

PostalOne! Infrastructure & Performance

August 16, 2012

Agenda

- Industry Concerns
- Previous areas of focus
 - Technology improvements
 - System monitoring
 - Metrics/Trends
- New areas of focus
 - Release scope & scheduling
 - Quality & testing
- Performance improvement focus group

Industry Concerns

"Users will never buy into Full Service Intelligent Mail by 2014, with the instability that is part of the major frustration of trying to use a system that is plagued with downtime and work-arounds....."

www.intelisent.com/postalaffairsblog – May 29, 2012

"every time this happens we need to revert to paper statements.... that creates additional work for both mailer and for the DMU clerks in entering the data. In addition the mail pieces are receiving the Full Service discount however they will not be available for any of the Full Service benefits"

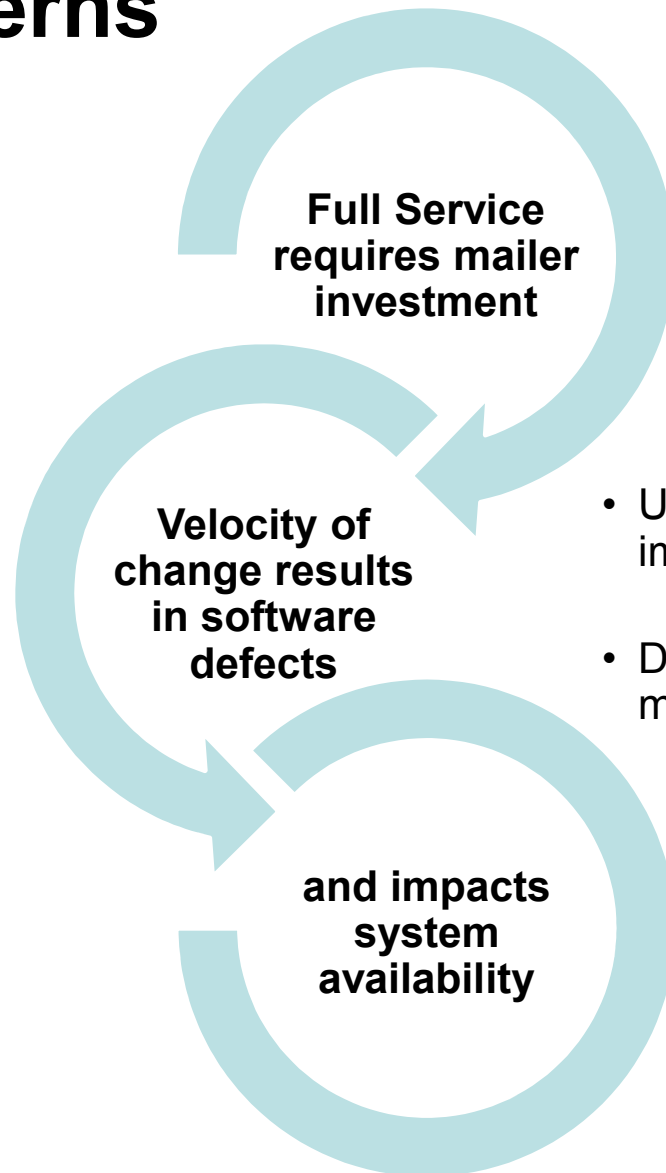
eMail from mailer - May 30, 2012

"The PostalOne June release went very well from all of the reports I am seeing. The Known Issues listed above, which was sent out to the PostalOne user group, is a short list. There are a lot of people working very hard at the Postal Service on these releases. The Postal Service is going to eventually have to scale them back a bit so that they can be adequately managed....."

www.intelisent.com/postalaffairsblog – June 12, 2012

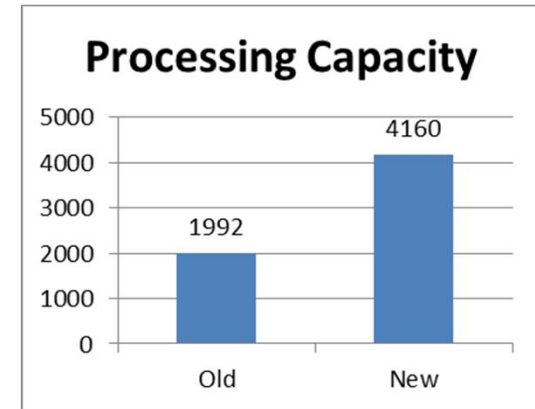
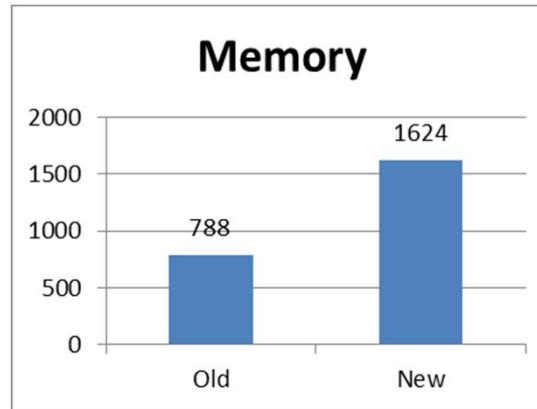
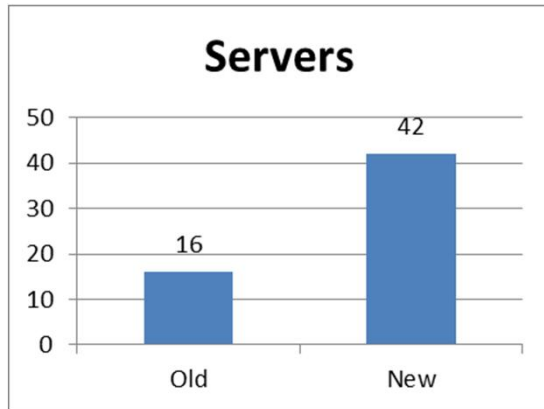
"I don't understand why you keep changing the system instead of fixing the things that would make it easier to use AND also make it work consistently (no outage)."

