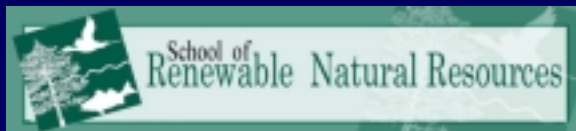# The Certification Information System:© Managing Chain-of-Custody

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School of Renewable Natural Resources

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March 2003

Common Questions About Certification

- What motivates companies to certify?

- Does sufficient consumer demand exist?

- Are programs practical in large scale natural forest systems?

- Are programs practical with an industry that sources logs from up to 4 million forest landowners?

- Who is going to pay for certification?

- Oversight and compliance?

- How competent are certifying agencies?

- Is one scheme better than another?

- **What is the feasibility of maintaining an audit trail for certified wood through channels of distribution?**

Complexities of Chain-of-Custody
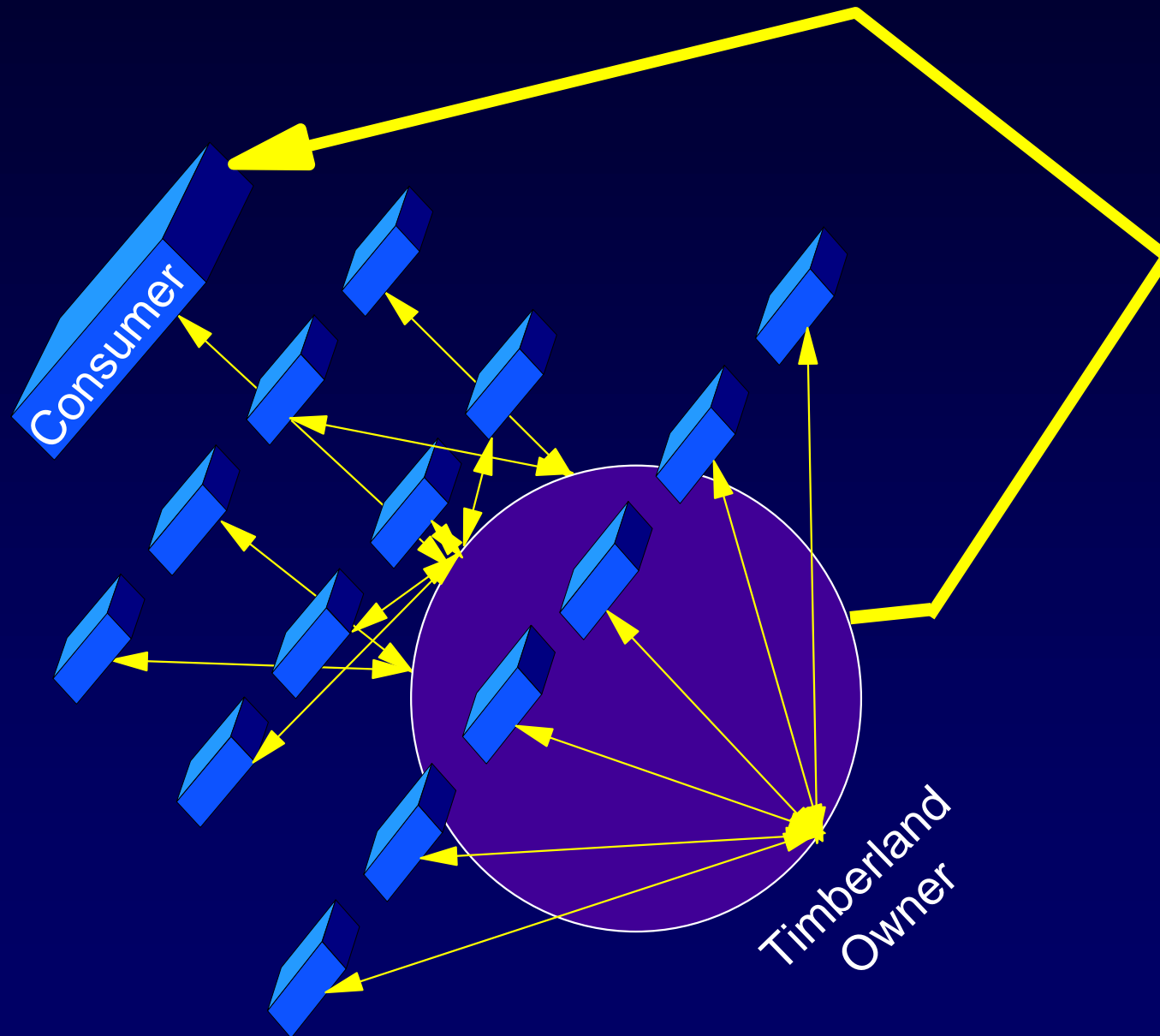
The Problem

There is a need for an extremely **high quality** (quality assurance and production) and the **logistical precision** required to meet the needs of chain-of-custody (COC) specifications.

COC is a materials management and production exercise.

COC is seen by many as the weak link in the Certification process.

