"Information Technology Driven Supply Chain Optimization in the Wood Products Industry"

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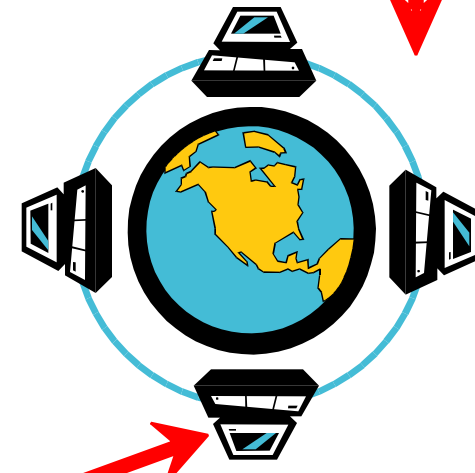
Outline

- Summary

- What Are Supply Chains?

- Why Should We Care?

- What Are Others Doing?

- What Can We Do?

Summary-
Goal is Competitive Advantage

- Lowering Costs
- Increase Value
- Consistently High Product Quality
- Consistent Delivery
- Responsiveness to Customers
- Strong Exchange Partner Relationships
- Flexibility
- Adapt to Change
- Information as Power
- Penetrate, Secure and Maintain Markets
- Motivated Knowledgeable Workforce

