the phone.[79] ABI Research claims that mobile financing, including mobile person-to-person payments, is "the next big thing," and predicts there will be almost a half-billion mobile financial customers in 2013.[80]

With online banking gaining momentum, it isn't hard to make the jump to mobile banking. Bank of America reports that 17 percent of its online banking customers already use mobile services such as alerts to review balances, and Smartphone applications to view transactions, pay bills, or even make deposits by taking a photo of a check. [81] Financial institutions have already developed a small but growing number of iPhone applications, and consumers will continue to expect more functionality in their mobile devices. Some estimates predict that by 2013 there will be almost a half-billion mobile financial customers, including mobile peer-to-peer payments. Despite its slow growth rate, m-commerce is expected to reach $18 billion by 2013. [82]

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[78] "Deloitte's 25th Annual Holiday Survey," *Deloitte*. November 2010. *www.deloitte.com/view/en_US/us/Industries/Retail-Consumer-Business/da7f6d847113c210VgnVCM3000001c56f00aRCRD.htm*

[79] "Visa launches contactless payment trials for commuters in New York, Los Angeles," *The Paypers*. September 2010. *www.thepaypers.com/news/mobile-payments/visa-launches-contactless-payment-trials-for-commuters-in-new-york-los-angeles/742042-16*

[80] "Mobile Banking is an Enormous Growth Market," *L'Atelier*. March 2009. *www.atelier-us.com/mobile-wireless/article/mobile-banking-is-an-enormous-growth-market*

[81] "Full Service Mobile Banking," *CMS Wire*. September 2010. *www.cmswire.com/cms/enterprise-20/mobile-enterprise-more-mobile-banking-marketing-trends-008604.php*

[82] "Google Outlines Mobile Trends at Advertising Week DC," *The Huffington Post*. September 2010 *www.huffingtonpost.com/eric-shutt/post_904_b_735621.html*

Gaps in the Digital Age

The digital revolution has ushered in many enhancements to the world of communication and commerce. Citizens and businesses all over the globe can now communicate and transact instantly and cheaply. But for many consumers, the digital world is imperfect. The Internet was designed as a channel for the exchange of ideas among trusted parties, not as a means for commerce. As new online tools and capabilities roll out, it introduces new shortcomings in the infrastructure.

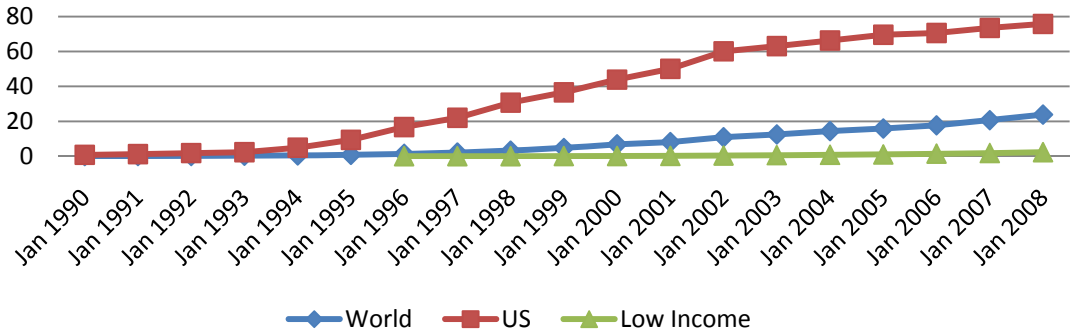
This section begins with a look at the significant segments of society that remain left behind and others likely to join this group as the digital revolution continues. The section also briefly summarizes four other shortcomings including the challenges of keeping the digital platform "neutral," the lack of an adequate level of privacy, confidentiality, dependability and security in digital communications and transactions as desired by citizens, the information overload and continuing lack of adequate tools to manage personal information, and finally, the need for a secure and convenient platform for financial transactions. Neither the digital or the physical world seem to be perfect; each has its own weaknesses and strengths. Digital communications are quick and cheap but they are often not secure and not always private. Providers of online services may come and go depending on economic cycles, acquisitions and other factors, disrupting life for businesses and consumers alike. Physical mail is secure and private, but it is more expensive and slower. The question at hand is how to forge a symbiotic relationship that combines the desirable characteristics from both media while building a platform that harnesses the positive synergetic effects of both worlds.

The Internet and Its Consumer Tools Are Not Available to All Citizens

While the federal government has established a principle of universal service in the physical world, that principle does not yet exist in the electronic world in the United States. With the shift in both commerce and communications toward electronic channels, those without access to high-speed Internet (due to either cost, aptitude, or access) could be on the wrong side of the digital divide. Despite widespread adoption globally, there remain groups of people that are unable to, or choose not to, access the Internet. Currently, one quarter of the U.S. population does not use the Internet while a third does not have high-speed access.[83] According to a recent OECD study, in the United States, growth in home broadband access has slowed and currently sits at 66 percent, up only 3 percent from 2009 — putting the nation in 15th place for the proportion of citizens with high-speed access (see Appendix M).[84]

[83] "Internet World Stats Usage and Population Statistics," *www.internetworldstats.com/am/us.htm*
[84] "U.S. lagging behind other countries in broadband access," *Bloomberg News*. June 2010. *www.tampabay.com/news/business/economicdevelopment/article1099580.ece*

Figure 3: Internet Users (Per 100 People), 1990-2008



Source: The World Bank, 2008 *data.worldbank.org/indicator/IT.NET.USER.P2/countries/1W-US-XM?display=graph*

However, broadband access is just one measure of the digital divide. As the developing world has shown us through its leap to the adoption of mobile telecommunication, consumers will have more options for connecting as technology becomes cheaper. The rise in the use of the mobile Internet points towards a shift from a PC-based to mobile-based Internet economy. Mobile phone penetration rates may have an increasingly significant impact on bridging the digital divide. Both government and technology leaders have a role to play in helping to reduce the digital divide. By working together, they can seek appropriate means to leverage technology to bridge the existing barriers. Many of these barriers are not technical in nature and relate more to cost effectiveness in service availability.

With the advance of mobile technologies, there are means to connect disparate communities while reducing costs. In particular, the government has a role to play in implementing a national digital strategy that increases access to online government services, delivering the same personalization, choice, speed, and 24/7 access that consumers expect from private sector services. As businesses and government turn increasingly towards the Internet to provide information, products, and services, there is concern that some excluded groups will fall further behind. The United States can benefit from the experiences of other developed countries that have been pursuing a digital strategy to help reach underserved segments.

Both government and technology leaders have a role to play in helping to reduce the digital divide — by increasing service availability, connecting communities and reducing costs.

Potential Threat to the Principle of "Network Neutrality"

One of the key characteristics of the digital revolution is the ability of anyone — citizens, businesses or governments — to be online. On the positive side, this sparks innovation and encourages the market to determine what works and what does not. On the negative side, it creates a muddled medium, with heavy traffic, full of platforms that

could operate with a bias towards a particular company's customers or proprietary technologies. In the end, there is no guarantee that platforms provide individuals, small businesses, or large companies the same kind of treatment without preference and with choice of control over services. At the same time, the neutrality needs to extend further. The infrastructure should not pick winners or losers, whether the "contestants" are applications or users. Otherwise, one ends up with a caste system, with customers deemed more valuable receiving a higher level of service.

