Postal Rate Commission

Washington, D.C. - February 22, 2006

Is There a Future for Mail?

Luis Jimenez
Senior Vice President and Chief Strategy Officer
Pitney Bowes
Myth: Paper will Disappear

“The paperless office is close”
Business Week, 1975

“By the turn of the century we will live in a paperless society”
Fortune “10” CEO, 1986

“If mail service fails to improve, 60% of mail will be delivered electronically by the year 2000”
Wall Street Journal, 1987

“Electronic mail … could replace 25% of snail mail by 2000”
TIME Magazine, 1998

“E-mail is disrupting postal services. The volume of personal communication that is done by letter is dropping precipitously, leaving postal services with magazines, bills and junk mail”
Clayton Christensen, “The Innovator’s Solution”, 2003
“The number of letters sent in individual pieces is dropping at an accelerating rate. Any grade school kid knows why: Nobody sends letters anymore; everybody uses e-mail.”


“The USPS survived the closure of the Brentwood and Trenton facility … because of the massive overcapacity built into its system. It was the consequence of the reduction in the volume of mail resulting from the increasing use of the Internet to pay bills, write letters, and send greeting cards.”

Yossi Sheffi, “The Resilient Enterprise,” 2005
The optimists were also wrong

The citizens who live in the next century will pay once cent for a postage stamp
  - USPS Postmaster General, 1893

Free mail delivery will be universal
  - Noted author, 1893

Before man reaches the moon mail will be delivered by rockets between New York and Australia
  - USPS Postmaster General, 1959
“It’s very difficult to make predictions, especially about the future.”

- Niels Bohr, Nobel Prize in Physics, 1922
1. Trends
Volume growth rates peaked in the 80s

Reality: Mail per household will not reach the same level in all countries
The low growth for some European Posts can be explained in part by competition.

**Volumes (billions)**

- Unaddressed Mail
- Addressed Mail

**1. Trends**

Source: PB Analysis based on published postal reports and FEDMA
Reality: US and EU mail per capita remains steady despite email explosion

Email / Mail 33 : 1

US: Messages Per Capita

- Total Mail
- Total Email Sent
- First Class
- Consumer Email Sent
- C-C First Class

EU15: Messages Per Capita

- Total Postal Mail
- Total Email Sent
- Consumer Email Sent
- C-C Mail

Source: PB Analysis
In a pure substitution pattern the new medium grows at the same rate as the other one declines.

Source: PB Analysis
Email has not followed a classical substitution pattern

1. Trends

EU15: Messages Per Capita

Total Postal Mail

Total Email Sent

Consumer Email Sent

C-C Mail

Cassettes for LPs and CDs for Cassettes

CD  Cassette  LP

'73 '75 '77 '79 '81 '83 '85 '87 '89 '91 '94 '96 '98 '00 '02
Reality: Email is a “Niche” application within FCM, not unlike express shipments.

“Fast” and/or “free”

Email Niche

First Class Mail

Express Shipments Niche

Most other email no longer replaces mail.
Reality: Mail’s share in each segment is evolving differently depending on the range of available alternatives.

**U.S. Market**

<table>
<thead>
<tr>
<th>Segment</th>
<th>1992</th>
<th>2000</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>80%</td>
<td>47%</td>
<td>40%</td>
</tr>
<tr>
<td>Email</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messaging</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice Mail</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mail’s Share by Value</td>
<td>80%</td>
<td>47%</td>
<td>40%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Segment</th>
<th>1992</th>
<th>2000</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Mail</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telemarketing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mail’s Share by Value</td>
<td>72%</td>
<td>67%</td>
<td>67%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Segment</th>
<th>1992</th>
<th>2000</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactional Services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Pitney Bowes and Arthur D. Little
2. Our Research
Our Research

- Document the literature – over 300 references
- **Future of Mail:** Review major trends in mail volumes in the US, Canada and Europe. Examine specific transactions and their evolution: bills, payments, correspondence, advertising, greeting cards.
- Review past mail demand models; build new ones
- Assess the volume forecasting accuracy
- Analyze drivers, enablers and barriers of shifts in mail volume: technology, competition, price and quality, regulation, human factors

★ Separate Myths from Realities ★

2. Electronic Substitution Research
3. Models
**Myth:** All substitution follows the Rogers Model for the diffusion of innovations.
Myth: Forecasters in the 70s assumed that new technologies directly caused substitution … and underestimated mail growth

U.S. First-Class Mail Volume: Actual vs. Forecast (70s)

- Actual
- ADL (Low Diversion, 1977)
- ADL (High Diversion, 1977)

# Billion Pieces

“The status quo has a crucial advantage. It is already in equilibrium. The purpose of innovation is to act as a disequilibrating forces.”