Summary
One Key=Technology
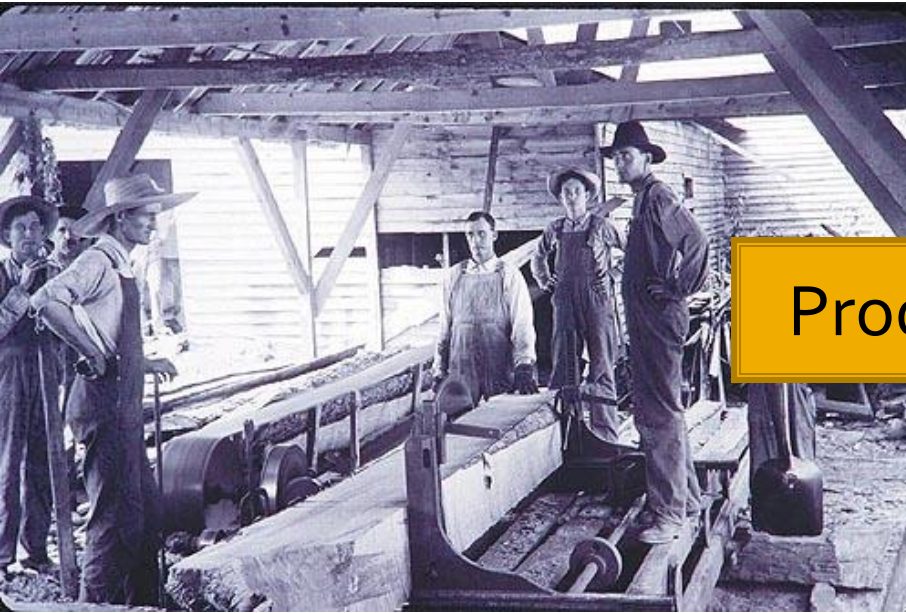
Production

Summary
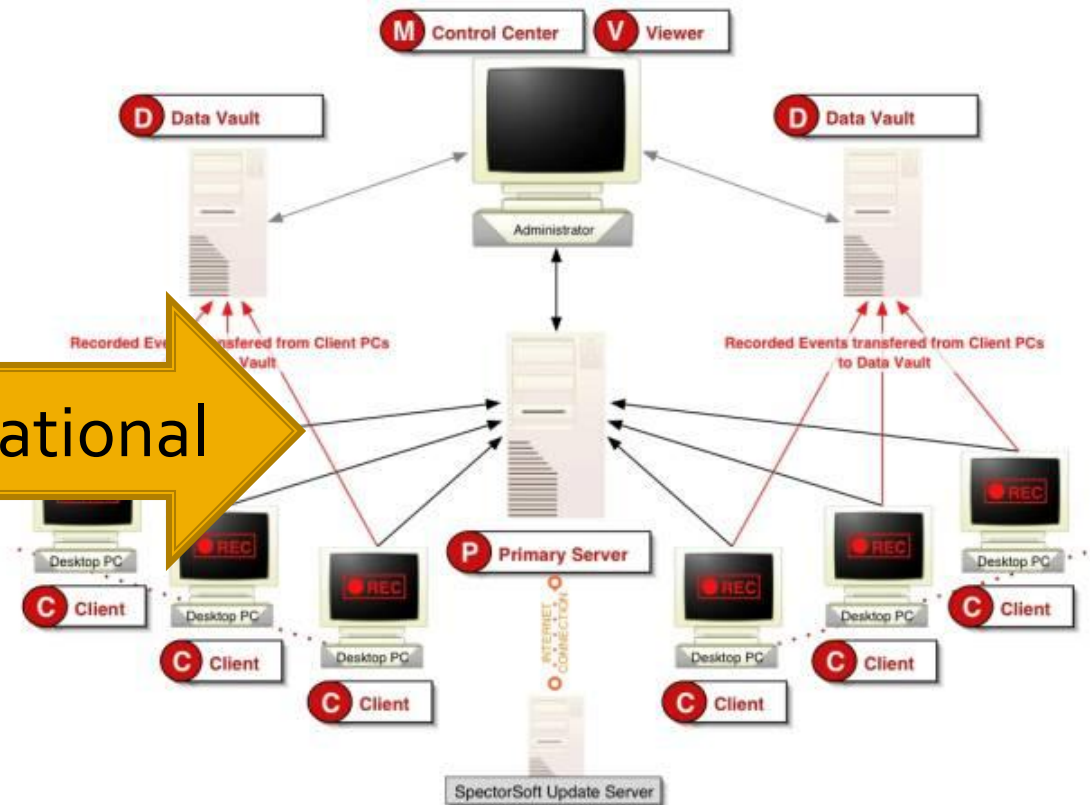# One Key=Technology

Information

Summary
One Key=Technology

Interorganizational
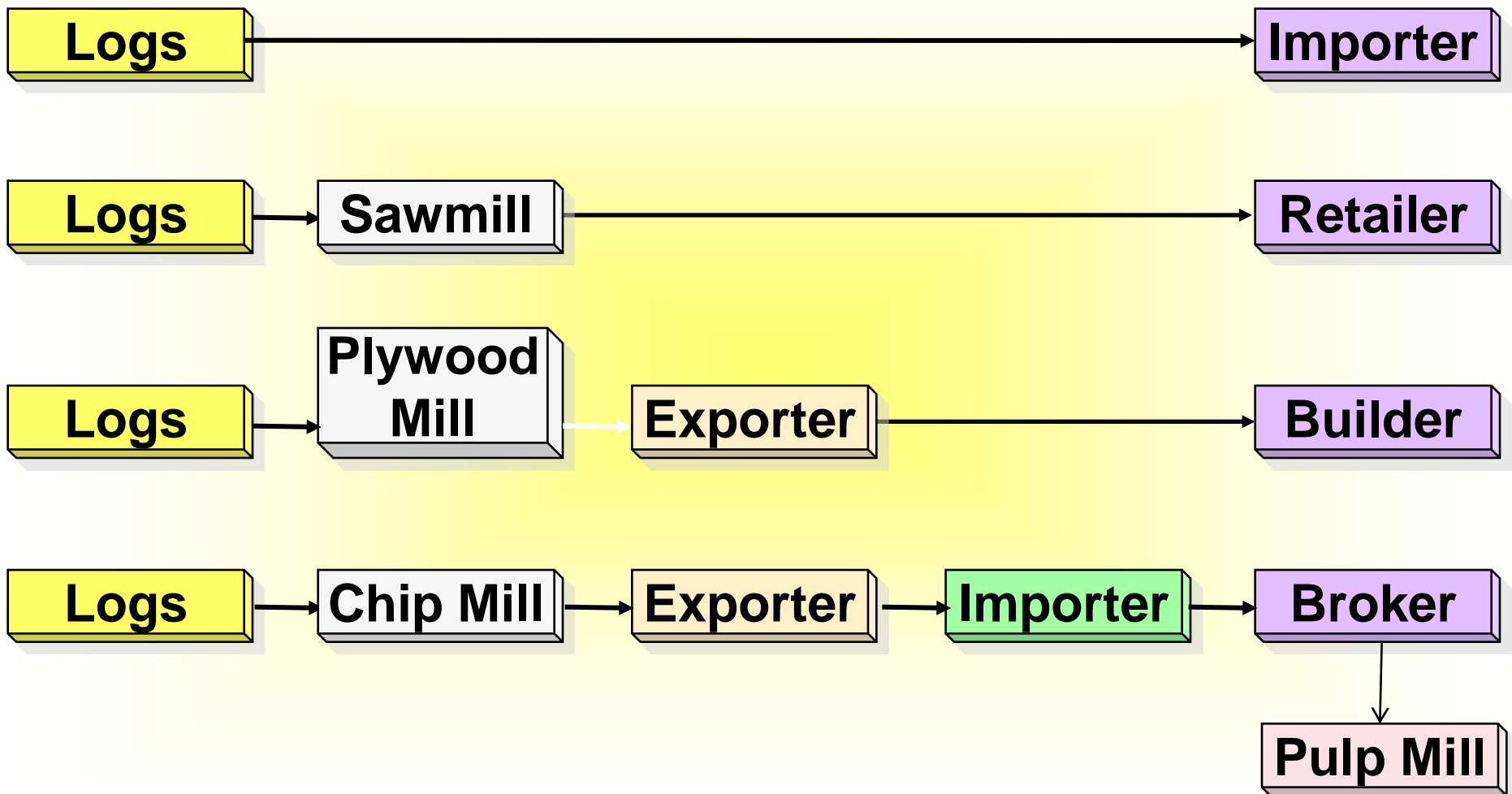
Summary
One Key=Technology

Supply Chain

What is a Supply Chain?

- **Intra-Company:** All functions involved in fulfilling a customer request (product development, marketing, operations, distribution, finance, customer service)

- **Inter-Company:** All functions involved in getting product between exchange partners (information, logistics, tangible product, service, payment, etc.)

What is a Supply Chain?

