Supply Chain and Inventory Control: Limiting Factors and the Technologies that Help Them Work

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MARICOPA COMMUNITY COLLEGES®

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Funded, in part by a grant from the National Science Foundation DUE 1003542

HTWI is a part of
Center for Workforce Development
a member of the
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Maricopa Community Colleges.

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DUE-1003542

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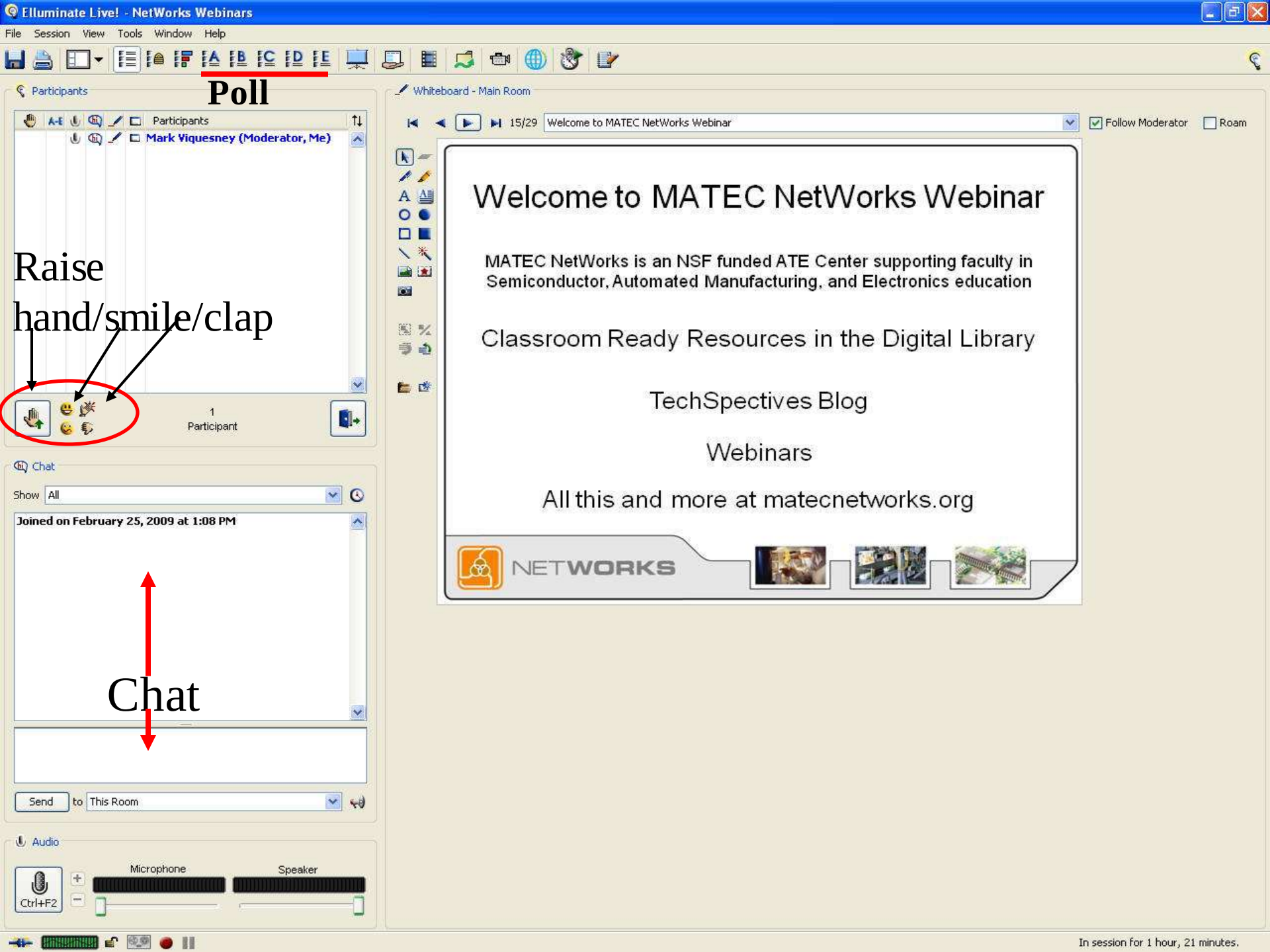
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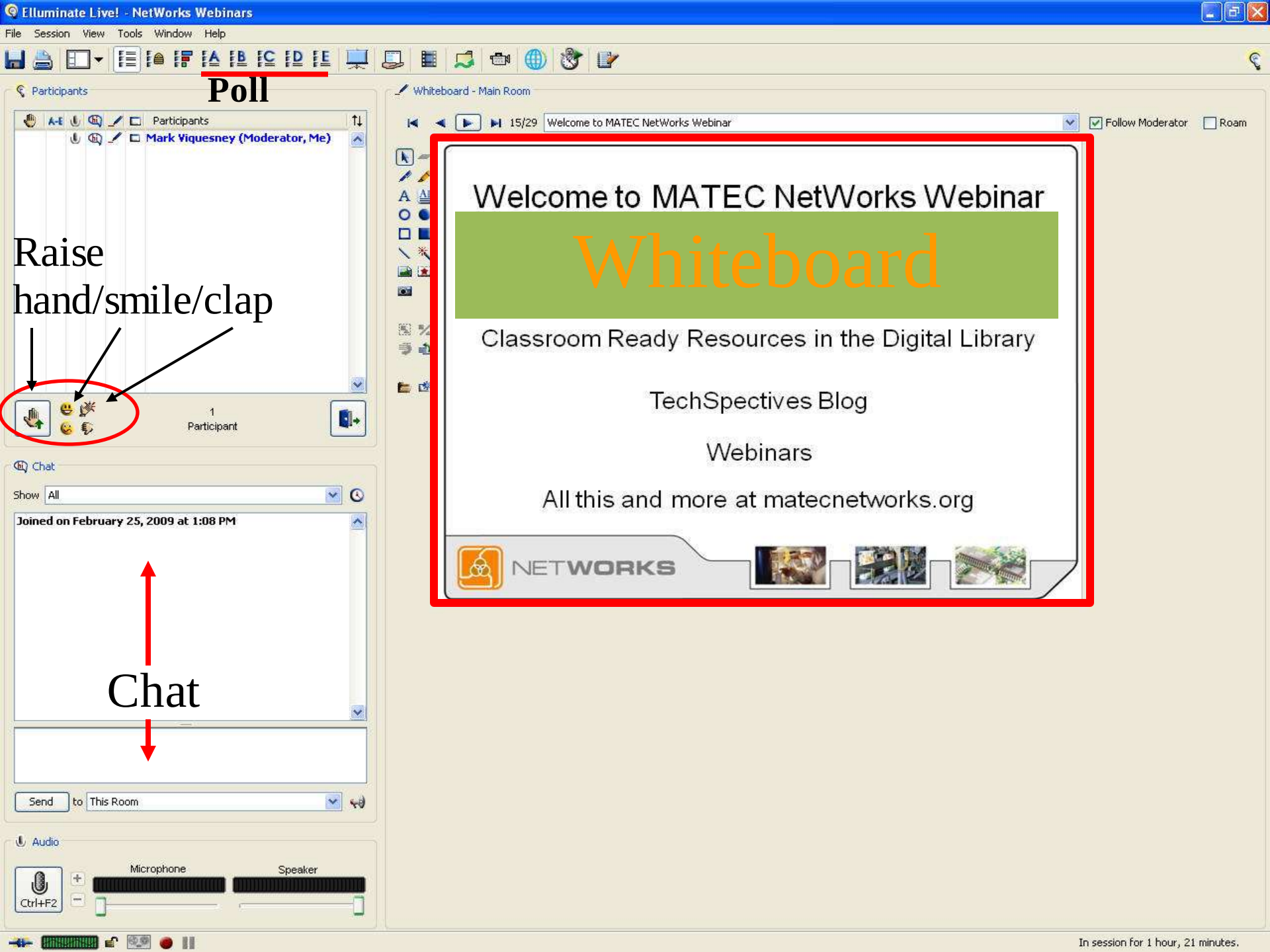
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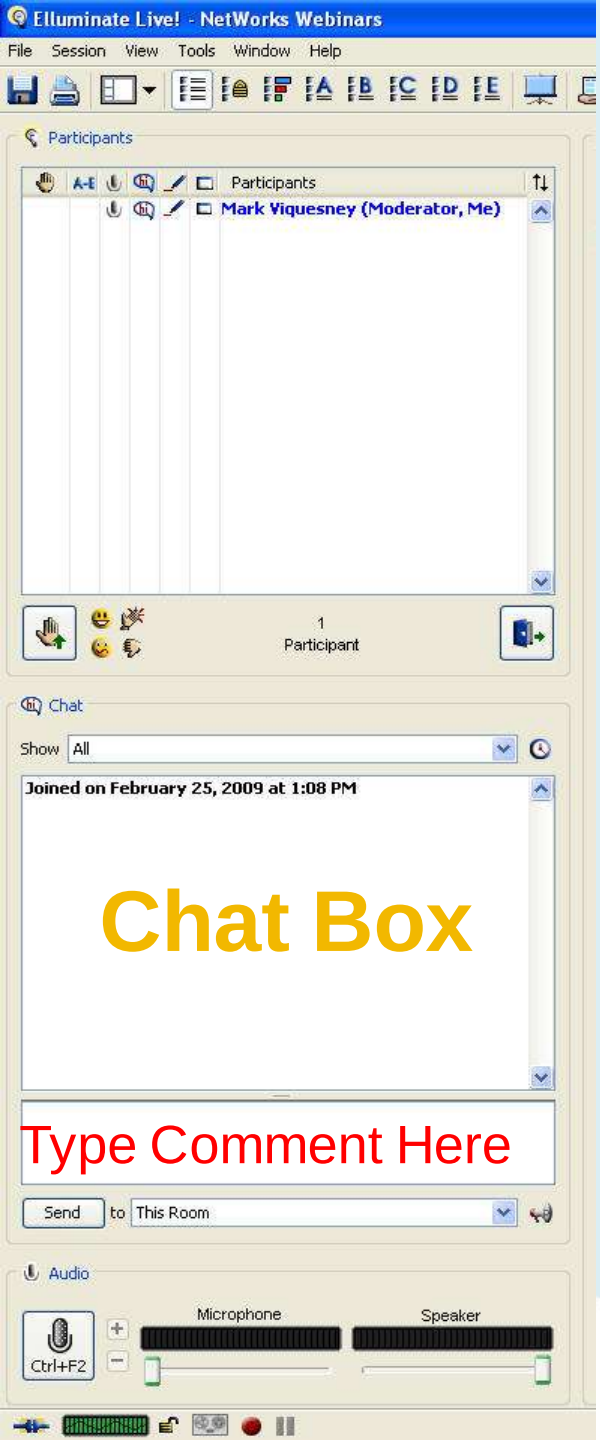