Lack of an Adequate Level of Privacy, Confidentiality, Dependability, and Security in Digital Communications and Transactions

As the Internet has grown, so too has the need for privacy, confidentiality, dependability, and security controls to protect users. These controls are needed to encourage full electronic adoption of sensitive transactions such as in banking, medical, and government services. Without an internationally accepted standard for user authentication and identity management, businesses have developed their own level of security based on their needs and the perceived needs of their users. Privacy of personal information and identity management may hinder further growth in Internet platform usage for commercial purposes. The inability to know, with assurance, with whom you are dealing at the other end of a transaction or communication limits the level of activity. This distrust remains a serious barrier to increased productivity and economic growth.

Individuals currently lack standardized, trusted security processes and tools to manage their own identity or enable personal controls on the Internet.

In the past few years, there has been much debate over Internet security. While all parties agree that it is needed, the critical questions are around the degree of control and who should maintain the control. Individuals are generally very sensitive about protecting their online activities, and are wary of handing too much information to businesses or governments. Most agree that they have a different tolerance level for perceived security risk based on their particular activity on the Internet. A look across demographics finds that fears of online security exist among all age groups, but what people actually choose to do to protect their identities differs. Many older users do not go online because they do not trust that their transactions will be safe. Even Generation Y expressed concern in a recent survey with 89 percent of respondents believing that identity theft is a growing problem in our society and less than half of the respondents feeling safe sharing personal or financial information online.[85] The key will be providing a context-aware, consumer-controlled identity management capability.

Changing technologies also shift consumer concerns. While PC security is a priority, smartphone security has yet to receive the same level of attention and faces increasing threats.[86] Although the actual number of attacks on mobile devices is low compared to

[85] "Generation Y Online Security Survey Conducted by TRU Research," *sponsored by RSA (EMC)*. April 2010. *www.rsa.com/maintainmyprivacy/Gen_Y_Int_Sec_Surv_Res_TRU_RSA.pdf*

[86] "Cyber criminals target Smartphones as malware increases by a third in 2010", AdaptiveMobile, 15 Dec 2010, www.adaptivemobile.com/press-centre/press-releases/cyber-criminals-target-smartphones-as-malware-increases-by-a-third-in-2010

other platforms, attacks are on the rise as mobile phones become more Web-capable and used for daily financial transactions. Social networking privacy concerns have ballooned over several recent shifts in Facebook's privacy policy and settings, and the efforts by some large companies to manage online traffic have sparked new concerns over whether there will be a large entities governing the once-free world of cyberspace.[87] In fact, the Federal Trade Commission and Congress have grown concerned over privacy issues and are considering "do not track" legislation, with a bill introduced in the House in February.

Inadequate Personal Information Management Tools

With the vast amount of information available on the Web and the explosion of e-mail, users have become overwhelmed with searching and finding information that is relevant to them. Some of the latest Internet innovators are those focused solely on developing unique Internet management applications and services that can help people decipher the "good from the bad" and organize it in a way that increases their Internet productivity. This includes acting as a curator for personal information, storing financial transactions, health records, and other key data, and providing efficient delivery of information when needed.

There is a need for a "universal e-mail service" that can help consolidate consumers' e-mails for ease of management.

Both consumers and business people alike are growing increasingly wary of e-mail overload. According to The Radicati Group, the typical corporate user sends 36 e-mails and receives 61 legitimate e-mails a day. The average user has 1.6 e-mail accounts, with 75 percent of all e-mail accounts belonging to consumers and 25 percent to corporate users. Many people have multiple e-mail accounts to help manage and prioritize their messages, such as a work account, plus personal primary, secondary and marketing accounts; and 17 percent of Americans create a new e-mail address every 6 months.[88] To manage this overload some are forwarding multiple e-mails to one location while others are looking for a "universal e-mail account." Several models have recently entered the market, such as Google's Priority Inbox feature, which prioritizes e-mail based on algorithms and mailbox habits, and Zumbox's digital mailbox for every U.S. postal address.

Insufficient Availability of Affordable Digital Currency as Well as Secure and Convenient Financial Tools

Financial shortcomings (both in terms of secure tools for payment, and seamless cross-border payments) are arguably one of the most significant gaps in the digital economy. Multiple electronic bill presentment and payment methods have emerged due to a lack of consistency and centralization by billers and banks and a lack of clear industry standards. Analysts agree that online banking payments will dominate in the future, as

[87] "Best Global Brands 2010," *Interbrand Study*. www.brandwizard.com/Best_Global_Brands_2010_US.pdf
[88] "E-mail Statistics Report," *Radicati*. 2010. www.radicati.com/wp/wp-content/uploads/2010/04/E-mail-Statistics-Report-2010-2014-Executive-Summary2.pdf

shown in more mature e-payment markets such as Canada and the United Kingdom. Ideally, consumer channel preference would enable both presentment and payment.[89] Businesses, particularly small-to-medium sized, still feel a sense of security and control by using paper-based invoicing, and with a lack of uniform international invoicing and content presentation formats, many fear the high cost of implementing an e-billing solution.[90]

Though business' use of checks is on the decline (81 percent in 2004 to 74 percent in 2007), paper checks still account for the majority of commercial payments in the United States, leaving significant opportunity to streamline enterprise payables with electronic processes. For example, New Jersey will replace weekly unemployment checks with debit cards or direct deposit, saving the state as much as $8 million a year.[91] Finally those who have less access to debit and credit cards — the financially challenged and new immigrants — are at a further disadvantage as individuals are increasingly charged predatory fees as they move money from digital to paper and back.

Key Realities for the Future

What Does the Future Look Like? — A Vision for 2020

As we reflect on the last decade of change in the transition to the digital economy, there is no question that the postal industry will continue to face further changes in its operating environment over the next decade and beyond. As digital natives join the workforce and become active contributors to the economy, their paperless behaviors will have a profound impact on many aspects of the postal business as we know it today:

- Mobile technology will become further entrenched in society as the main mode of Internet activity, electronic communications, and commerce. Innovation will continue to create new ways of communicating.
- Online trust could be redefined through integration of social, business, and government networks, reinforced with recognition of the legal status of qualified electronic communications.
- Consumers will demand a more seamless and secure method of receiving communications and paying for services from businesses and governments. If it is not available electronically, it will not be needed or desired by a significant portion of the population.
- Despite the advances in digital communication, physical delivery will still be essential for some consumer and business applications. The continued

[89] "E-billing: Understanding the Adoption Barriers," *TM Forum*. *www.tmforum.org/ArticleEbilling/8746/home.html*
[90] "Finsights: Enterprise Payments," *Infosys*. *www.infosys.com/FINsights/Documents/pdf/issue3/FINsights-Chp6.pdf*
[91] "N.J. ending use of checks for jobless benefits," *Philly.com*. October 2010. *www.philly.com/philly/news/new_jersey/20101028_N_J__ending_use_of_checks_for_jobless_benefits.html*

shortcomings in the digital world will help physical mail retain and enhance its value.

- Consumers will demand simpler, faster, and cheaper e-commerce capabilities from retailers globally — brands that deliver secure and convenient cross-border shopping, shipping, and return services will prevail.
- Personal correspondence mail will continue to be a very small percentage of total mail sent, while business and government communications will continue to shift to an electronic format, further reducing the amount of First-Class Mail. While both First-Class and Standard Mail will continue to exist, the "two-way" nature of the physical mail channel will decline as businesses and governments invest in their own secure communications solutions.
- Standard Mail will need to be ever more targeted, relevant to consumers' needs, and integrated with multiple channels of communications to retain its value, while consumers will require choice in the communication they receive and control over how they receive it.