- Movement of products from suppliers to manufacturers to distributors, but also includes movement of information, funds, and products in **both directions**

- More accurate term "supply network" or "supply web"

- Can be short or long

Supply Chains
Short or Long

Logs → **Importer**

Logs → Sawmill → **Retailer**

Logs → Plywood Mill → Exporter → **Builder**

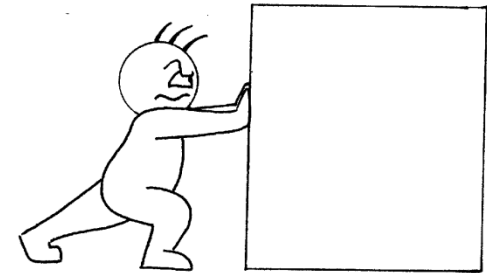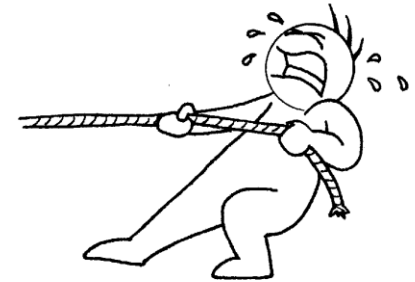**Logs** → Chip Mill → Exporter → Importer → **Broker** → **Pulp Mill**

The Objective of a Supply Chain

- *Maximize overall value created*

- *Supply chain value:*

  - what the final product is worth to the customer MINUS effort the supply chain expends in filling the customer's request

