

Modal Unit-Response Rates and Strategy

A Study of Historical Response Rate Trends by Mode of Collection for Multiple Surveys

Purpose of the Study

Reveal effectiveness of different data collection instruments over periods of time

Data Collection Modes analyzed:

- Mail
- Internet
- Fax
- Telephone Follow-up

Stated Goals

Identify trends in modal response data over time

Analyze major program changes

Optimize respondent form return through:

- Strategic planning recommendations
- Response strategy recommendations

Surveys Studied

- Quarterly Services Survey (QSS)
- Quarterly Plant Capacity Utilization Survey (QPC)
- Annual Retail Trade Survey (ARTS)
- Annual Wholesale Trade Survey (AWTS)

Data Visualization, Primary Measurement

Bar chart format by statistical period as modal percentages of the total response rate percentage as a function of initial mail size

- Each Stat Period has its own bar
- Modal response percentages equal total response rate percentage in each bar
- Difference between upper threshold of the graph (100%) and each bar represents non-response from the initial mail

Stacked Bar Chart Time-Series, Explained

Visual understanding of fluctuating response rate percentages over time

Unbiased visual aids as they pertain to:

- Changing sample universe sizes within survey
- Different sample universe sizes across surveys

Helps identify real change agents impacting modal response rate percentages

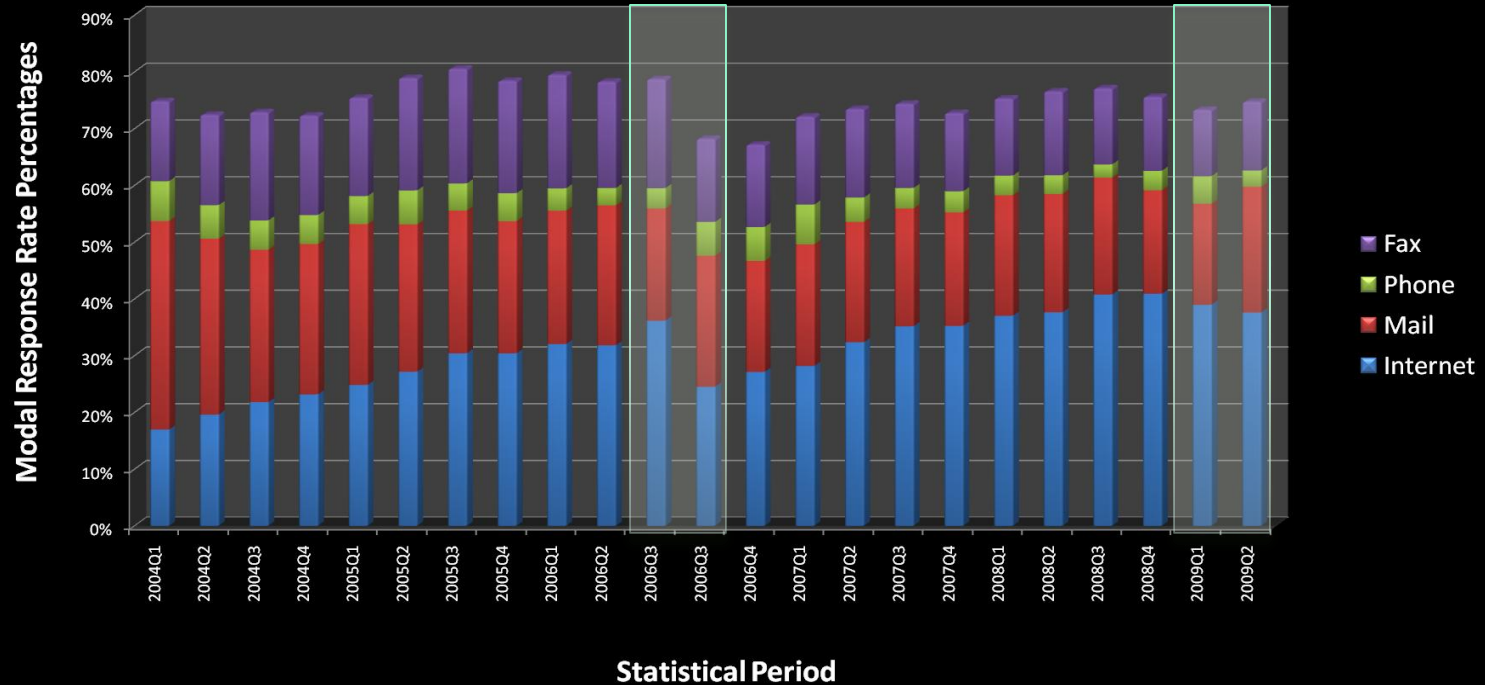
Data Visualization, Detailed Measurements

- Single survey:
 - Single mode
 - Modal comparison
 - Sample comparison
 - Regression analysis
- Multi-survey:
 - Single mode

Quarterly Services Survey (QSS) Key Characteristics

- Data before and after major program changes:
 - Sample Revision
 - Sample Expansion
- Impacts modal and overall response rates

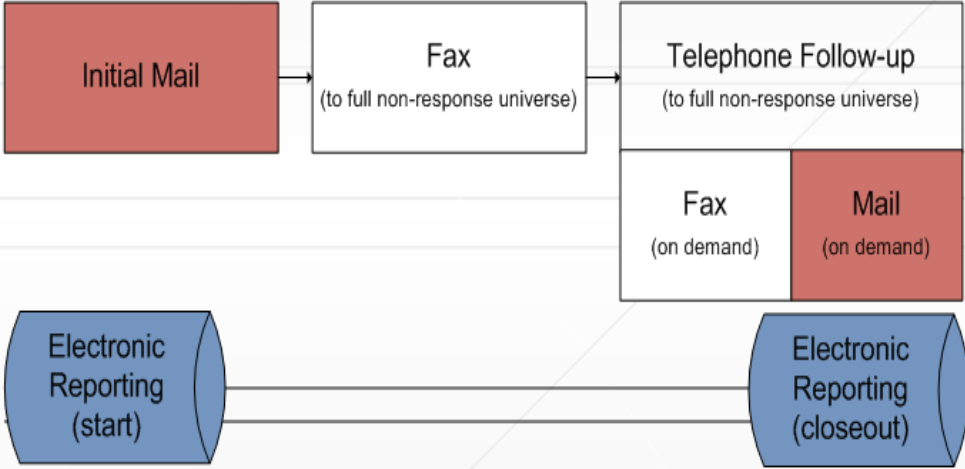
QSS Overall Response Percentages By Mode



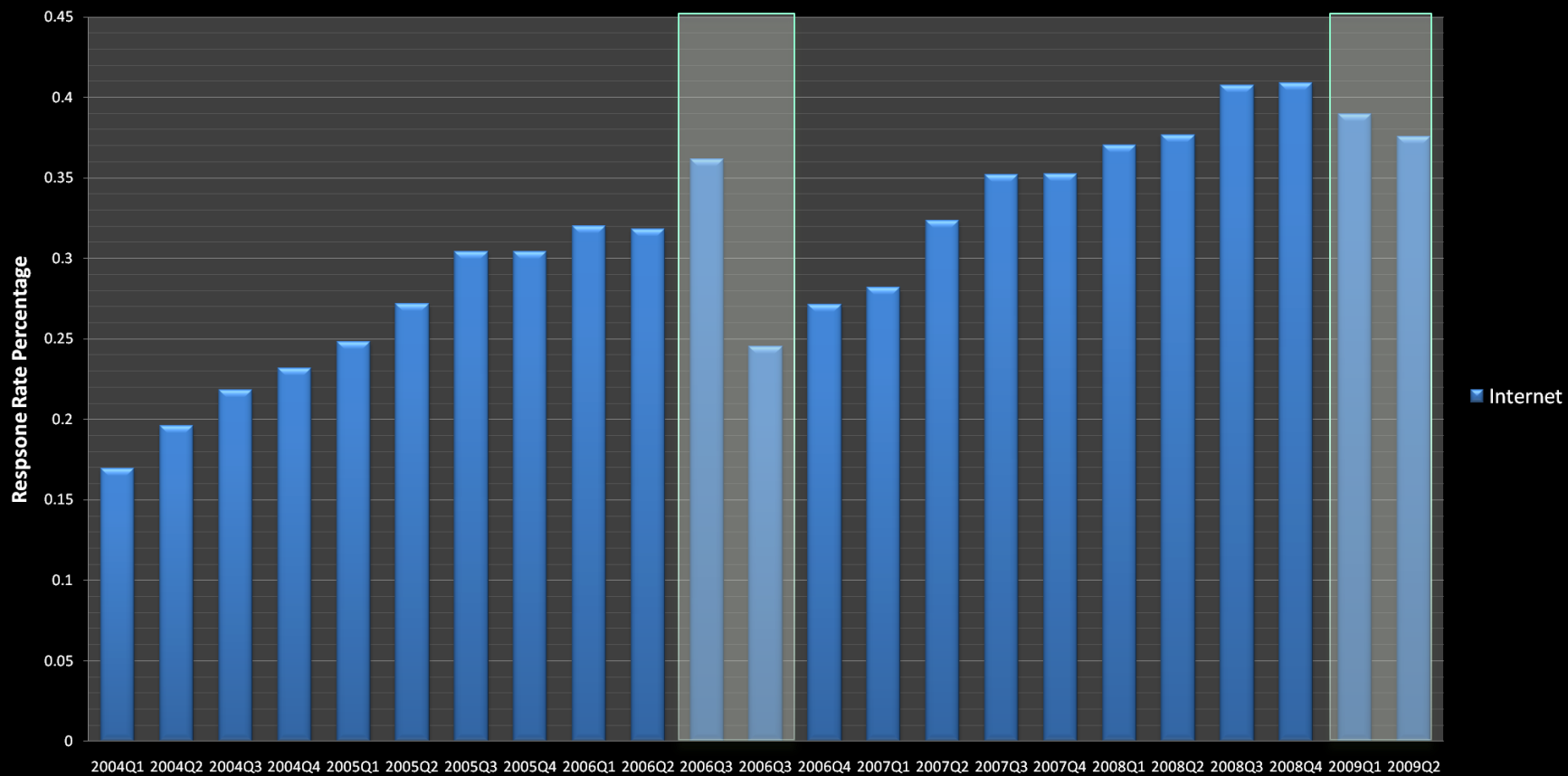
**Sample Revision in 2006Q3 –
10% drop in overall response rate**