Redefining the Postal Ecosystem

The "postal ecosystem" can be defined as the markets, applications, and processes that have traditionally involved in one way or another, the Postal Service and its sending and receiving customers, partners, third party consolidators, and vendors. With the changing competitive dynamics of the communications, media, and technology industries, the postal ecosystem is evolving. Those with a future stake in postal services will need to understand these new dynamics and be able to envision the enabling platform and key applications, products, and services in 2020 to identify viable roles.

The relative decline of traditional mass media (print, radio, TV), and the shift to individualized production of content are fundamental changes in both business models and behavior. With the right tools, control will be in the hands of the individual to choose *what*, *when*, *where,* and *how* for their personal, businesses, and government correspondence. About a decade ago, the providers of content were traditional media publishers, journalists, and authors who distributed their content through traditional channels. This landscape has changed from a top-down model to a bottom-up playing field, where anyone can become an author and any type of organization can become a distributor. This has radically changed the traditional postal ecosystem, but may prove to be the core of the digital postal ecosystem.

A Look Overseas

As companies continue to move toward paperless transactions and paperless advertising, postal organizations must figure out how they can remain relevant. Many European posts have already embraced this position and invested both money and effort into developing a strategy. Here's a cross-section of strategies and products from a number of international posts:

Itella — Finland Post (Netposti)

With support from the Finnish Government and local businesses, NetPosti, an alternative to a physical mail box coupled with file archiving, is proving to be an attractive service with nearly 500,000 users and a penetration rate equaling almost 12 percent of the population. Finns are significant users of electronic services. With NetPosti, each citizen is provided with an account tied to his or her social security number and an e-mail address. The government also provides NetPosti with every resident's physical address which is automatically updated if a citizen moves.

NetPosti has signed a cooperation agreement with the leading Finnish online payment solutions provider, servicing more than 1,500 Finnish online stores. Consumers can simply click an invoice button and receive a receipt of their online purchases directly at their NetPosti account.

In an effort to cut costs and emissions, Finland Post is experimenting with the concept of a secure digital mailbox where a number of households and businesses have volunteered for the trial. Consumers receive an e-mail or a mobile phone text message when their mail has been opened, scanned, and sent as a PDF file to a secure digital mailbox. Scanned mail is also delivered to physical addresses, although service is reduced to twice a week at residential addresses and three times a week to mailboxes at local stores. Envelopes are analyzed and mail such as bankcards and voting ballots are filtered out for physical delivery.[92]

Canada Post

In 2010, Canada launched a digital economy strategy to drive the adoption of new technology and encourage innovation while protecting the rights of Canadians through the strengthening of intellectual property and copyright laws. Policies and programs could be adjusted, where appropriate, to maximize Canadian success in the digital economy. Additionally, the public sector was requested to lead by example as the model users of digital technologies.[93]

Canada Post embraced the government's strategy in transitioning to digital. It introduced a Comparison Shopper portal that will give Canadian consumers access to a wealth of retailers and products across Canada and the United States while simplifying the online shopping experience. Consumers will benefit from being able to research and compare the most current prices and features, and make purchases from a much broader spectrum of retailers than previously possible, all at a simple price that includes taxes, shipping, and other cross-border fees. Additionally, Canada Post's Borderfree e-commerce and cross border delivery platform provides a hosted check-out service for U.S. retailers to improve their international customer experience – specifically for Canadian customers.

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[92] Finland Netposti, 2010. www.posti.fi/english/netposti
[93] "Improving Canada's Digital Advantage," *Government of Canada*. *de-en.gc.ca/wp-content/uploads/2010/05/Consultation_Paper.pdf*

Canada Post offers a free bill presentment service called epost, where consumers can add, pay, view, and manage over 200 types of bills and other documents such as phone, water, cable, and credit cards, all online. An epost mailbox is a secure, Internet-based virtual "Inbox" where users can receive, add, pay, print, and manage bills and other important financial documents. Epost is closely integrated with the major online banking websites in Canada. If a user has signed up to view billing statements electronically via an online banking website, then they are automatically signed up with epost. Canada Post is currently developing plans for "epost 2.0," an extension of the existing service to become an integrated multi-channel communication solution to help address the erosion of physical mail and resolve consumer and business problems with the electronic channel in Canada.

Poste Italiane

Poste Italiane has developed an advanced technological infrastructure: over 80 percent of correspondence is sorted using automated systems, a central structure controls the whole logistics process, and delivery is guaranteed by an "electronic postman", equipped with a palmtop computer and a small printer. Over the past decade, Poste Italiane has made large investments in technology to modernize and expand its offering of products and services while utilizing multiple access channels including Internet, telephone, self-service kiosks, and will soon even offer them through Digital Terrestrial TV (DTT).

Poste Italiane's e-government strategy is aimed at reducing the digital divide by positioning the company as the bridging platform between the physical and electronic world and at simplifying and improving the average citizen's experience with government services.

The implementation of this strategy included the creation of platforms enabling the secure and certified offering of hybrid and electronic-based communications and transactions and the provision of new additional physical and electronic channels for accessing and delivering government services. For example, special counters (called "Sportello Amico") are available at some 5,740 post offices which provide a range of government products and services such as the issuance of passports and residency permits as well as the issuance via debit cards of welfare and pension payments.

Other examples of e-government services include:

- A certified e-mail box (a channel for the exchange of communications and documentation with legal value between federal and local governments and citizens). The certified e-mail box includes identity authentication using digital identity or digital signature, timestamps, and proof of sending and delivery).
- Digital identity authentication services to access government websites.
- Time-stamping services offered upon request to governments and citizens to certify the validity of financial transactions and hybrid communications.

- Electronic invoicing that government contractors can use (with the Poste Italiane platform) to bill the government and receive payment. Poste Italiane archives the electronic copy of each invoice.

- Scanning and electronic archiving (or physical archiving by postal facilities) of government documents and communications. Electronically archived documents are "sealed" with an electronic postmark (e-postmark).

In 2007, Poste Italiane entered the telecommunications market as a mobile virtual network operator making possible for customers to use their cell phone to pay their bills, send telegrams, letters, and registered mail, pay for transport, send postcards created from an MMS, and track their mail.

Conclusion — The Postal Service as a "Bridging" Platform

In order to enable an open but secure environment, the future postal role will involve an interdependent relationship between various types of organizations from both the public and private sectors. Providing platforms for the greater good at the lowest possible price is inherently a government service. Given its current mandate, the potential exists for an overarching role for the Postal Service as an open, neutral "platform" to facilitate Internet service advancement and enhancement in the communication and commerce realms.