eMail from BMEU clerk – June 13, 2012



- Mailers must invest in their systems
- USPS systems need to support additional FS/IMB volume
- USPS changes also impact mailer systems
- Defects impact mailer/USPS operations
- Outages impact mailer/USPS operations

Technology Improvements – *PostalOne!*



- Hardware refresh complete – capacity doubled in 2012
- Commercial Off the Shelf (COTS) software upgraded – major database technology upgrade completed on 8/5
- Two year *PostalOne!* infrastructure modernization program now complete

Technology improvements – Other systems

	Business Customer Gateway	Centralized Account Processing System	Facility Access & Shipment Tracking	Mailer ID	<i>PostalOne!</i>	Program Registration
Hardware Refresh (HP/Linux)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Software Refresh (WAS7.x)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Database Refresh (Oracle11g)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Technology improvements – Hosting

- New virtual hosting environment allows application to scale:
 - Horizontally – add more nodes/servers
 - Vertically – add more processors/memory to servers
- New hosting design includes redundancy not included in original hosting solution:
 - Allows for application changes to be deployed without outages and for patching to be performed without outages.
 - As an example – the *PostaOne!* production environment is being patched this week without an outage between 4AM and 7AM. Everyday one node is taken out of service and patched with no mailer impact.

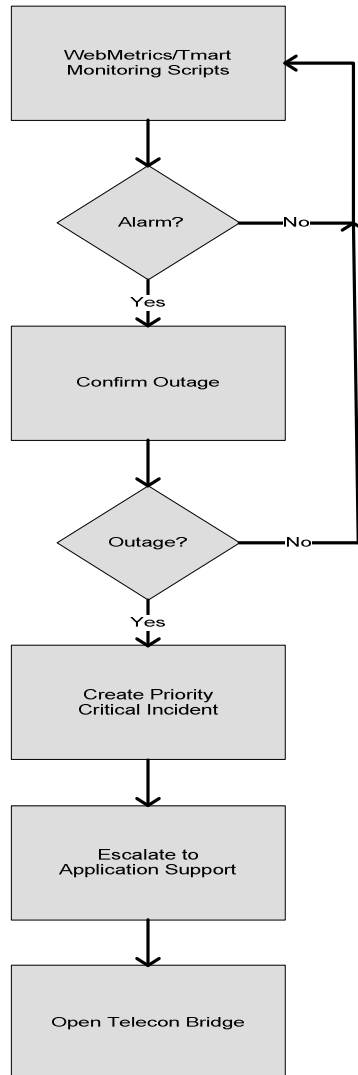
System monitoring – Tools

- WebMetrics is used to monitor USPS external website availability
- Uses a set of synthetic transaction scripts that are executed every five minutes from 46 cities
 - *PostalOne!* Login
 - Manage Permits
 - Balance & Fees
 - Mailing Reports
 - Postal Wizard
 - eDoc, Data Distribution, and FAST XML
- Provides the load time, errors, and overall performance of the pages that are part of the scripts
- If the performance is less than the set threshold an alert is sent 7

System monitoring – Tools

- TMART - Transaction Management Application Response Time Emulates defined user transactions to monitor internal websites for the following conditions:
 - Availability - Site pages are up and allowing authenticated logins
 - Accuracy - Site pages load with expected content
 - Performance - Site pages load within an expected timeframe
- Monitors application as well as infrastructure
- Provides the load time, errors, and overall performance of the pages that are part of the scripts
- If the performance is less than the set threshold an alert is sent