**Sample Expansions in 2009Q1 & Q2 –
Impedes overall response rate growth**

QSS Response Strategy

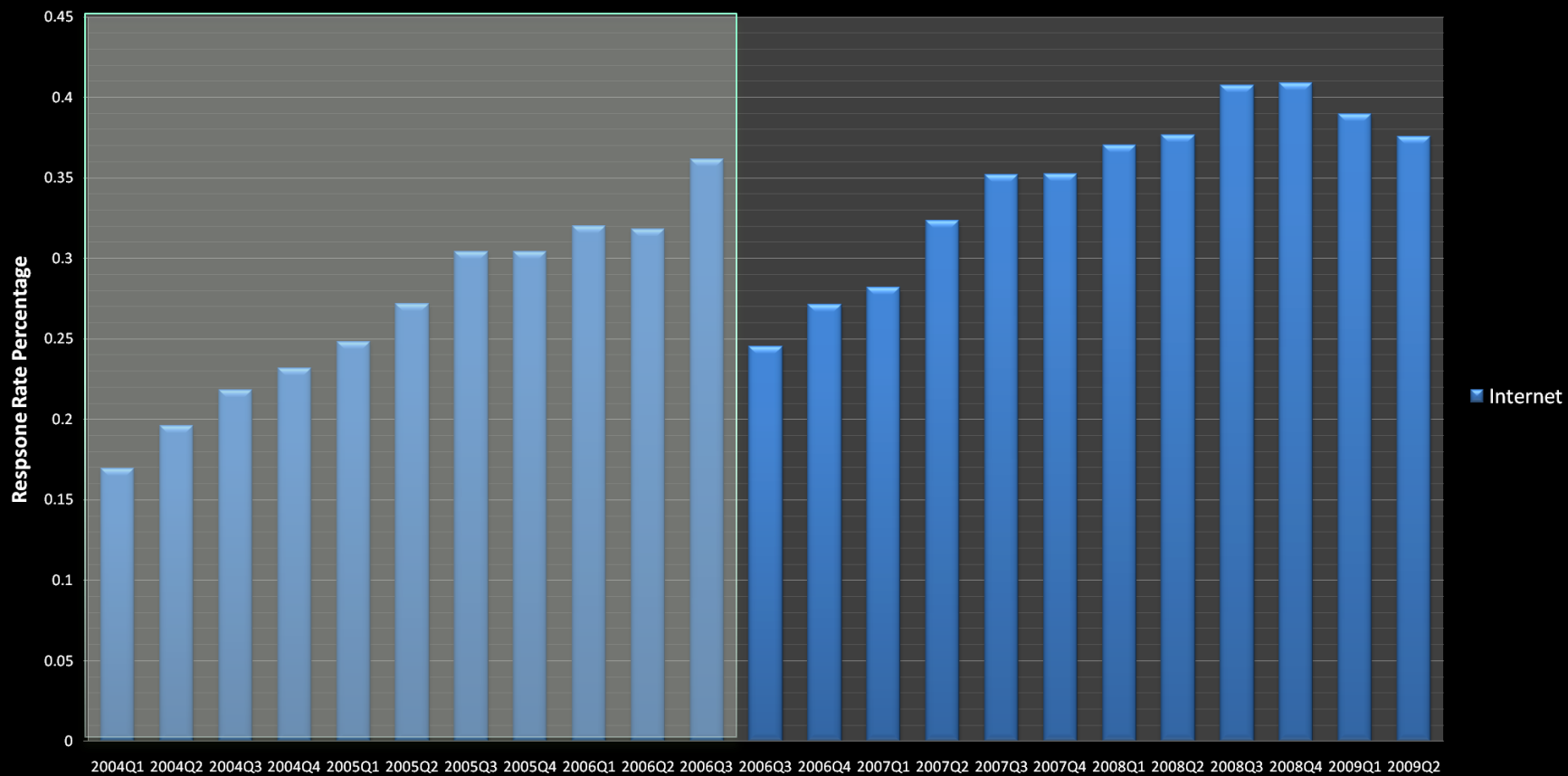


Important Modal Data Trends



**Sample Revision in 2006Q3 –
11% drop in Internet response rate**

**Sample Expansion in 2009Q1 & Q2 –
Impedes Internet response rate growth**

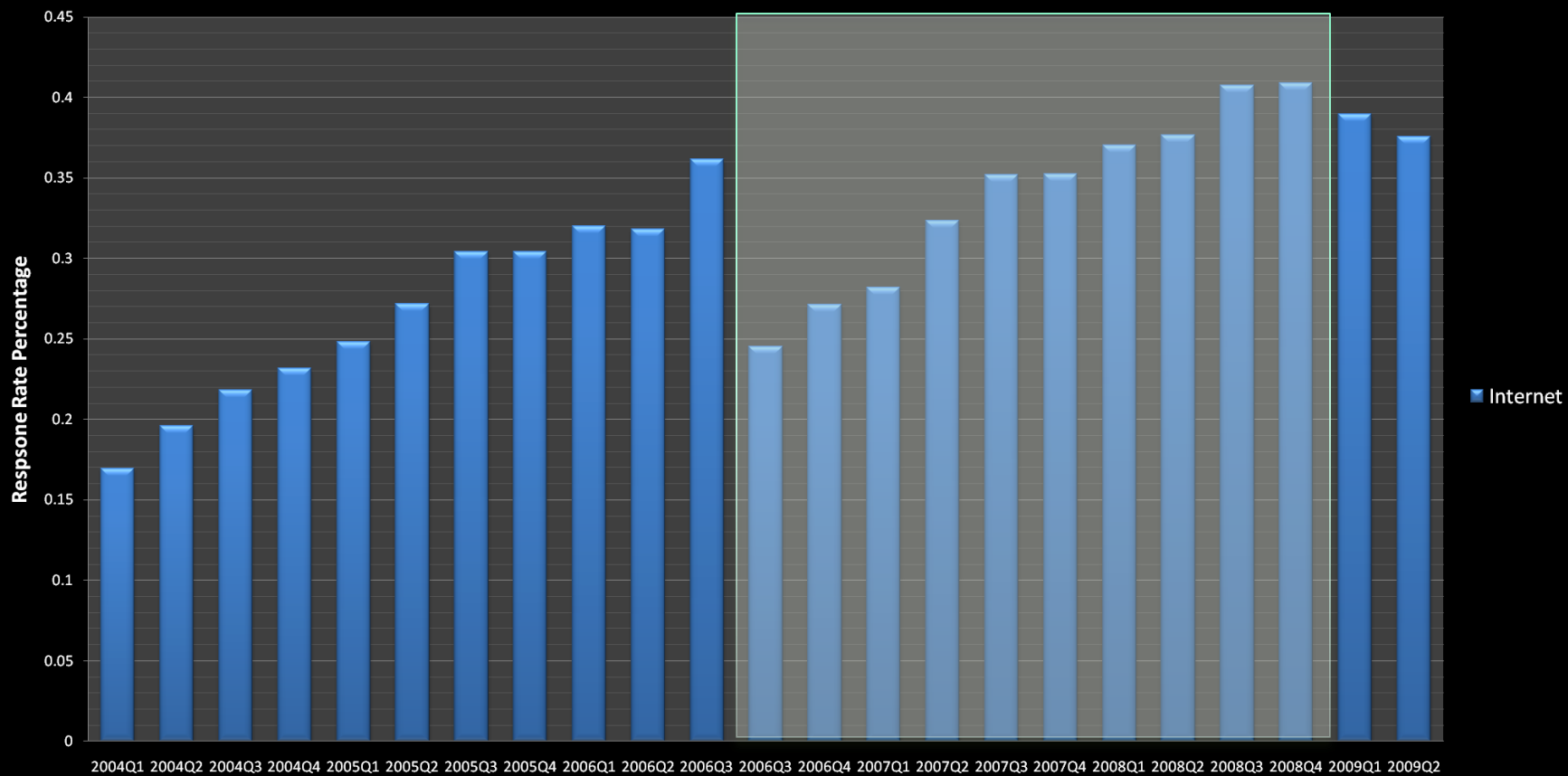


Sample BSR2K–

Average annual Internet increase of 4%

20% Internet increase from survey's inception to sample maturity

Steady build, low reversion rate

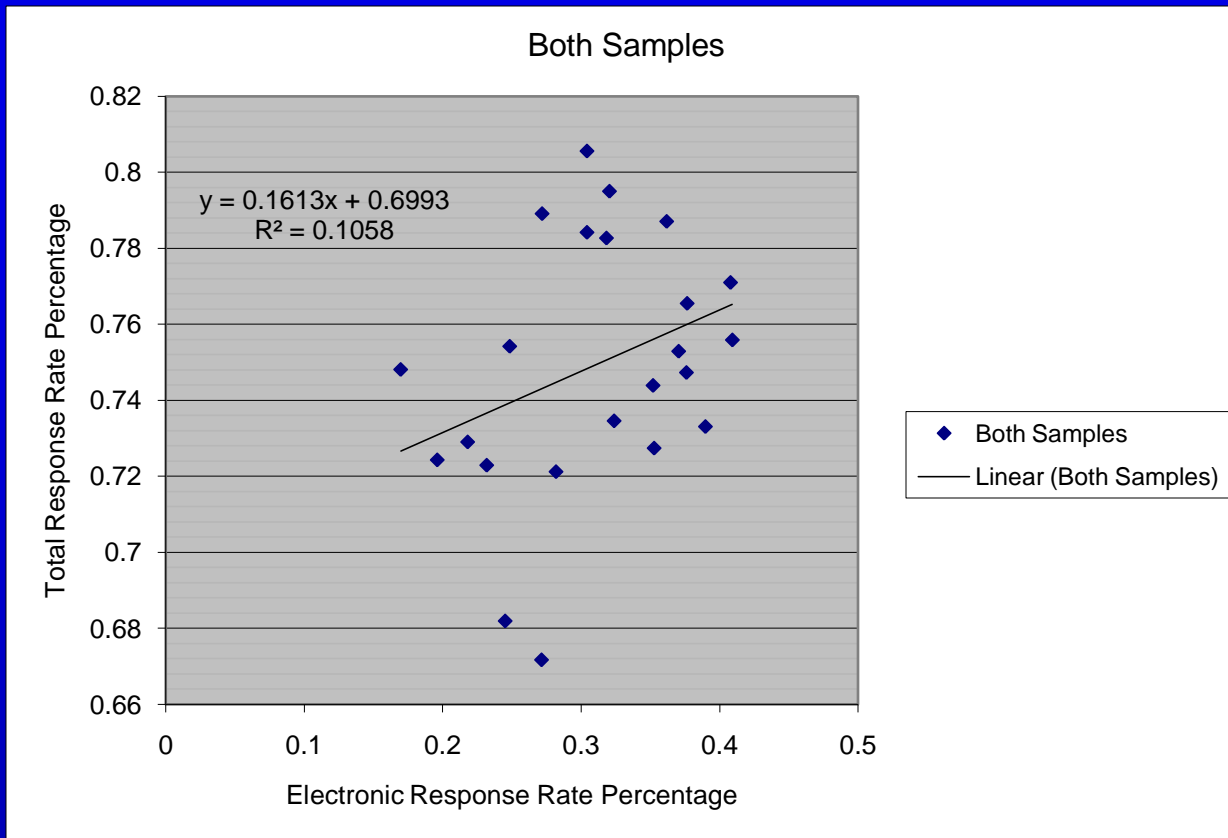


Sample BSR06—

