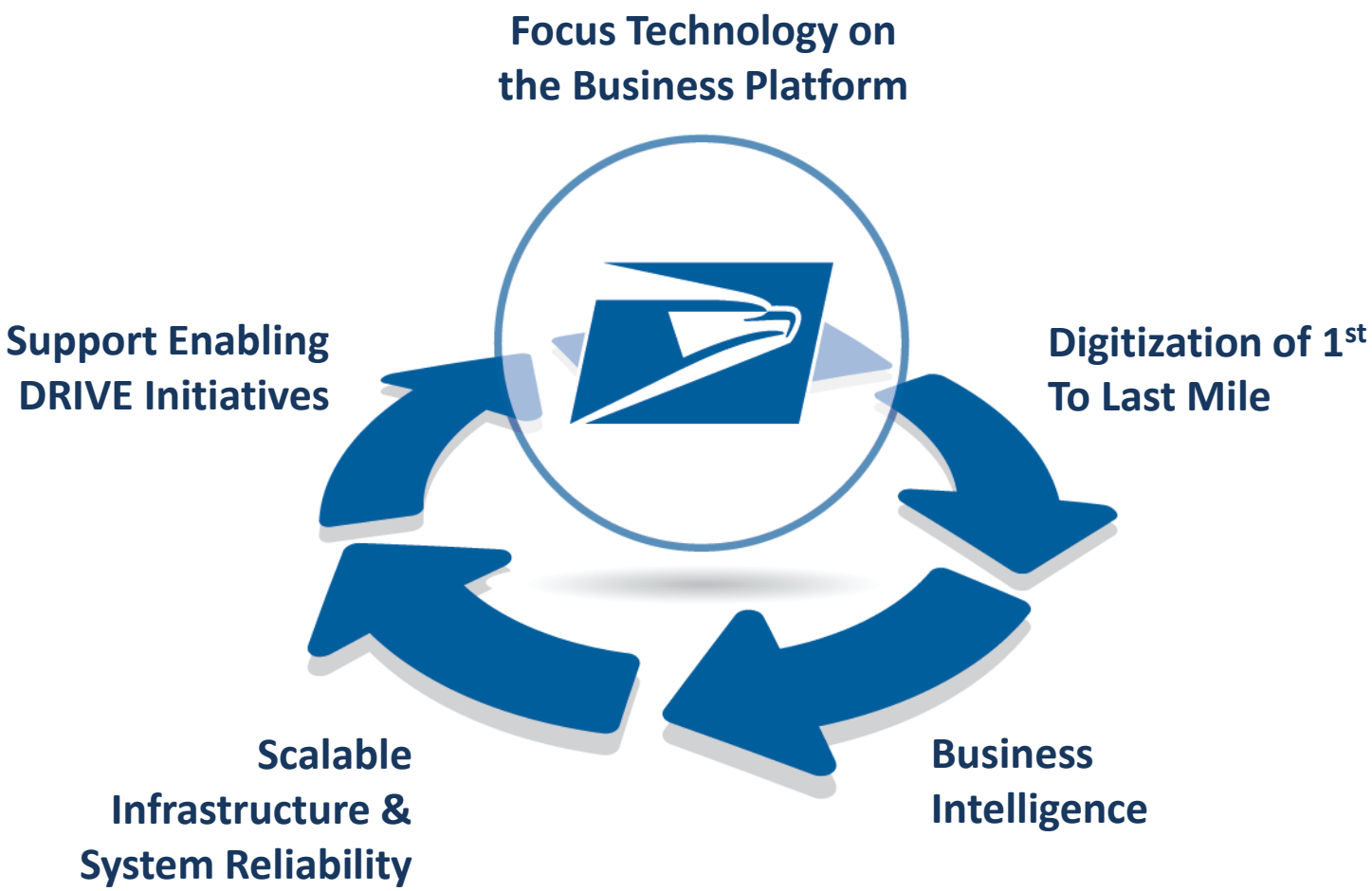
# Technology Updates

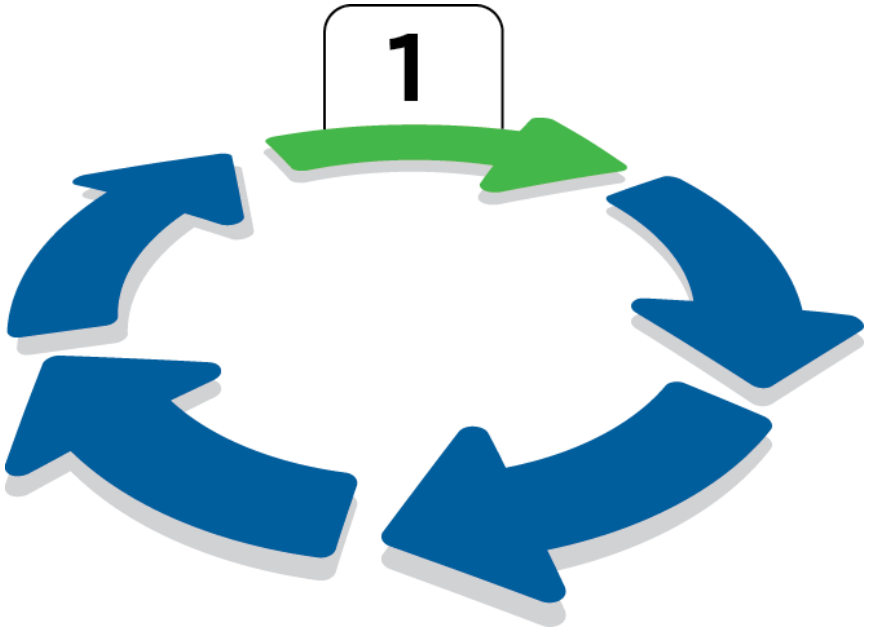
## USPS Leadership Forum for Stakeholders

## February 19, 2013

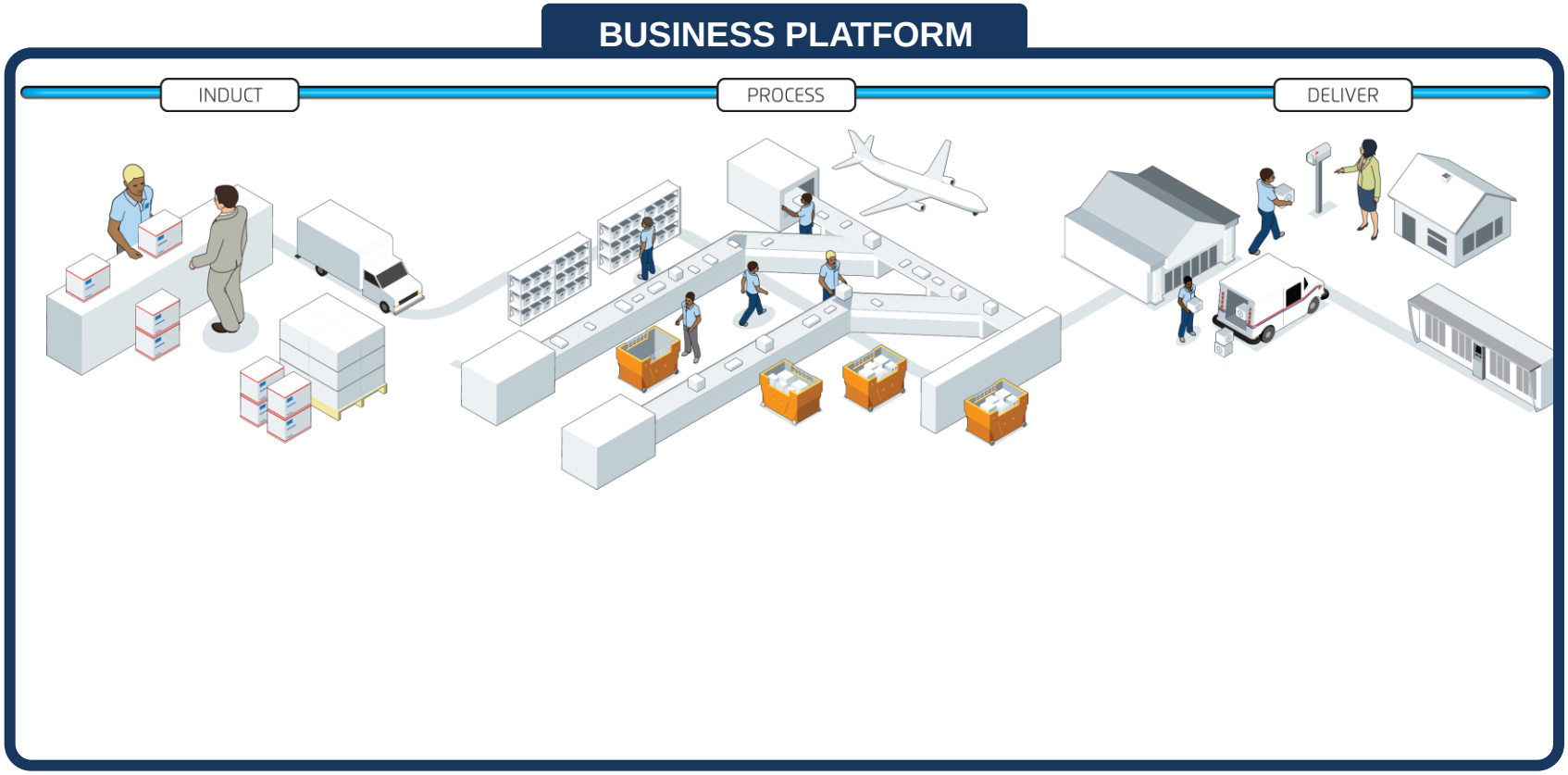

Focus Technology on
the Business Platform
Digitization of 1st
To Last Mile
Business
Intelligence
Scalable
Infrastructure &
System Reliability
Support Enabling
DRIVE Initiatives

2013
2014
5 Key Technology Strategies

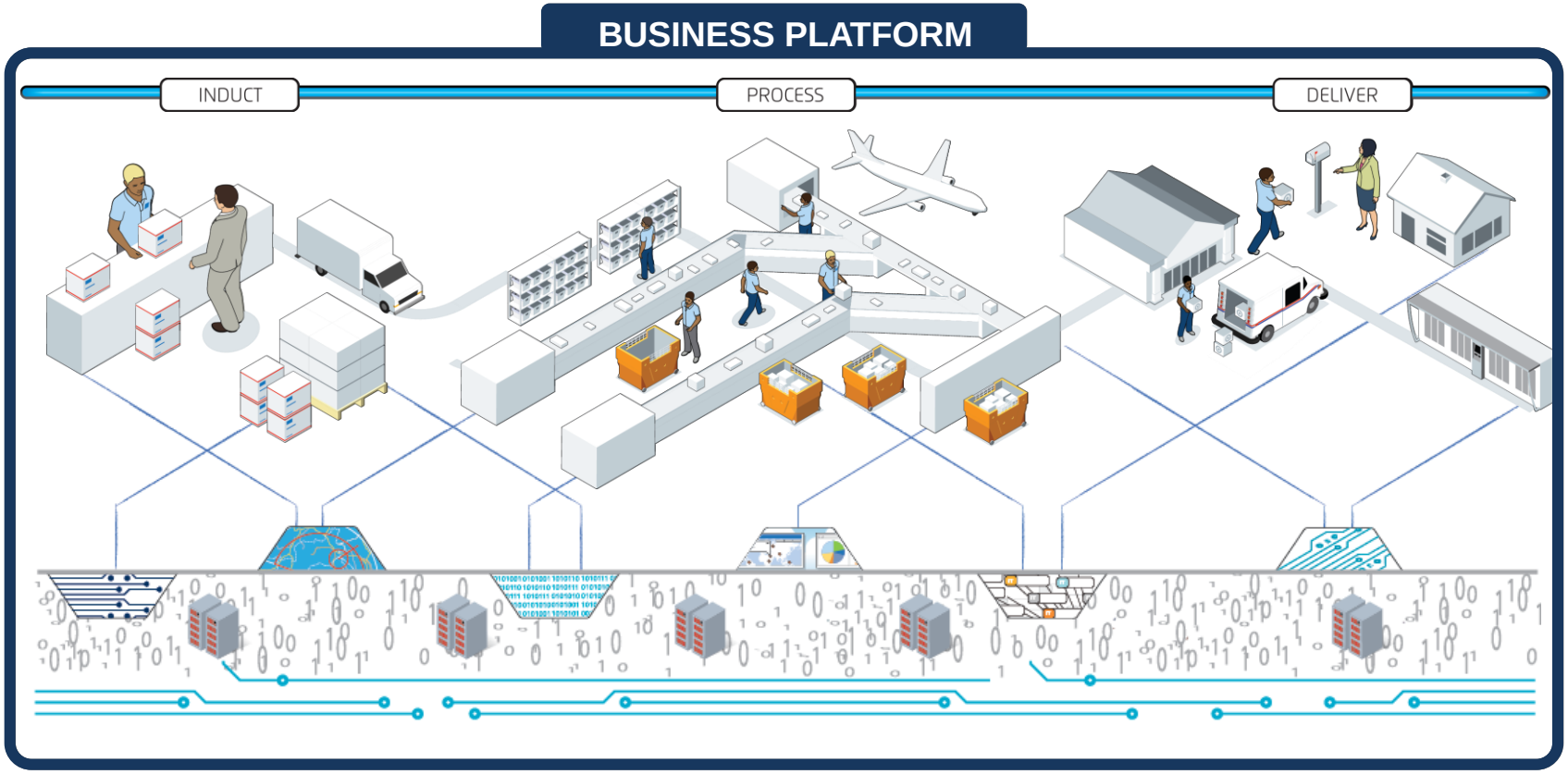
# Focus Technology on the Business Platform



# Focus Technology on the Business Platform



# Focus Technology on the Business Platform

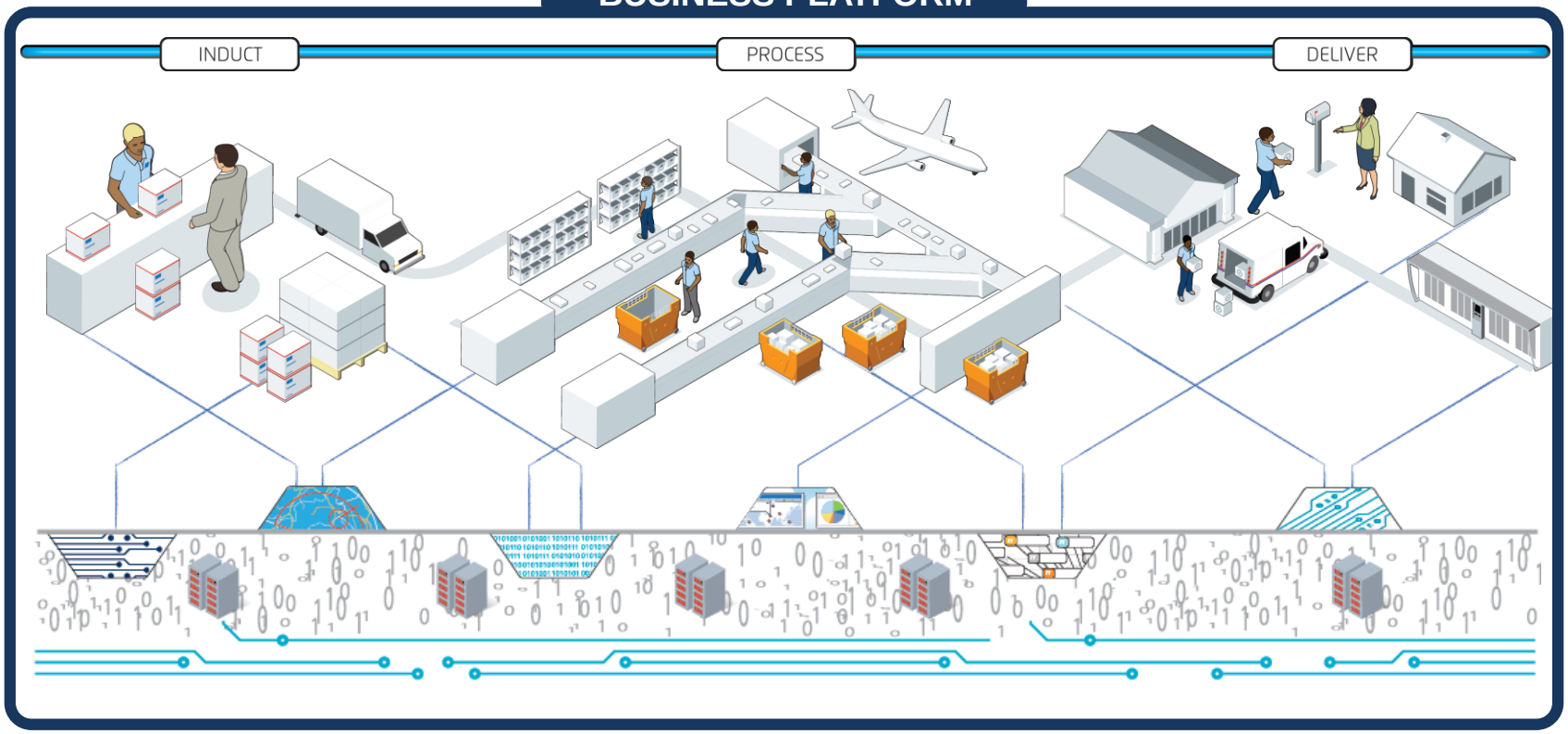



## CIO Supports the USPS Business Model

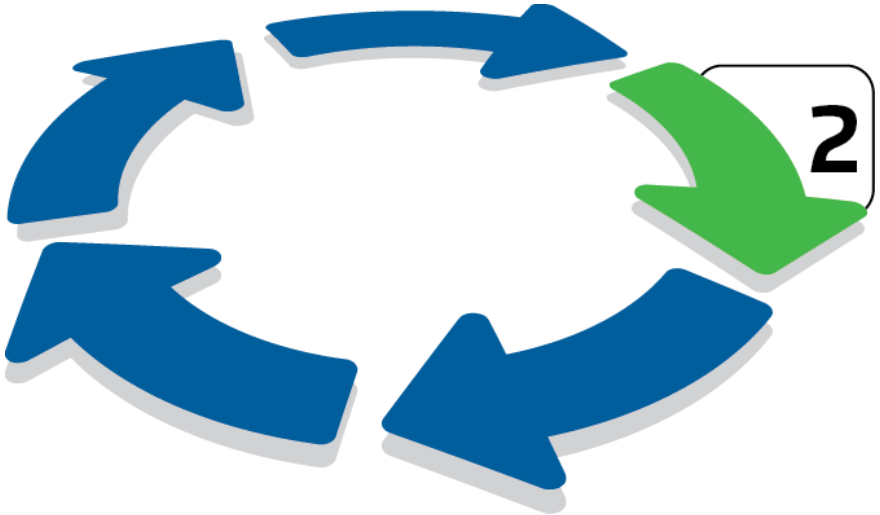
# Focus Technology on the Business Platform

