

Don't Ignore Data Quality In Your Supply Chain!



Chad Walters, MBA ASQ CSSBB CSSGB

ASQ Section 1506 – January 25, 2018



The Global Voice of Quality®

Introduction

SIEMENS

Ingenuity for life

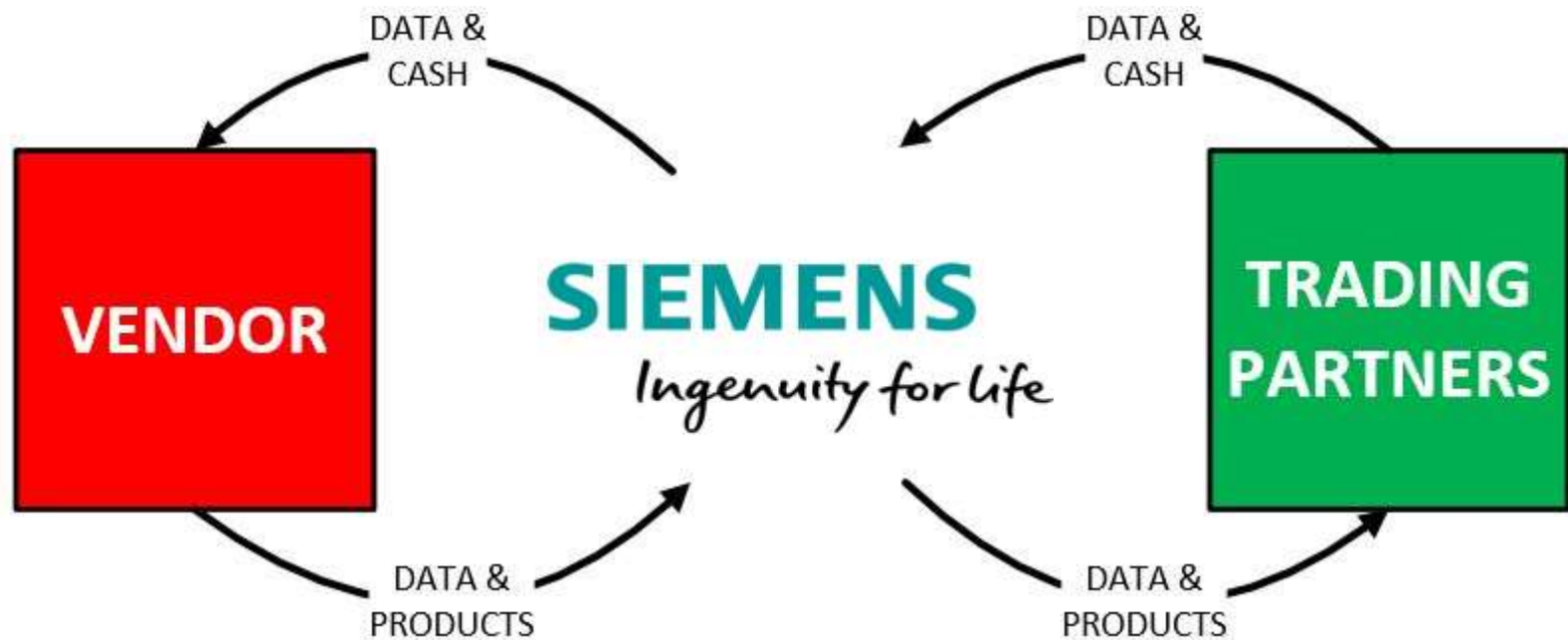
- Siemens Corporation
 - OpsEx/Business Excellence Consultant (aka Internal Lean Guy)
 - Low Voltage Electrical Management Division, Roebuck SC
- ASQ CSSBB, 2010
- ASQ CSSGB, 2009
- MBA, Indiana University, 2006
- BS ChE, Tri-State University (Indiana), 2002