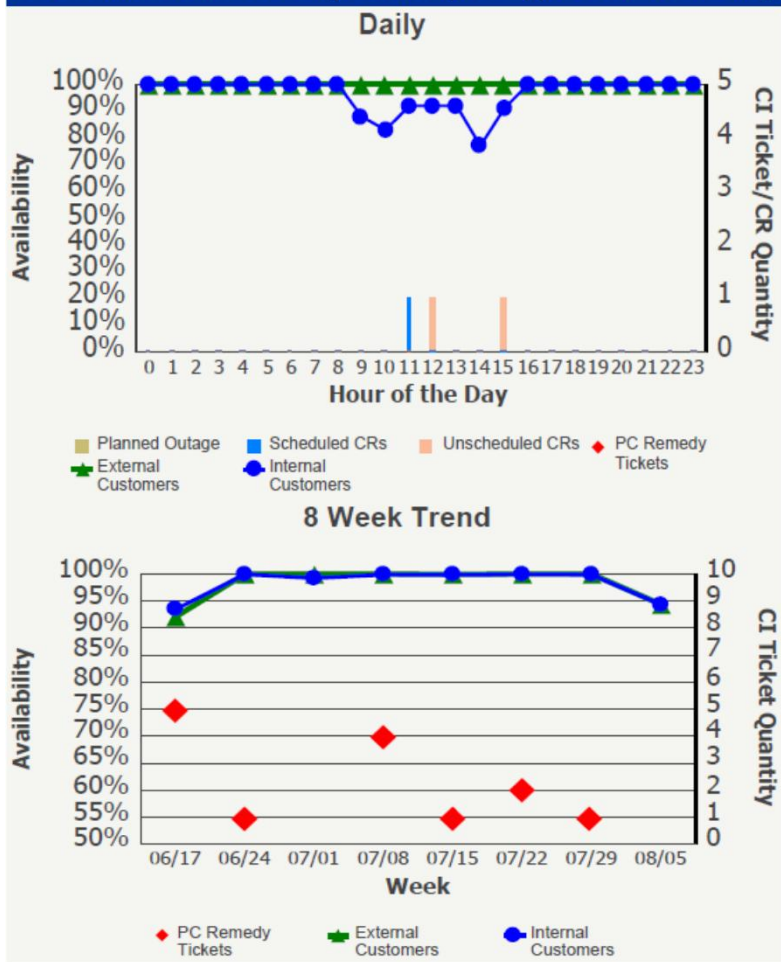
System monitoring - ESM



- USPS Enterprise Systems Monitoring (ESM) group monitors 24x7x365
- Provides incident management/escalation when monitoring alarms detected
- Provides both infrastructure and application monitoring services for distributed systems

System monitoring – CIO Daily Flash

USPS Office of the CIO Daily Flash Report-Application Availability



- New CIO Daily Flash reporting provides visibility of availability/outages using same WebMetrics/TMART alarms
- Merges outage details with schedule outages, scheduled changes, and Priority Critical Incidents to provide view of application availability
- Provides trends

Current Metrics - Mail.dat eDoc Processing

Week ending 7/29/2012	100k Job Size	1M Job Size	1-5M Job Size	5-10M Job Size	10M+ Job Size
SLA	Under 30 minutes	Under 1 hour	Under 2 hours	Under 4 hours	Under 8 hours
% of Jobs that met SLA	99.5%	99.1%	99.6%	100%	100%
Total Job Count	5,667	1,415	300	21	2
Average E2E Processing Time (HH:MM:SS)	00:03:29	00:06:13	00:20:37	01:00:14	04:39:34
Min E2E Processing Time (HH:MM:SS)	00:00:44	00:00:46	00:01:38	00:05:53	02:10:16
Max E2E Processing Time (HH:MM:SS)	01:13:09 (Max upload time 00:55:35)	08:05:21 (Max validation time 07:59:53)	02:38:15 (Max upload time 00:52:49)	03:41:49 (Max upload time 00:59:51)	07:08:51 (Max upload time 00:11:27)

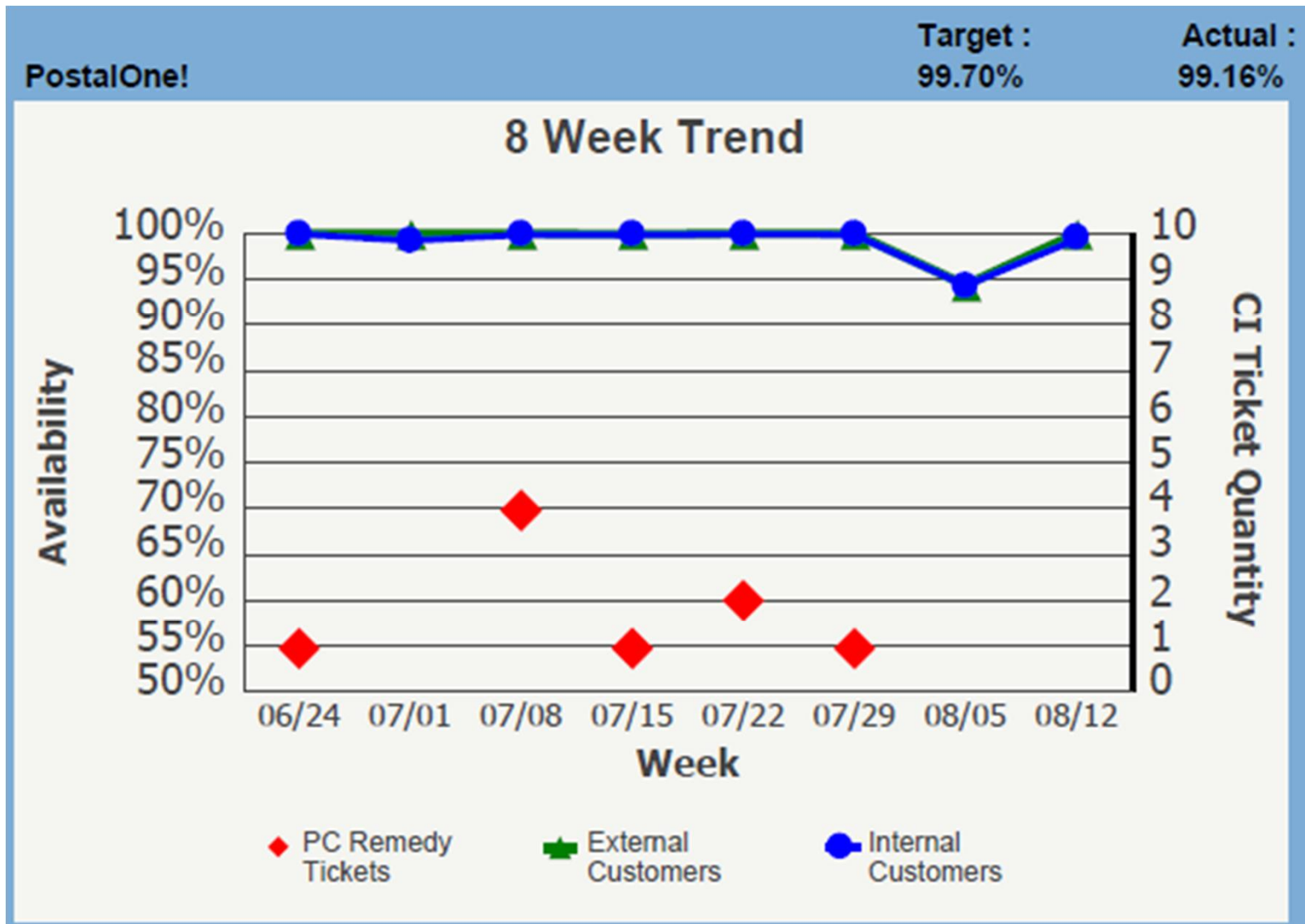
Current Metrics - Mail.XML eDoc Processing

