

## OFFICE OF INSPECTOR GENERAL UNITED STATES POSTAL SERVICE

What Postal Services Do People Value the Most?

A Quantitative Survey of the Postal Universal Service Obligation

## **RARC** Report

Report Number RARC-WP-15-007

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## OFFICE OF INSPECTOR GENERAL UNITED STATES POSTAL SERVICE

## Executive Summary

This study is the first of its kind for postal services in the United States. The U.S. Postal Service Office of Inspector General (OIG) has conducted a nationally representative quantitative survey on the relative value of the different services provided as part of the universal service obligation (USO). This study is the first of its kind in the United States and was done in conjunction with the market research firm Gallup and with Professor Michael Bradley of George Washington University's Department of Economics. The study focused on four attributes of the USO: mode of delivery, access to postal services, frequency of delivery, and price.

The USO consists of requirements that ensure all users receive a certain level of service at a reasonable price. In our paper, *Guiding Principles for a New Universal Service Obligation*, we suggested that the current postal USO needs to be more clearly defined.<sup>1</sup> We also identified the need for a quantitative study on the value of the different services provided as part of the USO. Such surveys have been used in other countries to assess and evaluate postal USOs, but until now, no one has conducted such a study in the United States.

Although there have been numerous qualitative studies in the United States that offer insight into what services postal customers want, the studies are sometimes criticized for being biased toward the status quo or a higher level of service. To address this issue, we developed a quantitative survey that

#### **Highlights**

The OIG performed the first quantitative study in the United States of the value of the various attributes of the postal universal service obligation.

The survey found that both consumers and businesses still value postal services, especially door and curb delivery and access to post offices.

While consumers and businesses are indifferent when it comes to the Saturday delivery of letters, consumers still place value on the Saturday delivery of parcels.

Consumers and businesses also value lower prices and may be willing to accept lower levels of service to keep prices from rising sharply.

provided respondents with a tradeoff between levels of service and price. This type of survey allows the respondent to consider if a higher level of service is valued enough to warrant the additional cost. The results of the survey can be used to produce quantitative measures of the relative value that consumers and businesses put on various aspects of the Postal Service's USO. This, in turn, can provide policymakers with insight into which services postal customers value when attempting to craft a new universal service obligation.

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U.S. Postal Service Office of Inspector General, *Guiding Principles for a New Universal Service Obligation*, Report No. RARC-WP-15-001, November 17, 2014, https://www.uspsoig.gov/sites/default/files/document-library-files/2014/rarc-wp-15-001.pdf.

The Gallup survey also included qualitative questions that were designed to elicit information that is relevant to the USO but were not easily captured by the quantitative portion of the survey. The survey produced eight main findings:

- Consumers and businesses place a high value on maintaining delivery to the door and/or curb rather than delivery to cluster boxes or parcel lockers. This is especially true for parcels and even more so for consumers that currently receive mail via cluster box.
- Both consumers and businesses place value on human interaction with a Postal Service employee at a post office rather than alternative access options such as postal counters in non-postal retail stores and self-service kiosks. However, respondents seemed to find more limited hours of operation acceptable.
- Overall, respondents are indifferent to receiving Saturday delivery of letters, but consumers still place some value on the Saturday delivery of parcels. Furthermore, both consumers and businesses value not moving to 3-day a week delivery.
- Both consumers and businesses value lower prices. In other words, they may be willing to accept lower levels of service to keep prices from rising sharply.

- The vast majority of respondents believe it is important or very important that the Postal Service be obligated to deliver to every address in the country.
- The majority of respondents believe a uniform First-Class Mail rate is important or very important.
- There remains a strong need for postal services for both consumers and businesses.
- At this time, there is not much acceptance of the Postal Service using digital alternatives to deliver the mail, such as the Postal Service scanning mail and sending it via e-mail.

Together, these findings can help policymakers form a comprehensive view of the trade-offs involved when discussing what level of services the USO should include in order to meet the needs of American businesses and citizens.

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## **Observations**

While there have been several studies in the United States designed to elicit postal customers' needs, to date these surveys have been qualitative in nature.

A quantitative survey, such as the one presented in this paper, has the benefit of being able to introduce a trade-off to respondents between different levels of service and price.

## Introduction

The U.S. Postal Service's universal service obligation (USO) is a collection of requirements that ensures all users receive a certain level of service at a reasonable price. A USO can be fulfilled by one or more providers, and it is often a regulator's responsibility to ensure that it is being met. Today, the Postal Service has the sole responsibility for providing required postal services in the United States; however, the current law does not contain a comprehensive and clear definition of the USO. Instead, the Postal Service's USO is assumed to be made up of various legal requirements and regulations that, in most instances, provide only broad guidance.<sup>1</sup>

In our report, *Guiding Principles for a New Universal Service Obligation*, we proposed taking a comprehensive look at clarifying and redefining the Postal Service's USO.<sup>2</sup> It also identified an area of study that was needed — a quantitative study on the relative value of the different services provided as part of the USO. In order to meet that need, the OIG worked closely with Gallup, an expert in survey design and implementation, and Dr. Michael Bradley, a professor of economics, to develop, design, and implement such a study. While this type of survey has been performed for other posts in other countries, it is the first of its kind for postal services in the United States.<sup>3</sup>

While there have been several studies in the United States designed to elicit postal customers' needs, to date these surveys have been qualitative in nature. They ask the respondents for their opinions on what postal services they value. While these studies can offer insight into what services postal customers want, they have sometimes been criticized for giving respondents little reason to choose a level of service lower than what they currently receive. For example, if the survey does not indicate that respondents would have to pay a higher price in order to receive the higher level of service, respondents will have little incentive to choose a lower level of service.

A quantitative survey, such as the one presented in this paper, has the benefit of being able to introduce a trade-off to respondents between different levels of service and price. This forces respondents to consider if a higher level of service is worth the extra cost. This has the benefit of being able to produce quantitative measures of the value that consumers and businesses put on various aspects of the Postal Service's USO. These quantitative measures can provide policymakers with insight into which services postal customers value (as well as the relative value of different options) when attempting to design a USO.

## **Definitions**

Given the complexity of this topic, it is helpful to define a few important terms before delving into a full discussion of the survey. For the purposes of this paper, the term "attribute" refers to particular aspects of the USO, such as delivery frequency. The attributes of the USO are generally considered to be geographic scope, range of products, access, delivery mode, delivery frequency, pricing, service, enforcement, and security.<sup>4</sup> However, the terminology is not an exact science; this list of attributes covers a large range of topics. For example, pricing includes both a uniform price requirement and the general concept of affordability.

<sup>1</sup> For a list of legislation that references various aspects of the USO, see U.S. Postal Service, Report on Universal Postal Service and The Postal Monopoly, October 2008, http://about.usps.com/universal-postal-service/usps-uso-report.pdf, pp. 9-11, and Postal Regulatory Commission, Report on Universal Postal Service and the Postal Monopoly, December 2008, http://www.prc.gov/Docs/61/61628/USO%20Report.pdf.

<sup>2</sup> U.S. Postal Service Office of Inspector General, *Guiding Principles for a New Universal Service Obligation*, Report No. RARC-WP-15-001, November 17, 2014, https://www.uspsoig.gov/sites/default/files/document-library-files/2014/rarc-wp-15-001.pdf.

<sup>3</sup> Ibid, Appendix B. There have been at least six of these studies done for foreign posts, although three were done in the United Kingdom over several years. A complete summary of all the studies can be found in Appendix B of the *Guiding Principles for a New Universal Service Obligation* paper.

<sup>4</sup> These attributes were identified in the Postal Regulatory Commission's and the Postal Service's report on universal postal services and the monopoly. U.S. Postal Service, Report on Universal Postal Service and The Postal Monopoly, and Postal Regulatory Commission, Report on Universal Postal Service and the Postal Monopoly.

The other phrase used in this paper that may need explanation is "levels of the attribute." For the purposes of this paper, levels of the attribute refer to how much of the service is provided for that attribute. For example, the attribute delivery frequency can have different levels, including 6 days a week, 5 days a week, and 3 days a week.

## **Gallup Survey**

The OIG and Dr. Bradley worked closely with Gallup in the development of the survey to ensure that the survey design would provide nationally representative results. The survey included both a quantitative and qualitative section. Since the main focus was the quantitative portion, we will focus our discussion on how the decisions related to this section were made.<sup>5</sup>

#### **Quantitative Survey Methodology**

The type of study performed by Gallup is often referred to as a discrete choice study.<sup>6</sup> The survey uses "choice experiments," which involved showing respondents four options, each including a hypothetical level of service for each attribute including price, and asking them to choose which option they preferred. An illustrative example of a choice experiment is shown in Table 1. Each respondent was presented with numerous choice experiments: 10 for letters and 10 for parcels. Please note that in some cases, the levels of service within the options overlapped.

The majority of the surveys were conducted over the Internet. However, given that the nature of the survey was to ascertain how much value people place on mail services, we wanted to ensure that individuals who lacked access or were not comfortable using the Internet were included in the survey. Therefore, it was important to ensure that a portion of the survey be done via the mail. Gallup's panel of respondents includes individuals who have requested to be surveyed via

the mail.7

In addition, we felt it was important to include both households and businesses. For the household sample, Gallup used their established panel. For the business sample,

# Table 1: Example of Choice Experiment: Respondents Were Asked to Choose Which Option (A–D) They Preferred

	Option A	Option B	Option C	Option D
Access to Postal Services	Post Office open 8 hours Mon-Fri 4 hours Sat	Postal Counter at commercial retail store	Post Office open 4 hours Mon-Sat	Self-service kiosk
Mode of Delivery	Delivery to your door	Delivery to a locked cluster box	Delivery to a mailbox at the curb	Delivery to your door
Frequency of Delivery	3 days a week	Mon-Sat	Mon-Fri	Mon-Fri
First-Class Mail Letter Rate	60 cents	50 cents	75 cents	60 cents

5 More detail about the survey can be found in Gallup's Analytical Report in Appendix B of this paper.

6 A criticism of choice experiments is that they are designed to elicit "stated preference." That is, they ask people what they would do instead of observing what they actually do (which is often referred to as "revealed preference"). In the case of the USO, it is impossible to simply observe the relevant behavior. It is not possible to change the universal service obligation and then observe how consumers and businesses respond. Therefore, a stated preference survey is the only available method for estimating relative values. The OIG acknowledges that stated preference studies can be subject to potential biases; however, these biases can be minimized by using optimal survey methods. This is why the OIG worked with Gallup, an expert in survey design and implementation, to design and implement the survey. Further, because the approach used in our survey forces respondents to choose between specific alternatives, it is considered more reliable than contingent valuation in which people are asked open-ended questions about the value of a non-market good.

7 Of the 937 households that completed the survey, 759 were done via the Internet and 178 were done via the mail

We wanted to ensure that individuals who lacked access or were not comfortable using the Internet were included in the survey. Gallup used a random sample of small, medium, and large businesses. The sample did not focus on businesses that send more mail than they receive, such as advertising mailers, as we wanted to ensure that the survey included a broad range of business mailers.<sup>8</sup>

We also requested separate quantitative measurements for letters and parcels, as there is evidence that postal customers may value services for letters and parcels differently in the United States. For example, while the Postal Service has proposed eliminating the Saturday delivery of letters, it is testing Sunday delivery of parcels.

#### **Choice of Attributes and Levels of Attributes**

In order to make the survey manageable for respondents, we had to limit the number of choice experiments. Our team worked with Gallup to find the right combination of attributes and the levels of each attribute that would be both manageable and provide enough information to be useful. A list of the attributes and levels of attributes are shown in Table 2. A discussion of how the attributes and levels of attributes were chosen can be found in Appendix A.

#### Table 2: List of Attributes and Levels of the Attributes Included in the Survey

Attribute	Levels of Each Attribute
	Monday through Saturday
Delivery Frequency	Monday through Friday
	3 days a week
	Post office open 8 hours Monday through Friday and 4 hours on Saturday
	Post office open 4 hours Monday through Saturday
Access to Post Office	Postal counter at a commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day
	Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week
	Delivery to the door (of home or business)
	Delivery to the mailbox at the curb
Mode of Delivery	Delivery to a locked cluster box located no more than 1/4 mile from your home
	For parcels-parcel locker, which is a secure postal facility for retrieving parcels, accessible 24 hours a day, 7 days a week
	For consumer-letters, 50, 60, 75, and 85 cents
Price*	For business-letters, 38, 46, 54, and 62 cents
	For consumer and business-parcels, \$11, \$13, \$16, and \$18

Source: Gallup Report (Appendix B).

\*The lowest prices reflect close proximities of current prices. See Appendix A for a full description of how the prices were chosen.

Our team worked with Gallup to find the right combination of attributes and the levels of each attribute that would be both manageable and provide enough information to be useful.

<sup>8 203</sup> businesses completed the survey: 28 small, 99 medium, and 74 large.

## Key Findings from the Quantitative Part of the Survey

The main result of this type of survey is an estimated value called willingness to pay (WTP). The WTP for a given level of service provides an estimate of how much value the respondents place on the base level relative to alternative levels of service.<sup>9</sup> For example, the WTP estimate for the consumer survey for 3-day vs. 6-day delivery represents how much in additional postage respondents are willing to pay to receive Monday through Saturday delivery over 3-day a week delivery. The higher the WTP estimate, the more the respondents valued the base level of service over the alternative.<sup>10</sup>

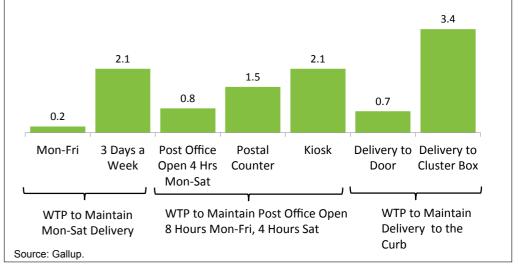
Please note that the WTP estimates are calculated separately for each attribute and reflect the value relative to the service to which they are being compared. For example, the WTP values for the access alternatives reflect the value of accessing postal services via a Post Office open normal business hours compared to the three alternatives. In most cases, the base level refers to the highest level of service. However, in a few instances, the value of the second highest level of service was so close to the first that respondents were essentially indifferent. As a result, for consistent comparison, Gallup substituted the second highest level of service for the first to ensure positive WTP measures. This happened in the case of mode of delivery for letters for consumers and frequency of delivery for both letters and parcels for businesses.

The overall results for letters for consumers and businesses are found in Figures 1 and 2, respectively. The overall results for parcels for consumer and businesses are found in Figures 4 and 5, respectively. Detailed tables showing Gallup's WTP estimates can be found in their report in Appendix B of this paper (Tables G through J).

## Figure 1: WTP Estimates for Letters for Consumers

## WTP Estimates for Letters for Consumers (cents)

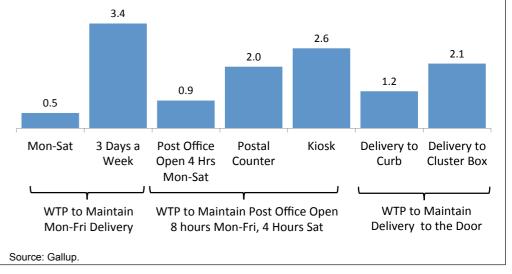
The graph shows the WTP estimates for consumers to maintain the base level (Mon-Sat delivery, Post Offices open 8 hours on Mon-Fri, 4 hours Sat, and delivery to the curb) compared to alternatives shown. The higher the bar, the more respondents value maintaining the base level of service (the less the respondents were willing to accept the alternative).



## Figure 2: WTP Estimates for Letters for Businesses

### WTP Estimates for Letters for Businesses (cents)

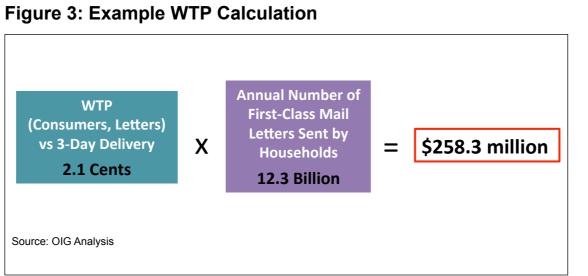
The graph shows the WTP estimates for businesses to maintain the base level (Mon-Fri delivery, Post Offices open 8 hours on Mon-Fri, 4 hours Sat, and delivery to the door) compared to alternatives shown. The higher the bar, the more respondents value maintaining the base level of service (the less the respondents were willing to accept the alternative).



<sup>9</sup> For a detailed description of the methodology used to calculate these values, see Gallup's Technical Report in Appendix C.

The WTP for a given level of service provides an estimate of how much value the respondents place on the base level relative to alternative levels of service.

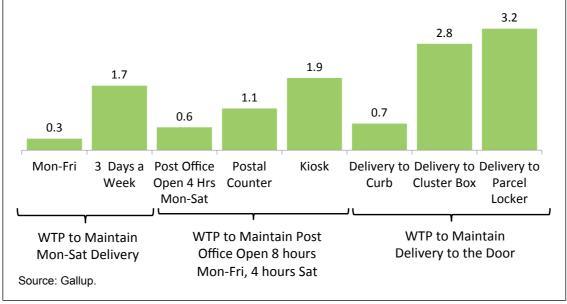
<sup>10</sup> The OIG does not mean to imply that the WTP measure should be used as an attempt to identify the maximum price the Postal Service should charge for its services.



### Figure 4: WTP Estimates for Parcels for Consumers

#### WTP Estimates for Parcels for Consumers (\$)

The graph shows the WTP estimates for consumers to maintain the base level (Mon-Sat delivery, Post Offices open 8 hours on Mon-Fri and 4 hours Sat, and delivery to the door) compared to alternatives shown. The higher the bar, the higher the value to maintain the base level of service (the less the respondents were willing to accept the alternative).



The WTP values for letters are given in cents and represent the respondent's willingness to pay for each letter they send. When multiplied by the number of letters sent each year, the number becomes quite substantial. An example of this calculation is shown in Figure 3. When the estimated WTP value for consumers for 6-day delivery vs. 3-day delivery of letters is multiplied by number of First-Class letters sent by households in FY 2013, the result is hundreds of millions of dollars per year.

The same calculation could be done for all the WTP estimates, and it is useful to show a back of the envelope calculation to demonstrate how the WTP estimates can result in significant values. However, we caution against using the WTP estimates to calculate a total value of each attribute for the purposes of directly comparing to the Postal Service's cost of providing the levels of service.<sup>11</sup> This is because the amounts can be influenced by factors such as which prices were included in the survey. Further, while WTP values cast light upon the direct private benefits of customers, they do not necessarily include the benefits to society as a whole. For example, as indicated by a study commissioned by the Postal Regulatory Commission, there is a value of having a government presence in the community.<sup>12</sup> It is not possible to know precisely what respondents considered when answering the questions. Were they considering their own personal benefits or if they were willing to pay to benefit others as well? Were they considering mail volume they sent or also mail they received? Further, the total estimates vary depending on which postal volumes are used

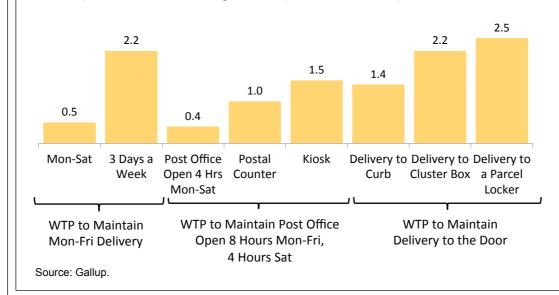
<sup>11</sup> Only one of the six quantitative surveys in other countries (the one in Norway) measured the total benefits of a certain level of attribute against the cost to the post of providing that level of service. The other surveys relied on the WTP estimates to provide information on which levels of attributes respondents place the most value. The Norway study can be found in Henrik Lindhjem and Simen Pedersen, "Should Publicly Funded Postal Services be Reduced? A Cost-Benefit Analysis of the Universal Service Obligation in Norway," *Review of Network Economics*, 11, No. 2 (2012).

<sup>12</sup> The Urban Institute, A Framework for Considering the Social Value of Postal Services, Final Report. Prepared for the Postal Regulatory Commission, February 2010, http://www.prc.gov/sites/default/files/archived/Final\_Report\_Sent\_to\_PRC\_Feb\_3\_943.pdf.

#### Figure 5: WTP Estimates for Parcels for Businesses

### WTP Estimates for Parcels for Businesses (\$)

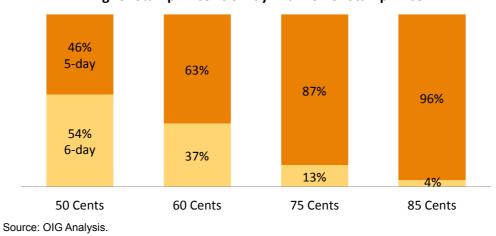
The graph shows the WTP estimates for businesses to maintain the base level (Mon–Fri delivery, Post Offices open 8 hours on Mon-Fri and 4 hours Sat, and delivery to the door) compared to alternatives shown. The higher the bar, the higher the value to maintain the base level of service (the less the respondents were willing to accept the alternative).



### Figure 6: Value of Saturday Delivery for Consumers

### Consumers Did Not Place Significant Value on Saturday Delivery of Letters

Even at 50 cents, just over half of the consumers would prefer to maintain Saturday delivery. And as the hypothetical price of a stamp rises, the percentage of people who would prefer to pay a higher postage to maintain Saturday delivery drops rapidly.



Percentage of Consumers Who Would Choose 6-Day with Higher Stamp Price vs 5-Day with Lower Stamp Price for the calculation. Thus, the OIG recommends that the WTP estimates not be used to estimate a measure of the total benefit of the USO attributes. Instead, the survey's results provide an important and useful measure of the relative value across attributes and levels of attributes.

The WTP estimates for parcels for consumers and businesses are shown in Figures 4 and 5, respectively. It is important to note that the WTP estimates for parcels are in dollars. As with letters, the higher the bar (the higher the WTP value), the more value respondents place on maintaining the higher level of service compared to the alternative.

The WTP values shown in the figures above demonstrate that both consumers and businesses still value postal services, especially for parcels. Using these WTP estimates and some additional analysis of the data, we can highlight a few key findings.

## Overall, Respondents Are Indifferent to the Saturday Delivery of Letters

Both consumers and businesses appear to place little value on Saturday delivery of letters. The WTP values for consumers for Monday through Saturday delivery over Monday through Friday delivery were less than half a cent. Even at the price that was close to the current stamp price, only slightly half of the consumers prefer to maintain Saturday delivery. Further, as the hypothetical stamp price increases, the percentage of consumers who would prefer to maintain Saturday delivery at the higher price quickly declines. This analysis is shown in Figure 6.

The higher the WTP value, the more value respondents place on maintaining the higher level of service

compared to the alternative.

Both consumers and businesses appear to place little value on Saturday delivery of letters. The results from the business survey are similar to the consumer results. At the current presort price, less than half of the businesses would choose to maintain delivery on Saturday. As shown in Figure 7, as the hypothetical postage needed to maintain Saturday delivery rises, the percentage of businesses who would prefer to pay more in postage to maintain Saturday delivery quickly declines.

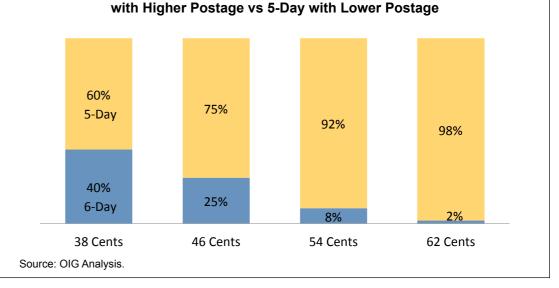
#### While Consumers Place Some Value on Maintaining Saturday Delivery of Parcels, They Care More About Other Attributes in the Survey

Consumers find value in maintaining Saturday delivery of parcels. Compared to Saturday delivery of letters, this value is relatively high. However, compared to other attributes, such as maintaining Post Offices with longer hours and delivery to the door, the values are relatively low. This can be seen in Figure 8. Figure 7: Businesses and Saturday Delivery

#### Even at Current Presort Rates, Over Half of Businesses Would Choose to Eliminate Saturday Delivery

Businesses showed a slight preference for eliminating Saturday delivery of letters. At the current presort rates, 60 percent of businesses would prefer 5-day a week delivery.

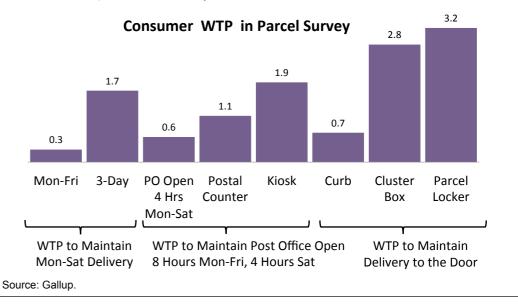
Percentage of Businesses Who Would Choose 6- Day



## Figure 8: Relative Value of Saturday Parcel Delivery for Consumers

# Consumers Place Some Value on the Saturday Delivery of Parcels, but Not as Much Value as on Other Attributes

Compared to letters, consumers place a much higher value on the Saturday delivery of parcels. However, they value other attributes such as keeping Post Offices open and delivery to the door more.