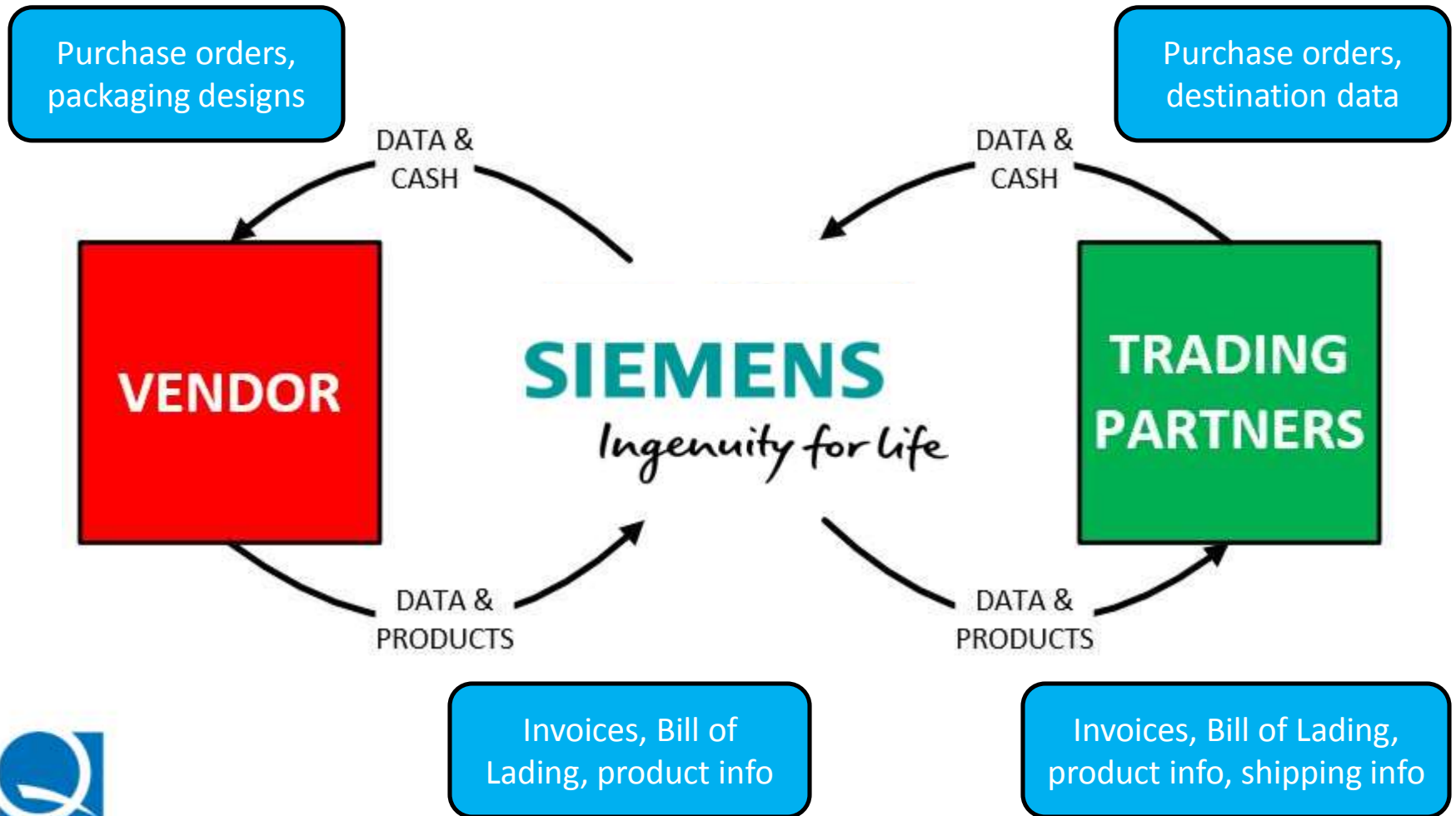
Learning Objectives

- In this session you will:
 - Understand the elements of a global supply chain
 - Learn about the use of data across a modern global supply chain
 - Learn about the growing data requirements from customers and end consumers
 - Discover new tools and technologies for streamlining supply chain data transmission and management

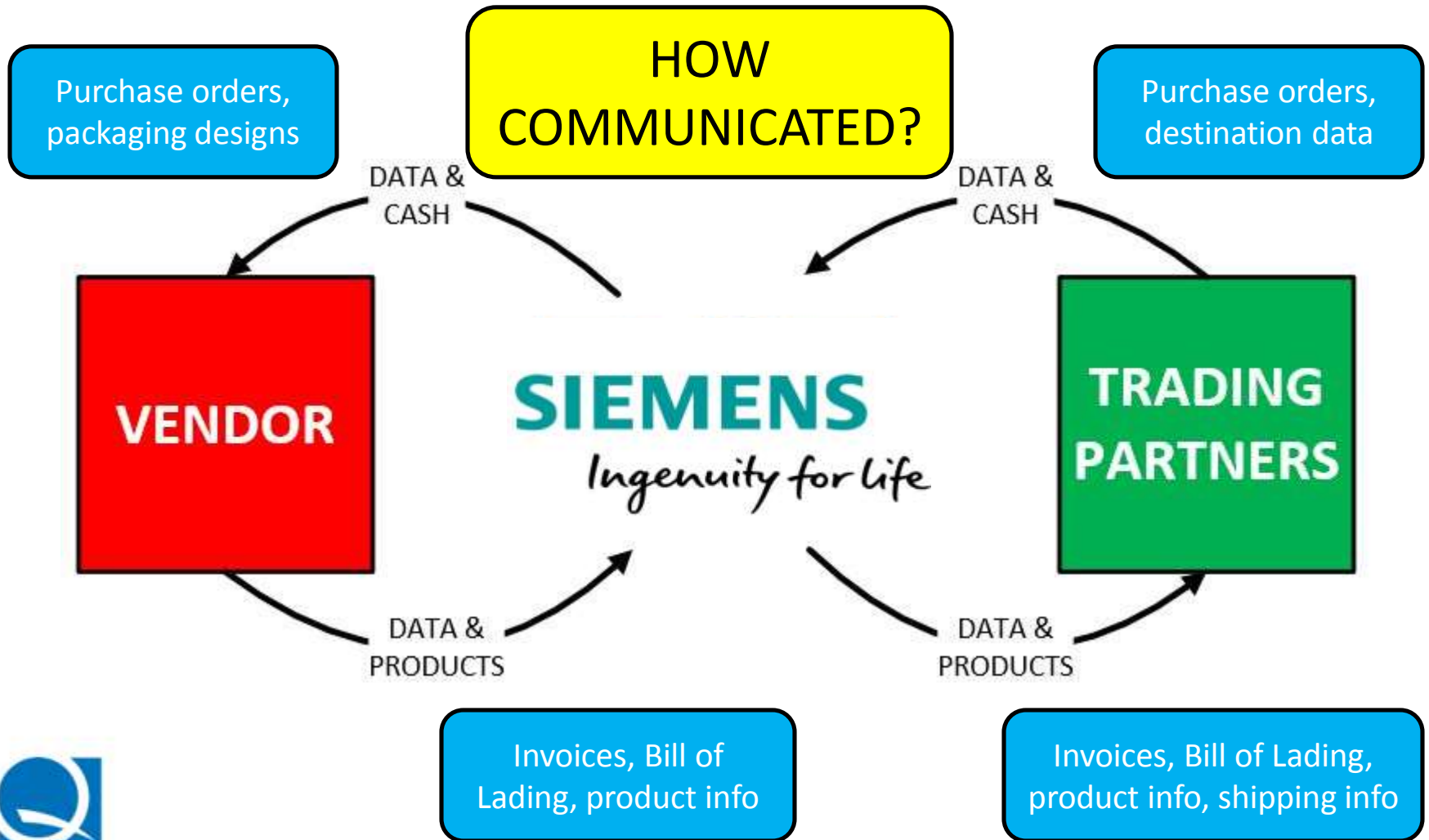
What is a Supply Chain?