**16% Internet increase from sample origin to maturity
(prior to expansion)**

Steady build, low reversion rate

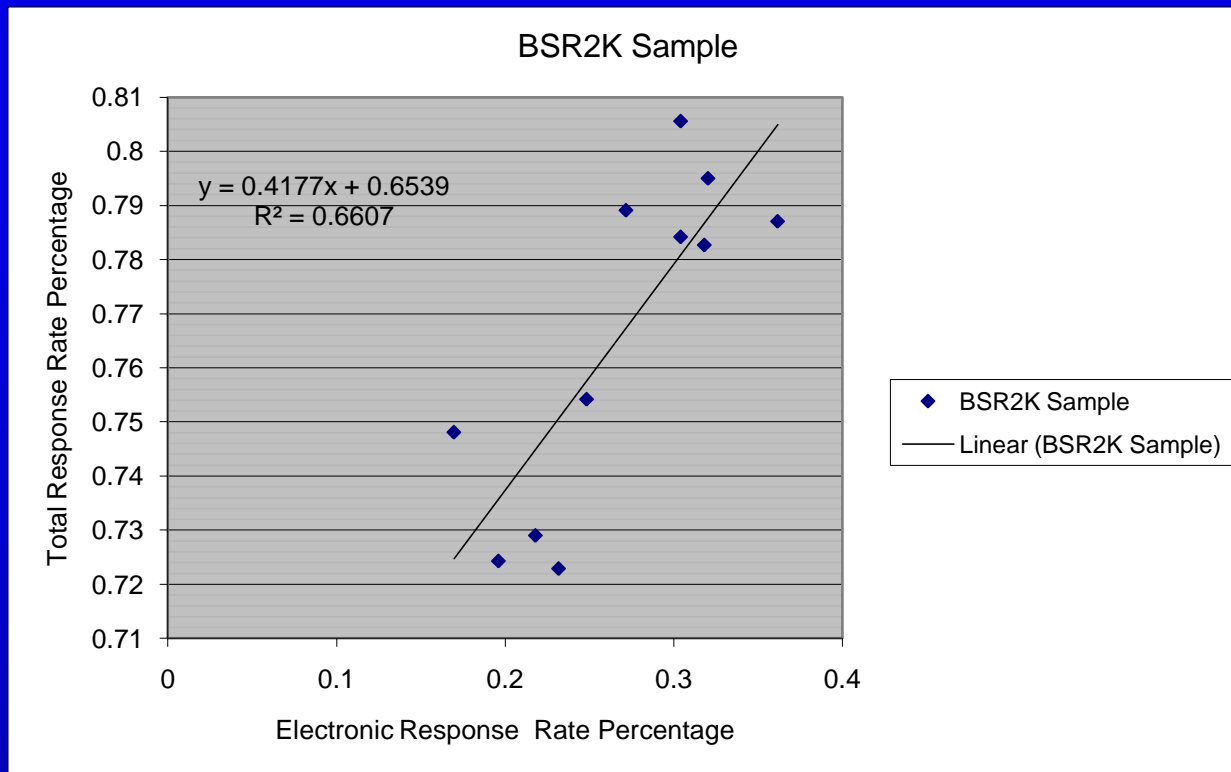
For QSS, Internet is the only mode of collection with a positive correlation to overall response rates



Wait, no relationship??

Correlation .325

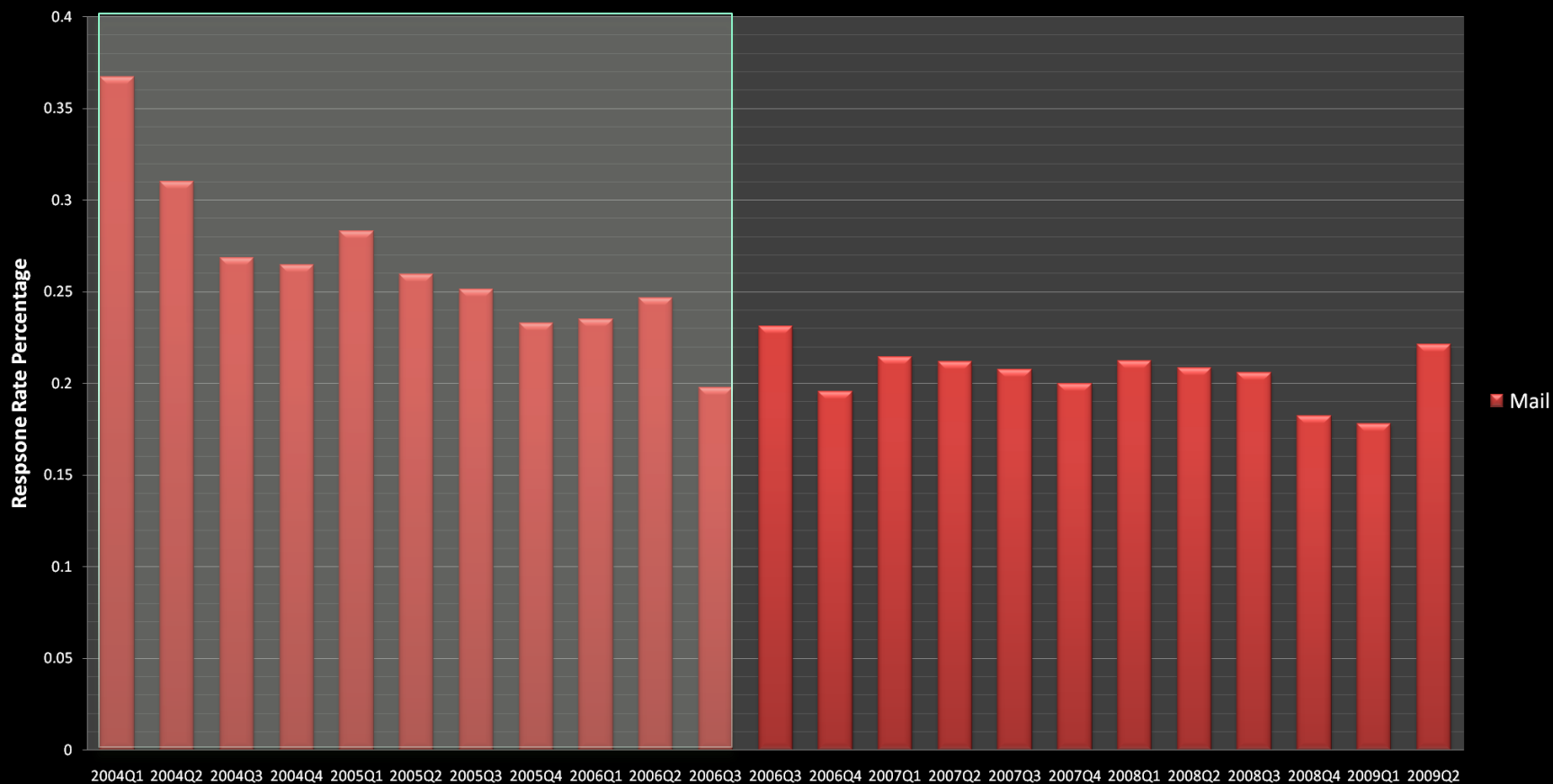
Coefficient of Determination .106



BSR2K - Overall response in conjunction with Internet
Weak, positive relationship

Correlation .813
Coefficient of Determination .661

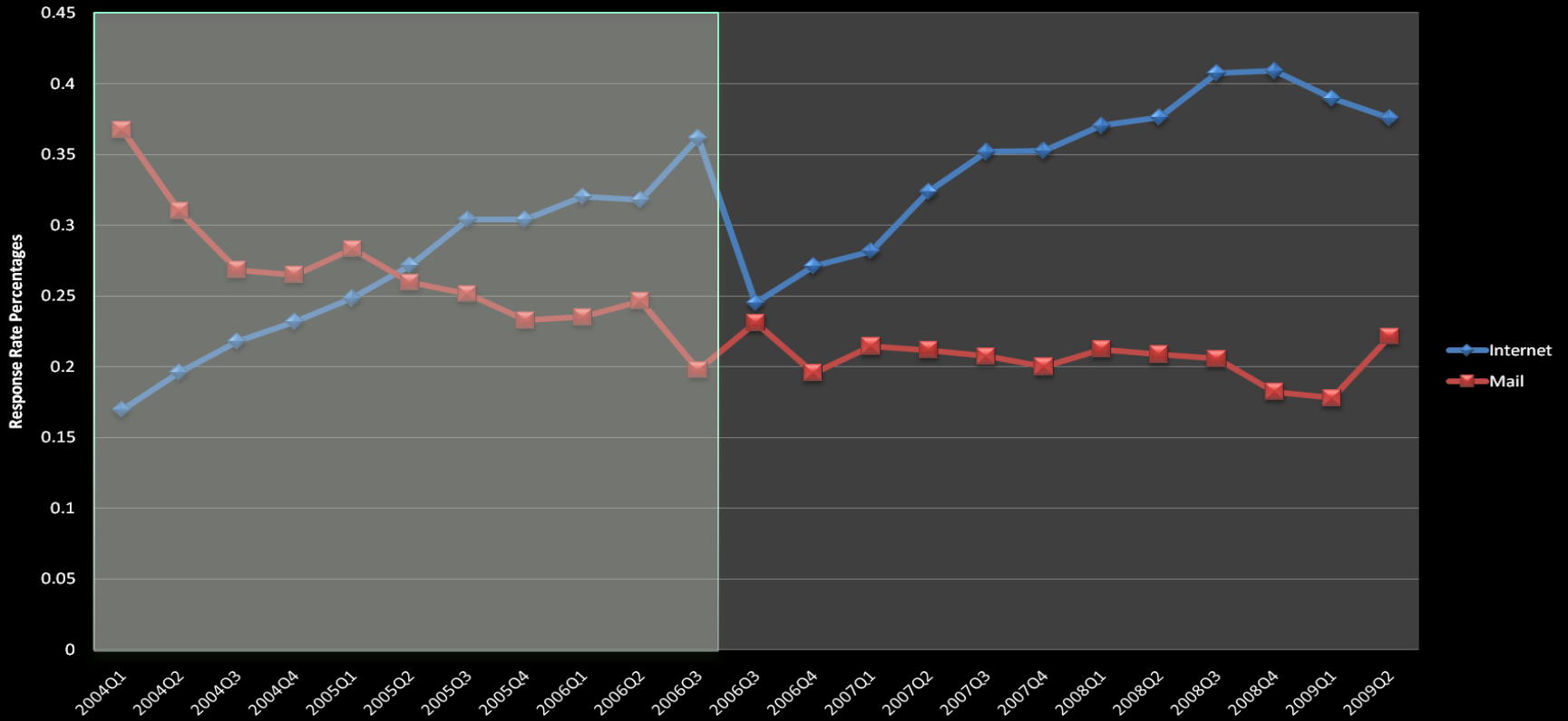
Why only a weak correlation??...