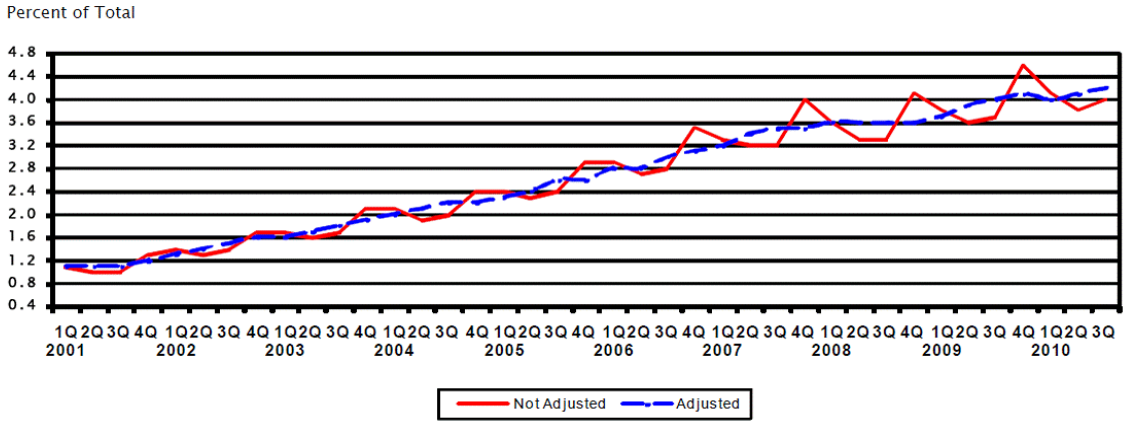
The Postal Service must identify elements of the new economy that are best delivered by an impartial intermediary that has a mandate to provide agenda-free services to citizens — and then invest appropriately to position itself to be this intermediary: a de facto national service provider. Corporations may be more agile and have proven innovation processes to develop a digital platform offering identity authentication, security management, universal communications delivery, or integrated billing and payments. But the Postal Service, while limited due to size and historical business models, has the advantage of being a trusted intermediary. Together with the private sector, it could create game-changing services. The ability to learn from and work across the private and public sectors is crucial for the Postal Service to continue to be a "platform provider," bridging the physical and digital worlds and closing the gaps that are currently preventing a fully digital economy.

Some essential gaps do exist in the digital era that postal operators may be able to fill, leveraging their strong trusted brand, reach, and scope of service. Some of these applications, such as e-commerce facilitation, trusted third-party identity certification, location-based services, mobile marketing, and secure e-mail, already exist in the marketplace, but many do not adequately meet the needs of all users. Working with other government agencies, leading Internet service providers, and Internet intermediaries, the Postal Service may have the opportunity to set a new direction that could fill such "gaps" in the marketplace and lead the next expansion of the digital age.

Appendices

Appendix A U.S. Retail E-commerce Sales

Figure 4: Quarterly U.S. Retail E-commerce Sales as a Percent of Total Retail Sales



Source: U.S Department of Commerce, 2010 *http://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf*

Table 4: U.S. Shipments, Sales, Revenues, and E-commerce, 2007-2008

[Shipments, sales and revenues are in billions of dollars.]

Description	Value of Shipments, Sales, or Revenue				Year to Year Percent Change		% Distribution of E-commerce	
	2008		2007					
	Total	E-commerce	Total	E-commerce	Total	E-commerce	2008	2007
Total *	**22,408**	**3,704**	**21,966**	**3,395**	**5.0**	**12.1**	**100.0**	**100.0**
B-to-B*	**11,602**	**3,416**	**11,179**	**3,130**	**3.8**	**9.1**	**92.2**	**92.2**
Manufacturing	5,486	2,154	5,338	1,879	2.8	14.6	58.2	55.3
Merchant Wholesale	6,116	1,262	5,841	1,251	4.7	0.9	34.1	36.8
Excluding MSBOs[1]	4,411	720	4,153	705	6.2	2.1	19.4	20.8
MSBOs	1,705	543	1,687	547	1.1	-0.7	14.7	16.1
B-to-C*	**10,806**	**288**	**10,787**	**265**	**0.2**	**8.7**	**7.8**	**7.8**
Retail	3,959	142	4,005	137	-1.2	3.3	3.8	4.0
Selected Services	6,847	146	6,782	128	1.0	14.1	3.9	3.8

* We estimate business-to-business (B-to-B) and business-to-consumer (B-to-C) e-commerce by making several simplifying assumptions: manufacturing and wholesale e-commerce is entirely B-to-B, and retail and service e-commerce is entirely B-to-C. We also ignore definitional differences among shipments, sales, and revenues. The resulting B-to-B and B-to-C estimates, while not directly measured, show that almost all the dollar volume of e-commerce activity involves transactions between businesses. See the "Note to reader" for cautions relating to the interpretation of the "Total" shown here.
[1]Manufacturers' Sales Branches and Offices

Source: U.S. Census Bureau, 2010. *www.census.gov/econ/estats/2008/2008reportfinal.pdf*

Appendix B E-retailing Merchandise Categories, 2007-2008

Table 5: U.S. Retail Trade Sales, Total and E-commerce

[Estimates are based on data from the 2008 Annual Retail Trade Survey. Sales estimates are shown in millions of dollars, consequently industry group estimates may not be additive.
Estimated measures of sampling variability for these estimates are provided in Table 5A]

NAICS Code	Description	Value of Sales 2008 Total Sales	Value of Sales 2008 E-commerce	Value of Sales 2007 Revised Total Sales	Value of Sales 2007 Revised E-Commerce	Y/Y Percent Change Total Sales	Y/Y Percent Change E-commerce Sales	E-commerce as Percent of Total Sales 2008	E-commerce as Percent of Total Sales 2007	Percent Distribution of E-commerce Sales 2008
	Total Retail Trade	**3,959,157**	**141,890**	**4,005,248**	**137,344**	**-1.2**	**3.3**	**3.6**	**3.4**	**100.0**
441	Motor vehicles and parts dealers	788,657	19,996	911,165	23,648	-13.4	-15.4	2.5	2.6	14.1
442	Furniture and home furnishings stores	101,059	(S)	111,152	(S)	-9.1	(S)	(S)	(S)	(S)
443	Electronics and appliance stores	109,086	1,164	110,706	1,132	-1.5	2.8	1.1	1.0	0.8
444	Building materials and garden equipment and supplies stores	306,667	546	322,005	537	-4.8	1.7	0.2	0.2	0.4
445	Food and beverage stores	573,619	888	548,934	1,002	4.5	-11.4	0.2	0.2	0.6
446	Health and personal care stores	247,308	(S)	237,798	279	4.0	(S)	(S)	0.1	(S)
447	Gasoline stations	499,366	(ZZ)	451,364	(ZZ)	10.6	(Z)	(Z)	(Z)	(Z)
448	Clothing and clothing accessories stores	216,584	2,539	221,622	2,061	-2.3	23.2	1.2	0.9	1.8
451	Sporting goods, hobby, book, and music stores	84,067	1,977	84,994	1,554	-1.1	27.2	2.4	1.8	1.4
452	General merchandise stores	596,935	175	578,920	(S)	3.1	(S)	(Z)	(S)	0.1
453	Miscellaneous store retailers	115,871	2,068	118,147	2,046	-1.9	1.1	1.8	1.7	1.5
454	Nonstore retailers	319,938	110,925	308,441	103,978	3.7	6.7	34.7	33.7	78.2
4541	Electronic shopping and mail-order houses	227,084	106,821	222,464	99,978	2.1	6.8	47.0	44.9	75.3

(S) Estimate does not meet publication standards because of high sampling variability (coefficient of variation is greater than 30%) or poor response quality (total quantity response rate is less than 50%). For a description of publication standards and the total quantity response rate, see <http://www.census.gov/quality/S20-0_v1.0_Data_Release.pdf>.

(Z) Estimate is less than 0.05%.

(ZZ) Estimate is less than $500,000.