At the current presort price, less than half of businesses would choose to maintain delivery on Saturday.

## Respondents Value Not Moving to 3-Day a Week Delivery

While respondents did not place much value on Saturday delivery of letters, both consumers and businesses really disliked moving to 3-day a week delivery for letters and parcels. As can be seen in Figure 9, this was especially true for businesses and their preferences for letters. In fact, the WTP values for 3-day vs. 5-day delivery had the highest relative value of all the attributes in the businesses-letter survey.

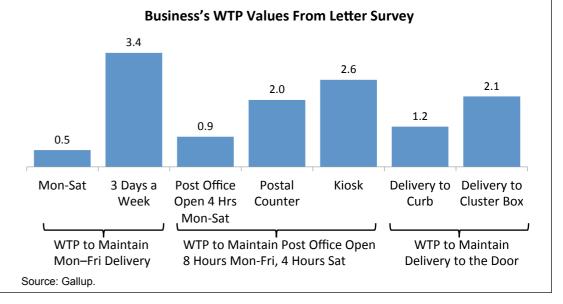
#### Consumers Are Indifferent between Door and Curb Delivery of Letters

For the questions pertaining to mode of delivery, consumers are indifferent between delivery to the door and delivery to the curb for letters and only place a moderate value on maintaining door delivery over curb delivery for parcels. As shown in Figure 10, even at current letter rates, over half of respondents prefer curb delivery of letters and few would choose to pay more to maintain door delivery over the curb. For parcels, consumers place some value on delivery to the door, but at the second highest postage rate in the survey, 83 percent would prefer to accept curb delivery rather than pay the higher postage.

### Figure 9: Businesses Value Frequent Letter Delivery

### Businesses Placed the Most Relative Value on Avoiding Moving to 3-Day Delivery for Letters

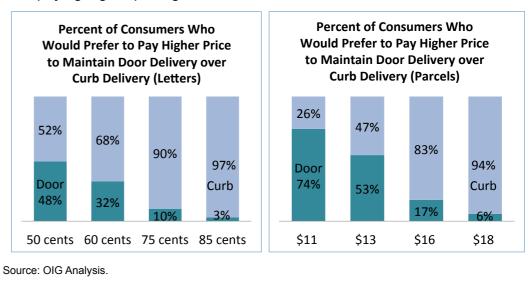
While neither business nor consumers place much value on maintaining Saturday delivery, they both place value on avoiding moving to 3-day delivery. It was especially relevant for businesses in the letter survey.



# Figure 10: Consumers Are Indifferent to Door or Curb Delivery for Letters

#### Consumers Place Little Value on Door Delivery Compared to Curb Delivery for Letters, but Place Moderate Value for Parcels

While consumers are indifferent to door or curb delivery for letters, they do value delivery to the door over delivery to the curb for parcels. As the theoretical postage rises, consumers would prefer to accept curb delivery over paying higher postage.



Consumers are indifferent between delivery to the door and delivery to the curb for letters.

#### For Parcels, Consumers Place the Most Value on Delivery to the Door Rather Than Delivery to Cluster Box or Parcel Locker

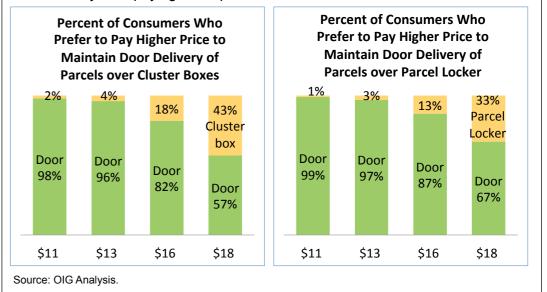
When it came to comparing delivery to the door to delivery to a cluster box or parcel locker, the results were much more significant than door delivery vs. curb delivery. The survey results demonstrate that consumers have a relatively high WTP to avoid either cluster box or parcel locker delivery compared to delivery to the door. In fact, the consumers' highest WTP for all attributes in the letter survey was for maintaining delivery to the door over delivery to a cluster box. In the parcel survey, the preference was even stronger. Not only do consumers value maintaining door delivery over cluster boxes, they place more value on door delivery when compared to a parcel locker. As shown in Figure 11, even at the highest parcel price in the survey, 57 percent of consumers would choose to pay the higher price rather than have delivery to the cluster box and 67 percent of consumers in the survey would choose to pay the higher parcel price over having delivery to a parcel locker.

The survey specifically stated that cluster boxes and parcel lockers were secure and locked. The results appear to demonstrate that individuals either prefer convenience over security or believe that door delivery is secure enough. Further, consumers who currently have delivery to a cluster box were the most opposed to receiving parcel delivery to a cluster box or parcel locker. These results are shown in Figure 12.

## Figure 11: Consumers Prefer Door Delivery of Parcels

### Consumers Place Relatively High Value on Delivery of Parcels to the Door vs Cluster Box or Parcel Locker

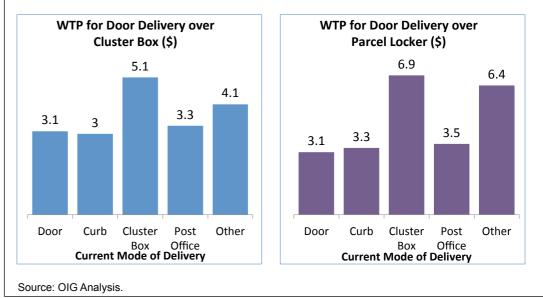
The survey demonstrated that consumers place a relatively high value on parcel delivery to the door vs. a cluster box or parcel locker. Even at the highest parcel price in the survey, the majority of consumers would still prefer door delivery over paying lower prices.



## Figure 12: Consumers with Cluster Boxes Value Door Delivery Most

### Consumers that Currently Receive Delivery at a Cluster Box Place the Most Value on Delivery to the Door For Parcels

While all consumers valued door delivery for parcels, those who currently receive mail delivery to a cluster box placed the most value on door delivery of parcels compared to delivery to a cluster box or parcel locker.



The results appear to demonstrate that individuals either prefer convenience over security or believe that door delivery is secure enough.

#### Businesses Value Delivery to the Door, Rather than to Cluster Boxes and Parcel Lockers, Especially for Parcels

Businesses place some value on delivery to the door, instead of the curb. In addition, businesses place a high value on delivery to the door over delivery to the cluster box or parcel locker, especially for parcels. For parcels, the WTP estimates for door delivery over cluster box and parcel locker are the two highest WTP estimates of all the attributes in the business survey. However, for letters, the relative values change. For letters, businesses place relatively less value on maintaining delivery to the door than keeping Post Offices open, instead of a kiosk, and not moving to 3-day delivery. These results are shown in Figure 13.

#### Both Consumers and Businesses Value Post Offices over Postal Counters in Retail Stores and Kiosks

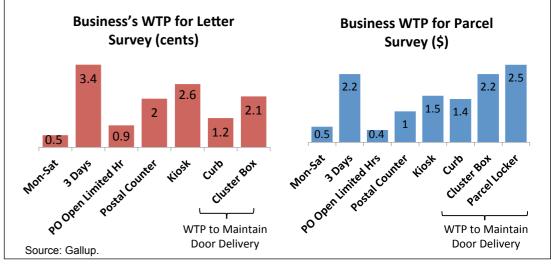
Both consumers and businesses value maintaining post offices compared to alternative retail access such as postal counters and postal kiosks. They placed minimal value on keeping post offices open normal business hours as compared to more limited hours.<sup>13</sup>

In particular, consumers and businesses do not seem to be willing to accept having kiosks as retail access points. As can be seen in Figure 14, at the second highest price in the survey, over half of consumers and nearly three fourths of businesses would prefer paying the higher price than to be forced to access postal services via kiosks. However, both did have their limit. At the highest postage rate option for both groups, the percentage of respondents who would prefer to pay the higher postage and maintain post offices drops to around 30 percent.

## Figure 13: Businesses Value Door Delivery for Parcels

## Businesses Place the Most Value on Delivery to the Door Instead of Cluster Box or Parcel Locker for Parcels

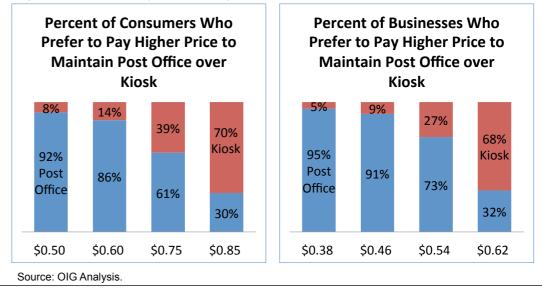
Businesses also value delivery to the door, compared to delivery to a cluster box or parcel locker, especially for parcels. For parcels, it was the highest WTP value. For letters, they place relatively less value on door delivery than either moving to 3-day delivery (vs. Mon–Sat delivery) or maintaining Post Offices (vs. a kiosk).



## Figure 14: Consumers and Businesses Still Value Post Offices

## Both Consumers and Businesses Still Value Post Offices

The survey demonstrated that both consumers and businesses still value being able to access postal services at a Post Office. Even at the second highest letter prices in the survey, 61 percent of consumers and 73 percent of businesses would prefer higher postage to using kiosks (vs. Post Offices open normal hours) to access postal services.



13 For the purpose of this study, normal business hours refer to a Post Office being open 8 hours a day Monday through Friday and 4 hours on Saturday.

In particular, consumers and businesses do not seem to be willing to accept having kiosks as retail access points.

#### Both Consumers and Businesses Value Lower Prices

While respondents demonstrated a preference for higher levels of postal services, there was a limit to the amount of postage they were willing to pay as a trade-off for these higher levels of service. In their analysis, Gallup found that of the four attributes, price was the second to highest in relative importance for consumers for both letters and parcels. Further, it was second to highest in relative importance for parcels. This may mean that postal customers may be willing to accept lower levels of service to keep prices from rising sharply.

## Key Findings from Qualitative Part of Survey

In addition to the quantitative choice experiments, the Gallup survey included some more qualitative questions. These questions were designed to elicit information about USO attributes or information that may be relevant to the USO that were not easily captured by the quantitative survey. The key findings are:

- The vast majority of respondents believe it is important or very important that the Postal Service be obligated to deliver to every address in the country.
- The majority of respondents believe a uniform First-Class Mail rate is important or very important.
- There remains a strong need for Postal Services for both consumers and businesses.
- There is not much acceptance of the Postal Service using digital alternatives to deliver the mail, such as the Postal Service scanning mail and sending it via e-mail, at this time.

## Conclusion

Both consumers and businesses still value postal services, although they do not appear to value Saturday delivery for letters. There is a limit, however, to how much people are willing to pay for higher levels of service. These values, as well as the benefits to society as a whole, need to be weighed against the costs to the Postal Service of providing these services. Further, policymakers may need to consider if there are levels of service that are essential enough to warrant an alternate source of funding beyond postal revenues.

Postal customers may be willing to accept lower levels of service to keep prices from rising sharply.

## Appendices

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## Appendix A: Choice of Attributes and Levels of Attributes

In order to make the survey manageable for respondents, the OIG had to limit the number of choice experiments. The OIG worked with Gallup to find the right combination of attributes and the level of each attribute that would be both manageable and provide enough information to be useful. Below is a brief description of how these choices were made.

## **Attributes**

The OIG started with a fairly lengthy list of attributes that included things like frequency of delivery, mode of delivery, uniform price, affordability, access, service standards, and which products to include in the USO. The list was narrowed down in view of the following considerations.

First, the OIG focused on attributes currently being widely debated or discussed. For example, frequency of delivery has been debated in the public arena for several years. Another attribute that is often the subject of controversy is whether or not the Postal Service should be allowed to close Post Offices. Therefore, the attributes delivery frequency and access to postal services were included in our survey.

Additionally, the OIG examined results from two recent OIG papers, (1) *What America Wants* and (2) *What America Wants and Needs*, which were based on qualitative survey data to determine attributes.<sup>14</sup> For example, in the *What America Wants and Needs* study, the participants in the focus groups seemed to be willing to accept, and in some cases favor, getting mail delivered to a centralized cluster box. Since the focus groups were limited to a few geographic areas, we thought it would be interesting to see if a national survey would produce similar results. Another finding from the focus groups was that the discussion of digital alternatives was fairly complex. We decided that if digital alternatives were too complicated for discussion within focus groups where a moderator can explain the concept and is available to answer questions, then the idea was too complex to be included in the quantitative portion of the Gallup survey.<sup>15</sup>

The OIG also looked at quantitative studies done for foreign posts, including the attributes those posts chose to include and lessons learned from their surveys. A summary of these studies, their various findings, and lessons learned from the surveys can be found in the OIG paper, *Guiding Principles for a New USO*.<sup>16</sup> One of the lessons learned from the studies was to only include attributes that were easy for the respondents to understand how the alternative would affect them.<sup>17</sup> For example, respondents easily understand what it means to have mail delivered 5 days a week vs. 6 days a week. However, respondents may not understand the implications of including or excluding a product from the USO. We followed these lessons learned and focused on attributes whose outcomes could easily be understood. This had the impact of excluding attributes such as which products to include in the USO.

Thus, the OIG included the following attributes in the quantitative survey: frequency of delivery, mode of delivery, access to postal services, and price. Price was necessary in order to monetize the value consumers place on specific attribute levels.

<sup>14</sup> OIG, What America Wants from the Postal Service, Report No. RARC-WP-13-009, May 21, 2013, https://www.uspsoig.gov/sites/default/files/document-library-files/2013/rarc-wp-13-009.pdf, and OIG, What America Wants and Needs from the Postal Service, Report No. RARC-WP-14-009, February 18, 2014, https://www.uspsoig.gov/sites/default/files/document-library-files/2014/rarc-wp-14-009\_1.pdf.

<sup>15</sup> A few questions were added to the qualitative survey about the acceptance of receiving mail via e-mail.

<sup>16</sup> See OIG, Guiding Principles for a New Universal Service Obligation, Appendix B for a full discussion of these studies. https://www.uspsoig.gov/sites/default/files/document-library-files/2014/rarc-wp-15-001.pdf.

<sup>17</sup> Ibid., Table 2.

## **Levels of Attributes**

As discussed earlier, the design of the survey includes giving respondents a choice between different levels of service for each attribute. For example, for the attribute frequency of delivery, the levels included (1) Monday through Saturday delivery, (2) Monday through Friday delivery, and (3) 3-day a week delivery. The OIG developed its wish list of levels of attributes and worked with Gallup to ensure that number of levels and wording describing the levels was appropriate for the survey.

#### **Price**

For price, we looked at studies done by other posts to get an idea of the range of prices offered. We found the one lesson learned was to make sure the price variations were wide enough to reflect the true value differences.<sup>18</sup> We also strived to make the choices realistic and believable.

For the starting price for letters, we felt that we needed different price points for consumers and businesses as businesses often pay lower prices through the Postal Service workshare prices. For consumers, we wanted to start with the current price of the First-Class Mail stamp, but rounded up to 50 cents to avoid respondents rejecting the current price to favor prices that were rounded to 5 cents.

For businesses, it was more complicated, as there are numerous rates that reflect various levels of workshare. The average revenue for First-Class Mail presort was close to the price for a 5-digit presorted First-Class Mail letter, which happens to be the highest volume mail category within First-Class Mail presort group.<sup>19</sup> Therefore, we decided the starting point would be the 5-digit presort rate, rounded to the nearest whole integer. For businesses, we were not concerned about respondents favoring rates that were rounded to 5 cents, as historically businesses favor lower prices over round numbers.

For parcels, the biggest concern was dealing with the fact that some parcel rates vary with distance and weight. We wanted a price that would easily be understood by the respondents. Therefore, we chose the price for a medium size flat-rate Priority Mail box. The rate at the time of the survey was \$11.30, so we rounded to \$11 for simplicity and used the same rate for consumers and businesses.

#### **Delivery Frequency**

For delivery frequency, we decided to include the current status, Monday through Saturday, the Postal Service's proposal to drop Saturday delivery, and delivery 3 days a week.<sup>20</sup> While the 3-day option could be considered extreme, at least one other country has recently changed its minimum requirement for some areas of the country to 3-day delivery.<sup>21</sup> The same options were used for letters and parcels and for both consumers and businesses.

#### Access to Postal Services

The purpose of including access to postal services as an attribute was to try to determine how much value people placed on the ability to go to their local post offices vs. the availability of access to postal services via other means. Therefore, we decided to include post offices open normal hours, post offices open limited hours, postal counters in other businesses, and self-service

<sup>18</sup> Ibid.

<sup>19</sup> The average revenue on presort First-Class Mail letters was 37 cents, and the 5-digit automation rate for a 1 ounce letter was 38.1 cents. We picked a starting point of 38 cents.

<sup>20</sup> In order to make the survey easier to understand, we specifically stated that the 5-day delivery alternative was Monday through Friday delivery, which is consistent with the Postal Service's most recent proposal. It is possible we would have received different responses, had we chosen another day to exclude from delivery.

<sup>21</sup> The New Zealand Post, *Questions and Answers on Our Proposal,* 2013, http://www.nzpost.co.nz/about-us/postal-legislation/deed-of-understanding/questions-and-answers-on-our-proposal.

kiosks. For normal Post Office operating hours, we looked at operating hours nationwide and found that 8 hours Monday through Friday and 4 hours on Saturday was a fair representation.<sup>22</sup>

#### Mode of Delivery

Mode of delivery is another attribute that currently varies across the country. Our goal was to determine how much value people place on the physical delivery location — how close the delivery point is to their home or business. We decided on three options for letters and four options for parcels. The options were similar for residents and businesses with slight wording changes to acknowledge the differences (home vs. business). The options for letters were delivery to the door, delivery to the mailbox at a curb, and delivery to a locked cluster box no more than a ¼ mile from the respondent's home. For parcels we also included an option for a parcel locker and made it clear that the parcel would be secure and accessible 24 hours a day, 7 days a week. For the cluster box and parcel locker options, we added either the words "locked" or "secure" to inform respondents that this option would be secure. We felt this feature was important since the focus groups in *What America Wants and Needs* demonstrated that some people value security over proximity.

<sup>22</sup> We acknowledge that "normal" hours for post offices vary across the country.

## Appendix B: Gallup Analytic Report

# GALLUP

October 30, 2104

# ANALYTIC REPORT – UNIVERSAL SERVICE OBLIGATION USPS OIG RISK ANALYSIS RESEARCH CENTER

Contract Number: 6HQOIG-14-B-0031

Submitted by:

**CHRIS STEWART** Partner

901 F St NW Washington, DC 20004 t 949.474.2785 f 202.715.3131 chris\_stewart@gallup.com

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## **EXECUTIVE SUMMARY**

The Postal Service Office of Inspector General (OIG) partnered with Gallup to conduct surveys of American consumers and businesses to measure their views regarding key elements of the Postal Service's Universal Service Obligation (USO). The survey instrument was carefully designed to elicit the data required to model estimates of respondents' willingness to pay (WTP) for various levels of service the U.S. Postal Service might provide in the future. WTP is a concept that captures the implicit value in an attribute that customers are willing to pay for to consume/experience it and achieve a certain level of satisfaction or utility or be willing to get compensated for not being able to consume it. These estimates were calculated independently for letters and parcels among both consumers and businesses across a range of demographic variables and business sizes. In addition, the survey included several questions that were more qualitative in nature, such as respondents' general views on the postal service as well as their current mail mix. This information should help policy makers chart a course for the future of the U.S. Postal Service that ensures changes to the USO are made strategically and in a way that maximizes the value provided to both consumers and businesses.

#### **KEY FINDINGS**

#### WILLINGNESS TO PAY

- Of the different attributes considered in this study, mode of delivery has the highest relative importance for consumers when it comes to selecting service options for letters and parcels while frequency of delivery has the least relative importance. Price remains equally important for both letters and parcels.
- Businesses assign roughly equal importance to frequency of delivery, access to postal services, and price in the case of letters. However, businesses display a clear preference for mode of delivery when it comes to parcels.
- Both consumers and businesses seem to place relatively little value on Saturday delivery for both letters and parcels, but see value in maintaining at least five-day delivery as opposed to delivery just three days a week.
- Both consumers and businesses assign relatively high value for delivery location, especially among those who currently receive delivery to their door.
- Both consumers and businesses place value on human interaction with U.S. Postal Service employees at a post office, when they access postal services, as opposed to using a postal counter at a retail store or a self-service kiosk.

#### CONSUMER CHARACTERISTICS

- Younger Americans tend to check their mail less often than their older counterparts. While nine in 10 of those aged 50 or older say they check their mail daily, the proportion slips to three in four among those aged 30 to 49 and just 55% among those aged 19 to 29.
- While bills are currently the most common form of First-Class Mail® received among consumers in this survey, 71% of those aged 19 to 29 and 57% of those aged 30 to 39 say they don't make any payments through the mail.
- Two-thirds of consumers say they receive at least one parcel through the mail each month and 42% say they send at least one parcel per month. The proportion who say they receive at least one parcel per month increases steadily across income brackets from 58% among those living in households earning less than \$35, 000 to 83% among those living in households earning \$150,000 or more.
- While 90% of businesses say they send more letters than parcels, small businesses are somewhat more likely to send about the same number of letters as parcels or sending more parcels than letters.
- The vast majority of both consumers (85%) and businesses (82%) say it is either very important or important that the U.S. Postal Service deliver to every address in the country.
- Roughly two-thirds of both consumers (62%) and businesses (70%) say it is either very important or important that the First-Class Mail stamp price is the same for every letter regardless of where the letter is sent in the country.

- Eight in 10 business respondents surveyed either strongly agree or agree that there are some things businesses such as theirs will always need to send by mail. Meanwhile, among consumers, two-thirds either strongly agree or agree that they would feel cutoff from society if they were not able to send or receive mail.
- Fewer than one in five consumers and one in three businesses say they would be very likely or likely to accept electronic delivery of some of their mail via secure email.

## INTRODUCTION

One of the biggest challenges facing policy makers regarding the U.S. Postal Service is determining how to best make necessary tradeoffs between varying levels of service currently provided under its USO. To better inform Postal Service Governors, Postal Service management, and Congress about potential impacts from changes to current levels of service, the U.S. Postal Service Office of OIG Risk Analysis Research Center (RARC) commissioned Gallup to conduct a quantitative survey designed to elicit WTP estimates for both consumers and businesses across four key attributes of the USO — frequency of delivery, mode of delivery, access to postal services, and price. The findings from this study should be carefully considered along with well-founded cost/savings projections to ensure that any changes to current levels of service are designed so that the U.S. Postal Service continues to maximize the value it provides to American consumers and businesses.

## **RESEARCH BACKGROUND**

This study builds upon prior RARC studies that have explored Americans' general attitudes and preferences regarding the U.S. Postal Service by deriving rigorous WTP estimates for different attributes of the USO among a nationally representative sample of consumers and a stratified sample of businesses.

#### **OBJECTIVE**

The goal of this study is to develop measures of WTP for a number of important attributes of the U.S. Postal Service's USO with estimates calculated separately for each level of each attribute among consumers and businesses and for letters and parcels. To accomplish this objective, Gallup conducted quantitative surveys designed to support a Stated Preference Discrete Choice Model (SPDCM) by presenting respondents with a series of choice tasks consisting of four unique concepts (random combinations of attribute levels). The questionnaires used in this study were designed following a review of past RARC studies to identify specific items that would provide a better understanding of preferences and tradeoffs made by different segments of the consumer population. WTP estimates were derived from this data based on respondents' preferences for the service attributes included in this study and the value that each level of the attribute provides to the consumer expressed in monetary terms. The questionnaire also included questions designed to capture customers' mailing characteristics and qualitative views of the USO.

#### **METHODOLOGY**

#### SAMPLING AND DATA COLLECTION

The data for this study were collected through parallel surveys of consumers and businesses. The sample for the consumer survey was drawn from the Gallup Panel — one of the few research panels that is representative of the entire U.S. population. The Gallup Panel selects potential members using random-digit-dial (RDD) methodology and address-based sampling (ABS) to contact U.S. households at random by telephone. This ensures scientific accuracy and creates a probability sample that is essential to generalizing survey results.