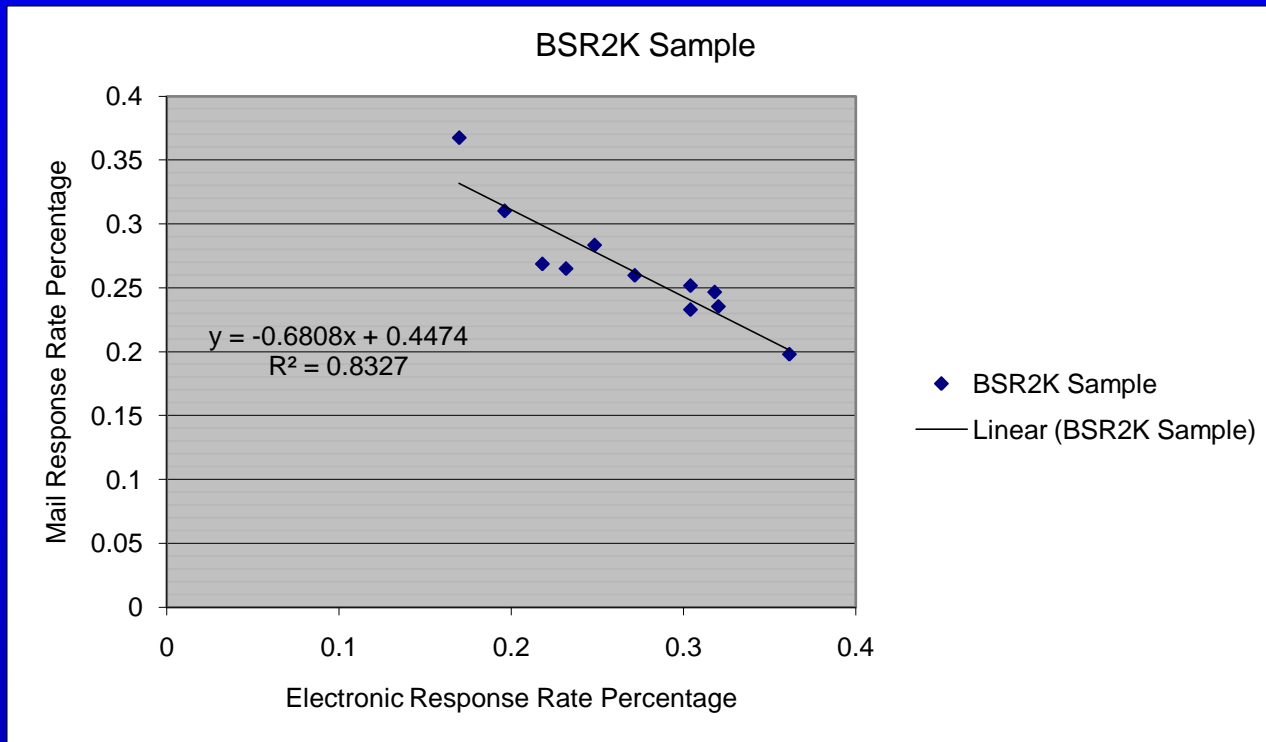
BSR2K - Mail response

17% decline from survey's inception to sample maturity

QSS Internet versus Mail: Both Samples



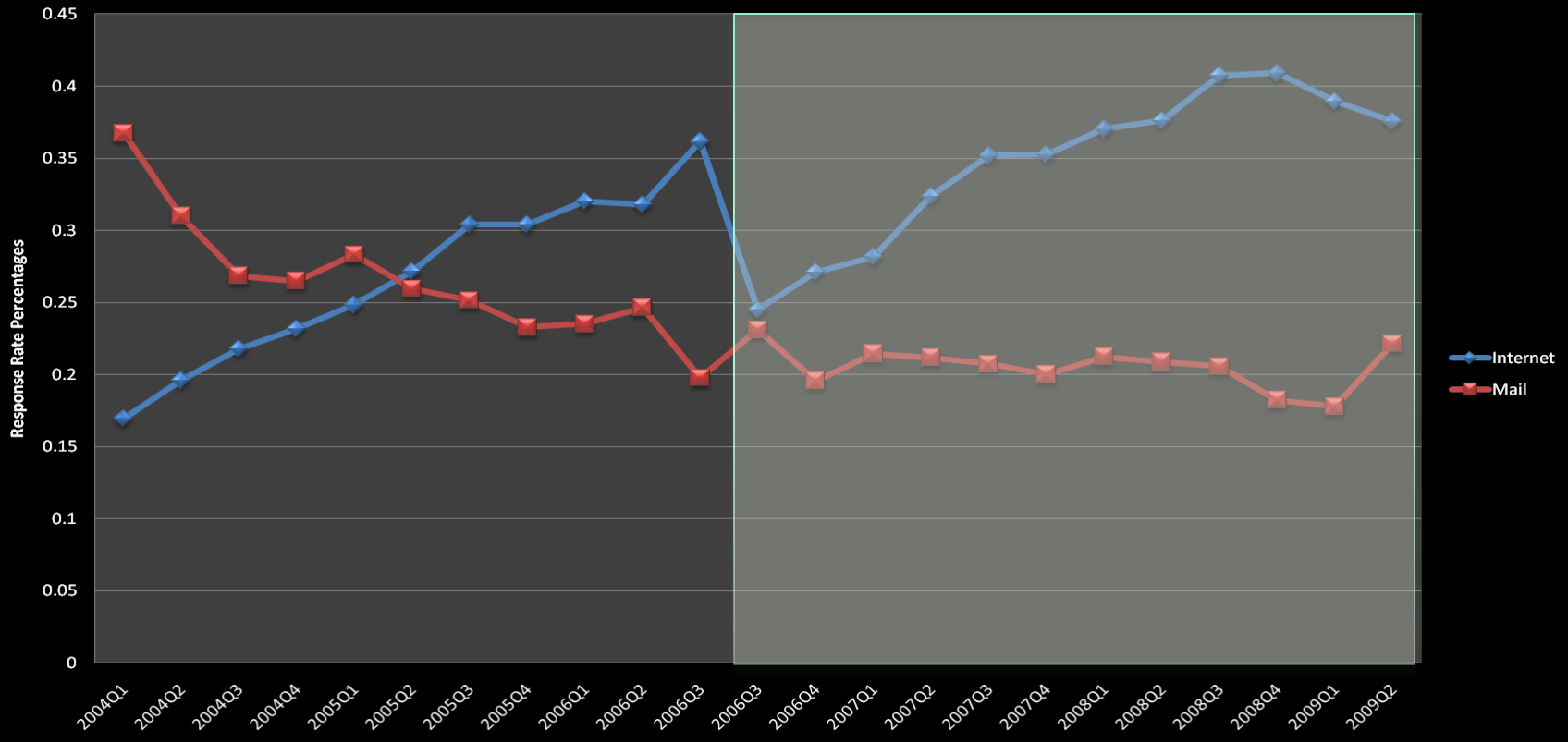
BSR2K - Mail versus Internet Response rate cannibalization



BSR2K - Mail versus Internet
Strong, negative relationship

Correlation (-.91)
Coefficient of Determination .833

QSS Internet versus Mail: Both Samples

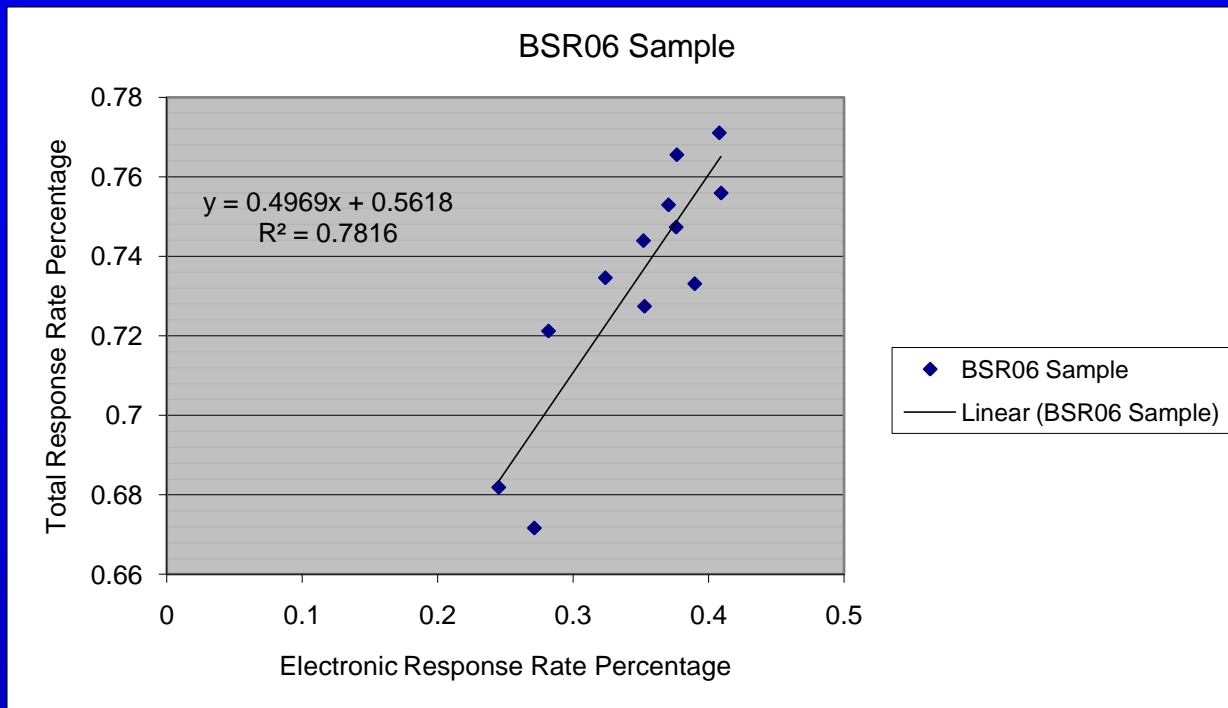


BSR06 - Mail versus Internet

No response rate cannibalization

Mail growth / decline is stagnant

Internet steadily gains until expansion, low reversion rate, proves users are satisfied with online reporting instrument



BSR06 - Overall response in conjunction with Internet
Strong, positive relationship

Correlation - .884
Coefficient of Determination - .782

**For QSS, as of BSR06, increases in electronic reporting
are driving increases in overall response**

**We can say with 78% certainty,
that if we can increase electronic response rates,
we will also improve overall response**

QSS Internet Success, Why?

- Frequency of survey
- Small reporting burden / short form
- NAICS related / type of respondent
- Ease of use of online instrument, respondents satisfied

The Important Question

How do we maximize Internet response rates during the course of and at the maturity of a particular sample, while increasing the likelihood of improving overall response rates?