Note: Retail total and other subsector totals may include data for kinds of business not shown. Estimates have not been adjusted for price changes. For additional information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions see <http://www.census.gov/svsd/www/artstbl.html>.

[1] Estimates include data for businesses with or without paid employees and are subject to revision.

Source: U.S. Census Bureau, 2010. *www.census.gov/econ/estats/2008/2008reportfinal.pdf*

Table 6: U.S. Electronic Shopping and Mail-Order Houses

[Estimates are based on data from the 2008 Annual Retail Trade Survey. Sales estimates are shown in millions of dollars, consequently merchandise line estimates may not be additive.
Estimated measures of sampling variability for these estimates are provided in Table 6A]

Merchandise Lines	Value of Sales 2008 Total Sales	Value of Sales 2008 E-commerce	Value of Sales 2007 Revised Total Sales	Value of Sales 2007 Revised E-commerce	Y/Y Percent Change Total Sales	Y/Y Percent Change E-commerce Sales	E-commerce as Percent of Total Sales 2008	Percent Distribution Total Sales 2008	Percent Distribution E-commerce Sales 2008
Total Electronic Shopping and Mail-Order Houses (NAICS 4541)	**227,084**	**106,821**	**222,464**	**99,978**	**2.1**	**6.8**	**47.0**	**100.0**	**100.0**
Books and magazines	8,087	5,138	7,495	4,603	7.9	11.6	63.5	3.6	4.8
Clothing and clothing accessories (includes footwear)	24,057	17,058	23,482	15,729	2.4	8.4	70.9	10.6	16.0
Computer hardware	23,127	11,818	25,539	13,041	-9.4	-9.4	51.1	10.2	11.1
Computer software	4,826	2,522	4,432	2,327	8.9	8.4	52.3	2.1	2.4
Drugs, health aids, and beauty aids	65,831	5,510	62,274	5,020	5.7	9.8	8.4	29.0	5.2
Electronics and appliances	16,409	13,018	14,741	11,118	11.3	17.1	79.3	7.2	12.2
Food, beer, and wine	3,882	2,322	4,478	2,626	-13.3	-11.6	59.8	1.7	2.2
Furniture and home furnishings	13,125	9,811	13,318	8,968	-1.4	9.4	74.8	5.8	9.2
Music and videos	5,110	3,972	4,525	3,282	12.9	21.0	77.7	2.3	3.7
Office equipment and supplies	8,111	5,899	8,136	5,473	-0.3	7.8	72.7	3.6	5.5
Sporting goods	6,419	3,991	6,068	3,543	5.8	12.6	62.2	2.8	3.7
Toys, hobby goods, and games	5,921	3,344	5,184	2,863	14.2	16.8	56.5	2.6	3.1
Other merchandise[2]	30,486	14,355	31,254	13,848	-2.5	3.7	47.1	13.4	13.4
Nonmerchandise receipts[3]	11,693	8,063	11,538	7,537	1.3	7.0	69.0	5.1	7.5

Note: Estimates have not been adjusted for price changes. For additional information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions see <http://www.census.gov/svsd/www/artstbl.html>.

[1] Estimates include data for businesses with or without paid employees, are grouped according to merchandise categories used in the Annual Retail Trade Survey, and are subject to revision.
[2] Includes other merchandise such as collectibles, souvenirs, auto parts and accessories, hardware, lawn and garden equipment and supplies, and jewelry.
[3] Includes nonmerchandise receipts such as auction commissions, customer training, customer support, advertising, and shipping and handling.

Source: U.S. Census Bureau, 2010. *www.census.gov/econ/estats/2008/2008reportfinal.pdf*

Appendix C DHL Packstation Concept

Figure 5: Example of DHL Packstation

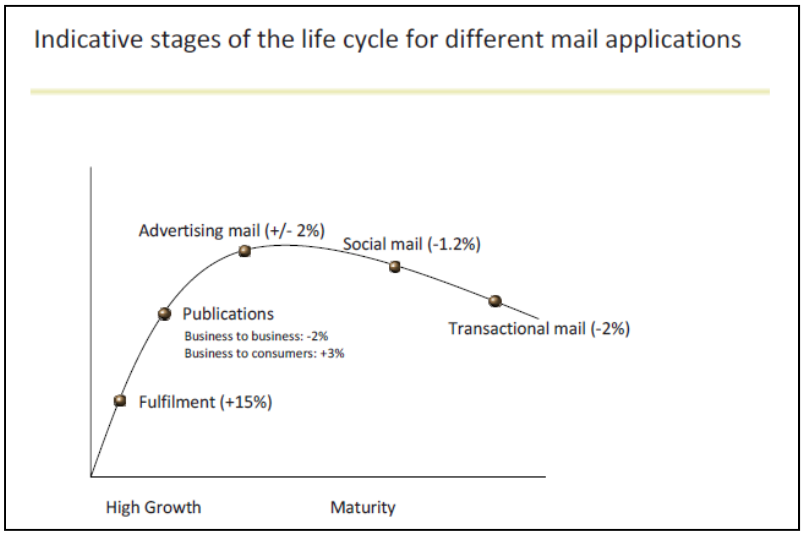
DHL/Deutsche Post has placed around 2,500 Packstations around Germany. After registering to use the Packstation service, users may choose whether they want a package delivered to a home address or to any Packstation. Parcels can also be sent via the Packstation and offer users a savings on postage.

Source: DLH website. *www.dhl.de/en/paket/privatkunden/packstation.html*

Appendix D U.K. Postal Sector Mail Product Lifecycle

The Hooper report[94] has demonstrated the impact of increased electronic substitution and demographic changes on the U.K. postal sector's mail product life cycle (see chart below). In analyzing the results of a 2009 mail volume study conducted by The Boston Consulting Group, the Postal Service is seeing similar trends in the growth and maturity of its categories of similar mail products.

Figure 6: Stages of the Life Cycle for Different Mail Applications



Source: The Hooper Report, 2008.

[94] Hooper, R., et al. "Modernise or decline, Policies to maintain the universal postal service in the United Kingdom." December 2008.

Appendix E U.S. Postal Service Mail Volume Forecasts for 2020

Table 7: U.S. Postal Service Mail Volume Forecast – Businesses

Businesses Sending Mail (Combined Categories)					
Year	**2009**		**2020 Forecast**		**Change**
Total Mail Volume	**177 Billion**		**150 Billion**		**-27 B (-15%)**
Category of Mail	**Share of Total Mail 84%**	**Total Volume 154 B**	**Share of Total Mail 89%**	**Total Volume 131 B**	**Overall -23 B (-15%)**
Business Mail Sent to Consumers	27%	48 B	20%	30 B	-38%
Payments Sent	3%	6 B	1%	2 B	-67%
General Mail Sent to Businesses (B-to-B)	2%	4 B	2%	3 B	-25%
Ad Mail Sent	47%	80 B	57%	83 B	+4%
Catalogs and Magazines Sent	11%	20 B	11%	16 B	-20%

Note: Segments do not total to 177 billion in 2009 and 150 billion in 2020 due to rounding.