Week ending 7/29/2012	Qualification Report Summary (<1MB)	Qualification Report Detail (<8MB)	Mail Piece (<8MB)	Postage Statement (<2MB)
SLA	Under 30 seconds	Under 5 minutes	Under 3 minutes	Under 2 minutes
% of Messages that met SLA	100%	99.7%	100%	100%
Total Record Count (# of messages)	452	618	3,484	505
Average E2E Processing Time (HH:MM:SS)	00:00:06	00:01:47	00:00:19	00:00:23
Min E2E Processing Time (HH:MM:SS)	00:00:01	00:00:05	00:00:03	00:00:04
Max E2E Processing Time (HH:MM:SS)	00:00:17	00:05:04	00:01:15	00:00:28

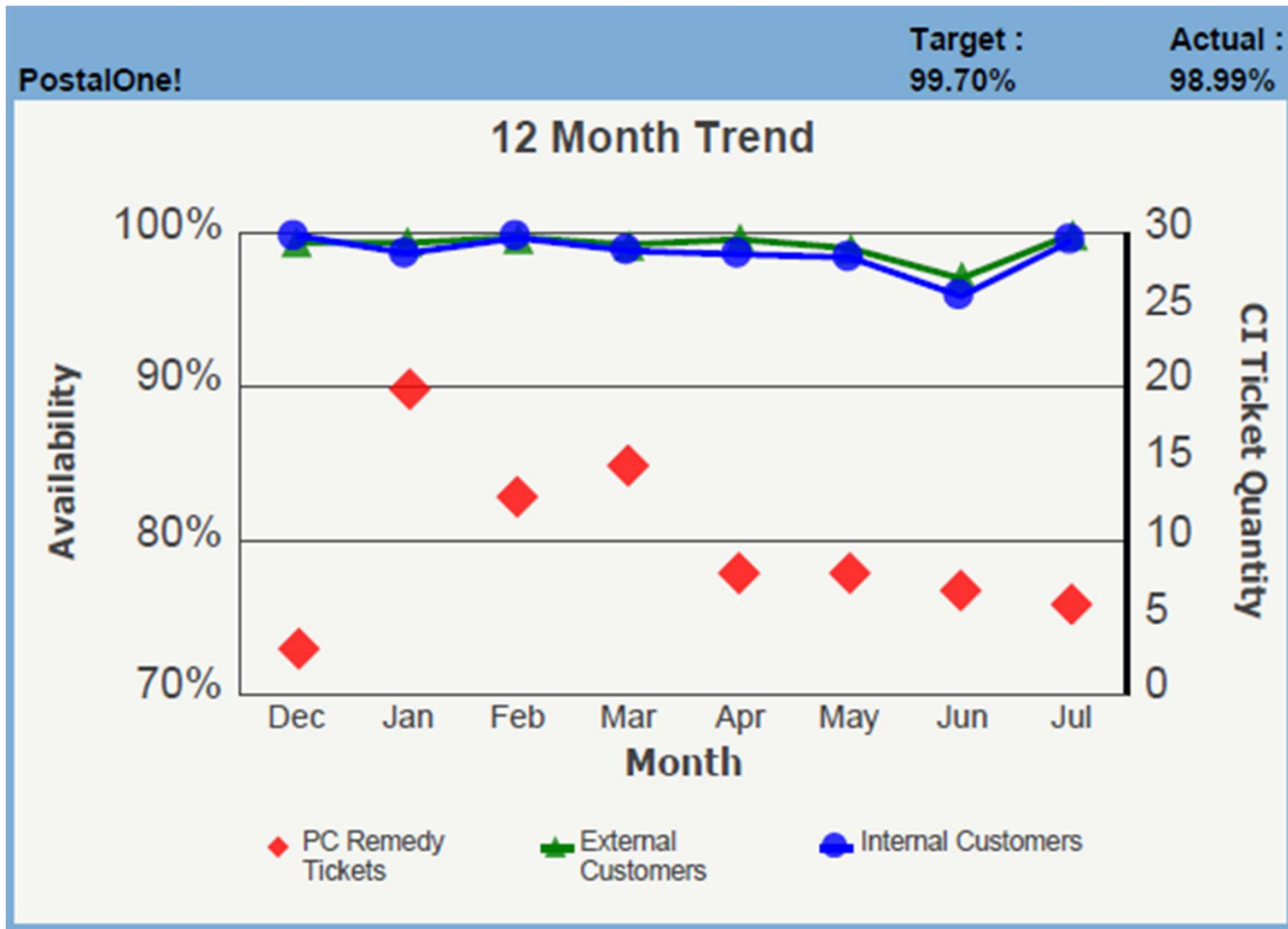
Current Metrics – Dashboard and Reporting

