

“Getting on Board: Building a Business Case for Auto-ID at Dell”

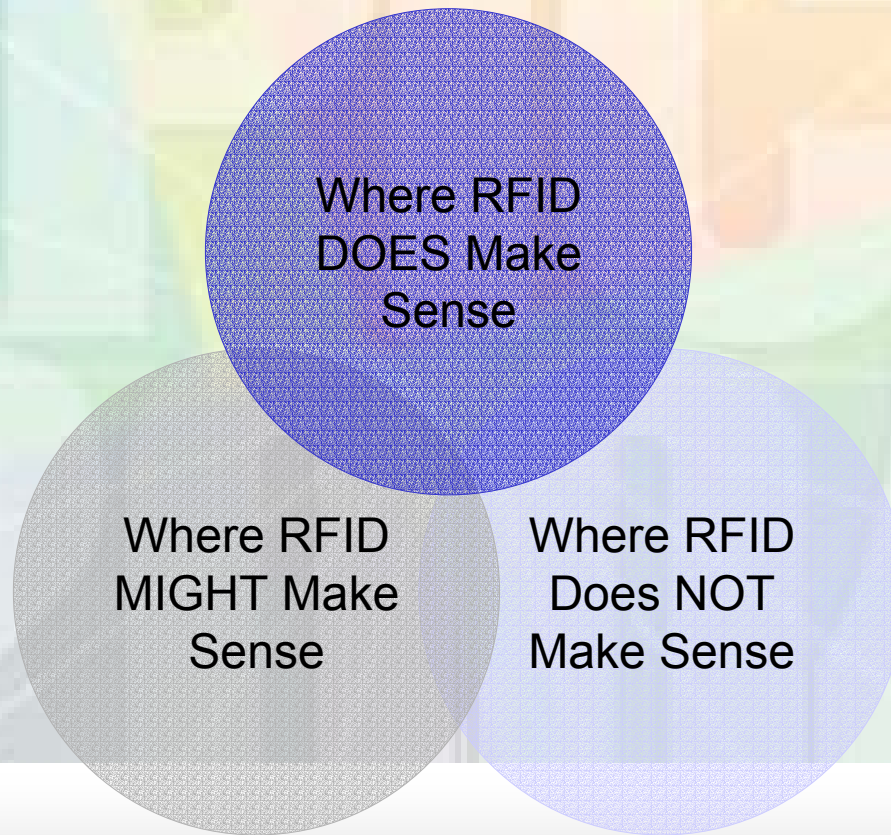
Mark Dinning and Edmund W. Schuster

**Published in APICS – The Performance Advantage
(October 2004)**

APICS is not responsible for statements or opinions expressed by individuals in its publications or at its meetings.

The views expressed are solely those of the individual and are not necessarily endorsed by APICS.

Sorting Out RFID



Mark Dinning, RFID Project Leader
Dell Inc.

Our Goals for Today

- 1. Understand the RFID Scorecard**
- 2. Build the Business Case**
- 3. Determine What to do Next**

RFID Scorecard

Benefits

Cost

Characteristics of the Affected Process

Labor Intensive Process
High Rate of Errors
Ineffective Optical Scanning

Benefits

Reduce Labor
Reduce Errors
Reduce Inventory

Current Situation?

Will Imp. Allow
 You To?

Implementation Complexity

In a Limited Footprint
On a Limited Number of Products
Within One Company

Operational Expense

Be Able to Share Investment Cost
Tag a Reusable Asset
Tag at the Pallet/Case Level
Avoid Item-Level Tagging

Will Imp. Be?

Will You?