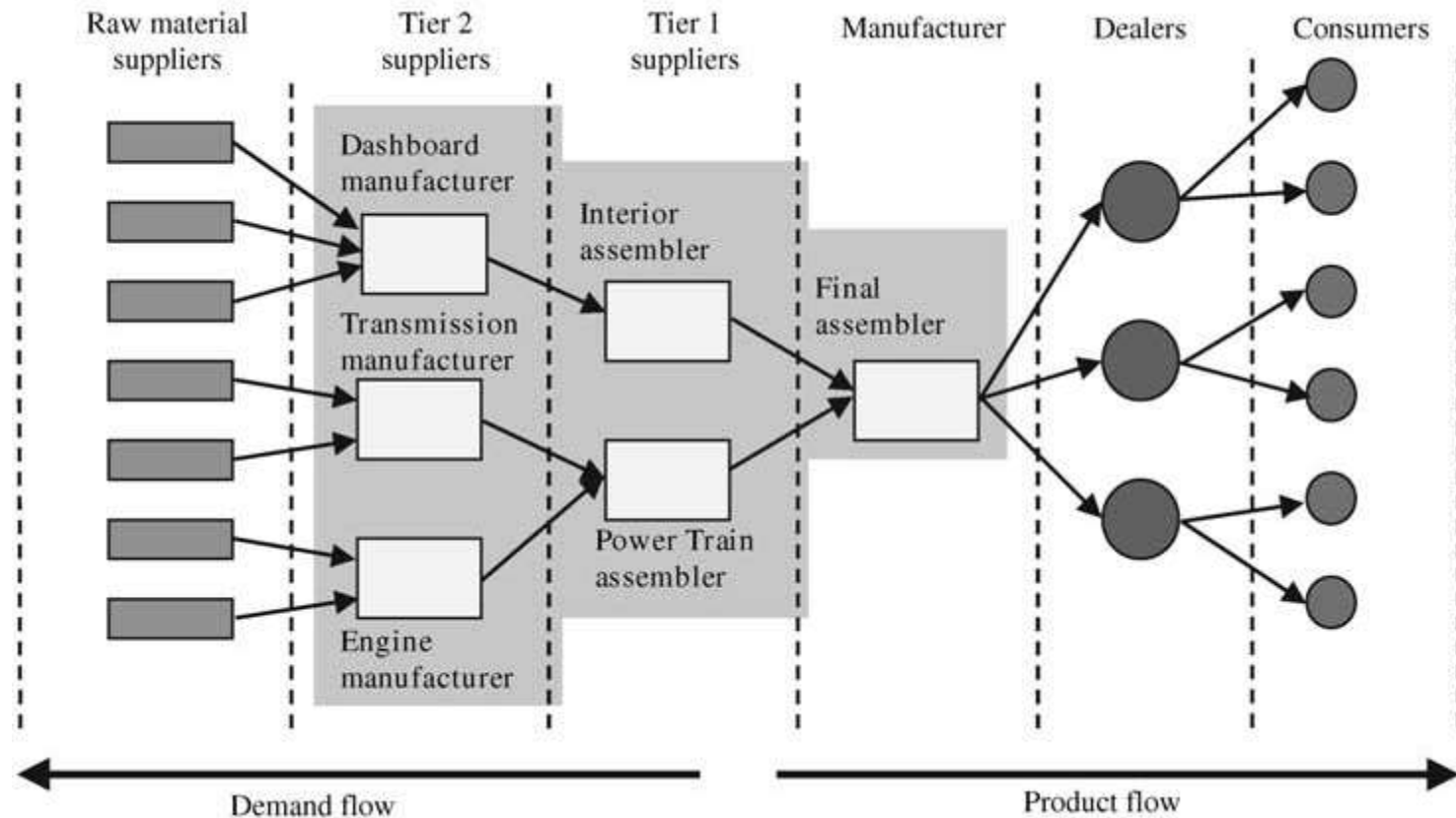
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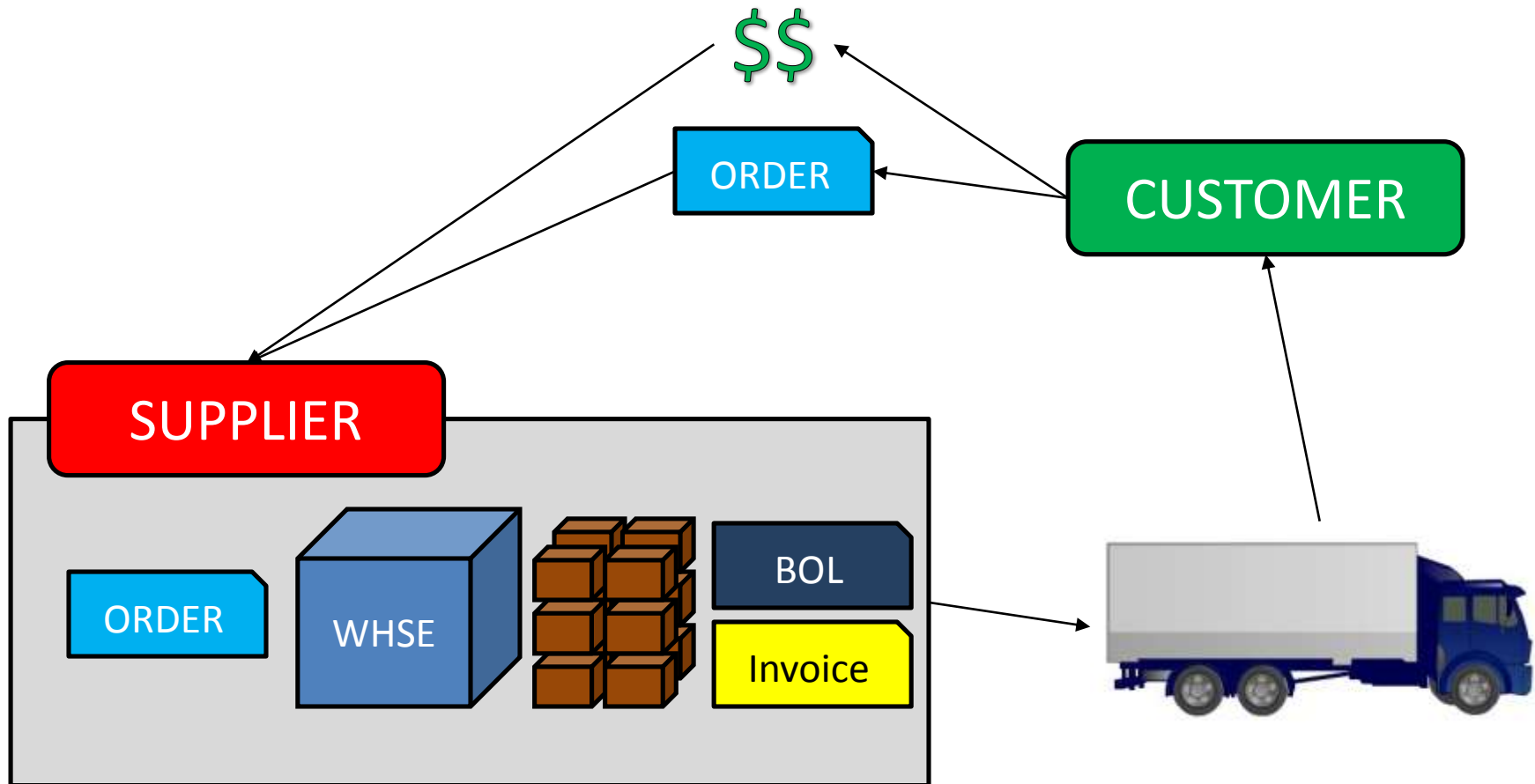
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