The sample drawn for this study was stratified by age, education, race, and ethnicity. Since Americans who lack Internet access are a high-priority group of U.S. Postal Service consumers, separate subsamples were drawn to receive Web or mail versions of the questionnaire. Panelists with access to the Internet and a preference for completing surveys via the Web were eligible for the Web-based version of the survey while those who have expressed a preference for completing surveys via mail or lack of access to the Internet were eligible for the mail version of the survey. To ensure at least 800 consumers completed the survey, a sample of 2,486 Web panelists and 625 mail panelists were selected to participate for a total sample size of 3,111. Web-based participants were initially contacted with an email explaining the purpose of the survey and containing a unique link to the survey on June 20, 2014. Reminder emails were sent to sampled participants who had not yet completed the survey on June 30 and July 2. Participants who were selected to complete the paper version of the survey were sent an invitation letter explaining the purpose of the survey along with a copy of the questionnaire and a pre-paid return envelope on June 24. The actual completion rate for both modes exceeded

expectations resulting in 759 Web completes (30%) and 178 mail completes (28%) for a total sample size of 937 consumers. The median length for of the consumer Web survey was 15 minutes.

The sample for the business portion of the study was drawn from a database of commercial businesses licensed by Marketing Systems Group from Dun & Bradstreet. This sample was stratified by size: small (0-99 employees), medium (100-499), or large (500 or more) and included representative businesses from across all industries. Employees from each sampled business with job titles suggesting they were most likely to be responsible for making decisions regarding the businesses' choice of mail carrier were contacted by a Gallup interviewer via telephone and asked a series of screening questions to determine if they were the best person to evaluate their business with the U.S. Postal Service or if another individual would be better suited to complete the survey. Once the correct respondent was identified, that individual was sent an email with a link to complete the survey online. These screener interviews were conducted from June 18 to July 24 with email invitations explaining the purpose of the survey and containing a unique link to the survey website sent to potential respondents the morning following their phone interview. Up to three weekly reminder emails were sent to potential respondents who had not vet completed the survey. These reminders were sent on June 25, July 2, July 10, July 13, and July 23, Gallup interviewers called 1,865 businesses over this timeframe, gathering email contact information for 810 individuals best able to evaluate the U.S. Postal Service. Of these potential respondents, a total of 203 completed the Web survey with 28 small, 99 medium, and 74 large businesses represented. The median length for of the business Web survey was 12 minutes.

#### WEIGHTING

To ensure that the consumer sample was projectable to the U.S. population, weights were prepared at the respondent level. Base weights were prepared to account for the probability of selection of the individual into the Gallup consumer panel. Although the sample was stratified by age, education, race, and ethnicity and drawn in proportion to the population distribution, completed surveys do not always reflect the population distribution due to non-response or non-cooperation. To account for that, the sample was post-stratified by age (15-34, 35-44, 45-54, 55+), education (High school or less, Some college, College or higher), race (white, black, other), ethnicity (Hispanic, non-Hispanic), and census region. All population parameters used in weighting were obtained from the latest Current Population Statistics available. Weights were appropriately trimmed to ensure that the variability of weights did not have an undue effect on the variability of the survey estimates. These weights were further normalized so the average weight equals 1.

There were no weights constructed for the business sample. All businesses, regardless of size, were given equal representation in the analysis involving the total sample.

### WILLINGNESS TO PAY

#### PREFERENCE FOR SERVICE LEVELS

One of the key objectives of this study is to understand consumer and business needs and preferences for various postal services and the value they place on different service levels, expressed in monetary terms. These values are called their "willingness to pay." To gain better insights into the tradeoffs consumers are willing to make with regards to various service levels, the survey incorporated a module that required respondents to make a series of choices when exposed to a set of hypothetical service offerings that the U.S. Postal Service might offer. Tables A and B show the list of service attributes and the levels within those attributes that were considered for this study, separately for letters and parcels and for consumers and businesses, respectively. The list of attributes is largely similar for both consumers and businesses, with the material difference being in the price attribute. This is due to the different prices for business mail based on class of mail, volume, and amount of presorting done by the business.

#### TABLE A

Selected Service Attributes and Levels for Consumers

Attribute	Letters	Parcels
Frequency of Delivery Access to Postal Services	<ul> <li>a. Monday through Saturday</li> <li>b. Monday through Friday</li> <li>c. 3 Days a week</li> <li>a. Post Office open 8 hours Monday through Friday and 4 hours on</li> </ul>	<ul> <li>a. Monday through Saturday</li> <li>b. Monday through Friday</li> <li>c. 3 Days a week</li> <li>a. Post Office open 8 hours Monday through Friday and 4 hours on</li> </ul>
(within 10 minutes' travel time from your home)	<ul> <li>Saturday</li> <li>b. Post Office open 4 hours Monday through Saturday</li> <li>c. Postal counter at a commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>d. Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ul>	<ul> <li>Saturday</li> <li>b. Post Office open 4 hours Monday through Saturday</li> <li>c. Postal counter at commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>d. Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ul>
Mode of Delivery	<ul> <li>a. Delivery to the door of your home</li> <li>b. Delivery to a mailbox at the curb</li> <li>c. Delivery to a locked cluster box located no more than <sup>1</sup>/<sub>4</sub> mile from your home</li> </ul>	<ul> <li>a. Delivery to the door of your home</li> <li>b. Delivery to a mailbox at the curb</li> <li>c. Delivery to a locked cluster box located no more than ¼ mile from your home</li> <li>d. Parcel locker, which is a secure postal service facility for retrieving parcels, accessible 24 hours a day, 7 days a week</li> </ul>
<b>Price</b> (First-Class Mail stamp price / Priority Mail <sup>®</sup> medium-size flat rate box rate)	a. 50 cents b. 60 cents c. 75 cents d. 85 cents	a. \$11 b. \$13 c. \$16 d. \$18

#### TABLE B

Selected Service Attributes and Levels for Businesses

Attribute	Letters	Parcels
Frequency of Delivery Access to Postal Services (within 10 minutes' travel time from your business)	<ul> <li>a. Monday through Saturday</li> <li>b. Monday through Friday</li> <li>c. 3 Days a week</li> <li>a. Post Office open 8 hours Monday through Friday and 4 hours on Saturday</li> <li>b. Post Office open 4 hours Monday through Saturday</li> <li>c. Postal counter at a commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>d. Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ul>	<ul> <li>a. Monday through Saturday</li> <li>b. Monday through Friday</li> <li>c. 3 Days a week</li> <li>a. Post Office open 8 hours Monday through Friday and 4 hours on Saturday</li> <li>b. Post Office open 4 hours Monday through Saturday</li> <li>c. Postal counter at commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>d. Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ul>
Mode of Delivery	<ul> <li>a. Delivery to the door of your business</li> <li>b. Delivery to a mailbox at the curb</li> <li>c. Delivery to a locked cluster box located no more than ¼ mile from your business</li> </ul>	<ul> <li>a. Delivery to the door of your business</li> <li>b. Delivery to a mailbox at the curb</li> <li>c. Delivery to a locked cluster box located no more than <sup>1</sup>/<sub>4</sub> mile from your business</li> <li>d. Parcel locker, which is a secure postal service facility for retrieving parcels, accessible 24 hours a day, 7 days a week</li> </ul>
<b>Price</b> <sup>1</sup> (First-Class Mail stamp price / Priority Mail medium-size flat rate box rate)	<ul><li>a. 38 cents</li><li>b. 46 cents</li><li>c. 54 cents</li><li>d. 62 cents</li></ul>	a. \$11 b. \$13 c. \$16 d. \$18

Frequency of delivery, access to postal services, mode of delivery, and price are the four attributes that were considered for this study. Within each attribute there were multiple levels of service offerings with one of the offerings being a status quo, even though it is not explicitly stated as such. For example, Monday through Saturday delivery would be considered status quo for consumers while Monday through Friday delivery may be considered status quo for businesses.

Rather than ask consumers and businesses explicitly which levels of each of these attributes they prefer, which typically results in consumers stating all of the attributes as being important and hence unable to make tradeoffs, respondents are presented with sets of hypothetical combinations of these service attributes and asked to make a choice if those are the only options available to them. This is called stated preference discrete

<sup>1</sup> Note that business prices are based on presort pricing rates (not a single-piece stamp).

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choice model (SPDCM) and is commonly used for eliciting preferences of services as well as estimation of WTP for different levels of the service.

The methodology works in the following way: Each individual is offered a set of hypothetical concepts from within which they have to choose one they prefer the most. Each concept is a combination of different levels of the postal service attributes described above representing a service offering. For example, U.S. Postal Service's Monday through Saturday delivery with Post Office open 8 hours Monday through Friday and 4 hours on Saturday and letters delivered to a mailbox at the curb for a stamp price of 38 cents would be considered a service offering or a concept. Each respondent is offered four such concepts at a given time and asked to select one they prefer the most. This is repeated multiple times to allow for different combinations of the various service levels to appear together allowing for a more complete assessment of the tradeoffs each respondent is willing to make.

Theoretically, given three levels for frequency of delivery, four levels for access to postal services, three levels for mode of delivery, and four levels for stamp price, we would have required the respondent to evaluate 144 unique concepts each for letters and parcels if we wanted them to evaluate all possible combinations. In practice, it is not necessary to obtain all of those evaluations to determine respondents' preferences for the various attributes. To minimize respondent burden and associated fatigue in responding to such a choice experiment, a more limited design was chosen with the following properties:

- 1. Within each service attribute, each level appears an equal number of times.
- 2. Each level appears an equal number of times with every other level of different attributes.
- 3. There is variation across levels of an attribute within a choice task or low degree of overlap.

The Sawtooth Software for Choice-Based Conjoint (CBC) was used in developing this design. Under this design, each respondent completed 10 choice tasks for letters and 10 for parcels. Each choice task involved reviewing four concepts and selecting one they preferred the most. In other words, each respondent provided 40 unique observations about their preferences for various service levels with respect to letters and 40 unique observations with respect to parcels. To avoid all respondents being exposed to the same 40 concepts, eight different versions of the choice experiment were prepared and respondents were randomly assigned to one of the eight versions. The need for gathering data via regular mail was fundamental in determining the number of versions of the design generated as more versions would have made the logistics of managing the data collection that much harder. With eight versions, we are able to achieve a good balance between randomness and logistical complexity.

It would have been possible to offer a "None" concept in each choice task, essentially allowing the respondent to reject all of the concepts offered thereby revealing preference for a competitive offering. However, considering this evaluation or study was not set in a competitive context, the "None" option was not offered.

**FIGURE A** 

Illustration of a typical question respondents were offered.

#### Universal Service Obligation U.S. Postal Service OIG Business Preference Survey

Thinking about your mail options for <u>letters</u> by First-Class Mail®, If these were your only options, which one would you choose? Choose by clicking one of the buttons below:

	OPTION A	OPTION B	OPTION C	OPTION D	
Access to postal services (within 10 minutes travel time from your business)	Post Office open 8 hours Mon-Fri 4 hours on Sat	Postal counter at a commercial retail store	Post Office open 4 hours Mon-Sat	Self-service Kiosk	
Mode of delivery	Delivery to your door	Delivery to a locked clusterbox	Delivery to a mailbox at the curb	Delivery to your door	
Frequency of Delivery	3 days a week	Mon-Sat	Mon-Fri	Mon-Fri	
First-Class Mail® letter rate	46 Cents	38 Cents	38 Cents	54 Cents	
	$\bigcirc$	0	$\bigcirc$	0	

Clusterbox: Delivery to a locked mailbox within a clusterbox located no more than 1/4 mile from your business

**Postal counter at commercial retail store:** Postal counter at commercial retail store, staffed by a nonpostal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day

Self-service Kiosk: A secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, 24 hours a day, 7 days a week



To derive the importance respondents assign to each service attribute, the first step in the process is to estimate the partworths or the utilities associated with each level of each attribute. This is done by estimating a logit model at the individual level by maximizing likelihood function. The coefficients of the logit model provide the partworth utilities for each level of each attribute. Attribute levels are coded in such a way that the sum of the estimated partworth utilities within each attribute for each respondent sums to zero. The model is estimated at the individual level using a hierarchical Bayes framework where data from all respondents is used in estimating

the parameters for each individual respondent. Once the partworth utilities are estimated, the range of partworth utilities for each respondent for each attribute is computed. The range for each attribute is summed at the respondent level and the ratio of the range for a particular attribute to the sum of all ranges for that respondent is the importance assigned to that attribute by that respondent. This is repeated for every respondent. Finally, importance for each attribute is averaged across respondents.

Tables C through F show the average relative importance that each level of the service attribute offers for the total sample and key sub-segments of the consumer and business samples. The value in each cell is the average<sup>2</sup> across all individuals' relative importance of each attribute while evaluating the choice tasks.

#### TABLE C

Average Relative Importance of Service Attributes for Letters Among Consumers

	Overall	Mo	ode	Urba	nicity	C	ensus	Delivery Location			
		Web	Mail	Urban	Rural	Northeast	South	Midwest	West	Door	Clusterbox
Sample Size	936	759	177	775	161	159	227	327	222	220	155
Frequency of Delivery	19%	20%	16%	17%	16%	19%	18%	19%	22%	17%	22%
Access to Postal Services	25%	24%	33%	27%	31%	24%	25%	25%	25%	24%	29%
Mode of Delivery	30%	30%	30%	29%	33%	29%	31%	31%	27%	38%	20%
First-Class Mail Stamp Price	26%	27%	21%	26%	20%	28%	27%	25%	27%	20%	29%

When it comes to letters, consumers overall place the highest relative importance on mode of delivery, as observed in this table (30%) and the least amount of importance to frequency of delivery (19%), with roughly equal importance given to access to postal services (25%) and price (26%). Preferences among sub-segments vary somewhat, with those respondents reached via regular mail assigning greater importance to access to postal services (33%) and rural respondents to mode of delivery (33%). In addition, those currently receiving mail at their doorstep also assign an even higher importance to mode of delivery (38%). Mode of delivery enjoys the least relative importance among residents of the Western region (27%) and those currently receiving mail in a clusterbox or to a central mailbox in an apartment building (20%).

<sup>&</sup>lt;sup>2</sup> At the individual level, the importance is calculated by taking the range of partworth utilities for each attribute, summing those ranges across all four attributes and then taking the ratio of the range of each attribute to the sum. As preferences for attributes and levels are heterogeneous, the importance each individual assigns to an attribute varies. The table shows the average across the total sample.

#### TABLE D

Average Relative Importance of Service Attributes for Parcels Among Consumers

		Mo	ode	e Urbanicity Census Region					on	Delivery Location	
	Overall	Web	Mail	Urban	Rural	Northeast	South	Midwest	West	Door	Curb
Sample Size	936	759	177	775	161	159	227	327	222	218	469
Frequency of Delivery	16%	17%	14%	16%	16%	18%	15%	17%	17%	15%	20%
Access to Postal Services	22%	21%	26%	22%	23%	22%	25%	20%	22%	23%	22%
Mode of Delivery	36%	35%	38%	35%	39%	37%	36%	36%	32%	43%	27%
Priority Mail Flat-Rate Box Price	26%	27%	22%	27%	22%	22%	24%	27%	29%	19%	30%

With regards to parcels, consumers overall place the highest relative importance on mode of delivery (36%) and least importance to frequency of delivery (16%). This is perhaps not surprising considering the low frequency nature of sending and receiving parcels compared with letters. Consumers living in rural<sup>3</sup> areas of the country assign the greatest importance to mode of delivery (39%) while residents living in the Western region express the least importance to mode of delivery (32%). For those already receiving mail at their doorstep, mode of delivery is twice as important (43%) as price of priority mail (19%) while for those receiving most of their mail at the curb, both mode of delivery (27%) and price of priority mail (30%) are somewhat similar.

#### TABLE E

Average Relative Importance of Service Attributes for Letters Among Businesses

	Overall	Business Size					
	Overall	Small	Medium	Large			
Sample Size	203	28	99	74			
Frequency of Delivery	27%	27%	26%	26%			
Access to Postal Services	26%	32%	24%	24%			
Mode of Delivery	25%	25%	24%	23%			
First-Class Mail Stamp Price	22%	17%	25%	27%			

<sup>3</sup> Residents living in counties that are in the bottom 20% on population density

Businesses assign roughly equal importance to all four service attributes in the case of letters. In essence, they are unwilling to tradeoff between these service attributes. In the case of parcels overall, there is a clear preference for mode of delivery (31%) and frequency of delivery is assigned the least importance (21%). There is little difference by size of business when it comes to tradeoffs between these service attributes, although access to postal services (26%) is slightly more important among small businesses when it comes to parcels and mode of delivery is slightly more important among medium and large businesses.

#### TABLE F

Average Relative Importance of Service Attributes for Parcels Among Businesses

	Overall	Business Size					
	Overall	Small	Medium	Large			
Sample Size	203	28	99	74			
Frequency of Delivery	21%	23%	22%	21%			
Access to Postal Services	22%	26%	21%	24%			
Mode of Delivery	31%	27%	32%	31%			
Priority Mail Flat-Rate Box Price	26%	24%	25%	24%			

#### WILLINGNESS TO PAY

Given these preferences for postal services, to determine consumers' and businesses' willingness to pay for services, individual level logit models are constructed for the total consumer sample and business sample first using the same model used to derive average importances. The only difference is instead of treating price as categorical, it is treated as linear or continuous. The outcome of this model is a set of coefficients for each level of the service attribute that represents the partworth or the marginal utility that level provides the respondent. A hierarchical Bayes framework is used to estimate the partworths for each respondent using an iterative approach, where model coefficients for each respondent are updated by using information from the rest of the sample. Maximum likelihood methods are used to estimate the individual level logit models that include main effects. This process continues until the coefficients for each respondent converge. The coefficients are then averaged across all respondents to obtain the overall average utilities or partworths for each level of each attribute. This is considered one iteration. This process is repeated 10,000 times by drawing a new set of starting coefficient values from a multivariate normal distribution, resulting in 10,000 sets of average partworth utilities for each level.

This empirical distribution of partworth utilities enables us to obtain an estimate of uncertainty of the coefficients. The coefficients for each attribute are monotonic in that the first level yields higher utility than the second, which is higher than the third, and so on. The first level within each attribute is considered a reference level and all willingness to pay estimates at the attribute level are computed relative to that level. The only difference is mode of delivery where delivery to the curbside is treated as the reference level. The coefficient on price is expected to be negative meaning higher price yields lower utility and hence, less likely to be chosen. To make sure that the coefficient on price does not switch signs (from negative to positive), which is likely when the sample size is limited or the range of prices offered is too narrow, a constraint is imposed for the coefficient to be negative. To compute the WTP for a particular level of an attribute, the difference of the partworth utility between the reference level and the level we are interested in is divided by the partworth utility for price. The ratio is the willingness to pay. For example, to compute the average WTP for frequency of delivery of 5 days (Monday through Friday) for the total sample, the average partworth utility for this level, is subtracted from

the average partworth utility for 6-day delivery (Monday through Saturday). This difference reflects the decrease in average utility for respondents by accepting a 5-day delivery instead of a 6-day delivery. When this difference is divided by the average partworth utility for price, the result is the average willingness to pay more for the First-Class stamp price to compensate for the decline in utility. In other words, it is a monetary measure of the utility or value of the attribute. This calculation is repeated for each level of each attribute resulting in average WTP estimates for one iteration. This is repeated 10,000 times providing an empirical distribution for the average WTP estimates. Tables G and H show the computed average WTP and the 2.5<sup>th</sup> and 97.5<sup>th</sup> percentiles of the empirical distribution (a measure of its uncertainty) for consumers as a whole and sub-segments of the population in cents (for letters) and dollars and cents (for parcels). For each sub-segment of the population, the model is re-estimated and average WTP and measure of uncertainty of WTP is estimated. This process is repeated separately for consumers evaluating letters and parcels as well as businesses evaluating letters and parcels.

#### TABLE G

Average Willingness to Pay Estimates for Letters (increase in First-Class Mail stamp price) - Consumers

	Overall	Mode		Urbanicity		Census Region				Delivery Location	
		Web	Mail	Urban	Rural	Northeast	South	Midwest	West	Door	Curb
Sample Size	936	759	177	775	161	159	227	327	222	220	470
Frequency of Delive	ery										
WTP for Mon-Sat delivery instead of:											
Mon-Fri	0.23	0.23	0.3	0.24	0.28	0.29	0.13	0.31	0.27	0.06	0.25
(2.5pctl, 97.5pctl)	(0.17, 0.29)	(0.12, 0.50)	(0.18, 0.30)	(0.11, 0.50)	(0.15, 0.45)	(0.15, 0.45)	(0.05, 0.27)	(0.21, 0.43)	(0.16, 0.40)	(0.0, 0.28)	(0.16, 0.33)
3 Days a week	2.06	2.06	2.14	2.0	2.56	2.11	1.9	2.07	2.11	2.3	2.07
(2.5pctl, 97.5pctl)	(1.91, 2.22)	(1.90, 2.22)	(1.71, 2.58)	(1.85, 2.16)	(2.1, 3.09)	(1.78, 2.48)	(1.63, 2.20)	(1.82, 2.35)	(1.78, 2.47)	(1.89, 2.77)	(1.86, 2.29)
Access to Postal Ser											
WTP for access to a Po	st Office	open 8 l	nours M	on-Fri 4	hours o	n Sat ins	stead of:	1			
Post Office open 4 hours Mon-Sat	0.77	0.79	0.81	0.73	1.12	0.85	0.75	0.7	0.87	1.15	0.68
(2.5pctl, 97.5pctl)	(0.66, 0.90)	(0.66, 0.92)	(0.46, 1.14)	(0.62, 0.86)	(0.76, 1.49)	(0.56, 1.11)	(0.51, 0.98)	(0.50, 0.93)	(0.63, 1.13)	(0.82, 1.51)	(0.51, 0.87)
Postal counter at commercial retail store	1.45	1.35	2.13	1.46	1.54	1.49	1.77	1.46	1.17	1.95	1.44
(2.5pctl, 97.5pctl)	(1.31, 1.58)	(1.20, 1.48)	(1.69, 2.60)	(1.31, 1.61)	(1.15, 2.01)	(1.15, 1.84)	(1.51, 2.07)	(1.22, 1.71)	(0.90, 1.46)	(1.57, 2.34)	(1.24, 1.66)
Self-service kiosk	2.07	1.87	3.39	2.02	2.58	1.97	2.27	2.09	1.82	2.79	1.96
(2.5pctl, 97.5pctl)	(1.91, 2.24)	(1.71, 2.03)	2.85, 4.05)	(1.85, 2.18)	(2.09, 3.07)	(1.65, 2.32)	(1.96, 2.59)	(1.82, 2.37)	(1.52, 2.14)	(2.36, 3.32)	(1.74, 2.18)
Mode of Delivery											
WTP for delivery to the	e curb in	stead of:	I	r	r	r	1	1	r	r	r
Delivery to the door	0.72	0.7	0.96	0.79	0.41	0.43	0.68	0.92	0.77	0.04	1.23
(2.5pctl, 97.5pctl)	(0.64, 0.81)	(0.61, 0.79)	(0.72, 1.24)	(0.70, 0.89)	(0.23, 0.64)	(0.25, 0.62)	(0.52, 0.85)	(0.76, 1.09)	(0.63, 0.93)	(0.02, 0.09)	(1.10, 1.37)
Delivery to a locked clusterbox	3.37	3.29	3.76	3.21	4.39	2.9	3.28	3.82	2.9	5.78	4.01
(2.5pctl, 97.5pctl)	(3.17, 3.60)	(3.06, 3.52)	(3.16, 4.44)	(2.98, 3.45)	(3.59, 5.29)	(2.47, 3.36)	(2.93, 3.69)	(3.43, 4.31)	(2.54, 3.31)	(5.01, 6.73)	(3.71, 4.37)

In general, consumers' willingness to pay for higher levels of service, within each service attribute, in the context of letters is relatively low. Consumers on the average are willing to pay more for the service attribute mode of delivery and little to nothing for frequency of delivery. For example, when considering letters, Copyright © 2014 Gallup, Inc. All rights reserved.

consumers, on the average, are willing to pay no premium over and above the First-Class mail rate to retain a 6-day delivery compared with a 5-day delivery. In utility terms, this means they place relatively small value on receiving the sixth day of delivery. However, their measured WTP of 2 cents indicates they do place value on retaining 6-day delivery as opposed to 3-day delivery. Likewise, rural consumers, on the average, are willing to pay 4 cents more than the First-Class Mail rate to have delivery of mail to a mailbox at the curb instead of delivery to a locked cluster box. Those consumers who already report receiving their mail to their door have a willingness to pay 6 cents more than First-Class Mail rate to have their mail delivered to a mailbox at the curb instead of to a locked cluster box. The point estimates of WTP also have a 95% confidence interval reported in Table H below the point estimates. Generally, the WTP estimate from 10,000 iterations is used to obtain the 95% confidence interval.