Chain-of-Custody
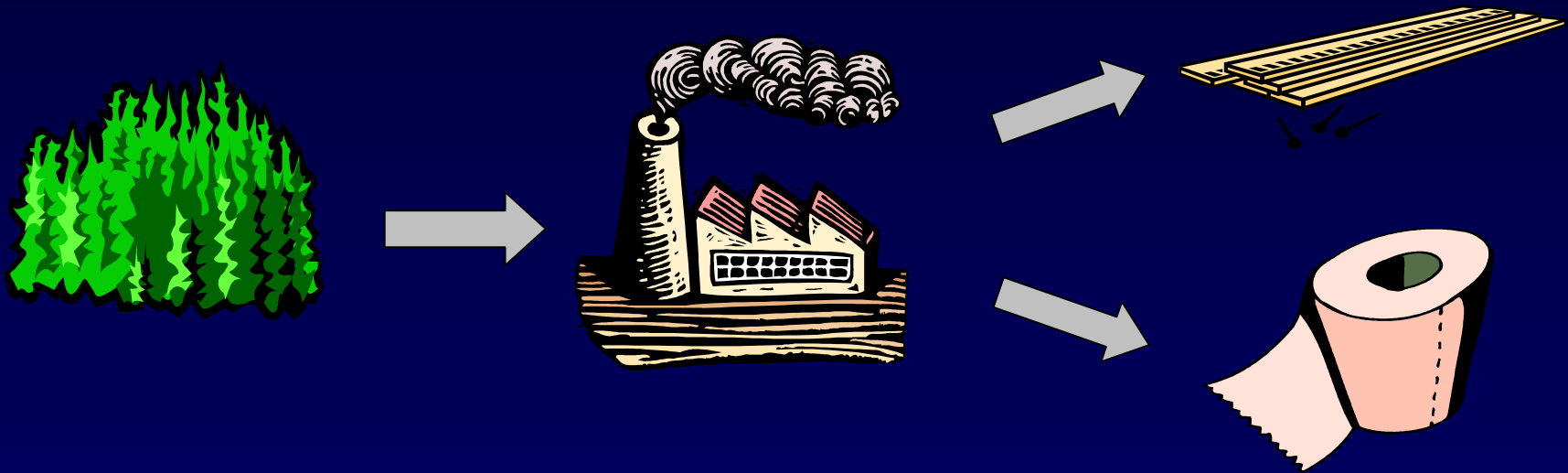# An Integrated Process

Environmental
Strategy

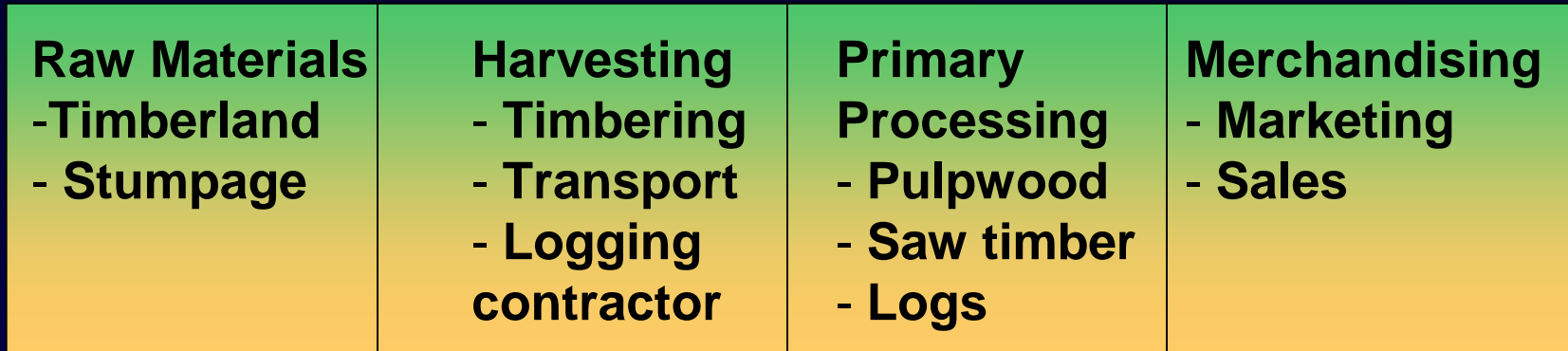Certification

Organizational
Strategy

Technology
Strategy

Effective
Chain-of-Custody Can:

✓ Manage certified inventory and channel costs.

✓ Help a company to be responsive to customers and the marketplace.

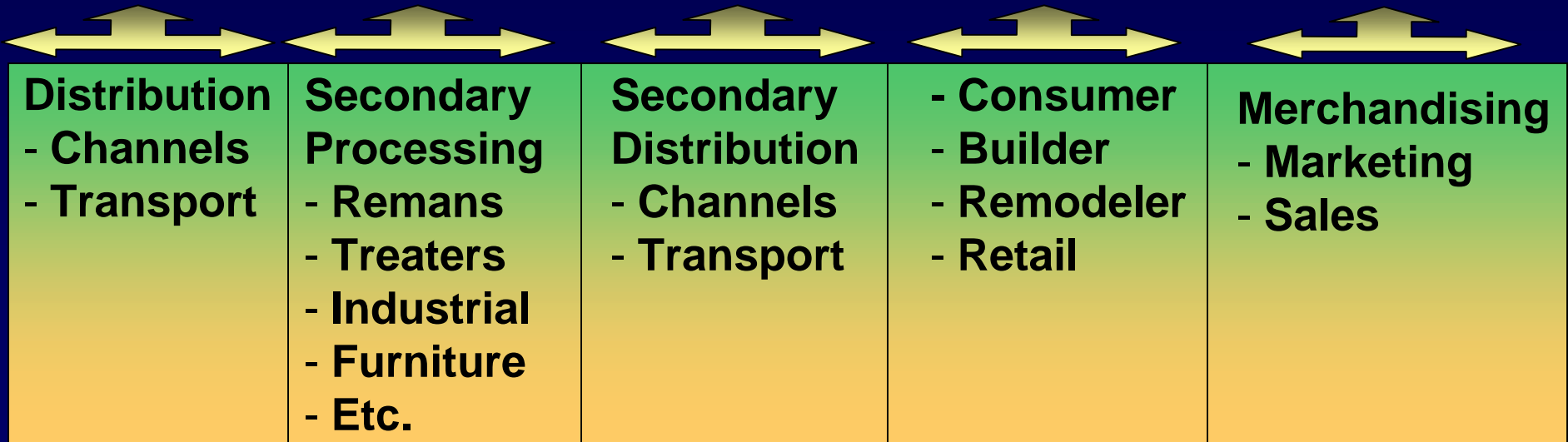✓ Create flexibility and coordination in production, delivery and replenishment of certified wood products.