Future

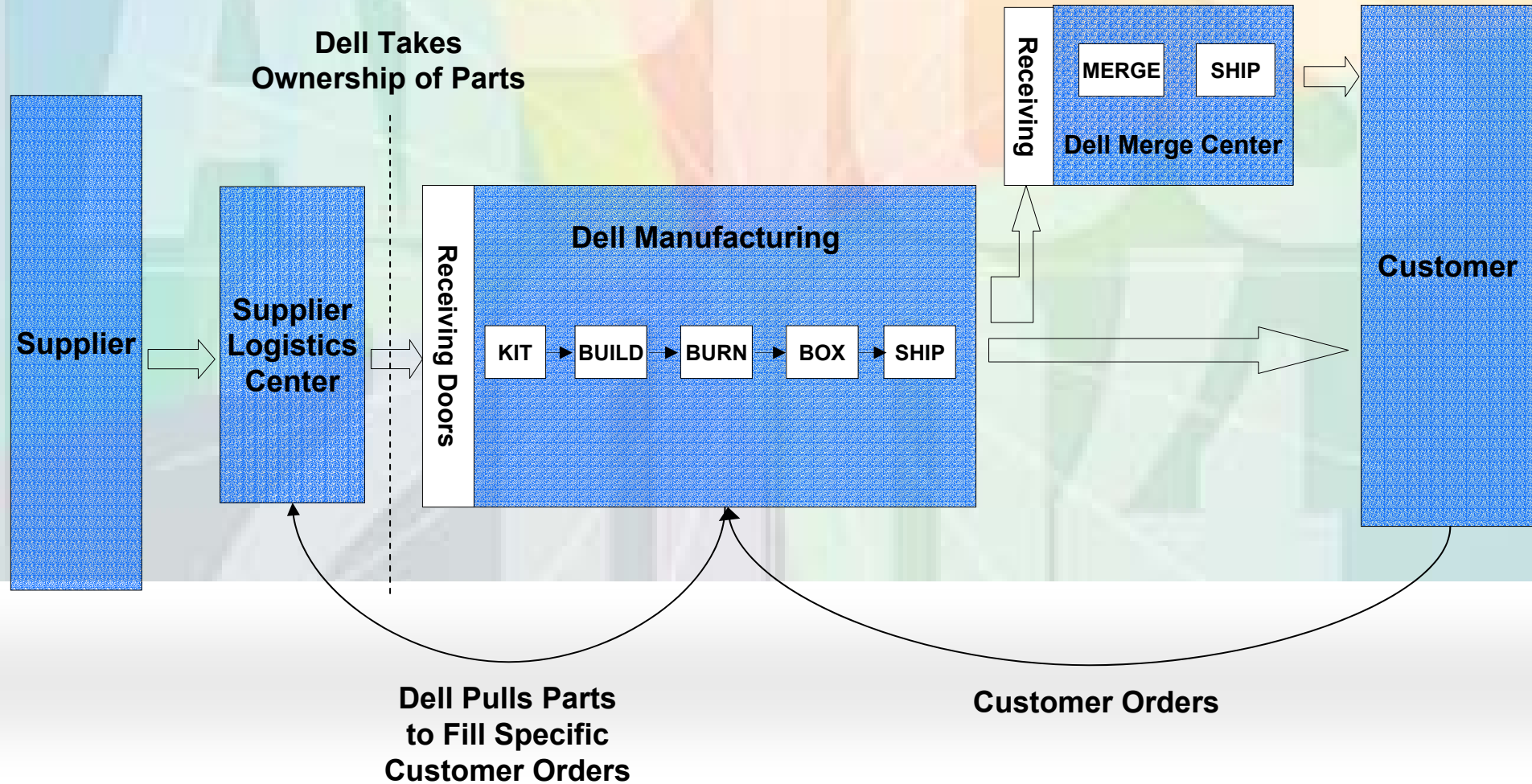
Longer Term Considerations
A Scalable, Repeatable Solution
Increased Visibility
Increased Velocity

Does Imp. Lead To?