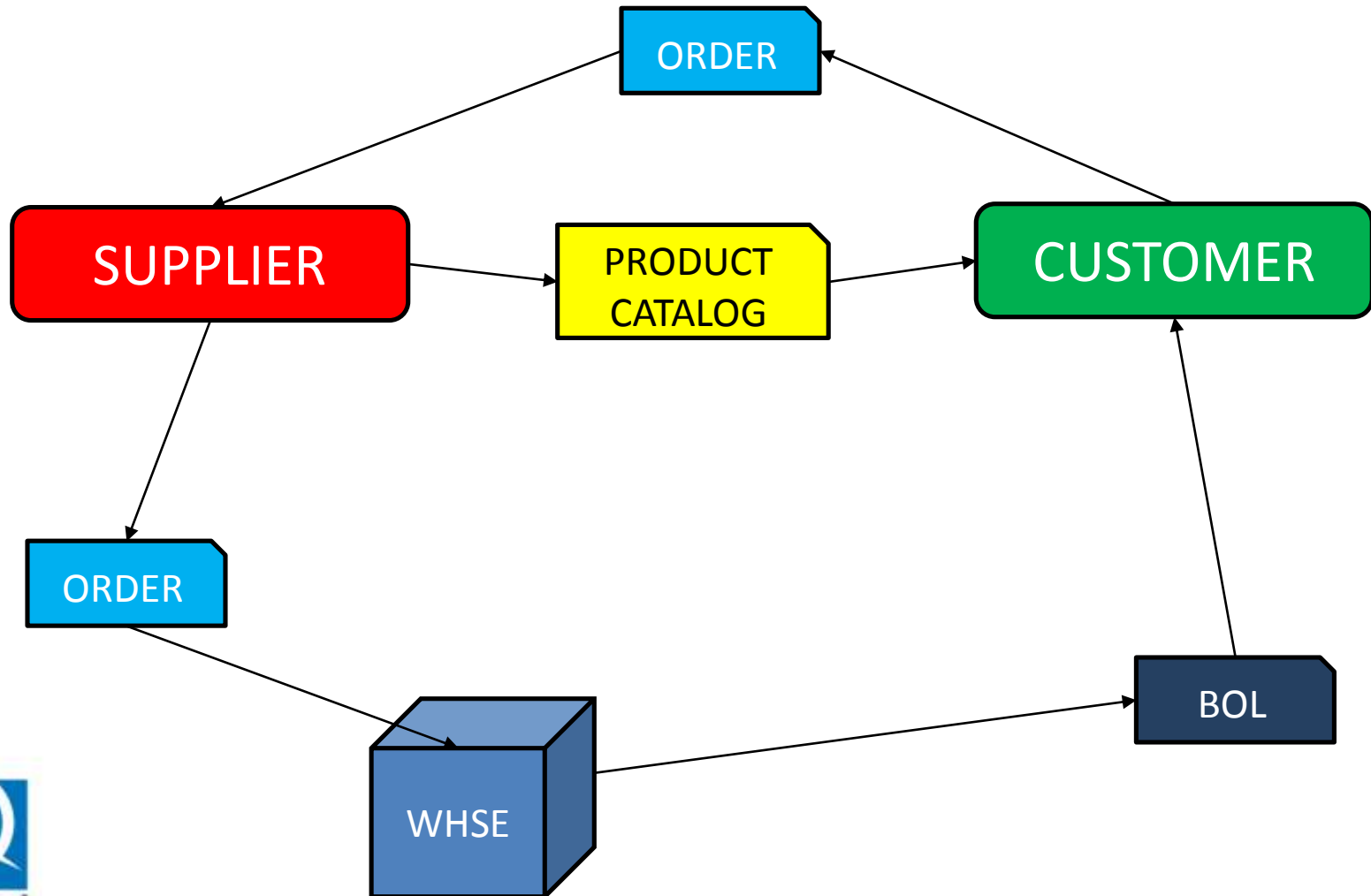
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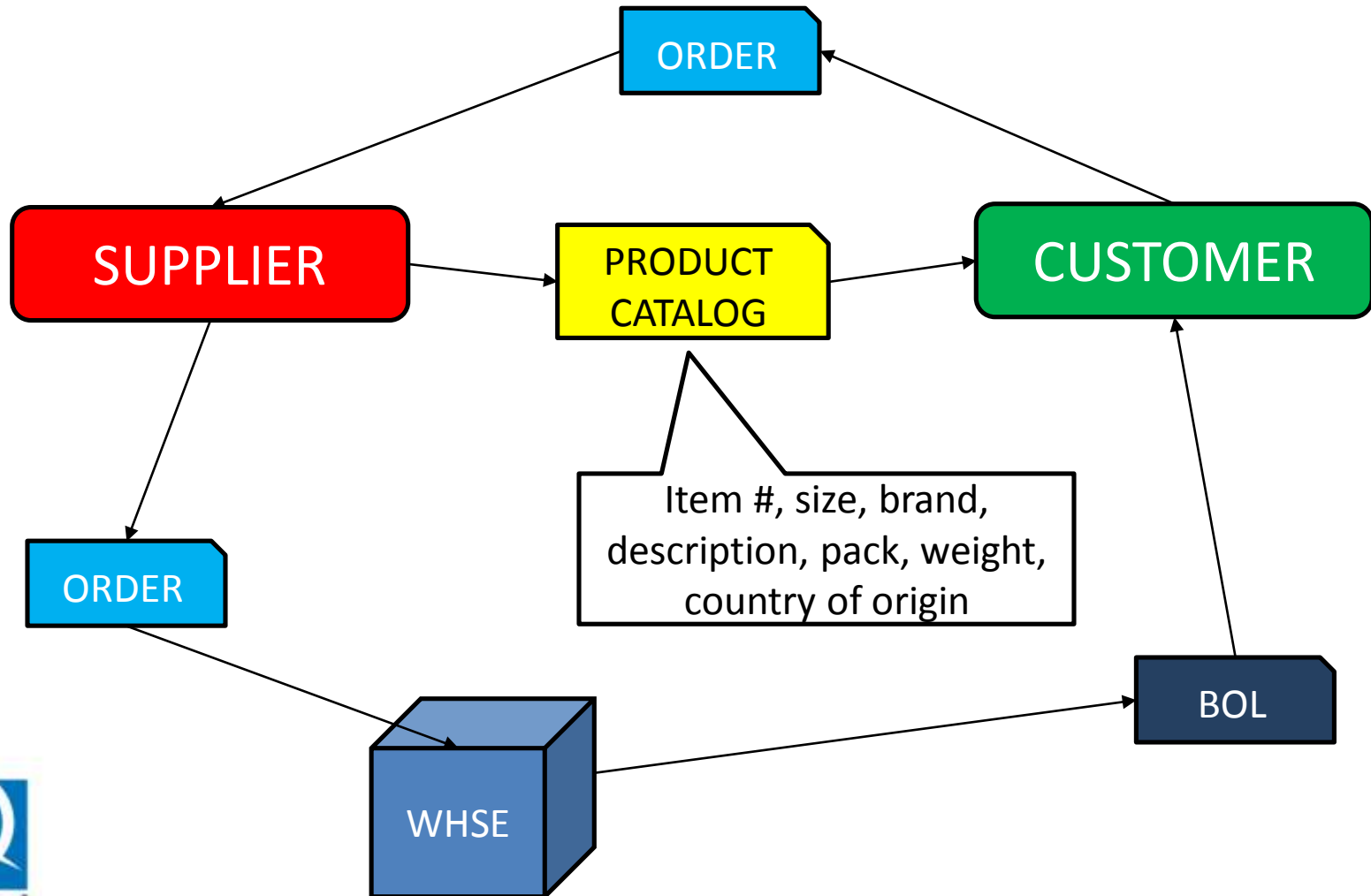
Order-To-Cash Process