The Forest Products Market Chain
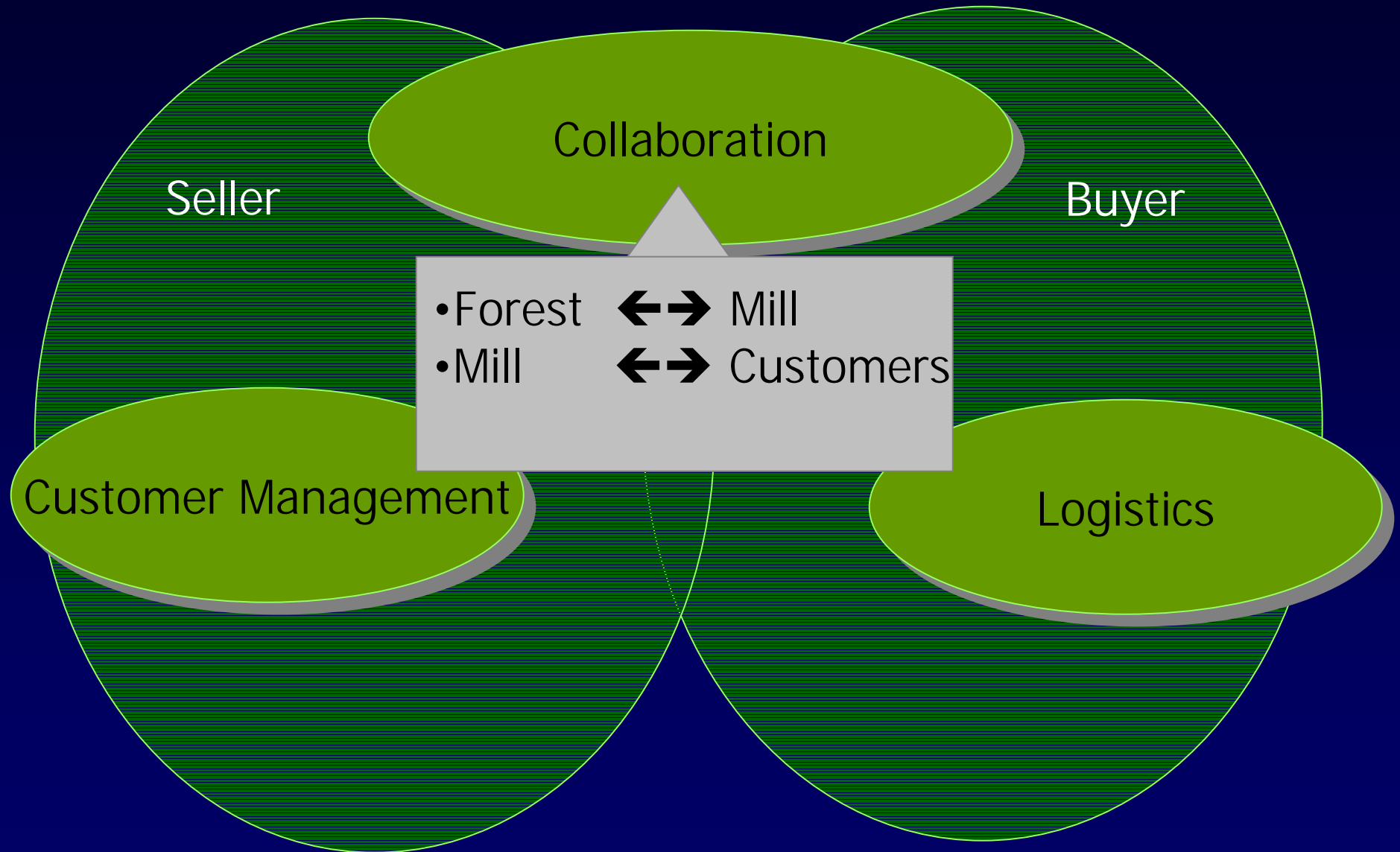
The Traditional Forest Products Value Chain

Raw Materials	Harvesting	Primary Processing	Merchandising
-Timberland - Stumpage	- Timbering - Transport - Logging contractor	- Pulpwood - Saw timber - Logs	- Marketing - Sales

Potential CIS-Information Interfaces

Distribution	Secondary Processing	Secondary Distribution	Consumer	Merchandising
- Channels - Transport	- Remans - Treaters - Industrial - Furniture - Etc.	- Channels - Transport	- Consumer - Builder - Remodeler - Retail	- Marketing - Sales

(Adapted from Terry Aaron-TALPX 2000)

Certification Interfaces

Collaboration

Seller

Buyer

- Forest ←→ Mill
- Mill ←→ Customers

Customer Management

Logistics

(Adapted from Forest One 2000)