Yes = Advantage
 No = Disadvantage

Other Considerations
Increased on Shelf Availability
Unified Anti-Theft Device
Anti-Counterfeit Solution

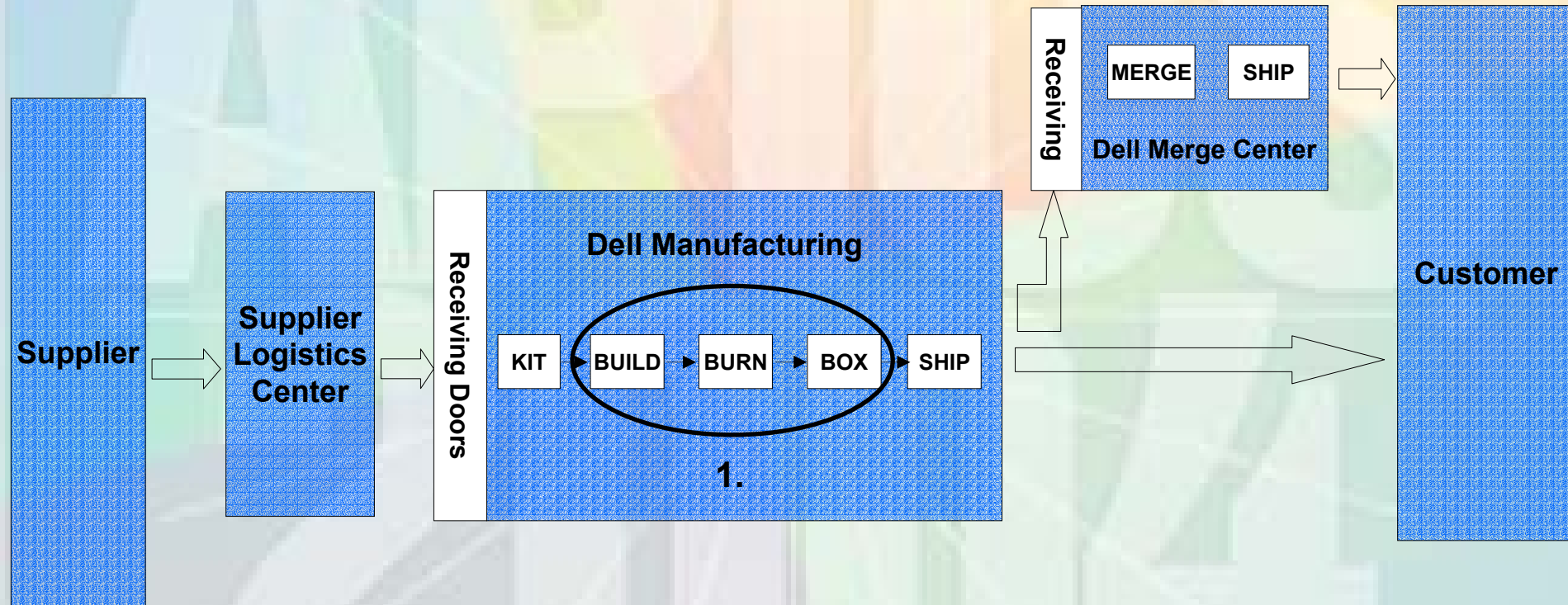
Dell's Supply Chain - Overview



Three Dell RFID Scenarios

- 1. Tracking Totes and Trays**
- 2. Tracking a High Value Asset from Asia**
- 3. Tracking a Commodity**

1. Tracking Totes and Trays



Goal

- Improve Read Rates (Reduce Cycle Time)
- Enhance Tracking and Tracing Capabilities

Tracking Totes and Trays Scorecard

Benefits

Cost

Characteristics of the Affected Process

Labor Intensive Process
High Rate of Errors
Ineffective Optical Scanning

Benefits

Reduce Labor
Reduce Errors
Reduce Inventory

Current Situation?

 N
 Y
 Y

Will Imp. Allow You To?