## TABLE H

Average Willingness to Pay Estimates for Parcels (increase in Priority Mail Flat Rate) - Consumers

		Mo	ode	Urba	nicity		Census	Region	l		very ation
	Overall	Web	Mail	Urban	Rural	Northeast	South	Midwest	West	Door	Curb
Sample Size	932	759	173	772	160	159	227	326	219	218	469
Frequency of Deli	ivery		I	I	I	I	1	I	I	I	I
WTP for Mon-Sat de	elivery in	stead of:	:								
Mon-Fri	0.31	0.38	0.32	0.31	0.47	0.58	0.3	0.29	0.37	0.54	0.33
(2.5pctl, 97.5pctl)	(0.24, 0.38)	(0.31, 0.45)	(0.13, 0.56)	(0.25, 0.38)	(0.22, 0.75)	(0.38, 0.89)	(0.11, 0.47)	(0.16, 0.40)	(0.25, 0.48)	(0.31, 0.82)	(0.23, 0.46)
3 Days a week	1.73	1.83	1.56	1.7	2.17	2.45	1.7	1.65	1.61	2.37	1.61
(2.5pctl, 97.5pctl)	(1.60, 1.90)	(1.70, 2.01)	(1.26, 1.94)	(1.56, 1.84)	(1.71, 2.72)	(2.0, 2.97)	(1.41, 2.02)	(1.44, 1.87)	(1.35, 1.92)	(1.92, 2.89)	(1.45, 1.79)
Access to Postal S							•				
WTP for access to a	Post Offi	ce open	8 hours	Mon-Fri	4 hours	on Sat i	nstead of	f:		1	
Post Office open 4 hours Mon-Sat	0.55	0.59	0.48	0.54	0.6	0.73	0.51	0.57	0.52	0.71	0.5
(2.5pctl, 97.5pctl)	(0.45, 0.68)	(0.47, 0.73)	(0.15, 0.82)	(0.44, 0.65)	(0.22, 1.02)	(0.39, 1.12)	(0.30, 0.73)	(0.42, 0.75)	(0.32, 0.76)	(0.36, 1.08)	(0.36, 0.65)
Postal counter at retail store	1.11	1.05	1.65	1.09	1.23	1.45	1.28	1.09	0.91	1.53	1.04
(2.5pctl, 97.5pctl)	(0.97, 1.26)	(0.92, 1.20)	(1.19, 2.11)	(0.97, 1.26)	(0.84, 1.69)	(1.0, 1.92)	(0.99, 1.60)	(0.91, 1.29)	(0.70, 1.15)	(1.11, 2.04)	(0.88, 1.22)
Self-service kiosk	1.93	1.8	2.93	1.87	2.37	2.64	2.54	1.61	1.5	3.25	1.81
(2.5pctl, 97.5pctl)	(1.77, 2.10)	(1.65, 1.97)	2.42, 3.54)	(1.72, 2.04)	(1.84, 2.95)	(2.14, 3.25)	(2.15, 2.95)	(1.40, 1.84)	(1.22, 1.79)	(2.67, 3.94)	(1.61, 2.01)
Mode of Delivery			0.04)	1049		0-0/		1.04)		J. J.	,
WTP for delivery to	the door	instead	of:								
Delivery to the curbside	0.7	0.68	0.87	0.59	1.61	1.76	1.01	0.42	0.5	3.21	0.17
(2.5pctl, 97.5pctl)	(0.59, 0.81)	(0.58, 0.80)	(0.55, 1.19)	(0.47, 0.70)	(1.22, 2.0)	(1.35, 2.2)	(0.75, 1.27)	(0.25, 0.58)	(0.34, 0.68)	(2.69, 3.81)	(0.05, 0.29)
Delivery to a locked clusterbox	2.82	2.61	4.13	2.67	3.92	4.06	3.25	2.8	1.82	6.5	3.09
(2.5pctl, 97.5pctl)	(2.62, 3.03)	(2.40, 2.82)	(3.47, 4.90)	(2.47, 2.87)	(3.30, 4.71)	(3.43, 4.85)	(2.80, 3.73)	(2.50, 3.14)	(1.55, 2.10)	(5.42, 7.47)	(2.83, 3.39)
Delivery to a parcel locker	3.16	3.05	3.95	2.93	4.82	4.68	3.55	3.03	2.23	6.59	3.25
(2.5pctl, 97.5pctl)	(2.97, 3.39)	(2.86, 3.26)	(3.33, 4.67)	(2.72, 3.13)	(4.11, 5.65)	(3.99, 5.51)	(3.09, 4.05)	(2.70, 3.36)	(1.94, 2.56)	(5.69, 7.61)	(2.98, 3.53)

In the case of parcels, as in the case of letters, consumers express a greater willingness to pay for a more convenient mode of delivery. This is consistent with a higher average importance assigned to door delivery. Consequently, any other method of delivery yields less value or utility to them. To have parcels delivered to their doorstep as opposed to being delivered to a mailbox at the curb, consumers would be willing to pay, on the average, \$0.70 more than the Priority Mail Flat Rate or \$3.16 more than the Priority Mail Flat Rate in the case of parcels being delivered to a parcel locker. Those living in the Northeast (\$1.76) or those who already receive their mail at their door step (\$3.21) are, on the average, willing to pay higher amounts over and above the Priority Mail Flat Rate for door delivery.

Rural consumers in particular are willing to pay an average of \$4.82 more than the Priority Mail Flat Rate to have their parcels delivered to their doorstep instead of to a parcel locker. Those currently receiving their mail at their doorstep would be willing to pay, on the average, \$6.59 more than the Priority Mail Flat Rate to continue to receive parcels delivered to their doorstep instead of to a parcel locker.

Tables I and J provide the average WTP estimates and their associated 95% confidence levels for businesses with respect to receiving letters and parcels. To ensure that coefficients of frequency of delivery are consistent with expectations around how many days in a week that businesses are operating, the model was constrained to ensure utility for 5-days-a-week delivery was higher than 6-days-a-week delivery or 3-days-a-week delivery. The latter constraint is not needed as there were no reversals of signs when it came to 3-days-a-week delivery. In addition to these constraints, the coefficient on price was constrained to be negative to ensure that WTP is non-negative.

Consistent with what we observe in the case of consumers, when it comes to letters business respondents are unwilling to pay a premium for altering their preferred service levels within each attribute. For example, considering most businesses do not operate 6 days week, the 5-days-a-week delivery level is chosen as the reference in this case. Average WTP for businesses to have a 6-day delivery as opposed to a 5-day delivery is close to zero. They don't appear to see any value in the additional day of delivery. However, compared with a 3-day-a-week delivery, businesses are willing to pay 3 cents above the First-Class metered rate to retain a 5-day-a-week delivery. Alternative options to access postal services such as a postal counter at a retail store or self-service kiosks also are not preferred by the average business and hence, businesses have a low willingness to pay to retain access to a post office that is open 8 hours, Monday through Friday and 4 hours on Saturday. Compared with consumers, businesses place less value on more convenient modes of delivery. The businesses' WTP is just 1 cent more than the First-Class metered rate to have their mail delivered to their businesses than to a mailbox at the curb, and 2 cents more when compared with picking up mail from a locked clusterbox. Although sample size is limited, small businesses appear to be willing to pay a bit more (4 cents above the First-Class metered rate) for access to their mail during working hours than the flexibility of using a self-service kiosk.

When it comes to parcels, businesses on the average, are willing to pay only 50 cents more than the Priority Mail flat rate to have a 6-day delivery compared with a 5-day delivery, although they are willing to pay an average of \$3.40 more than the Priority Mail flat rate to retain a 5-day delivery compared with a 3-day-a-week delivery. As in the case of letters, small businesses care about access to postal services and are willing to pay on the average \$2.08 more than the Priority Mail flat rate to have access to a post office open 8 hours Monday through Friday and 4 hours on Saturday compared with being open 4 hours during 6 days of the week.

## TABLE I

Average Willingness to Pay Estimates for Letters – Businesses

	Orversell		Business Size			
	Overall	Small	Medium	Large		
Sample Size	203	28	99	74		
Frequency of Delivery						
WTP for Mon-Fri delivery instead of:						
Mon-Sat	0.49	0.19	0.6	0.57		
(2.5pctl, 97.5pctl)	(0.35, 0.66)	(0.01, 0.52)	(0.37, 0.84)	(0.37, 0.80)		
3 Days a week	3.40	3.82	3.38	3.28		
(2.5pctl, 97.5pctl)	(3.01, 3.80)	(2.54, 5.40)	(2.87 3.98)	(2.70, 3.97)		
Access to Postal Services						
WTP for access to a Post Office open 8 hou	ırs Mon-Fri 4 hou	irs on Sat instead	of:			
Post Office open 4 hours Mon-Sat	0.90	2.08	0.94	0.64		
(2.5pctl, 97.5pctl)	(0.63, 1.16)	(1.18, 3.23)	(0.57, 1.32)	(0.19, 1.06)		
Postal counter at commercial retail store	1.99	2.22	2.05	2.08		
(2.5pctl, 97.5pctl)	(1.67, 2.33)	(1.36, 3.61)	(1.60, 2.55)	(1.61, 2.61)		
Self-service kiosk	2.62	3.61	2.6	2.41		
(2.5pctl, 97.5pctl)	(2.21, 3.03)	(2.29, 5.38)	(2.07, 3.14)	(1.86, 3.05)		
Mode of Delivery						
WTP for delivery to the door of business in	nstead of:					
Delivery to a mailbox at the curb	1.16	0.48	1.26	1.28		
(2.5pctl, 97.5pctl)	(0.92, 1.41)	(-0.284, 1.24)	(0.93, 1.62)	(0.92, 1.65)		
Delivery to a locked clusterbox	2.08	1.29	2.53	1.81		
(2.5pctl, 97.5pctl)	(1.80, 2.40)	(0.40, 2.43)	(2.08, 3.06)	(1.36, 2.29)		

<sup>4</sup> Confidence interval spans zero making this coefficient not very useful. Small sample size is partly responsible for such large confidence interval.

#### TABLE J

Average Willingness to Pay Estimates for Parcels - Businesses

	011	Business Size			
	Overall	Small	Medium	Large	
Sample Size	203	28	99	74	
Frequency of Delivery					
WTP for Mon-Fri delivery instead of:					
Mon-Sat	0.50	0.19	0.60	0.52	
(2.5pctl, 97.5pctl)	(0.37, 0.63)	(0.05, 0.40)	(0.41, 0.82)	(0.32, 0.76)	
3 Days a week	2.15	2.42	2.34	1.87	
(2.5pctl, 97.5pctl)	(1.89, 2.45)	(1.66, 3.43)	(1.98, 2.75)	(1.55, 2.24)	
Access to Postal Services					
WTP for access to a Post Office open 8 hou	ırs Mon-Fri 4 hou	rs on Sat instead	of:		
Post Office open 4 hours Mon-Sat	0.41	0.45	0.29	0.45	
(2.5pctl, 97.5pctl)	(0.21, 0.63)	(-0.24, 1.13)	(-0.01, 0.58)	(0.10, 0.79)	
Postal counter at commercial retail store	1.03	0.82	1.07	1.24	
(2.5pctl, 97.5pctl)	(0.79, 1.28)	(0.17, 1.54)	(0.68, 1.47)	(0.84, 1.67)	
Self-service kiosk	1.51	1.74	1.54	1.56	
(2.5pctl, 97.5pctl)	(1.26, 1.78)	(1.01, 2.57)	(1.18, 1.91)	(1.14, 2.04)	
Mode of Delivery					
WTP for delivery to the door of business in	istead of:				
Delivery to a mailbox at the curb	1.4	1.33	1.14	1.78	
(2.5pctl, 97.5pctl)	(1.19, 1.62)	(0.68, 2.04)	(0.86, 1.46)	(1.38, 2.21)	
Delivery to a locked clusterbox	2.18	2.25	2.55	1.81	
(2.5pctl, 97.5pctl)	(1.87, 2.56)	(1.55, 3.13)	(2.10, 3.07)	(1.33, 2.34)	
Parcel locker	2.54	2.48	2.75	2.34	
(2.5pctl, 97.5pctl)	(2.24, 2.87)	(1.78, 3.46)	(2.34, 3.21)	(1.84, 2.93)	

## **RESPONDENT CHARACTERISTICS**

## CONSUMERS

The consumer sample is generally in close alignment with known demographic targets although it does contain a larger share of older and better-educated respondents — disproportionalities that have been corrected through the weighting procedure described above. The respondent demographic profile along with design effects<sup>5</sup>, and estimated margins of error<sup>6</sup> for reported findings within each demographic group appear in Table K. For the overall sample of 936 consumers, the margin of error for an estimate that is close to 50%<sup>7</sup> is 4.35% at the 95% confidence level with an associated design effect of 1.85.

<sup>&</sup>lt;sup>5</sup> The design effect is an adjustment to account for the variability of weights introduced to correct for distortions created by sampling and non-response that acts to increase the margin of error for a given estimate.

<sup>&</sup>lt;sup>6</sup> Margin of Error =  $\sqrt{(pq/n)}$  \* 1.96 \*  $\sqrt{deff}$ . Where deff = kish approximation ~  $\sum wt^2 / \sum wt$ .

<sup>&</sup>lt;sup>7</sup> Note that, by convention, margin of error estimates are reported as the confidence interval for a proportion near

<sup>0.5 (50%).</sup> Actual margins of error decrease as proportions deviate from 0.5. So considering a hypothetical sample of

<sup>1, 000</sup> cases, the margin of error for a proportion of 0.5 (50%) would be +/-3.1%, while for a proportion of 0.1 (10%) the margin of error would be +/-1.9%.

#### TABLE K

Consumer Demographic Profile

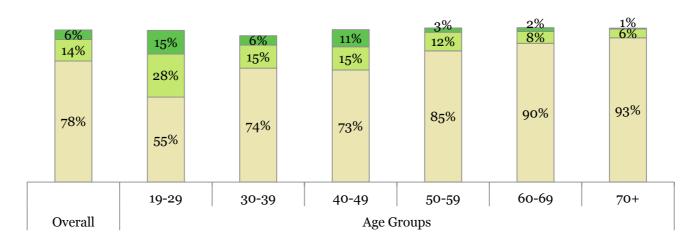
		n-size	Design Effect	Margin of Error
	East	159	1.70	+/- 10.13%
Census Region	Midwest	227	1.85	+/- 8.85%
	South	327	1.86	+/- 7.40%
	West	223	1.91	+/- 9.06%
Urbanicity	Urban	776	1.81	+/- 4.73%
Urbannenty	Rural	156	2.03	+/- 11.18%
Corr	Male	469	1.86	+/- 6.17%
Sex	Female	467	1.83	+/- 6.14%
Age Groups	19-29	69	1.39	+/- 13.93%
	30-39	128	1.45	+/- 10.44%
	40-49	119	1.49	+/- 10.96%
	50-59	221	1.60	+/- 8.35%
	60-69	232	2.13	+/- 9.38%
	70+	167	2.33	+/- 11.58%
	Did not complete high school	48	1.80	+/- 19.00%
	High school graduate	276	1.68	+/- 7.66%
Education	Some post-secondary education	171	1.53	+/- 9.28%
	College graduate	205	1.81	+/- 9.21%
	Post-graduate work	236	2.00	+/- 9.02%
	Less than \$35K	136	1.86	+/- 11.47%
	\$35K to \$50K	109	2.04	+/- 13.40%
Income	\$50K to \$75K	162	1.79	+/- 10.30%
meome	\$75K to \$100K	119	1.99	+/- 12.68%
	\$100K to \$150K	145	1.86	+/- 11.11%
	\$150K or more	113	1.75	+/- 12.20%

In addition to demographics, the survey captured information about U.S. consumers' mailing behavior. Half of respondents to this survey receive their mail through delivery to a mailbox at the curb (52%) while 21% have their mail delivered to a clusterbox, 20% have mail delivered to their door, and 6% pick up their mail from a post office/PO Box. Younger consumers are considerably more likely to receive their mail via delivery to a clusterbox (41% of those aged 19 to 29 and 33% of those aged 30 to 39). This finding likely reflects that younger consumers are far more likely to be renters with 72% of those in the youngest cohort and 39% of those aged 30 to 39 being renters compared with less than 15% of those aged 40 or older.

Three-quarters of consumers check their mail daily (78%) — a rate that increases to nine in 10 among consumers aged 60 and older. Consumers aged 19 to 29 are the least likely to check their mail daily (55%), but even among this age cohort virtually all check their mail on at least a weekly basis.

#### CHART A

How often do you check your mail? Among consumers overall and across age groups.

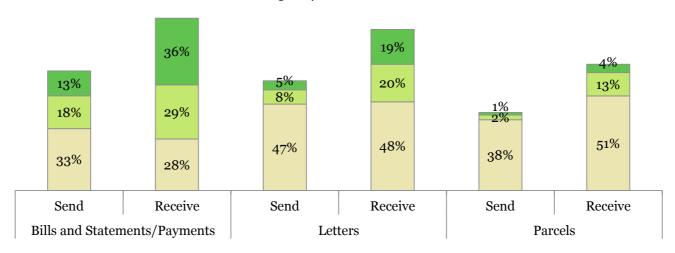


Once a day Several times a week Once a week

Bills and statements are the most common type of correspondence consumers receive with 93% saying they receive at least one and 65% saying they receive at least four items per month. Payments also account for the largest share of mail sent by consumers with 65% saying they mail at least one payment per month. While similar proportions say they send (59%) or receive (87%) at least one item of mail per month other than bills, the overall volume of bills and payments sent/received is substantially higher (see Chart B). The growing volume of parcels delivered by the U.S. Postal Service<sup>8</sup> is reflected in the finding that 68% of consumers say they receive and 42% say they send at least one parcel per month.

#### **CHART B**

Number of items of correspondence sent/received among consumers overall per month.



 $\square$  1 to 3  $\square$  4 to 6  $\square$  More than 6

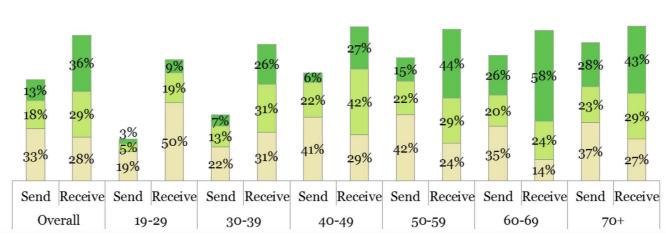
<sup>8</sup> Parcel volume has grown by 20% since 2009 while First-Class Mail volume has declined by 21% over the same timeframe http://online.wsj.com/articles/u-s-mail-does-the-trick-for-fedex-ups-1407182247

Although large majorities of younger consumers receive at least one bill or statement through the mail each month, most appear to be opting for online payment options as 71% of those aged 19 to 29 and 57% of those aged 30 to 39 say they don't make any payments through the mail. This contrasts sharply with the behavior of those aged 40 or older -78% of whom mail at least one payment per month.

## CHART C

*How many bills and payments/statements do you currently pay/receive through the mail each month?* Among consumers overall and across age groups.<sup>9</sup>

■ 1 to 3 ■ 4 to 6 ■ More than 6



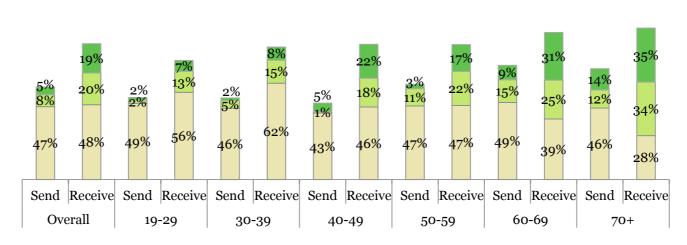
Age is also the primary driver of variation in letter volume sent/received; however, when it comes to sending letters, those aged 40 to 49 are more similar to their younger counterparts, with 49% sending at least one personal letter per month compared with 61% of those aged 50 to 59 and more than 70% of those aged 60 or older. These oldest consumers also receive the highest volume of personal correspondence with 55% of those aged 60 to 69 and 69% of those aged 70 or older receiving four or more letters each month.

9 Note that totals in this chart and the preceding text may not sum to 100% due to "don't know" responses. Copyright © 2014 Gallup, Inc. All rights reserved.

#### **CHART D**

*How many letters besides bill payments do you personally send/receive each month?* Among consumers overall and across age groups.

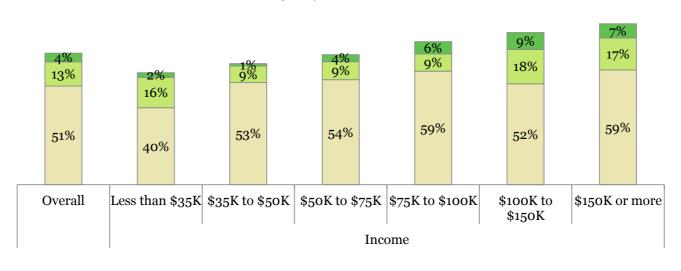
■1 to 3 ■4 to 6 ■ More than 6



There is little variation across demographic groups in the volume of parcels sent, but consumers with higher incomes receive far more parcels each month. The proportion who say they receive at least one parcel per month increases steadily across income brackets from 58% among those living in households earning less than \$35, 000 to 83% among those living in households earning \$150,000 or more. This finding likely reflects the greater disposable income those individuals enjoy for engaging in online or catalog shopping.

#### CHART E

*How many parcels do you personally receive each month?* Among consumers overall and across income brackets.



 $\square$  1 to 3  $\square$  4 to 6  $\square$  More than 6

## **BUSINESSES**

For the overall sample of 201 businesses, the margin of error for an estimate that is close to 50% is 6.91% at the 95% confidence level.

## TABLE L

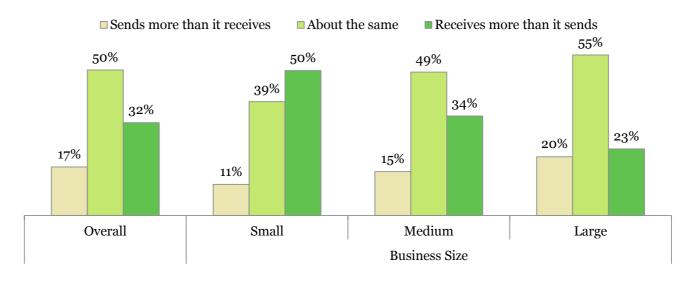
**Business Sample Profile** 

		Percentage	n-size	Margin of Error
	Small	14%	28	+/- 18.52%
<b>Census Region</b>	Medium	49%	99	+/- 9.85%
	Large	37%	74	+/- 11.39%

Nearly one-third of the businesses surveyed pick up their mail from the post office or a PO Box (32%) while 27% have their mail delivered to the door, 11% have it delivered to their mailroom, 9% have it delivered to a mailbox at the curb, and 7% receive their mail through delivery to a clusterbox. The majority of the large businesses surveyed tend to send as much mail as they receive (55%), while the small and medium businesses in this sample include a greater share of net receivers.

## CHART F

Overall does your business tend to send or receive more mail? Among businesses overall and by size.

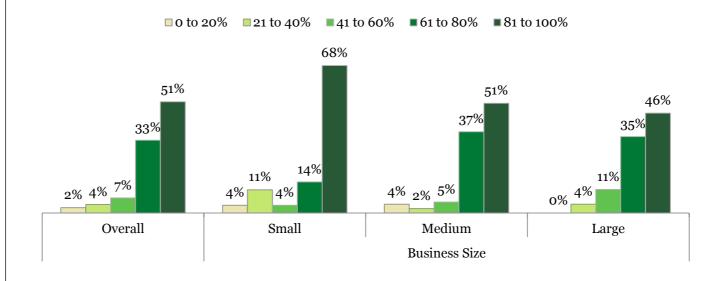


The vast majority of businesses surveyed tend to send more letters than parcels (90%). Likewise, 79% tend to receive more letters than parcels. There is a somewhat greater tendency toward parcel shipments among some small businesses with one-fifth either sending about the same number of letters as parcels (14% compared with 6% of medium and 7% of large businesses) or sending more parcels than letters (7% compared with 1% of both medium and large businesses). However, there are no variations in share of parcels received across business size with 81% of small, 79% of medium, and 77% of large businesses tending to receive more letters than parcels.

When asked to specify the approximate share of letters mailed out by their business, the majority of respondents surveyed say that more than 80% of their outgoing correspondence consists of letters (51%). Roughly two-thirds of small businesses fit this description (68%) as do a slight majority of medium businesses (51%) and a plurality of large businesses (46%).

#### CHART G

What proportion of the mail that your business sends out in an average week are letters? Among businesses overall and by size.