- *Value:*

  - revenue generated from the customer MINUS overall cost across the supply chain

Push/Pull View of Supply Chain Processes

- Pull: execution is initiated in response to a customer order (reactive)

- Push: execution is initiated in anticipation of customer orders (speculative)

- Wouldn't it be better to COORDINATE???

Decisions, Decisions....

Logistics

Order Processing
Submitted
Processed
Shipped

Supply Chain Management

Transportation
Water, Truck, Rail

Warehousing
Storage
Distribution

Inventory
When to order
How much to order
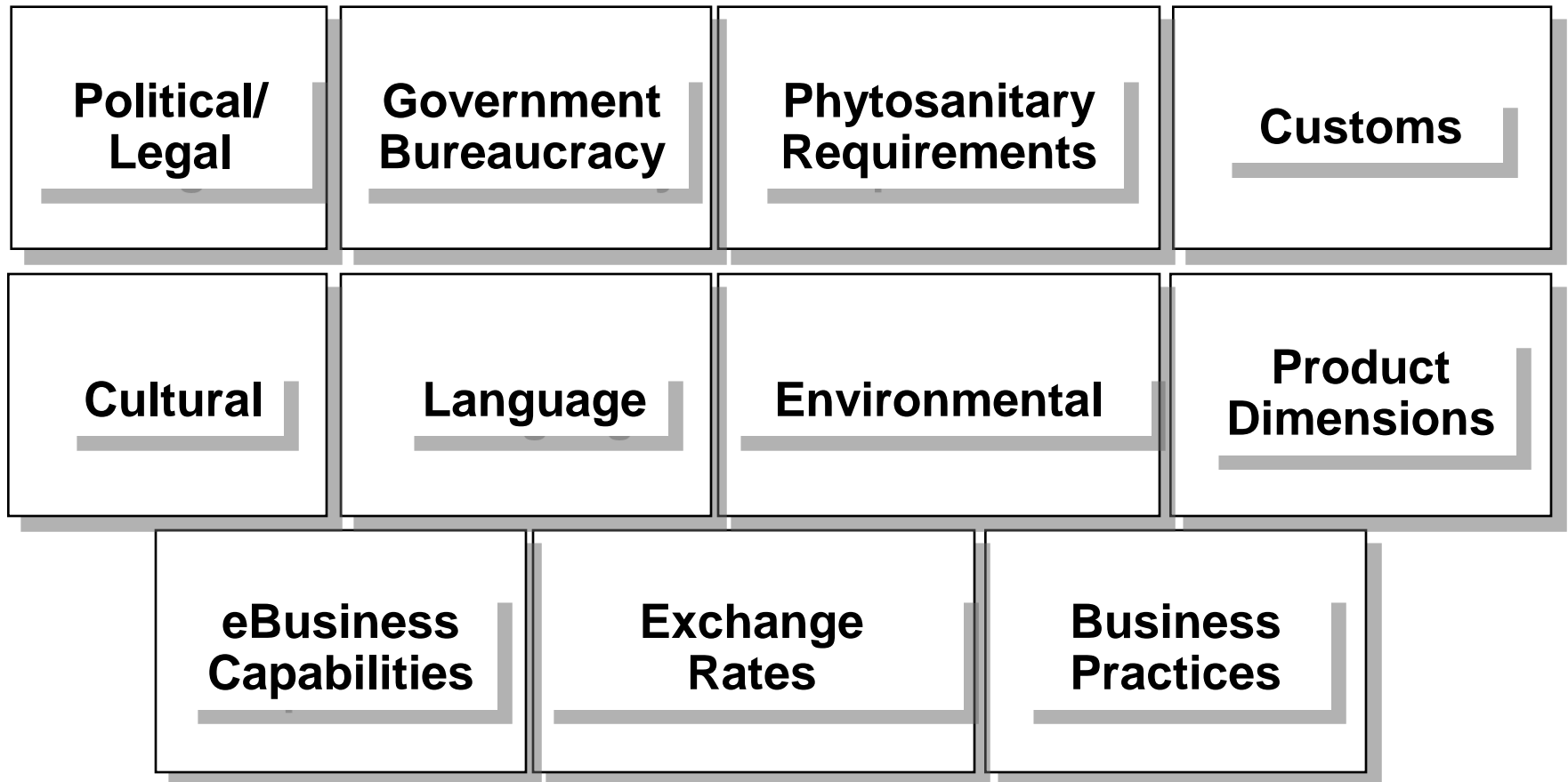**Just-in-time**
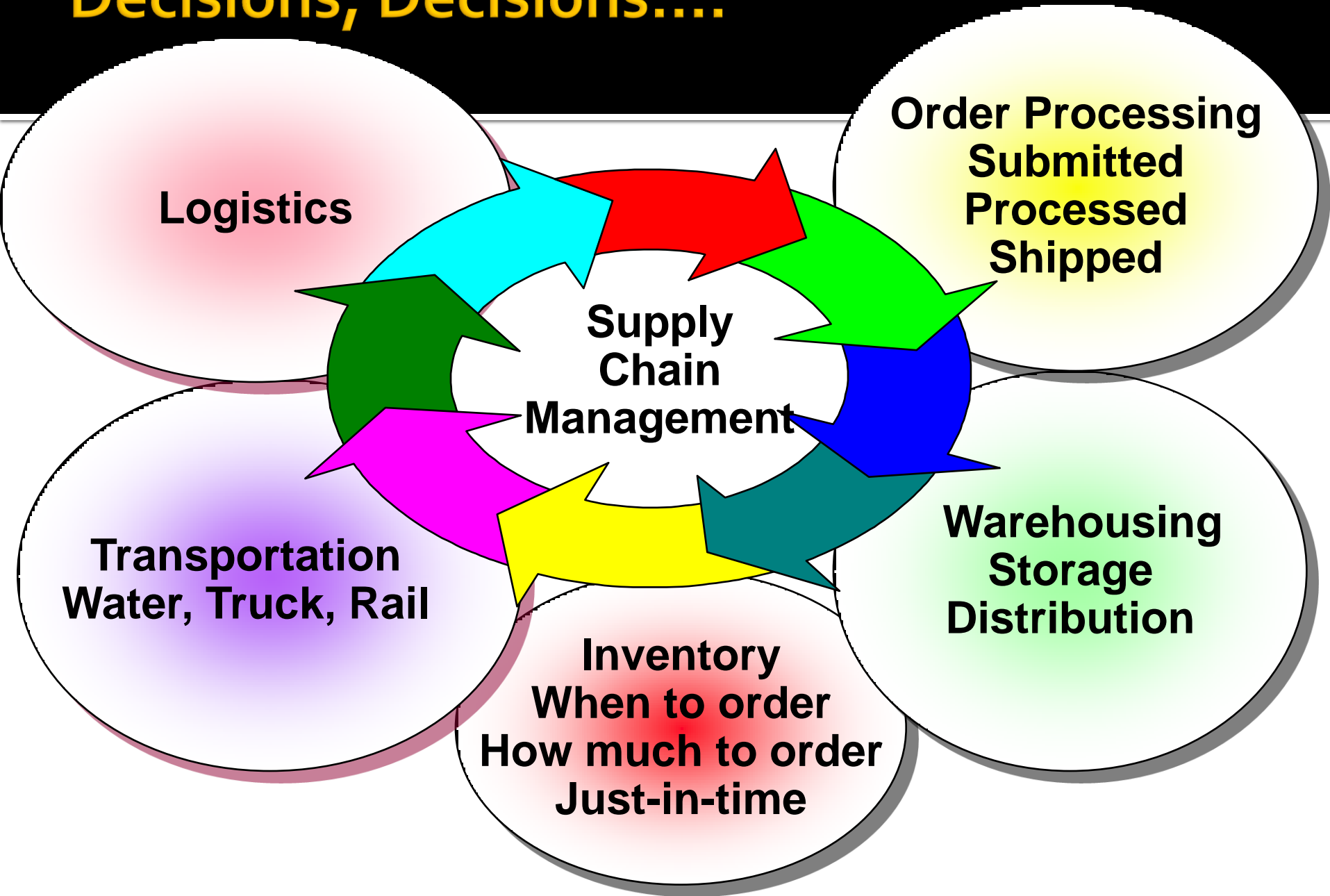
Supply Chain Integration

