



Cisco Blockchain

Revolutionizing Supply Chain Architectures

Jeff Simpson

Blockchain Solution Specialist

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Industry trends reshaping our economy

**New
Networks**

**New
Business Models**

**Technology
Advances**

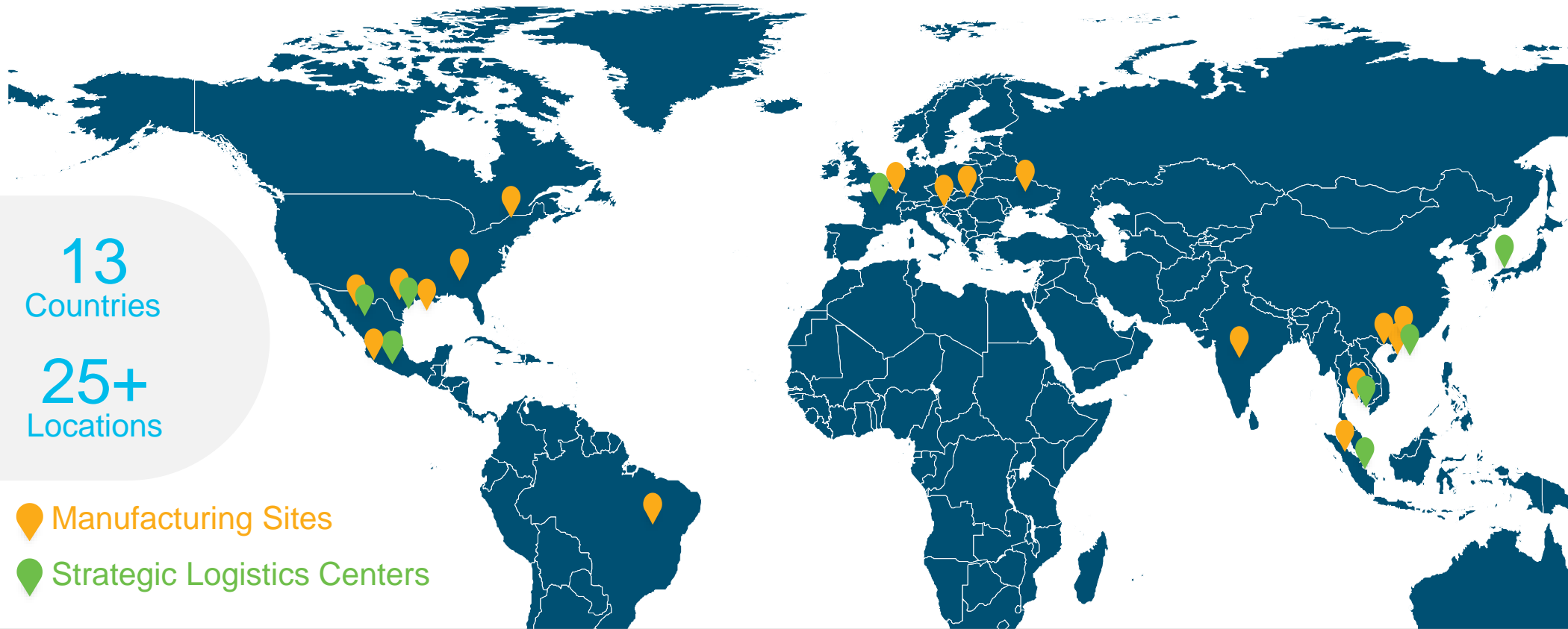
**Multiple
Clouds**

DIGITAL TRANSFORMATION



Cisco's Supply Chain

Global. Complex. Diverse.