COC Complexities are Magnified
By International Certified Wood Trade

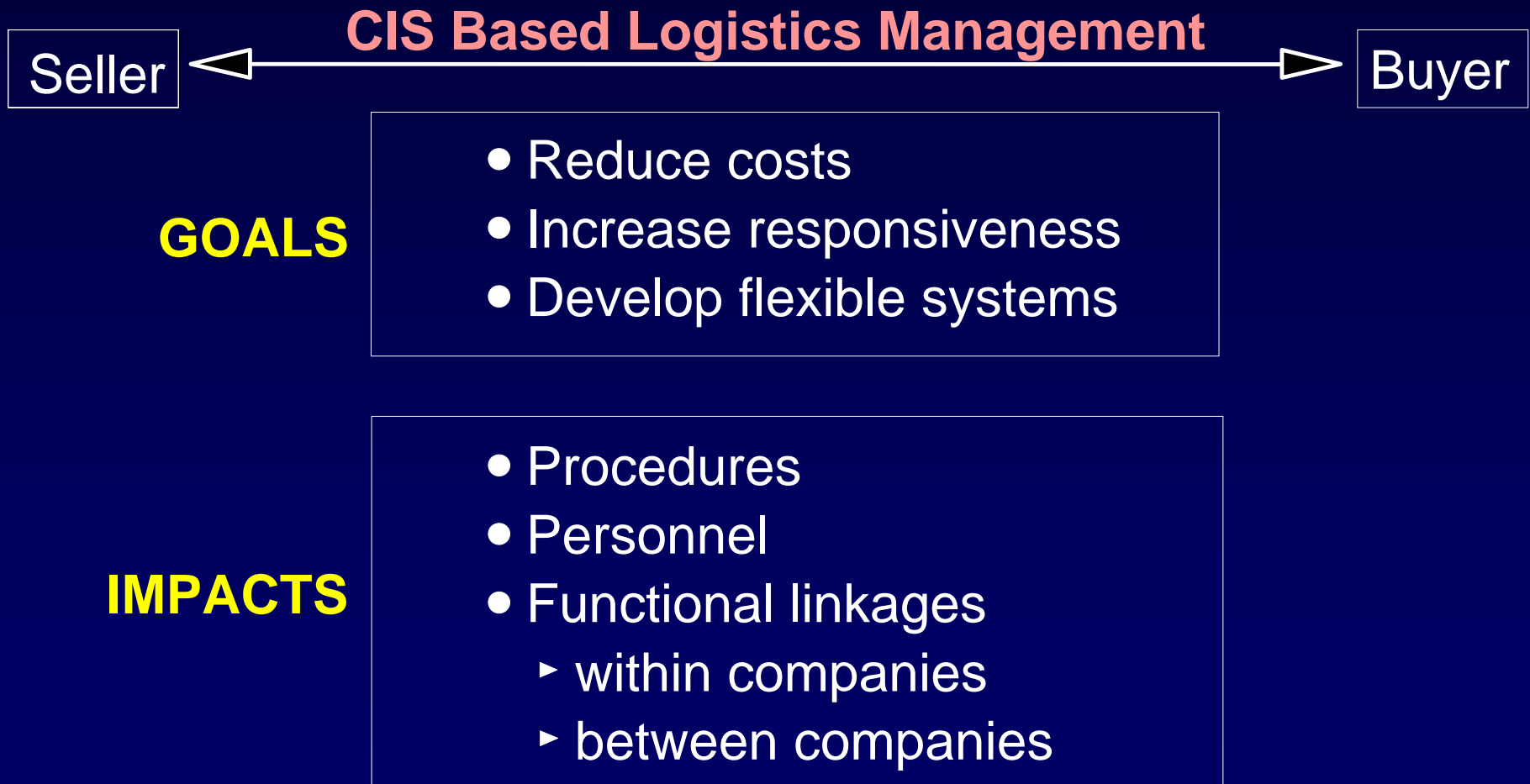# What is the Certification Information System©?

(CIS)

CIS Elements

✓ *Information Sharing*

- ▸ Partnerships
- ▸ Relationships
- ▸ Internet-based Information Interchange

✓ *Information Transmission*

- ▸ Bar Code Based Data Collection
- ▸ Internet-based Information Interchange

Transition To CIS-Based Certification Channel Management

CIS Based Logistics Management

Seller ◄─────────────────────────► Buyer

GOALS

- Reduce costs
- Increase responsiveness
- Develop flexible systems

IMPACTS

- Procedures
- Personnel
- Functional linkages
  - ▸ within companies
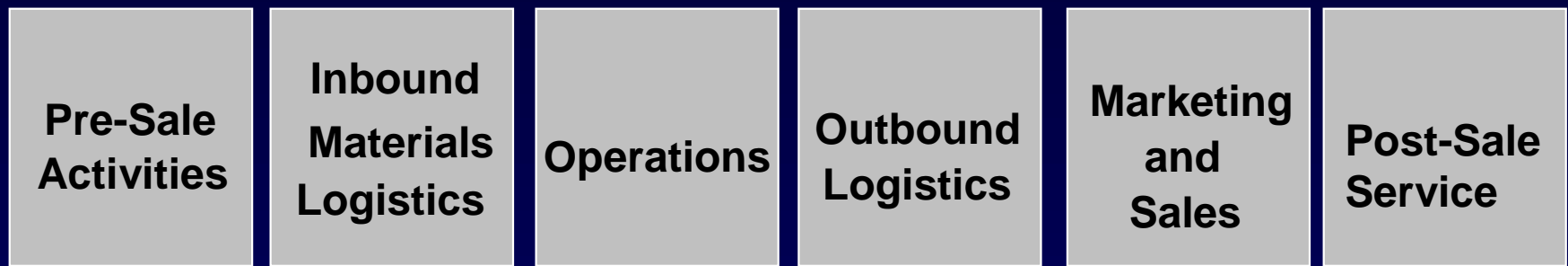 - ▸ between companies

CIS Features

- ✓ Management reporting
- ✓ Real-time inventory status
- ✓ Multiple location management
- ✓ Linked to order entry and sales systems
- ✓ Personal computer based
- ✓ Internet connectivity

The Intra-Company Component of the Value Chain is Impacted by COC

CIS Based Logistics Management

Pre-Sale Activities	Inbound Materials Logistics	Operations	Outbound Logistics	Marketing and Sales	Post-Sale Service