- Collaboration between companies

- Training and support

- Communication with suppliers & customers

- Data Interchange

- Production/buyer demand coordination

Facilitated by Technology!

Supply Chain Complexity is Compounded in International Markets

Political/ Legal	**Government Bureaucracy**	**Phytosanitary Requirements**	**Customs**
Cultural	**Language**	**Environmental**	**Product Dimensions**
	eBusiness Capabilities	**Exchange Rates**	**Business Practices**

Supply Chains in Wood Processing Sectors

A Typical Forest Products Supply Chain

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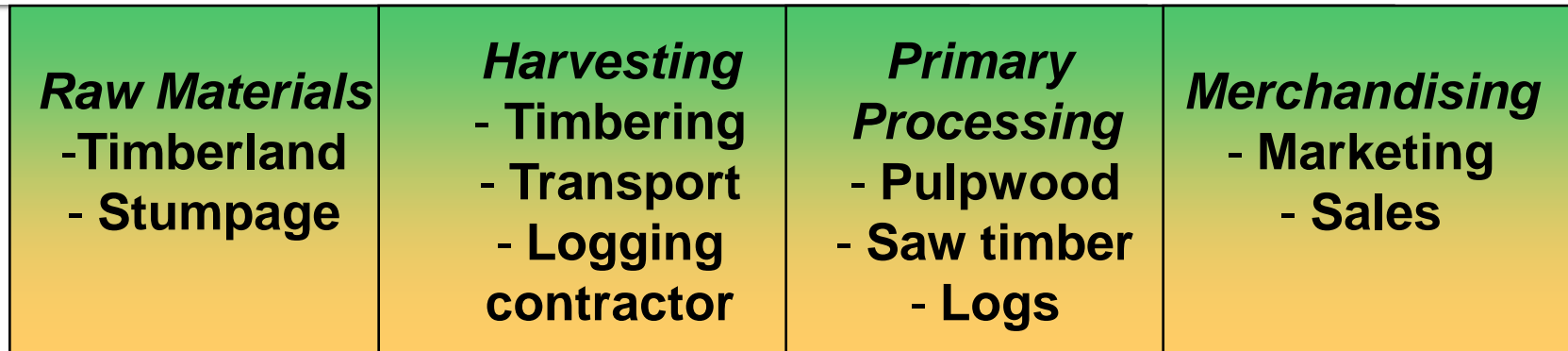
Information Interfaces