13
Countries

25+
Locations

 Manufacturing Sites

 Strategic Logistics Centers



Catalyst 9300



Spark Board



NCS 6000 Series

**Diverse
Portfolio**

Mass production
to highly
configured

30,000+
orderable items

20,000+
virtual teams

1M+
orders annually

80M+
items shipped annually

700+
active suppliers

62,000
components

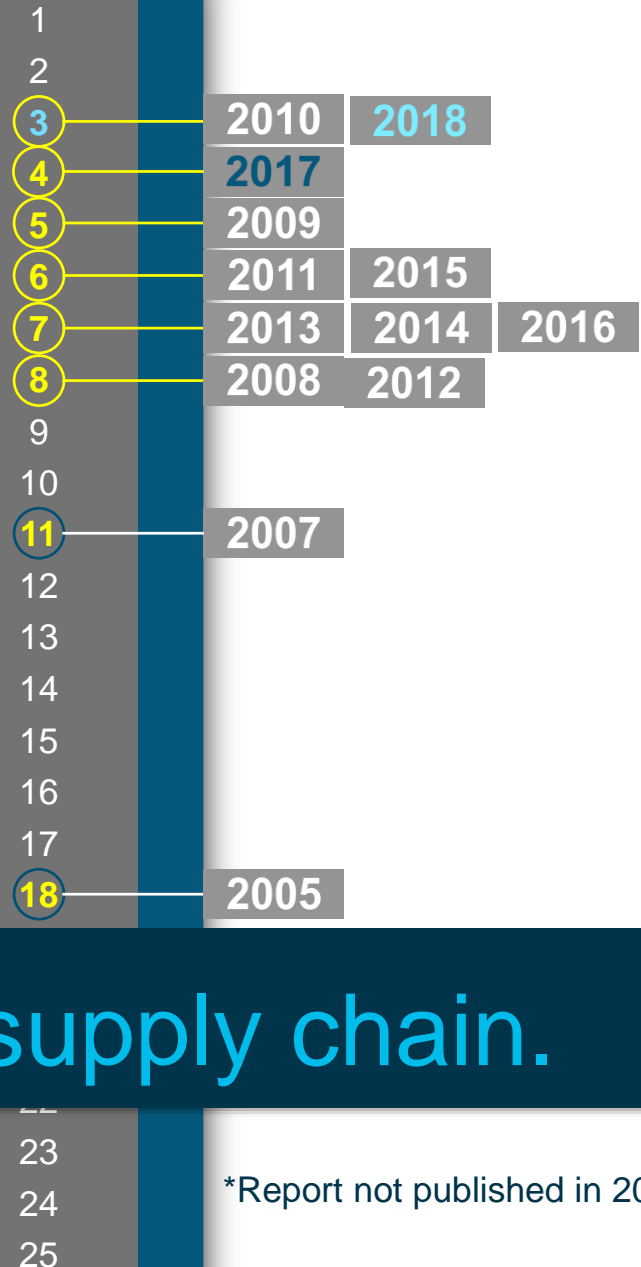
Industry Recognition

2018 List

1. Unilever
2. Inditex
3. **CISCO**
4. Colgate-Palmolive
5. Intel
6. Nike
7. Nestle

10. Starbucks

Gartner TOP 25



*Report not published in 2006

Over **10** years. A top **10** global supply chain.

Cisco's Digitalization Journey

Foundation

Data Analytics

Orchestration

ERP & PDM Systems Upgrade

Collaboration,
IoT, Mobility, Big
Data, Cloud

Real-time Visibility
Predictive &
Prescriptive Analytics

Machine Learning, Automated
Decision Making, End to End
Process Digitization, Blockchain

