

AASHTO
Trns·port®
Transportation Software | Management Solution



Trns•port CES Presentation

Parametric Cost Estimation

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Presentation Agenda

- Brief Overview of Trns•port
- Trns•port CES Functionality
- Building a Parametric Cost estimate
- CES Demo
- Evolving it to a full-detailed Cost Estimate



Presentation Agenda

➤ Brief Overview of Trns•port

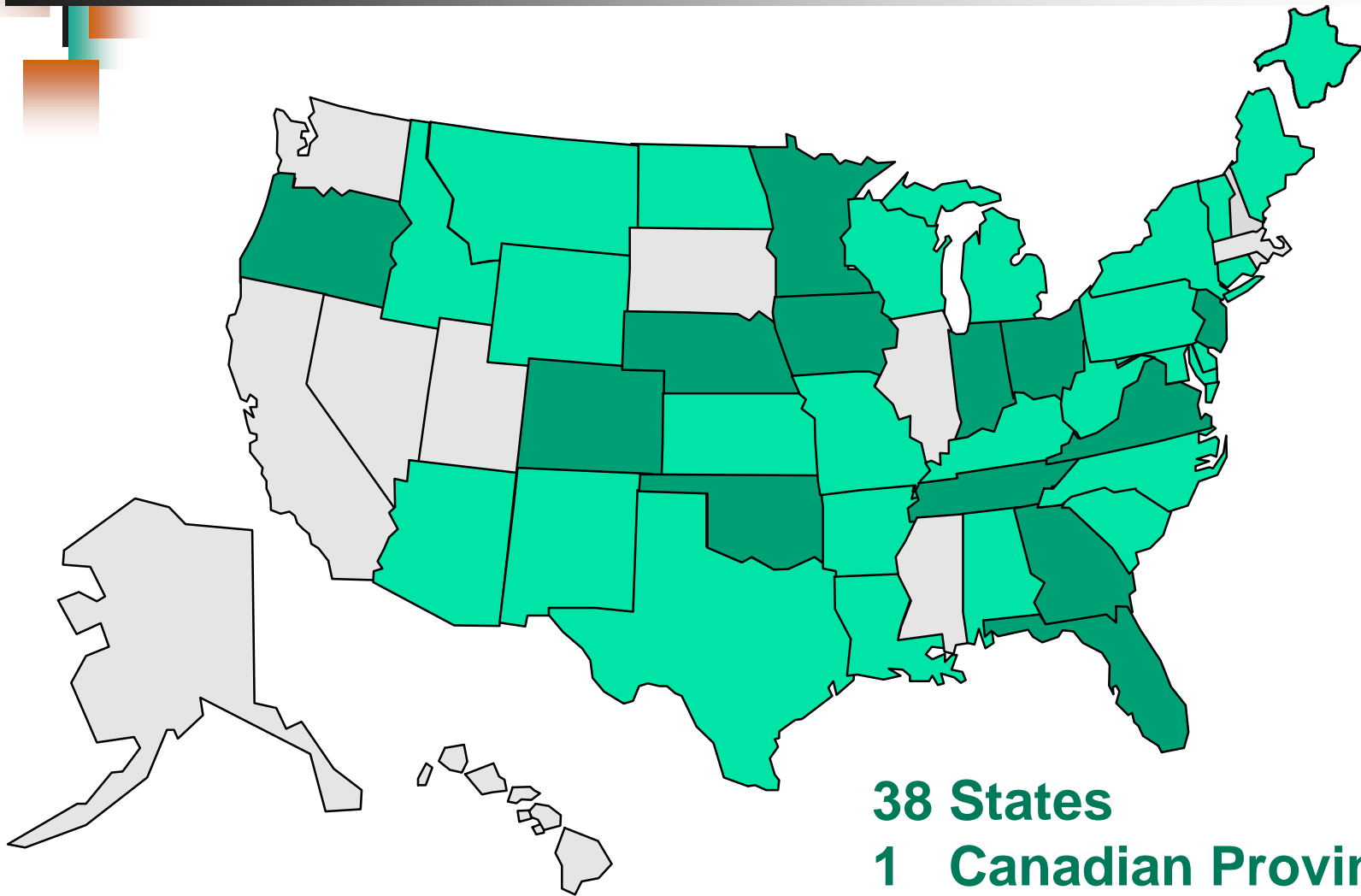