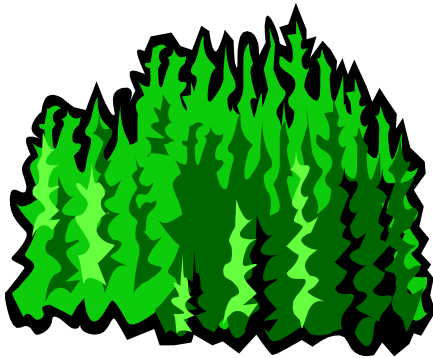| Distribution	Secondary Processing	Secondary Distribution	Consumer	Merchandising
- Channels - Transport	- Remans - Treaters - Industrial - etc	- Channels - Transport	-Builder -Remodeler -Retail	- Marketing - Sales

(Adapted from -TALPX 2000)
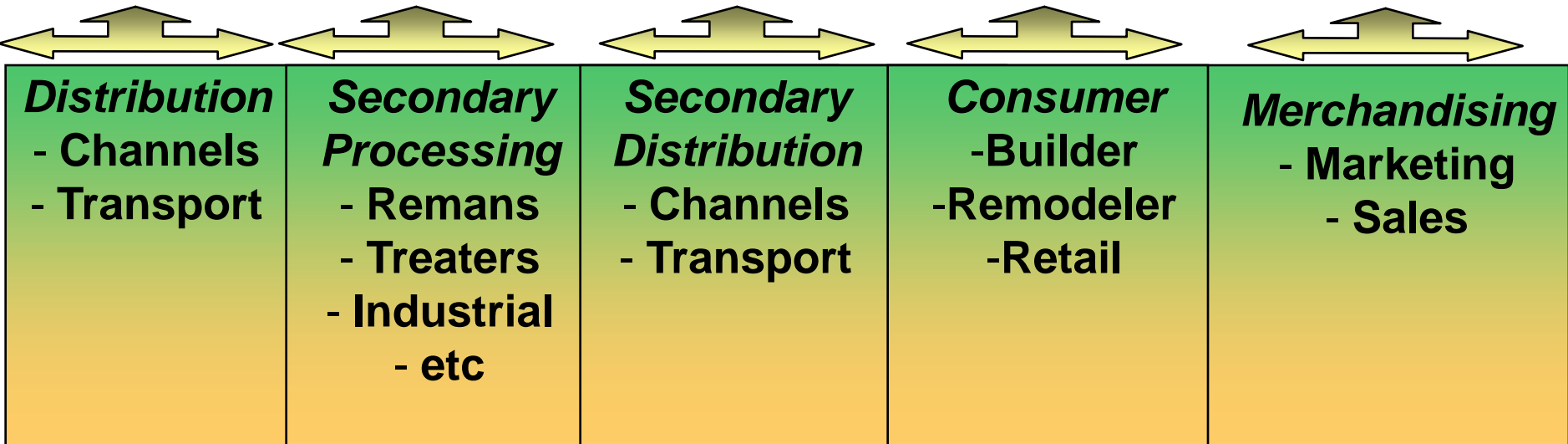
Even From the Forest to the Mill

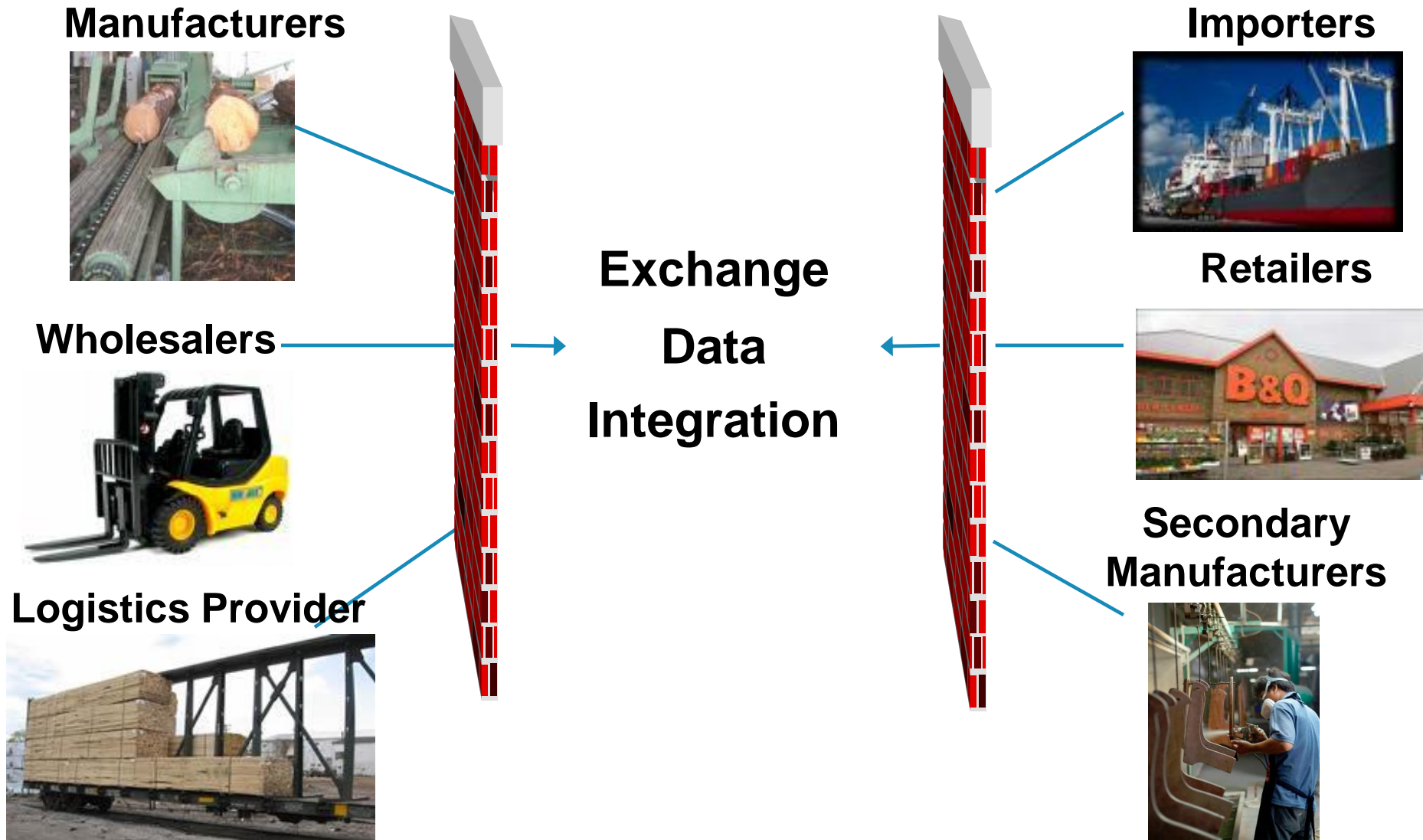| Timber Owner | Forester/Loggers | Timber Buyer |