Strategic Planning Recommendations

Recommendations

- Aggressively target major change quarters
 - Revisions (full sample)
 - Expansions (target marketing)
- Wow factor in direct mail promotional materials

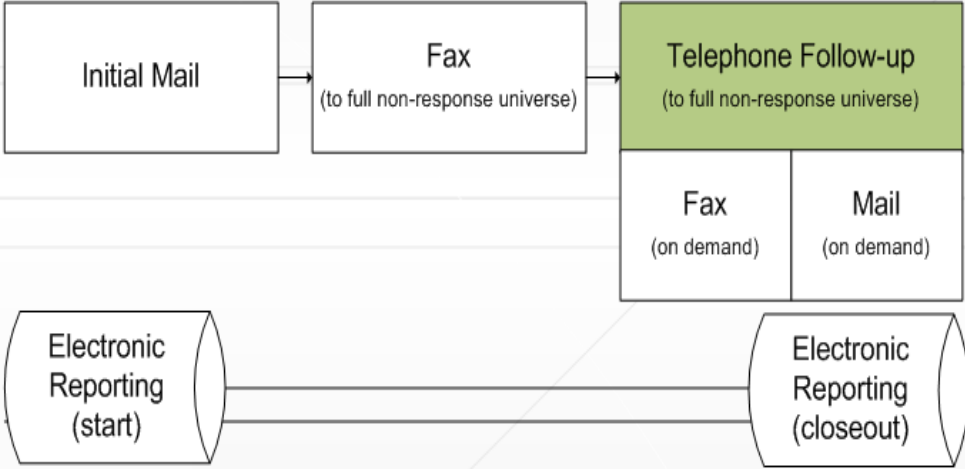
Recommendations (c'tnd)

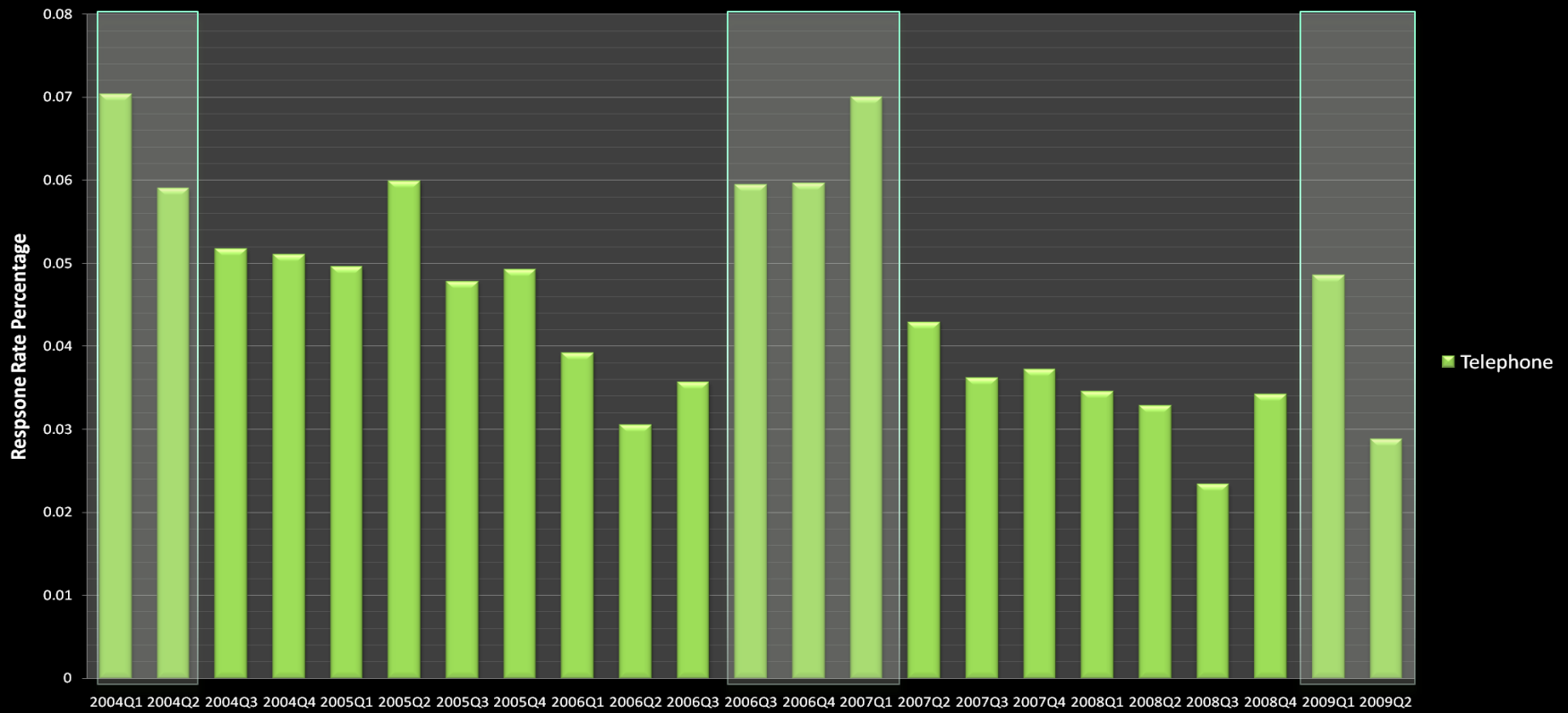
- Develop “year 1” strategic communications plan
- Share a stated target Internet response rate goal with respondents
 - Secure a pledge to report electronically
 - Don't mail a form in subsequent quarters
 - Letter, flyer
 - Bookmark site
 - Update them on our progress each quarter
 - Thank them for choosing internet

Recommendations (c'tnd)

- Schedule all major online instrument redesigns / enhancements to coincide with revision years
 - Revision schedules are known far in advance and are a guarantee, unlike proposed expansions
 - Budget is not a factor
 - Make marketable changes
 - How does the online experience change as a result?

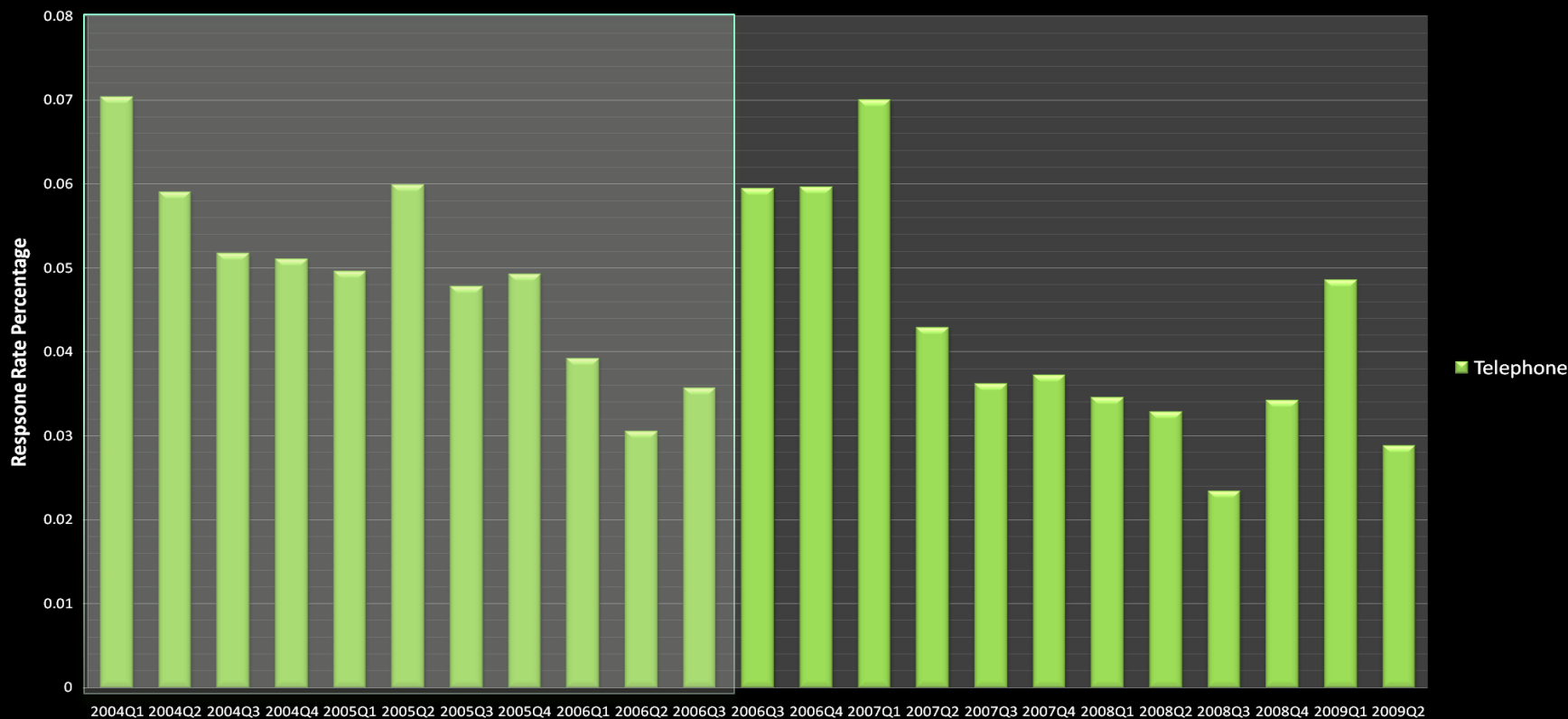
QSS Response Strategy





Spikes in TFU – taking respondents longer to report

- Inception
- Revision
- Expansion



At sample maturity, TFU response rates steadily decreasing

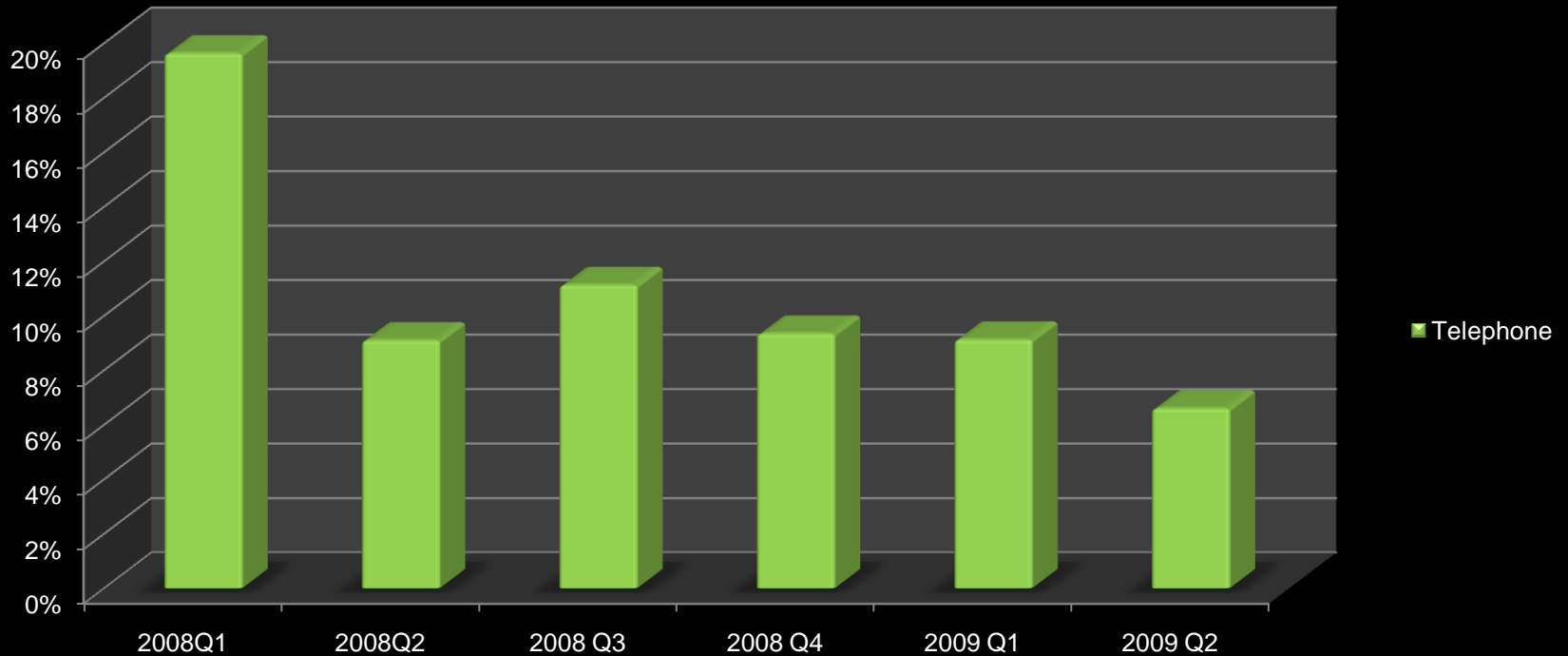
-Fewer total calls being made

-Less time to conduct TFU operation -or-

-Less personnel required to conduct TFU

Example of how trends in operations statistics can improve cost estimation and planning