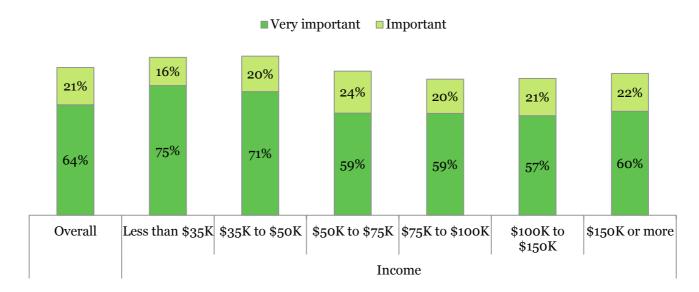
## VIEWS OF UNIVERSAL SERVICE OBLIGATION

## **DEFINING THE OBLIGATION**

Both consumers and businesses see a clear need for the U.S. Postal Service to deliver to every address in the country. The vast majority of those interviewed among consumers and businesses describe this aspect of the USO as either very important (64% of consumers and 55% of businesses) or important (21% of consumers and 27% of businesses). This view is held consistently among businesses of all sizes and by majorities across all consumer demographic groups. Lower-income consumers show even stronger support for this mandate with 75% of those living in households earning less than \$35, 000 and 71% of those living in households earning \$35,000 to \$50,000 describing it as very important.

#### CHART H

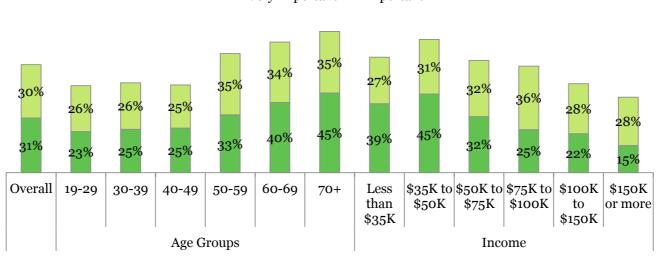
*How important is it to you that the U.S. Postal Service delivers to every address in the country?* Among consumers overall and across income brackets.

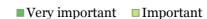


There is less consensus concerning uniformity in stamp prices, although majorities of both consumers and businesses say it is either very important (31% of consumers and 39% of businesses) or important (30% of consumers and 31% of businesses) that the price of a First-Class Mail stamp be the same for every letter regardless of where it is sent in the country. Small and medium businesses are somewhat more open to variation in stamp prices with 39% of small and 32% of medium businesses describing price uniformity as either somewhat important or not at all important (compared with 19% of large businesses). Openness to differential pricing among consumers varies by age and income with younger and wealthier consumers being less likely to see the importance of price uniformity.

#### **CHART I**

*How important is it that the First-Class Mail stamp price is the same for every letter — regardless of where the letter is sent in the country?* Among consumers overall, across age groups and income brackets.



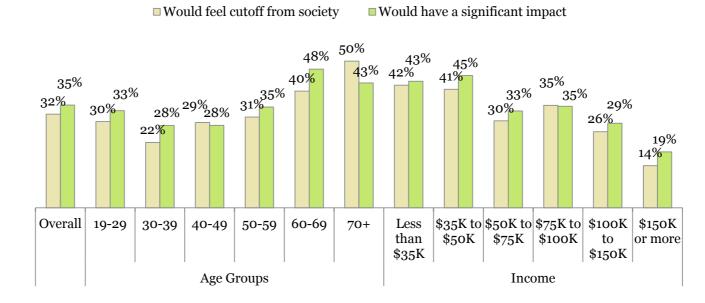


## **NEED FOR POSTAL SEVICES**

There remains a strong need for postal services among both businesses and consumers. Eight in 10 businesses respondents surveyed either strongly agree (55%) or agree (28%) that there are some things businesses such as theirs will always need to send by mail. Meanwhile, among consumers, two-thirds either strongly agree (32%) or agree (32%) that they would feel cutoff from society if they were not able to send or receive mail. A similar proportion of consumers either strongly agree (35%) or agree (34%) that if the U.S. Postal Service did not exist in five years, it would have a significant impact on them. Women are more likely to strongly agree with each of these statements -44% strongly agree that a lack of postal services would have a significant impact on them and 38% strongly agree that they would feel cutoff from society if they were unable to send and receive mail (compared in each case with 26% of men). Older and lower-income consumers are also more likely to strongly agree with these sentiments.

#### CHART J

*I would feel cutoff from society if I were not able to send or receive mail;* and *If the U.S. Postal Service does not exist in 5 years, it would have a significant impact on me.* Percentage "strongly agree" among consumers overall, across age groups and income brackets.

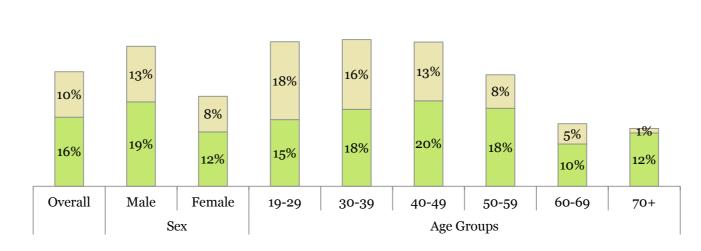


#### **OPENNESS TO ELECTRONIC DELIVERY**

One innovation that postal services in other countries have considered and even started using is the implementation of an electronic delivery service via secure email. Introducing this offering would likely require a significant educational campaign as currently just one-quarter of consumers say they would be either very likely (10%) or likely (16%) to accept this offer. Openness to an electronic delivery service is somewhat greater among men with 32% saying they would be either very likely or likely to accept this offer compared with 21% of women.

#### CHART K

Postal Services in some countries deliver mail electronically using secure email. If the US Postal Service were to offer to deliver your mail in this way, how likely would you be to accept this offer? Percentage "very likely" or "likely" among consumers overall, by sex and across age groups.

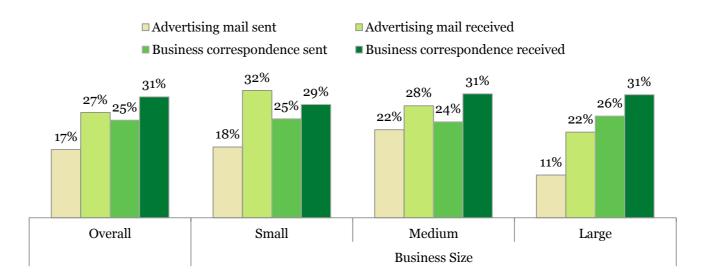




Most businesses would also be reluctant to accept the introduction of this service. Just 17% of business respondents say they would be either very likely or likely to accept electronic delivery of advertising mail their business sends while 25% say they would be either very likely or likely to accept electronic delivery of business correspondence their business sends. In both cases, there is slightly greater openness to accepting an electronic delivery option for mail received, but still less than one-third say they would be either very likely or likely to accept this service for either advertising mail (27%) or business correspondence (31%). Large businesses are even less likely to accept electronic delivery for advertising mail either sent (11%) or received (22%), although they are equally likely as their medium and small business counterparts to do so in the case of business correspondence.

## CHART L

Postal services in some countries deliver some mail electronically using secure email. If the U.S. Postal Service were to offer to deliver the advertising mail/business correspondence your business sends/receives in this way, how likely would you be to accept this offer? Percentage "very likely" or "likely" among businesses overall and by size.



## SUMMARY

Based on our survey, we find that there remains a strong need for postal services among both businesses and consumers with an overwhelming majority of businesses feeling that something will always need to be sent through mail while a significant proportion of consumers report they would feel cutoff from society if the U.S. Postal Service ceased to exist. Further, both consumers and businesses see a clear need for the U.S. Postal Service to deliver to every address in the country and the majority agree or strongly agree for the need for uniformity in stamp prices for letters sent from anywhere in the country.

In looking at the service attributes evaluated in this study, frequency of delivery enjoys the least importance among consumers in the context of sending and receiving both letters and parcels. While mode of delivery is seen as the most important service attribute when it comes to letters and parcels among consumers, price is also important. Businesses, on the other hand, seem to value all four service attributes similarly when it comes to letters, although their preference for mode of delivery is higher in the context of parcels.

Consistent with these preferences, both consumers and businesses place relatively little value on Saturday delivery both for letters and parcels, but do see the value in comparison with 3-day-a-week delivery. There is also greater willingness to pay for the convenience of door delivery compared with a locked cluster box or a parcel locker. In particular, those already receiving their mail to their doorstep are willing to pay a more to retain this service compared with other options.

Both consumers and businesses value access to postal services that has the potential for human interaction with U.S. Postal Service employees (walking into a post office open 6 days a week) more than using the self-service kiosk or even a postal counter at a commercial retail store.

Preferences revealed by this study and the WTP estimates produced as a result suggest that the reduction of services that is least likely to impact consumer and business expectations for both letters and parcels is altering the frequency of delivery.

## **APPENDIX I: ADDITIONAL CONSUMER WTP ESTIMATES**

## TABLE M

Average Willingness to Pay Estimates for Letters (increase in First-Class Mail stamp price) – Consumers

		Inco	ome	Age		
	Overall	Less than \$50K	Greater than \$50K	18-34	35-54	55+
Sample Size	936	397	539	159	248	529
Frequency of Delivery	1	I	11		I	I
WTP for Mon-Sat delivery instead of:	1					
Mon-Fri	0.23	0.31	0.05	0.55	0.13	0.19
(2.5pctl, 97.5pctl)	(0.17, 0.29)	(0.21, 0.42)	(-0.06, 0.15)	(0.35, 0.78)	(0.06, 0.22)	(0.10, 0.29)
3 Days a week	2.06	2.01	1.54	2.14	1.60	1.82
(2.5pctl, 97.5pctl)	(1.91, 2.22)	(1.78, 2.25)	(1.38, 1.70)	(1.80, 2.53)	(1.37, 1.85)	(1.64, 2.02)
Access to Postal Services						
WTP for access to a Post Office open 8 hou	rs Mon-Fri	4 hours on	Sat instea	ad of:	1	1
Post Office open 4 hours Mon-Sat	0.77	0.89	0.68	1.04	0.79	0.67
(2.5pctl, 97.5pctl)	(0.66, 0.90)	(0.70, 1.07)	(0.54, 0.84)	(0.77, 1.34)	(0.60, 1.00)	(0.51, 0.83)
Postal counter at commercial retail store	1.45	2.02	1.10	1.25	1.16	1.67
(2.5pctl, 97.5pctl)	(1.31, 1.58)	(1.78, 2.26)	(0.94, 1.26)	(0.93, 1.57)	(0.94, 1.39)	(1.49, 1.87)
Self-service kiosk	2.07	2.66	1.67	1.82	1.65	2.31
(2.5pctl, 97.5pctl)	(1.91, 2.24)	(2.38, 2.94)	(1.49, 1.85)	(1.49, 2.19)	(1.41, 1.90)	(2.08, 2.57)
Mode of Delivery					•	•
WTP for delivery to the curb instead of:						
Delivery to the door	0.72	0.83	0.70	0.66	0.59	0.81
(2.5pctl, 97.5pctl)	(0.64, 0.81)	(0.69, 0.97)	(0.61, 0.79)	(0.47, 0.87)	(0.45, 0.73)	(0.70, 0.93)
Delivery to a locked clusterbox	3.37	3.52	3.23	2.92	3.18	3.47
(2.5pctl, 97.5pctl)	(3.17, 3.60)	(3.19, 3.89)	(2.99, 3.52)	(2.43, 3.41)	(2.83, 3.59)	(3.17, 3.79)

## TABLE N

Average Willingness to Pay Estimates for Parcels (increase in Priority Mail Flat Rate) – Consumers

		Inco	ome		Age		
	Overall	Less than \$50K	Greater than \$50K	18-34	35-54	55+	
Sample Size	932	393	539	154	248	530	
Frequency of Delivery	1	1			I	1	
WTP for Mon-Sat delivery instead of:							
Mon-Fri	0.31	0.31	0.40	0.65	0.23	0.31	
(2.5pctl, 97.5pctl)	(0.24, 0.38)	(0.20, 0.43)	(0.32, 0.50)	(0.45, 0.88)	(0.14, 0.33)	(0.22, 0.43)	
3 Days a week	1.73	1.50	1.99	2.43	1.60	1.63	
(2.5pctl, 97.5pctl)	(1.60, 1.90)	(1.31, 1.72)	(1.80, 2.22)	(2.02, 2.97)	(1.37, 1.87)	(1.44, 1.82)	
Access to Postal Services							
WTP for access to a Post Office open 8 hou	rs Mon-Fri	4 hours on	Sat instea	ad of:			
Post Office open 4 hours Mon-Sat	0.55	0.64	0.49	0.63	0.42	0.62	
(2.5pctl, 97.5pctl)	(0.45, 0.68)	(0.49, 0.80)	(0.34, 0.64)	(0.35, 0.93)	(0.22, 0.62)	(0.48, 0.76)	
Postal counter at commercial retail store	1.11	1.33	0.98	1.15	0.93	1.22	
(2.5pctl, 97.5pctl)	(0.97, 1.26)	(1.13, 1.59)	(0.82, 1.16)	(0.84, 1.46)	(0.71, 1.17)	(1.05, 1.38)	
Self-service kiosk	1.93	2.48	1.61	1.57	1.53	2.24	
(2.5pctl, 97.5pctl)	(1.77, 2.10)	(2.21, 2.80)	(1.43, 1.79)	(1.22, 1.95)	(1.27, 1.84)	(2.03, 2.48)	
Mode of Delivery							
WTP for delivery to the curb instead of:	1	1	1		1	1	
Delivery to the door	0.7	0.72	0.71	0.48	0.90	0.70	
(2.5pctl, 97.5pctl)	(0.59, 0.81)	(0.55, 0.90)	(0.58, 0.84)	(0.21, 0.74)	(0.69, 1.09)	(0.58, 0.86)	
Delivery to a locked clusterbox	2.82	3.15	2.60	2.47	2.71	2.95	
(2.5pctl, 97.5pctl)	(2.62, 3.03)	(2.82, 3.51)	(2.39, 2.82)	(2.07, 2.91)	(2.38, 3.07)	(2.66, 3.24)	
Delivery to a parcel locker	3.16	3.01	3.32	3.32	3.19	3.15	
(2.5pctl, 97.5pctl)	(2.97, 3.39)	(2.73, 3.30)	(3.05, 3.60)	(2.86, 3.88)	(2.81, 3.58)	(2.88, 3.44)	

## Appendix C: Gallup Technical Report

GALLUP

October 30, 2014

## TECHNICAL REPORT – UNIVERSAL SERVICE OBLIGATION

# USPS OIG RISK ANALYSIS RESEARCH CENTER

Contract Number: 6HQOIG-14-B-0031

Submitted by:

**CHRIS STEWART** Partner

901 F St NW Washington, DC 20004 t 949.474.2785 f 202.715.3131 chris\_stewart@gallup.com

What Postal Services Do People Value the Most? A Quantitative Survey of the Postal Universal Service Obligation Report Number RARC-WP-15-007

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Design Matrix for Businesses - Parcels

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## DISCRETE CHOICE EXPERIMENT DESIGN

This report details the development of the discrete choice experiment (DCE) design, the implementation of the survey, construction of weights to make the consumer sample representative of the adult population, estimation of the logit models, and the willingness to pay measures.

Given the limited number of attributes and levels within attributes, researchers determined that using a discrete choice modeling approach would best meet the following study goals:

- a. To understand consumer preferences for various hypothetical service levels, and
- b. To determine the tradeoff consumers would be willing to make over their preferred levels of service expressed in terms of premium that they would be willing to pay over and above the first-class stamp price.

Based on prior research, the Postal Service Office of Inspector General (OIG) provided Gallup with a preliminary list of attributes and levels within each attribute. The four service attributes considered for this study are — frequency of delivery, mode of delivery, access to postal services, and first-class mail letter rate (in the case of letters) and priority mail flat rate box rate (in the case of parcels).

Within each service attribute there are multiple levels. For instance, within frequency of delivery there are three levels offered - 6-day delivery expressed as Monday through Saturday, 5-day delivery expressed as Monday through Friday, and 3 days a week delivery. These are often described as service levels.

The service attributes and the levels therein were fine-tuned in collaboration with OIG for language, simplicity, clarity, and consistency across both letters and parcels. The range that the service levels spanned within each service attribute was chosen so as to cover what would be considered realistic offerings in the market from a consumer perspective. With respect to the service attribute price (first-class mail letter rate, priority mail flat rate box rate), prior research suggested that it was possible to offer consumers a wider range of price points and get more robust estimates of willingness to pay. This was the motivation for selecting the highest value of this service attribute at close to 170% of the base.

Gallup used a custom-integrated software called SSI Web 8.3.2 developed by Sawtooth Software. This program features a built-in module for conjoint DCE experiments, tools for setting up the survey to capture data on the Web, calculators for estimating the parameters of the model specified in the study, and the ability to conduct what-if and market share simulations when presented with competitive offerings.

The following describes how this software was used in the design of the choice experiment:

- 1. The first step of the design process involved creating four separate choice experiments. Two for consumers (letters and parcels separately) and two for businesses (letters and parcels separately).
- 2. A choice experiment involves the determination of three things:
  - a. Concept: It is a combination of different levels of the four service attributes used in this study. For example, in the case of the consumers who are considering sending letters, the following combination of service levels would be considered a single concept:

"Delivery of FirstClass Mail® Monday-Saturday, to a mailbox at the curb, with access to a nearby post office open 8 hours a day Monday-Friday and 4 hours on Saturday, and a FirstClass Mail® stamp price of 50 cents."

b. Number of concepts in a choice task: Each choice task is a set of concepts offered on a screen with the respondent selecting one that they prefer the most. Typically between two and five concepts are offered in a choice task for respondents to choose from. The larger the number of concepts offered in a choice task, the more likely it is respondents will be exposed to different

combinations of service levels, including some that may not be relevant to consumers. However, with more service levels within each service attribute it may be necessary to increase the number of concepts in each choice task. The downside of offering a large number of concepts within a choice task is respondent fatigue resulting in their use of simple heuristics such as focusing on one service attribute, say price and always selecting the one that is the lowest. Gallup experimented with values from two to five and chose four as the optimal value for number of concepts in a choice task. This was determined jointly along with the number of choice tasks that each respondent would be asked to evaluate separately for letters and parcels. Typically "None of the above" could be an option included in a choice task. However, that option was not included as there was a general feeling that consumers had to pick one of these choices if they had to use the U.S. Postal Services for sending mail.

Following is an example of a choice task that consumers were exposed to in the context of letters:

Figure A: Example Web survey choice task.

Thinking about your mail options for <u>letters</u> by First-Class Mail®, If these were your only options, which one would you **choose**? Choose by clicking one of the buttons below:

	OPTION A	OPTION B	OPTION C	OPTION D
Access to postal services (within 10 minutes travel time from home)	Post Office open 8 hours Mon Fri. and 4 hours on Saturday	Postal counter at commercial retail store	Post Office open 4 hours Mon Sat.	Self-service Kiosk
Mode of delivery	Delivery to the door of your home	Delivery to a locked clusterbox	Delivery to a mailbox at the curb	Delivery to the door of your home
Frequency of Delivery	3 days a week	Monday - Saturday	Monday - Friday	Monday - Friday
First-Class Mail® letter rate	60 Cents	50 Cents	50 Cents	75 Cents
	0	$\bigcirc$	0	$\bigcirc$

- c. Number of choice tasks: The number of different groups of concepts that respondents have to evaluate in a choice experiment. The larger the number of choice tasks, the more observations from each respondent, but with increased respondent fatigue. In short, there is diminishing return for having respondents go through additional choice tasks. The Sawtooth software is able to estimate the minimum number of observations from each respondent that it needs to be able to calculate all of the coefficients of a simple main effects logit model with a prescribed degree of confidence (95% confidence level) given service attributes and levels within attributes. For this study, the number of choice tasks for each choice experiment was set at 10. That is each consumer evaluated 20 different choice tasks of which 10 involved evaluating letters and another 10 choice tasks involved evaluating parcels.
- d. Number of versions: As an alternative to the fixed orthogonal design where all respondents are exposed to a single version of the questionnaire, Sawtooth enables the use of a randomized design where each respondent sees a unique and carefully chosen set of tasks. It is called a balanced overlap method. There are three distinct advantages to using this method. For studies where each attribute has a different number of levels within (asymmetric designs), random designs are more efficient than orthogonal designs. In addition, they allow for the estimation of all interactions including those not recognized as important at the time of the study design.

Further, they help minimize context and order effects. In this case, instead of all respondents being exposed to a single version of the questionnaire, eight unique versions were created. Although for the Web version of the survey, we could have used a much large number of versions since the software automatically generates the instrument. To ensure for consistency with the mail version of the survey, it was determined that eight versions would be sufficient.

Once all of the above four parameters are chosen, the software uses a random seed to generate the design and test the efficiency of this design using sample generated data. It estimates and displays the relative standard errors of each main effect, along with an estimate of the relative efficiency of estimation of each parameter compared to a comparable hypothetical orthogonal design. Table A below shows the design efficiency test results for the choice experiment involving letters among consumers. The efficiency estimates range from 0.96 (or a loss of 4% efficiency compared with a pure orthogonal design) to 1.02 (or a gain of 2% efficiency compared with a pure orthogonal design), suggesting that the balanced method produced a highly efficient design.

Attribute	Level	Description	Frequency	Actual	Ideal	Efficiency
	1 Monday through Saturday		107	(this level has been dele		en deleted)
Frequency of delivery 2		Monday through Friday	106	0.1447	0.1449	1.0029
or derivery	3	3 days a week	107	0.1453	0.1449	0.9944
	1	Post Office open 8 hours Monday through Friday and 4 hours on Saturday	81	(this le	evel has bee	en deleted)
Aggestibility	2	Post Office open 4 hours Monday through Saturday	80	0.1712	0.1680	0.9630
Accessibility of postal services 3	Self-service kiosk that allows customers to buy postage and send mail – open 24 hours a day	79	0.1657	0.1680	1.0278	
	4	Self-service kiosk that allows customers to buy postage and send mail – open 24 hours a day	80	0.1643	0.1680	1.0455
	1	Delivery to the door of your home	106	(this level has been deleted		en deleted)
Delivery	2	Delivery to a mailbox at the curb	107	0.1454	0.1449	0.9933
location	3	Delivery to a locked cluster box located no more than ¼ mile from your house	107	0.1460	0.1449	0.9857
	1 50 Cents		81	(this le	evel has bee	en deleted)
Price	2	60 Cents	80	0.1684	0.1703	1.0221
r nce	3	75 Cents	80	0.1690	0.1703	1.0153
	4	85 Cents	79	0.1699	0.1703	1.0042

Table A: CBC design efficiency test for letters among consumers<sup>1</sup>

Similar tests were run for each of the other three choice experiments (parcels among consumers and letters and parcels among businesses). Final design matrix for each of the four choice experiments by version is shown in Appendix I.

<sup>&</sup>lt;sup>1</sup> Task generation method is 'Balanced Overlap' using a seed of 2,010. Based on eight version(s). Includes 80 total choice tasks (10 per version). Each choice task includes four concepts and four attributes. A priori estimates of standard errors for attribute levels. The efficiencies reported for this design assume an equal number of respondents complete each version.

## SURVEY INSTRUMENT

Once an efficient design was selected, the next step was to construct the Web and mail versions of the survey instrument. In addition to the choice experiment, a few additional questions were included to gauge consumers' attitudes toward specific aspects of the U.S. Postal Service as well as current behavior with respect to sending and receiving mail.

At the beginning of the choice experiment, respondents were provided a brief description of the exercise that they were about to undertake along with a clear description of each of the service attributes and levels included in the study.

Figure B: Survey instruction page

As we mentioned earlier, the way people use the Postal Service is changing and so it is important for us to find out what people **need** from the service and what they **value** most.

The next set of questions are aimed at determining how important different aspects of the Postal Service are to you.

For this study we consider different possibilities across four of the Postal Service's key service attributes:

Frequency of delivery has 3 possible levels: a) mail is delivered 6 days a week, Monday - Saturday, b) delivered 5 days a week, Monday - Friday and c) delivered 3 days a week.

Mode of delivery also has 3 levels: a) mail delivered to your door, b) delivered to a mailbox at the curb and c) delivered to a locked clusterbox located no more than ¼ mile from your home.

Access to postal services has 4 levels: a) Post office open 8 hours Monday - Friday and 4 hours on Saturday, b) Post Office open 4 hours Monday - Saturday, c) Postal counter at a commercial retail store, staffed by a nonpostal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day and d) Self-service Kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, 24 hours a day, 7 days a week.

Stamp price also has 4 levels: a) First-Class Mail® stamp price of 50 cents, b) 60 cents, c) 75 cents and d) 85 cents.

On each screen, you will be presented with a scenario where you have four different options (A,B,C,D) to choose from.

Each option is a combination of different levels of the four service attributes shown above.

For eg., one option could be

Delivery of First-Class Mail® Monday - Saturday, to a mailbox at the curb, with access to a nearby post office open 8 hours a day Monday - Friday and 4 hours on Saturday, and a First-Class Mail® stamp price of 50 cents.

By keeping all other attributes identical to the above example but changing the First-Class Mail® stamp price to 60 cents a second option can be created and so on.