Trns•port CES Functionality

Building a Parametric Cost estimate

Demo

Evolving it to a full-detailed Cost Estimate

Trns•port Licensees



38 States

1 Canadian Province

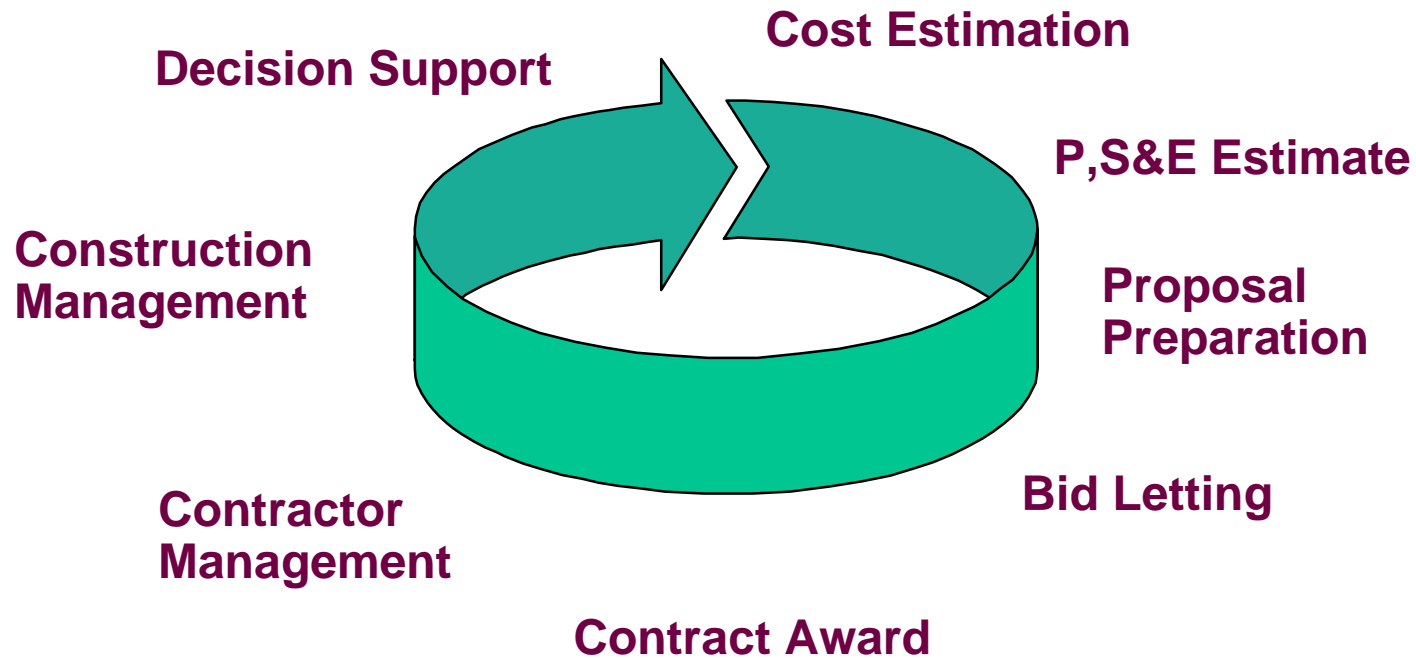
13 States have CES



Trns•port Mission Statement

*... to serve the operational and executive management information needs of the transportation agency associated with the **development and management of construction projects.***