Source: The Boston Consulting Group. 2010. *www.usps.com/strategicplanning/_pdf/BCG_Detailed%20presentation.pdf*

Table 8: U.S. Postal Service Mail Volume Forecasts – Consumers

Consumers Sending Mail					
Year	**2009**		**2020 Forecast**		**Change**
Total Mail Volume	**177 Billion**		**150 Billion**		**-27 B (-15%)**
Category of Mail	**Share of Total Mail 10%**	**Total Volume 18 B**	**Share of Total Mail 8%**	**Total Volume 11 B**	**Overall -7 B (-39%)**
C-to-C Social Mail Sent	3%	5 B	3%	4 B	-22%
General Mail Sent to Businesses	2%	4 B	2%	3 B	-24%
Payments Sent	5%	9 B	3%	4 B	-57%

Note: Segments do not total to 177 billion in 2009 and 150 billion in 2020 due to rounding.

Source: The Boston Consulting Group. 2010. *www.usps.com/strategicplanning/_pdf/BCG_Detailed%20presentation.pdf*

Table 9: U.S. Postal Service Mail Volume Forecasts – Businesses (Expanded)

Businesses Sending Mail (Expanded Categories)					
Year	2009		2020 Forecast		Change
Total Mail Volume	177 Billion		150 Billion		-27 B (-15%)
Category of Mail	Share of Total Mail 84%	Total Volume 154 B	Share of Total Mail 89%	Total Volume 131 B	Overall -23B (-15%)
Bills / Invoices Sent	12%	22 B	8%	12 B	-44%
General Mail Sent to Consumers (B-to-C)	8%	14 B	7%	11 B	-24%
Bank Statements Sent	5%	8 B	3%	4 B	-47%
Payments Sent	3%	6 B	1%	2 B	-46%
General Mail Sent to Businesses (B-to-B)	2%	4 B	2%	3 B	-24%
First-Class Ad Mail Sent	7%	11 B	5%	8 B	-30%
Standard Ad Mail Sent	18%	32 B	26%	38 B	+18%
Flyers Sent	14%	24 B	18%	26 B	+10%
Catalogs Sent	7%	12 B	6%	9 B	-29%
Magazines Sent	4%	8 B	5%	7 B	-17%
Other (Large Envelopes, Newsletters, Postcards)	8%	13 B	8%	11 B	-15%

Note: Segments do not total to 177 billion in 2009 and 150 billion in 2020 due to rounding.

Source: The Boston Consulting Group. 2010. *www.usps.com/strategicplanning/_pdf/BCG_Detailed%20presentation.pdf*

Appendix F Challenges of Digital Communications

Despite the myriad of benefits associated with using electronic media for personal or business communications, it poses a variety of challenges that prevent user adoption and drive the continued use of traditional methods such as mail or fax. As electronic solutions evolve, they must overcome these challenges to become an effective replacement for print:

- **The need for a physical signature for legal proof**: Contracts, applications, and credit card authorizations are good examples of documents that continue to require a physical signature for proof of transaction or authorization, thereby forcing people to continue using postal mail, fax or courier.
- **Concerns over privacy**: Many users are not yet convinced that the Internet is a safe means of communications, particularly for banking information or credit card details. Many consumers will opt to use the telephone or fax machine to place orders despite secure online payment methods and secure e-commerce sites.
- **E-mail abuse and unsolicited spam**: Despite the convenience of e-mail, many users have become overwhelmed with the amount of e-mail received, in particular unsolicited e-mail, which has been known to drive some to declare "e-mail bankruptcy." They simply stop using the e-mail account in question, sign up for a new address and start over to avoid having to deal with unwanted communications. Users have become increasingly skeptical of giving their e-mail address to organizations for fear of being inundated with unsolicited messages. Many people opt to have one account for true personal communications, a second for business/work and yet a third for marketing offers. Marketers know this and often turn to direct mail as a way of breaking through the clutter to target customers with a more tangible, personalized message.
- **Multiple e-mail addresses, logins, and passwords**: Each service provider wants to draw users directly to its own biller direct site, thinking that more eyeballs on its site is the way to achieve success. Users must create and manage a multitude of logins and passwords to gain access to different services, and with no centralized identity management system, they often find it too complex and opt for paper communications instead. Those who do go electronic typically re-use their favorite credentials thereby posing a security risk. Security vendor Trusteer found that 73 percent of web users were re-using the password for their online bank sites to access at least one other website."[95]
- **Malware, viruses, and phishing**: While unwanted e-mail and other messages clog up mailboxes, information and identity theft that are delivered through e-mail are greater threats to computer systems. Unwary users can provide information or access to thieves just by opening a simple attachment or e-mail message.

[95] "Too many people re-use logins, study finds," *Network World*. February 2010. *www.networkworld.com/news/2010/020410-too-many-people-re-use-logins.html*

Appendix G E-billing Adoption Barriers

The main reasons why e-billing has not become 100 percent mainstream is because of the perceived complexity and inconvenience users face when dealing with multiple billers and inflexible processes. In the biller-direct model, customers are required to register for and remember a multitude of usernames and passwords in order to access all of their electronic bills. This "push" model of insisting that recipients "fetch" their billing data is the same as the postal service asking consumers to collect their letters from various warehouses around the country. While customers are willing to go paperless, Forrester Research believes they will not take the initiative to eliminate paper without an adequate incentive.[96] Large companies, such as utilities, are beginning to offer their customers financial incentives to receive statements and pay bills online, but are likely to continue using bulk mail products for a number of years yet, while they remain committed to offering customers a choice between e-mail and paper statements.[97]

- 84 percent of consumers still receive paper statements
- 70 percent can be convinced to give up paper for electronic
- 35 percent would turn off paper if e-statement printing was easy
- 33 percent would turn off paper if saving it locally was easy

According to billing solutions provider Striata, in order to migrate more users to e–billing, billers need to change the model and communicate bills the way the user wants and needs — by sending the e-bill to their designated inbox. The e-bill should look the same as the paper bill that customers are used to, and they should be able to view and pay it online in under 30 seconds, or save it and pay it later. All that is required is the customer's e-mail address. Businesses must make participation easy and adoption rates will increase accordingly.[98]

Some Billers Begin to See Success

As a result of understanding and applying the new "push" model, some billers are starting to achieve success. The municipal utilities in the city of Tallahassee exceeded their 3-year paper bill suppression target in just 10 months.[99] U.S. banks are increasingly moving to electronic documents and in many cases implementing "electronic by default" policies, whereby customers must contact the bank if they wish to

[96] "How to get more people enrolled in electronic billing," *Striata*. *www.striata.com/resources/news-and-press-releases/how-to-get-more-people-enrolled-in-electronic-billing.html?LCM*
[97] Hooper, R., et al. "Modernise or decline, Policies to maintain the universal postal service in the United Kingdom." December 2008.
[98] "How to Buck the Dismal eBilling Adoption Trend," *Striata*. *www.striata.com*
[99] "City of Tallahassee Suppresses 17% Paper Bills in 18 months," *Striata*. *www.striata.com/resources/news-and-press-releases/city-of-tallahassee-suppresses-17-percent-paper-bills-in-18-months.html*

continue to receive a printed statement each month. Some will continue to offer it for free, while others are beginning to charge for it. [100]

Paperless Statements

Going paperless will not be achieved without providing value to the consumer. Current solutions require the consumer to change habits and in some instances incur increased inconvenience, while the biller saves paper, printing, and postage costs. The convenience factor is considerable. In the United States, household bill consolidation does not yet exist, therefore consumers must go to several websites, open up online accounts and then make several steps to retrieve their statements rather than simply receiving, and opening an envelope.