Revenue Generation

BUSINESS PLATFORM




Service & Efficiencies




**Digitization of 1st To Last Mile**

## Manual

60’s

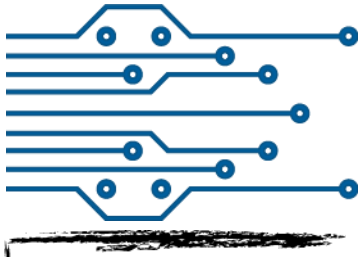
## Mechanization

70’s

## Automation

80’s

## Digitization



Today

# Digitization Transforms the Mailstream

## *Delivers Measurable Value From 1st Mile to Last Mile*

Value-Added Products

Multi-channel Marke

Asset Management

Customer Value

Smart Logisti

### LAST MILE

- Parcel Locker
- Real-time Scanning
- Geo-fencing
- Dynamic Routing/Delivery
- Schemeless Environment
- PASS & Ring Scanners
- Track-it
- Delivery Diagnostics

### PROCESS & TRANSPORT

- Dynamic Processing
- Interception of parcels
- Sequencing of Letters & Flats
- Physical Piece to Image
- High Speed Flats Feeder
- Next Gen Package Sorting
- Informed Visibility Platform
- Transportation Visibility

### FIRST MILE

- Value Products
  - Incentives
  - ePostage
  - Scan-based Payment
  - MetroPost
- Retail Software Systems (RSS)
- Meters / Performance Criteria
- Full-Service Mail Prep
- Small Business Tool
- Enterprise Payment
- Self-Service Check-In
- eInduction/Seamless

Routing

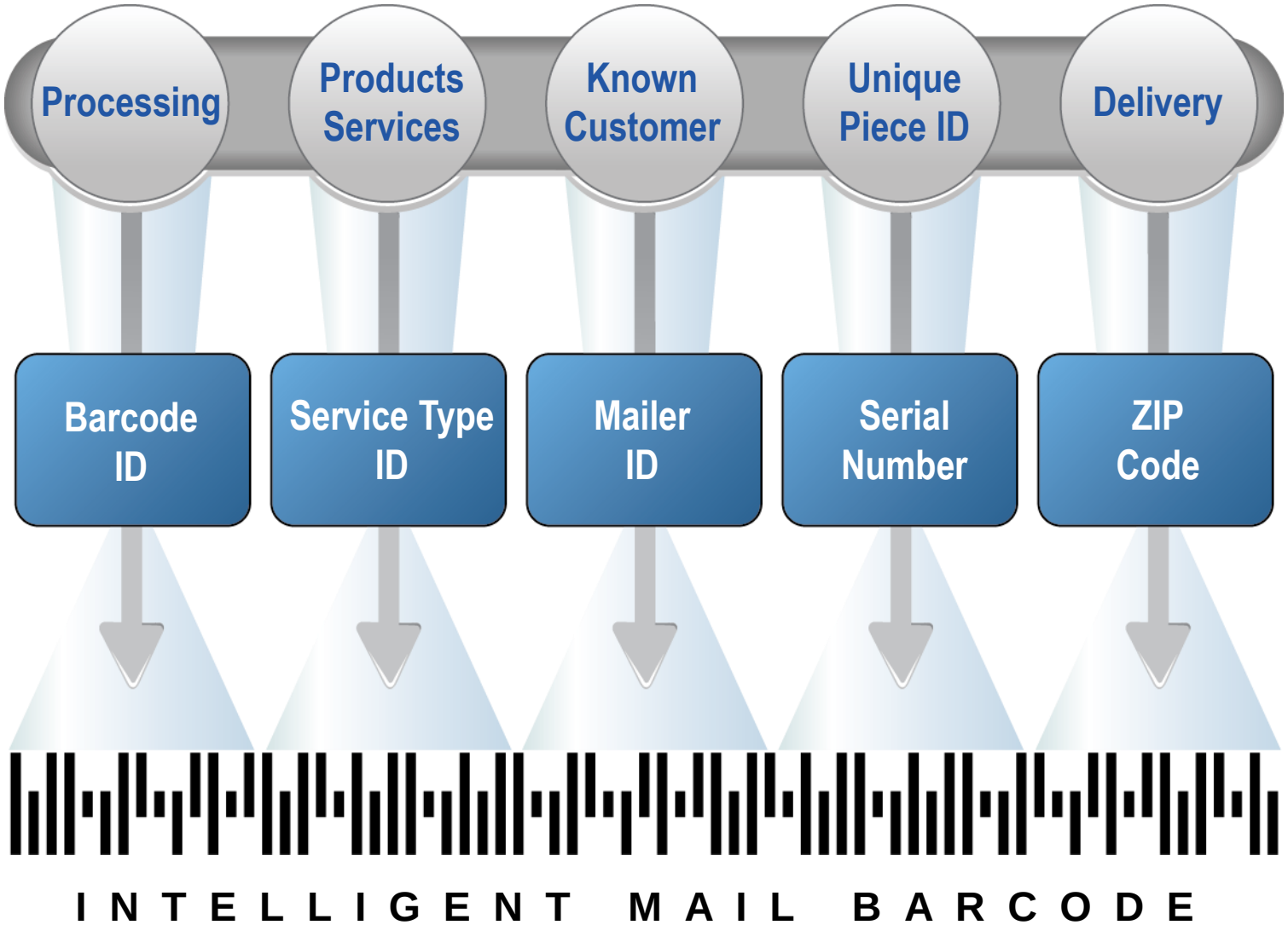
Asset Management

ing

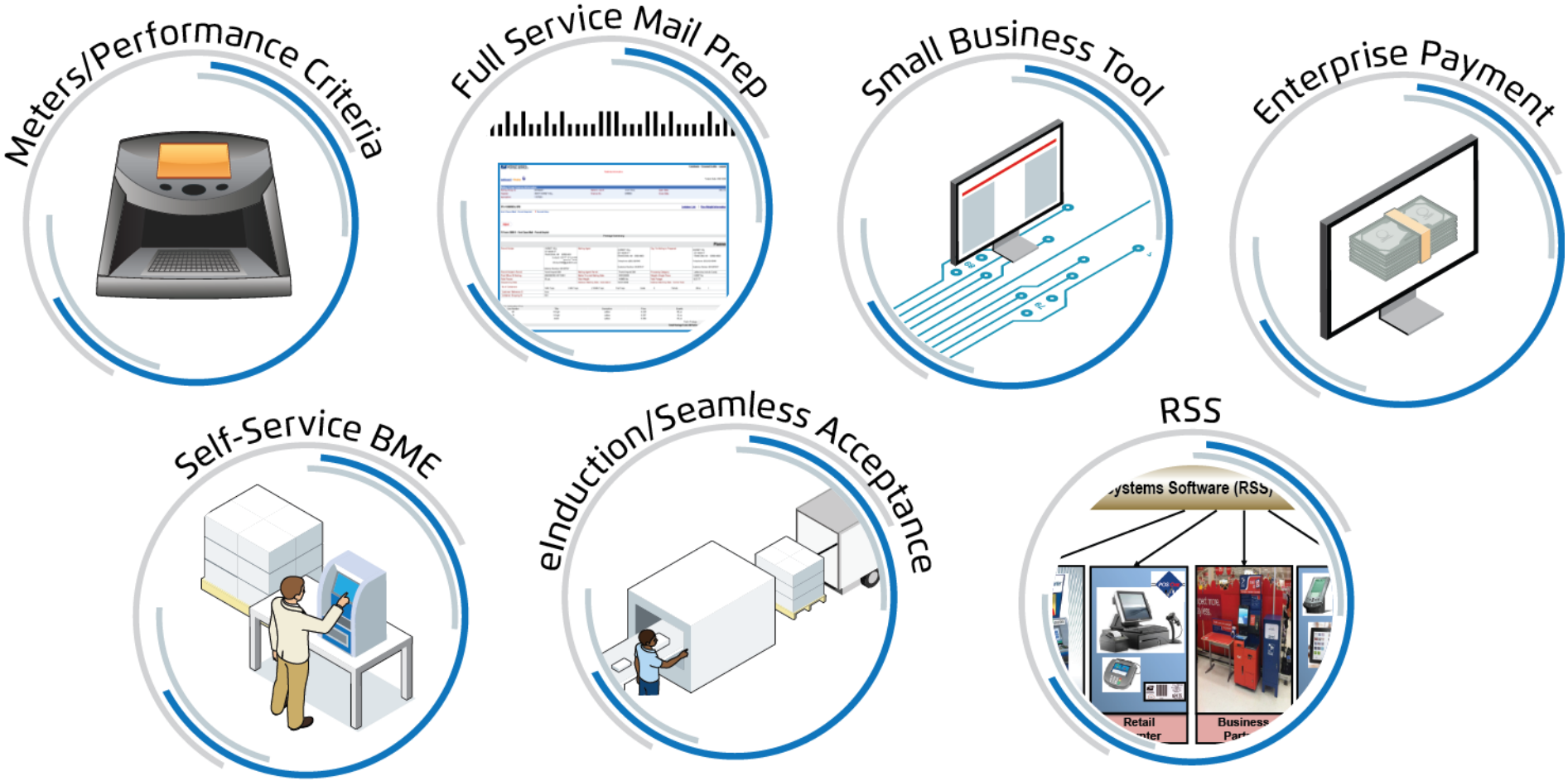
Revenue Capture

Customer Awareness

USPS Value

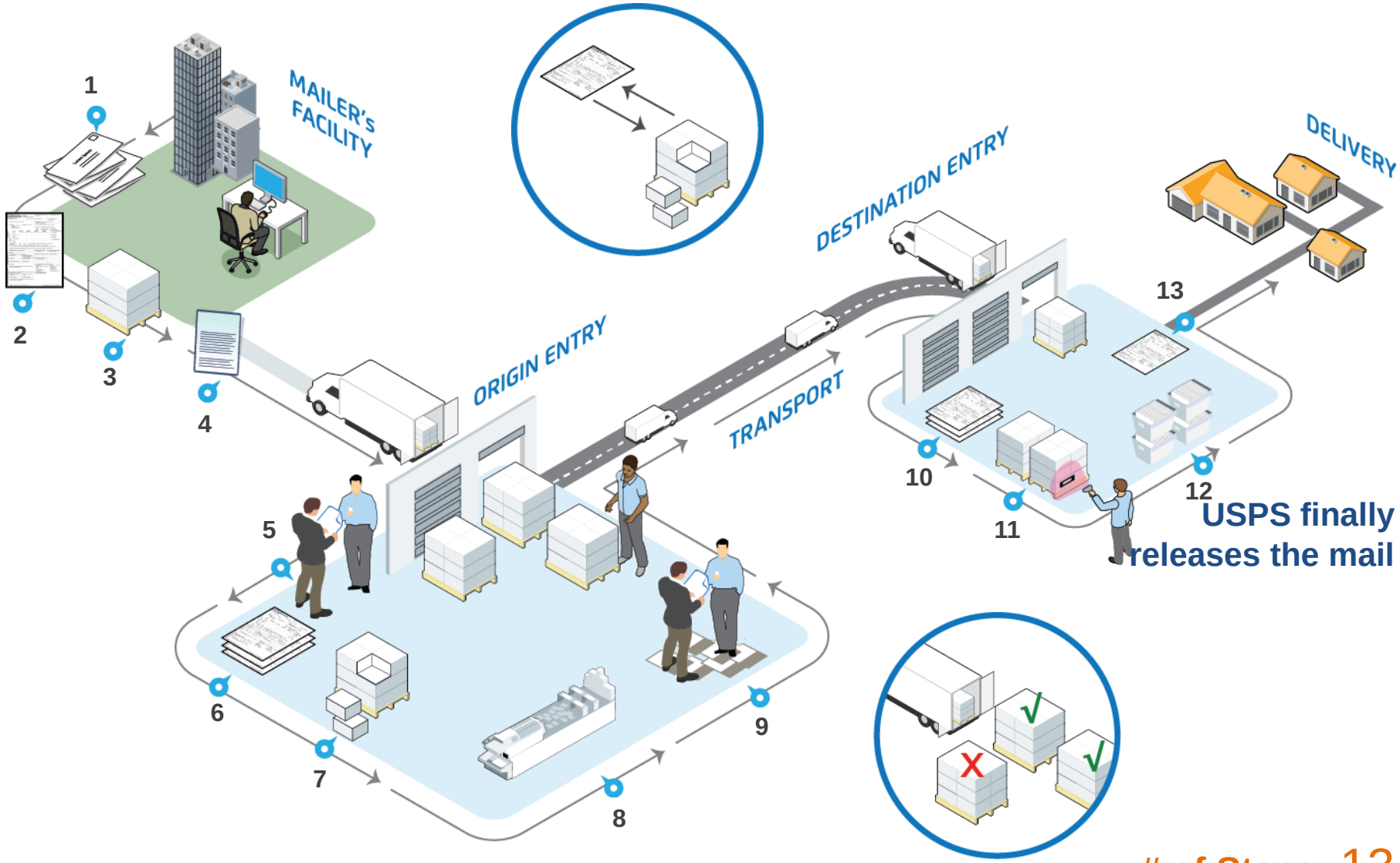

Processing
Products Services
Known Customer
Unique Piece ID
Delivery
Barcode ID
Service Type ID
Mailer ID
Serial Number
ZIP Code
INTELLIGENT MAIL BARCODE

# First Mile


Meters/Performance Criteria
Full Service Mail Prep
Small Business Tool
Enterprise Payment
Self-Service BME
eInduction/Seamless Acceptance
RSS
ystems Software (RSS)
Retail
Business

# MAIL ENTRY: Current State

**Most mailers provide information in hard copy**



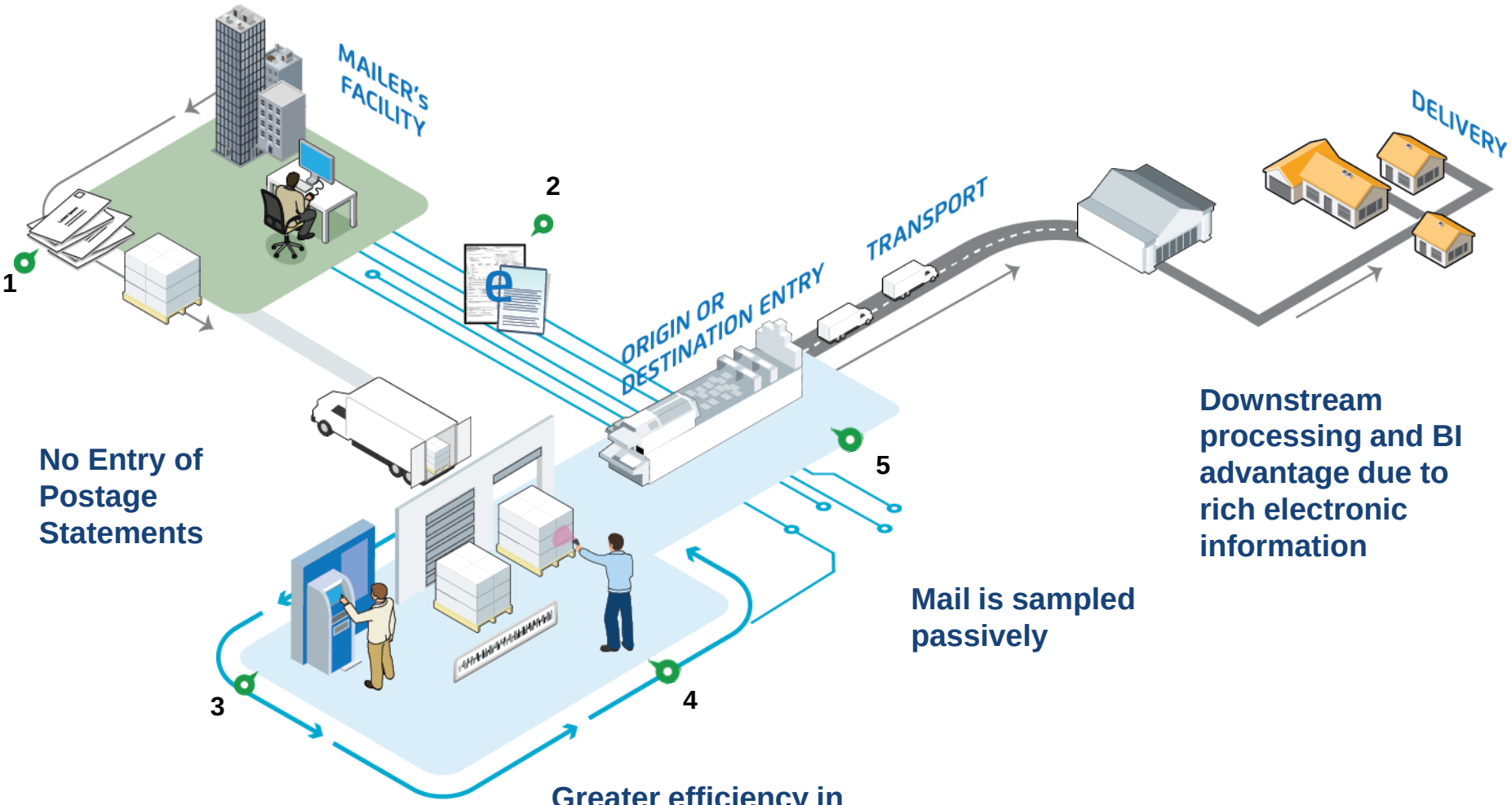

**USPS finally releases the mail**

**USPS takes manual sample of mail and visually inspects the mail**

**# of Steps:** 13

**Entry Time:** 90+ Minutes

# SEAMLESS ENTRY:
## Future State




No Entry of Postage Statements

Downstream processing and BI advantage due to rich electronic information

Mail is sampled passively

Greater efficiency in offloading process:

Just in time logistics management

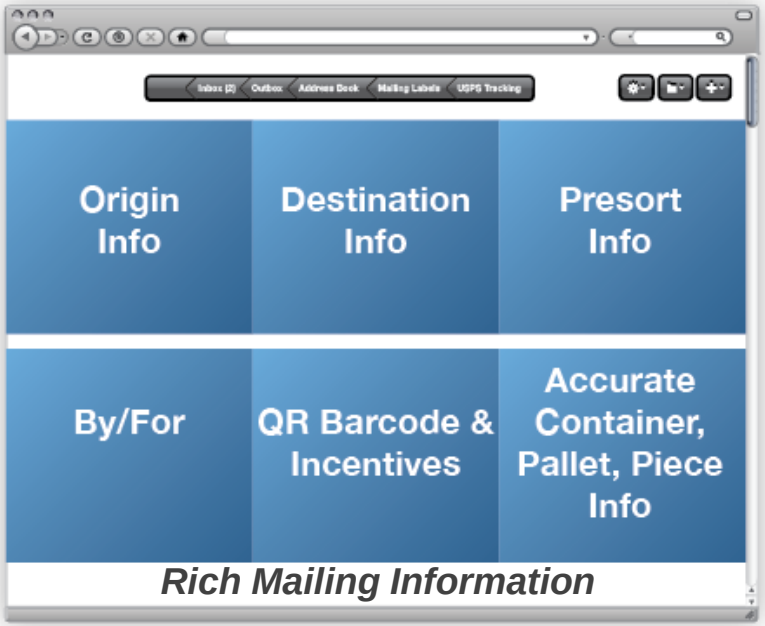
**# of Steps:** 5

**Entry Time:** 10 Minutes

# Mail Preparation

*IMb*

*Electronic Mailing Information (eDoc)*

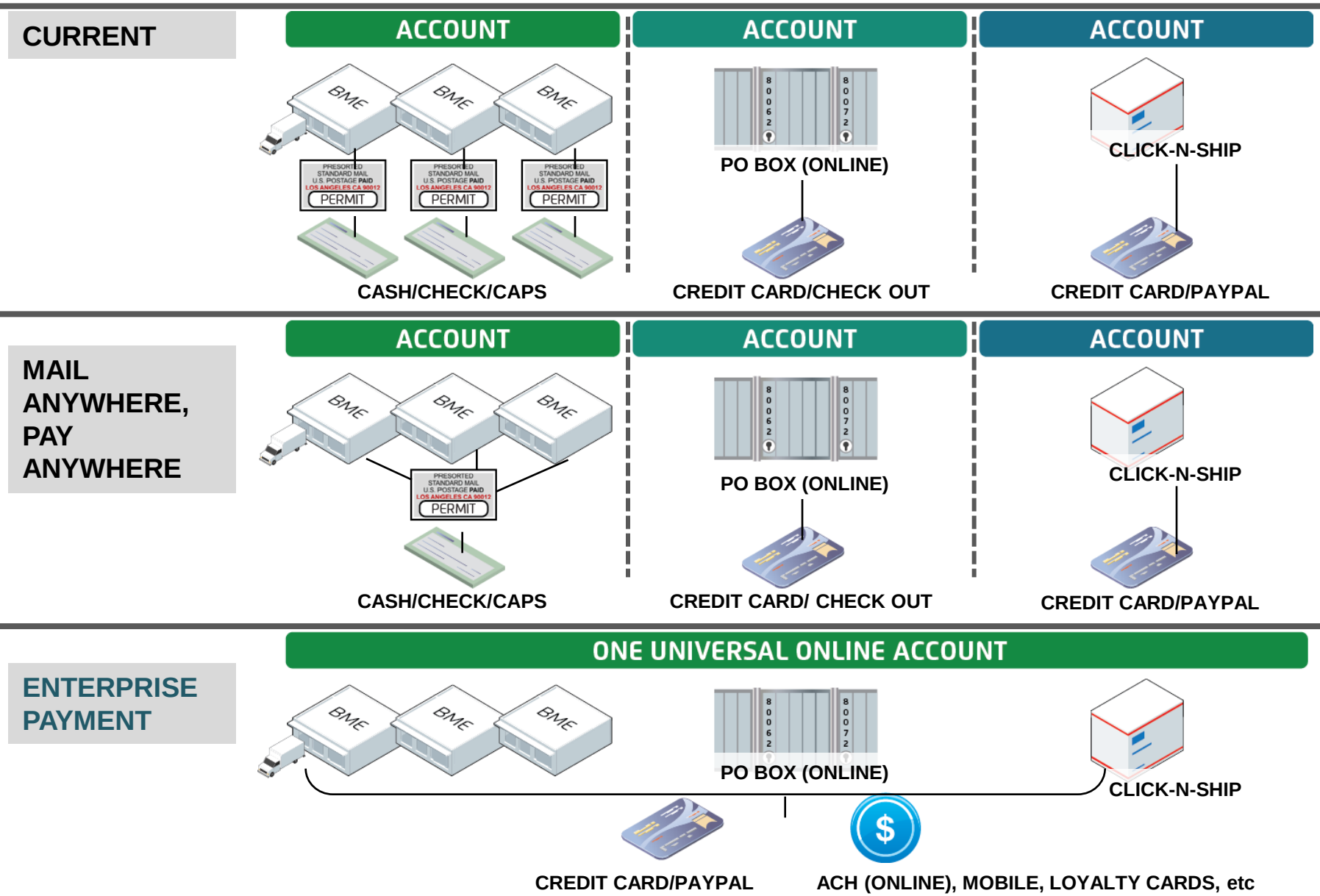



# Enables…

- Seamless Acceptance
- Revenue Assurance
- Revenue Reporting
  - Mail Owner, Mail Preparer ID
- Downstream Induction, Processing and Delivery Intelligence
- Asset Optimization

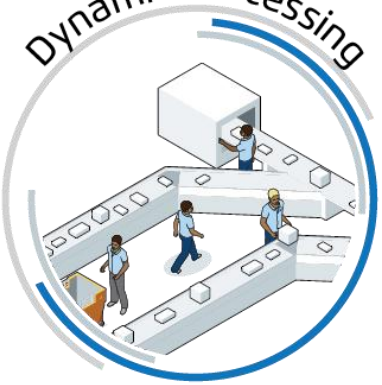
- Innovative Product Solutions
  - Incentives, Linkage of mail pieces to promotional images
  - Scan-based payment
  - Promotional calendar
  - ePostage
  - MetroPost