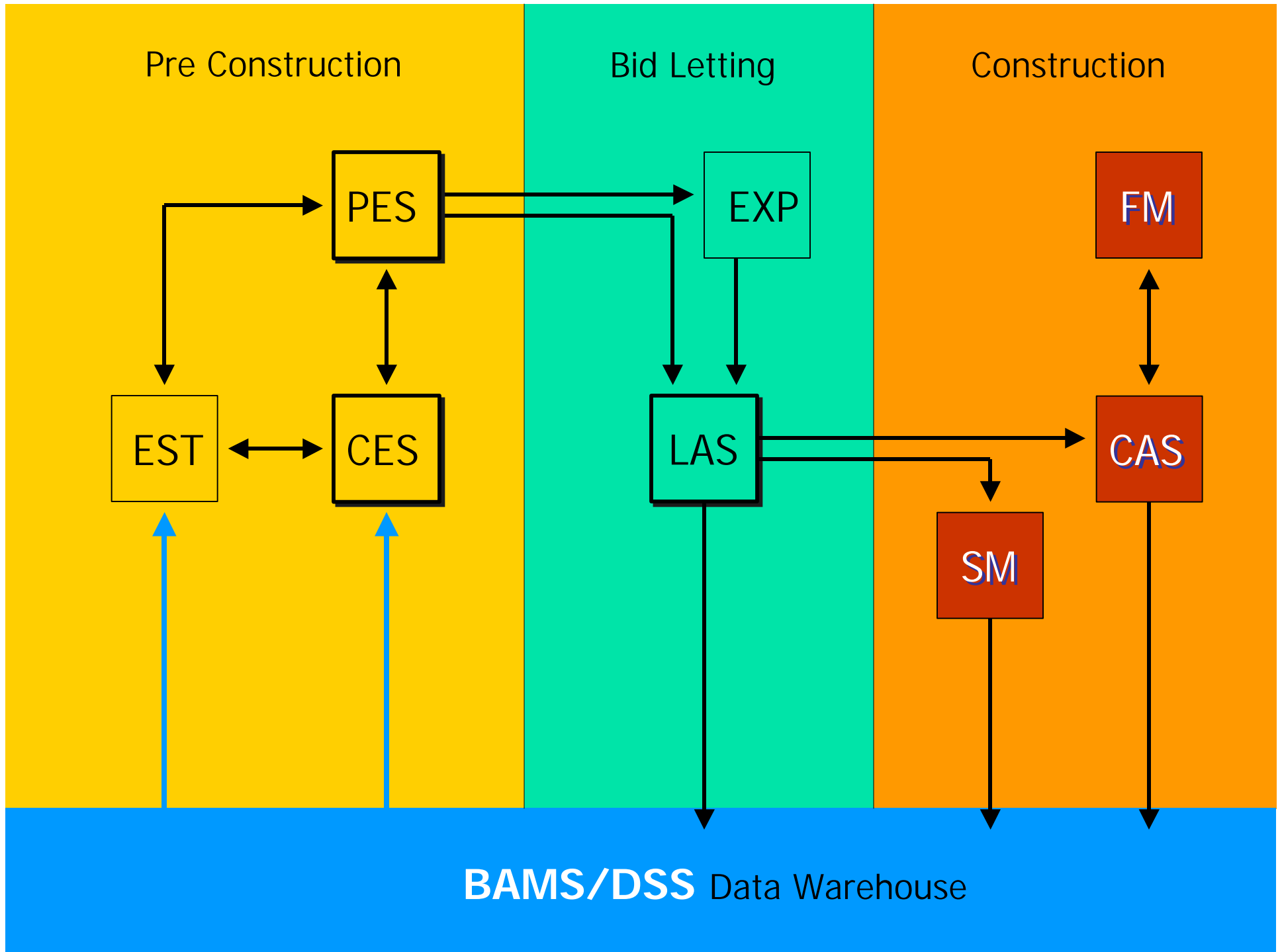
Trns•port's Integrated Solution



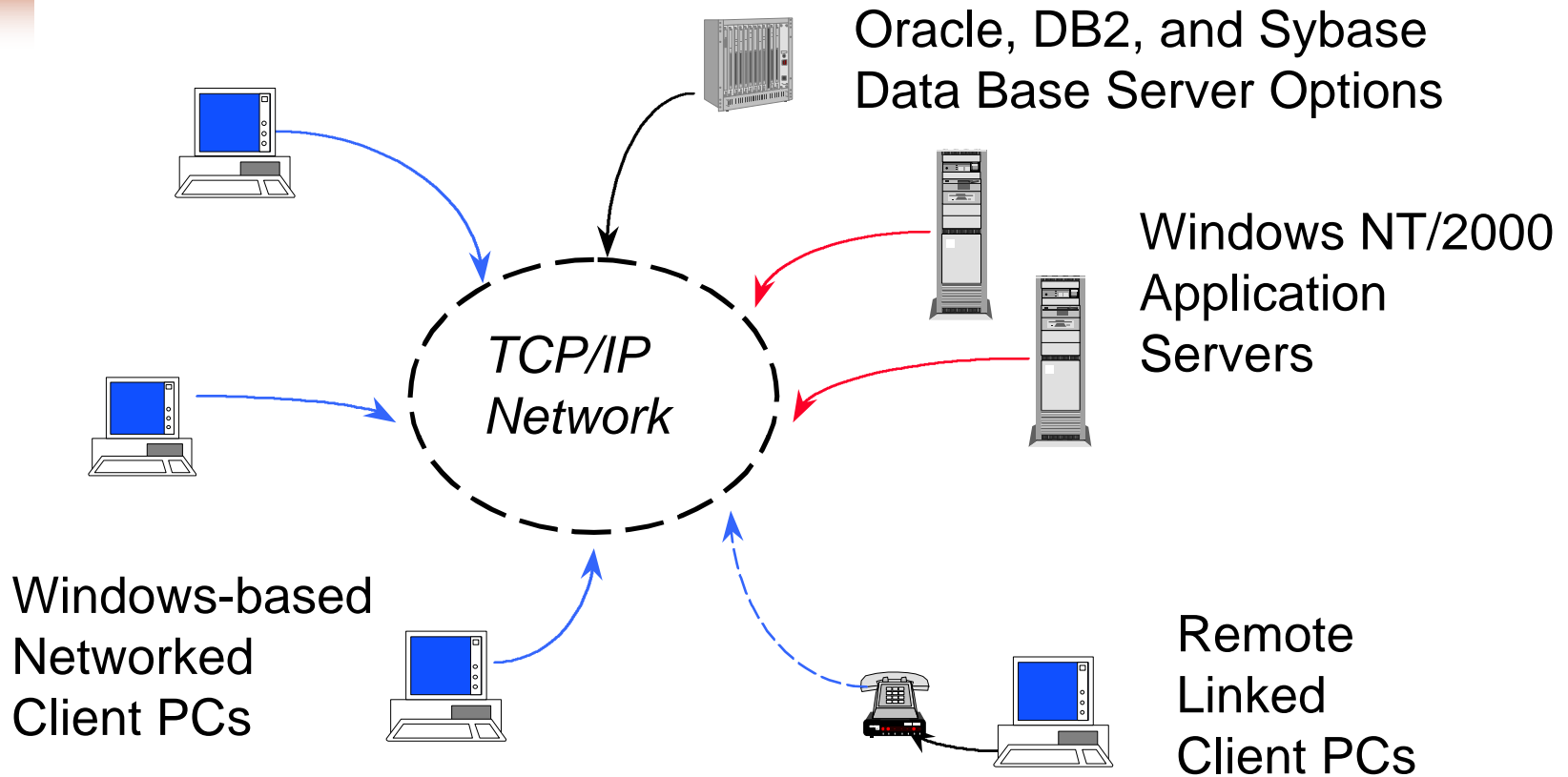


Trns•port Software

- Cost Estimation ⇒ CES and Estimator
- Project and Proposal Development ⇒ PES
- Bid Letting/Award Management ⇒ LAS
- Electronic Bidding ⇒ Expedite
- Construction Mgt. ⇒ SiteManager, CAS and FieldManager
- Data Analysis & Decision Support ⇒ BAMS/DSS



Client/Server Environment





Some Recent Highlights

- A completely rewritten Client/Server Version of CES, PES, LAS, and CAS is now available
- Client/Server BAMS/DSS database was expanded to include all Trns•port application data, including SiteManager data
- Expedite, rewritten from scratch for Windows, now supports all required contractor data entry (including DBEs) and digital signatures for electronic bid submission.



Planned Major Enhancements

- Intranet/Internet module (Q1 2001)
 - to provide web browser access for analysis and data query capabilities
- SiteManager Handheld data collector (Q2 2001)
- Materials Management module
- BAMS/DSS rewrite
- Streamlined data flow to FHWA



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Trns•port CES

The Trns.port CES module is a **cradle-to-grave project estimation system**, providing for the preparation of parametric and item level project cost estimates.