Intra-Company Value Chain Activities

End-to-End Coordination
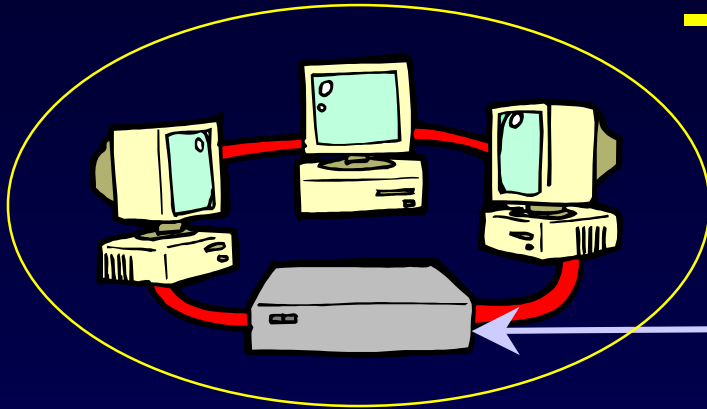
CIS:
Elements

Information Sharing

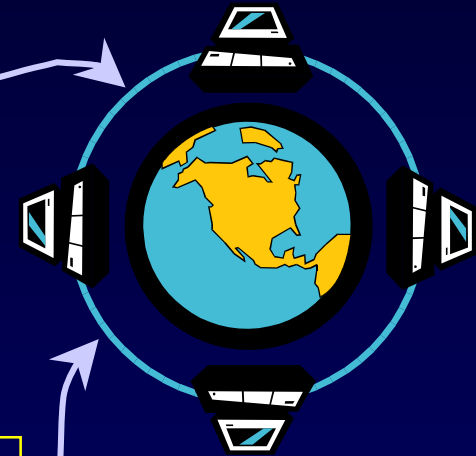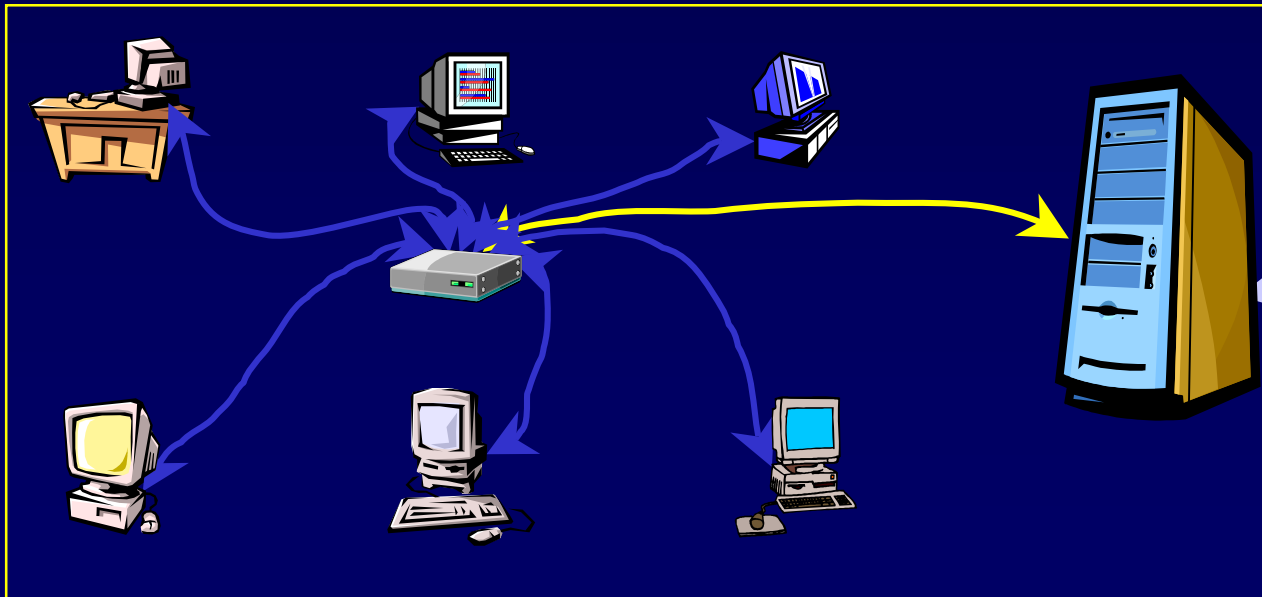Enhanced Channel Relationships
- ► Relationships
- ► Partnerships
- ► Strategic Alliances?

CIS Internet-Based Partnership Linkages -Information Flow-
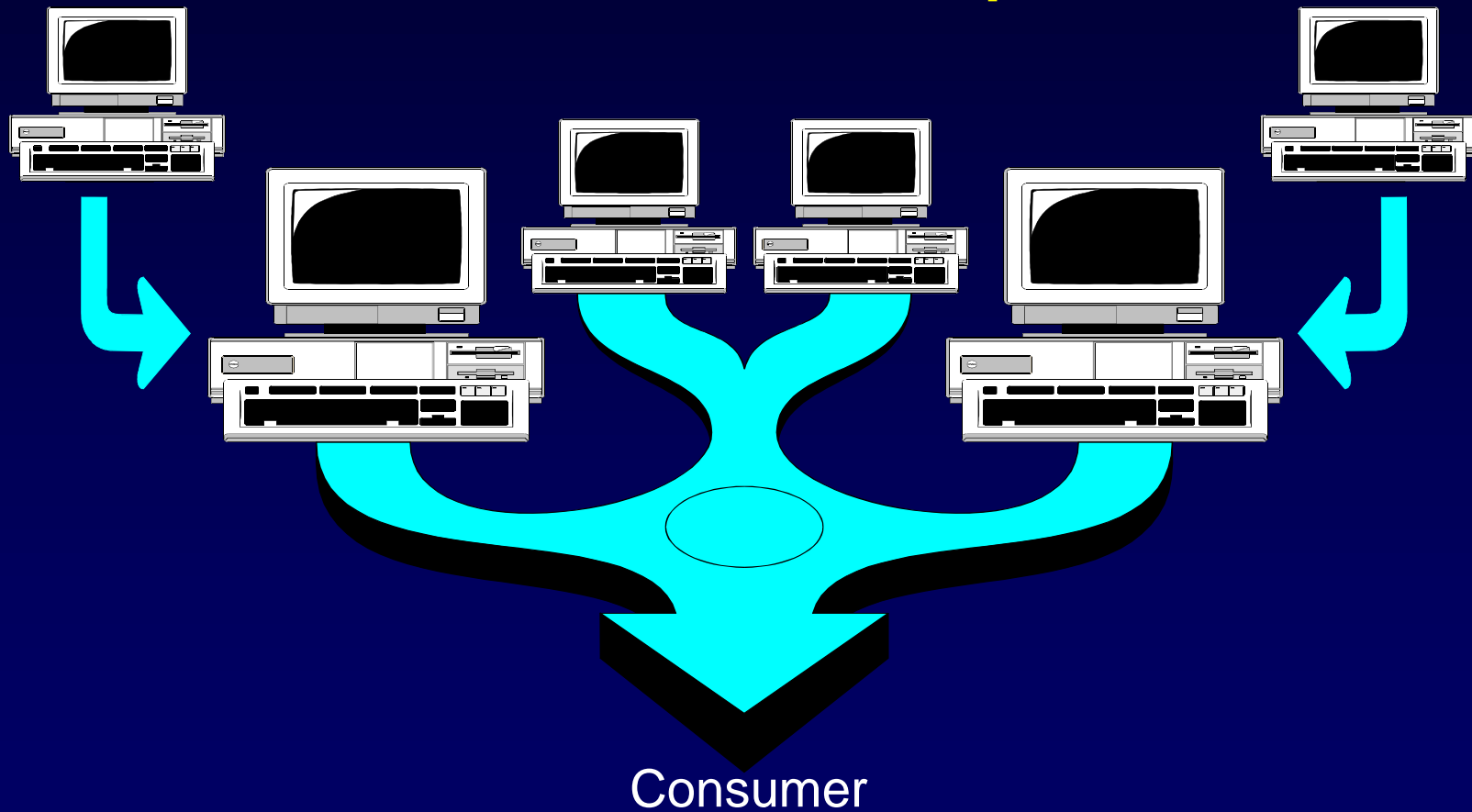
Your Company