“For the status quo to change, innovation in the business model and the market structure are more important than the technology.”

_Bhaskar Chakravorti, “The Slow Pace of Fast Change”_
Several patterns arise when a new technology is introduced in a market.

**Pure Substitution**
- CDs vs cassette tapes

**Complementarity**
- Mobile telephones

**Stalling**
- Video-phones; electronic greeting cards

**New Demand Created**
- Airplanes; email

- Models
4. Forecasts
Reality: Forecasts have difficulty predicting the long term

Billion Pieces


S.Plan 01-05 – Historic
USPS/GAO, 1998
S.Plan 04-08 – Optimist
S.Plan 04-08 – Base
S.Plan 01-05 – Base
S.Plan 04-08 – Pessimist
S.Plan 01-05 – Diversion

Actual
Reality: In contrast, European forecasters have tended to underestimate growth.
Reality: In contrast, European forecasters have tended to underestimate growth in the Netherlands.
Challenges to traditional volume forecasting

- Pessimistic forecasts have not come to pass
- Volumes are no longer explained by economic activity alone
- Current methods work best for short-term budgeting
- Little confidence that we can project the future accurately
- Many models start assuming that electronic substitution will occur and then build its effects directly into a diversion model
- Recognition is spreading that there are many factors that influence volumes:
  - Market liberalization/competition
  - Postage prices and total cost of mailing
  - Quality and product shift
  - Mailer rationalization
Reality: Pessimistic mail forecasts have influenced “political” decisions in the past

- Prepare labor force for downsizing
- Obtain new commercial freedoms to participate in non core businesses
- Prepare rate makers for price increases due to shrinking volume
- Oppose liberalization in a mature market to protect postal revenue
- Accelerate market opening and privatization in other markets
Our scenario for future growth potential

Pattern of the 1990s: 
–5% to +5%

Pattern for 2000-2010: 
“Slow Erosion, Low Growth”

5. Drivers
5. Drivers of Demand

**Reality:** Many factors, not just technology, impact the Posts’ mail volumes

**Economic and Demographic**
- Recession and expansion
- Personal consumption
- Advertising spending
- Customer acquisition spending
- Demographic shifts

**Consumer Preferences**
- Paper vs electronics
- Saturation with promotions
- Need for credit and refinancing
- New shopping habits
- Demographic and generational differences

**Electronic Alternatives**
- Surge in inexpensive e-mail marketing
- Bill payment
- Remote commerce
- Variable digital printing

**Competition**
- Private Postal Operators
- Growth of unaddressed mail
- Posts setting up operations in each others’ countries

**Postal Products**
- Price level
- Price changes
- Quality
- Differentiation
- Ease of Access
- Life cycle

**Mailer Rationalization**
- Total Cost of Mailing
- Frequency
- Customer Targeting
- Customer relationship management
GDP is no longer the most accurate indicator of mail growth, but economic activity remains a strong predictor of volume.

Economic Activity

- GDP
- Expansion and recessions
- Business cycle
- Personal consumption
- New business formation
- Household formation
- Advertising Spending
- Customer acquisition spending

Demographic Shifts

- Population growth
- Age distribution
- Generational distribution
- Income distribution
- Internet penetration
Reality: Ad spending and mail volumes per capita are directed related to GDP per capita in Europe and the Americas.


5. Drivers of Demand - Economic Activity
Reality: Household income is still the strongest predictor of mail volume

2004 US Mail Volume by Income

Source: US Household Diary 2004
In the UK, higher income and better educated AB households receive 70% more mail than DE households.
High-income groups are becoming more wired relative to low-income groups.

Internet Penetration: Difference Between High vs Low Income Households
Reality: Internet users in the US and UK receive more mail than those without Internet access.

How do consumers view the Internet?

<table>
<thead>
<tr>
<th>Metaphors for the Internet, asked of all Americans</th>
<th>All Americans</th>
<th>Internet Users</th>
<th>Non-Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library</td>
<td>51%</td>
<td>61%</td>
<td>36%</td>
</tr>
<tr>
<td>Meeting Place</td>
<td>11</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>10</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>School</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Peep Show</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Party</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Bank</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>All of the Above</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other/Don’t Know</td>
<td>11</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

An analysis of activities performed with broadband vs dial up reveals that increased broadband has not impacted mail much.