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In the **Chat Box**,
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and how many people are attending with you today.

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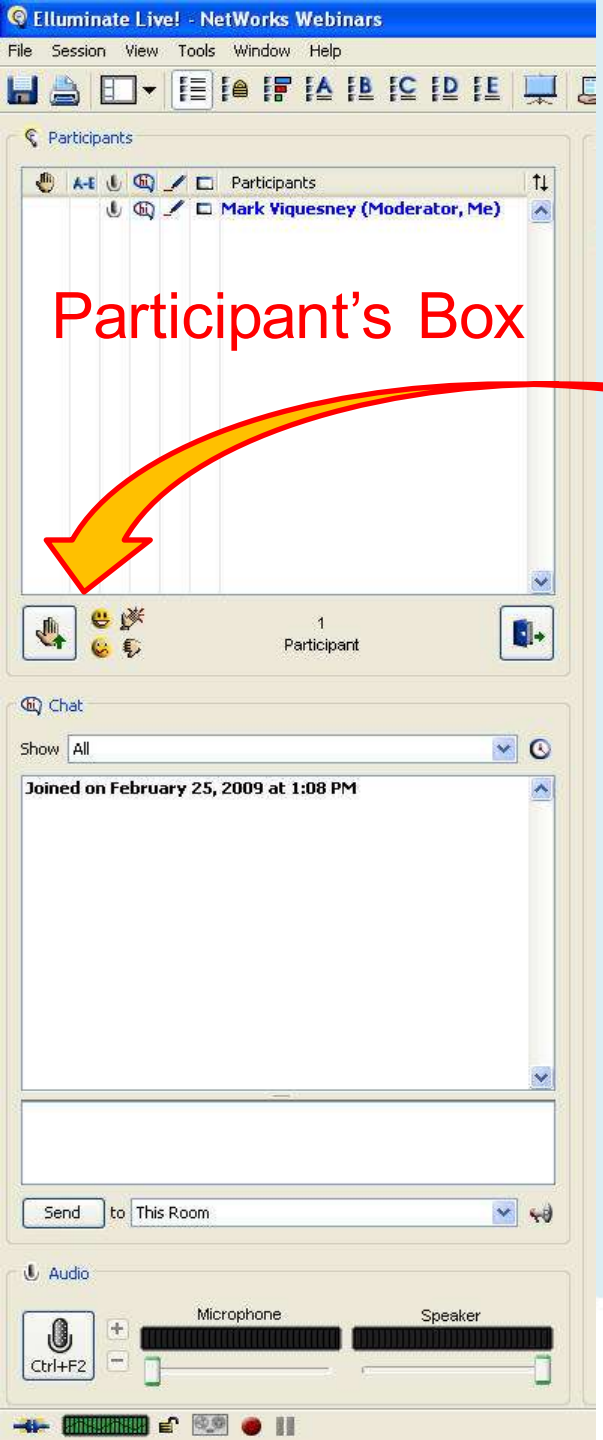
Participant's Box



Let the presenter know if you like what they say with a smile or clap. Raise a hand if you have a question – and then type it into the chat box.

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eSyst Webinar Presenters

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Overview

- Implementing the Distribution Logistics Technician Program (CDP)
- Need for a Consortium
- Periodic Program Review
- Partners' Inputs on Inventory Control
- Outcomes