On each screen, you will be asked to choose one of the four options (A,B,C,D) that you prefer the most assuming those are the only options available for you. There are no right or wrong answers, just your best guess. While it may seem repetitive, each screen will present you with a slightly different combination of options to choose from. Please take the time to evaluate them carefully before making a choice.

First you will be asked to evaluate options relating to letters followed by options relating to parcels.

To facilitate ease of understanding of certain terminologies used in the choice task, a description of those were provided at the bottom of each screen. The Web instruments were thoroughly tested to ensure there were no issues with progression from one screen to another. Respondents didn't have the ability to skip questions and choices in each screen required clicking on simple radio buttons, eliminating the possibility of keystroke errors.

The Sawtooth Software has a built in functionality to generate all versions of the choice experiments in a standard format so it can be used in document processing software to produce a mail version of the survey. Gallup modified the formatting and layout slightly to meet its standard mail survey protocol specification. As the data for the mail survey had to be entered manually, to facilitate correct transfer of data, each of the choice tasks along with the version number were clearly labeled.

Figure C: Mail survey choice task format

SELECT ONE	OPTION A	OPTION B	OPTION C	OPTION D
Access to postal services (within 10 minutes travel time from home)	Post Office open 8 hours Mon-Fri 4 hours on Sat	Postal counter at commercial retail store	Post Office open 4 hours Mon-Sat	Self-service Kiosk
Mode of delivery	Delivery to the door of your home	Delivery to a locked clusterbox	Delivery to a mailbox at the curb	Delivery to the door of your home
Frequency of Delivery	3 days a week	Mon-Sat	Mon-Fri	Mon-Fri
First-Class Mail® stamp price	60 Cents	50 Cents	50 Cents	75 Cents

9 Thinking about your mail options for letters by First-Class Mail®, If these were your only options, which one would you choose?

D - 1, T - conweblet\_Random1

- Clusterbox: Delivery to a locked mailbox within a clusterbox no more than 1/4 mile from your home
- **Postal counter at commercial retail store:** Postal counter at commercial retail store, staffed by a nonpostal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day
- Self-service Kiosk: A secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, 24 hours a day, 7 days a week

## SAMPLING

The basis for the consumer sample is the Gallup Panel, which is one of the nation's few research panels that is representative of the entire U.S. population. The Gallup Panel selects potential members using random-digit-dial (RDD) methodology or address-based sampling (ABS) to contact U.S. households at random by telephone. Once individuals are recruited to the Panel, depending on their Internet access status, they can be contacted and can complete surveys either by mail or email. The ability to harness the power of multiple survey modes to target a specific population is unique to the Panel and is not achievable in any opt-in panels. Random sampling of telephone numbers ensures scientific accuracy and creates a probability sample that is essential to generalizing survey results to a larger population. Gallup's telephone interviewers are trained to recruit panelists and explain the expectations, procedures, and benefits of participation. Currently, the Gallup Panel covers everyone in the U.S. who lives in a household with a telephone. The Gallup Panel is accessible through landline and cell phones and covers more than 95% of the U.S. population.

The Gallup Panel maintains profiles of all panel members; Gallup used this demographic information to draw stratified samples from the larger pool of available respondents. More specifically for this study, the sample was stratified by age, race, education, and ethnicity, with certain demographic groups such as young African Americans getting oversampled to account for expected differential non-response. Samples were separately drawn from the list of panelists who had previously stated that they prefer to take surveys via the Web for the

Web portion of the study and from the remainder for the mail portion of the study. A simple random sample of panelists was drawn within each strata and sample source. A total of 2,486 panelists were selected for Web administration and 624 for mail administration.

The sample for the business portion of the study was drawn from a database of commercial businesses licensed by Marketing Systems Group (MSG) from Dun & Bradstreet. This sample was stratified by size: small (0-99 employees), medium (100-499), or large (500 or more) and included representative businesses from across all industries. A total of 3,000 records were purchased from MSG with equal numbers drawn from the small, medium, and large businesses.

As the business sample purchased did not include any attribute to identify if the respondent would be the best person to answer questions related to their business' mail service, Gallup executive interviewers called each of those businesses in the list and, using a carefully constructed screener script, identified the appropriate individual and obtained his or her contact details. A total of 1,865 businesses were contacted from the sample drawn, of which 810 provided contact information.

## SURVEY IMPLEMENTATION

Web-based participants were initially contacted through email on June 20, 2014, explaining the purpose of the survey and containing a unique link to the survey website. On June 30 and July 2, Gallup sent reminder emails to sampled participants who had not yet completed the survey. Gallup sent participants who were selected to complete the paper version of the survey an invitation letter explaining the purpose of the survey along with a copy of the questionnaire and a pre-paid return envelope on June 24. A total of 876 Web participants started the survey; 759 completed the survey including the choice experiment section and the demographics. Evaluation of those who had not completed the survey based on demographics did not reveal any systematic pattern, which suggests that lack of time or interest may have been why they opted not to respond. Although results are reported only on the sample of completes, all 876 records from the Web portion of the consumer sample were included in the construction of weights.

For participants responding by mail, sampled panelists were randomly assigned to one of eight groups to implement the eight different versions of the questionnaire. Each group received one version of the survey. A total of 624 surveys were mailed out with 180 surveys returned. Of the returns, two had not completed the choice questions in their entirety and were dropped from the analysis.

The actual completion rate (considering only those cases that had complete information for all choice items) for both modes exceeded expectations, resulting in 759 Web completes and 178 mail completes for a total sample size of 937 consumers. The median length of the consumer Web survey was 15 minutes.

Via telephone, a Gallup interviewer contacted employees from each sampled business with job titles suggesting they were most likely to be responsible for making decisions regarding the business' choice of mail carrier. Interviewers asked each individual a series of screening questions to determine if they were the best person to evaluate their business with the U.S. Postal Service or if another individual would be better suited to complete the survey. Once interviewers identified the correct respondent, that individual was sent an email with a link to complete the survey online. Interviewers conducted these screener interviews from June 18 to July 24. Gallup sent email invitations explaining the purpose of the survey and containing a unique link to the survey website to potential respondents the morning following their phone interview. Gallup sent up to three weekly reminder emails to potential respondents who had not yet completed the survey. Gallup sent these reminders on June 25, July 2, July 10, July 13, and July 23. Gallup interviewers called 1,865 businesses over this timeframe, gathering email contact information for 810 individuals best able to evaluate the U.S. Postal Service. Of these potential respondents, a total of 203 completed the Web survey with 28 small, 99 medium, and 74 large businesses represented. The median length for of the business Web survey was 12 minutes.

## DATA ACCUMULATION AND WEIGHTING

By design, data from the Web portion of the consumer sample and business sample were already in a format ready for analysis within the Sawtooth Software. For surveys received via mail, Gallup analysts checked them for completeness and then entered them into a template that would facilitate the aggregation of the Web and mail portion of the consumer sample.

To ensure that the consumer sample was projectable to the U.S. population, Gallup analysts prepared weights at the respondent level. Gallup prepared these weights to account for the probability of selection of the individual into the consumer panel. Although the sample was stratified by age, education, race, and ethnicity and drawn in proportion to the population distribution, completed interviews do not always reflect the population distribution due to non-response or non-cooperation.

There were four steps involved in the construction of the respondent-level weights. Each panel record already has a sample weight attached to it based on its probability of selection into the panel. The inverse of this probability is the base weight that each record begins with. In step 2, based on the stratification used for this study, each record received an adjustment factor that was the inverse of its probability of selection within a strata. As mentioned earlier, sample was stratified by age, race, education, and ethnicity. Next, to account for the distortions in participation among demographic subgroups, the sample was post-stratified by specific demographics. Demographic adjustments were made using a raking algorithm that adjusted the marginal distribution for all chosen demographic variables simultaneously. Adjustments were made based on age (15-34, 35-44, 45-54, 55+), education (high school or less, some college, college or higher), race (white, black, other), ethnicity (Hispanic, non-Hispanic), and census region. Finally, extreme weights were trimmed to ensure that the variability of weights did not have an undue effect on the variability of the survey estimates while reducing any bias induced by over- or under-representation of specific demographic groups. Weights for the consumer sample range from 0.18 to 3.55. These weights were further normalized so the average weight equaled 1. The inflation in variance of survey estimates as a result of variability in weights for the 937 completes is 1.38.

All population parameters used in the construction of weights were obtained from the latest Current Population Statistics<sup>2</sup> available.

There were no weights constructed for the business sample. All businesses, regardless of size, were given equal representation in the analysis involving the total sample.

## **DATA ANALYSIS**

## **COUNTS ANALYSIS**

The simplest analysis using choice data is the counts analysis. This method provides quick and automatic estimation of the main effects from a choice experiment. It involves calculating a proportion for each level of an attribute, based on how many times a concept including that level was chosen, divided by the number of times that level occurs in the choice experiment.

For example, in the full consumer sample, looking at the first service attribute frequency of delivery as it pertains to letters, 6 days a week delivery Monday through Saturday was the most popular. Respondents chose this 30.3% of the time a concept containing that level occurred. By this measure, 3 days a week delivery was the least popular (17.0%). It is important to note that the proportions for this attribute don't sum to 1, as each individual was exposed to four concepts in a choice task and considering this attribute had only three levels, one of the three levels would have been duplicated in each set of four concepts in a choice task. If a level

<sup>&</sup>lt;sup>2</sup> Current Populations Statistics, March 2014 supplement

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appears twice in the same choice task, and if one of the concepts including it is selected, then the other concept is necessarily rejected.

Table B: Count ana	lysis for frequency	y of delivery of letters a	mong consumers
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Frequency of	Proportion
Delivery	Selected
Mon – Sat	0.303
Mon – Fri	0.276
3 days a week	0.170
<b>Chi Square Testing</b>	
Chi Square	480.11
d.f.	2
P value	<0.01

The attribute price has four levels allowing for each concept in a choice task to have a unique level of it displayed. For the full consumer sample as it pertains to letter, the lowest price -50 cents - is the most popular level followed by 60 cents, 75 cents, and 85 cents.

**Table C:** Count analysis for price of letters among consumers

Price	<b>Proportion Selected</b>
50 cents	0.360
60 cents	0.301
75 cents	0.188
85 cents	0.149
<b>Chi Square Testin</b>	5
Chi Square	1048.91
d.f.	3
P value	<0.01

All main effects for consumers in the context of letters were found to be significant, yielding Chi Squares with probabilities less than .01. The table below shows that self-service kiosk was the least popular level within access to postal services with postal counter at the retail store or post office being open 4 hours Monday through Saturday equally preferred.

Table D: Count analysis for access to postal services for letters among consumers

Access to Postal Services	Proportion selected
8 hours Mon – Fri and 4 hours on Sat	0.358
4 hours Mon – Sat	0.242
Postal counter at retail store	0.210
Self-service kiosk	0.187
Chi Square Testing	
Chi Square	636.299
d.f.	3
P value	<0.01

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With respect to letters, delivery to the curb and delivery to the door were the most popular modes of delivery among consumers.

Table E: Count analysis for mode of deliver	ry of letters among consumers
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Mode of	Proportion
Delivery	Selected
Delivery to the	0.207
door	0.297
Delivery to the	0.318
curb	0.318
Locked cluster box	0.135
Chi Square Testin	g
Chi Square	978.85
d.f.	2
P value	<0.01

## **ATTRIBUTE IMPORTANCE**

To determine the importance implicitly assigned to each attribute, we first estimate the part-worth utilities for each level of each attribute using a logit model that includes only the main effects. In particular, the logit model is built at the individual level using the hierarchical Bayes approach<sup>3</sup>. The underlying assumption is that respondents answer choice tasks according to a Multinomial Logit model (MNL). Under the MNL assumption, the model considers the probability of the specific alternative chosen as being related to the proportion of the total utility for that concept relative to the total utility for all the concepts using the formula:

 $P(\text{chosen concept}) = \frac{e^{Uchosen}}{e^{U1} + e^{U2} + \cdots + \cdots}$ 

In the above formula, *Uchosen* represents the total utility for the chosen concept and the denominator contains the total utility for each concept including the chosen one. The total utility for each concept is calculated by adding the utility associated with each attribute level included in the task. Maximum likelihood is used to estimate the coefficients of the model iteratively until it converges. The part-worth utilities from the estimation can then be used to derive the importance of the attributes. This is done by taking the range of the part-worths within each attribute, summing the range across the four attributes and then determining the share of each attribute's range in the overall sum. As an example, in the case of an aggregate logit, the estimated coefficients for the full sample of consumers in the context of letters is shown in Table F.

<sup>&</sup>lt;sup>3</sup> CBC/HB Technical paper, Sawtooth Software

**Table F:** Aggregate logit model for letters among consumers (N=936)

	Iteration	Chi-Square		Root celihood	
	1	3845.13175 0.3076		.30761	
Model	2	3945.56165	0	.30928	
	3	3946.03477	0	.30929	
	4	3946.03478	0	.30929	
	Log-likelihood for this model	10879.31763			
	Log-likelihood for null model	128	52.33502		
	Difference	19	73.01739		
	Percent Certainty	1,	5.35143		
Model fit	Akaike Info Criterion	217	78.63526		
Model IIt	Consistent Akaike Info Criterion	218	859.98173		
	Bayesian Information Criterion	218	849.98173		
	Adjusted Bayesian Info Criterion	21818.20335			
	Chi-Square	3946.03478			
	Relative Chi-Square	394.60348			
Attribute	Service Level	Effect Std Error t		t Ratio	
	Mon-Sat	0.272	0.016	16.580	
Frequency of delivery	Mon-Fri	0.174	0.017	10.369	
uchivery	3 days a week	-0.447	0.019	-24.043	
	Post Office open 8 hours Mon-Fri 4 hours on Sat	0.499	0.019	26.142	
Access to postal	Post Office open 4 hours Mon-Sat	0.024	0.021	1.102	
services	Postal counter at commercial retail store	-0.177	0.022	-8.161	
	Self-service kiosk	-0.345	0.022	-15.513	
	Delivery to the door of your home	0.313	0.016	19.099	
Mode of delivery	Delivery to a mailbox at the curb	0.346	0.016	21.129	
	Delivery to a locked clusterbox	-0.658	0.019	-33.819	
	50 Cents	0.653	0.020	32.959	
Price	60 Cents	0.257	0.021	12.408	
Frice	75 Cents	-0.258	0.022	-11.683	
	85 Cents	-0.653	0.025	-25.729	

As effects coding is used to estimate the part-worths, the sum of the coefficients within each attribute equals zero. All levels across attributes with the exception of Post Office open 4 hours Monday through Saturday are statistically significant at the 95% confidence level. In addition, within each attribute, part-worth utilities decline as we go down the levels. For example, 6-day delivery offers the highest utility to consumers in the aggregate sample at 0.272. By moving to a 5-day delivery, their average utility declines to 0.17 or a drop of 0.10 in utility. Likewise, going from a first-class mail rate of 50 cents to 60 cents there is a decline in utility of 0.40. Mode of delivery is the only attribute for which the utility levels are not monotonic. Table G shows how we can take the range of those utilities from the above table and derive importance of the attributes. This suggests that in the case of the consumer sample, evaluating the choice experiment related to letters, price is the most important attribute. A critical assumption here is that all consumers have similar preferences (homogeneity), which may or may not be true.

Table G: Importance from aggregate logit model for letters among consumers

Attribute	Range	Importance
Frequency of deliver	ry 0.7194	19%
Access to postal services	0.8444	22%
Mode of delivery	1.0039	26%
Price	1.3061	34%
Sum	3.8738	

By estimating individual-level logit models, we can evaluate to what extent the homogeneity condition holds. Using the hierarchical Bayes module built into the Sawtooth software, part-worth utilities for each level of each attribute for each respondent is computed. For hierarchical Bayes, effects coding is used to code the levels within each attribute such that the sum of the average part-worth utilities across all levels for each respondent is zero. For example, Table H shows the average part-worth utility for a subset of the respondents from the consumer sample estimated using the hierarchical Bayes approach. These are average part-worth utilities as they are averaged over 10,000 random draws from a multivariate normal distribution for each respondent.

**Table H:** Example individual part-worth utilities using hierarchical Bayes for letters among consumers (raw-utilities)

		Respondent ID				
Attribute	Level	151	147	80	79	105
Frequency	Mon-Sat	0.51	1.41	-0.17	-1.59	-0.35
of delivery	Mon-Fri	0.18	0.51	0.02	-0.12	0.11
of delivery	3 days a week	-0.69	-1.92	0.16	1.72	0.24
	Post office open 8 hours Mon-Fri and 4 hours	1.39	3.98	1.6	2.41	1.8
Access to	on Sat					
postal	Post office open 4 hours Mon-Sat	1.37	0.81	0.57	0.56	-0.13
services	Postal counter at commercial retail store	0.01	-1.88	-0.73	0.17	0.56
	Self-service kiosk	-2.77	-2.9	-1.45	-3.14	-2.23
Mode of	Delivery to the door of your home	1.24	0.1	4.49	0.4	1.15
delivery	Delivery to a mailbox at the curb	0.03	1.39	-0.95	0.05	-1.2
uenvery	Delivery to a locked clusterbox	-1.27	-1.49	-3.55	-0.45	0.05
First class mail letter	50 Cents	0.87	-0.77	0.55	1.64	0.34
	60 Cents	0.25	-0.39	0.5	0.74	0.34
rate	75 Cents	0.02	0.28	0	-0.34	-0.15
Tate	85 Cents	-1.13	0.88	-1.05	-2.04	-0.53

Using individual-level part-worth utilities, we can compute the importance at the individual level using the same procedure as we did for the aggregate logit model. That is at the individual-respondent level, the range of the utilities for each attribute is computed and then summed. The ratio of range for a particular attribute to the sum of all ranges at the respondent level provides an estimate of the importance that respondent assigns to an attribute. For example, using the above table, respondent 151 has an importance estimates of 12.2% for frequency of delivery, 42.2% for access to postal services, 25.5% for mode of delivery and 20.1% for price. As can be seen, that is different from what was obtained using an aggregate logit model shown in Table G. This particular respondent assigns greater importance to access to postal services than price. Such difference in preferences for attributes at the individual level can be used to segment consumers. In addition, the overall fit of the model increased significantly. The root likelihood (RLH) for the aggregate logit model with main effects shown in Table D was 0.30. The RLH for the individual logit model using hierarchical Bayes for the same sample was 0.634, suggesting a much better fit and the presence of considerable heterogeneity in the data.

By averaging those attribute importances across respondents, we arrive at the following average attribute importance in the full consumer dataset. Table I shows the average importance and confidence interval for

those estimates. Results suggest that consumers, on the average, assign relatively higher importance to mode of delivery than any of the other attributes, which is different from what appears in Table G. Further, access to postal services and price are roughly of equal importance with frequency of delivery having the least importance.

		<b>Confidence Interval</b>		
Attribute	Average Importance	Lower bound	Upper bound	
Frequency of delivery	19.21	18.45	19.97	
Access to postal services	24.80	23.95	25.64	
Mode of delivery	29.95	29.01	30.89	
First-Class Mail® stamp price	26.05	25.04	27.06	

Table I: Importance from individual logit model for letters among co	onsumers
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## WILLINGNESS TO PAY

For the purposes of this study, willingness to pay for a particular level of an attribute is defined as the tradeoff in price required to maintain the highest utility possible for that attribute. Table J shows the average part-worth utilities for each level of the four attributes using the individual logit models. To estimate willingness to pay, we set price to be linear. A monotonic decrease in utility at every level of a higher price suggests that it should be possible to treat price as linear. This also reduces the number of parameters to estimate from 10 to 8.

Attribute	Service Level	Average Utilities	Std Error	t Ratio
Englionau	Mon-Sat	0.210	0.0089	23.59
Frequency of delivery	Mon-Fri	0.169	0.0054	31.03
of delivery	3 days a week	-0.379	0.0124	-30.62
Access to	Post office open 8 hours Mon-Fri 4 hours on Sat	0.356	0.0128	27.86
postal	Post office open 4 hours Mon-Sat	0.094	0.0087	10.82
services	Postal counter at commercial retail store	-0.118	0.0113	-10.43
	Self-service kiosk	-0.332	0.0139	-23.93
Mode of	Delivery to the door of your home	0.245	0.0139	17.56
delivery	Delivery to a mailbox at the curb	0.256	0.0130	19.70
delivery	Delivery to a locked clusterbox	-0.500	0.0167	-30.02
	50 Cents	0.435	0.0128	33.90
Price	60 Cents	0.237	0.0058	40.61
Price	75 Cents	-0.156	0.0070	-22.32
	85 Cents	-0.516	0.0118	-43.91

Table K shows the individual-level logit model treating price as linear. As expected, the coefficient of price is negative as every unit increase in price yields lower utility to consumers and lower the probability of choice. To avoid coefficients reversing signs on the mode of delivery attribute as well as price, it was constrained in such a way that delivery to curb was preferred to delivery to the door or clusterbox and coefficient of price was constrained to be negative.

<sup>&</sup>lt;sup>4</sup> The raw utilities are normalized in such a way that the total sum of the differences between the worst and best levels of each attribute across attributes is equal to the number of attributes in this experiment, which is 4. Each raw utility was multiplied by this factor.

Attribute	Service Level	Average Utilities	Std Error	t Ratio
Frequency of delivery	Mon-Sat	0.240	0.0088	27.39
	Mon-Fri	0.157	0.0060	26.17
	3 days a week	-0.397	0.0135	-29.41
Access to postal services	Post office open 8 hours Mon-Fri 4 hours on Sat	0.383	0.0141	27.21
	Post office open 4 hours Mon-Sat	0.097	0.0109	8.96
	Postal counter at commercial retail store	-0.125	0.0126	-9.98
	Self-service kiosk	-0.355	0.0154	-22.96
Mode of delivery	Delivery to the door of your home	0.195	0.0120	16.21
	Delivery to a mailbox at the curb	0.452	0.0092	49.36
	Delivery to a locked clusterbox	-0.646	0.0181	-35.65
Price		-0.329	0.0086	-38.16

**Table K**: Constrained Individual logit model linear in price for letters among consumers (N=936) (normalized utilities)

To compute the willingness to pay for various levels of each attribute, we take the difference between the level that yields the highest utility for each attribute and another level within that attribute and take the ratio of that difference to the coefficient of price. For example, by moving from Monday through Saturday delivery to Monday through Friday delivery, the average consumer loses approximately 0.08 in utility (0.16 – 0.24). The ratio of this difference to the price coefficient (-0.08/-0.33) = 0.24, when expressed in monetary terms amounts to 0 cents. That is, on the average, respondents are not willing to pay anything for the loss in utility from reducing services from a 6-day delivery to a 5-day delivery holding everything else constant. On the other hand, if frequency of delivery were reduced to 3 days a week, the drop in utility is -0.64 (-0.397 – 0.240) and the ratio of this difference to the price coefficient (-0.64/-0.33) = 1.94, or approximately 2 cents. That is to avoid going from a 6 days a week delivery to 3 days a week delivery, on the average, respondents are willing to pay 2 cents more than the first-class mail rate of 50 cents. Likewise, instead of having their mail delivered to a locked clusterbox to have the mail delivered to the door of their home, consumers on the average are willing to pay approximately 3 cents. The WTP measure is, by definition, bounded below at 0. Further, it is important that the coefficient of price be negative for the WTP estimate to make sense. As these are average WTP estimates, it is possible to obtain a measure of uncertainty with this estimate.

To represent the uncertainty of the average WTP, we use the empirical distribution of the ratio estimate described in the previous paragraph at the respondent level for each attribute level, assuming the level within the attribute that has the highest utility is the reference level. Which happens to be the first level. The exception is mode of delivery, where delivery to a mailbox at the curb appears to be the preferred level. Average WTP for all attribute levels are estimated for each random draw from a multivariate normal distribution. A total of 10,000 iterations were conducted. Average WTP along with the 2.5<sup>th</sup> and 97.5<sup>th</sup> percentile estimates of the empirical distribution from those 10,000 iterations are shown in Table L for the full consumer sample evaluating letters.

**Table L**: Average WTP estimates in cents over and above the first-class mail rate for letters among consumers (N=936)

Attribute	Level	Overall	2.5 pctl	97.5 pctl	
	WTP for Mon-Sat delivery instead of:				
Frequency of Delivery	Mon-Fri	0.23	0.17	0.29	
of Delivery	3 Days a week	2.06	1.91	2.22	
	WTP for access to a post office open 8 hours Mon-Fri, 4 hours on Sat instead of:				
Access to Postal	Post office open 4 hours Mon-Sat	0.77	0.66	0.90	
Services	Postal counter at commercial retail store	1.45	1.31	1.58	
	Self-service kiosk	2.07	1.91	2.24	
	WTP for delivery to the curb instead of:				
Mode of Delivery	Delivery to the door	0.72	0.64	0.81	
Denvery	Delivery to a locked clusterbox	3.37	3.17	3.60	

## **APPENDIX I: DESIGN MATRICES**

The appendix contains the design matrices for each of the four discreter choice experiments: consumers – letters, consumers – parcels, business – letters and businesses – parcels. Each design matrix contains the following information:

- Version: One eight indicating the version of the questionnaire administered.
- Task: One ten indicating the choice task within each version of the questionnaire.
- Concept: Indicating the concept presented within each task one (frequency of delivery), two (access to postal services), three (mode of delivery) or four (price).
- Attribute level: Indicates the level presented for each of the four service attributes as shown in Table M (consumers) or Table N (businesses).