Week ending 7/29/2012	PostalOne! Login	Manage Permits	Balance & Fees	Postal Wizard	Mailing Reports
Average response time	6.97 sec	6.27 sec	8.29 sec	8.33 sec	9.89 sec
Uptime	100%	100%	100%	100%	100%

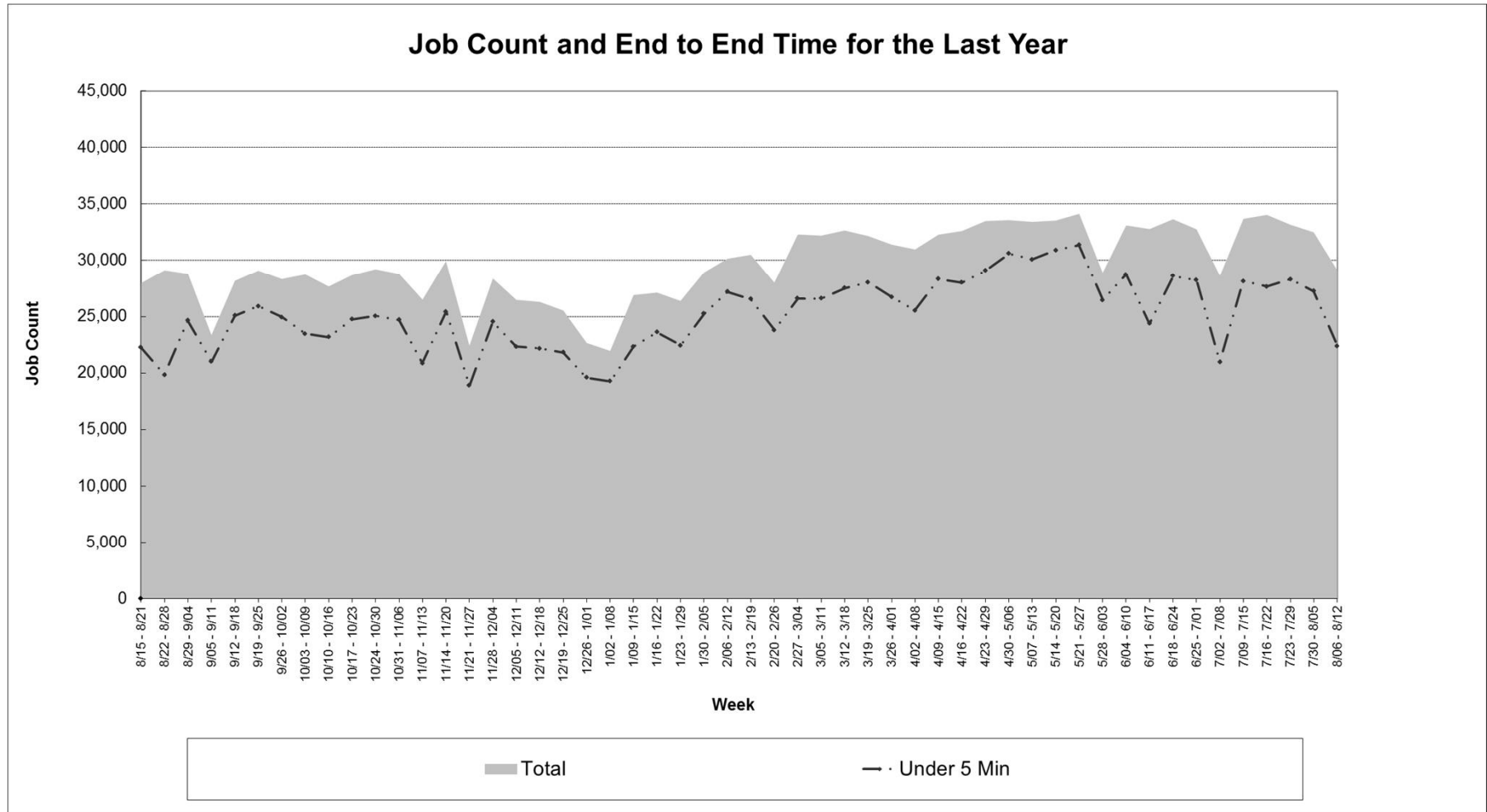
Trends – System Availability



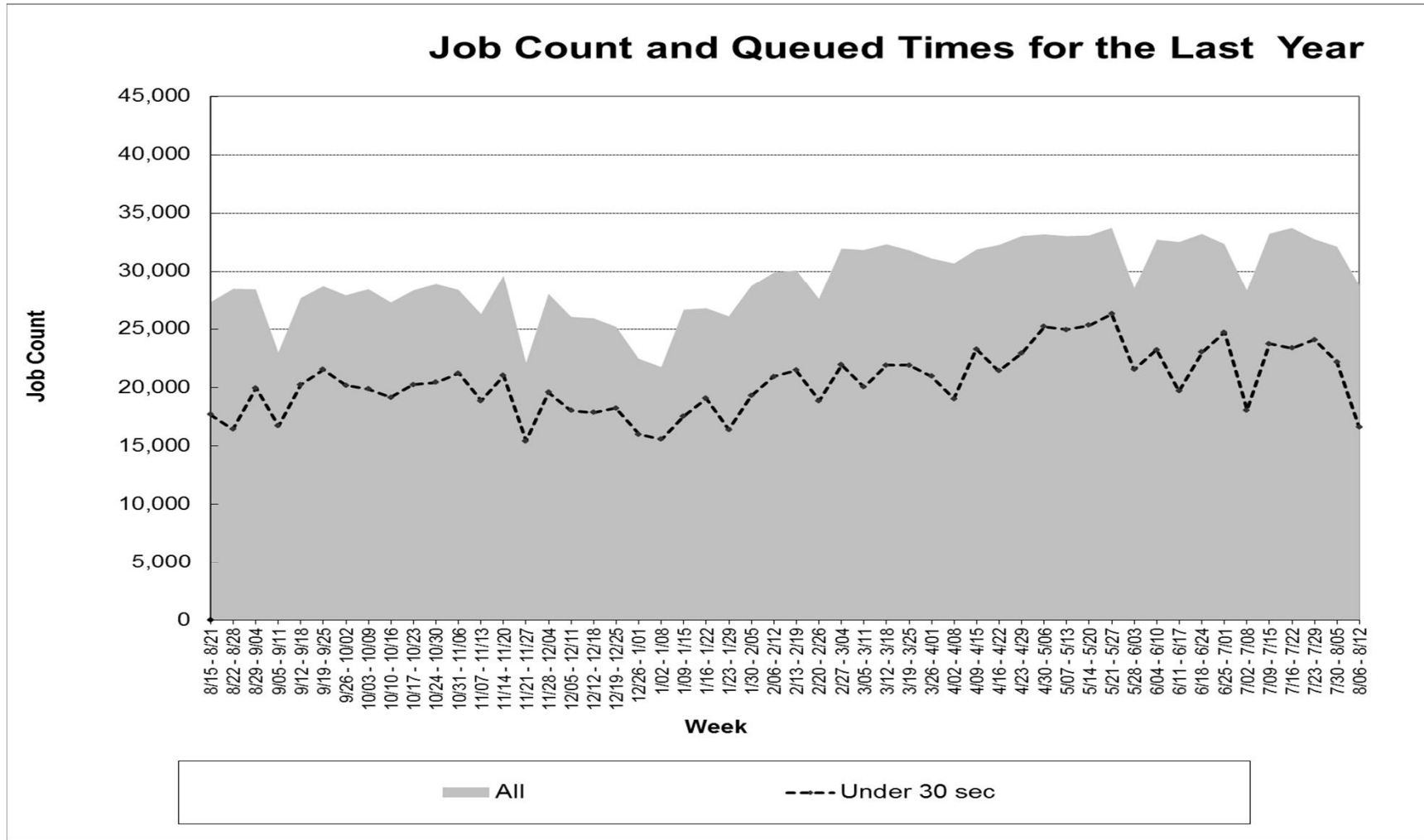
Trends – System Availability



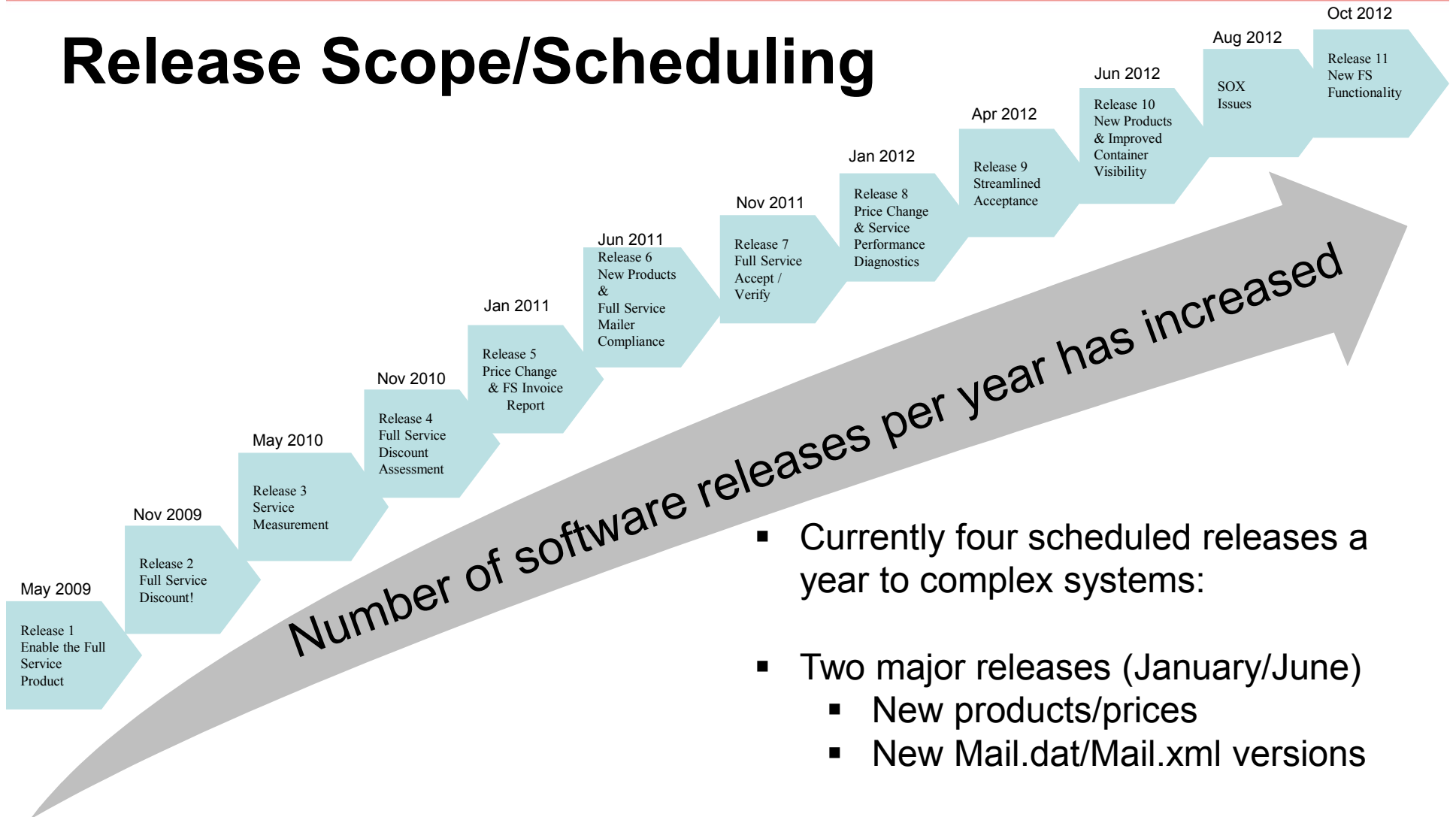
Trends - Mail.dat job E2E processing time