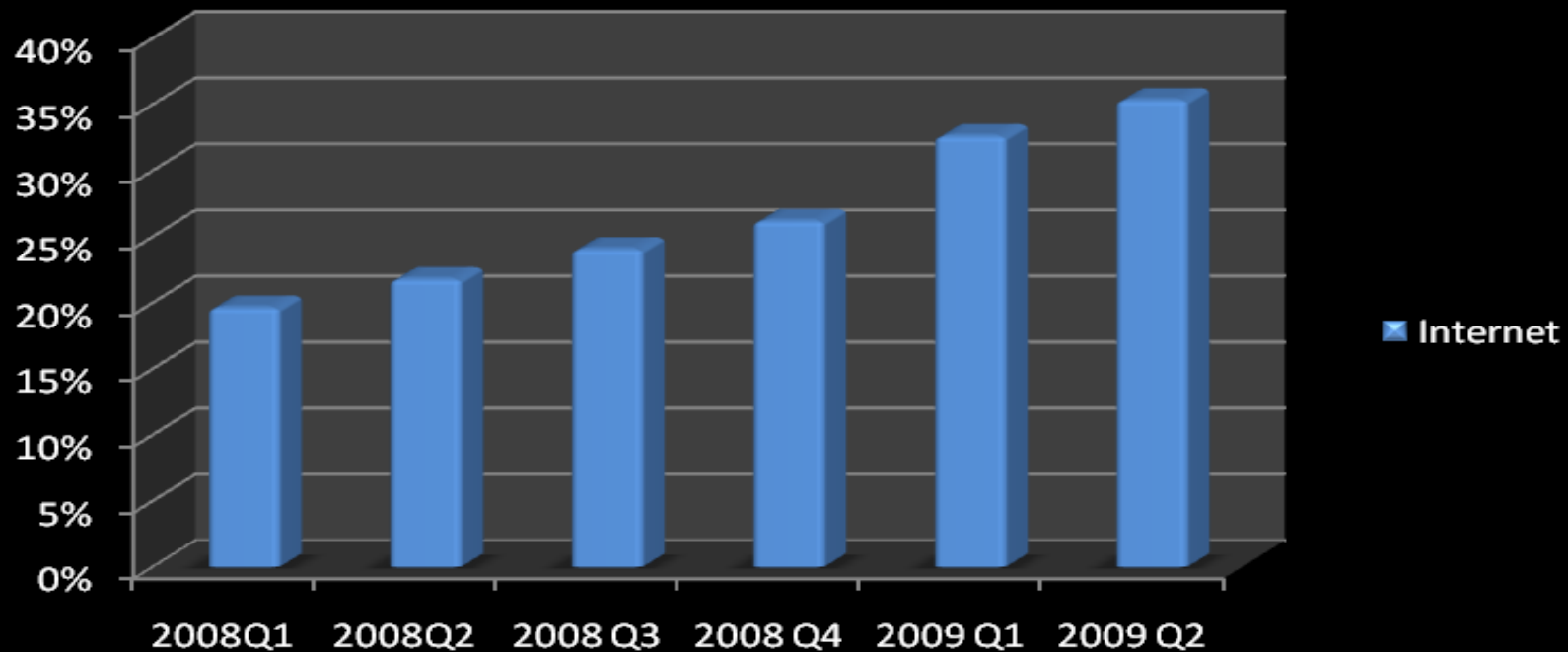
QPC Phone Response Percentages



Systematic:

-Same TFU trend for QPC (from survey inception)

QPC Internet Response Percentages

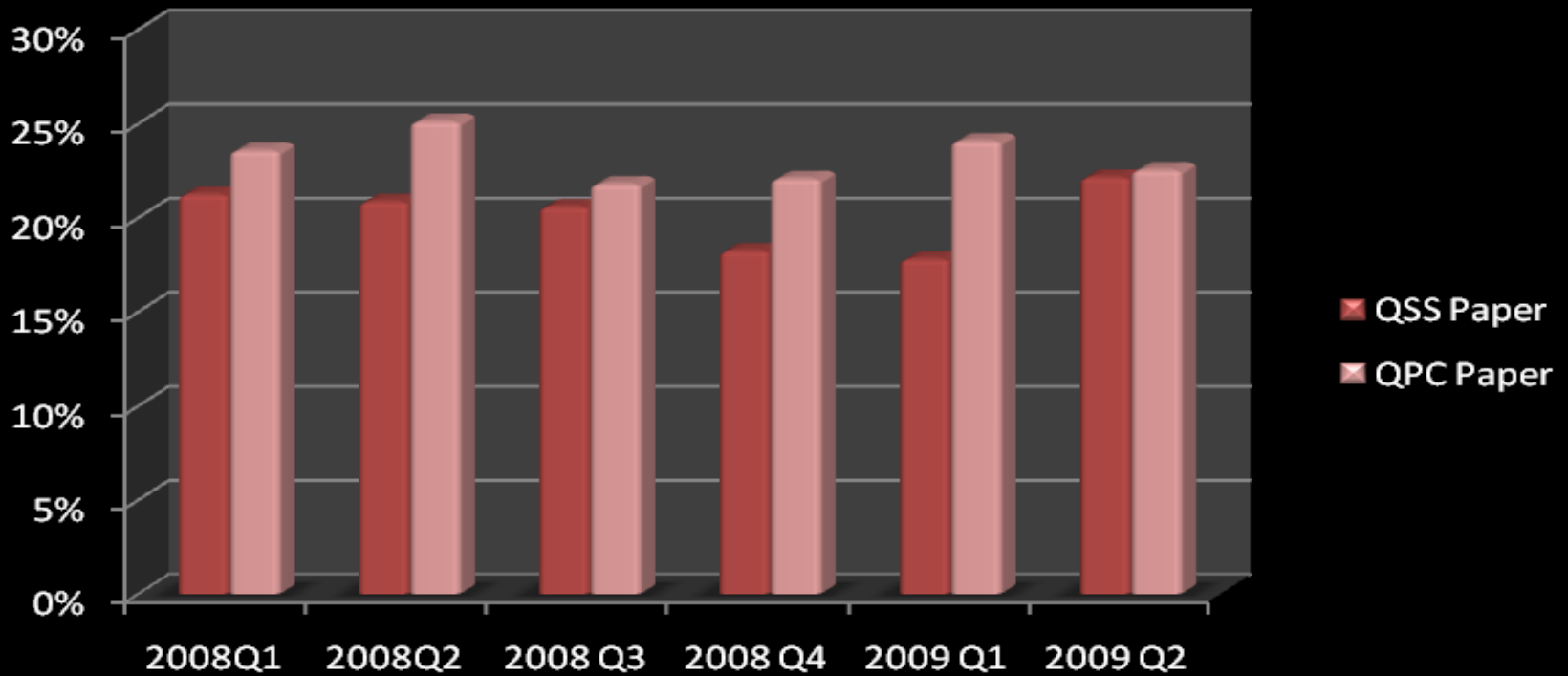


Systematic:

-Same Internet trend for QPC (from survey inception)

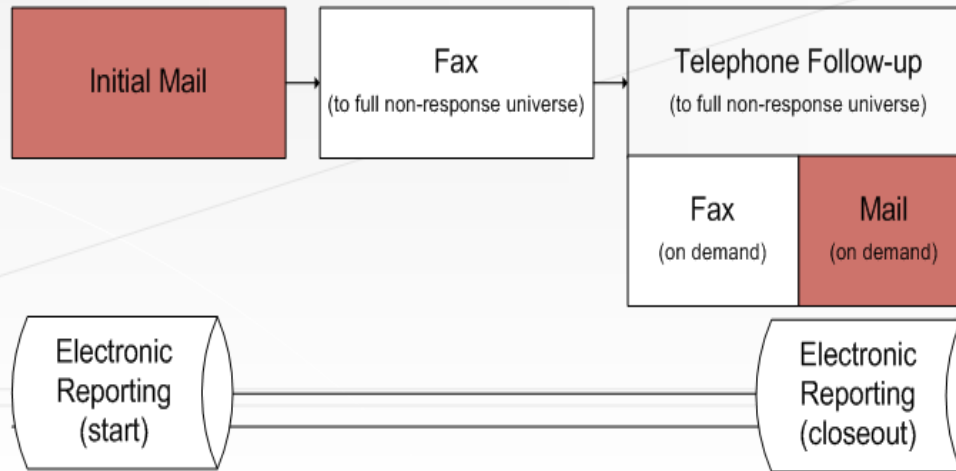
Means strategic planning recommendations can be applied to more than one survey

Response Strategy Recommendations

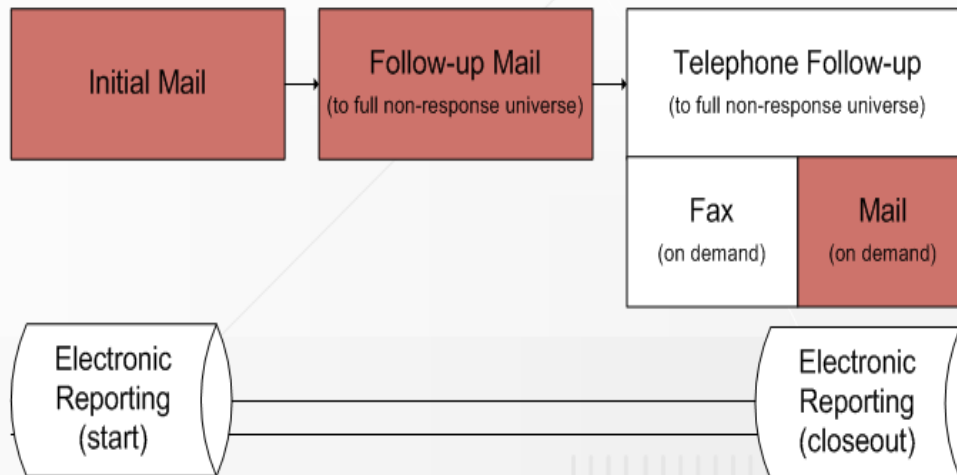


Over the same period of time, who has the more effective paper collection operation, QSS or QPC?