The re-written version of CES was released in February 2000 and the warranty release shipped October 2000



Trns•port CES Re-write Goals

- Use the same Client/Server architecture as the rest of Trns•port
- Integrate the CES database and code tables with the rest of Trns•port
- Improve and streamline user interface
- Implement best available estimation methodology
- Support evolution of a project and its associated cost estimate



CES JAD Team

- Bruce Green, Missouri
- Gene Fredrick, Minnesota
- Jeff Hisem, Ohio (Beta Test State)
- Jim Haefele, Wyoming
- Mike Jenkins, Indiana
- Shirley Daugherty, Nebraska



Two Types of CES Estimates

- Parametric estimates - project-level estimates based on project work types and their major cost groups
- Item-level estimates - bid item estimates derived from bid histories, cost-based estimating techniques, or reference prices



Parametric Estimation Methods

Parametric estimates are based on project work types and their major cost groups

- Ad hoc manual pricing is simply the estimator using his/her best judgement and manually entering a price
- Formula-based pricing allows the estimator to enter a formula to calculate the cost from other information in the system
- Bid-based estimates are derived from BAMS/DSS item analyses collapsed to the cost group level



Item-Level Estimation Methods

Item-level estimates are derived from bid history, cost sheets, or reference prices

- Bid-based estimates are derived from BAMS/DSS item analyses
- Cost-based estimates use material, equipment, labor, and production rates
- Reference prices are default prices stored with other item attributes in the item master table.
- Ad hoc pricing is simply the estimator using his/her best judgement and entering a price



CES Features

- Cost Groups
- Snapshots
- Formulas
- Splitting and Combining Jobs
- Variety of Estimation Methods
- RS Means Data Interface
- Job Check Out / Check In
- Attachments



CES Reports

- Parametric Job Estimate
- Detailed Job Estimate
- Lists
 - Jobs List
 - Job Snapshots List
 - Material, Labor, and Equipment Lists
 - Cost Sheets List
 - Crews List
 - Formula Libraries List
 - Programs List



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Steps in Building the Estimate

- Define a new project
- Fill in basic project information
- Assign Cost Groups to project
- Estimate Cost Group Quantities
- Enter Cost Group Prices
 - Ad Hoc
 - Formula Driven
 - Bid-based



Setting up Cost Groups

- Specify appropriate Cost Groups
 - Mobilization, Asphalt Paving, Earthwork, etc.
- Set up formulas for Cost Group quantities per Project unit of measure
 - e.g., tons of asphalt per lane mile of resurfacing
- Now, you are ready to generate parametric estimates with *ad hoc* pricing



Demo

- Setting up Cost Groups
- Ad Hoc parametric pricing
- Use formulas



Standard BAMS/DSS Reports

- Item Price Estimation and History
 - provides a systematic evaluation of historical bid prices and estimates.
 - provides statistical summaries of historical bid data for Estimator and CES - including support for parametric estimates
- Item Price/Quantity Variance
 - analyzes the variance between the awarded and the final costs and quantities on a specified contract.