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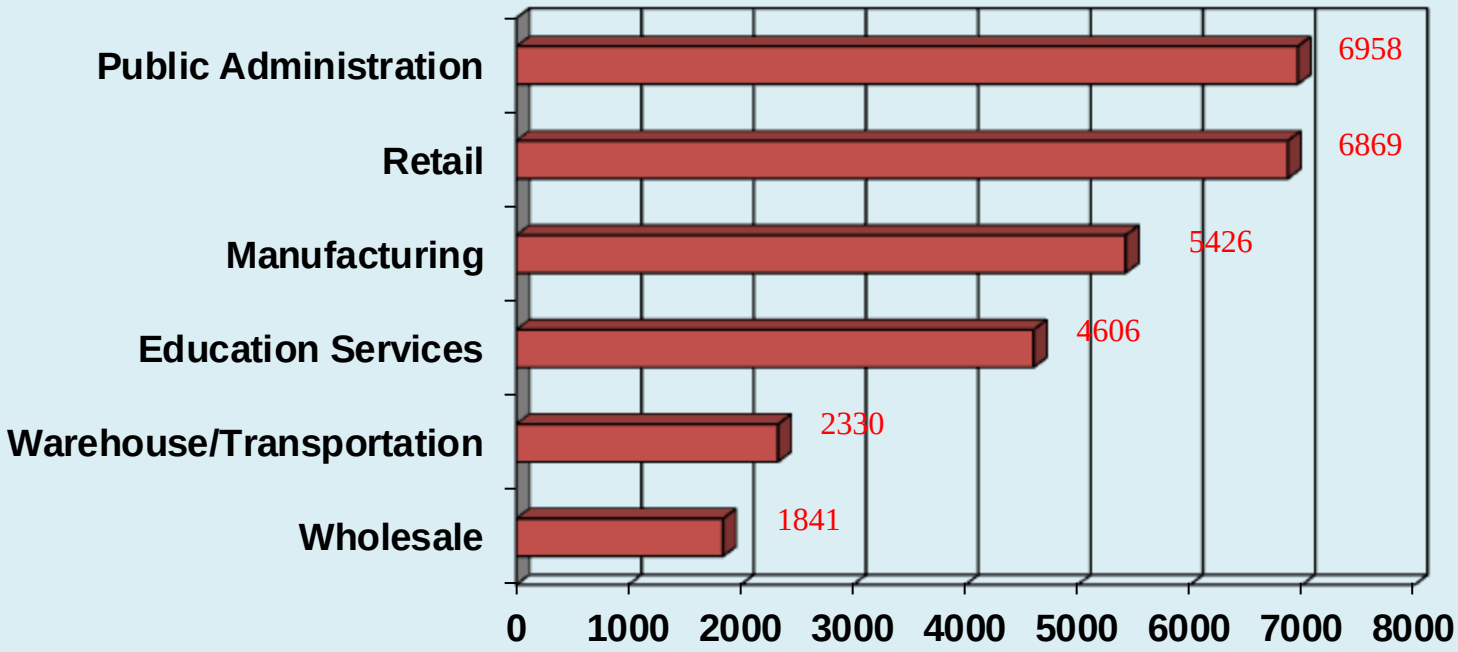
Implementing CDP

Top Six Major* Employers in Estrella Mountain Service Area
Breakdown by Industry (2009)



*100 or more employees

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CDP Curriculum

- Five blocks of instruction covered over 160 hours
  - Working in Warehousing Environment
  - Communication and Teamwork
  - Warehousing and Distribution Process
  - Warehousing Technology Skills
  - Additional Skill Requirements

Journey to Launch CDP

- Adopted curriculum in 2007
- First class of 10 completed in 2008
- Through 2010, 83% completion rate
- Enrollment impacted by economy
  - Hiring nonexistent because of extremely low turnover
  - Hiring freezes halted need to find new recruits
- Industry partners have renewed commitment
  - They value program completers over pool of available labor

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Defining the Consortium

A consortium is an association of two or more individuals, companies, organizations, or governments (or any combination) with the objective of participating in a common activity or pooling their resources for achieving a common goal.

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Consortium Participants

Special thanks to everyone who supports the Distribution Logistics Technician Program by sharing their resources and expertise.

Advantage Logistics	AeroTurbine
Albertsons LLC	Amazon.com
Bashas	Berry Plastics
Coca-Cola	Conair
Core-Mark	Costco
Crescent Crown	Gatorade-Pepsico
Honeywell	Macy's Fulfillment Center
ULTA Cosmetics	And Estrella Mountain staff

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Periodic Review of Program

Annual Consortium meetings

- Attendees include human resource, warehouse and operations managers
- Attend semi-monthly West Valley Human Resource Manager Group

Address Ongoing Challenges

- Maintain cadre of skilled and knowledgeable teachers
- Keep content current and applicable to local industry
- Supplement classroom activities with real world examples
- Student engagement and success

Apply Systems Approach

- First round: Adopted curriculum on Good Manufacturing Practices
- Current round: Upgrade Inventory Control content
  - Feedback from instructors and prior program completers
  - Collect input from industry partners on current policies, procedures, and technology used to improve inventory control
  - Research textbooks, trade publications, and online resources