QSS Response Strategy



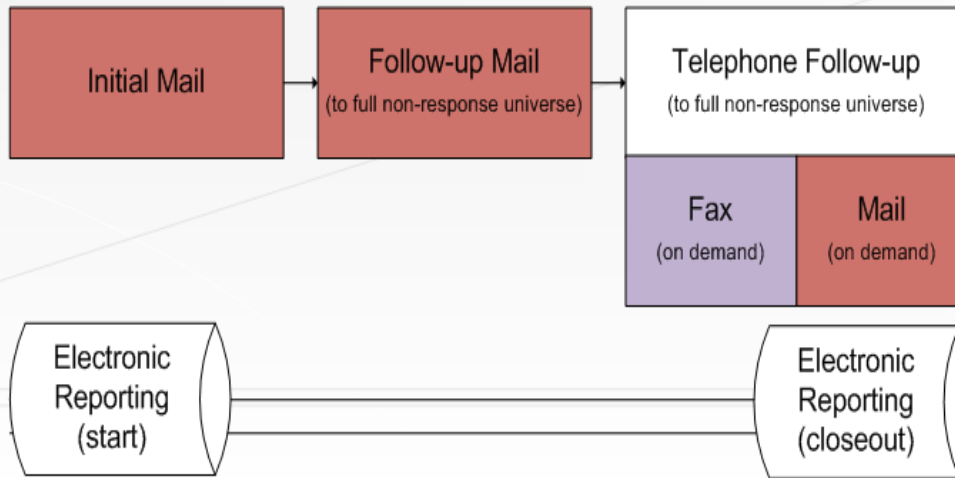
QPC Response Strategy



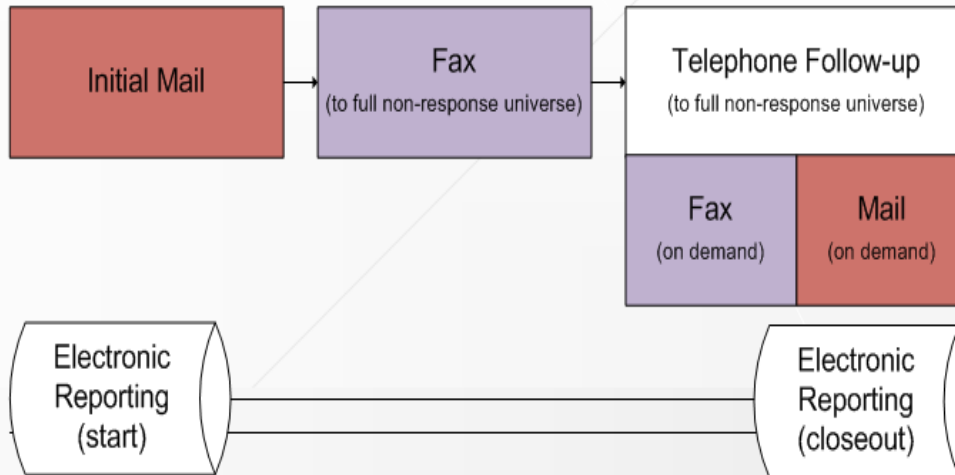
QPC Response Strategy Recommendation

- **Limited effectiveness of current QPC first follow-up mail**
- **Fax technology already in place for faxing on demand during TFU**
- **Consider a fax to the full non-response universe instead of a first follow-up mail**

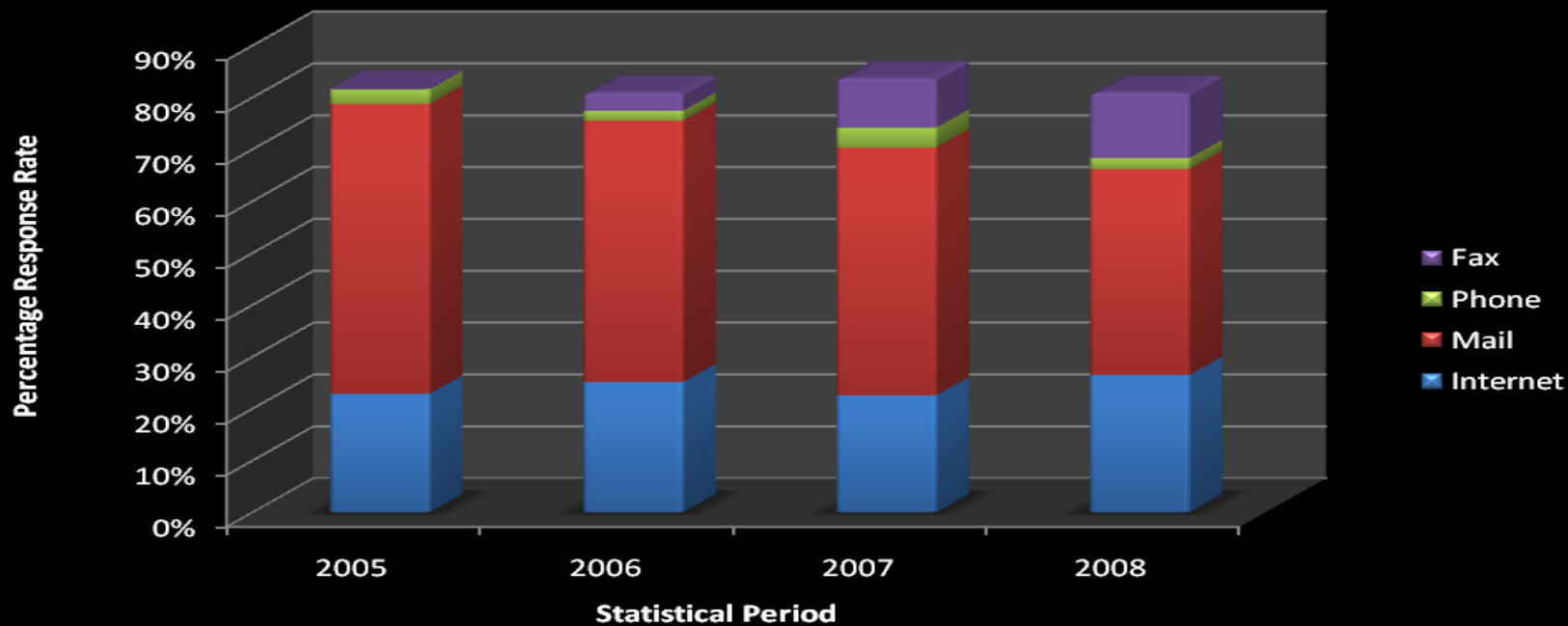
CURRENT QPC Response Strategy



RECOMMENDED QPC Response Strategy

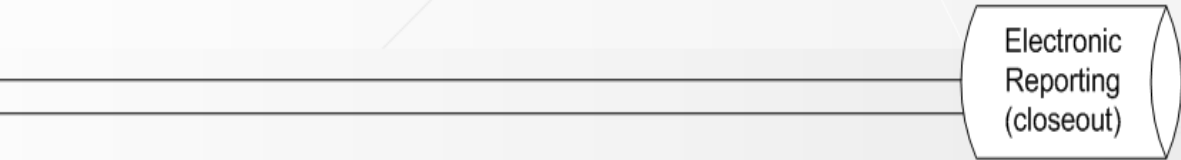
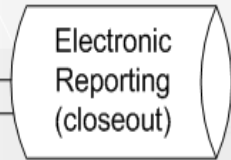
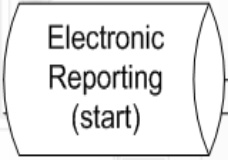
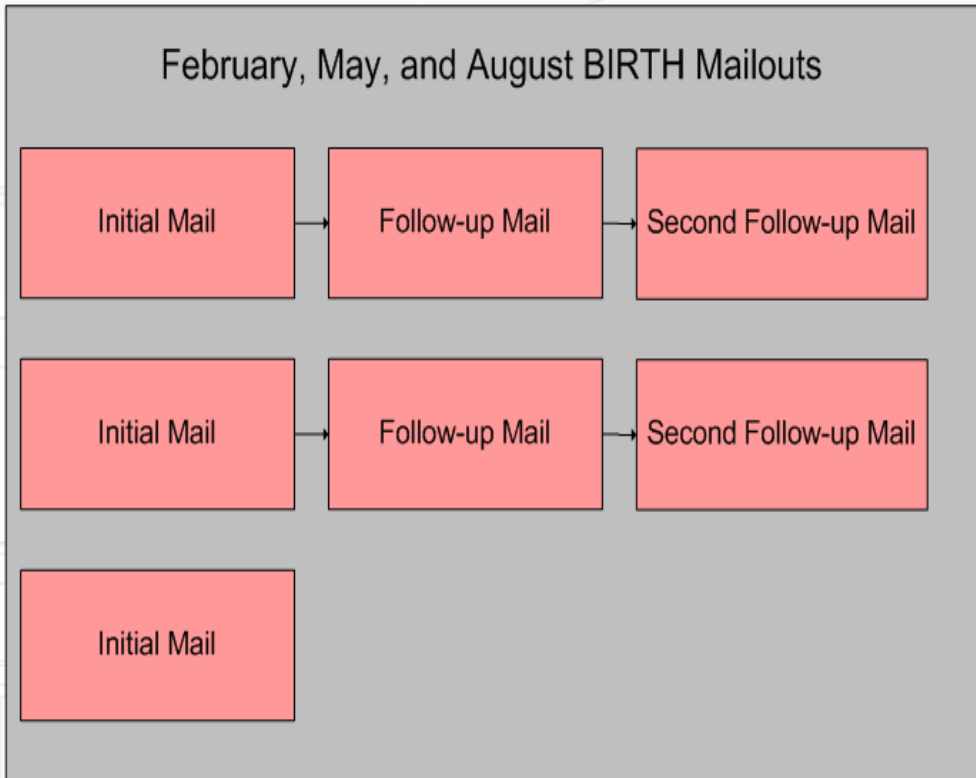
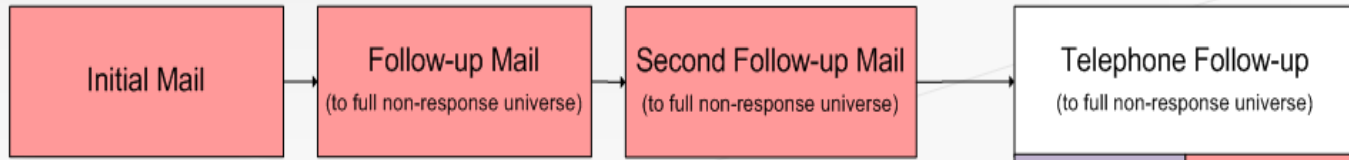