[100] "Going paperless can stop fees from banks," *The Post and Courier*. August 2010. *www.postandcourier.com/news/2010/aug/22/going-paperless-can-stop-fees-from-banks*

Appendix H Change in U.S. Advertising Expenditures

Table 10: U.S. Advertising Expenditures by Medium, 2009

Projected ad spending for 2009, compared to 2008, in billions of dollars

Type of Media	Projected 2009 Revenues	Percentage Change
Television[a]	$47.7	-14.4%
Newspapers	$28.5	-29.5%
Online total	$23.0	-2.2%
Direct Mail	$19.2	-11.2%
Magazines	$15.7	-18.3%
Radio	$14.0	-21.0%
Directories	$12.1	-10.5%
Outdoor	$6.1	-12.9%

Source: MAGNA Media Advertising Forecast, July 13, 2009.

a. Television category does not include cable.

Source: Congressional Research Service, 2009. *www.fas.org/sgp/crs/misc/R40908.pdf*

Table 11: U.S. Advertising Expenditures by Industry, 2008-2009

Dollar amounts in millions

Product Category	Q1-Q2 2009	Q1-Q2 2008	% Change
Automotive	$3,681.2	$5,363.6	-31.4%
Fast Food Restaurant	$2,200.7	$2,093.4	5.1%
Pharmaceutical	$2,148.0	$2,421.2	-11.3%
Wireless Telephone	$1,871.4	$1,847.1	1.3%
Motion Pictures	$1,709.0	$1,680.7	1.7%
Auto Dealers - Local	$1,688.5	$2,288.3	-26.2%
Department Stores	$1,565.8	$1,637.2	-4.4%
Direct Response Products[a]	$1,260.1	$1,181.1	6.7%
Restaurants	$834.6	$867.7	-3.8%
Furniture Stores	$773.8	$802.9	-3.6%
Top 10 Product Groups	$17,733.1	$20,183.1	-12.1%

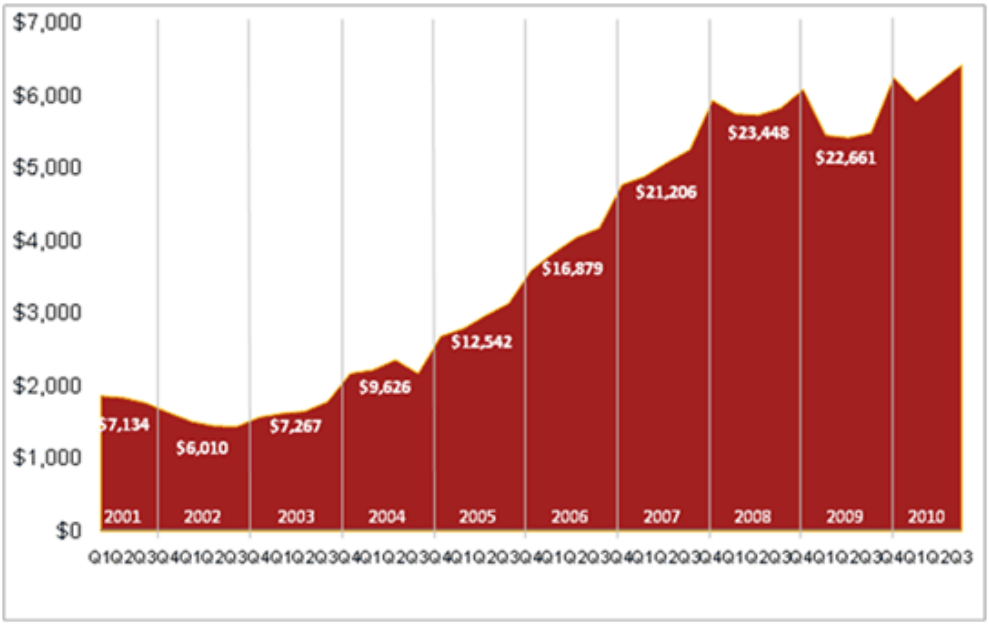
Source: The Nielsen Company.

a. Direct Response refers to products sold via infomercials or home shopping networks including such products as Snuggie Blankets, Rosetta Stone Computer Software or Video Professor Computer Software Data excludes business-to-business magazine ad spending.

Source: Congressional Research Service, 2009. *www.fas.org/sgp/crs/misc/R40908.pdf*

Appendix I Growth in Internet Advertising

Figure 7: Internet Advertising Revenues, 2001-2010 (millions)



Source: Internet Advertising Bureau, 2010.
http://www.iab.net/about_the_iab/recent_press_releases/press_release_archive/press_release/pr-111710

Table 12: Projected Growth in U.S. Interactive Advertising Revenues

Dollar amounts in millions

	2009	2010	2011	2012	2013	2014	CAGR[a]
Mobile Marketing	$391	$561	$748	$950	$1,131	$1,274	27%
Social Media	$716	$935	$1,217	$1,649	$2,254	$3,113	34%
Email Marketing	$1,248	$1,355	$1,504	$1,676	$1,867	$2,081	11%
Display Advertising	$7,829	$8,395	$9,846	$11,732	$14,339	$16,900	17%
Search Marketing	$15,393	$17,765	$20,763	$24,299	$27,786	$31,588	15%
Total	$25,577	$29,012	$34,077	$40,306	$47,378	$54,956	17%
Percent of Total Ad Spending	12%	13%	15%	17%	19%	21%	

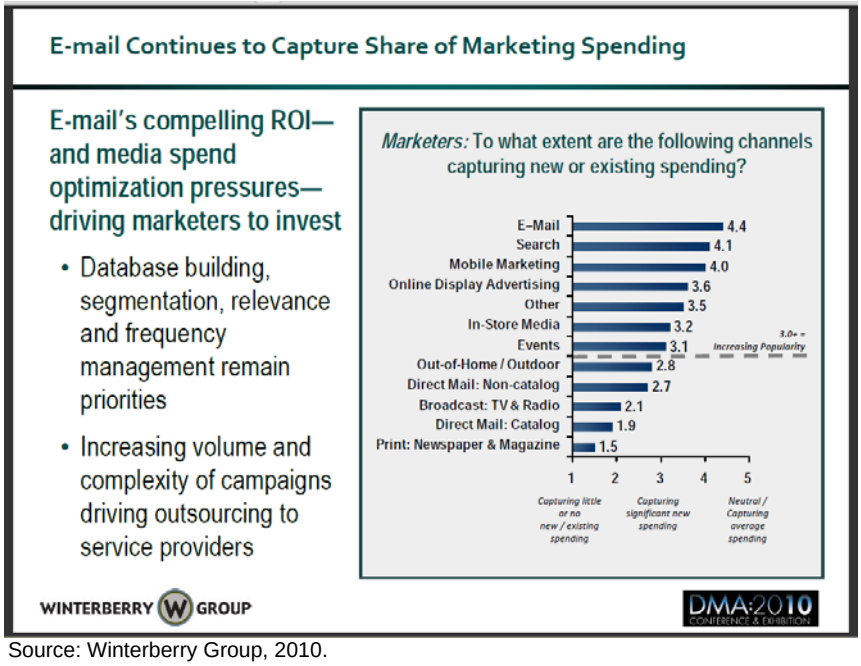
Source: Forrester Research Interactive Models 4/09 and 10/08 (US only)

a. Compound Annual Growth Rate.