# Path to Enterprise Payment



# Process & Transport

Dynamic Processing



Next Gen Package Sorting

Sequencing of Letters & Flats

Physical Piece to Image

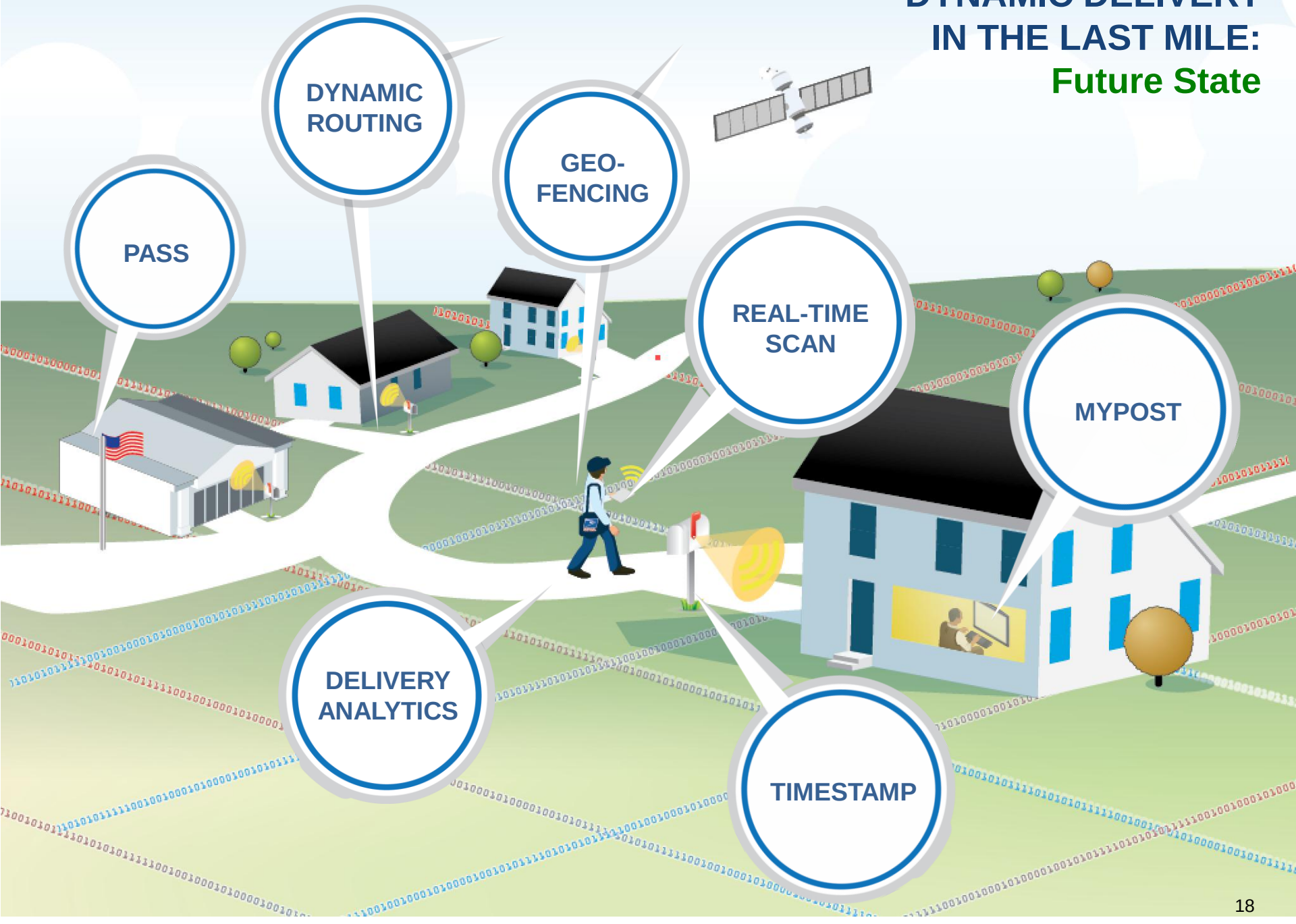
High Speed Flats Feeder

Informed Visibility

Transportation Visibility

# THE LAST MILE:
## Current State

# DYNAMIC DELIVERY IN THE LAST MILE:
## Future State



## Delivery Sortation System

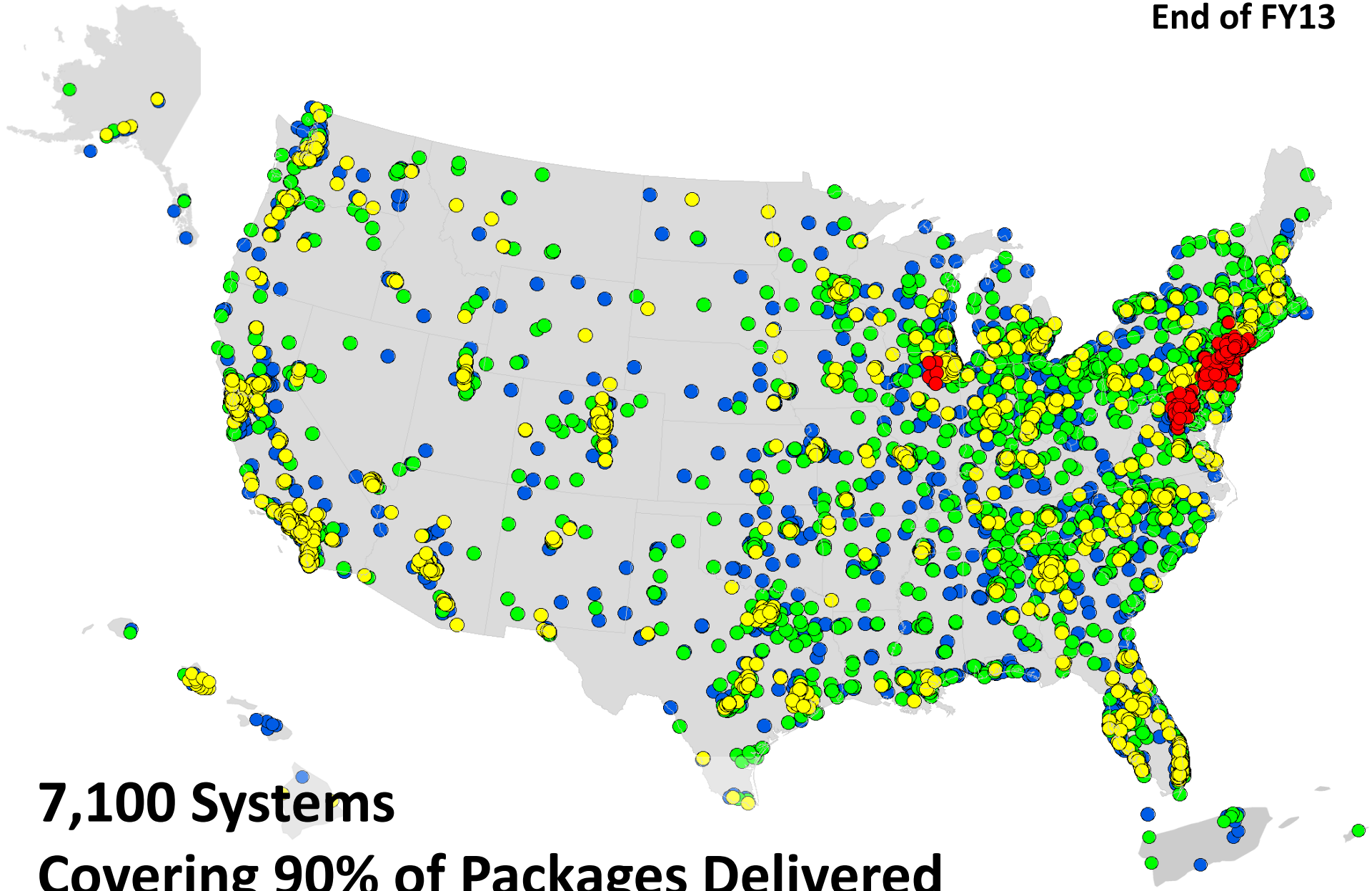
## PASS

## PASS Lite & DSS

# Total Planned Deployment – 22,150

# SCHEMELESS SORTATION

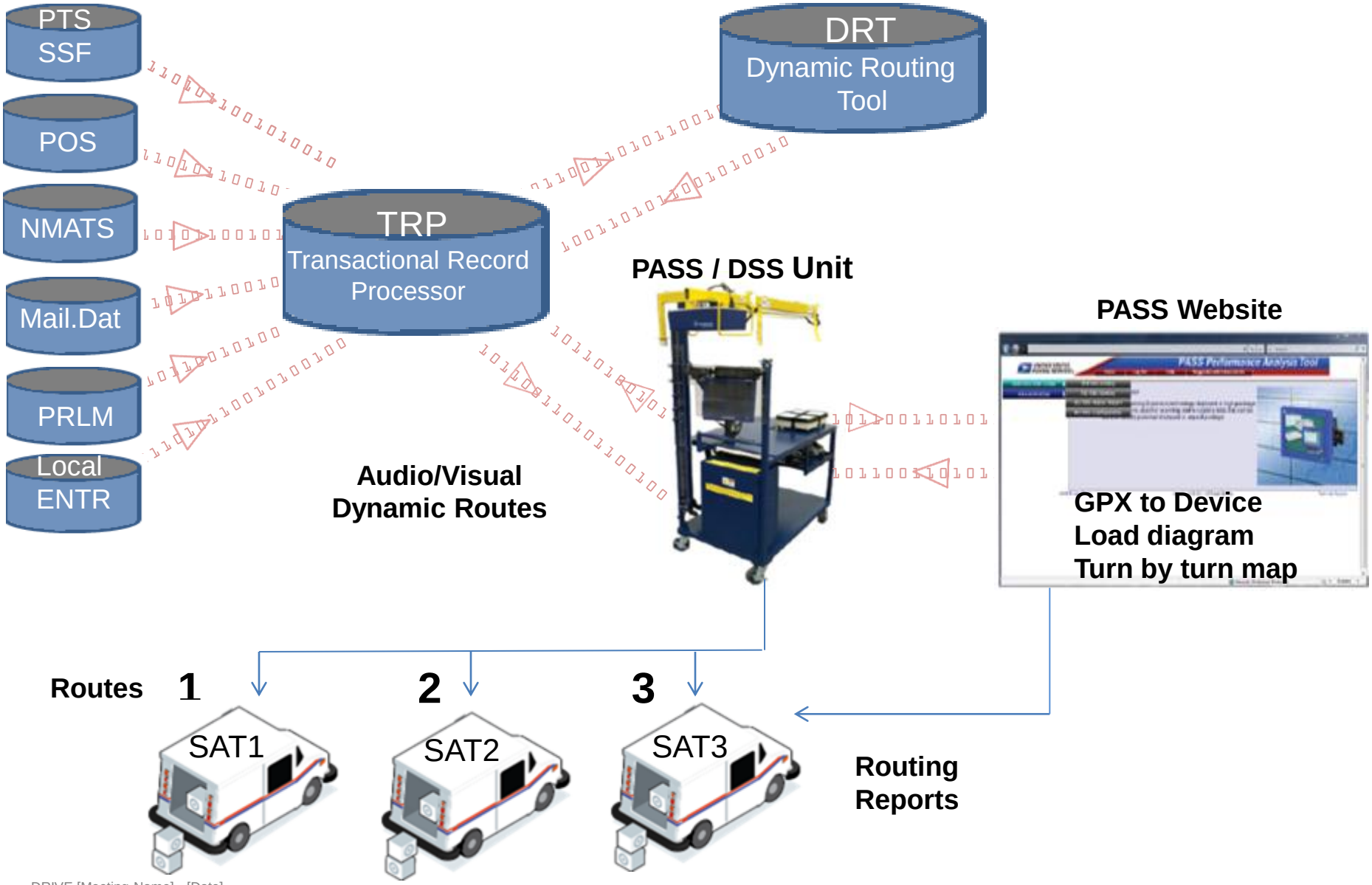
**End of FY13**



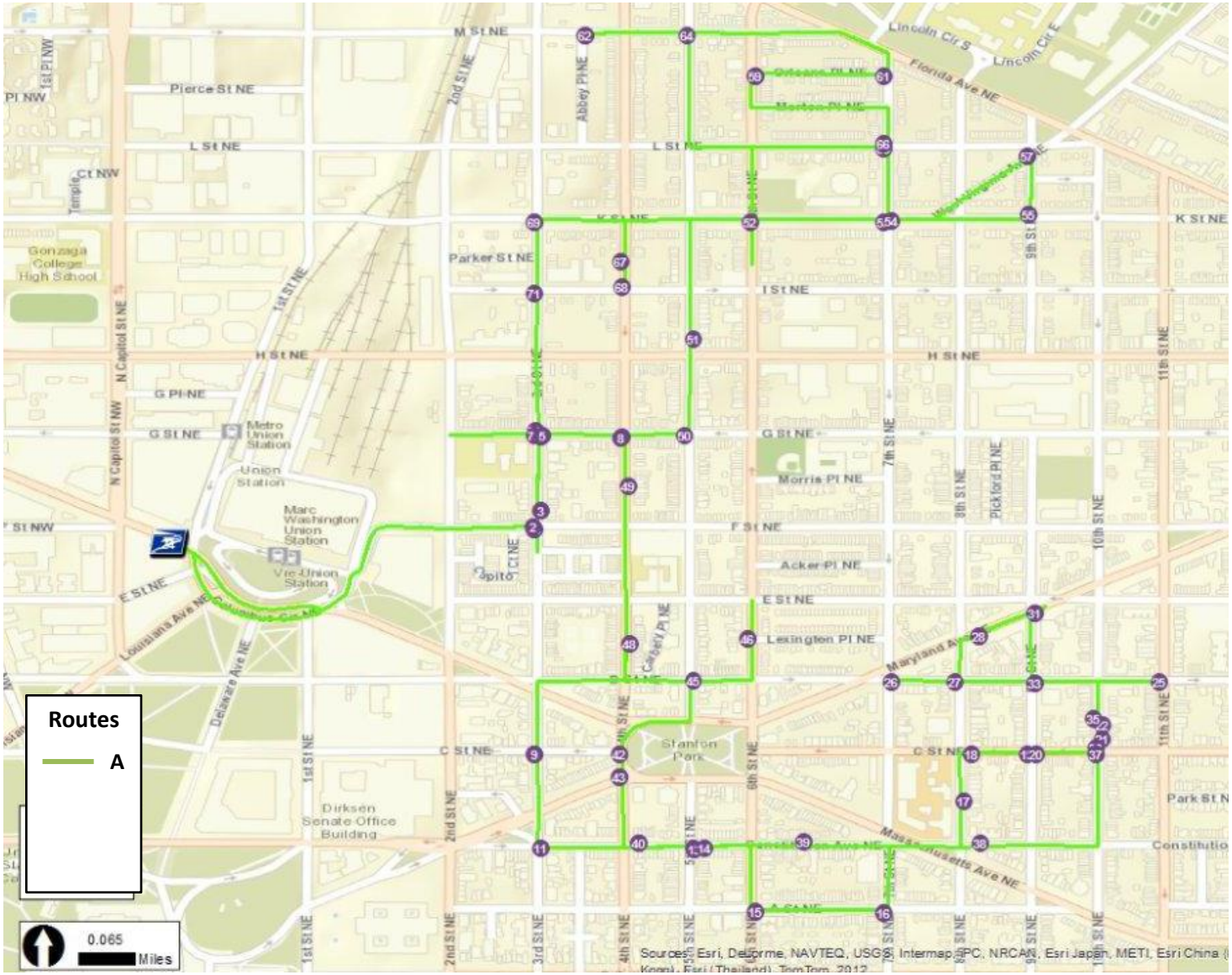
**7,100 Systems**

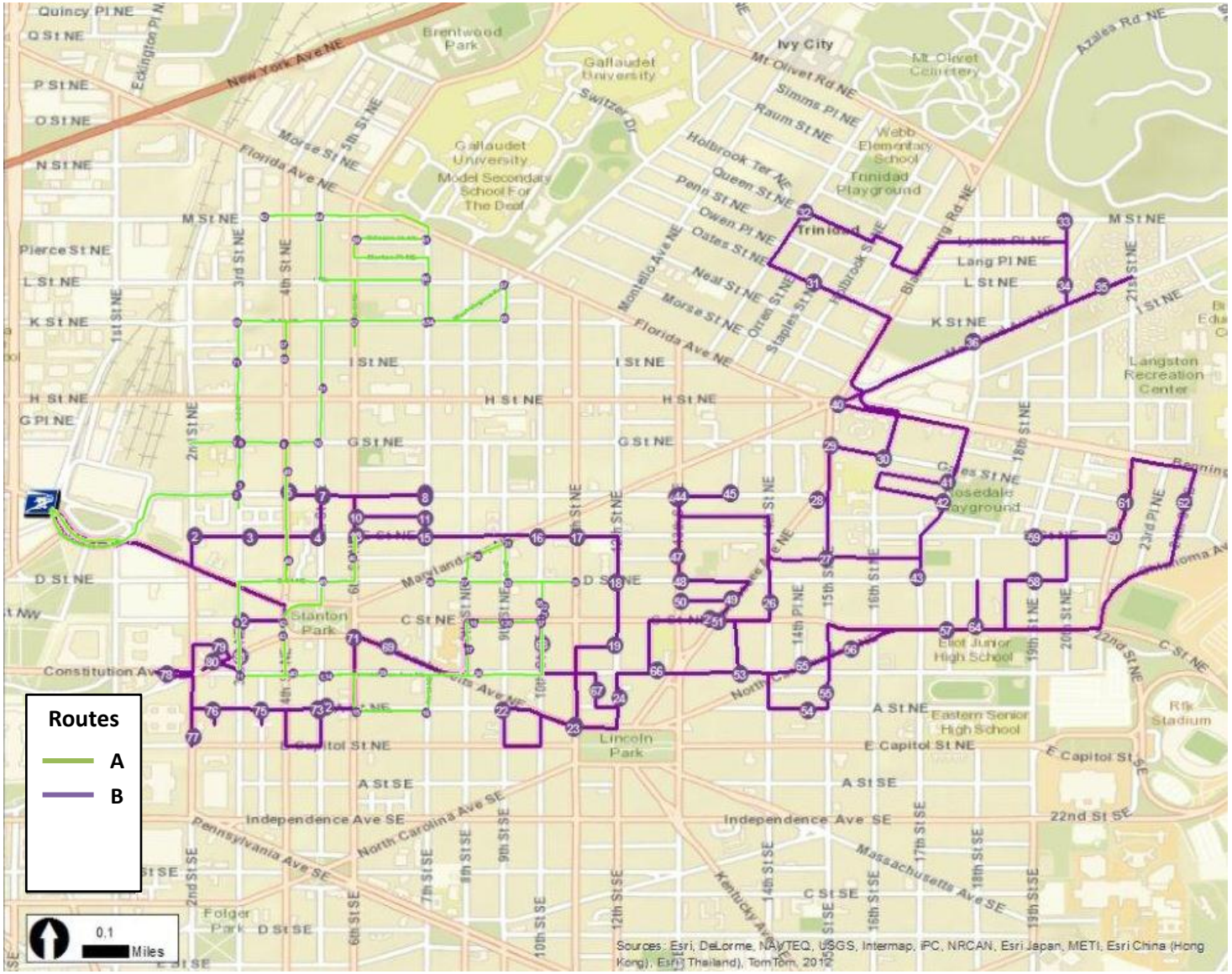
**Covering 90% of Packages Delivered**

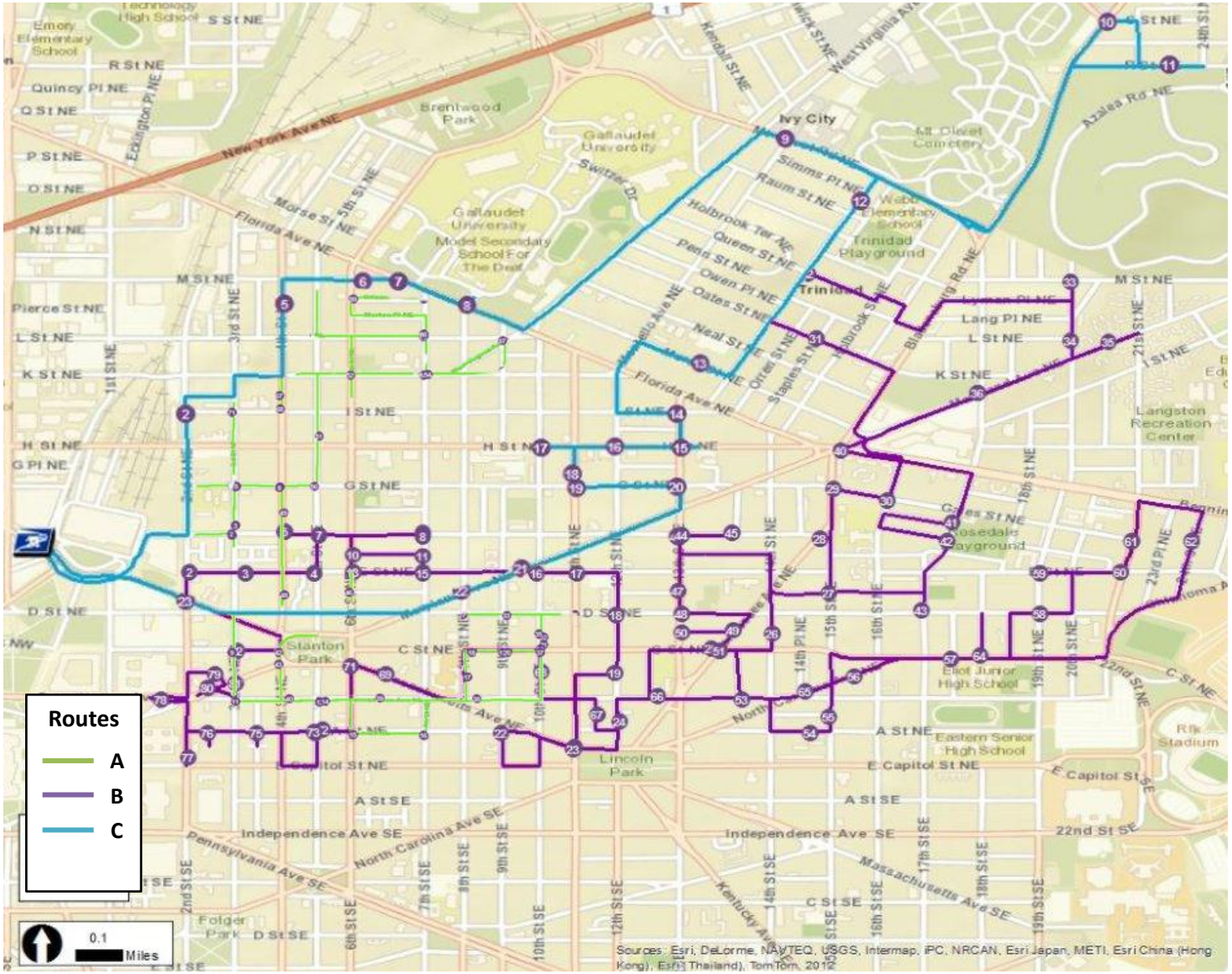
# Dynamic Routing Model



# Testing Dynamic Routing in Washington DC


Routes
A
0.065
Miles
M St NE
Pierce St NE
L St NE
Parker St NE
I St NE
H St NE
G Pl NE
G St NE
F St NE
Acker Pl NE
E St NE
Lexington Pl NE
C St NE
Gonzaga College High School
Metro Union Station
Union Station
Marc Washington Union Station
Vre Union Station
Dirksen Senate Office Building
Stanton Park
Morris Pl NE
Lincoln Cir S
Lincoln Cir E
Florida Ave NE
K St NE
Maryland Ave
Massachusetts Ave NE
Louisiana Ave NE
Delaware Ave NE
N Capitol St NE
1st St NE
2nd St NE
3rd St NE
4th St NE
6th St NE
7th St NE
8th St NE
9th St NE
10th St NE
11th St NE
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (


Routes
A
B
0.1
Miles
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012
Quincy Pl NE
Q St NE
P St NE
O St NE
N St NE
M St NE
Pierce St NE
L St NE
K St NE
I St NE
H St NE
G Pl NE
G St NE
D St NE
C St NE
A St NE
E Capitol St NE
A St SE
Independence Ave SE
C St SE
D St SE
New York Ave NE
Florida Ave NE
Morse St NE
Brentwood Park
Gallaudet University
Gallaudet University Model Secondary School For The Deaf
Ivy City
Mt Olivet Rd NE
Mt Olivet Cemetery
Simms Pl NE
Raum St NE
Webb Elementary School
Trinidad Playground
Holbrook Ter NE
Queen St NE
Penn St NE
Owen Pl NE
Oates St NE
Neal St NE
Morse St NE
Trinidad
Lang Pl NE
Langston Recreation Center
Rosedale Playground
Stanton Park
Constitution Ave
Lincoln Park
Eliot Junior High School
Eastern Senior High School
Rfk Stadium
Folger Park
Pennsylvania Ave SE
North Carolina Ave SE
Massachusetts Ave SE
Kentucky Ave SE
22nd St SE
E Capitol St SE
Azales Rd NE
Switzer Dr
Montello Ave NE
Orren St NE
Staples St NE
Holbrook St NE
Blackburn Rd NE
Lyman Pl NE
Eckington Pl NE
1st St NE
2nd St NE
3rd St NE
4th St NE
5th St NE
6th St NE
7th St NE
8th St NE
9th St NE
10th St NE
12th St NE
14th St NE
15th St NE
16th St NE
17th St NE
18th St NE
19th St NE
20th St NE
21st St NE
22nd St NE
23rd Pl NE
Maryland Ave NE
North Carolina Ave NE
Kentucky Ave NE
Massachusetts Ave SE
Pennsylvania Ave SE
Independence Ave SE
Florida Ave NE
Morse St NE
Oates St NE
Gales St NE
Benning
Oklahoma Av


Routes
A
B
C
0.1
Miles
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012
New York Ave NE
Florida Ave NE
Ivy City
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Massachusetts Ave SE
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A St NE
A St SE
C St NE
C St SE
D St NE
D St SE
G St NE
H St NE
I St NE
K St NE
L St NE
M St NE
N St NE
O St NE
P St NE
Q St NE
R St NE
S St NE
Quincy Pl NE
Pierce St NE
Morse St NE
Holbrook Ter NE
Queen St NE
Penn St NE
Owen Pl NE
Oates St NE
Neal St NE
Simms Pl NE
Raum St NE
Lang Pl NE
Azalea Rd NE
Kendall St NE
West Virginia Ave
Eckington Pl NE
Switzer Dr
Orren St NE
Staples St NE
Holbrook St NE
Blackburn Rd NE
Gales St NE
Eastern Ave NE
Kenilworth Ave NE
Bennin
Oklahoma Ave
Emory Elementary School
Technology High School
Mt Olivet Cemetery
1st St NE
3rd St NE
5th St NE
6th St NE
7th St NE
8th St NE
9th St NE
10th St NE
12th St NE
14th St NE
15th St NE
16th St NE
17th St NE
18th St NE
19th St NE
20th St NE
21st St NE
22nd St NE
23rd Pl NE
24th St NE
2nd St SE
6th St SE
7th St SE
8th St SE
9th St SE
10th St SE
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14th St SE
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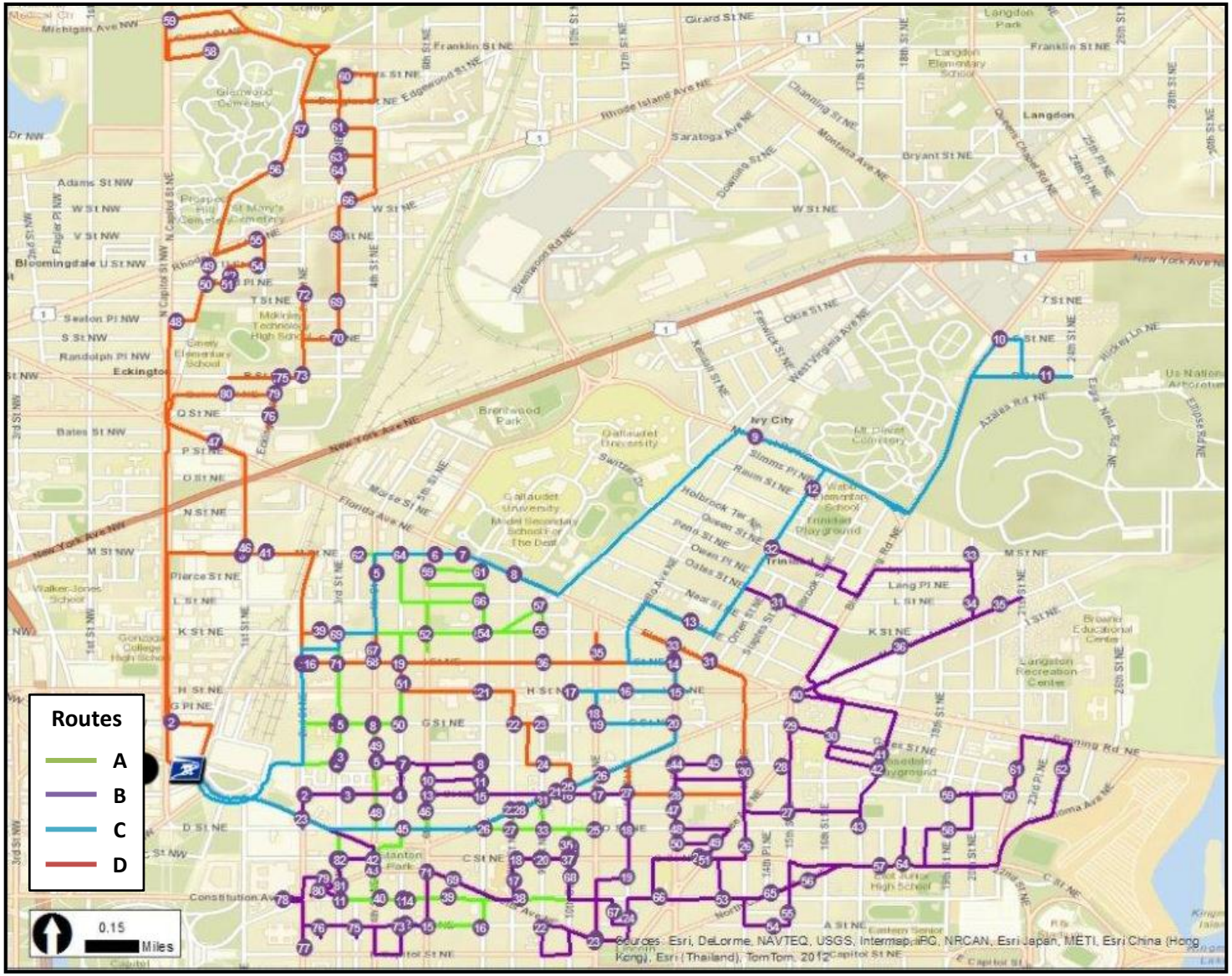
16th St SE
17th St SE
18th St SE
19th St SE
22nd St SE
24th St SE