### Relative likelihood of use with broadband vs. dial-up

- **Download videos/movies**: 5.7 (High-likely mail)
- **Online games/gambling**: 4.95 (High-likely mail)
- **Home video conferencing**: 3.67 (High-likely mail)
- **Download music**: 2.69 (Possible mail)
- **Phone calls over the Web**: 2.57 (Possible mail)
- **Reference and Research Sites**: 2.37 (Possible mail)
- **Instant messages**: 2.29 (Possible mail)
- **Download free/share software**: 2.07 (Possible mail)
- **Online auctions**: 1.94 (Possible mail)
- **Email, manage digital photos**: 1.86 (Possible mail)
- **Research/order free samples**: 1.69 (Possible mail)
- **Web-based email**: 1.67 (Possible mail)
- **Make purchases**: 1.63 (Possible mail)
- **Carry out financial transactions**: 1.56 (Possible mail)
- **Send SMS from a Web site**: 1.50 (Possible mail)
- **Send email**: 1.08 (Possible mail)

**Not mail-related**

**Possible mail**

**High-likely mail**

Source: Forrester, October 2003 (European Online Users)
6. Transactions
Reality: Forecasts of Internet advertising are no longer in the “hype” stage.
Reality: Media shares shift slowly over time. Direct Mail will maintain its share if its relative cost and ROI remain attractive.

Source: Veronis Suhler, DMA, eMarketer
Reality: Direct Mail’s share of advertising expenditures has not decreased.

Sources: USPS Market Research and Analysis based on Coen-McCann Erickson and DMA; FEDMA.

6. Transactions - Advertising
Reality: In Belgium, Direct Mail increases response rate and decreases acquisition costs when combined with other media.

Belgian Telecommunications Sector

Deutsche Post uses direct marketing mail to target new purchasers, as part of the launch of the new Ford *Focus*.

- They provide Ford with accurate Address selection and direct mail design
- In 2004, *Focus* Sales increased 12%
- Ford increased market share in 9.8%
Kenko Kazoku
Farm-grown organic products
Growth strategy around the use of direct mail
Regularly include samples

Attribute 40% growth in annual revenue to mailstream
Myth: Up to one third of households would have switched all bills and payments to EBPP by 2005

Early EBPP Forecasts

### Reality:

Current forecasts suggest EBPP will have a reduced effect on mail volume.

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Households:</strong></td>
<td>110 m</td>
<td>118 m</td>
</tr>
<tr>
<td><strong>Households using EBPP:</strong></td>
<td>17 m</td>
<td>31 m</td>
</tr>
<tr>
<td><strong>Households not using EBPP:</strong></td>
<td>93 m</td>
<td>87 m</td>
</tr>
</tbody>
</table>

**Net Households switching from mail to EBPP:** 6m of 93m

**The maximum erosion of mail/yr:** 0.33%

Source: PB Analysis from Forrester, Jupiter, Giga, and USPS Household Diary
Reality: EBPP growth will continue to slow down

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of households paying bills online (M)</th>
<th>Annual growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>3.9</td>
<td>N/A</td>
</tr>
<tr>
<td>2000</td>
<td>7.3</td>
<td>87%</td>
</tr>
<tr>
<td>2001</td>
<td>10.6</td>
<td>45%</td>
</tr>
<tr>
<td>2002</td>
<td>13.7</td>
<td>29%</td>
</tr>
<tr>
<td>2003</td>
<td>17.6</td>
<td>28%</td>
</tr>
<tr>
<td>2004</td>
<td>22.2</td>
<td>26%</td>
</tr>
<tr>
<td>2005</td>
<td>26.8</td>
<td>21%</td>
</tr>
<tr>
<td>2006</td>
<td>31.6</td>
<td>18%</td>
</tr>
<tr>
<td>2007</td>
<td>36.2</td>
<td>15%</td>
</tr>
<tr>
<td>2008</td>
<td>40.3</td>
<td>11%</td>
</tr>
<tr>
<td>2009</td>
<td>43.9</td>
<td>9%</td>
</tr>
<tr>
<td>2010</td>
<td>46.8</td>
<td>7%</td>
</tr>
</tbody>
</table>

Base: US online households that pay bills online
*Source: Forrester’s Consumer Technographics® 2005 North American Benchmark Study
**Reality: Barriers remain for further EBPP penetration**

**Barriers to greater EBPP penetration**

- Fees (37%)
- Security and Privacy (43-46%)
- Dislike for direct debit (30%)
- Easy to write checks (46%)

Source: PB Analysis from Forrester, Jupiter, Giga, and USPS Household Diary
Reality: Bills & statements are growing strongly in key industries

Business-Household Bills & Statements (b) (2000-2003 CAGR)

- 0.7% B-H First Class
- 3.3% B-H Bills & Statements
- 7.8% B-H Bills & Statements within Key Industries*

*Industry segments include Banking, Brokerage, Insurance, Credit Card, Telecom, and Utilities.