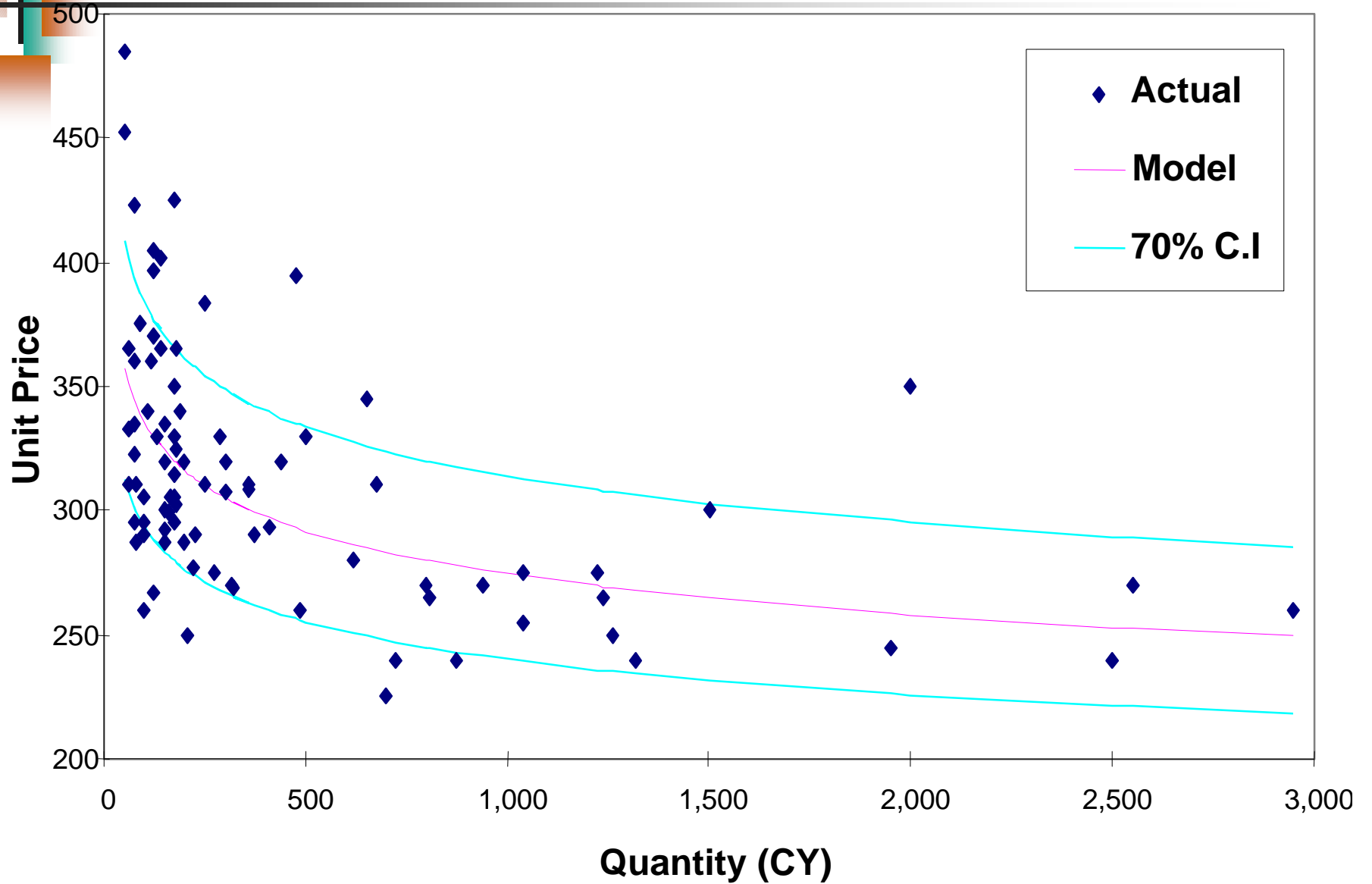


Other Components

- Ad Hoc Reporting
 - Provides answers and reports for questions as they come up
 - The key to successful analysis
- Web Access to the BAMS/DSS data
 - Easy, controlled access to historical data
 - Pre-defined queries