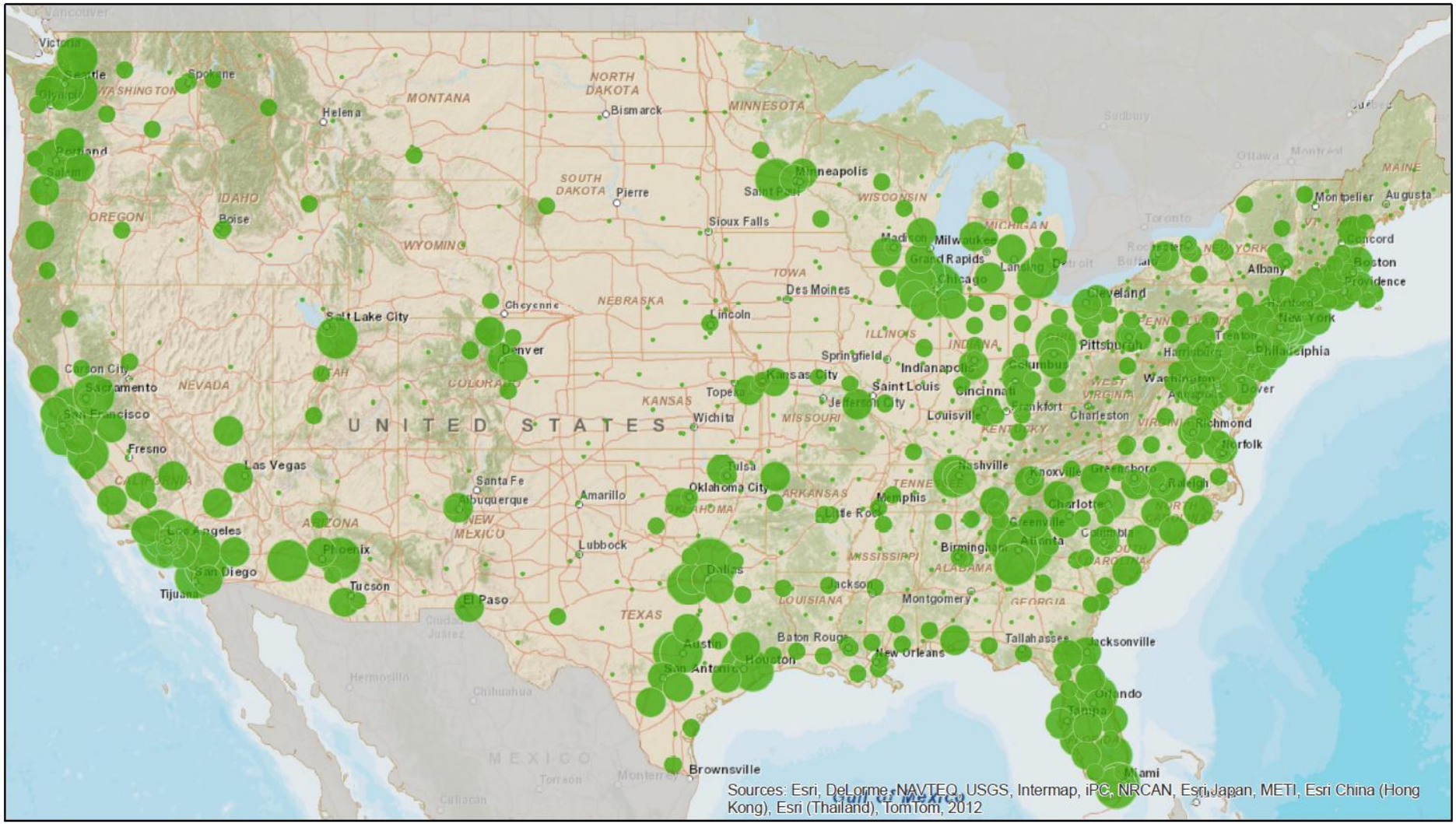

Routes
A
B
C
D
0.15
Miles
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012

LLV Segments
for Mail
Loading
A
B
C
D
E
F
G
H

# REAL-TIME SCANNING

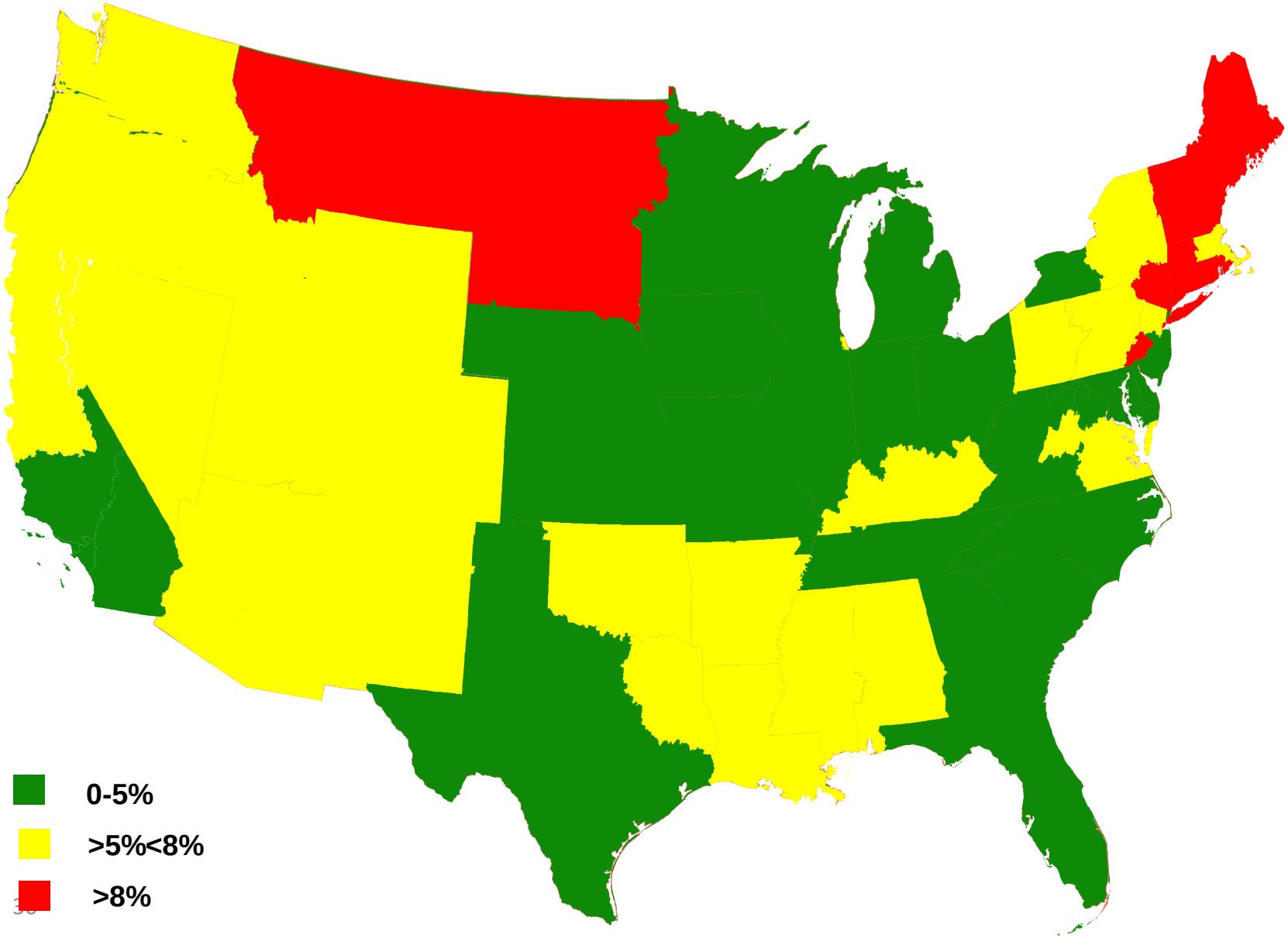
- **Provides real-time communications and GPS**
- **Wireless tether for existing IMD to minimize cost**
- **Reduce posting of data from 5 hours to 20 minutes**

# REAL-TIME COVERAGE
# PQ3 FY13

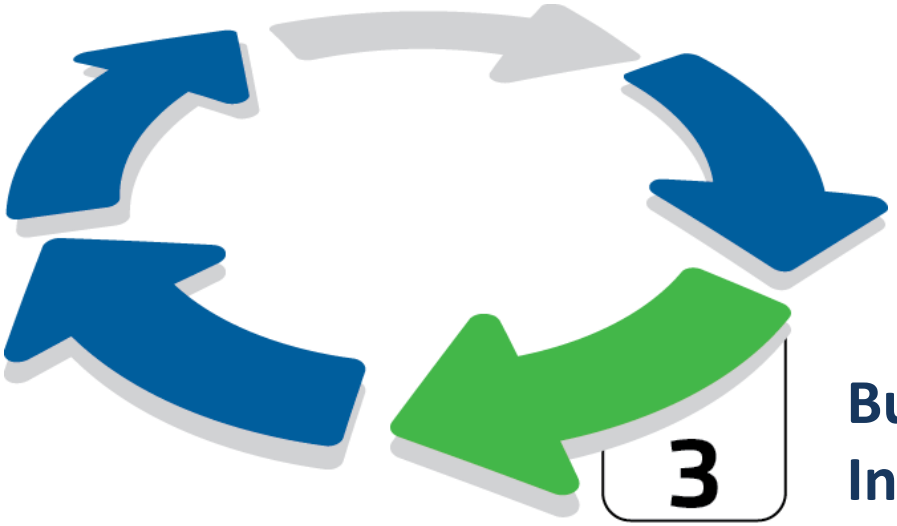



240 Miles

# Percentage of Deliveries not made on First Attempt



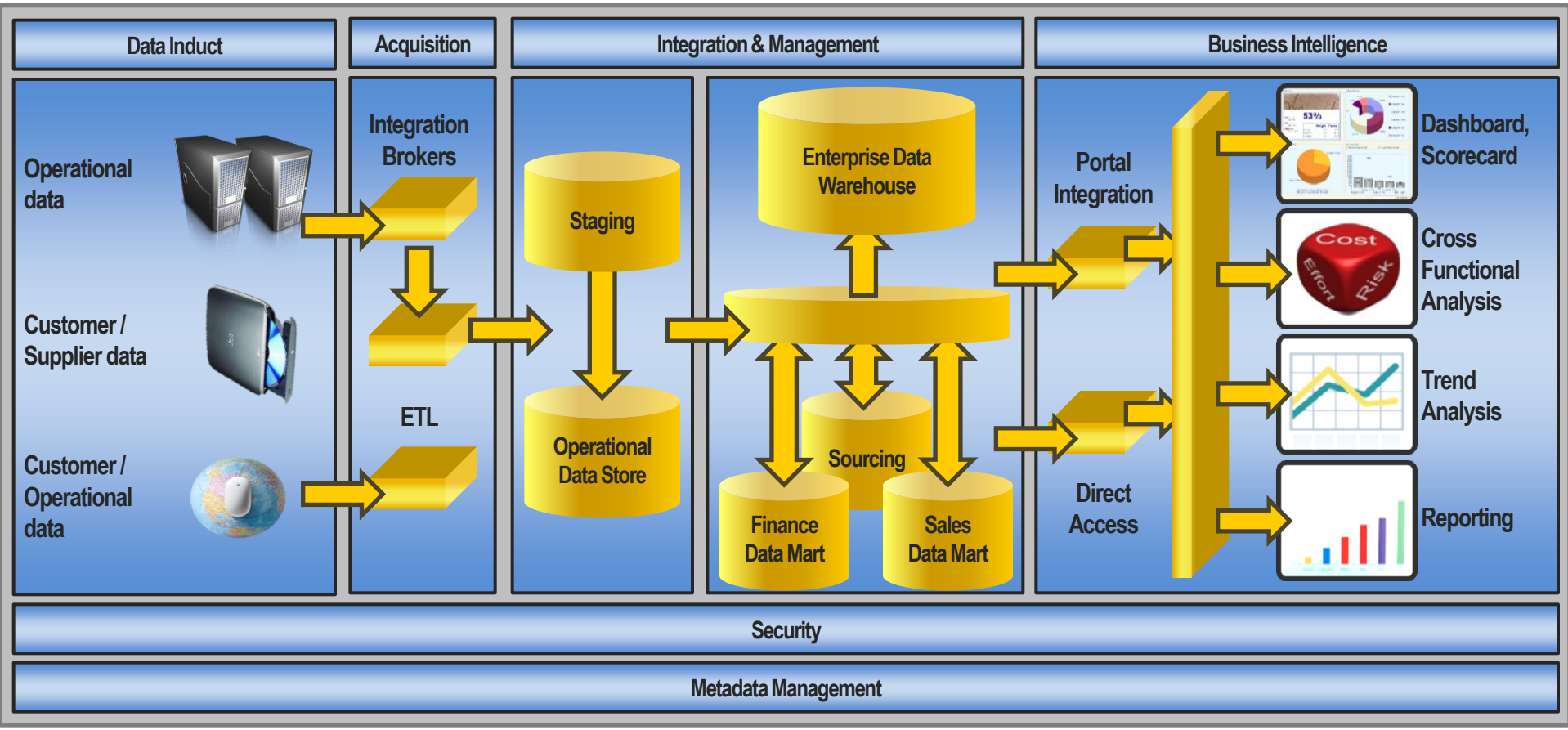
# PARCEL LOCKERS

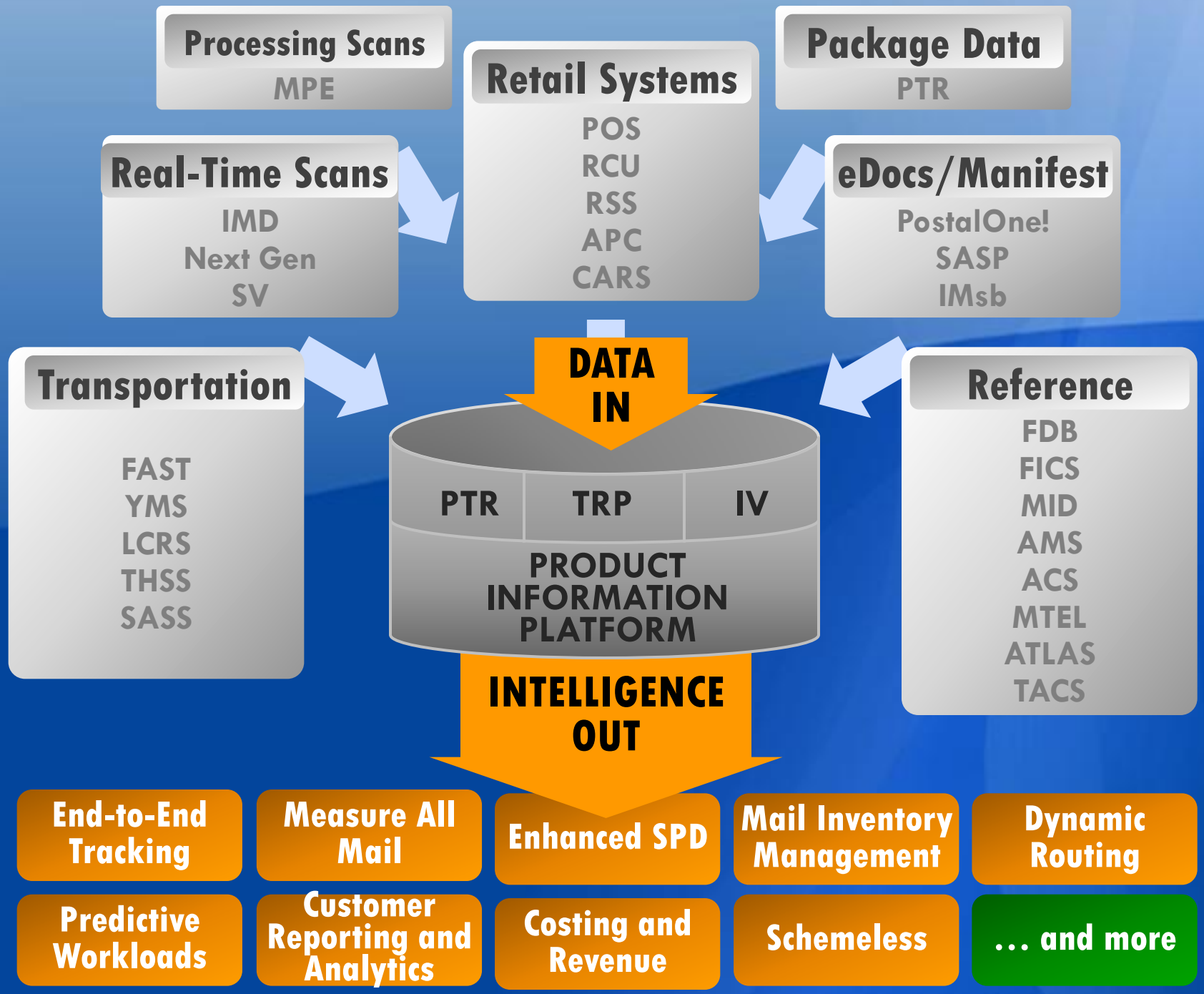



**Business Intelligence**

# Business Intelligence

***is simply turning data into information and information into knowledge***




Processing Scans
MPE
Retail Systems
POS
RCU
RSS
APC
CARS
Package Data
PTR
Real-Time Scans
IMD
Next Gen
SV
eDocs/Manifest
PostalOne!
SASP
IMsb
Transportation
FAST
YMS
LCRS
THSS
SASS
DATA IN
PTR
TRP
IV
PRODUCT INFORMATION PLATFORM
Reference
FDB
FICS
MID
AMS
ACS
MTEL
ATLAS
TACS
INTELLIGENCE OUT
End-to-End Tracking
Measure All Mail
Enhanced SPD
Mail Inventory Management
Dynamic Routing
Predictive Workloads
Customer Reporting and Analytics
Costing and Revenue
Schemeless
… and more

# Mail Analytics

New!