6. Transactions - Bills and Payments
Reality: Bills & statements are growing strongly in key industries

**Growth of Bills & Statements sent to Household (CAGR)**


Nader, 2005

6. Transactions - Bills and Payments
Reality: Paper is the overwhelmingly preferred reception channel for bills and invoices Australia, Finland and the U.S.

### Australia 2003

<table>
<thead>
<tr>
<th>Service</th>
<th>Paper mail</th>
<th>Other*</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bills</td>
<td>91</td>
<td>10</td>
<td>7</td>
</tr>
</tbody>
</table>

### Finland 2003

<table>
<thead>
<tr>
<th>Service</th>
<th>Paper mail</th>
<th>Other*</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invoice and new offer</td>
<td>84</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Notification for payment in Net</td>
<td>74</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Notification for direct debit</td>
<td>74</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Invoices in general after 3-5 years</td>
<td>72</td>
<td>12</td>
<td>16</td>
</tr>
</tbody>
</table>

### USA 1999-2003

<table>
<thead>
<tr>
<th>Year</th>
<th>Paper mail</th>
<th>Other*</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>93</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>2001</td>
<td>93</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>2003</td>
<td>86</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Elkela, Finland Post 2005

# 6. Transactions - Bills and Payments
Checks are losing their preponderance as the preference payment mechanism.

### 6. Transactions - Payments

<table>
<thead>
<tr>
<th>Year</th>
<th>Paper-based checks</th>
<th>Electronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>1995</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>2000</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>2005E</td>
<td>45%</td>
<td>55%</td>
</tr>
</tbody>
</table>
Households Mailed Bill Payments (Billions)

Reality: Households payments in the mail are declining more slowly than anticipated

Plans for the 82% of Consumers that Do Not Pay Bills Online

Plan to Pay Online Sometime 18%

Never Intend to Pay Online 80%

2% No Longer Pay Online

6. Transactions - Payments
Myth: Checks are declining due to increase online bill payment by consumers

6. Transactions - Payments
Reality: Check use is low in most European countries, so there is little threat of substitution.

Number of checks per inhabitant per year (2002)

Source: European Central Bank
Reality: Consumers in technology-intensive countries still prefer to receive letter invoices but prefer to pay online.

### Invoice reception channel

- **Letter**: Undesired -3, Most desired 16, Desired 72%
- **Email**: Undesired -29, Most desired 1, Desired -74%
- **Text message**: Undesired 1, Most desired 11, Desired 78%
- **Internet**: Undesired -31, Most desired 11, Desired 78%

### Form of invoice payment

- **Counter services**: Undesired -43, Most desired 4, Desired 64%
- **Auto paying machine**: Undesired -21, Most desired 12, Desired 64%
- **Bank payment service**: Undesired -38, Most desired 5, Desired 64%
- **Mobile**: Undesired -10, Most desired 2, Desired 64%
- **Net bank**: Undesired -10, Most desired 2, Desired 64%

Source: Finland Post, 2003
7. Mail Flows
Reality: Household-originated mail has been relatively flat for years

Billions of Pieces

'03-'04 Growth Rate

- 0.6% First-Class Household-Business
-1.5% First-Class Household-Household

Source: USPS Household Diary Studies

Note: year distribution not proportional
Voting by mail for a Dutch trade union: Response increased 80 percent

CendrisVote/TPG Post

Data

Media outgoing

Media incoming

Data

Central members database

Printing

Mail

Response card

Phone/voice response

Website

Scanning

Central database and result
Reality: Business-to-household mail is still growing slowly

Billions of Pieces

'03-'04 Growth Rate

6.8% Standard A Business-Household

0.2% First-Class Business-Household

Source: USPS Household Diary Studies

Note: year distribution not proportional

7. Mail Flows
Swiss Post – OnTime Mail

- Day specific mass mailings
- Three service levels
  - Day specific
  - Within 2 day range
  - Saturday delivery
- Opens up new uses for mail