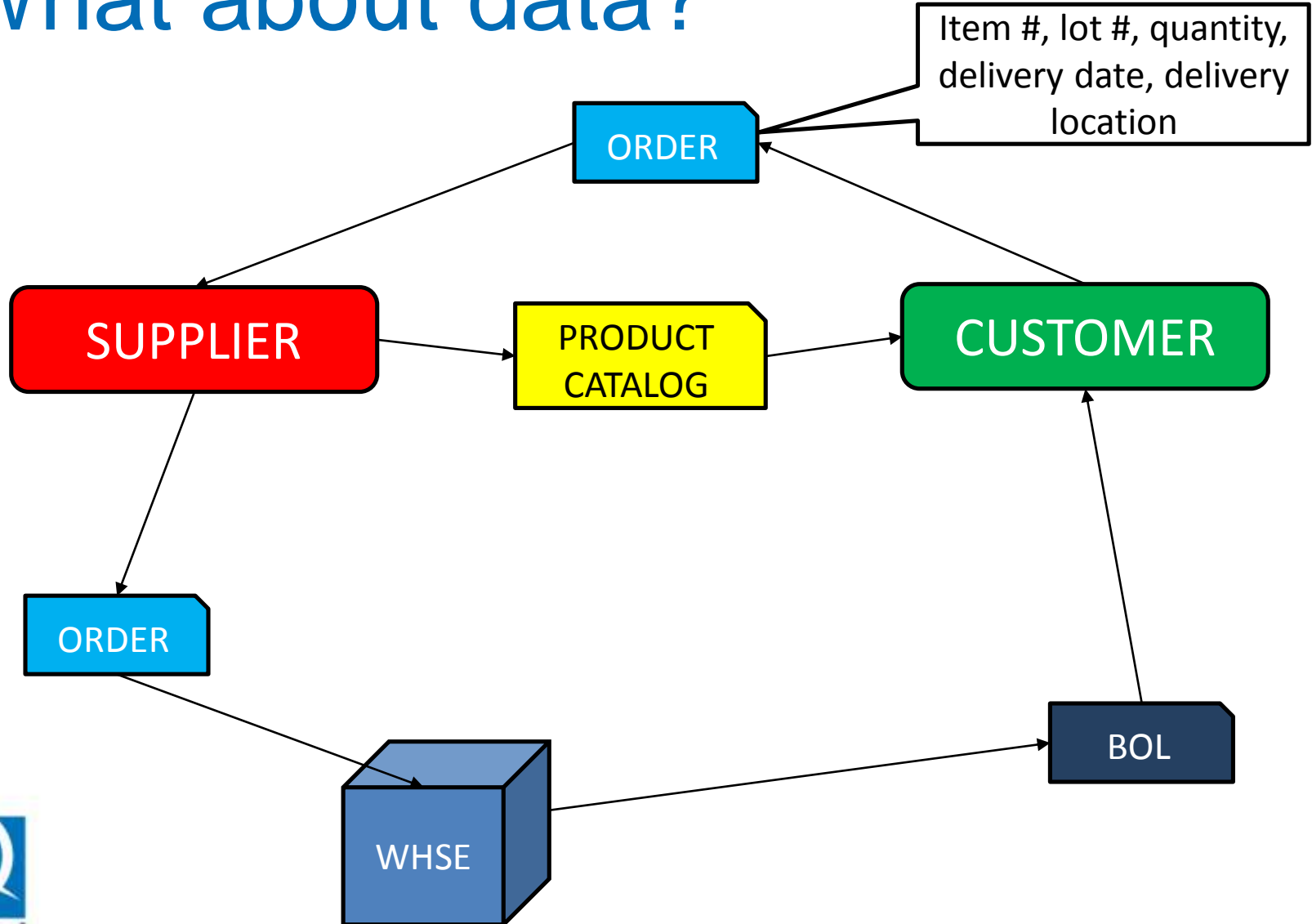
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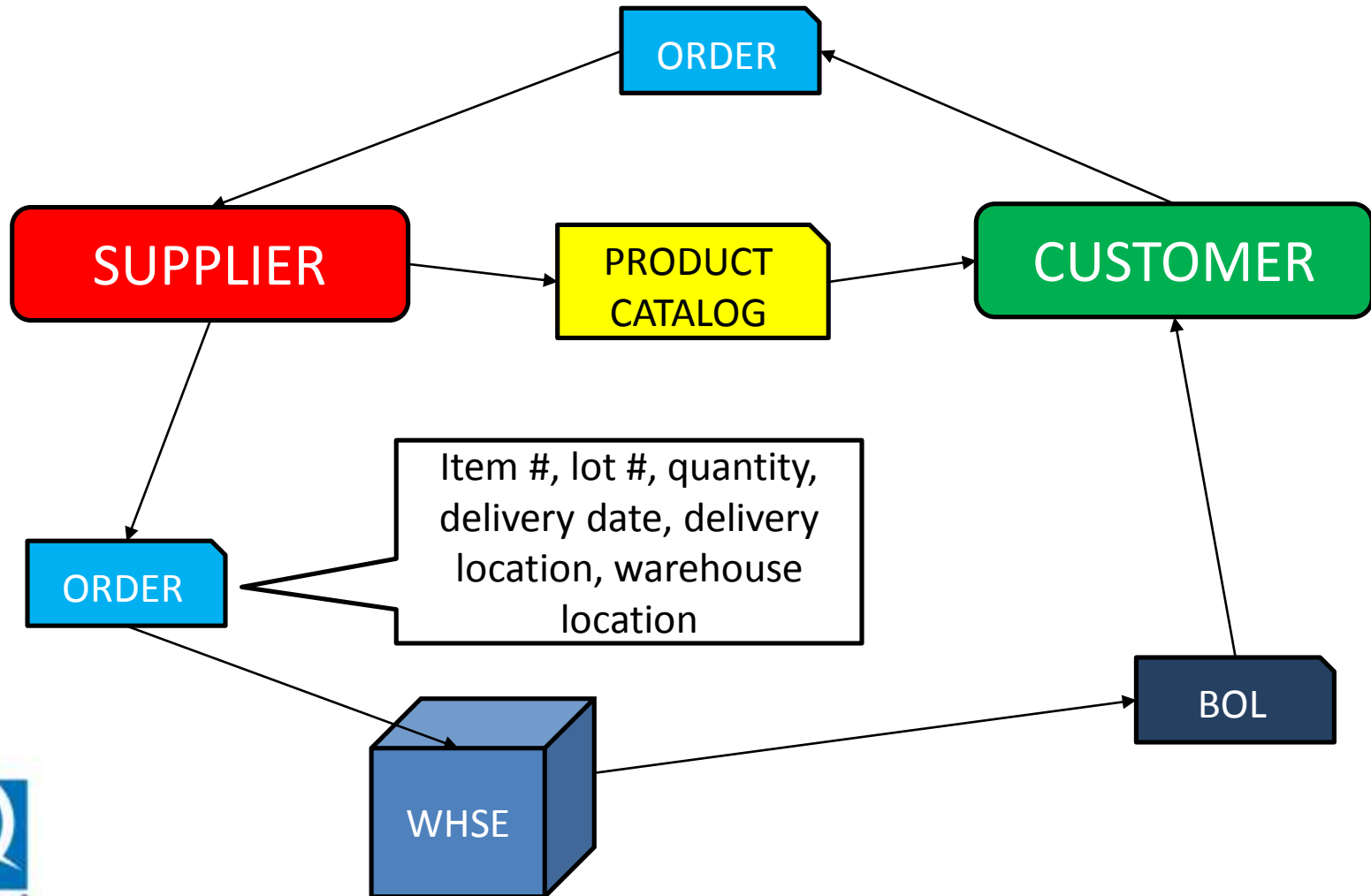