FY11

FY12

FY13

FY14

FY15

FY16

FY17

FY18

Systems & Processes
Foundation

Data & Analytics
Foundation

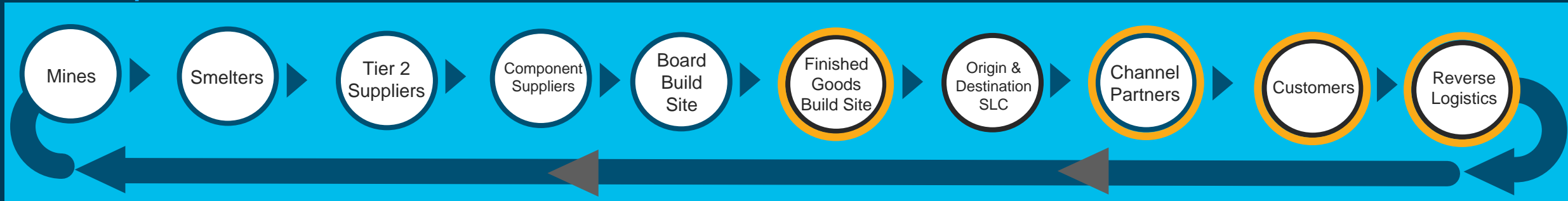
Digitization &
Orchestration

Digital Supply Chain

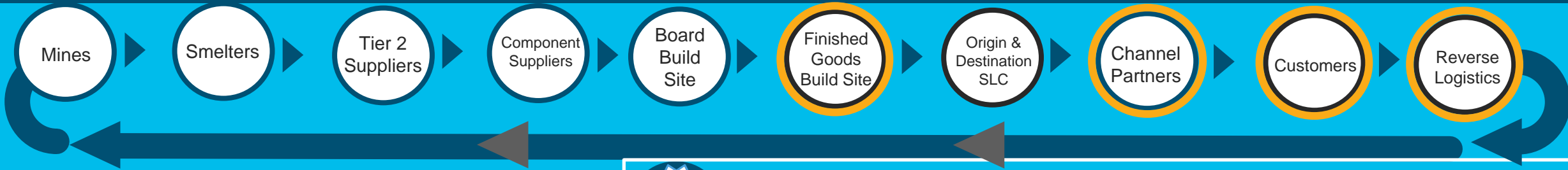
Growth & Value. Visibility. Simplification. Automation.

Cisco Supply Chain Operations

Complex. Global. Diverse. EXPANDING....



Areas of Friction



SUPPLY CHAIN FINANCE

- High costs for capital for tier 2 & 3 suppliers -Risk drives up cost for manufacturers
- Removing third party executing payments thus reduce SC costs



GRAY MARKET & COUNTERFEITING

LEAKAGE & THEFT

- Lack of traceability
- Theft at OEM sites
- Risk of brand dilution

- Brand diluted when products are reverse engineered in the field & sold on the gray market

CUSTOMS CLEARING

- Lack of transparency with shippers, carriers, governments slows processing times & causes delays
- Complex process creates dependency on brokers to manage risk

SOURCING & APPROVING SUPPLIERS

REAL TIME VISIBILITY

PLANNING

- Time wasted syncing Build of Materials across ERPs
- Data delays cause visibility gaps – leads to higher costs and not able to accurately commit to customers

QUALITY ISSUE ISOLATION

- Difficult to identify and isolate quality issues before they get into field
- Missing parent/child relationship between components & products lead to inaccurate gauge of exposure & over recalling

LOGISTICS

- **CARRIER COMPLIANCE:** Loss of visibility due to lack of partner/carrier compliance **certification and documentation**

RECONCILIATION & INVOICE PAYMENTS

- Process inefficiencies
- Settlement delays + longer NPIS

SOFTWARE LICENSE AUTHENTICATION

- Selling of software licenses on the gray market
- **OVER COVERAGE**
- Lack of traceability
- Warranty over coverage

Supply Chain Challenges

Key challenges in supply chain



Counterfeit products

Significant impact on customers and Cisco's revenues and brand



Over-delivery of software and service entitlements

Duplication & misuse of software licenses; limited proof of ownership



Gaps/inaccuracy in data impacting SC operations

Hampers ability to isolate issues in quality and planning



Logistics and customs improvements

Low visibility & manual processes in orders, shipping, invoices, etc.

How blockchain addresses

- Creates **trusted record of product genealogy** auditable by end customers
- Provides **real-time updates** on transfer of **ownership and custody**
- **Shared ownership** of data and selective transparency to drive accountability and encourage participants to share data
- Use **digital tokens** on blockchain as **software activation keys**
- Digital tokens **cannot be duplicated** and provide **proof of ownership** tied to a **unique customer identity**
- **All data** written to a blockchain is **validated by multiple entities** through multiple proof points, ensuring the **validity and accuracy** of all data
- Parent-child data structure allows **immediate traceability** into product genealogy and other attributes recorded on the blockchain
- **Single version of the truth** eliminates need for reconciliation and allows automation of business processes through smart contracts
- **Contracts are guaranteed** to execute impartially when pre-defined conditions are met and validated through consensus