#### **Table M:** Selected Service Attributes and Levels for Consumers

Attribute	Letters	Parcels
Frequency of Delivery	<ol> <li>Monday through Saturday</li> <li>Monday through Friday</li> <li>3 Days a week</li> <li>Post Office open 8 hours Monday</li> </ol>	<ol> <li>Monday through Saturday</li> <li>Monday through Friday</li> <li>3 Days a week</li> <li>Post Office open 8 hours Monday</li> </ol>
Access to Postal Services (within 10 minutes' travel time from your home)	<ol> <li>Post Office open 8 hours Monday through Friday and 4 hours on Saturday</li> <li>Post Office open 4 hours Monday through Saturday</li> <li>Postal counter at a commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ol>	<ul> <li>through Friday and 4 hours on Saturday</li> <li>Post Office open 4 hours Monday through Saturday</li> <li>Postal counter at commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ul>
Mode of Delivery	<ol> <li>Delivery to the door of your home</li> <li>Delivery to a mailbox at the curb</li> <li>Delivery to a locked cluster box located no more than <sup>1</sup>/<sub>4</sub> mile from your home</li> </ol>	<ol> <li>Delivery to the door of your home</li> <li>Delivery to a mailbox at the curb</li> <li>Delivery to a locked cluster box located no more than ¼ mile from your home</li> <li>Parcel locker, which is a secure postal service facility for retrieving parcels, accessible 24 hours a day, 7 days a week</li> </ol>
Price (First-Class Mail stamp price / Priority Mail <sup>®</sup> medium-size flat rate box rate)	<ol> <li>50 cents</li> <li>60 cents</li> <li>75 cents</li> <li>85 cents</li> </ol>	1. \$11 2. \$13 3. \$16 4. \$18

Table N: Selected Service Attributes and Levels for Businesses

Attribute	Letters	Parcels
Frequency of Delivery	<ol> <li>Monday through Saturday</li> <li>Monday through Friday</li> <li>3 Days a week</li> </ol>	<ol> <li>Monday through Saturday</li> <li>Monday through Friday</li> <li>3 Days a week</li> </ol>
Access to Postal Services (within 10 minutes' travel time from your business)	<ol> <li>Post Office open 8 hours Monday through Friday and 4 hours on Saturday</li> <li>Post Office open 4 hours Monday through Saturday</li> <li>Postal counter at a commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ol>	<ol> <li>Post Office open 8 hours Monday through Friday and 4 hours on Saturday</li> <li>Post Office open 4 hours Monday through Saturday</li> <li>Postal counter at commercial retail store, staffed by a non-postal employee, where customers can purchase shipping and mailing services for both letters and parcels, open 10 hours a day</li> <li>Self-service kiosk, which is a secure automated device that allows customers to purchase shipping and mailing services for both letters and parcels, open 24 hours a day, 7 days a week</li> </ol>
Mode of Delivery	<ol> <li>Delivery to the door of your home</li> <li>Delivery to a mailbox at the curb</li> <li>Delivery to a locked cluster box located no more than ¼ mile from your business</li> </ol>	<ol> <li>Delivery to the door of your home</li> <li>Delivery to a mailbox at the curb</li> <li>Delivery to a locked cluster box located no more than ¼ mile from your business</li> <li>Parcel locker, which is a secure postal service facility for retrieving parcels, accessible 24 hours a day, 7 days a week</li> </ol>
Price (First-Class Mail stamp price / Priority Mail medium-size flat rate box rate)	<ol> <li>38 cents</li> <li>46 cents</li> <li>54 cents</li> <li>62 cents</li> </ol>	1. \$11 2. \$13 3. \$16 4. \$18

## **DESIGN MATRIX FOR CONSUMERS - LETTERS**

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	1	1	3	1	1	2
1	1	2	1	3	3	1
1	1	3	2	2	2	1
1	1	4	2	4	1	3
1	2	1	3	4	2	1
1	2	2	1	1	2	4
1	2	3	3	2	3	3
1	2	4	2	3	2	4
1	3	1	1	2	1	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	3	2	2	1	1	1
1	3	3	1	2	1	4
1	3	4	3	3	3	2
1	4	1	1	4	3	4
1	4	2	2	1	3	3
1	4	3	3	3	1	2
1	4	4	1	4	2	2
1	5	1	3	4	2	4
1	5	2	2	2	3	2
1	5	3	1	1	2	3
1	5	4	1	3	1	1
1	6	1	3	2	3	2
1	6	2	3	4	2	3
1	6	3	1	1	1	4
1	6	4	2	3	3	1
1	7	1	1	4	3	2
1	7	2	3	1	2	4
1	7	3	2	3	1	3
1	7	4	3	4	1	1
1	8	1	3	2	2	3
1	8	2	2	2	3	4
1	8	3	2	3	2	1
1	8	4	3	1	3	4
1	9	1	2	4	1	2
1	9	2	1	1	1	3
1	9	3	1	1	3	1
1	9	4	2	3	2	2
1	10	1	3	2	2	3
1	10	2	1	3	3	4
1	10	3	3	1	3	1
1	10	4	2	4	1	2
2	1	1	2	2	1	4
2	1	2	1	2	2	2
2	1	3	3	3	1	3
2	1	4	1	4	1	1
2	2	1	3	4	2	2
2	2	2	1	3	2	3
2	2	3	2	2	3	3
2	2	4	2	1	3	4
2	3	1	1	4	3	1
2	3	2	1	1	1	2

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
2	3	3	2	3	2	4
2	3	4	3	2	3	1
2	4	1	1	2	1	1
2	4	2	1	4	3	3
2	4	3	2	1	2	1
2	4	4	3	3	3	4
2	5	1	3	3	2	3
2	5	2	2	2	1	1
2	5	3	3	1	1	2
2	5	4	2	4	1	4
2	6	1	1	2	3	2
2	6	2	2	4	3	3
2	6	3	3	1	2	4
2	6	4	1	2	2	2
2	7	1	2	3	1	3
2	7	2	2	1	2	2
2	7	3	3	3	1	4
2	7	4	1	4	2	1
2	8	1	3	4	3	3
2	8	2	1	1	3	3
2	8	3	3	3	1	2
2	8	4	2	2	2	4
2	9	1	2	4	3	1
2	9	2	1	3	2	1
2	9	3	3	2	1	3
2	9	4	1	3	3	4
2	10	1	1	2	2	2
2	10	2	2	4	3	2
2	10	3	3	1	3	1
2	10	4	2	2	1	4
3	1	1	3	3	1	3
3	1	2	2	1	2	1
3	1	3	1	4	1	2
3	1	4	3	1	1	1
3	2	1	2	4	3	4
3	2	2	1	1	2	3
3	2	3	1	2	1	4
3	2	4	3	3	2	4
3	3	1	2	1	1	3
3	3	2	3	4	2	1
3	3	3	3	2	3	2

3 3 3 3 3 3 3 3 3 3 3	3 4 4 4 4 5 5 5 5 5	4 1 2 3 4 1	2 3 2 1 1	3 2 4 1	3 3 1	2 4
3 3 3 3 3 3	4 4 4 5 5 5	2 3 4	2 1	4		
3 3 3 3	4 4 5 5	3 4	1		1	
3 3 3	4 5 5	4		1		3
3	5 5		1	*	2	1
3	5	1		3	2	2
			2	3	3	1
3	5	2	1	1	1	4
	J	3	3	4	2	2
3	5	4	1	3	3	3
3	6	1	2	2	2	1
3	6	2	1	4	1	4
3	6	3	3	2	1	3
3	6	4	2	1	3	2
3	7	1	1	3	2	3
3	7	2	2	2	2	4
3	7	3	3	4	1	4
3	7	4	3	1	3	1
3	8	1	3	2	3	1
3	8	2	2	4	2	4
3	8	3	1	4	3	2
3	8	4	3	3	1	2
3	9	1	2	3	2	3
3	9	2	3	1	3	2
3	9	3	1	4	1	4
3	9	4	1	2	1	1
3	10	1	1	2	2	3
3	10	2	2	1	1	2
3	10	3	1	3	3	3
3	10	4	3	2	2	1
4	1	1	2	1	2	3
4	1	2	3	1	3	3
4	1	3	2	4	2	1
4	1	4	3	3	1	4
4	2	1	3	2	1	1
4	2	2	1	2	3	2
4	2	3	2	4	3	4
4	2	4	2	1	2	3
4	3	1	3	4	2	2
4	3	2	1	1	1	2
4	3	3	1	3	3	4

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
4	4	1	2	2	1	3
4	4	2	2	1	2	2
4	4	3	2	3	3	1
4	4	4	1	2	3	4
4	5	1	3	1	3	4
4	5	2	3	3	2	2
4	5	3	1	4	1	3
4	5	4	2	3	1	2
4	6	1	3	1	3	3
4	6	2	2	3	1	4
4	6	3	1	4	2	3
4	6	4	1	4	1	1
4	7	1	2	2	3	1
4	7	2	1	1	2	1
4	7	3	2	4	1	4
4	7	4	3	2	2	2
4	8	1	1	3	3	1
4	8	2	2	2	2	4
4	8	3	1	2	1	4
4	8	4	3	4	2	3
4	9	1	1	1	2	2
4	9	2	3	3	1	1
4	9	3	2	1	3	2
4	9	4	3	4	3	3
4	10	1	1	1	1	2
4	10	2	3	3	3	4
4	10	3	3	2	2	1
4	10	4	2	2	3	3
5	1	1	2	3	3	1
5	1	2	2	4	2	3
5	1	3	1	3	2	2
5	1	4	3	1	1	3
5	2	1	1	1	3	4
5	2	2	2	4	2	4
5	2	3	3	4	1	2
5	2	4	3	1	1	1
5	3	1	2	2	2	3
5	3	2	1	4	1	1
5	3	3	1	2	2	4
5	3	4	3	1	3	2
5	4	1	1	3	3	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
5	4	2	1	4	3	2
5	4	3	2	2	1	2
5	4	4	3	4	1	4
5	5	1	1	2	3	3
5	5	2	2	2	1	2
5	5	3	3	4	2	1
5	5	4	2	3	2	1
5	6	1	1	3	2	1
5	6	2	3	3	2	4
5	6	3	2	4	3	3
5	6	4	2	1	1	3
5	7	1	1	1	2	4
5	7	2	2	1	3	4
5	7	3	3	2	3	3
5	7	4	3	3	1	3
5	8	1	1	4	1	1
5	8	2	1	2	2	2
5	8	3	2	3	3	4
5	8	4	3	1	2	4
5	9	1	1	3	2	2
5	9	2	2	4	1	1
5	9	3	1	2	1	1
5	9	4	3	2	3	2
5	10	1	2	3	1	3
5	10	2	2	1	1	2
5	10	3	2	1	3	1
5	10	4	3	4	2	4
6	1	1	1	3	2	3
6	1	2	3	2	3	2
6	1	3	3	4	3	4
6	1	4	2	2	1	1
6	2	1	1	4	3	4
6	2	2	2	1	2	2
6	2	3	3	1	2	4
6	2	4	1	3	1	1
6	3	1	1	4	2	1
6	3	2	3	3	1	2
6	3	3	2	1	1	3
6	3	4	1	2	3	3
6	4	1	3	2	2	1
6	4	2	2	3	3	2

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
6	4	3	1	1	1	3
6	4	4	1	2	3	4
6	5	1	3	4	3	2
6	5	2	1	1	1	4
6	5	3	2	4	2	3
6	5	4	2	2	2	1
6	6	1	3	4	2	2
6	6	2	1	4	1	3
6	6	3	3	3	3	1
6	6	4	3	1	1	4
6	7	1	1	1	3	3
6	7	2	3	3	1	1
6	7	3	2	3	2	2
6	7	4	2	2	3	2
6	8	1	1	3	1	4
6	8	2	1	1	1	1
6	8	3	3	2	2	4
6	8	4	2	2	3	1
6	9	1	2	4	1	4
6	9	2	3	1	2	3
6	9	3	1	3	2	2
6	9	4	3	4	3	3
6	10	1	3	2	1	2
6	10	2	2	3	3	3
6	10	3	3	3	1	4
6	10	4	1	1	3	1
7	1	1	2	1	3	1
7	1	2	1	4	2	3
7	1	3	2	2	1	3
7	1	4	1	4	3	2
7	2	1	3	2	2	4
7	2	2	2	1	1	2
7	2	3	3	4	3	1
7	2	4	1	3	2	3
7	3	1	2	4	2	2
7	3	2	2	3	3	1
7	3	3	3	4	1	1
7	3	4	1	1	2	4
7	4	1	1	4	3	2
7	4	2	3	2	1	3
7	4	3	2	2	2	4

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
7	4	4	2	3	1	4
7	5	1	1	3	3	2
7	5	2	3	2	1	1
7	5	3	3	1	2	3
7	5	4	1	1	3	4
7	6	1	2	2	1	2
7	6	2	1	4	2	4
7	6	3	2	1	2	2
7	6	4	3	3	3	1
7	7	1	2	3	2	1
7	7	2	1	1	3	1
7	7	3	3	2	1	2
7	7	4	1	4	3	3
7	8	1	2	1	1	3
7	8	2	2	4	3	4
7	8	3	1	2	2	3
7	8	4	3	1	2	2
7	9	1	1	2	1	4
7	9	2	3	4	1	4
7	9	3	3	3	2	1
7	9	4	3	3	3	4
7	10	1	2	3	3	3
7	10	2	1	1	1	1
7	10	3	2	4	2	1
7	10	4	1	2	1	3
8	1	1	2	4	1	2
8	1	2	3	1	3	4
8	1	3	3	3	2	3
8	1	4	1	2	3	2
8	2	1	2	4	2	2
8	2	2	1	3	1	2
8	2	3	3	3	1	3
8	2	4	2	1	2	4
8	3	1	1	4	1	1
8	3	2	1	2	2	4
8	3	3	2	3	2	3
8	3	4	3	1	3	1
8	4	1	2	2	3	3
8	4	2	3	4	3	1
8	4	3	2	1	1	4

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
8	5	1	3	4	2	2
8	5	2	1	1	3	3
8	5	3	2	2	2	1
8	5	4	1	3	1	2
8	6	1	1	3	2	3
8	6	2	3	4	1	1
8	6	3	2	1	2	2
8	6	4	2	2	3	3
8	7	1	3	1	1	2
8	7	2	3	1	2	4
8	7	3	3	2	3	1
8	7	4	2	4	3	4
8	8	1	3	2	3	1
8	8	2	2	4	1	2
8	8	3	1	3	1	4
8	8	4	1	1	2	2
8	9	1	3	3	3	3
8	9	2	2	4	1	3
8	9	3	3	2	2	3
8	9	4	1	2	2	1
8	10	1	2	1	3	1
8	10	2	1	1	2	1
8	10	3	3	3	1	4
8	10	4	1	4	3	2

## DESIGN MATRIX FOR CONSUMERS - PARCELS

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	1	1	3	1	3	3
1	1	2	1	4	4	2
1	1	3	3	2	1	4
1	1	4	2	3	3	1
1	2	1	3	3	2	1
1	2	2	1	4	1	2
1	2	3	1	1	4	3
1	2	4	2	1	2	4
1	3	1	2	2	2	1
1	3	2	2	2	1	3
1	3	3	3	4	4	4
1	3	4	1	3	3	1

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	4	1	3	1	2	2
1	4	2	2	4	1	4
1	4	3	1	3	3	4
1	4	4	2	3	4	3
1	5	1	1	2	2	2
1	5	2	2	4	3	3
1	5	3	3	4	1	2
1	5	4	3	2	4	1
1	6	1	1	2	2	2
1	6	2	3	1	3	1
1	6	3	1	3	4	4
1	6	4	2	1	4	1
1	7	1	2	3	1	4
1	7	2	1	1	1	1
1	7	3	1	4	3	3
1	7	4	3	3	2	3
1	8	1	2	4	2	3
1	8	2	3	1	1	3
1	8	3	3	2	3	2
1	8	4	2	2	4	2
1	9	1	1	1	1	2
1	9	2	3	3	3	4
1	9	3	1	2	4	4
1	9	4	2	4	3	1
1	10	1	2	2	1	2
1	10	2	1	3	2	3
1	10	3	3	1	4	4
1	10	4	1	4	2	1
2	1	1	3	2	2	4
2	1	2	2	3	4	2
2	1	3	2	1	3	3
2	1	4	3	4	1	3
2	2	1	3	3	4	1
2	2	2	2	3	1	2
2	2	3	1	1	2	1
2	2	4	1	2	3	4
2	3	1	2	1	2	4
2	3	2	3	4	1	1
2	3	3	3	4	3	2
2	3	4	1	2	3	1
2	4	1	1	1	3	2

Technical Report –	Universal	Service	Obligation
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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
2	4	2	3	2	4	3
2	4	3	2	1	1	4
2	4	4	1	3	4	3
2	5	1	2	2	2	4
2	5	2	2	4	2	2
2	5	3	1	3	2	3
2	5	4	1	4	1	1
2	6	1	3	1	4	2
2	6	2	3	3	1	2
2	6	3	2	2	4	1
2	6	4	2	4	4	4
2	7	1	3	2	3	3
2	7	2	3	1	2	4
2	7	3	1	3	1	1
2	7	4	1	4	2	3
2	8	1	2	2	1	3
2	8	2	2	4	3	1
2	8	3	3	2	3	2
2	8	4	1	1	4	4
2	9	1	3	3	1	4
2	9	2	1	3	2	3
2	9	3	2	1	3	2
2	9	4	3	4	4	1
2	10	1	2	3	3	2
2	10	2	2	1	1	1
2	10	3	1	2	2	1
2	10	4	3	4	2	3
3	1	1	1	3	1	3
3	1	2	2	1	4	1
3	1	3	1	4	4	2
3	1	4	3	4	3	4
3	2	1	3	3	2	2
3	2	2	1	2	3	4
3	2	3	2	1	2	3
3	2	4	2	4	4	1
3	3	1	3	1	1	4
3	3	2	1	2	4	4
3	3	3	2	1	3	2
3	3	4	1	2	1	3
3	4	1	1	4	2	4
3	4	2	2	2	4	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
3	4	3	3	3	1	1
3	4	4	2	3	2	2
3	5	1	3	1	2	1
3	5	2	2	4	1	3
3	5	3	3	2	3	4
3	5	4	1	3	4	2
3	6	1	1	3	1	4
3	6	2	3	1	4	3
3	6	3	1	4	3	1
3	6	4	2	2	4	1
3	7	1	3	3	2	2
3	7	2	3	2	3	3
3	7	3	2	4	4	4
3	7	4	1	1	2	4
3	8	1	2	1	3	2
3	8	2	1	2	1	1
3	8	3	2	4	2	1
3	8	4	3	3	3	3
3	9	1	1	4	1	2
3	9	2	2	3	2	4
3	9	3	3	4	4	1
3	9	4	1	1	1	3
3	10	1	3	2	2	2
3	10	2	2	1	3	3
3	10	3	3	2	1	2
3	10	4	1	4	3	2
4	1	1	3	2	2	3
4	1	2	2	3	4	1
4	1	3	2	3	3	4
4	1	4	3	4	1	4
4	2	1	1	2	4	4
4	2	2	1	1	1	3
4	2	3	3	1	4	2
4	2	4	1	1	3	1
4	3	1	3	3	3	1
4	3	2	2	2	1	2
4	3	3	2	3	2	3
4	3	4	1	1	4	3
4	4	1	3	4	4	4
4	4	2	1	1	2	1
4	4	3	2	2	3	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
4	4	4	1	4	1	2
4	5	1	1	4	3	4
4	5	2	3	2	1	3
4	5	3	3	1	3	1
4	5	4	2	3	4	4
4	6	1	1	4	4	2
4	6	2	2	2	2	1
4	6	3	3	3	1	2
4	6	4	2	3	1	1
4	7	1	1	3	4	3
4	7	2	2	2	1	4
4	7	3	2	1	3	3
4	7	4	3	3	2	4
4	8	1	3	1	2	2
4	8	2	1	2	3	4
4	8	3	2	4	2	3
4	8	4	3	3	4	1
4	9	1	2	3	3	1
4	9	2	1	2	2	4
4	9	3	3	4	2	2
4	9	4	1	1	1	4
4	10	1	3	4	3	1
4	10	2	2	2	3	2
4	10	3	1	2	4	2
4	10	4	1	1	1	3
5	1	1	3	3	4	4
5	1	2	1	1	1	1
5	1	3	2	4	2	2
5	1	4	2	4	2	3
5	2	1	3	4	1	1
5	2	2	2	1	2	2
5	2	3	1	3	3	4
5	2	4	1	3	4	3
5	3	1	3	2	3	4
5	3	2	3	4	4	3
5	3	3	2	2	1	2
5	3	4	1	2	2	1
5	4	1	3	1	3	3
5	4	2	3	3	3	2
5	4	3	2	4	4	2
5	4	4	2	1	4	1

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
5	5	1	1	4	3	4
5	5	2	1	3	1	3
5	5	3	3	1	4	1
5	5	4	3	2	1	4
5	6	1	1	1	2	2
5	6	2	2	4	1	4
5	6	3	2	1	2	4
5	6	4	2	2	1	1
5	7	1	1	4	2	1
5	7	2	1	3	3	2
5	7	3	2	4	4	3
5	7	4	3	2	4	1
5	8	1	2	3	3	3
5	8	2	3	3	1	1
5	8	3	2	2	4	3
5	8	4	1	1	2	4
5	9	1	3	2	2	3
5	9	2	3	3	4	2
5	9	3	2	1	1	2
5	9	4	1	4	3	2
5	10	1	1	1	4	2
5	10	2	3	4	2	4
5	10	3	2	3	1	2
5	10	4	3	2	3	3
6	1	1	3	1	3	4
6	1	2	1	4	1	1
6	1	3	1	4	4	3
6	1	4	2	2	4	4
6	2	1	2	1	2	1
6	2	2	1	2	3	1
6	2	3	1	3	2	3
6	2	4	2	4	4	4
6	3	1	3	3	2	2
6	3	2	2	2	1	1
6	3	3	1	3	2	4
6	3	4	3	1	1	3
6	4	1	3	1	3	1
6	4	2	1	2	4	2
6	4	3	2	3	3	4
6	4	4	3	4	1	4

Technical Report – Universal	Service Obligation
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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
6	5	2	1	1	4	1
6	5	3	2	4	3	2
6	5	4	3	3	2	1
6	6	1	3	2	2	3
6	6	2	2	1	1	4
6	6	3	1	3	1	3
6	6	4	3	1	1	2
6	7	1	1	2	2	2
6	7	2	2	4	1	4
6	7	3	1	4	4	3
6	7	4	3	3	4	1
6	8	1	3	1	4	3
6	8	2	2	3	4	4
6	8	3	3	4	2	3
6	8	4	1	3	3	2
6	9	1	2	4	2	1
6	9	2	3	3	1	1
6	9	3	2	1	3	4
6	9	4	1	2	3	2
6	10	1	3	4	2	1
6	10	2	3	4	3	2
6	10	3	1	1	4	4
6	10	4	1	2	1	3
7	1	1	3	1	4	2
7	1	2	2	3	1	1
7	1	3	1	2	4	4
7	1	4	1	4	3	3
7	2	1	2	3	4	2
7	2	2	3	1	3	4
7	2	3	2	2	2	1
7	2	4	1	2	1	4
7	3	1	1	4	2	1
7	3	2	1	3	2	4
7	3	3	3	2	1	1
7	3	4	2	1	1	3
7	4	1	1	2	4	1
7	4	2	2	3	2	3
7	4	3	3	1	4	3
7	4	4	2	1	3	2
7	5	1	2	3	3	3
7	5	2	3	2	4	4