Information Needs

- Access to the market
- Timberland management

- Limited Infrastructure
- Limited Network
- Difficulty Coordinating

- Inventory management
- Consistent supply
- Search Costs

(Forest One 2000)

Implementation Examples

Software as a Service (SaaS)
Trading Exchanges Connect Buyers & Suppliers

Manufacturers

Wholesalers

Logistics Provider

Exchange Data Integration

Importers

Retailers

Secondary Manufacturers

Software as a Service (SaaS)
## Trading Exchanges Connect Buyers & Suppliers

- Reduces transaction time by automating existing processes.

- Frees up more time to focus on key trading partner relationships.

- Potential for incremental volume while minimizing incremental costs.

- Provides access to a larger, more diverse group of trading partners and products.

- Low cost of implementation and maintenance.

Private Supply Networks

Private supply networks support existing business relationships.

- Hosts the application via the Internet.

- You decide the companies that participate in your private trade network.

- Provides hosting, maintenance, support, monitoring, reporting, branding, security, financial services, customization, and product upgrades.

Private Supply Network
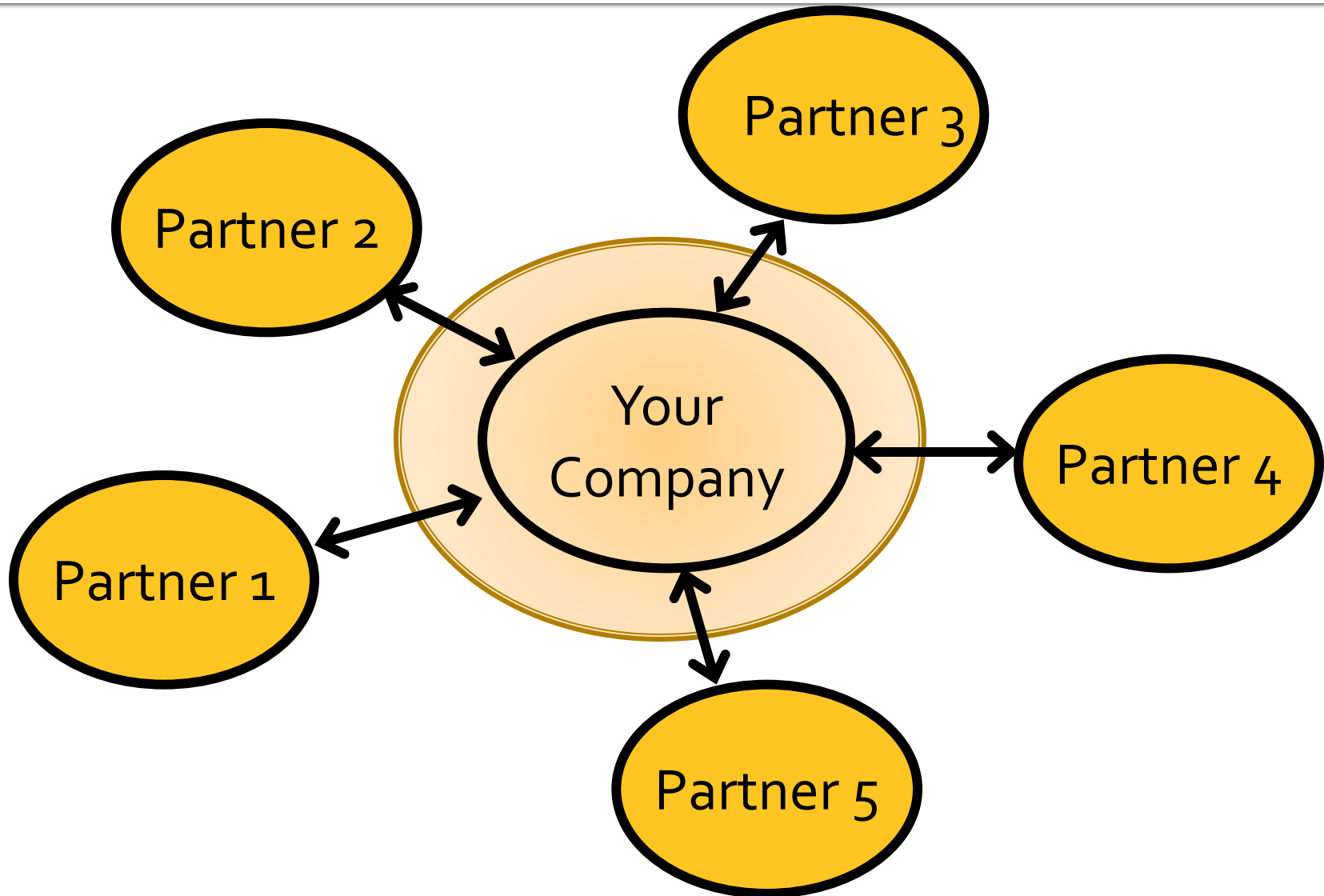
E-Biz Center

Bosnia & Herzegovina
USAID Sponsored Project

E-Biz Center Goals

1. Improve processing capabilities of the manufacturing sector.

2. Develop competitive advantage in penetrating and securing market position in target export markets.

3. Help improve profitability of the sector.

4. To become a self-sustaining business unit.

E-Biz Center Components

1. Superior production technology

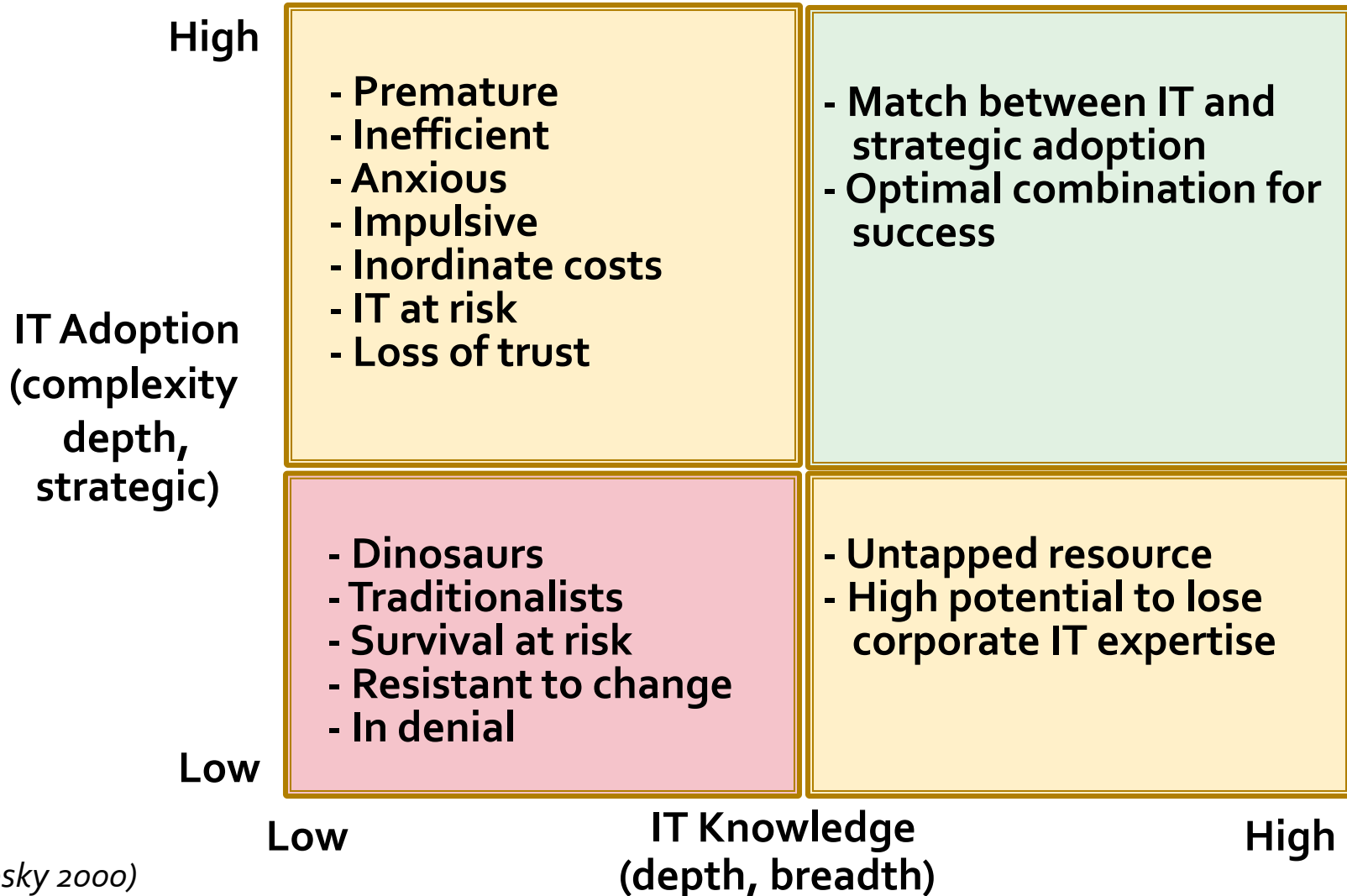2. Information technology driven supply chain management

E-Biz Center –IT Driven Supply Chain Mgt.