Counterfeiting and Gray Market

Semiconductor and electronics industry losses



\$75B

Estimated impact of counterfeiting on US semiconductor manufacturers¹



8%

Estimated fraction of electronics components diverted through gray market



\$24B

Global anti-counterfeit packaging market for electronics/automobile parts²

Counterfeited optical transceiver modules

Revenue Loss

Top FIVE most frequently counterfeited modules

SFP-10G-SR
\$995 list price



SFP-10G-LR
\$3995 list price



GLC-LH-SMD
\$995 list price



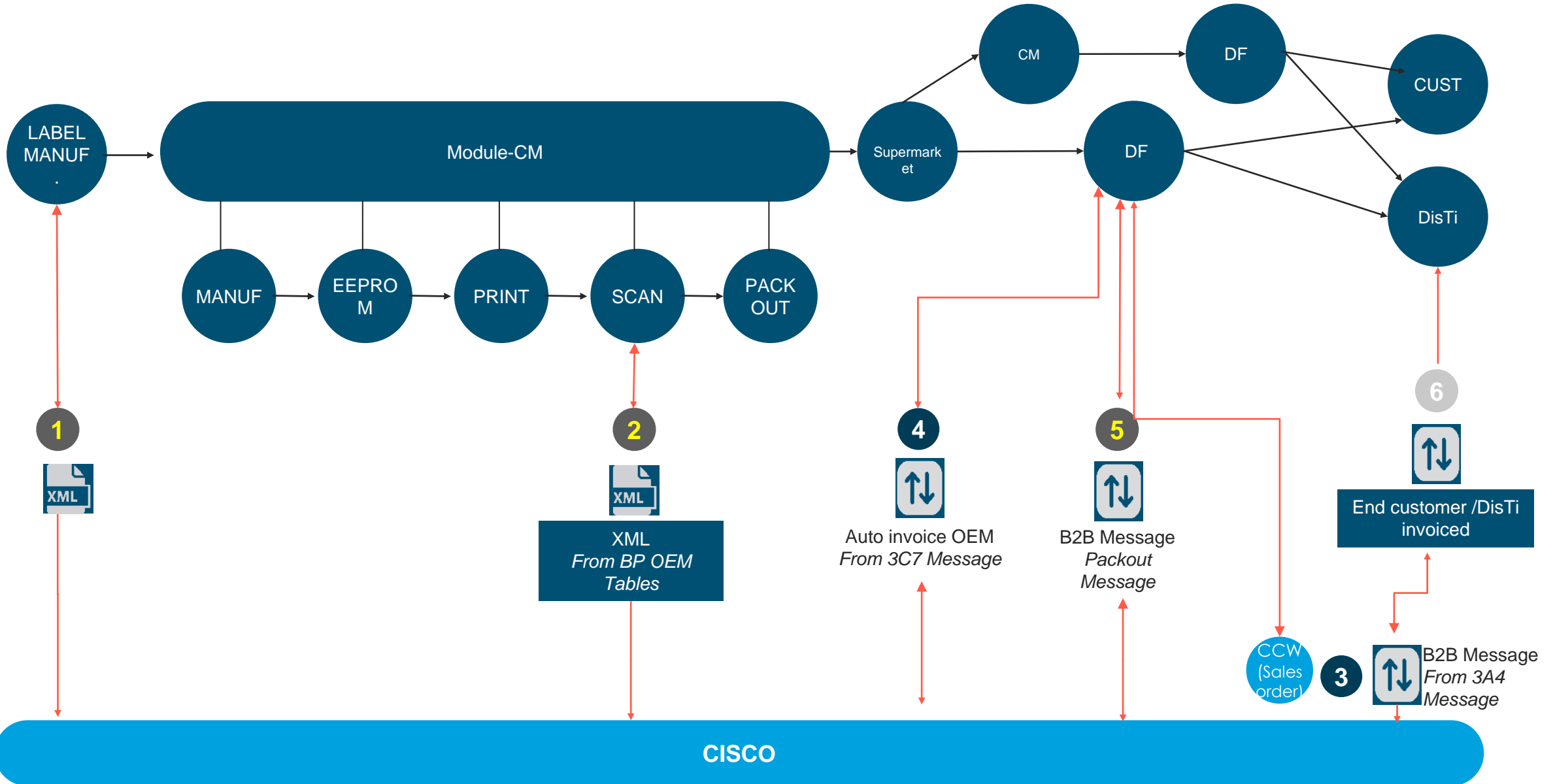
GLC-SX-MMD
\$500 list price



GLC-T
\$395 list price

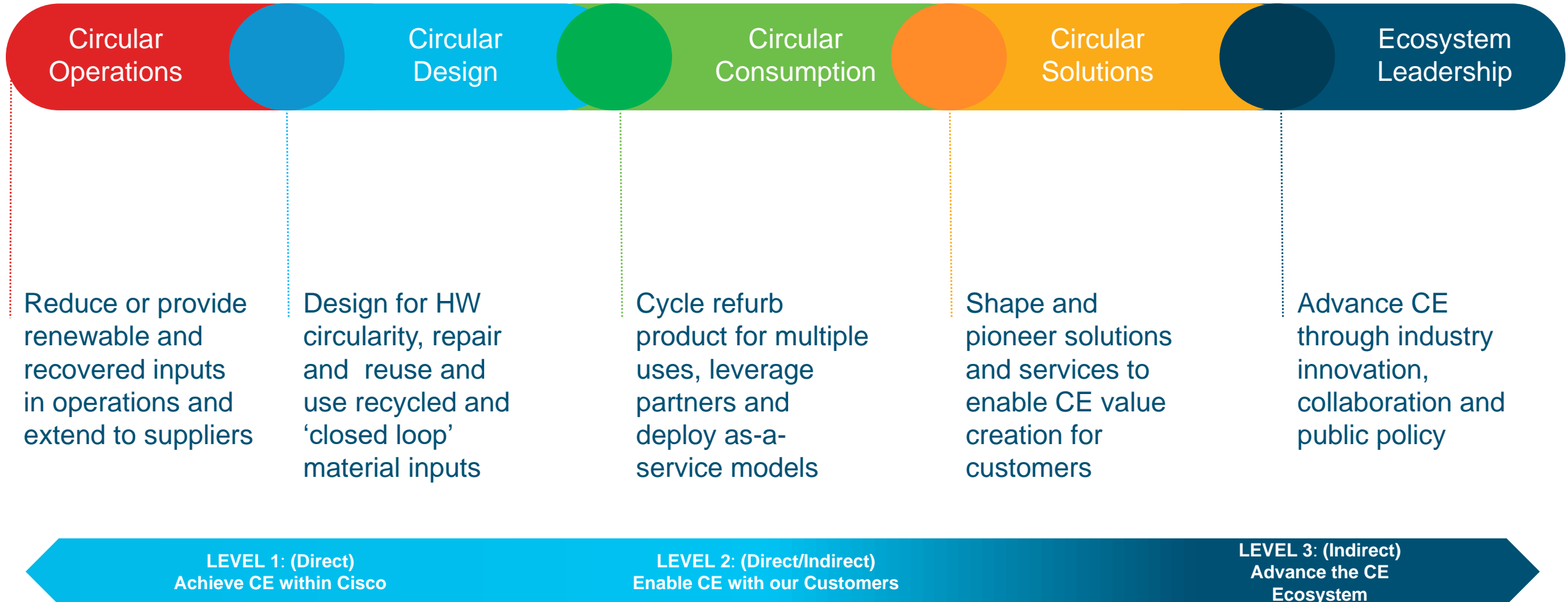


Data Feeds



Five Focus Areas for Cisco

To Enable Circular Advantage



Supply Chain journey from Digitization to Orchestration

Xtrace

Connecting supply chain participants to build an **accurate data foundation** to enable Digitization