# Internal Diagnostics

## FSS Analytics
## Last Mile Analytics
## Day of the Week Analytics

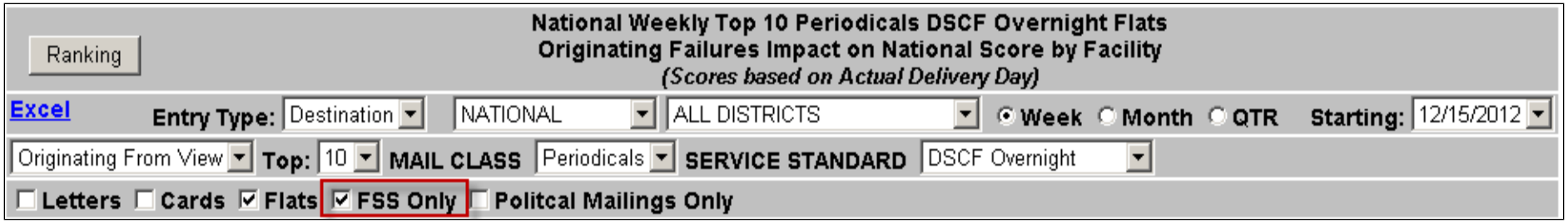
- FSS Cycle Time  - Released on Jan 8th

- FSS in Report Lookups
  - Drill to FSS in Failed Pieces

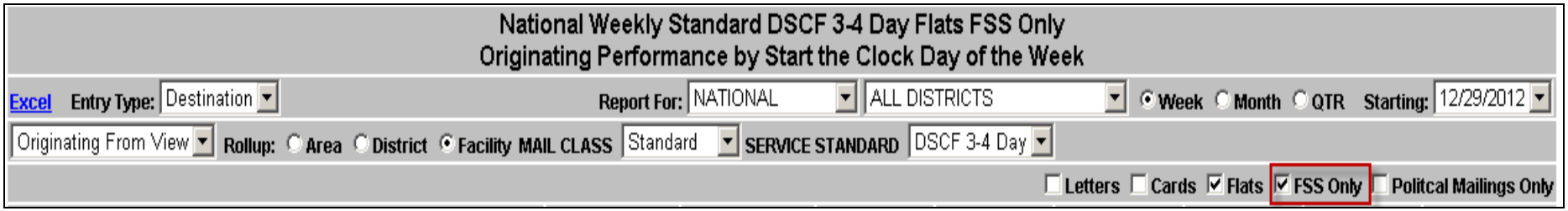
# FSS Option on Key Reports

- **Scorecard**

- **Top 10 Impacts**



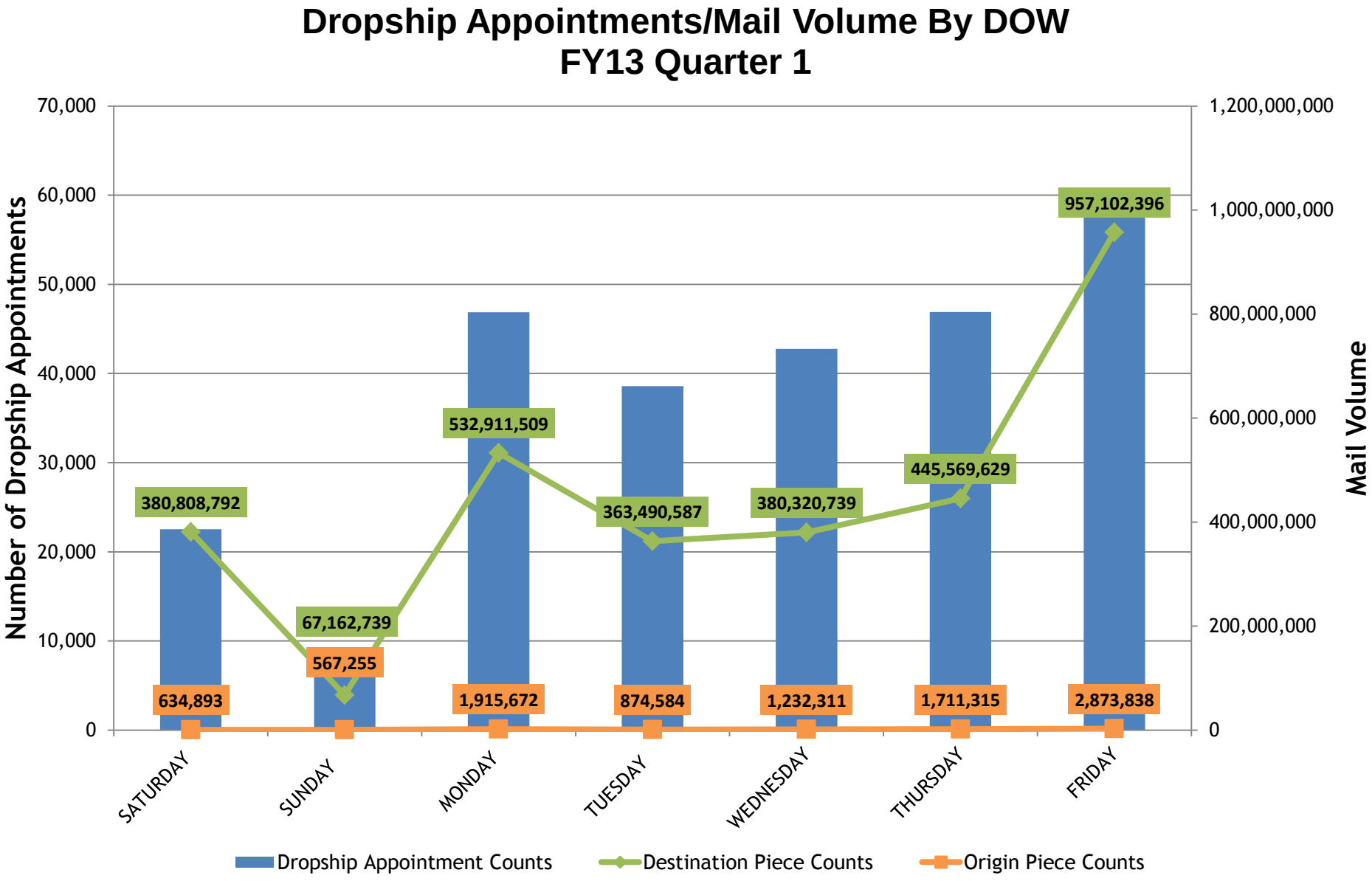

- **DOW Analysis**



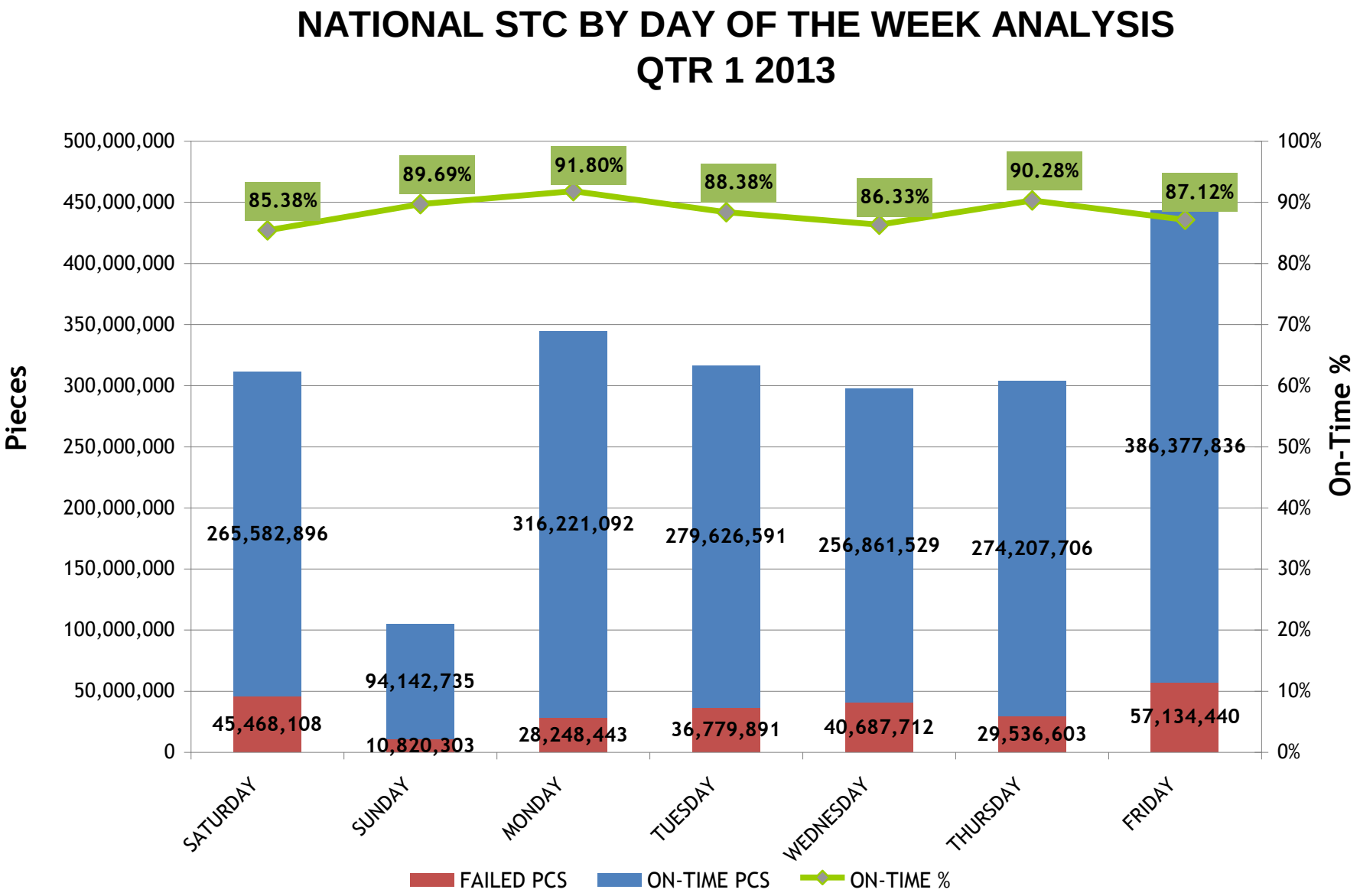
# Last Mile Analytics

- Bundle nesting from APPS
- Postal MTEL placard arrival-at-unit scans
- Post Office bundle scans
- Analysis by:
  - Shape/Class
  - Mail flow
  - Delivery type

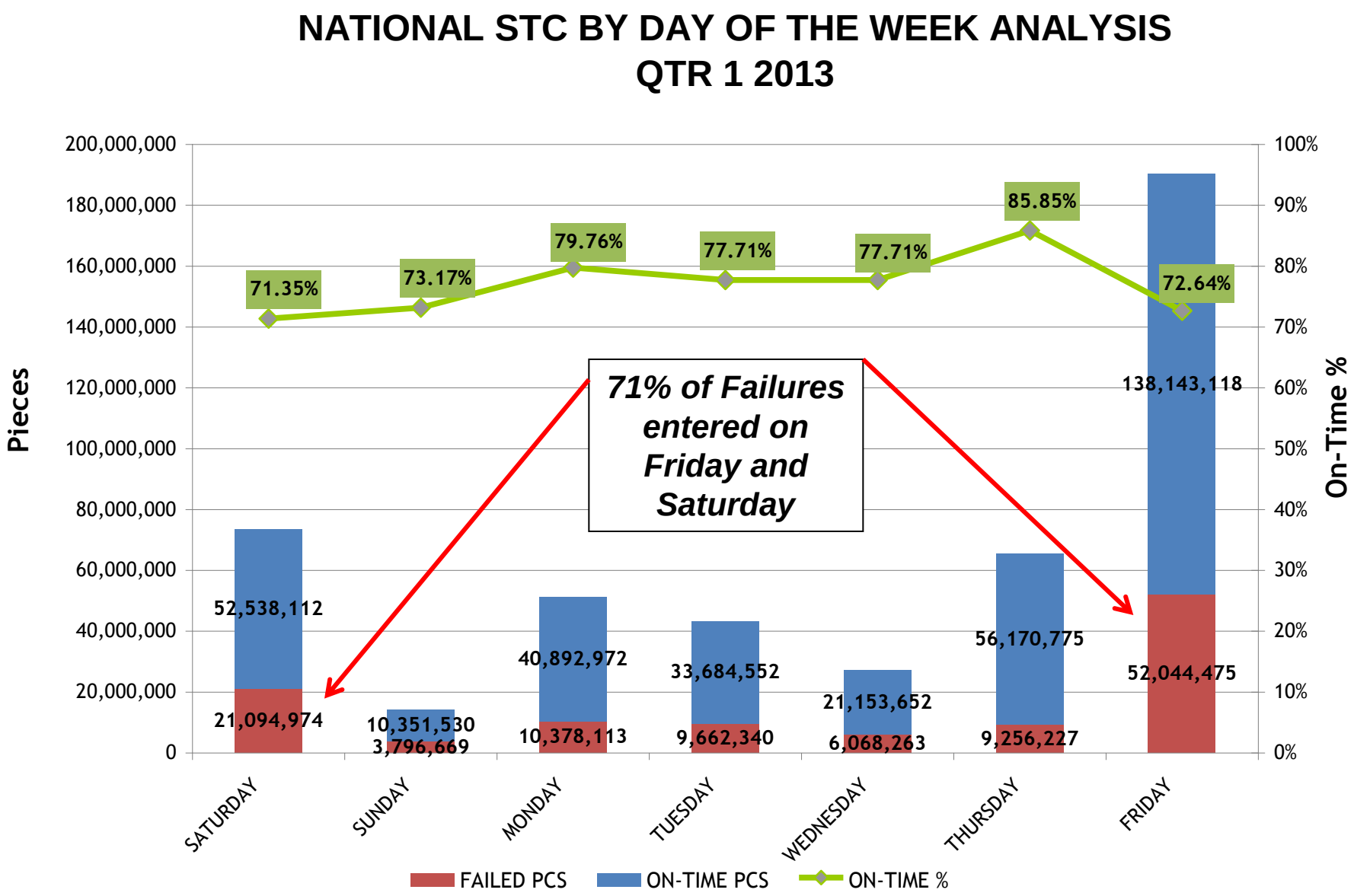
# *Full Service Intelligent Mail*
# *All Commercial Mail Classes & Shapes*