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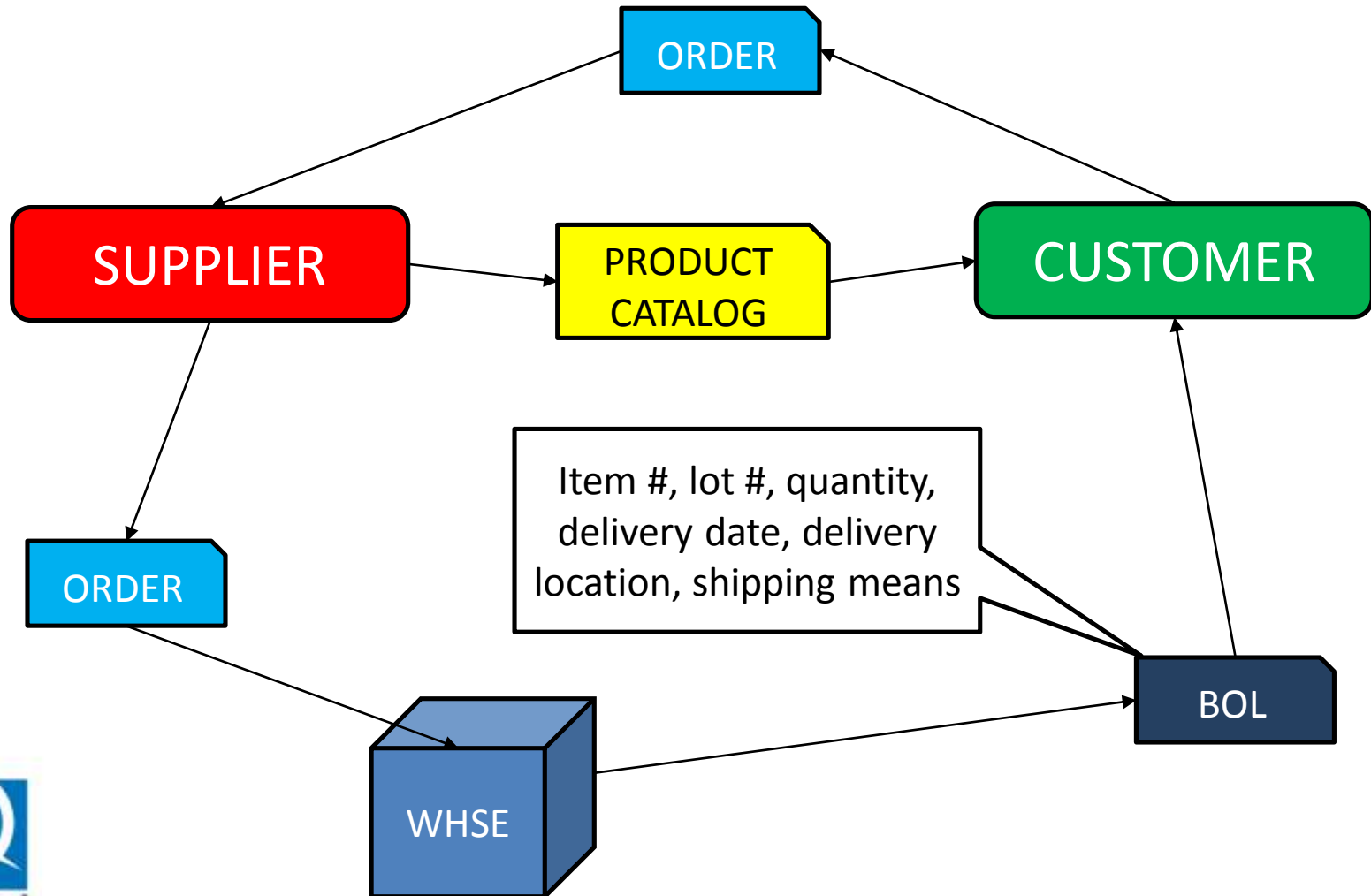
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What about data?