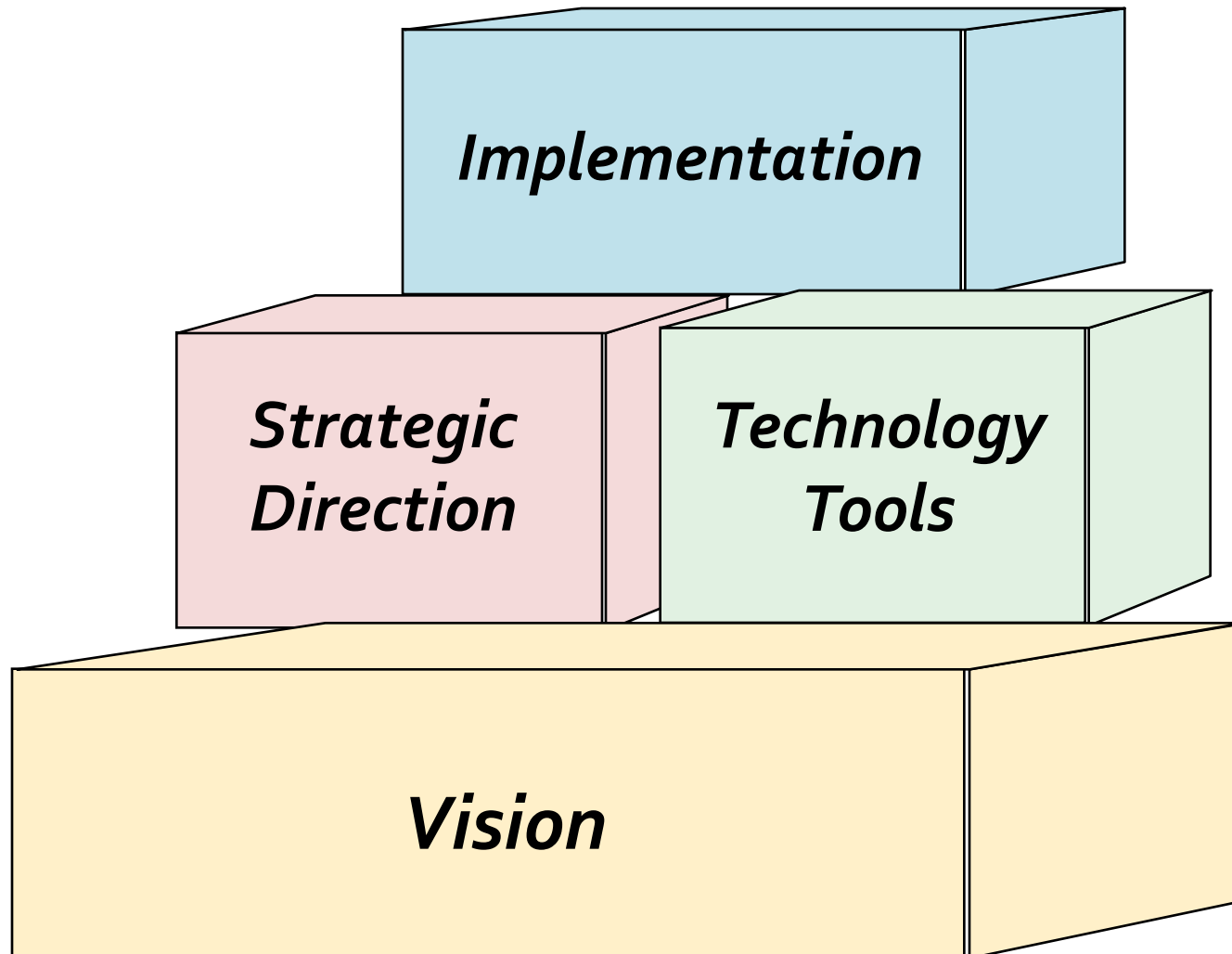| Value Chain Activity	Inefficiency	IT – Driven Impact
Inbound Logistics & Procurement	• Long lead time • Incompatible IT systems • Supplier selection	• Increased collaboration • Reduced order cycle • Reduced search cost • More responsive supply • Small and frequent purchases
Production & Operations	• Inaccurate demand forecast • Excess inventory	• Sharing supply and demand information • Integration of timely and accurate data into planning • Better demand forecast • Reduced inventory
Outbound Logistics & Distribution	• Multiple middlemen • Delivery costs	• Elimination of intermediaries • Electronic delivery • Accurate shipment • Improved tracking information

E-Biz Center –IT Driven Supply Chain Mgt.

Value Chain Activity	Inefficiency	IT – Driven Impact
Marketing & Sales	• Costly and difficult market information attainment	• Improved market and customer information • Faster documentation process • Faster payment cycle • Lower communication costs • Improved relationship
Service (during & after)	• Response time • Costly customized information	• 24/7 information access • Faster response • Customized service at low cost

IT Driven Supply Chain Mgt. Implementation/Success Matrix

High

IT Adoption (complexity depth, strategic)

- Premature
- Inefficient
- Anxious
- Impulsive
- Inordinate costs
- IT at risk
- Loss of trust

- Match between IT and strategic adoption
- Optimal combination for success

- Dinosaurs
- Traditionalists
- Survival at risk
- Resistant to change
- In denial

- Untapped resource
- High potential to lose corporate IT expertise

Low

Low   **IT Knowledge (depth, breadth)**   **High**

(Vlosky 2000)

Building Blocks to Implementation

Implementation

Strategic Direction

Technology Tools

Vision

What Does the Future Hold for You?

I have no idea.

Questions?

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