 Y
 Y
 N

Implementation Complexity

In a Limited Footprint
On a Limited Number of Products
Within One Company

Operational Expense

Be Able to Share Investment Cost
Tag a Reusable Asset
Tag at the Pallet/Case Level
Avoid Item-Level Tagging

Will Imp. Be?

 Y
 Y
 Y

Will You?

 N
 Y
 N/A
 N/A

Future

Longer Term Considerations
A Scaleable, Repeatable Solution
Increased Visibility
Increased Velocity

Does Imp. Lead To?

 N
 Y
 Y

Where
 RFID
 DOES
 Make
 Sense

Advantage

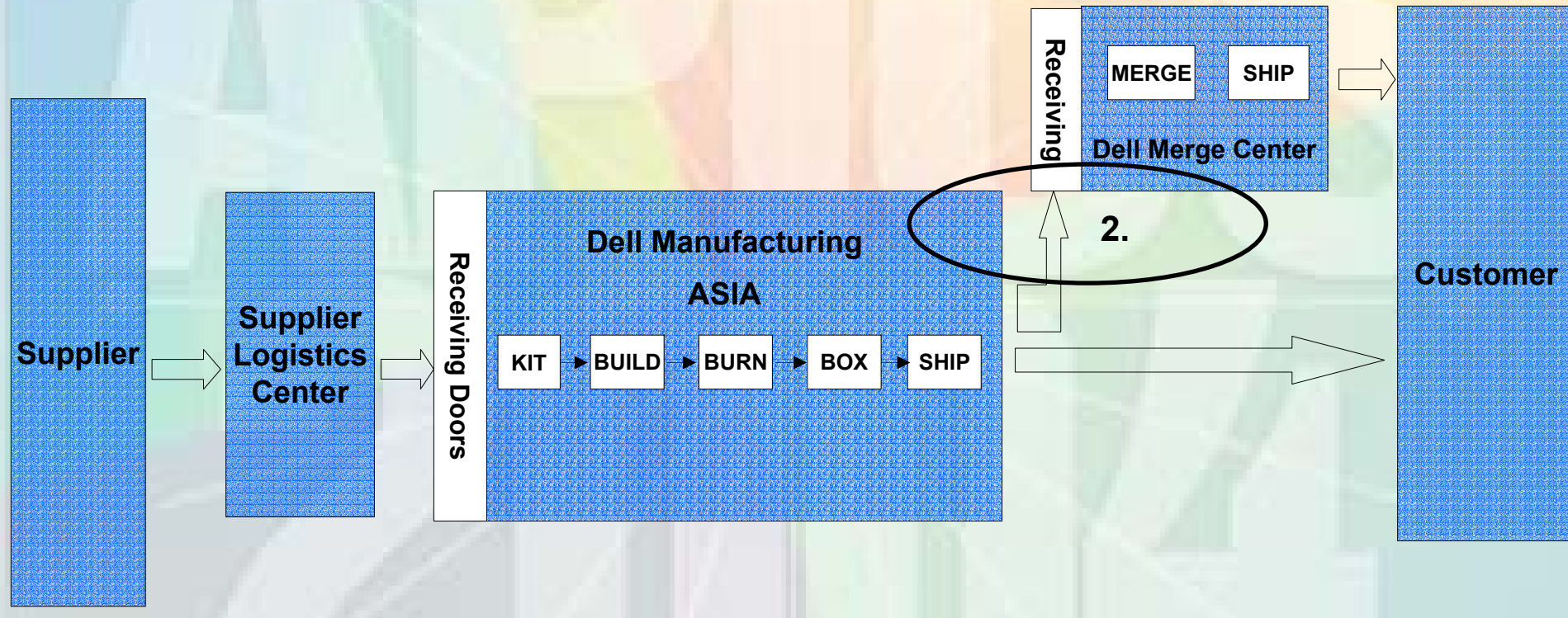
10

Disadvantage

4

Yes = Advantage
 No = Disadvantage

2. Tracking a High Value Asset from Asia



Goal

- Eliminate Occurrence of Product Being Sent to Wrong Customer
- Reduce Labor in Counting and Tracking

Tracking a High Value Asset from Asia Scorecard

Benefits

Cost

Characteristics of the Affected Process

- Labor Intensive Process**
- High Rate of Errors**
- Ineffective Optical Scanning**

Benefits

- Reduce Labor**
- Reduce Errors**
- Reduce Inventory**

Current Situation?