Trends - Mail.dat job queued time

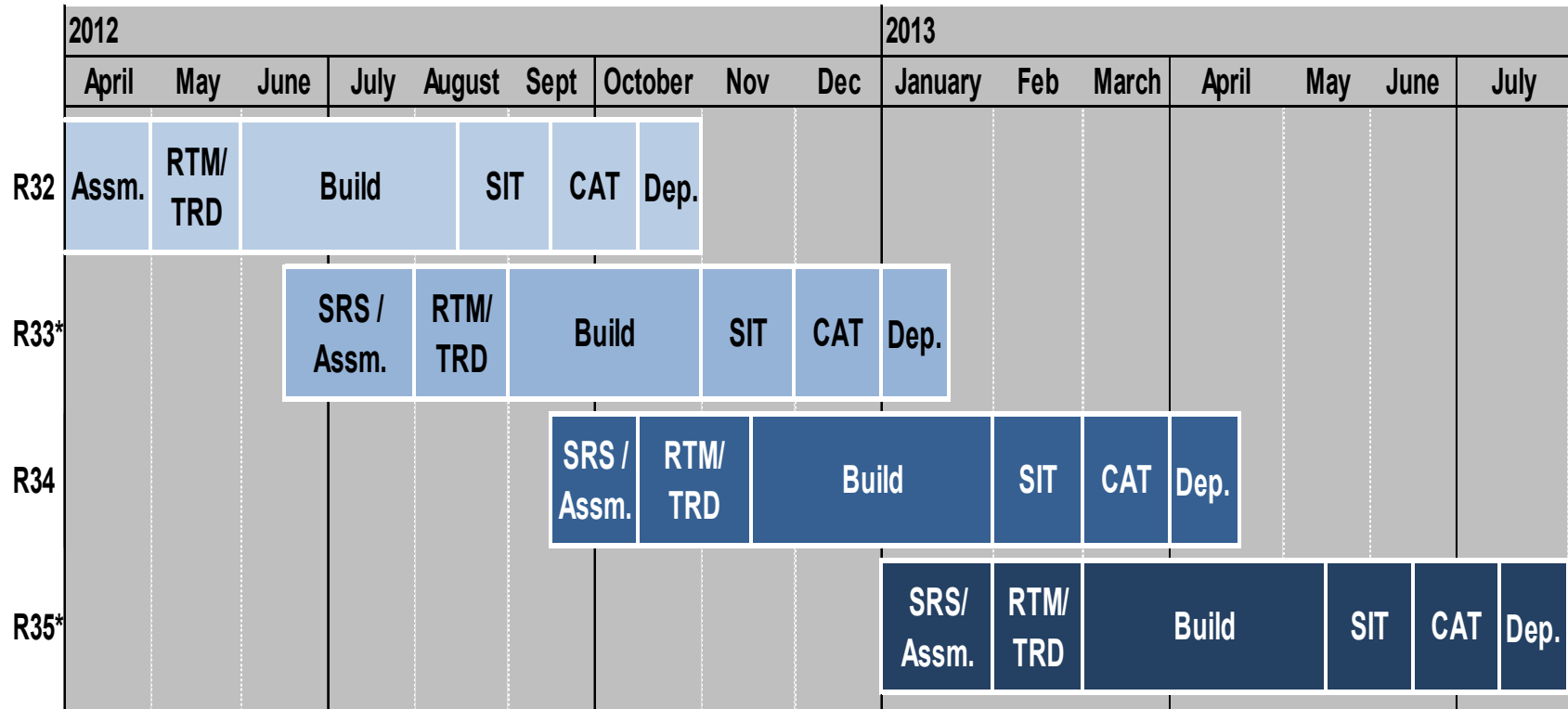


Release Scope/Scheduling



- Currently four scheduled releases a year to complex systems:
- Two major releases (January/June)
 - New products/prices
 - New Mail.dat/Mail.xml versions
- USPS looking to reduce number of scheduled releases a year

