



# Public Transit Scheduling and Operations IT: Lessons Learned

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**(T3) Presentation**

May 31 2012



# Today's Speakers

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# Disclaimer

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- 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.



# Presentation Outline

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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



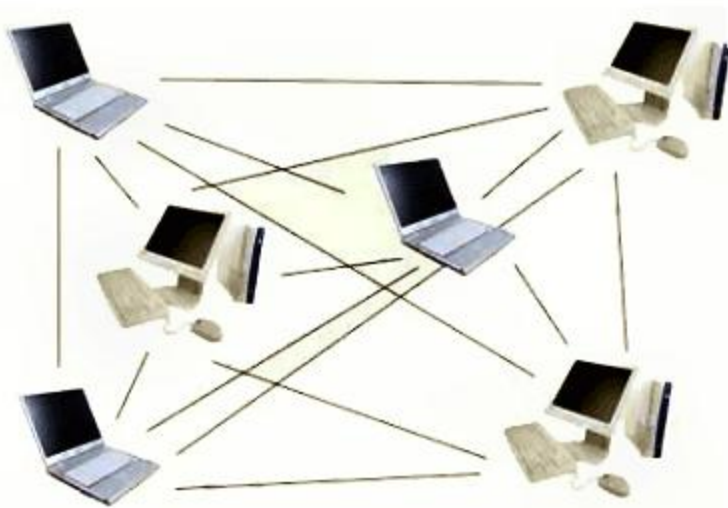
# ITS Peer-to-Peer Program

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## **1. Problem statement, Current challenges, Alternative views**

# Problem Statement

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



# Current challenges

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- 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  - outdated procedures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  - obsolete hardware and outdated OS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



# Alternative views

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- 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 breach and failure’
  - ‘represent increase cost and time for training’
  - ‘are not easily understood’





# ITS Peer-to-Peer Program

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## **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



# ITS Peer-to-Peer Program

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## **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



Statistics for bus only	Pierce Transit	BCTransit	Community Transit	TriMet	King County	CTA
Fleet size	230	261	295	625	1,300	1,781
Routes	46 <sup>a</sup>	54	53 <sup>b</sup>	79	251	144
Annual Boardings	16.4m	24.5m	9.6m	58.4m	119.0m	306.0m
Svc. Area (sq. miles)	414	322	1,305	570	2,134	275
	<i>38 local+8 Sound Transit<sup>a</sup></i>		<i>30 local+23 Sound Transit<sup>b</sup></i>			



# 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



			P2P comparison			
<b><i>Systems</i></b>	<u>Pierce Transit</u>	<u>BCTransit</u>	<u>Community Transit</u>	<u>TriMet</u>	<u>King County</u>	<u>CTA</u>
<b><i>Scheduling</i></b>	Hastus 2007	Hastus 2007	Hastus 2005	Hastus 2010	Hastus 2006	Hastus 2010
<b><i>Payroll/Operations</i></b>	Hastus Daily	Trapeze OPS 7.1.15.0	PeopleSoft Trapeze OPS	in-house	Hastus Daily	FAST
<b><i>Accidents/Incidents</i></b>	in-house (ODDS)	Trapeze/JD Edwards	Risk Master	in-house (ACID)	Access db	Other
<b><i>Employee Rewards/Discipline</i></b>	ePersonality	ePersonality	Access db	in-house (ERKS)	PeopleSoft	Other
<b><i>Maintenance</i></b>	Spear-Infor	JD Edwards	AssetWorks-FleetFocus	in-house (MMIS)	AssetWorks-M5	MMIS
<b><i>Bid</i></b>	Hastus	Trapeze	Trapeze	in-house	Hastus	Hastus (bus)
<b><i>Self-Service</i></b>	ePersonality/Hastus	in-house w/central db	Trapeze Self Service	in-house w/central db		
<b><i>Other notable systems/modules</i></b>						



# ITS Peer-to-Peer Program

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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)

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- Decision-making history is not transparent
- Wide range of project management skills
- Agency terminology



# ITS Peer-to-Peer Program

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## 5. Peer focus - King County Transit



# Peer focus - Approach

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- 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

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- 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

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- 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

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- 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



# ITS Peer-to-Peer Program

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## **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

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- 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

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- 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

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- 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!