Your Customer or Supplier

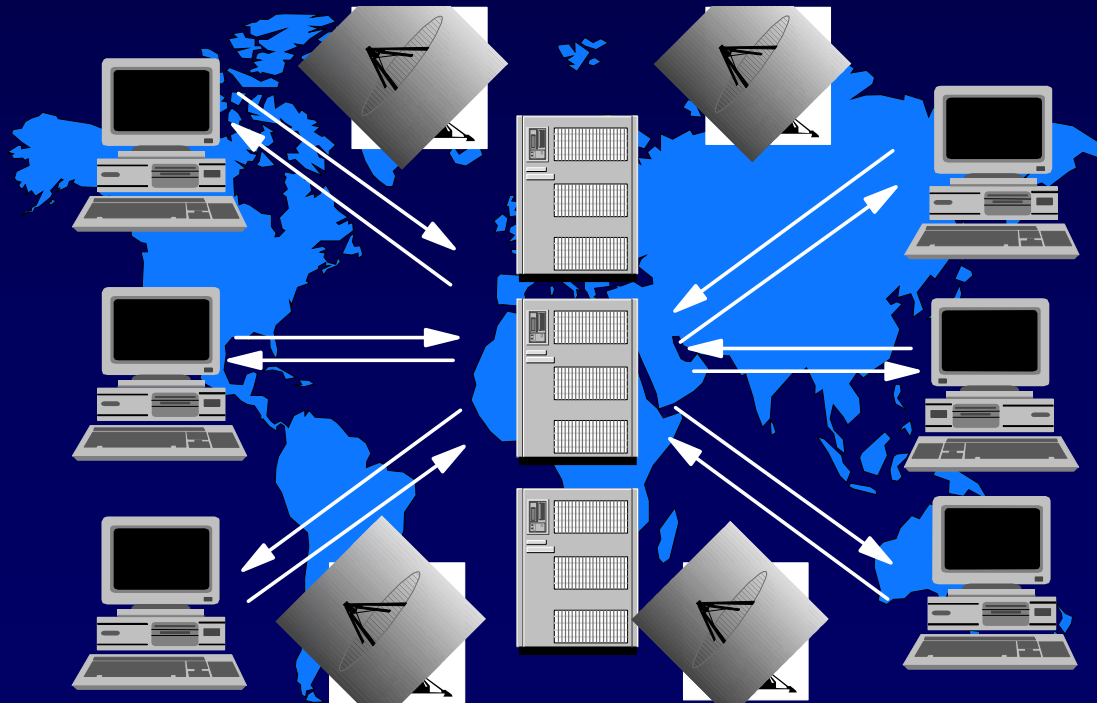*(Adapted from Michael & Punches 2000)*

Certification Information System:
A Network of Companies

Consumer

CIS:
Elements
Information Transmission

► Bar Code Based Data Collection/Inventory Management

► Internet-based Information Interchange

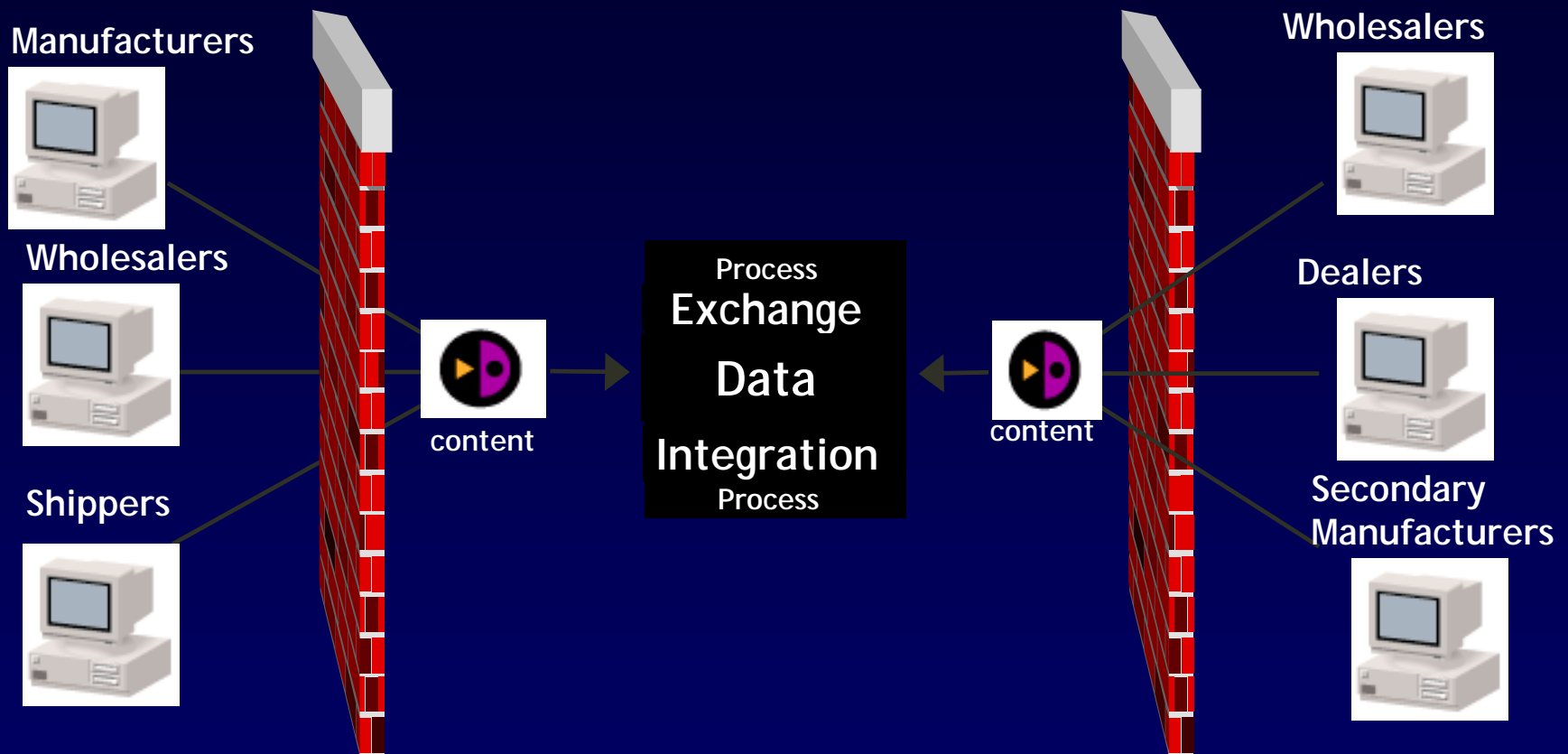# Bar Code Based Data Collection/ Inventory Management

An accurate and cost effective method of automating the identification and management of shipping units.

Information contained on unit level bar coded products may be used for internal inventory management and control or be communicated to customers as part of a joint (buyer/seller) inventory management strategy.

Bar Code Based Data Collection/ Inventory Management Additional Benefits Beyond COC!

- ✓ Cut order response time
- ✓ Improve efficiency & productivity
- ✓ Reduce physical inventories
- ✓ Greater speed & accuracy
- ✓ Improve customer service
- ✓ Improve inventory control & management
- ✓ Real-time inventory management
- ✓ Reduce data entry errors
- ✓ Speed up product replenishment
- ✓ Reduce costs