Xtrace

Real-time updates across participants to enable E2E visibility and smart contracts to **automate decisions**



Xtrace

Event triggers based on **single version of the truth** to enable end to end supply chain **orchestration**





Blockchain in supply chain

A world of possibilities.



Stronger Security



Cut Costs



Reduce Risks



Improve Profitability



Increase Efficiency

OUTCOMES



Thank You

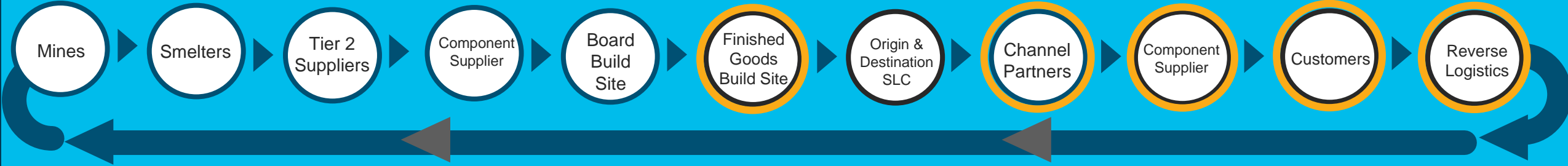
<https://www.cisco.com/go/blockchain>



Key Concept Areas

○ Hardware

○ Software



HARDWARE

- Track and trace for quality issues isolation
- Track and trace for supply planning
- Supplier management
- Customs clearance
- Track and trace for logistics -orders, shipping & invoices

SOFTWARE

- Track and trace for component genealogy, product ownership & software entitlements

FINANCE

- Tier 2/3 supplier financing
- Invoice reconciliation