Public Transit Scheduling and Operations IT: Lessons Learned

(T3) Presentation
May 31 2012
Today’s Speakers

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Disclaimer

- This presentation contains references to brand names and proprietary technologies. This information is provided in the specific descriptions of ITS applications at the presenting agencies, and does not in any way constitute an endorsement of those brands or technologies by US DOT.
1. Problem Statement, Current challenges, Alternative views
2. DOT Peer-to-Peer program
3. CTA Peers and their approach
4. Evaluation challenges
5. Peer focus - King County Transit: Approach, Challenges, Customization, Lessons Learned
6. CTA: Strategic Goal, RFP and the road ahead
7. Questions ?? Contact information

Appendix
1. Problem statement, Current challenges, Alternative views
Problem Statement

Too many disparate decentralized systems with redundant processes, manual entries, multiple interpretation of business rules limiting visibility and sustainability.
Current challenges

Many disparate paper-based systems defined by:
- outdated procedures
- lack of communication potential between them
- heavy customization, numerous features and interfaces
- obsolete hardware and outdated OS
- no vendor support continuity
- no real time status reporting
- high risk for employee turnover
- expensive maintenance, small chance to expand
- difficult integration with advanced-IT ERPs
The status quo (Legacy systems) and processes:
- ‘work satisfactorily; no reason to change them’
- ‘can be enhanced/refaced to interface with new IT’
- ‘add some value, yet run a system deficit annually’
- ‘are ticking time bombs’
- ‘can be replaced when necessary i.e. Not Now’

The new systems:
- ‘mean a steep, painful learning curve’
- ‘increase the risk of security breech and failure’
- ‘represent increase cost and time for training’
- ‘are not easily understood’
2. DOT Peer-to-Peer Program
What is this program?

- Sponsored by the US DOT’s RITA Office – Research & Innovative Technology Admin.
- Provides short-term technical assistance on ITS planning, procurement, deployment, and operational challenges
- Connects agencies with an existing base of ITS knowledge and expertise within the transportation community
- AKA Peer-to-Peer
How the P2P visit came about

- CTA contacted the ITS P2P Program about increasing its understanding of the process other agencies use to procure and deploy transit software.
- ITS P2P agreed to support two CTA staff members’ travel for four site visits in the Pacific Northwest; an addition peer-to-peer contact was made via a tele-conference.
- CTA produced a summary report detailing outcomes.
The purpose of the P2P visit

To share experiences and improve...

- ...the processes behind managing procurement of large-scale transit IT projects
- ...assimilation of large-scale IT deployments
- ...how we make better use of IT standards
- ...relationships with internal/external stakeholders
- ...the IT challenges to large and small agencies
3. CTA peers and their approaches
Peer agencies

On-site visits:
- Community Transit Everett, WA
- Pierce County Transit Lakewood, WA
- King County Transit Seattle, WA
- Tri-Met Transit Portland, OR

Conference call:
- BC Transit Victoria, B.C Canada
# Profile: peer agencies/CTA

<table>
<thead>
<tr>
<th>Statistics for bus only</th>
<th>Pierce Transit</th>
<th>BCTransit</th>
<th>Community Transit</th>
<th>TriMet</th>
<th>King County</th>
<th>CTA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fleet size</strong></td>
<td>230</td>
<td>261</td>
<td>295</td>
<td>625</td>
<td>1,300</td>
<td>1,781</td>
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<tr>
<td><strong>Routes</strong></td>
<td>46&lt;sup&gt;a&lt;/sup&gt;</td>
<td>54</td>
<td>53&lt;sup&gt;b&lt;/sup&gt;</td>
<td>79</td>
<td>251</td>
<td>144</td>
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<tr>
<td><strong>Annual Boardings</strong></td>
<td>16.4m</td>
<td>24.5m</td>
<td>9.6m</td>
<td>58.4m</td>
<td>119.0m</td>
<td>306.0m</td>
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<tr>
<td><strong>Svc. Area (sq. miles)</strong></td>
<td>414</td>
<td>322</td>
<td>1,305</td>
<td>570</td>
<td>2,134</td>
<td>275</td>
</tr>
</tbody>
</table>

<sup>a</sup> 38 local+8 Sound Transit

<sup>b</sup> 30 local+23 Sound Transit
CTA peers: their approaches

- Each agency is currently using GIRO’s Hastus product for scheduling.
- Two of the five (Community and BCTransit) have combined IT vendors: Hastus and Trapeze.
- All of the agencies are considered generally IT-savvy but only one (Portland’s Tri-Met) has a high reliance on in-house built systems.
# Systems: Peer Agencies/CTA