- ✓ Increase market share

Exchanges Can Facilitate CIS Connectivity

Manufacturers

Wholesalers

Shippers

content

Process
Exchange
Data
Integration
Process

content

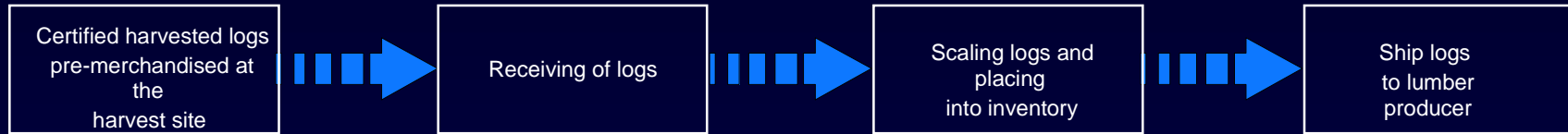**Wholesalers**

Dealers

Secondary Manufacturers

1. Communicate Between Disparate Systems – Documents, Electronic File Formats and Product Attributes

2. Exchange Information Between Trading Partners

3. Collaborate Throughout Supply Chain

The Certification Information System©
(CIS)

An Example

Certified Information System©-Data Collection Process

From Forest to Log Inventory

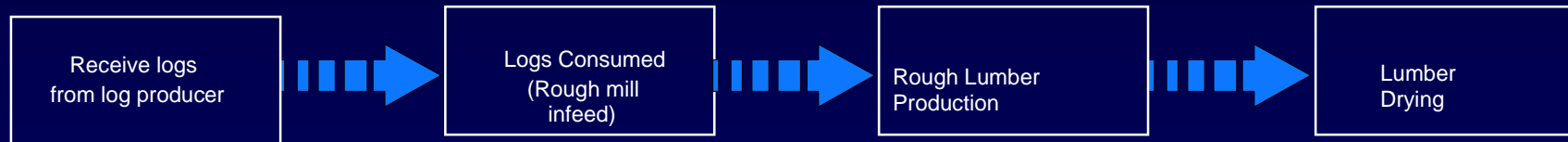| Certified harvested logs pre-merchandised at the harvest site	→	Receiving of logs	→	Scaling logs and placing into inventory	→	Ship logs to lumber producer

- Logs segregated in certified decks
- Logs bar coded with on-site portable printer
- Logs scanned with portable hand-held data collection device

- Driver scans in. Weight & time are recorded.
- Driver unloads logs and scans out. Weight & time are recorded.
- Receipt slip indicating certified load is printed on site for driver.