Customer Data Expectations

The screenshot shows a Walmart product page for 'Sea Best Sea Scallops, All Natural, 1 lb'. The page layout includes a top navigation bar with the Walmart logo, a search bar, and links to various services like 'Pickup Today' and 'Grocery Pickup'. Below the navigation bar, the product is categorized under 'Food > Fresh Food > Meat, Seafood & Poultry > Fish'. The product title is 'Sea Best Sea Scallops, All Natural, 1 lb', followed by a 5-star rating and '3 reviews'. A large image of the product packaging is displayed, showing a bag of 'SEA BEST All Natural Scallops'. To the left of the main image are five smaller thumbnail images showing different views of the product. On the right side of the page, the price is listed as '\$19.98', and there is a note that the item is 'Sold at Walmart store' and 'In-store purchase only'. A green callout box at the bottom right of the page contains the text: 'Customers have online catalogs with product data'.

Walmart

Departments

All Search

Credit Card Savings Offer

Pickup Today Grocery Pickup Weekly Ads Gift Cards Credit Card

Food > Fresh Food > Meat, Seafood & Poultry > Fish

Sea Best Sea Scallops, All Natural, 1 lb

★★★★★ 3 reviews Q&A By: Sea Best Walmart #: 551532091

SEA BEST All Natural Scallops

\$19.98

Stock up on everyday essentials. [See details.](#)

Sold at Walmart store In-store purchase only

Shipping not available

AVAILABLE NOW at Jacksonville, 4250 Phillips Hwy [See more stores](#)

This item is only sold at a Walmart store

Customer Data Expectations

Whirlpool 24.5-cu ft 4-Door French Door Refrigerator with Ice Maker (Fingerprint-Resistant Stainless Steel) ENERGY STAR

Item # 754716 Model # WRX73SSDHZ

★★★★☆ (187 Reviews)



Customer Data Expectations

- Continuously expanding
 - More and more supply chain data!
 - Transparency and visibility
 - Who, What, When, Where, Why, How
 - Rich data - images, videos, special views

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- Continuously expanding
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 - Rich data - images, videos, special views
- Why?
 - Consumer safety & sophistication
 - Online/mobile availability of rich data
 - Evidence of ethical compliance

Perfect Order Metric

- % of orders that are deemed “perfect”:
 - Shipped on-time to right location
 - Shipped complete and accurate
 - Shipped damage-free
 - Shipped with correct documentation

Perfect Order Metric

Perfect Order Metrics	Definition	Calculation
% of Orders with On-Time Delivery	The percentage of orders that arrive at their final destination at the agreed upon time. NOTE: There are many definitions of "on-time," and that the "time" may be a specific hour or day, or a window of time. "Agreed upon" means that the customer and shipper have agreed to the delivery time as a general commitment or as a part of the purchase order or contract.	Number of orders delivered on-time / Total number of orders shipped
% of Orders Shipped Complete	Measures the percentage of orders which shipped completely, meaning that all line/units ship with the order per agreement between the customer and shipper.	Number of orders shipped with all lines and units / Total number of orders shipped
% of Orders Shipped Outbound Damage Free	This measures the percentage of customer orders shipped in good and usable condition. NOTE: Orders damaged in transit are not considered here.	Number of orders shipped damage free / Number of total orders shipped
% of Orders Sent with Correct Documentation	The percent of total orders for which the customers received an accurate invoice and other required documents including ASNs, etc.	Number of orders with correct documentation / Number of total orders

Perfect Order Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best-In-Class	Median
% of Orders with On-Time Delivery	Less than 95%	≥ 95 and $< 98\%$	≥ 98 and $< 99.1\%$	≥ 99.1 and $< 99.8\%$	$\geq 99.8\%$	98.5%
% of Orders Shipped Complete	Less than 93.5%	≥ 93.5 and $< 96.2\%$	≥ 96.2 and $< 98.8\%$	≥ 98.8 and $< 99.7\%$	$\geq 99.7\%$	98.0%
% of Orders Shipped Outbound Damage Free	Less than 97.82%	≥ 97.82 and $< 99\%$	≥ 99 and $< 99.6\%$	≥ 99.6 and $< 99.9\%$	$\geq 99.9\%$	99.0%
% of Orders Sent with Correct Documentation	Less than 99%	≥ 99 and $< 99\%$	≥ 99 and $< 99.78\%$	≥ 99.78 and $< 99.994\%$	≥ 99.994	99.50%

Source: WERC Watch Spring 2015 Report



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% of Orders Shipped Outbound Damage Free	Less than 97.82%	>= 97.82 and < 99%	>= 99 and < 99.6%	>= 99.6 and < 99.9%	>= 99.9%	99.0%
% of Orders Sent with Correct Documentation	Less than 99.4%	>= 99.4 and < 99.5%	>= 99.5 and < 99.6%	>= 99.6 and < 99.7%	>= 99.7%	99.50%

Source: WERC Watch Spring 2015 Report

Higher expectations for data and delivery performance add complexity!



Complexity leads to errors

NACAS
powered by 1FoodService

SUPPLIERS ▾ FOODS ▾ NON-FOODS ▾ MY FAVORITES ▾

Beaver Street Fisheries, Inc. ▾ Smart Search Filters... ▾ 1 of 4

BEEF, GENERAL UNPROCESSED

1018006
BEEF RIBEYE STEAK THIN SL
BEAVER STREET FISHERIES, INC.
☐ Add to Compare

1177710
SKIRT STEAKS MARINATED
BEAVER STREET FISHERIES, INC.
☐ Add to Compare

1038542
BEEF, TENDERLOIN TIP
BEAVER STREET FISHERIES, INC.
☐ Add to Compare

1175223
BF PORTERHOUSE ST CH 24OZ
BEAVER STREET FISHERIES, INC.
☐ Add to Compare

1174030
12 OZ CH L/ON RIBEYE STK
BEAVER STREET FISHERIES, INC.
☐ Add to Compare

1175223
BF PORTERHOUSE ST CH 24OZ
BEAVER STREET FISHERIES, INC.
☐ Add to Compare

Complexity leads to errors

Trex Outdoor Furniture Rockport **3-Piece** Plastic Frame Patio Conversation Set with Spa Sunbrella Cushions

Item # 826182 Model # TXS135-2-SS5413

☆☆☆☆☆ No reviews



Number of Ottomans Included	1
Number of Sofas Included	0 (not included)
Number of Loveseats Included	1
Number of Sectional Pieces	0 (not included)
Chair Material	Plastic
Style	Traditional
Number of Pieces in Set	3
Number of Chairs Included	1
Table Top Material	Plastic
Table Material	Plastic
Number of Cushions Included	6
Cushion Fabric	Acrylic
Cushion Pattern	Solid
Patio Furniture Color/Finish	Black
Number of Tables Included	1

What happens with bad data?