Date Certain Delivery
B-B mail volumes vary by class

Billions of Pieces

'03-'04 Growth Rate
- 4.2% First-Class Business-Business
1.25% Standard A Business-Business

Source: USPS Household Diary Studies
Note: year distribution not proportional

7. Mail Flows
The decline in B-B mail has been relatively gradual since mid 1990s (’96-’04 CAGR of – 4%)

Declines experienced in B-B flow have been concentrated in correspondence and business documents (i.e., bills, statements)

Many U.S. companies have instituted e-commerce requirements requiring other firms to interact with them electronically

There is low interest in e-billing/e-invoicing among small and mid-market businesses

B-B Standard A mail has seen a CAGR of 4% in the years 2001-2004

Worksharing discounts have increased total mail volume but at the expense of single piece business mail.

8. Consumer Preferences
In Praise of a Snail's Pace

By Ellen Goodman

The Washington Post -- Saturday, August 13, 2005

CASCO BAY, Maine -- I arrive at the island post office carrying an artifact from another age. It's a square envelope, handwritten, with a return address that can be found on a map. Inside is a condolence note …

I would no more send an e-condolence than an e-thank you or an e-wedding invitation. There are rituals you cannot speed up without destroying them.
Reality: consumer preference for Mail vs. E-Mail for letters and documents

Source: Dirk Oosterlinck, “The Mail Moment” presentation, 2005

Source: Enquête Belge

USA

2001 62% 66%

Source: Pitney Bowes

8. Consumer Preferences
Consumer Preferences for Communications Media

Chrystal Szeto and Luis Jimenez (Pitney Bowes)

Background Paper No. 4, April 7, 2005

Includes:

The Mystery of Paper, The Myth of Paperless
However, new media tend to lack the longevity of established media and are subject to accessibility.

Source: Wired
The 1085 Domesday Book contains records of 13,418 settlements in the English counties.

Source: Hartshorne.org

8. Consumer Preferences
Consumer Preferences for Communications Media

Chrystal Szeto and Luis Jimenez (Pitney Bowes)

Background Paper No. 4, April 7, 2005

Includes:

The Digital Dark Age

8. Consumer Preferences
Analog writing:

• Ingrained in civilization for thousands of years: “societal rites”

• Can survive deep into time on physical media
Reality: US consumers perceive paper to be an effective medium for many applications.

Reality: US consumers consistently prefer mail and paper for a wide range of documents.

Numerous U.S. surveys indicate that paper usage has continued to grow in the electronic age

- The use of electronic mail increases the use of paper in offices by 40%
- In the first ten years after the introduction of the PC, paper use in offices doubled
- With the explosion of the Internet and web-based email, office printing grew 56% in 1996-2003 in the G5
- Half of small businesses have seen paper increase
- 72% of US companies “keep everything or many things” on paper
The introduction of electronic media have not threatened the growth of paper-based communication.
Little change is expected in home and office printing in the US over the next 5 years.

### Expected change in office email printing over next 5 years
- **Increase**: 15%
- **Decrease**: 12%
- **Remain the same**: 73%

### Expected change in home printing over next 12 months
- **Increase**: 32%
- **Decrease**: 2%
- **Remain the same**: 66%

Source: CAP Ventures

8. Consumer Preferences
“I realized my competition was paper not the computer.”
Jeff Hawkins, designer of the Palm Pilot

“We’re still lurching into the paperless office future. That’s a little bit of a surprise to me, but I didn’t expect paper to disappear completely.”
Paul Saffo, The Institute for the Future

“In 1993, advertising mogul Jay Chiat eliminated desks and filing cabinets. The attempt backfired: employees started storing paper in the trunks of their cars and hauling it around the office on toy wagons.”
Matt Bradley, The Christian Science Monitor
## Differences between paper and electronic monitors affect speed and ease of reading

### Hardware Deficiencies
- Angle of reading material
- Character shape
- Resolution
- Intermittent vs. continuous light
- Interference from reflections
- Posture of reader

### Software Deficiencies
- Contrast ratio
- Method for text advancement
- Characters per line
- Words per page
- Inter-line spacing
- Actual size of characters
- Inter-character spacing

Source: Zaphiris, Kurniawan: Wayne State University

### 8. Consumer Preferences
The mail “smoothes out” life: its interactional properties mediate social relationships

- Consumers are pulled to the mailbox by the promise and expectation of finding useful commercial and financial content.
- Mail connects the consumer with the market by keeping the consumer informed about what’s going on in the market.
- Bringing in the mail is a detour that allows consumers to relax, unwind, and come back a little more refreshed.
- The person who manages the household’s mail is also the principal shopper for the household.
- Mail provides essential “hardcopy anchors” that help the consumer to get their bearings.