Apply Systems Approach

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  - Feedback from instructors and prior program completers
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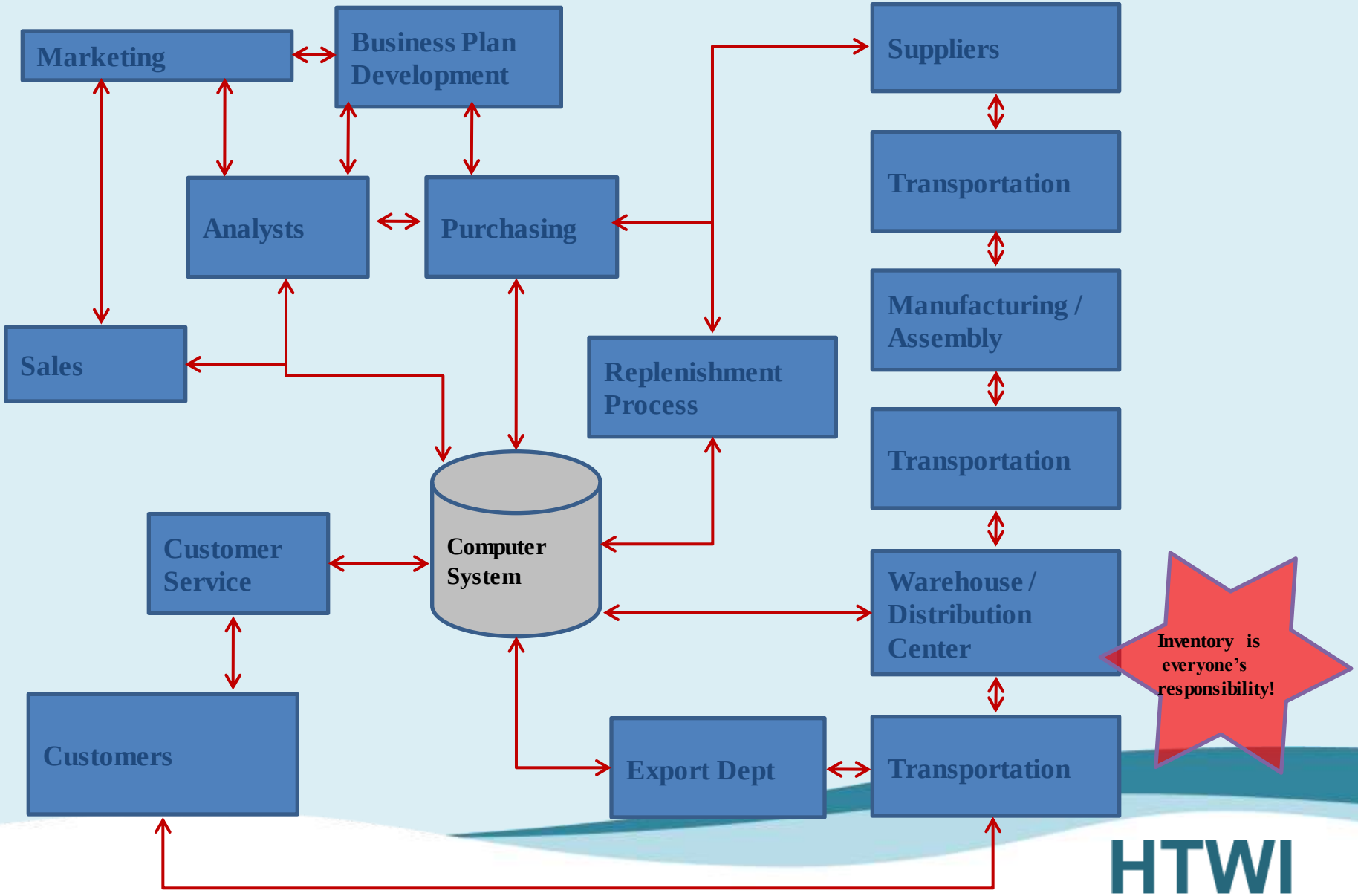
  - Research textbooks, trade publications, and online resources
- Next round: TBD