- ___N___**
- ___N___**
- ___N___**

Will Imp. Allow You To?

- ___Y___**
- ___Y___**
- ___N___**

Implementation Complexity

- In a Limited Footprint**
- On a Limited Number of Products**
- Within One Company**

Operational Expense

- Be Able to Share Investment Cost**
- Tag a Reusable Asset**
- Tag at the Pallet/Case Level**
- Avoid Item-Level Tagging**

Will Imp. Be?

- ___Y___**
- ___Y___**
- ___Y___**

Will You?

- ___N___**
- ___N/A___**
- ___Y___**
- ___N/A___**

Future

- Longer Term Considerations
- A Scaleable, Repeatable Solution**
 - Increased Visibility**
 - Increased Velocity**

Does Imp. Lead To?

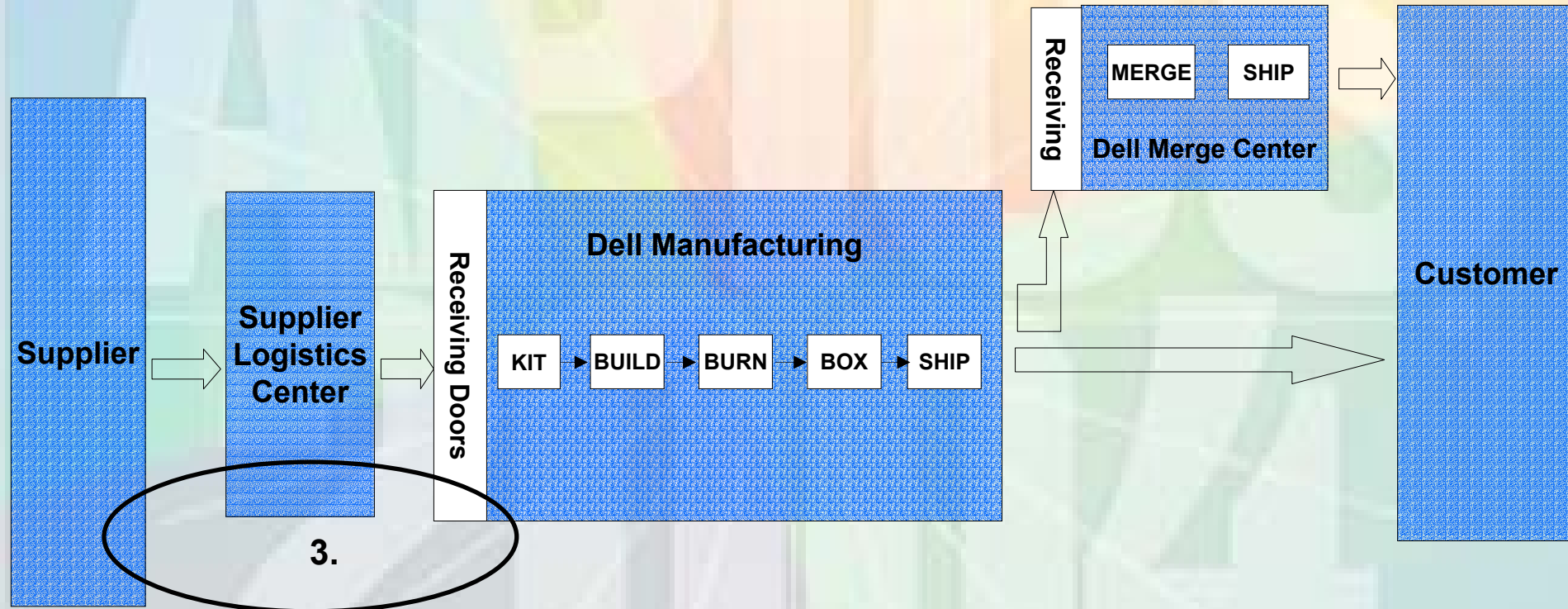
- ___N___**
- ___Y___**
- ___Y___**

Yes = Advantage
No = Disadvantage

Advantage	8
Disadvantage	6

Where
RFID Does
NOT Make
Sense

3. Tracking a Commodity



Goal

- Reduce Labor in Counting and Tracking
- Reduce Errors
- Increase Visibility and Velocity

Tracking a Commodity Scorecard

Benefits

Characteristics of the Affected Process
Labor Intensive Process
High Rate of Errors
Ineffective Optical Scanning

Benefits

Reduce Labor
Reduce Errors
Reduce Inventory

Current Situation?

Y
 N
 N

Will Imp. Allow You To?

Y
 Y
 N

Cost

Implementation Complexity
In a Limited Footprint
On a Limited Number of Products
Within One Company

Operational Expense
Be Able to Share Investment Cost
Tag a Reusable Asset
Tag at the Pallet/Case Level
Avoid Item-Level Tagging

Will Imp. Be?

Y
 Y
 N

Will You?

Y
 N/A
 Y
 N/A

Future

Longer Term Considerations
A Scaleable, Repeatable Solution
Increased Visibility
Increased Velocity

Does Imp. Lead To?