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
7	5	3	2	4	3	4
7	5	4	1	1	1	2
7	6	1	3	4	1	4
7	6	2	3	4	2	2
7	6	3	2	3	2	3
7	6	4	1	2	3	1
7	7	1	3	3	1	2
7	7	2	1	2	3	3
7	7	3	3	4	4	2
7	7	4	2	1	2	1
7	8	1	1	3	3	2
7	8	2	2	2	4	3
7	8	3	3	4	3	3
7	8	4	2	1	2	4
7	9	1	1	3	3	1
7	9	2	1	1	1	1
7	9	3	2	4	4	1
7	9	4	3	2	2	2
7	10	1	2	2	2	2
7	10	2	3	3	1	3
7	10	3	2	4	1	4
7	10	4	1	1	2	4
8	1	1	2	1	3	3
8	1	2	1	4	4	3
8	1	3	1	4	1	2
8	1	4	3	2	4	4
8	2	1	3	1	4	1
8	2	2	2	2	1	2
8	2	3	3	2	2	1
8	2	4	1	3	3	4
8	3	1	2	3	3	4
8	3	2	1	3	4	2
8	3	3	1	1	2	1
8	3	4	3	3	1	3
8	4	1	2	2	1	2
8	4	2	3	1	4	4
8	4	3	1	4	2	4
8	4	4	2	4	4	3
8	5	1	3	3	1	1
8	5	2	3	4	3	3
8	5	3	1	1	4	2

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
8	5	4	2	4	3	1
8	6	1	3	2	3	1
8	6	2	1	1	2	2
8	6	3	3	2	2	4
8	6	4	2	4	1	3
8	7	1	2	2	3	1
8	7	2	1	1	1	3
8	7	3	1	3	2	4
8	7	4	2	3	4	3
8	8	1	3	4	1	2
8	8	2	1	4	4	1
8	8	3	2	3	2	4
8	8	4	3	2	3	4
8	9	1	2	1	3	2
8	9	2	1	2	4	2
8	9	3	1	4	2	1
8	9	4	3	1	1	4
8	10	1	1	2	1	3
8	10	2	2	3	4	2
8	10	3	3	3	3	3
8	10	4	3	1	2	3

## **DESIGN MATRIX FOR BUSINESSES - LETTERS**

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	1	1	3	1	1	2
1	1	2	1	3	3	1
1	1	3	2	2	2	1
1	1	4	2	4	1	3
1	2	1	3	4	2	1
1	2	2	1	1	2	4
1	2	3	3	2	3	3
1	2	4	2	3	2	4
1	3	1	1	2	1	3
1	3	2	2	1	1	1
1	3	3	1	2	1	4
1	3	4	3	3	3	2
1	4	1	1	4	3	4
1	4	2	2	1	3	3
1	4	3	3	3	1	2

	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	4	4	1	4	2	2
1	5	1	3	4	2	4
1	5	2	2	2	3	2
1	5	3	1	1	2	3
1	5	4	1	3	1	1
1	6	1	3	2	3	2
1	6	2	3	4	2	3
1	6	3	1	1	1	4
1	6	4	2	3	3	1
1	7	1	1	4	3	2
1	7	2	3	1	2	4
1	7	3	2	3	1	3
1	7	4	3	4	1	1
1	8	1	3	2	2	3
1	8	2	2	2	3	4
1	8	3	2	3	2	1
1	8	4	3	1	3	4
1	9	1	2	4	1	2
1	9	2	1	1	1	3
1	9	3	1	1	3	1
1	9	4	2	3	2	2
1	10	1	3	2	2	3
1	10	2	1	3	3	4
1	10	3	3	1	3	1
1	10	4	2	4	1	2
2	1	1	2	2	1	4
2	1	2	1	2	2	2
2	1	3	3	3	1	3
2	1	4	1	4	1	1
2	2	1	3	4	2	2
2	2	2	1	3	2	3
2	2	3	2	2	3	3
2	2	4	2	1	3	4
2	3	1	1	4	3	1
2	3	2	1	1	1	2
2	3	3	2	3	2	4
2	3	4	3	2	3	1
2	4	1	1	2	1	1
2	4	2	1	4	3	3
2	4	3	2	1	2	1

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
2	5	1	3	3	2	3
2	5	2	2	2	1	1
2	5	3	3	1	1	2
2	5	4	2	4	1	4
2	6	1	1	2	3	2
2	6	2	2	4	3	3
2	6	3	3	1	2	4
2	6	4	1	2	2	2
2	7	1	2	3	1	3
2	7	2	2	1	2	2
2	7	3	3	3	1	4
2	7	4	1	4	2	1
2	8	1	3	4	3	3
2	8	2	1	1	3	3
2	8	3	3	3	1	2
2	8	4	2	2	2	4
2	9	1	2	4	3	1
2	9	2	1	3	2	1
2	9	3	3	2	1	3
2	9	4	1	3	3	4
2	10	1	1	2	2	2
2	10	2	2	4	3	2
2	10	3	3	1	3	1
2	10	4	2	2	1	4
3	1	1	3	3	1	3
3	1	2	2	1	2	1
3	1	3	1	4	1	2
3	1	4	3	1	1	1
3	2	1	2	4	3	4
3	2	2	1	1	2	3
3	2	3	1	2	1	4
3	2	4	3	3	2	4
3	3	1	2	1	1	3
3	3	2	3	4	2	1
3	3	3	3	2	3	2
3	3	4	2	3	3	2
3	4	1	3	2	3	4
3	4	2	2	4	1	3
3	4	3	1	1	2	1
3	4	4	1	3	2	2
3	5	1	2	3	3	1

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
3	5	2	1	1	1	4
3	5	3	3	4	2	2
3	5	4	1	3	3	3
3	6	1	2	2	2	1
3	6	2	1	4	1	4
3	6	3	3	2	1	3
3	6	4	2	1	3	2
3	7	1	1	3	2	3
3	7	2	2	2	2	4
3	7	3	3	4	1	4
3	7	4	3	1	3	1
3	8	1	3	2	3	1
3	8	2	2	4	2	4
3	8	3	1	4	3	2
3	8	4	3	3	1	2
3	9	1	2	3	2	3
3	9	2	3	1	3	2
3	9	3	1	4	1	4
3	9	4	1	2	1	1
3	10	1	1	2	2	3
3	10	2	2	1	1	2
3	10	3	1	3	3	3
3	10	4	3	2	2	1
4	1	1	2	1	2	3
4	1	2	3	1	3	3
4	1	3	2	4	2	1
4	1	4	3	3	1	4
4	2	1	3	2	1	1
4	2	2	1	2	3	2
4	2	3	2	4	3	4
4	2	4	2	1	2	3
4	3	1	3	4	2	2
4	3	2	1	1	1	2
4	3	3	1	3	3	4
4	3	4	3	3	1	1
4	4	1	2	2	1	3
4	4	2	2	1	2	2
4	4	3	2	3	3	1
4	4	4	1	2	3	4
4	5	1	3	1	3	4
4	5	2	3	3	2	2

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
4	5	3	1	4	1	3
4	5	4	2	3	1	2
4	6	1	3	1	3	3
4	6	2	2	3	1	4
4	6	3	1	4	2	3
4	6	4	1	4	1	1
4	7	1	2	2	3	1
4	7	2	1	1	2	1
4	7	3	2	4	1	4
4	7	4	3	2	2	2
4	8	1	1	3	3	1
4	8	2	2	2	2	4
4	8	3	1	2	1	4
4	8	4	3	4	2	3
4	9	1	1	1	2	2
4	9	2	3	3	1	1
4	9	3	2	1	3	2
4	9	4	3	4	3	3
4	10	1	1	1	1	2
4	10	2	3	3	3	4
4	10	3	3	2	2	1
4	10	4	2	2	3	3
5	1	1	2	3	3	1
5	1	2	2	4	2	3
5	1	3	1	3	2	2
5	1	4	3	1	1	3
5	2	1	1	1	3	4
5	2	2	2	4	2	4
5	2	3	3	4	1	2
5	2	4	3	1	1	1
5	3	1	2	2	2	3
5	3	2	1	4	1	1
5	3	3	1	2	2	4
5	3	4	3	1	3	2
5	4	1	1	3	3	3
5	4	2	1	4	3	2
5	4	3	2	2	1	2
5	4	4	3	4	1	4
5	5	1	1	2	3	3
5	5	2	2	2	1	2
5	5	3	3	4	2	1

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
5	5	4	2	3	2	1
5	6	1	1	3	2	1
5	6	2	3	3	2	4
5	6	3	2	4	3	3
5	6	4	2	1	1	3
5	7	1	1	1	2	4
5	7	2	2	1	3	4
5	7	3	3	2	3	3
5	7	4	3	3	1	3
5	8	1	1	4	1	1
5	8	2	1	2	2	2
5	8	3	2	3	3	4
5	8	4	3	1	2	4
5	9	1	1	3	2	2
5	9	2	2	4	1	1
5	9	3	1	2	1	1
5	9	4	3	2	3	2
5	10	1	2	3	1	3
5	10	2	2	1	1	2
5	10	3	2	1	3	1
5	10	4	3	4	2	4
6	1	1	1	3	2	3
6	1	2	3	2	3	2
6	1	3	3	4	3	4
6	1	4	2	2	1	1
6	2	1	1	4	3	4
6	2	2	2	1	2	2
6	2	3	3	1	2	4
6	2	4	1	3	1	1
6	3	1	1	4	2	1
6	3	2	3	3	1	2
6	3	3	2	1	1	3
6	3	4	1	2	3	3
6	4	1	3	2	2	1
6	4	2	2	3	3	2
6	4	3	1	1	1	3
6	4	4	1	2	3	4
6	5	1	3	4	3	2
6	5	2	1	1	1	4
6	5	3	2	4	2	3
6	5	4	2	2	2	1

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
6	6	1	3	4	2	2
6	6	2	1	4	1	3
6	6	3	3	3	3	1
6	6	4	3	1	1	4
6	7	1	1	1	3	3
6	7	2	3	3	1	1
6	7	3	2	3	2	2
6	7	4	2	2	3	2
6	8	1	1	3	1	4
6	8	2	1	1	1	1
6	8	3	3	2	2	4
6	8	4	2	2	3	1
6	9	1	2	4	1	4
6	9	2	3	1	2	3
6	9	3	1	3	2	2
6	9	4	3	4	3	3
6	10	1	3	2	1	2
6	10	2	2	3	3	3
6	10	3	3	3	1	4
6	10	4	1	1	3	1
7	1	1	2	1	3	1
7	1	2	1	4	2	3
7	1	3	2	2	1	3
7	1	4	1	4	3	2
7	2	1	3	2	2	4
7	2	2	2	1	1	2
7	2	3	3	4	3	1
7	2	4	1	3	2	3
7	3	1	2	4	2	2
7	3	2	2	3	3	1
7	3	3	3	4	1	1
7	3	4	1	1	2	4
7	4	1	1	4	3	2
7	4	2	3	2	1	3
7	4	3	2	2	2	4
7	4	4	2	3	1	4
7	5	1	1	3	3	2
7	5	2	3	2	1	1
7	5	3	3	1	2	3
7	5	4	1	1	3	4
7	6	1	2	2	1	2

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
7	6	2	1	4	2	4
7	6	3	2	1	2	2
7	6	4	3	3	3	1
7	7	1	2	3	2	1
7	7	2	1	1	3	1
7	7	3	3	2	1	2
7	7	4	1	4	3	3
7	8	1	2	1	1	3
7	8	2	2	4	3	4
7	8	3	1	2	2	3
7	8	4	3	1	2	2
7	9	1	1	2	1	4
7	9	2	3	4	1	4
7	9	3	3	3	2	1
7	9	4	3	3	3	4
7	10	1	2	3	3	3
7	10	2	1	1	1	1
7	10	3	2	4	2	1
7	10	4	1	2	1	3
8	1	1	2	4	1	2
8	1	2	3	1	3	4
8	1	3	3	3	2	3
8	1	4	1	2	3	2
8	2	1	2	4	2	2
8	2	2	1	3	1	2
8	2	3	3	3	1	3
8	2	4	2	1	2	4
8	3	1	1	4	1	1
8	3	2	1	2	2	4
8	3	3	2	3	2	3
8	3	4	3	1	3	1
8	4	1	2	2	3	3
8	4	2	3	4	3	1
8	4	3	2	1	1	4
8	4	4	1	2	3	4
8	5	1	3	4	2	2
8	5	2	1	1	3	3
8	5	3	2	2	2	1
8	5	4	1	3	1	2
8	6	1	1	3	2	3
8	6	2	3	4	1	1

Technical Report – Universal Service Obligation

Technical Report -	Universal Se	ervice Obligation
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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
8	6	3	2	1	2	2
8	6	4	2	2	3	3
8	7	1	3	1	1	2
8	7	2	3	1	2	4
8	7	3	3	2	3	1
8	7	4	2	4	3	4
8	8	1	3	2	3	1
8	8	2	2	4	1	2
8	8	3	1	3	1	4
8	8	4	1	1	2	2
8	9	1	3	3	3	3
8	9	2	2	4	1	3
8	9	3	3	2	2	3
8	9	4	1	2	2	1
8	10	1	2	1	3	1
8	10	2	1	1	2	1
8	10	3	3	3	1	4
8	10	4	1	4	3	2

## **DESIGN MATRIX FOR BUSINESSES – PARCELS**

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	1	1	3	1	3	3
1	1	2	1	4	4	2
1	1	3	3	2	1	4
1	1	4	2	3	3	1
1	2	1	3	3	2	1
1	2	2	1	4	1	2
1	2	3	1	1	4	3
1	2	4	2	1	2	4
1	3	1	2	2	2	1
1	3	2	2	2	1	3
1	3	3	3	4	4	4
1	3	4	1	3	3	1
1	4	1	3	1	2	2
1	4	2	2	4	1	4
1	4	3	1	3	3	4
1	4	4	2	3	4	3
1	5	1	1	2	2	2
1	5	2	2	4	3	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
1	5	3	3	4	1	2
1	5	4	3	2	4	1
1	6	1	1	2	2	2
1	6	2	3	1	3	1
1	6	3	1	3	4	4
1	6	4	2	1	4	1
1	7	1	2	3	1	4
1	7	2	1	1	1	1
1	7	3	1	4	3	3
1	7	4	3	3	2	3
1	8	1	2	4	2	3
1	8	2	3	1	1	3
1	8	3	3	2	3	2
1	8	4	2	2	4	2
1	9	1	1	1	1	2
1	9	2	3	3	3	4
1	9	3	1	2	4	4
1	9	4	2	4	3	1
1	10	1	2	2	1	2
1	10	2	1	3	2	3
1	10	3	3	1	4	4
1	10	4	1	4	2	1
2	1	1	3	2	2	4
2	1	2	2	3	4	2
2	1	3	2	1	3	3
2	1	4	3	4	1	3
2	2	1	3	3	4	1
2	2	2	2	3	1	2
2	2	3	1	1	2	1
2	2	4	1	2	3	4
2	3	1	2	1	2	4
2	3	2	3	4	1	1
2	3	3	3	4	3	2
2	3	4	1	2	3	1
2	4	1	1	1	3	2
2	4	2	3	2	4	3
2	4	3	2	1	1	4
2	4	4	1	3	4	3
2	5	1	2	2	2	4
2	5	2	2	4	2	2
2	5	3	1	3	2	3

Technical Report – Universal Service Obligation

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
2	5	4	1	4	1	1
2	6	1	3	1	4	2
2	6	2	3	3	1	2
2	6	3	2	2	4	1
2	6	4	2	4	4	4
2	7	1	3	2	3	3
2	7	2	3	1	2	4
2	7	3	1	3	1	1
2	7	4	1	4	2	3
2	8	1	2	2	1	3
2	8	2	2	4	3	1
2	8	3	3	2	3	2
2	8	4	1	1	4	4
2	9	1	3	3	1	4
2	9	2	1	3	2	3
2	9	3	2	1	3	2
2	9	4	3	4	4	1
2	10	1	2	3	3	2
2	10	2	2	1	1	1
2	10	3	1	2	2	1
2	10	4	3	4	2	3
3	1	1	1	3	1	3
3	1	2	2	1	4	1
3	1	3	1	4	4	2
3	1	4	3	4	3	4
3	2	1	3	3	2	2
3	2	2	1	2	3	4
3	2	3	2	1	2	3
3	2	4	2	4	4	1
3	3	1	3	1	1	4
3	3	2	1	2	4	4
3	3	3	2	1	3	2
3	3	4	1	2	1	3
3	4	1	1	4	2	4
3	4	2	2	2	4	3
3	4	3	3	3	1	1
3	4	4	2	3	2	2
3	5	1	3	1	2	1
3	5	2	2	4	1	3
3	5	3	3	2	3	4
3	5	4	1	3	4	2

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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
3	6	1	1	3	1	4
3	6	2	3	1	4	3
3	6	3	1	4	3	1
3	6	4	2	2	4	1
3	7	1	3	3	2	2
3	7	2	3	2	3	3
3	7	3	2	4	4	4
3	7	4	1	1	2	4
3	8	1	2	1	3	2
3	8	2	1	2	1	1
3	8	3	2	4	2	1
3	8	4	3	3	3	3
3	9	1	1	4	1	2
3	9	2	2	3	2	4
3	9	3	3	4	4	1
3	9	4	1	1	1	3
3	10	1	3	2	2	2
3	10	2	2	1	3	3
3	10	3	3	2	1	2
3	10	4	1	4	3	2
4	1	1	3	2	2	3
4	1	2	2	3	4	1
4	1	3	2	3	3	4
4	1	4	3	4	1	4
4	2	1	1	2	4	4
4	2	2	1	1	1	3
4	2	3	3	1	4	2
4	2	4	1	1	3	1
4	3	1	3	3	3	1
4	3	2	2	2	1	2
4	3	3	2	3	2	3
4	3	4	1	1	4	3
4	4	1	3	4	4	4
4	4	2	1	1	2	1
4	4	3	2	2	3	3
4	4	4	1	4	1	2
4	5	1	1	4	3	4
4	5	2	3	2	1	3
4	5	3	3	1	3	1
4	5	4	2	3	4	4
4	6	1	1	4	4	2

Technical Repo	rt – Universal Ser	vice Obligation	_	Access to
Version	Task	Concept	Frequency of Delivery	postal services
4	6	2	2	2
4	6	3	3	3
4	6	4	2	3
4	7	1	1	3
4	7	2	2	2
4	7	3	2	1
4	7	4	3	3
4	8	1	3	1
4	8	2	1	2
4	8	3	2	4
4	8	4	3	3
4	9	1	2	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
4	6	2	2	2	2	1
4	6	3	3	3	1	2
4	6	4	2	3	1	1
4	7	1	1	3	4	3
4	7	2	2	2	1	4
4	7	3	2	1	3	3
4	7	4	3	3	2	4
4	8	1	3	1	2	2
4	8	2	1	2	3	4
4	8	3	2	4	2	3
4	8	4	3	3	4	1
4	9	1	2	3	3	1
4	9	2	1	2	2	4
4	9	3	3	4	2	2
4	9	4	1	1	1	4
4	10	1	3	4	3	1
4	10	2	2	2	3	2
4	10	3	1	2	4	2
4	10	4	1	1	1	3
5	1	1	3	3	4	4
5	1	2	1	1	1	1
5	1	3	2	4	2	2
5	1	4	2	4	2	3
5	2	1	3	4	1	1
5	2	2	2	1	2	2
5	2	3	1	3	3	4
5	2	4	1	3	4	3
5	3	1	3	2	3	4
5	3	2	3	4	4	3
5	3	3	2	2	1	2
5	3	4	1	2	2	1
5	4	1	3	1	3	3
5	4	2	3	3	3	2
5	4	3	2	4	4	2
5	4	4	2	1	4	1
5	5	1	1	4	3	4
5	5	2	1	3	1	3
5	5	3	3	1	4	1
5	5	4	3	2	1	4
5	6	1	1	1	2	2
5	6	2	2	4	1	4

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
5	6	3	2	1	2	4
5	6	4	2	2	1	1
5	7	1	1	4	2	1
5	7	2	1	3	3	2
5	7	3	2	4	4	3
5	7	4	3	2	4	1
5	8	1	2	3	3	3
5	8	2	3	3	1	1
5	8	3	2	2	4	3
5	8	4	1	1	2	4
5	9	1	3	2	2	3
5	9	2	3	3	4	2
5	9	3	2	1	1	2
5	9	4	1	4	3	2
5	10	1	1	1	4	2
5	10	2	3	4	2	4
5	10	3	2	3	1	2
5	10	4	3	2	3	3
6	1	1	3	1	3	4
6	1	2	1	4	1	1
6	1	3	1	4	4	3
6	1	4	2	2	4	4
6	2	1	2	1	2	1
6	2	2	1	2	3	1
6	2	3	1	3	2	3
6	2	4	2	4	4	4
6	3	1	3	3	2	2
6	3	2	2	2	1	1
6	3	3	1	3	2	4
6	3	4	3	1	1	3
6	4	1	3	1	3	1
6	4	2	1	2	4	2
6	4	3	2	3	3	4
6	4	4	3	4	1	4
6	5	1	2	2	3	3
6	5	2	1	1	4	1
6	5	3	2	4	3	2
6	5	4	3	3	2	1
6	6	1	3	2	2	3
6	6	2	2	1	1	4
6	6	3	1	3	1	3

Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
6	6	4	3	1	1	2
6	7	1	1	2	2	2
6	7	2	2	4	1	4
6	7	3	1	4	4	3
6	7	4	3	3	4	1
6	8	1	3	1	4	3
6	8	2	2	3	4	4
6	8	3	3	4	2	3
6	8	4	1	3	3	2
6	9	1	2	4	2	1
6	9	2	3	3	1	1
6	9	3	2	1	3	4
6	9	4	1	2	3	2
6	10	1	3	4	2	1
6	10	2	3	4	3	2
6	10	3	1	1	4	4
6	10	4	1	2	1	3
7	1	1	3	1	4	2
7	1	2	2	3	1	1
7	1	3	1	2	4	4
7	1	4	1	4	3	3
7	2	1	2	3	4	2
7	2	2	3	1	3	4
7	2	3	2	2	2	1
7	2	4	1	2	1	4
7	3	1	1	4	2	1
7	3	2	1	3	2	4
7	3	3	3	2	1	1
7	3	4	2	1	1	3
7	4	1	1	2	4	1
7	4	2	2	3	2	3
7	4	3	3	1	4	3
7	4	4	2	1	3	2
7	5	1	2	3	3	3
7	5	2	3	2	4	4
7	5	3	2	4	3	4
7	5	4	1	1	1	2
7	6	1	3	4	1	4
7	6	2	3	4	2	2
7	6	3	2	3	2	3
7	6	4	1	2	3	1

7 7 7 7 7 7 7 7 7	7 7 7 7 8 8 8 8	1 2 3 4 1	3 1 3 2	<u>services</u> 3 2 4	1 3	2
7 7 7 7 7 7	7 7 8 8	3 4 1	3		3	0
7 7 7 7 7	7 8 8	4		1		3
7 7 7	8 8	1	2	+	4	2
7 7	8			1	2	1
7			1	3	3	2
	8	2	2	2	4	3
7	0	3	3	4	3	3
7	8	4	2	1	2	4
7	9	1	1	3	3	1
7	9	2	1	1	1	1
7	9	3	2	4	4	1
7	9	4	3	2	2	2
7	10	1	2	2	2	2
7	10	2	3	3	1	3
7	10	3	2	4	1	4
7	10	4	1	1	2	4
8	1	1	2	1	3	3
8	1	2	1	4	4	3
8	1	3	1	4	1	2
8	1	4	3	2	4	4
8	2	1	3	1	4	1
8	2	2	2	2	1	2
8	2	3	3	2	2	1
8	2	4	1	3	3	4
8	3	1	2	3	3	4
8	3	2	1	3	4	2
8	3	3	1	1	2	1
8	3	4	3	3	1	3
8	4	1	2	2	1	2
8	4	2	3	1	4	4
8	4	3	1	4	2	4
8	4	4	2	4	4	3
8	5	1	3	3	1	1
8	5	2	3	4	3	3
8	5	3	1	1	4	2
8	5	4	2	4	3	1
8	6	1	3	2	3	1
8	6	2	1	1	2	2
8	6	3	3	2	2	4
8 8	6 7	4	2	4	1 3	3

Technical Report –	Universal Service Obligation
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Version	Task	Concept	Frequency of Delivery	Access to postal services	Mode of delivery	Price
8	7	2	1	1	1	3
8	7	3	1	3	2	4
8	7	4	2	3	4	3
8	8	1	3	4	1	2
8	8	2	1	4	4	1
8	8	3	2	3	2	4
8	8	4	3	2	3	4
8	9	1	2	1	3	2
8	9	2	1	2	4	2
8	9	3	1	4	2	1
8	9	4	3	1	1	4
8	10	1	1	2	1	3
8	10	2	2	3	4	2
8	10	3	3	3	3	3
8	10	4	3	1	2	3



U.S. Postal Service Office of Inspector General 1735 N. Lynn Street Arlington, VA 22209

> Telephone: 703-248-2100 www.uspsoig.gov

For media inquiries, contact Agapi Doulaveris Telephone: 703-248-2286 adoulaveris@uspsoig.gov