Systems Look at a Supply Chain Structure



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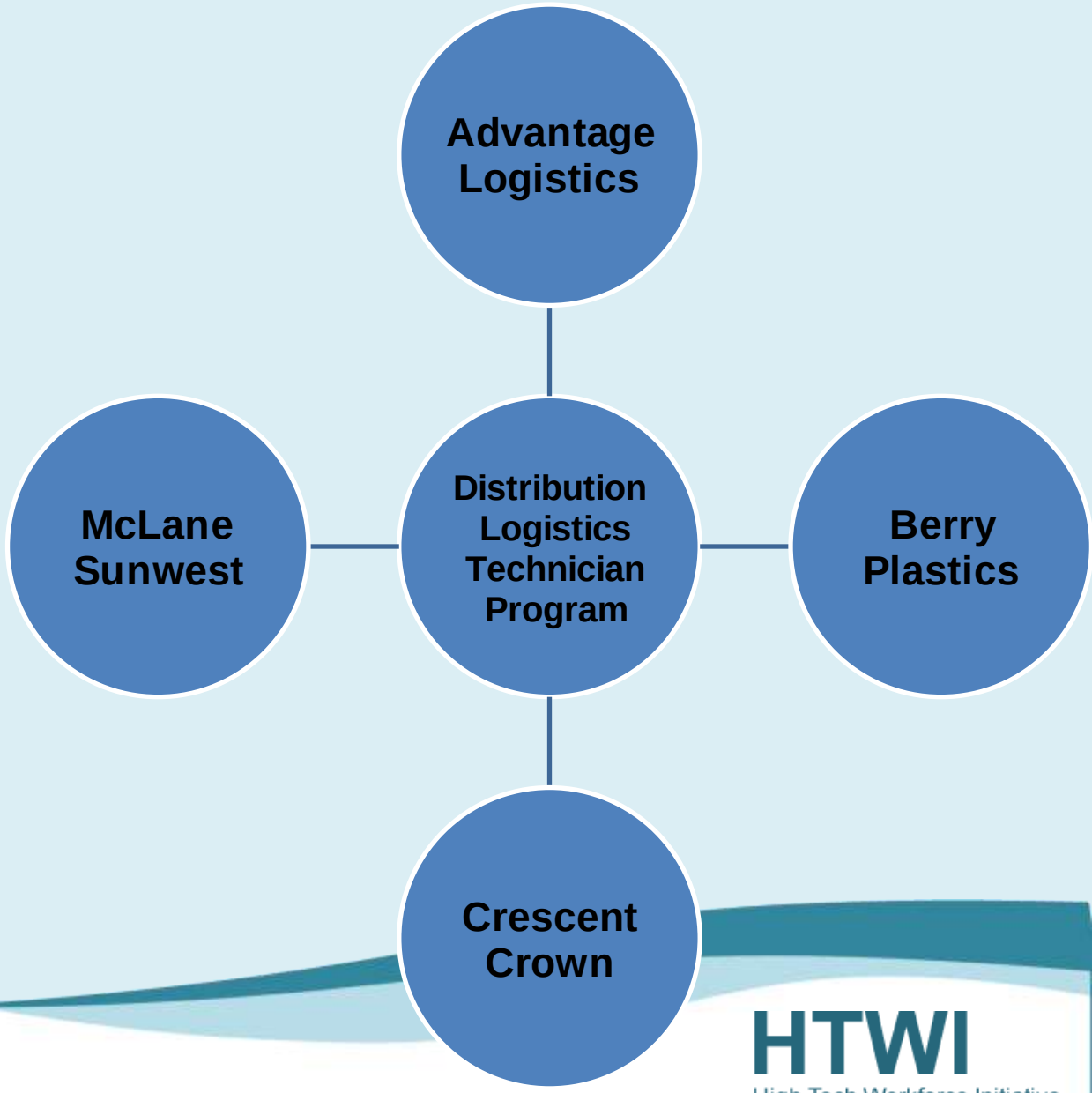
Partners For Inventory Control