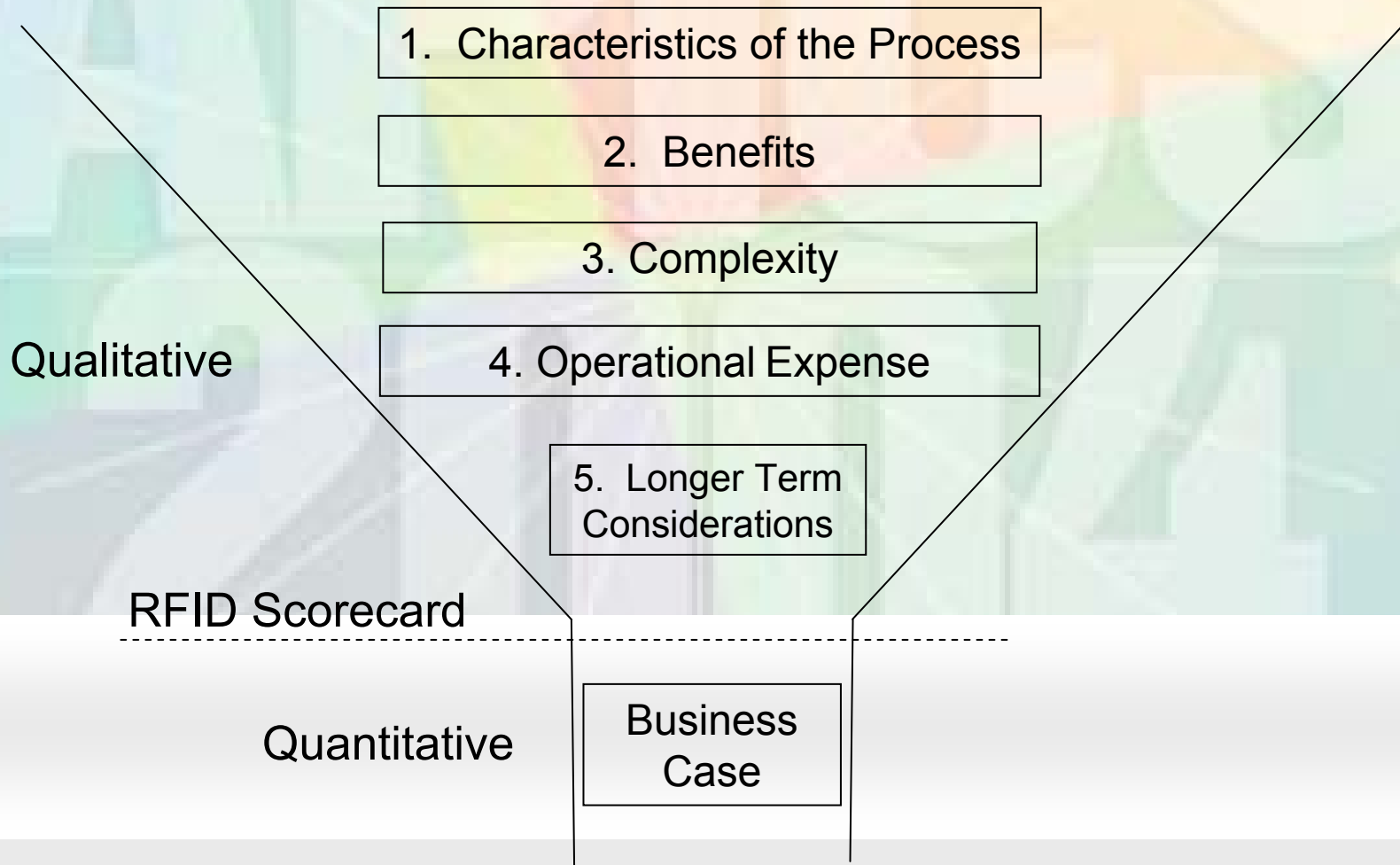
Y
 Y
 Y

Yes = Advantage
 No = Disadvantage

Advantage	10
Disadvantage	4

Where
 RFID
 Might
 Make
 Sense

RFID Opportunity Filter



Building the Business Case - Benefits

Benefits

Reduce Labor	80
Reduce Errors	75
Reduce Inventory	0

Total Yearly Benefit	\$155
-----------------------------	--------------

Building the Business Case - Costs

One-Time Costs

Hardware

Readers	5
Application Servers	8
Data Storage	4

Software

Operating System	2
RFID and Database Software	18

Subtotal for Hardware and Software \$37

Installation and Integration Services \$50

Total One-Time Costs \$87

Recurring Costs

Support and Maintenance (15% of Hardware and Software costs) \$5