AWTS Response Rates by Total Universe

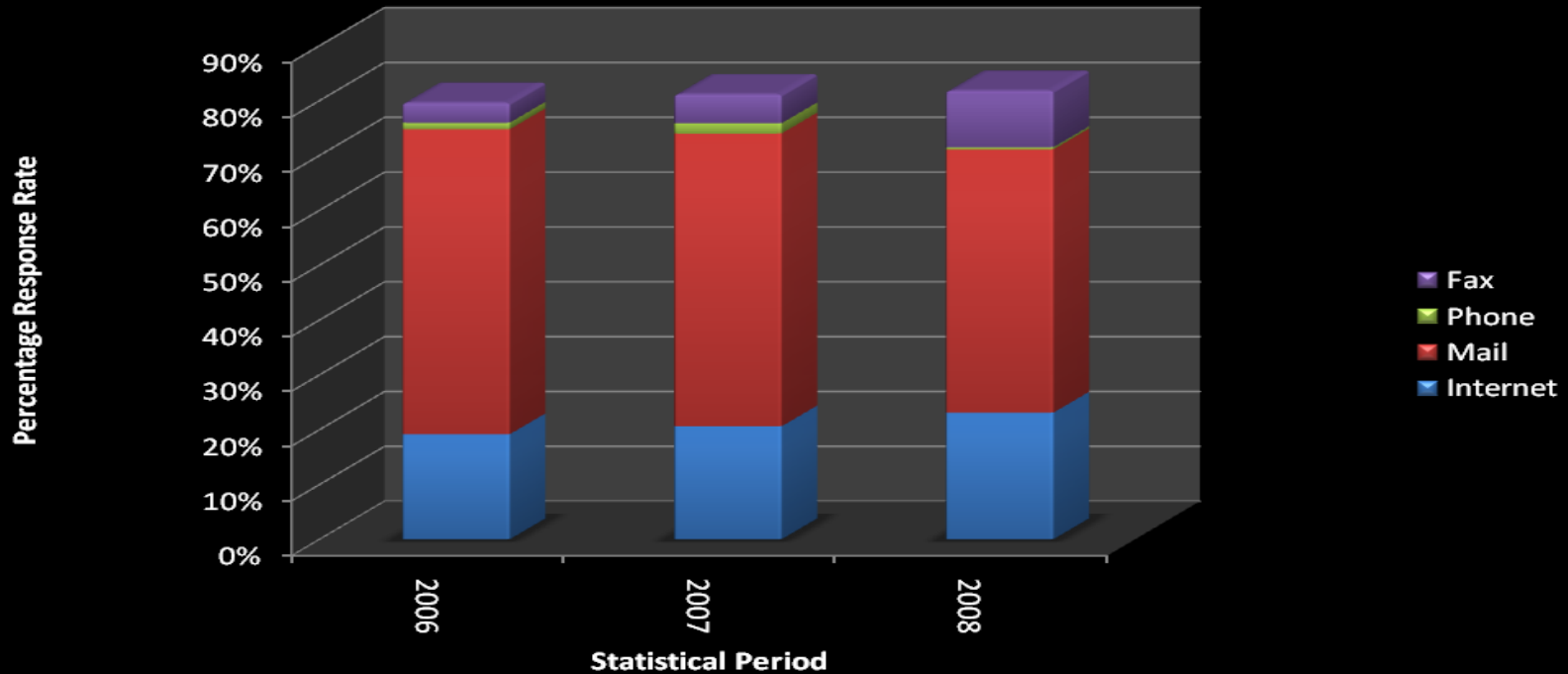


Increasing reliance on fax – under represented in follow-up strategy compared to mail

AWTS Response Strategy

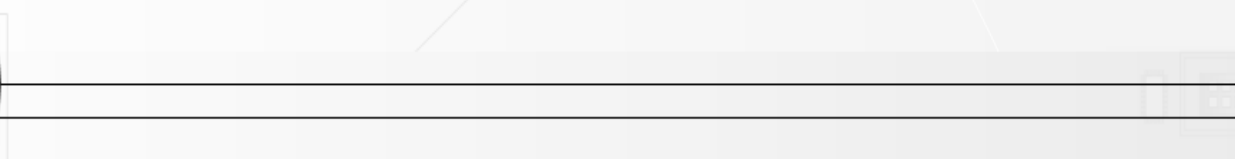
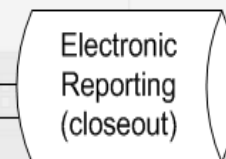
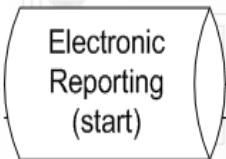
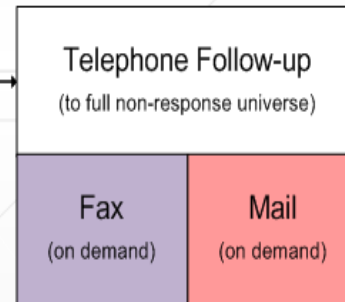
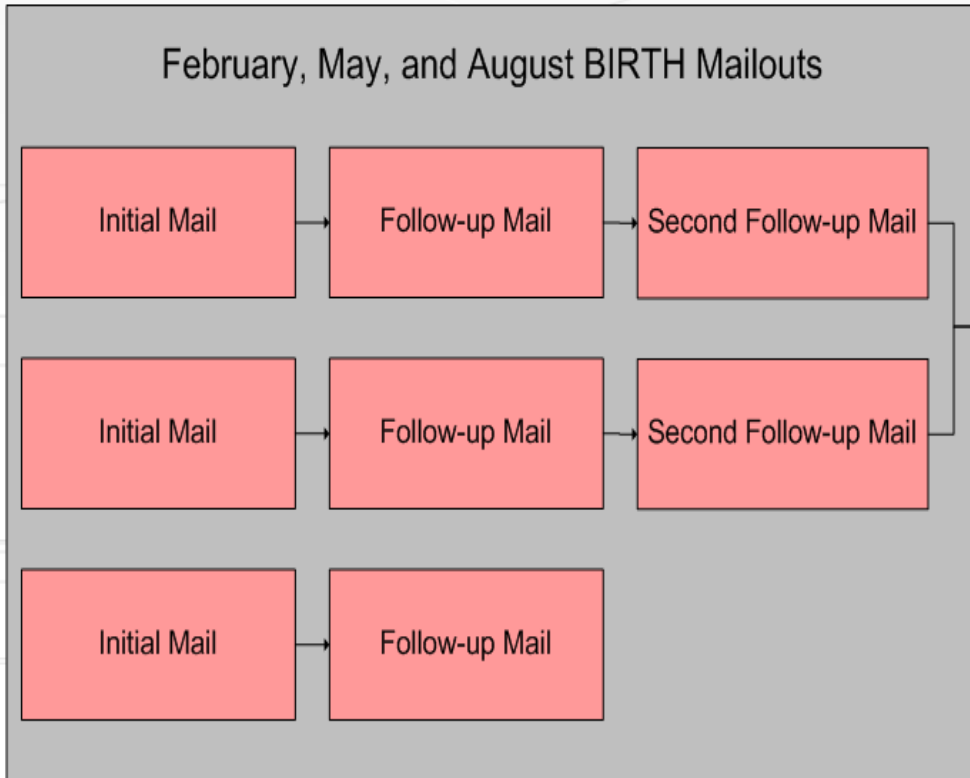


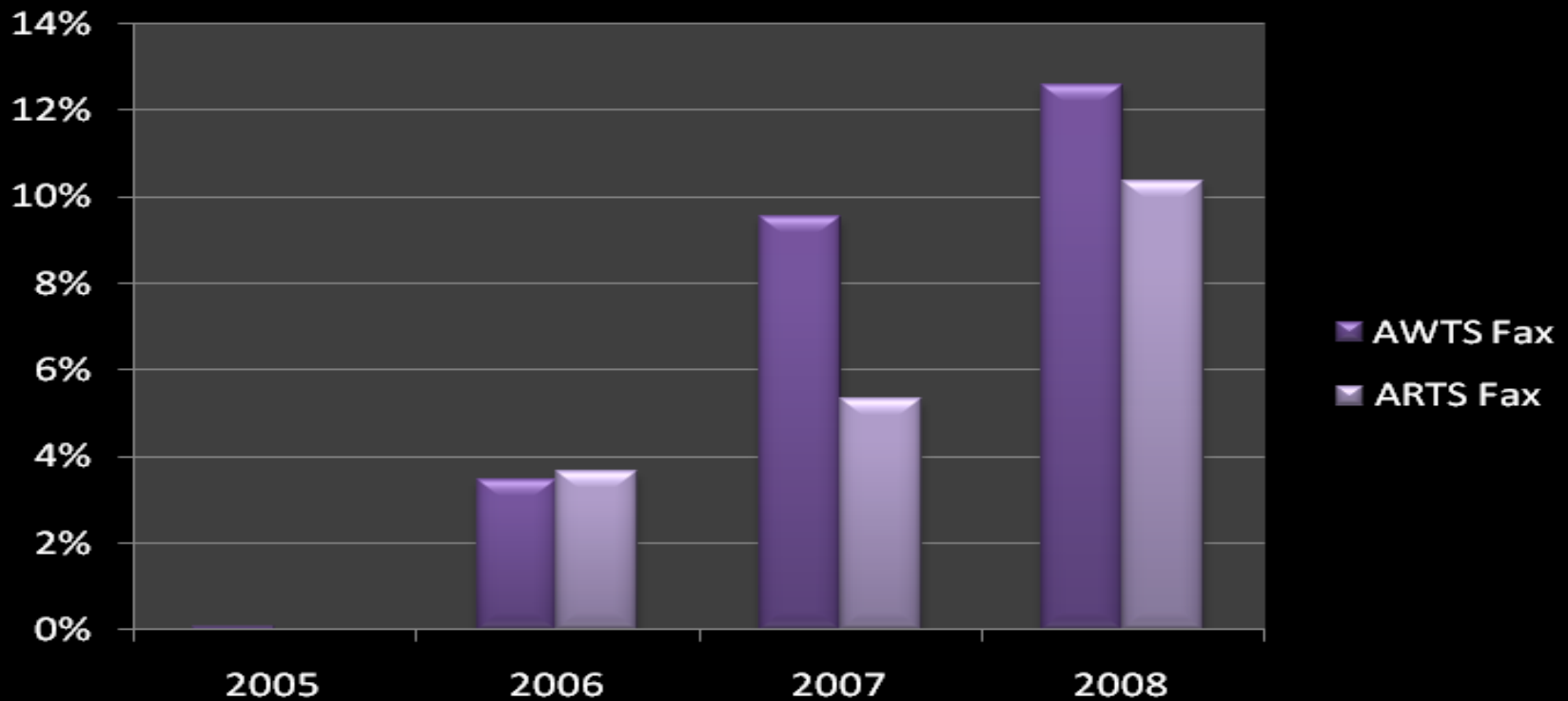
ARTS Overall Response Percentages By Mode



Increasing reliance on fax – under represented in follow-up strategy compared to mail

ARTS Response Strategy





New mode of collection in 2006 for both surveys

Increasing willingness to respond via fax

More proactive faxing – to full non-response universe

Less reactive faxing – on demand during TFU

Study Relevance and Application to Business Processes

Modal data analysis can be applied to organizational business processes through:

- Strategic planning recommendations
- Operations adjustments impacting technology and resource utilization
- Follow-up strategy changes
- Procedural changes

Important to Note

Analyzing summary-level data by Statistical Period

All graphs and trends could be recreated using subsets of sample universes by:

NAICS

Company Size

Add / Keep, etc.

Durations within Statistical Periods

Questions?

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