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Review of Inventory Content

- Current curriculum
  - Geared toward production
    - Raw material control
    - Push vs. Pull concepts
- Consortium primary concerns
  - Different categories of inventory
  - Business-specific measurements
  - Efficient/effective inventory management
  - Maximizing technology

Retail and Wholesale Trade

- Categories of Inventory
  - Varies by company
  - Dry grocery, grocery single cell vs. case, candy / repack, cooler / freezer, seasonal, general merchandise and more
- Measurements
  - Shrinkage
  - Adjustments
  - Sales
- Inventory Management
  - Cycle counts
  - Third party logistics
- Technology
  - RF receiving & shipping
  - Pick-to-light system
  - Warehouse management system
  - Automated material handling

Case Study

Cycle Count: Which products have priority?

Cycle Count

Apply cycle counting to a given scenario.

1) Consider these criteria for determining cycle count frequency:

Pilferage / Shrink
High dollar value
Perishable / Dated
Regulatory control

2) What type(s) of technology could improve inventory control?

Manufacturing Inputs

- Categories of Inventory
  - Raw materials
  - Work-in-process
  - Finished goods
- Measurements
  - Finished goods
  - Sales
  - Rework
- Inventory Management
  - MRP
  - Safety levels
  - Min-Max production
  - First in – First Out
- Technology
  - Automation
  - MRP System

Case Study

Factors Influencing Economic Manufacturing Quantity

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Economic Manufacturing Quantity

1) Determine the Economic Manufacturing Quantity for a given scenario for producing floral pots.

2) Calculate the following:

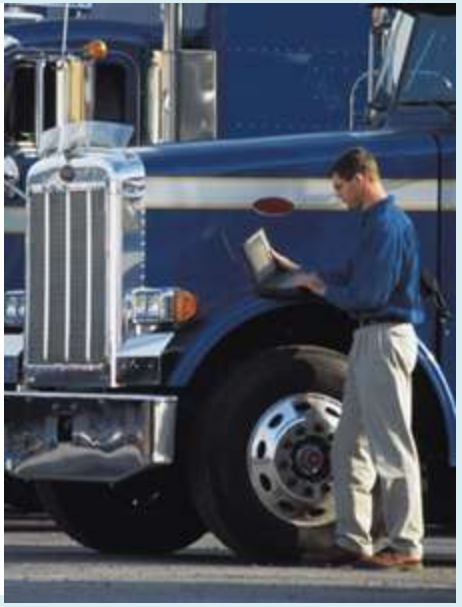
- Daily demand rate
- Highest inventory level
- Annual product cost
- Annual holding cost
- Annual set-up cost
- Total annual inventory costs
- Length of a production period
- Length of each inventory cycle
- Rate of inventory buildup during production
- Number of inventory cycles per year

3) Additional question:

If the manufacturer wants to produce custom, made-to-order pots for florists that are printed with personalized script what type of technology may it need to invest in to produce quality labeling, be responsive to customers, and keep costs down? . . . Consider entire supply chain structure.

Transportation and Warehouse Input

- Categories of Inventory
  - Saleable / unsalable
  - Close to code
  - Dunnage – Pallets and packing
- Measurements
  - Shrinkage
  - Inventory turn
  - Sales
- Inventory Management
  - Quality control
  - Forecasting
  - Cycle counts
- Technology
  - Automated pallet weighing
  - Live ordering interface
  - RF receiving and shipping
  - Voice command order selection
  - Warehouse management system



Case Study

e-Business: The challenges of a live ordering system

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e-business

Use the Supply Chain Structure as a guide:

1) Identify which functions could benefit by automating business transactions?
2) How will e-business effect continuous replenishment?
3) How would you apply RFID technology?
4) What other technology would you employ?
5) What are the implications of a live system on the distribution center stock levels?
6) Impact to suppliers?
7) Impact to customers?

Outcomes

- New curriculum on inventory management
- Case studies linked to facility tours
- Content that is applicable to local businesses

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Any Questions?

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Thank You for attending today's HTWI webinar

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