Number of Cases and Pallets Per Year 100

Cost Per Tag \$0.25

Annual Tag Costs \$25

Total Yearly Recurring Cost \$30

Building the Business Case - Payback

Payback Calculation

Yearly Return @ Stabilization (Annual Benefits Less Recurring Costs)	\$125
Installation, Integration, and Stabilization Time (Years)	0.3 years
Years to Recoup One-Time Cost (One-Time Costs/Yearly Return)	0.7 years
Payback	1.0 years

Recap

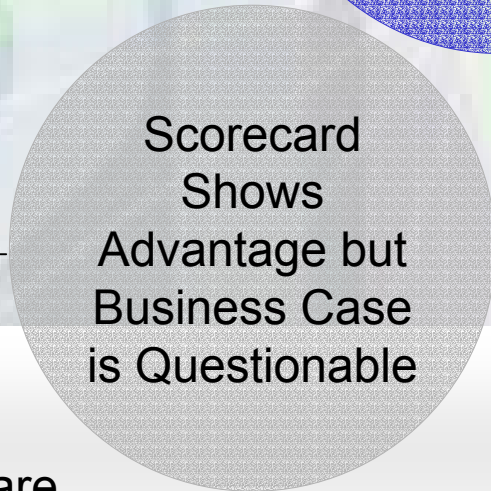
Yearly Return $155 - 30 = 125$

Years to Recoup One-Time Cost $87/125 = 0.7$ years

The Decision



Go!



Wait



Stop

Monitor the Market

- Cost of Tags
- Cost of Hardware
- Cost of Software
- Cost of Systems Integration