Source: USPS Mail Moment, Richard Harper

8. Consumer Preferences
Reality: The long predicted “generational effect” has not materialized; all generations step up their mail use as they age.

Ratio of mail for each age group relative to total mail

Increase in mail use as cohort moves from one age group to the next older one

Source: Pitney Bowes cohort analysis from USPS Household Diary

8. Consumer Preferences
9. Conclusions
We have observed 5 effects that the various drivers, enablers and barriers can have on mail volume

**Direct Substitution**

The new medium substitutes for the old *one-for-one*:
- Telephone, email for peer-to-peer correspondence (technology)
- Web-based tax forms (business practice)
- Electronic Signature on Faxes (regulation)

**Indirect Substitution**

A *business process* must change in order for substitution to begin:
- Tax Filing (regulation)

**Complementarity**

*New demand is created*; the new medium grows more quickly, but the old one neither declines nor is eliminated:
- Investment Statements (business practice)
- Marketing email (technology)

**Indirectly more Mail**

A *new practice generates traditional mail*:
- CAN SPAM Act (regulation)
- Online retail increases parcel mail (business practice, technology)

**Directly more Mail**

*New businesses are created, which generate more mail*:
- CRM and direct marketing mail (regulation)
- 1099 Dividend Form is mandated (regulation)
- Mail-intensive dot-com’s: eBay, NetFlix, Dell (business practice)

9. Conclusions
Paper possesses an **unmatched combination** of transportability, longevity and accessibility.

Many new **electronic media** face issues of **obsolescence**.

The properties of paper **facilitate many socially - ingrained behaviors** and practices.

**Letters are the preferred channel** for B-C communications: bills, statements, and unsolicited marketing mail.

**Age and life stage, not generational identity**, affect mail consumption patterns as well as invoice channel preferences.
We classify mail transactions into three categories with regard to the effects on substitution.

1. Substitution has already happened for simple transactions where there is a direct substitute.

2. Substitution is evolving more gradually than generally assumed for selected transactions.

3. The long-term effects of substitution are still ill-understood for many transactions.
1. Substitution has already happened for simple transactions where there is a direct substitute

- Telephone replaced much of peer-to-peer correspondence long ago; Email may increasingly take away most of the rest (1% in the US).
- Fax eliminated many HH-B confirmation notices that used to be mailed.
- US tax forms are no longer mailed; half of US tax returns replaced by electronic submission.
- Mail orders for goods shifted to free telephone calls and comfort with credit cards; Internet shopping is just a second-order shift.
- Information requests (papers, reports) used to be fulfilled by mail. Internet self-service and email attachments are now preferred if the sender wishes to distribute an electronic copy.

We do not expect significant further erosion of mail for transactions in this category. But we are examining all mail transactions …
2. Substitution is evolving gradually for other transactions; it is still uncertain how much mail may be diverted or when

Many effects of technology are not living up to previous aggressive forecasts of sweeping mail diversion:

- **Electronic greeting cards** have remained a small niche
- **Internet advertising** is not reducing direct mail
- Most **EBPP** adopters are not discontinuing mail
- **Electronic payments from HH to B** are advancing more rapidly than “round trip” billing and payment
- B-B mail has shifted largely to electronic methods for companies where relationships are well established. **Yet many firms still send each other bills, correspondence and promotions via mail.**
- **Total B-B mail is now declining.**
3. Long term effects of substitution are still ill-understood for many mailed transactions

- **Experience and human factors** matter more than the technology used by mail recipients.

- **Business senders make decisions** based on their need for process efficiency, not on the availability of technology at the recipient's end. Business processes have to change significantly for mail to be eliminated.

- Consumers view the **Internet mainly as a tool for entertainment**, education and convenience in activities unrelated to mail.

- **Internet users** with high income are still receiving more mail.

- **Broadband** may not have much additional effect for simple mail transactions.

- The Internet has significant **vulnerabilities** that may caution some businesses from dismantling mailed-based communications.

- It is not obvious that there will be a “**generational**” effect.
9. Conclusions

Source: Pitney Bowes, adapted from a graphic by Dr. Reon Brand, Philips Design