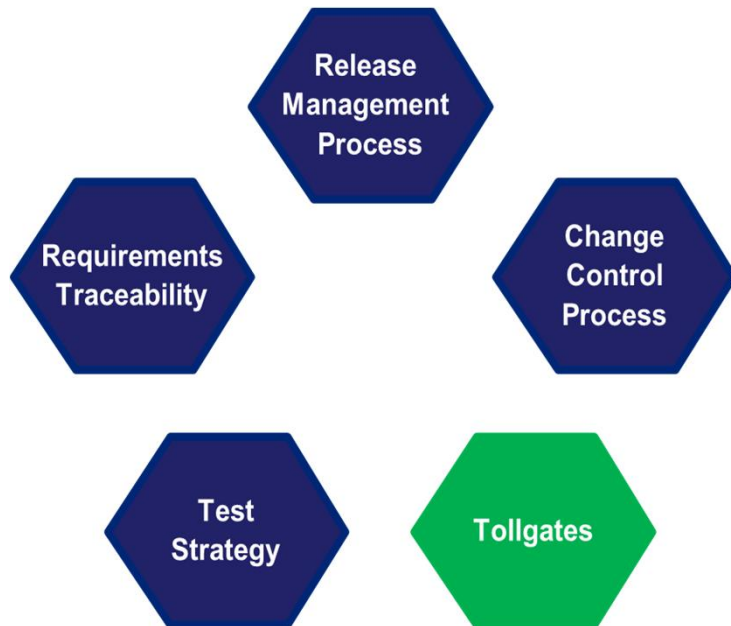
Release scope & scheduling - Overlap



*Price Change Release

The *PostalOne!* releases overlap requiring resources to be allocated across multiple releases

Release scope & scheduling - Processes



- Release management and change control processes strengthened to prioritize and streamline release content
- New tollgate process added for BNS, Baseline, Design, Release, and Close-out milestones to ensure VP level involvement
- For major (January/June) releases scope will be limited to price change, specification changes, and new products
- Shift some development focus to address problems versus solely new functionality
- Use an Agile approach to address critical defects

Improvements in quality & testing

- Testing strategy enhanced to include new requirements as well as regression of existing functionality, end-to-end, and other testing necessary to accept the release into production
- Increase stakeholder involvement including defined roles and responsibilities for the development and approval of test plans, execution of testing, and review and approval of results
- Increase industry participation in Customer Acceptance Testing and provide more production-like test environment

Improvements in quality & testing (cont'd)

- Refresh mailer reference data in CAT (CRIDs, Permits, Account numbers)
- CAT team to automate regression testing – First capability in January 2013
- Expand CAT production file library to include Mail.dat files that cover all scenarios
- Work with mailers to obtain files to be used with new functionality/new versions of specifications

Summary

- Technical infrastructure has capacity to support projected Full Service IMb volume
 - *PostalOne!*, FAST, SASP, BIDS all sized for full projected volume as part of Full Service IMb
 - USPS will continue to reassess system capacity to handle future volume
 - New HW platform is scalable if additional capacity needed
- Variability in system availability and performance driven by:
 - Amount of change/number of software releases
 - Software defects not caught in testing cycles
 - Infrastructure upgrades

NOT capacity/processing volumes

Performance improvement focus group

- Focus group created in July 2012
- Meetings (telecons) every two weeks
- First MTAC face-to-face meeting will be August 16th from 1 - 3PM
- Membership/Interest growing and has been very helpful in gaining detailed industry perspectives

Initial Industry Participants

<u>Name</u>	<u>Company</u>
Sharon Harrison	AT&T
Randy Randall	AT&T
Michael Tate	Bank of America
Pat Rawls	Bank of America
Rob Arnish	Bank of America
David Gorham	CSG Systems
Rose Flanagan	DataMail
George Rader	DST
Angelo Anagnostopoulos	Gray Hair Software
Cameron Bellamy	Gray Hair Software
Lisa Miller	Gray Hair Software
Charley Howard	Harte Hanks
John Sexton	PBPS
Steve Krejcik	PBPS
Dave Robinson	Pitney Bowes
Linda Gustason	Quad Graphics
Jim Morton	Quad Graphics
Kim Mauch	Satori Software
Stuart McAllister	Total System Services

Focus group – Initial recommendations

- Include additional metrics (KPIs) in measurement of system availability (outage duration, planned, unplanned, MTTR, MTBF, etc)
- Provide metrics for Full Service feedback/data distribution
- Expand monitoring to include additional transaction scripts
- Provide capability to use production end user experience for monitoring instead of synthetic transactions

CAT Improvement Plan

- CAT eDoc File Library
 - Update CAT Mail.dat & Mail.XML file library
 - Include files to cover all mail classes, all postage lines, different rate combinations
 - Include files to cover critical ETRs
 - Include negative test scenarios
 - New test plan for CAT mailers
 - Request planned test scenarios from mailers
 - Track new functionality tested by mailers
 - Add unique test scenarios to CAT eDoc library
 - Update eDoc library when new issue arises

CAT Library Overview

Submission Type								
Mail.dat Version			Submission Type				Pres. Category	
11-2	12-1	12-2	Original	Change	Update	Delete	Presort	MLOCR

Mail Type					
Mail Class			Processing Category		
FC	PE	Standard	Cards	Letters	Flats
Standard	Pending Periodicals		Irregular Parcels		Machinable Parcels

Payment Type										
Rate Type				Postage Payment Method				Affixed Method		Permit Count
Regular	Nonprofit	Classroom	BPM	Permit	Stamp	Meter	Pend Per	Stamp	Meter	(Variable)
Sci of Ag	Lim Circ.	& Combinations		Govt Permit		& Combinations				

Other Factors								
Full Service Indicator			Copal		Characteristics			
Full	Mixed	Basic	Regular	Internal	MI	MB	CT	Etc.

Vendor / TEM Certification

- Increase TEM functionality/capacity
 - Add Incentives and other
- On 7/9/12, USPS launched a Vendor Certification program:
 - Allows vendors to certify software in TEM according to their specifically defined mail preparation capabilities and before mailers attempt to use them.
 - Vendors' certified capabilities posted on RIBBS/BME Outreach.
 - Mailers do not have to go through extensive TEM process.

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