Source: *Forrester Research, 2009. www.fas.org/sgp/crs/misc/R40908.pdf*

Appendix J E-mail's Share of Marketing Spending, 2010

Figure 8: E-mail Continues to Capture Share of Marketing Spending

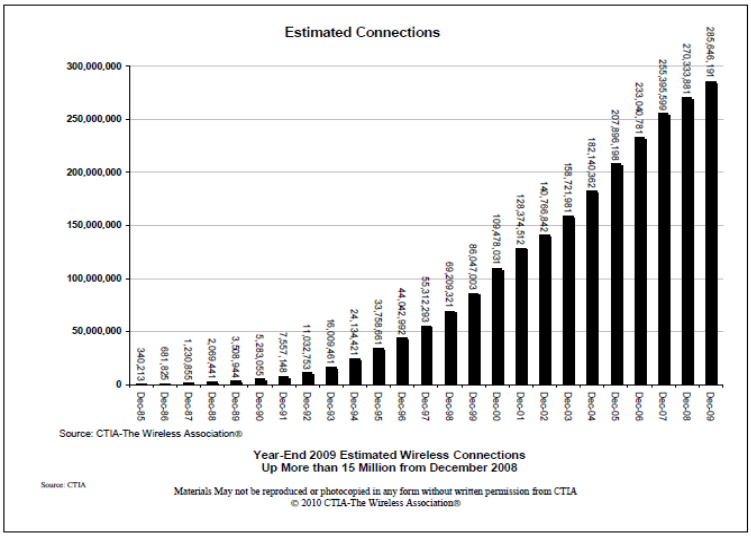


Source: Winterberry Group, 2010.
www.winterberrygroup.com/sites/default/files/Global%20Trends%20--%20DMA2010.pdf

Appendix K Growth in the U.S. Mobile Market

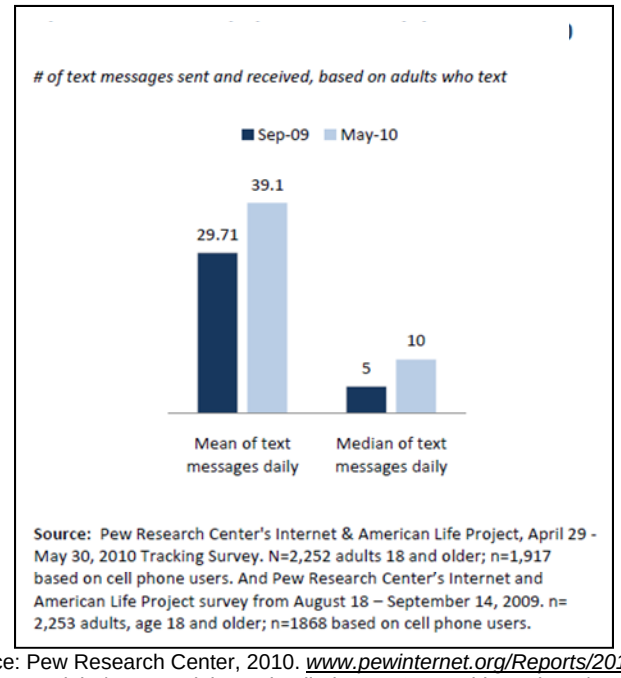
The following graph depicts the dramatic increase in mobile connections between 1985 and 2009:

Figure 9: Growth of Mobile Connections in the U.S. Market



Source: CTIA The Wireless Association,. 2010. *files.ctia.org/pdf/CTIA_Survey_Year_End_2009_Graphics.pdf*

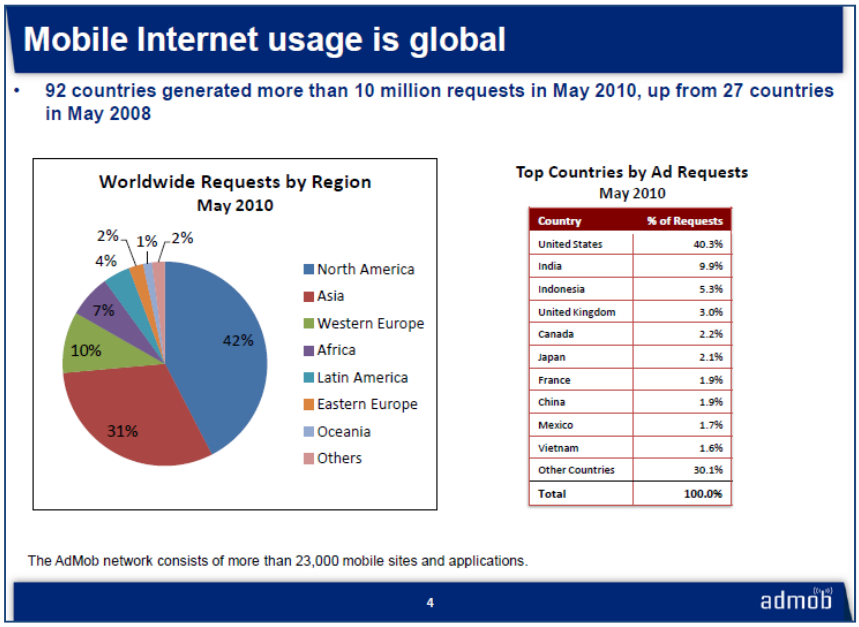
Figure 10: Change in Texting Habits Among Adults



Source: Pew Research Center, 2010. *www.pewinternet.org/Reports/2010/Cell-Phones-and-American-Adults/Part-1-Adults-and-cell-phones-Ownership-and-use/Uses-of-the-phone.aspx*

Appendix L Global Mobile Ad Requests

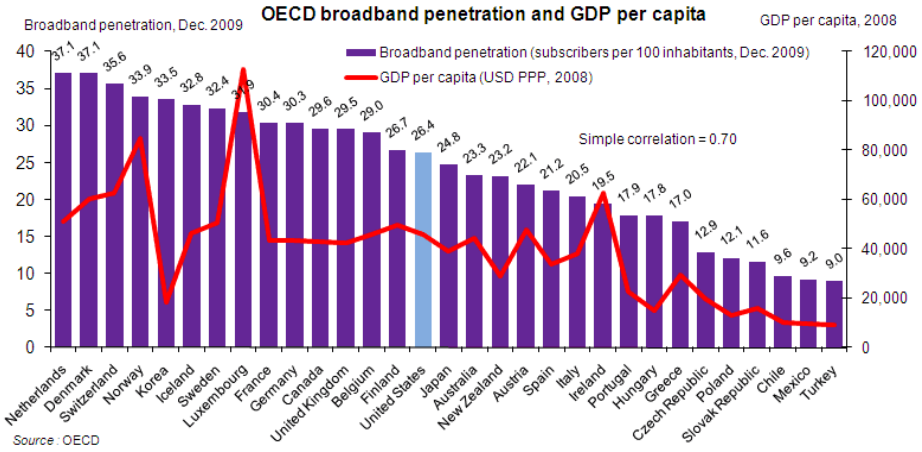
Figure 11: Global Usage of Mobile Internet



Source: AdMob, 2010. metrics.admob.com/wp-content/uploads/2010/06/May-2010-AdMob-Mobile-Metrics-Highlights.pdf

Appendix M OECD Broadband Penetration Rates Globally, 2009

Figure 12: Global Broadband Penetration Rates



Source: OECD, 2009. *www.websiteoptimization.com/bw/1006*