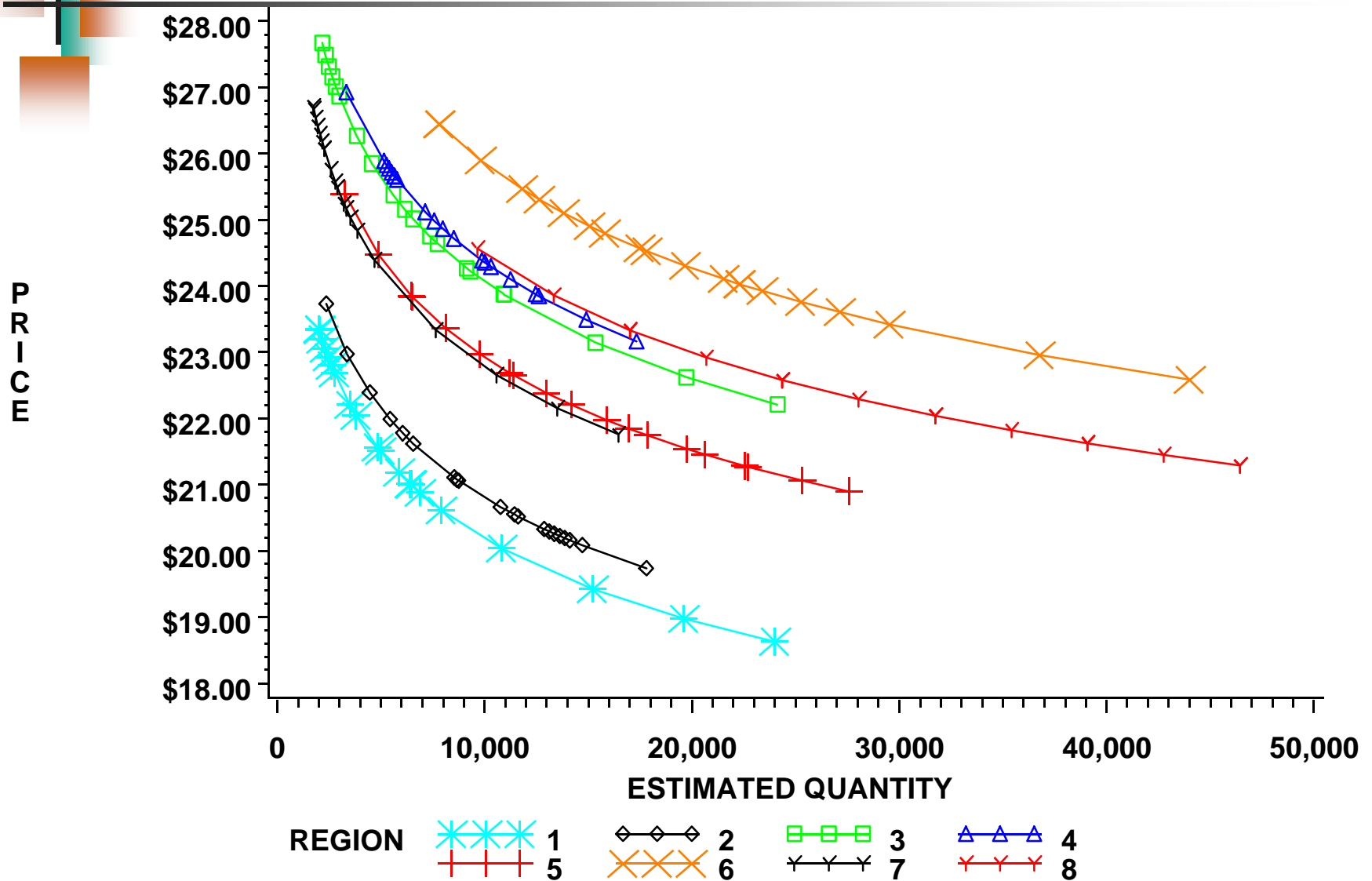
Unit Price vs. Bid Quantity

Item: Concrete Class A-4

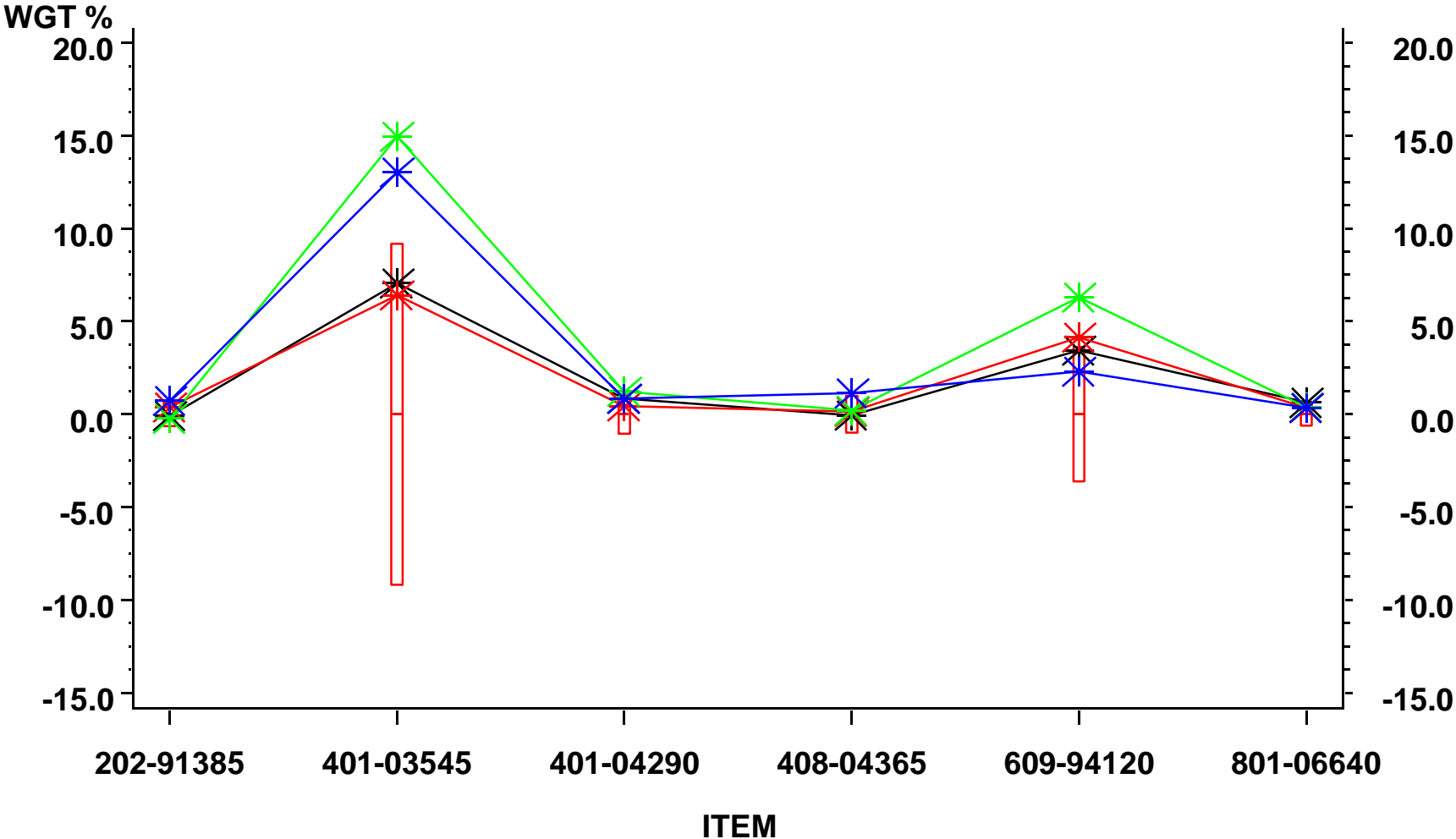


Price/Quantity Regressions

Bituminous Base 5, HV



Comparing Project Item Bids with Historical Regression Prices



VENDNAME * * * * * 00 ** ESTIMATE * * * * * * 01 WABASH VALLEY
 * * * * * 02 35-1145629/KO * * * * * 03 L.P. CAVETT C



Using BAMS/DSS Bid Histories

- Link Bid Items to Cost Groups
- Establish conversion factors to the Cost Group's standard unit of measure