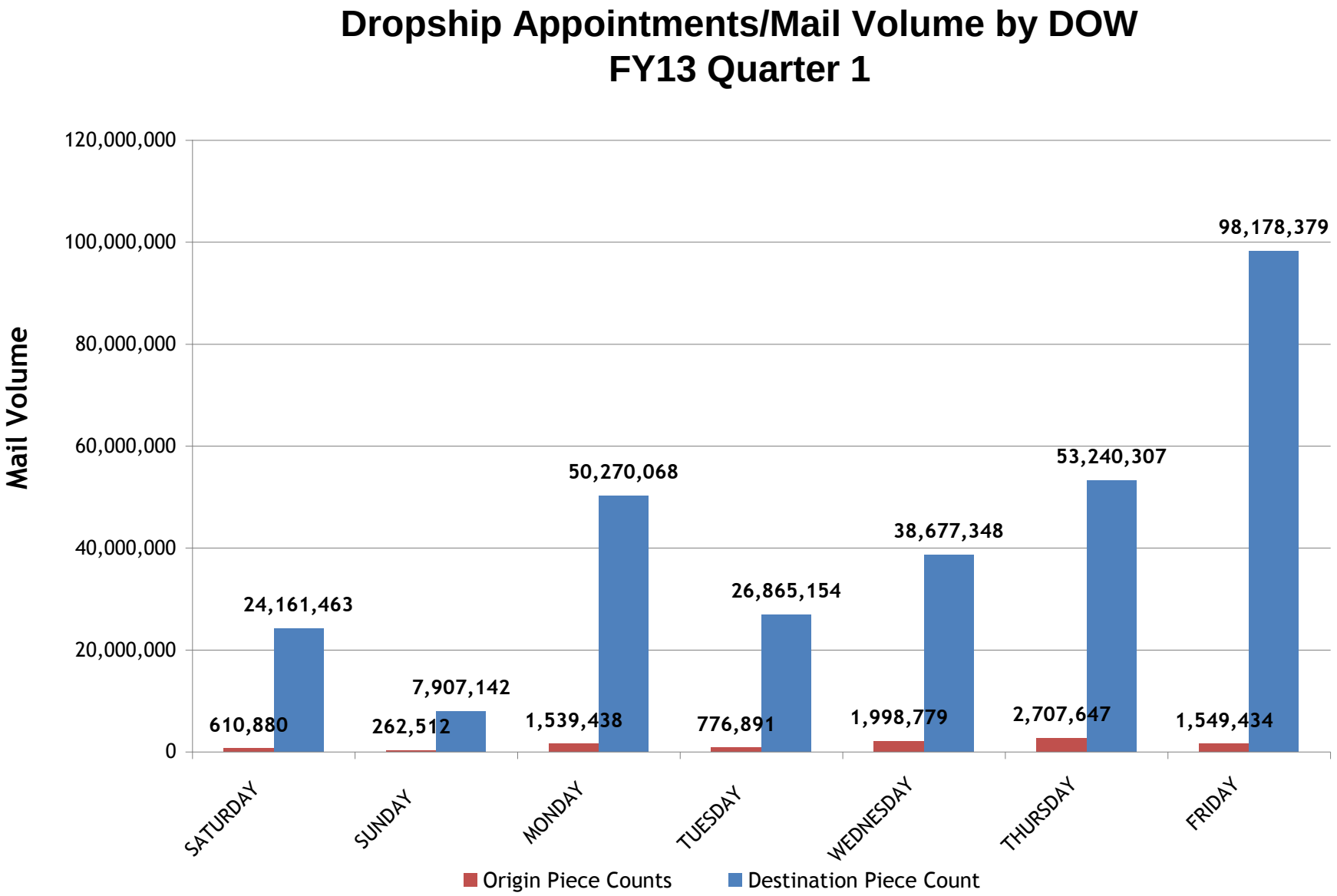
# *Standard Letters - SCF*



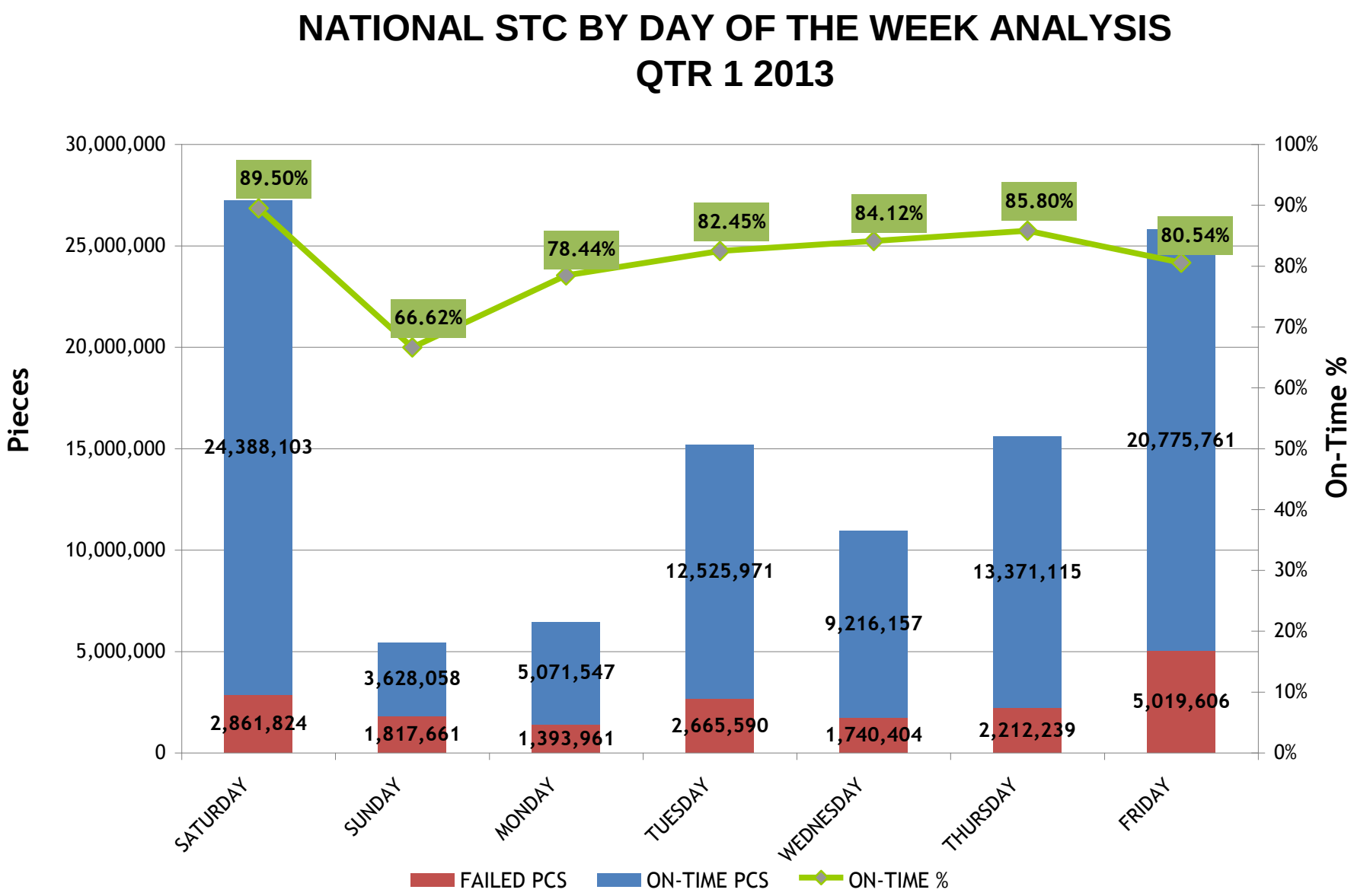
# *Standard Flats - SCF*



# *Periodicals Flats - SCF*

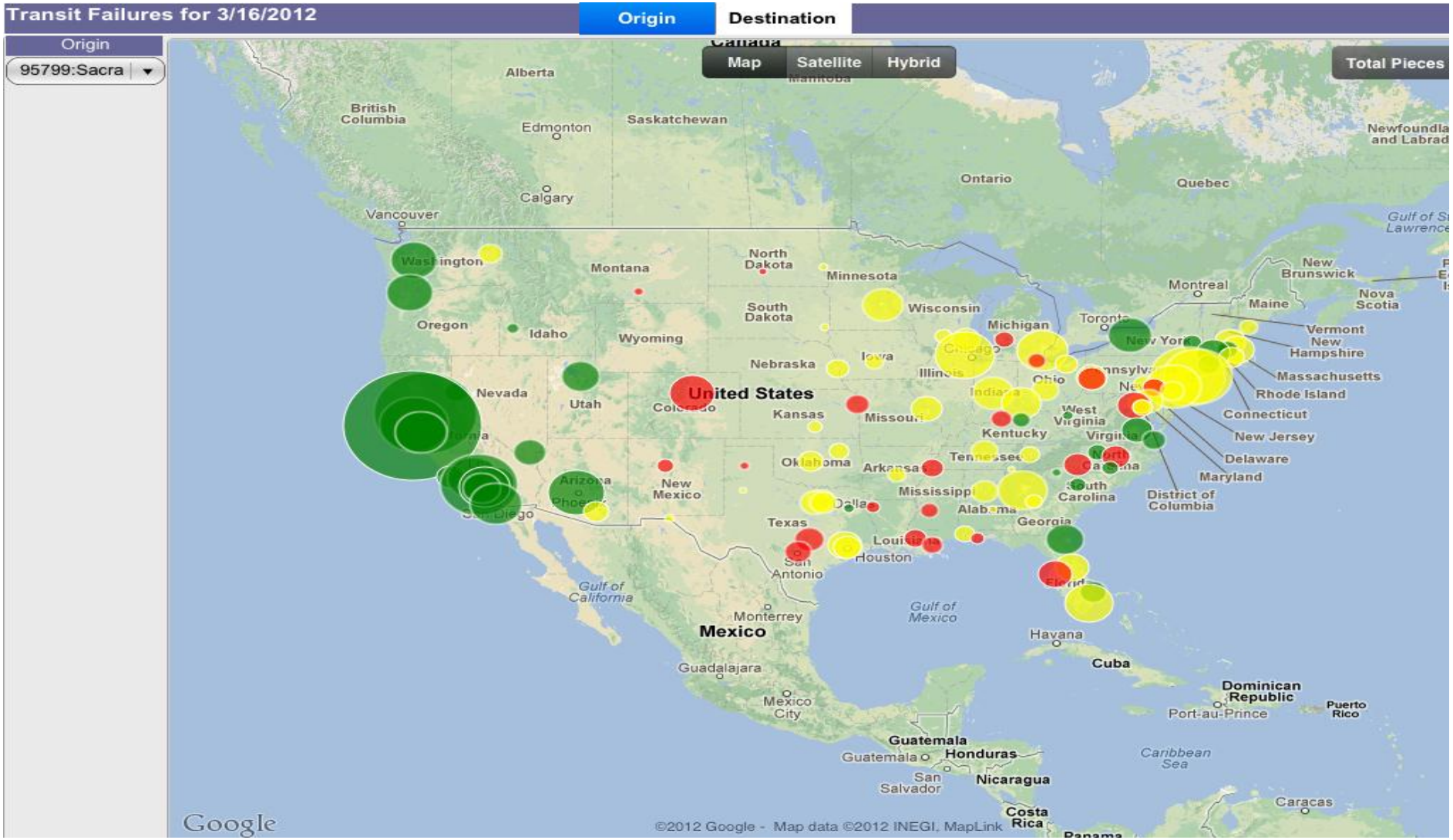


# *Periodicals Flats - SCF*



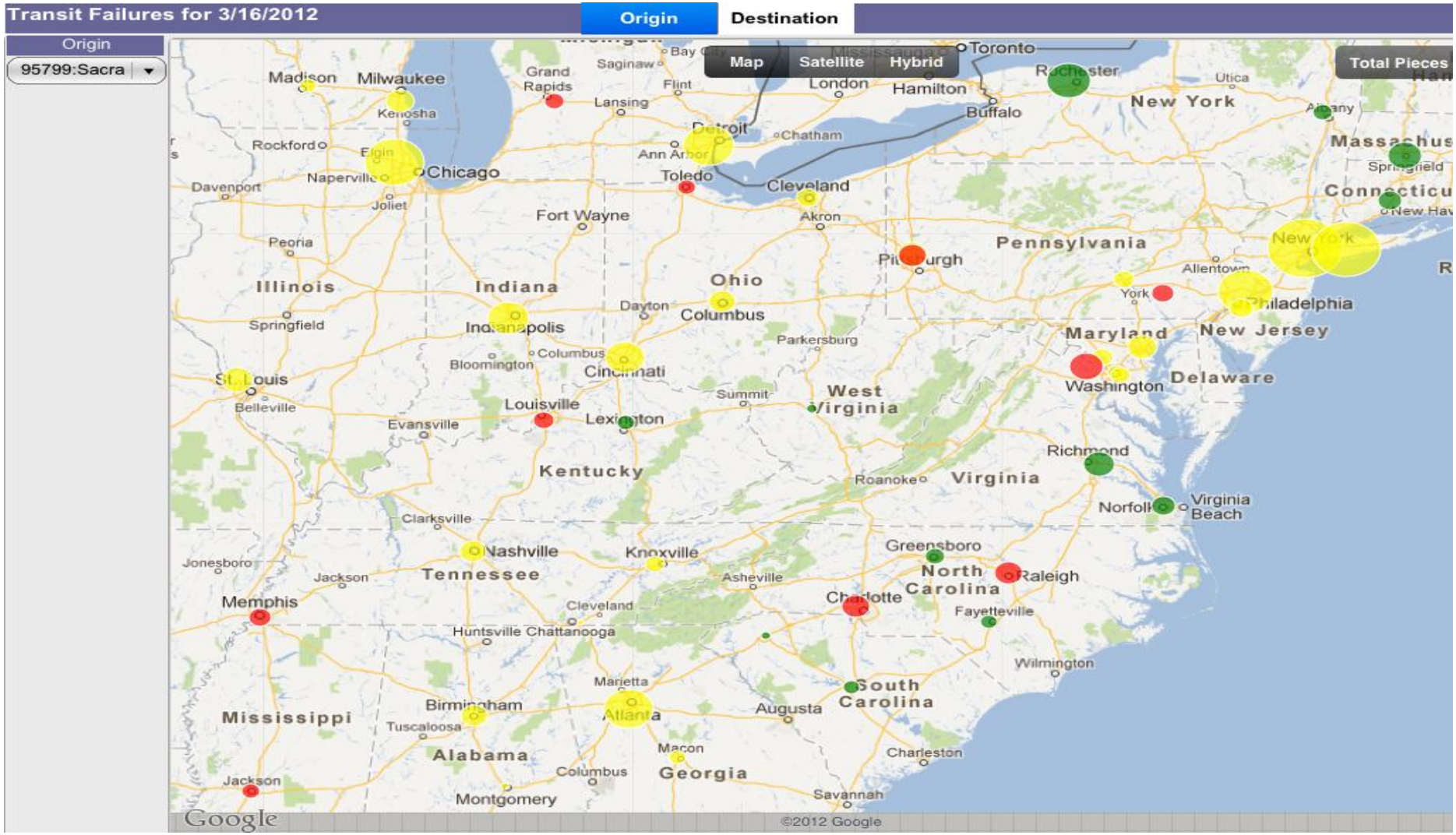
# Package Analytics

# Originating and Destinating Pairs



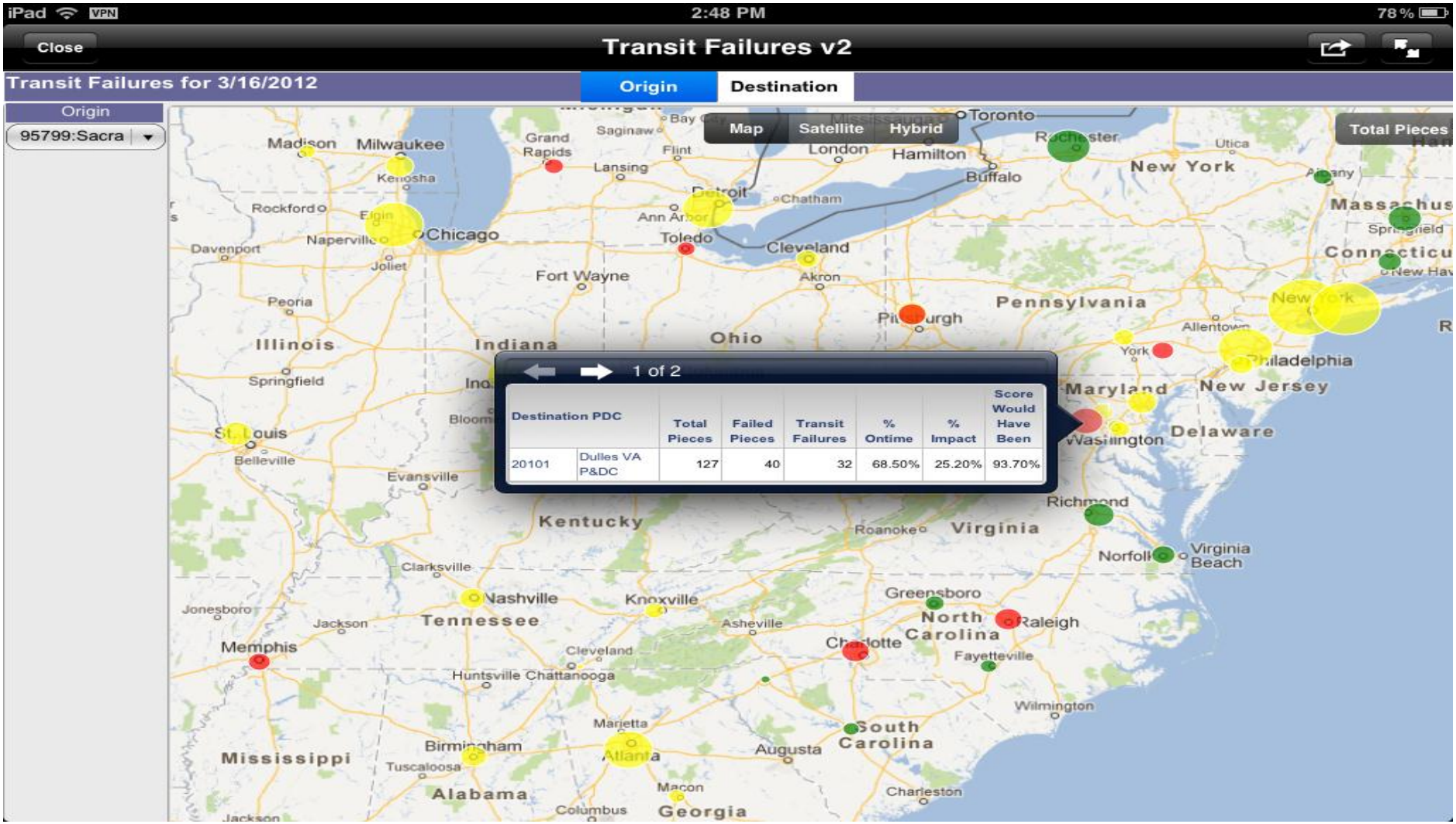

*- Selected Origin of Sacramento and displayed Destinations*

# Originating and Destinating Pairs

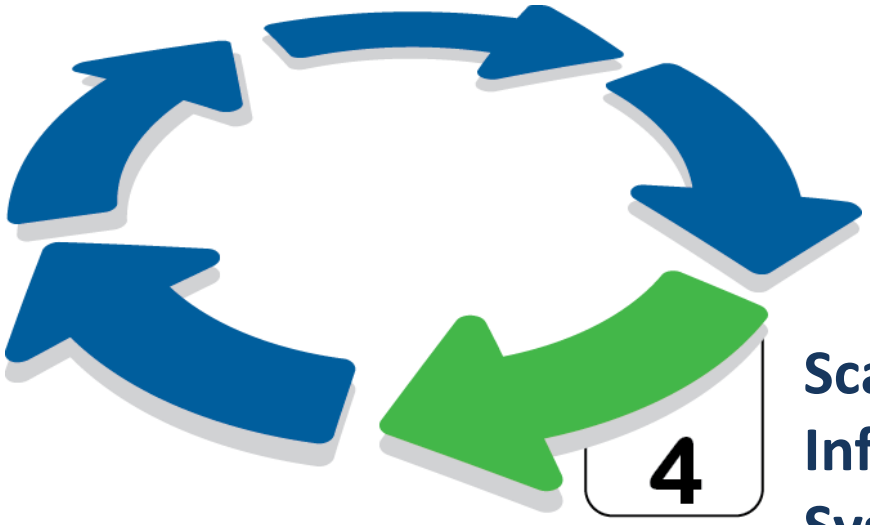



*- Zoomed in to view east coast locations*

# Originating and Destinating Pairs




*- Clicked on Dulles VA P&DC to view all information*




**Scalable Infrastructure & System Reliability**

# IT Empowers the Business Platform

**Develop Complex and Rapidly Evolving Postal Service Solutions**

100% Visibility

100% IMb

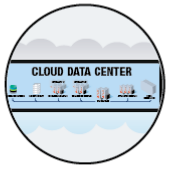
GPS Data Collection

Dynamic Routing

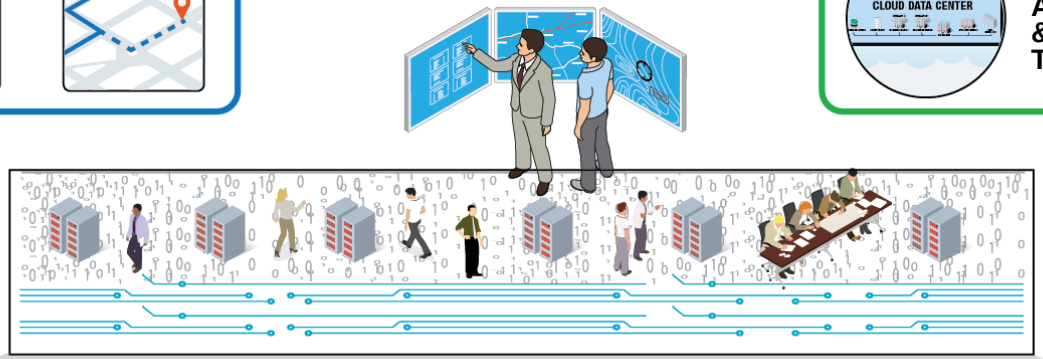
**Innovative Business Initiatives Drives Extreme IT Performance**

99.999% Uptime

Streaming Data




New Architectures & Technologies



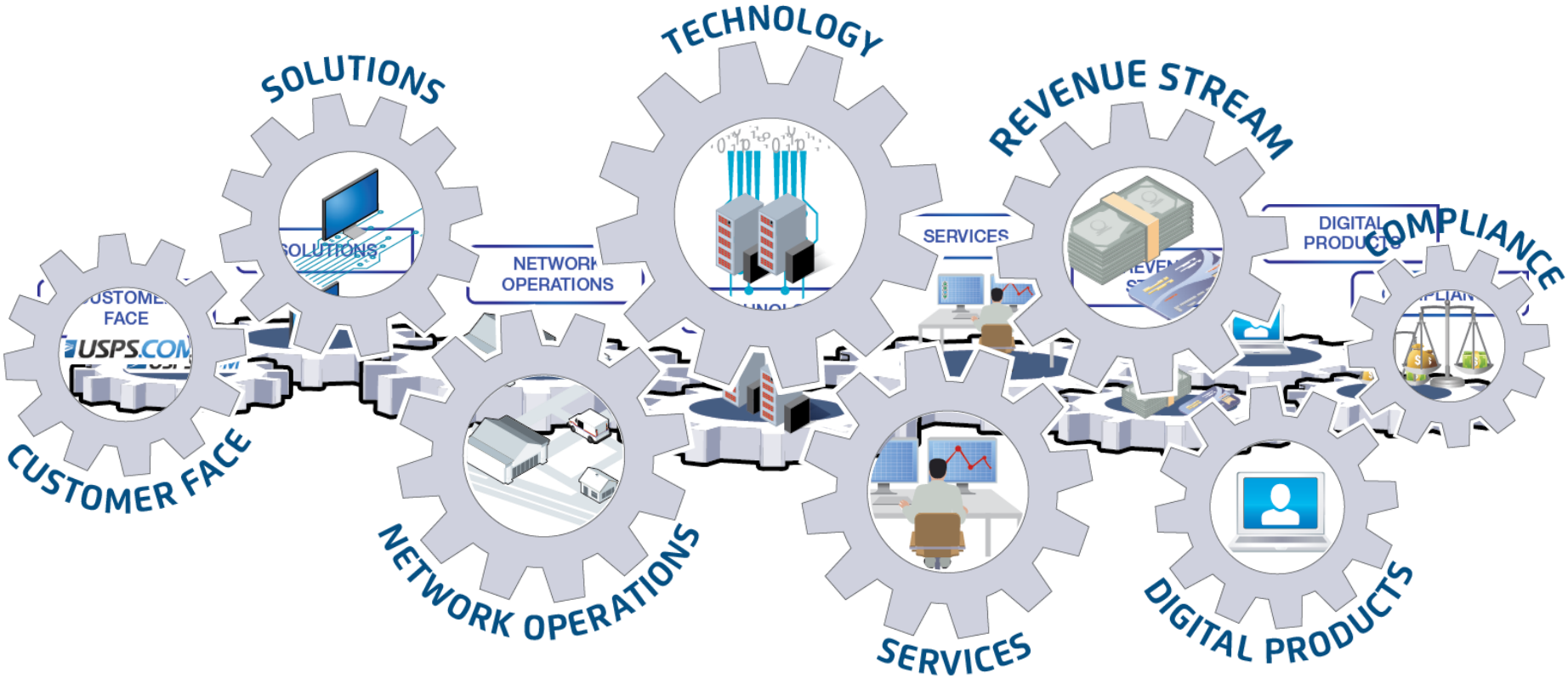
System Stability

Expanding Network Infrastructure

IT Systems Mgmt.

**Extend the Infrastructure**

# IT Empowers the Business Platform




**CUSTOMER FACING**
- USPS.com
- PostalOne!
- PTS
- Service Desk

**SOLUTIONS**
- PostalOne!
- SASP
- BIDS
- FAST, PTS
- *Informed Vis*

**NETWORK OPERATIONS**
- Moving the mail
- Service Measurement
- Operational Mgmt

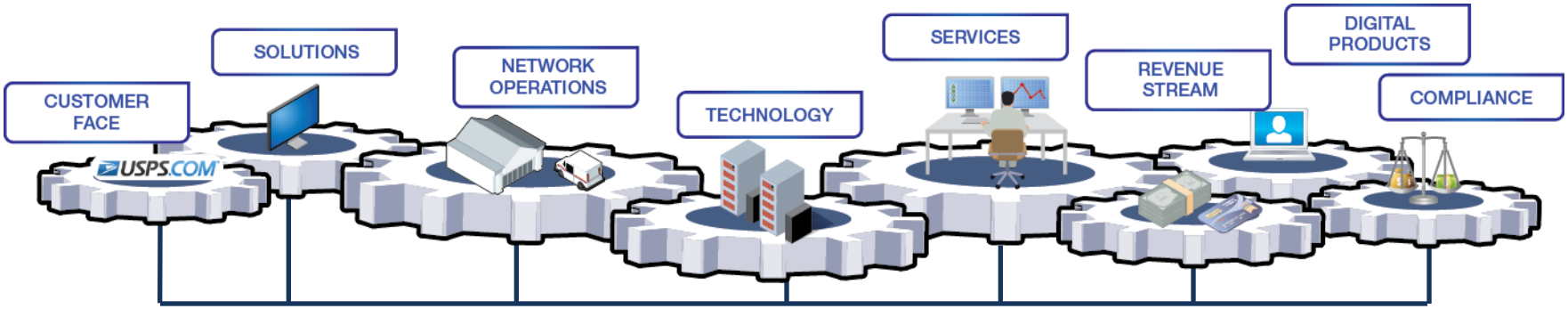
**TECHNOLOGY**
- Platforms
- Storage
- Enabling Software
- Network
- Desktop
- Mobile

**SERVICES**
- 24x7 Operations
- Systems Management