<table>
<thead>
<tr>
<th>Systems: Peer Agencies/CTA</th>
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<tbody>
<tr>
<td><strong>P2P comparison</strong></td>
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<tr>
<td><strong>Systems</strong></td>
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<tr>
<td>Pierce Transit</td>
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<td>BCTransit</td>
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<td>Community Transit</td>
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<td>TriMet</td>
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<td>King County</td>
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<td>CTA</td>
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<td><strong>Scheduling</strong></td>
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<td>Hastus 2007</td>
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<td>Hastus 2007</td>
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<td>Hastus 2005</td>
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<td>Hastus 2010</td>
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<tr>
<td>Hastus 2006</td>
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<tr>
<td>Hastus 2010</td>
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<tr>
<td><strong>Payroll/Operations</strong></td>
</tr>
<tr>
<td>Hastus Daily</td>
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<tr>
<td>Trapeze OPS 7.1.15.0</td>
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<tr>
<td>PeopleSoft Trapeze OPS</td>
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<tr>
<td>in-house</td>
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<tr>
<td>Hasta Daily</td>
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<tr>
<td>FAST</td>
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<td><strong>Accidents/Incidents</strong></td>
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<tr>
<td>in-house (ODDS)</td>
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<td>Trapeze/JD Edwards</td>
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<td>Risk Master</td>
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<tr>
<td>in-house (ACID)</td>
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<tr>
<td>Access db</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Employee Rewards/Discipline</strong></td>
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<td>ePersonality</td>
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<td>ePersonality</td>
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<tr>
<td>Access db</td>
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<td>in-house (ERKS)</td>
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<td>PeopleSoft</td>
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<td>Other</td>
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<tr>
<td><strong>Maintenance</strong></td>
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<td>Spear-Infor</td>
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<td>JD Edwards</td>
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<td>AssetWorks-FleetFocus</td>
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<td>in-house (MMIS)</td>
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<td>AssetWorks-M5</td>
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<tr>
<td>MMIS</td>
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<tr>
<td><strong>Bid</strong></td>
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<tr>
<td>Hastus</td>
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<td>Trapeze</td>
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<td>Trapeze</td>
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<td>in-house</td>
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<tr>
<td>Hastus</td>
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<td>Hastus (bus)</td>
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<td><strong>Self-Service</strong></td>
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<td>ePersonality/Hastus</td>
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<td>in-house w/central db</td>
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<tr>
<td>Trapeze Self Service</td>
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<tr>
<td>in-house w/central db</td>
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<tr>
<td><strong>Other notable systems/modules</strong></td>
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4. Evaluation Challenges
Evaluation Challenges

- Most agencies preferred judgment to financial metrics so comparisons are less than objective.
- Lacking uniform objectives for replacement/upgrade.
- Smaller agencies faced very different hurdles for these projects with regard to product acceptance, training and deployment.
Evaluation Challenges(2)

- Decision-making history is not transparent
- Wide range of project management skills
- Agency terminology
ITS Peer-to-Peer Program

5. Peer focus - King County Transit
Peer focus - Approach

- Result of a long and unsuccessful effort to have a custom built bus operations support system developed
- Gathered a team of SME’s and IT personnel to draft updated requirements
- Worked closely with vendor to identify differences between base system and our customized requirements
- Phased implementation
  - Bid function implemented first
  - Daily operations functions moved to production base by base
  - Training at each base just prior to production start-up
Peer focus - Challenges

- Converted from 3 legacy systems to new operations support system
- Business kept evolving during life of project
- Keeping project team staffed during a long (4 year) project
- Resistance to change from long-time system users
- Inability of IT staff to see into vendor code base to diagnose problems
Peer focus - Customization

- Became a complex issue due to:
  - specific union work rules
  - reporting standards dictated by payroll and prior business practices
  - processing requirements from dispatchers and pick room personnel

- Added to the time horizon
  - Approximately the first 40% of the project timeline was dedicated to requirement gathering and customization.

- Required time and money to get it right
  - The project team spent one week payroll testing at vendor HQ

- Can’t be done well without company-wide buy-in
  - SMEs were highly engaged from Day 1
Peer focus – Lessons learned

- Strong business lead is essential
- A thorough testing plan is most important
- Full organizational buy-in necessary
- Testing time at vendor HQ is very much worth the time and expense
- Post production support essential from both the vendor and core project team
6. CTA’s Strategic Goal, RFP and the road ahead
CTA focus - Strategic Goal

- Enterprise system that supports all areas of Operations providing the functionality to accomplish centralized - Scheduling, Picking, Day-to-day work and resource management, Payroll, Accidents, Incidents, Interview and discipline tracking and reporting.
CTA Focus

- Single Project Vision between operations – Bus, Rail and Maintenance
- Identify Subject Matter Experts and all Stakeholders.
- Focus on System Wide Process Optimization and alignment.
- Workforce Change Management and Control.
- Manage Resistance and align to Organization Vision.
- Effective Communication.
CTA focus - RFP

- CTA is currently engaged in an RFP to acquire an enterprise system.
- Based on Lessons Learned from the Peer-to-Peer CTA will institute an RFP to include:
  - End to End Software Solution starting with Business Process Analysis till Deployment.
  - Benefits management and realization via phase gates to measure stakeholder aims.
  - On-site Vendor presence during parallel tests.
  - Phased deployment with 24/7 support and maintenance.
RFP Expectations

- Enterprise System to support business processes, information flows, reporting, and data analytics.
- Eliminate Paper distribution and tracking.
- Automate all pick processes, uniformly across job classes.
- Automate Extraboard assignments to < 3 minutes
- Centralize Systems Safety and incident tracking.
- Biometric time capture with additional kiosk services.
- Web based attendance and holiday requests.
- Workflow authorization of payroll processes.
Thank you!