- Select appropriate group of contracts through BAMS/DSS
 - Type of Construction
 - Market Areas/Conditions
- Generate bid histories
 - Run BAMS/DSS historical regression model
- Load Cost Group bid histories into CES



Demo

- Attaching Bid Items to Cost Groups
- Generating Bid History Libraries
- Using bid-based pricing



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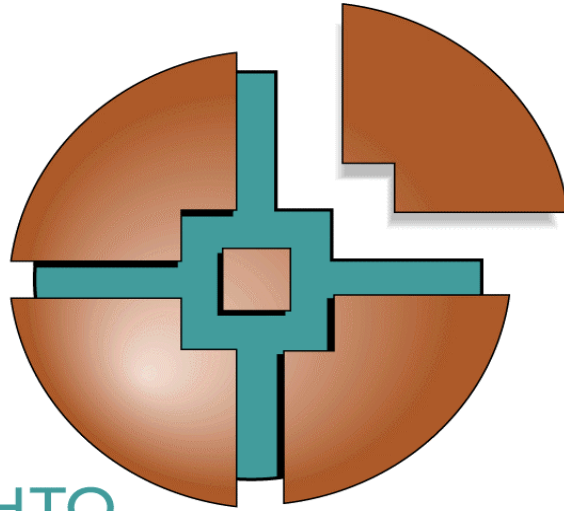
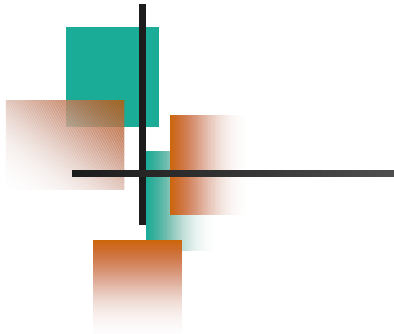
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