- Lost sales
- Rework/reconciliation
- Customer fines
- Product obsolescence

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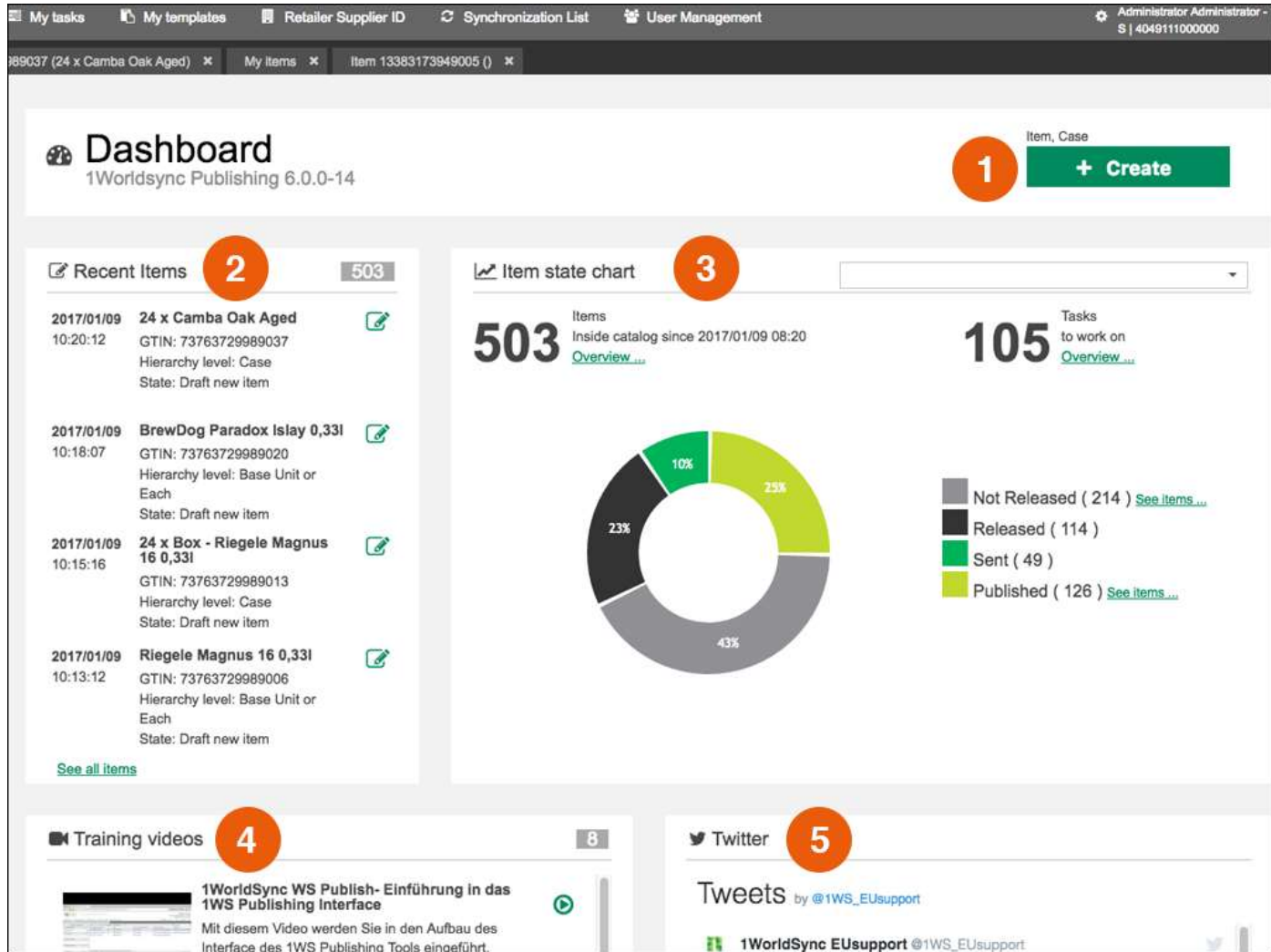
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Bad Data =
Loss of Revenue!!

What tools help prevent errors?

- First, where do we need help preventing these errors?
 - Product information for customer portals
 - Warehouse and inventory management
 - Picking right items
 - Managing accurate inventory
 - Transportation management
 - End-to-end supply chain transparency

Product Data Synchronization



Warehouse/Transportation

- Synchronization of supply chain and ERP systems
 - Warehouse Management Systems (WMS)
 - Transportation Management Systems (TMS)



jda.
Plan to deliver™

GS1 Standards & GS1-128



Jabil InControl

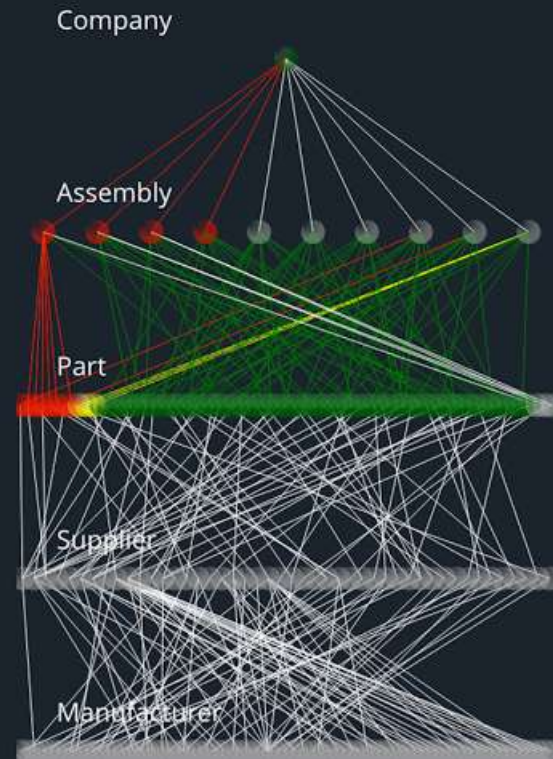


JABIL



NODE NETWORK DIAGRAM

Top 10 nodes



Other kinds of technology

- Blockchain
- Product Information Management Systems (PIM)
- Electronic Data Interchange (EDI) and Advance Ship Notice (ASN)
- RFID tags
- Certification and compliance portals



Questions?

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