- Log scaler enters scaling information including certification identification
- Logs bar coded with on-site portable printer
- Logs scanned with portable hand-held data collection device
- Data downloaded from handheld device to update inventory
- Logs placed into inventory

- Log tags scanned with portable hand-held data collection device on the truck
- Data downloaded from handheld device to update inventory
- Use downloaded information to generate shipping documents

Lumber Manufacturing Processes

| Receive logs from log producer	→	Logs Consumed (Rough mill infeed)	→	Rough Lumber Production	→	Lumber Drying

- Log tags scanned with portable hand-held data collection
- Data downloaded from handheld device to update inventory

- Log bar code tags scanned as logs enter the mill
- Logs removed from log inventory

- Rough lumber tallied as stickered for drying
- Tags printed and applied to rough units
- Rough lumber bar codes scanned and entered into rough certified lumber inventory
- Rough units stored for further processing

- Green units assembled for kiln drying
- Lumber dried
- Dried units are scanned
- Unit status changes from green to dry rough

Rough Lumber Consumed	→	Finished Lumber Produced	→	Ship lumber to home center retailer customer
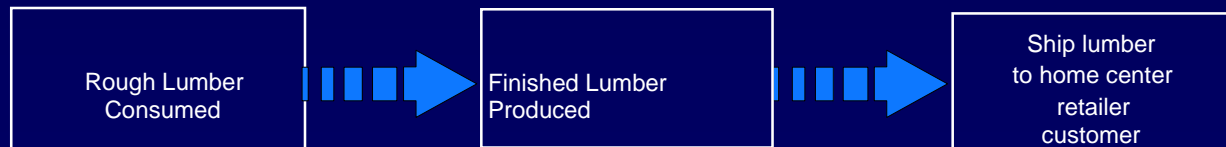
- Rough units scanned as are broken down
- Rough units removed from rough inventory

- Finished certified lumber is tallied as it is banded
- Finished unit certified inventory bar code tag printed
- Finished unit bar code scanned
- Unit is entered into certified finished product inventory
- Unit is segregated for storage

- Lumber tags scanned with portable hand-held data collection device on the truck
- Data downloaded from handheld device to update inventory
- Use downloaded information to generate shipping documents

Adapted from: Pedersen 1994

Certification Information System©
Data Collection Sites

From Forest to Log Inventory

Certified harvested logs pre-merchandised at the harvest site

Receiving of logs

- Logs segregated in certified decks.
- Logs bar coded with on-site portable printer.
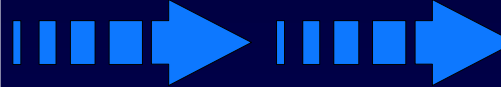- Logs scanned with portable hand-held data collection device.

- Driver scans in. Weight & time are recorded.
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- Receipt slip indicating certified load
- is printed on site for driver.

Certification Information System©
Data Collection Sites
From Forest to Log Inventory

| Scaling logs and placing into inventory | ▰▰▰▰➤ ▰▰▰▰➤ | Ship logs to lumber producer | ▰▰▰▰➤ |

- Log scaler enters scaling information including certification identification.
- Logs bar coded with on-site portable Printer.
- Logs scanned with portable hand-held data collection device.
- Data downloaded from handheld device to update inventory.
- Logs placed into inventory.

- Log tags scanned with portable hand-held data collection device on the truck
- Data downloaded from handheld device to update inventory
- Use downloaded information to generate shipping documents

Certification Information System[©]
Data Collection Sites

Lumber Manufacturing Processes

| Receive logs from log producer | → → | Logs Consumed (Rough mill infeed) | → |
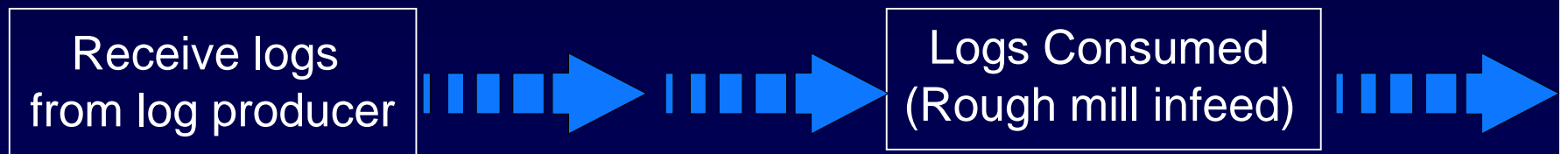
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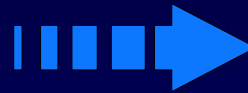- Data downloaded from handheld device to update inventory.

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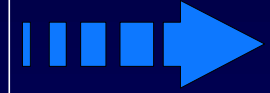
Certification Information System©
Data Collection Sites

Lumber Manufacturing Processes

| Rough Lumber Production |
|---|

➤➤

Lumber Drying

➤➤

- Rough lumber tallied as stickered for drying.
- Tags printed and applied to rough units.
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Certification Information System[©]
Data Collection Sites

Lumber Manufacturing Processes

| Rough Lumber Consumed | ▮▮▮▮➤   ▮▮▮▮➤ | Finished Lumber Produced | ▮▮▮▮➤ |
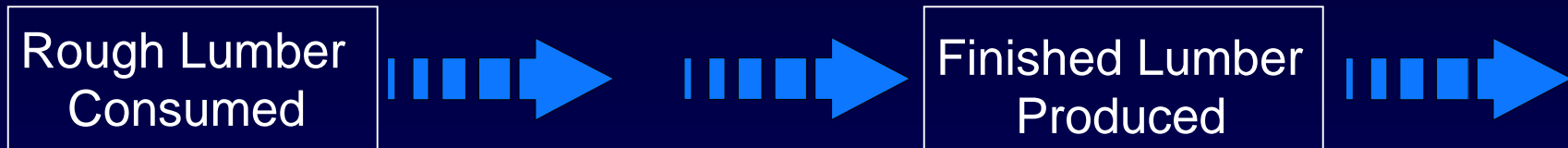
- Rough units scanned as they are broken down.
- Rough units removed from rough inventory.
- Lumber is planed and finished.

- Finished certified lumber is tallied as it is banded.
- Finished unit certified inventory bar code tag printed.
- Finished unit bar code scanned.
- Unit is entered into certified finished product inventory.
- Unit is segregated for storage.

Certification Information System
Data Collection Sites
Lumber Manufacturing Processes

Ship lumber
to customer

- Lumber tags scanned with portable hand-held data collection device on the truck/rail car.
- Data downloaded from handheld device to update inventory.
- Use downloaded information to generate shipping documents.

LOWE'S

THE HOME DEPOT

ACE

EMPIRE

?

Summary

- Certification is building momentum

- Chain-of-custody is an important and potentially complicated component of certification.

- The CIS is one approach to facilitating chain-of-custody.

Questions?

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