- Service Desk

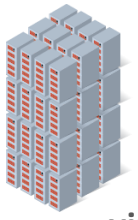
**REVENUE STREAM**
- PostalOne!
- USPS.com
- Financial Mgmt

**COMPLIANCE**
- PCI
- SOX
- Regulatory Compliance
- IT Security

# Complexity and Scale




Enhancements to over
**200**
IT SOLUTIONS



Patching
**8000+**
SERVERS,
physical and virtual for bug fixes, Security updates

**CAPACITY GROWTH**
meet unexpected, evolving new business requirements, i.e. BIDS increase from
**10 TB to 120 TB**

Hardware refreshes for
**2000+**
SERVERS, STORAGE, NETWORK, BACKUP DEVICES

**4**
MAJOR FULL SERVICE RELEASES
Hundreds of significant changes

Version Updates for
**2000+**
DATABASES

Enable Security
**250,000+**
Servers, Network Points

**200+**
Software products with thousands of installations

# Evolving the Infrastructure: 3 Strategies

1

**Extending Network Capacity & Operations**

2

**99.999% Continuous Uptime:**
Major mailers, industry partners and general public expect systems available
ALL THE TIME

3

**Real Time 'Streaming Data' and Big Data:**
new business goals drive major technology, operational and management changes

**New Technologies/Architectures**

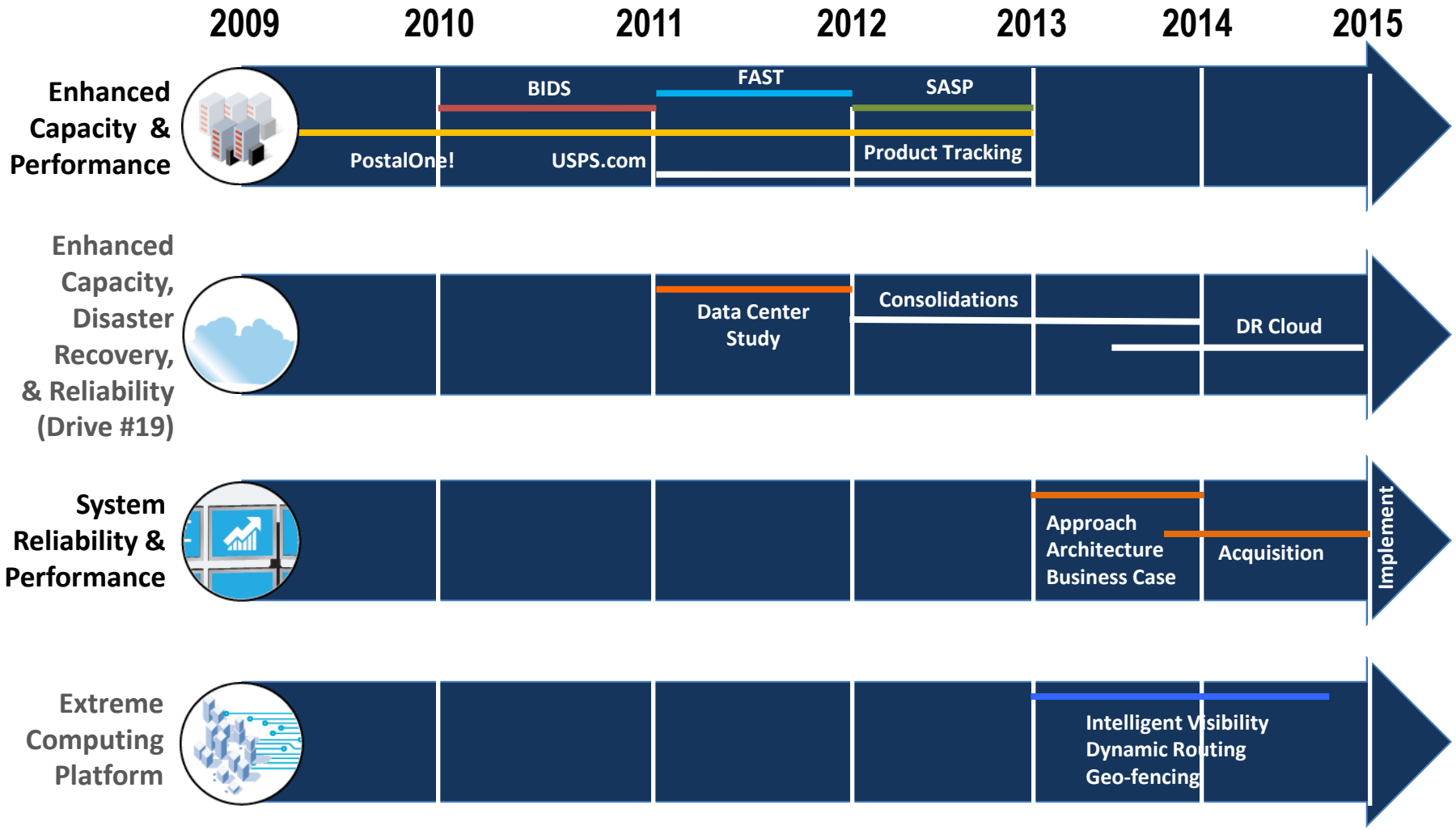
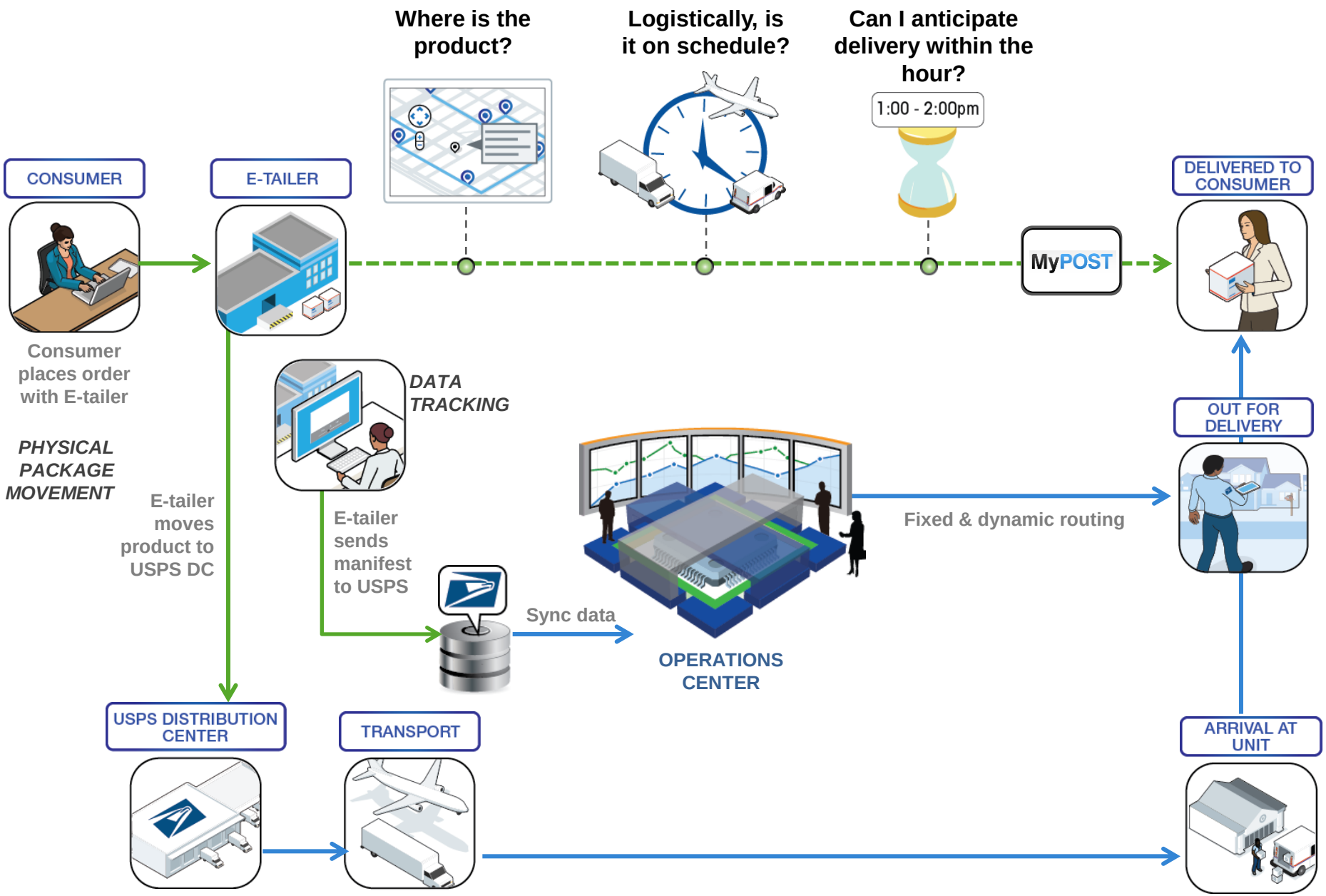
**Analytics**

**PCI**

**Mobility**

**Security**

# Roadmap


2009
2010
2011
2012
2013
2014
2015
Enhanced Capacity & Performance
BIDS
FAST
SASP
PostalOne!
USPS.com
Product Tracking
Enhanced Capacity, Disaster Recovery, & Reliability (Drive #19)
Data Center Study
Consolidations
DR Cloud
System Reliability & Performance
Approach
Architecture
Business Case
Acquisition
Implement
Extreme Computing Platform
Intelligent Visibility
Dynamic Routing
Geo-fencing

# BUSINESS INTELLIGENCE PLATFORM