Multi Enterprise Collaboration and Visibility at Intel

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Agenda

1. Intel APICS CSCP program
2. Collaboration/visibility journey
3. Pilot program overview
4. Key Learning's/Summary
**Presenter Bio**

**John Dawson, CPIM, CSCP**

- 40+ years of experience in a variety of senior management roles in operations, purchasing, supply chain, sales/marketing, quality, manufacturing, and information technology
  - Led several MRPII/ERP implementations across multiple plants and geographies
  - Majority of career between IBM and Intel
- 18 years at Intel in various operations and supply chain roles
  - Currently Strategic Planning Manager/CVBI Program Manager, with Intel's Global Sourcing and Procurement organization
  - Chair the APICS Core Team, which is responsible for APICS education/certification programs across Intel
  - APICS member for 27 years and have held a variety of chapter board positions. As a CSCP Lead Instructor, conduct classes within Intel and with the Portland APICS Chapter

**Co-presenter Bio**

**Radha Krishna, CFPIM, CSCP**

- Twenty years of combined industry and IT consulting with mix of USA/Asia experience
  - Industry verticals include Hi-Tech, Retail and FMCG
- Focus areas include enterprise architectural responsibilities, re-design of business processes and IT implementation across the supply chain – (demand management, supply planning, manufacturing and distribution networks).
- Joined Intel June 2003 as Engineering Manager –IT Supply Demand Enterprise App. team
- Prior experience include IBM, PricewaterhouseCoopers in Supply Chain Consulting Practice
Contributors

- **Mark Handy**: is a Senior Program/Project Manager specializing on tool and business improvement opportunities on Intel’s Global Inbound Supply Chain.

- **Krishna Subramanian, CSCP**: is a Supply Chain Project Manager in Systems and Factory support. He has led projects focused on supply/demand alignment, supplier integration, new business supply chain and development. Krishna is also an Intel CSCP instructor.
Gartner Top 25 Supply Chain

New segments, new supply chain challenges

Supply Chain Transitioning

Growing New Segments

- Smartphone
- Tablet
- Smart TV
- Embedded
Supply Optimization Challenge

Significant paradigm shifts on these vectors are transforming Intel’s supply chain

It All Started With APICS CSCP

2009
Began internal APICS CSCP program

2012
Collaboration/visibility adopted as an outsourcing strategy

2013
Program funded as Collaboration, Visibility and Business Information (CVBI)

Conducted internal classes across 14 Intel sites world-wide

More than 250 employees achieved CSCP

Intel APICS Core Team formed
How CSCP benefited Intel employees

More than half of the Supply Chain Strategic Roadmap team, a cross-organization team that develops Intel’s 1-3 year supply chain strategies, are APICS-certified. Here are some of their thoughts on the value of APICS certification:

• “APICS certification provides foundation for critical thinking...”
• “APICS certification provides industry credibility...”
• “I use APICS every week for reference material for biz problems...future direction of supply chain.”
• “I use the practices and learning’s from the two certification programs to think about strategy and initiatives...”
• “My APICS certification provides a foundational baseline to work on cross functional, cross Intel supply chain management improvements...”

Problem Statement

Collaboration/Visibility/Business Information capability to support outsourcing and internal manufacturing are fragmented and not scalable to support future business growth and complexity.

“As Is” State

• Lack of supply chain visibility/analytics is an acute problem in the outsource space
• Business units have multiple/siloed reporting interfaces, systems/tools, and datasets
• Lack of data integration to conduct effective analysis and reporting
• No workflow and exception management
“To Be” State

One tool, one interface, one version of the truth, and near real-time data across the extended enterprise.

WHAT: Increase revenue, win deals, faster ramps, better supply/demand balancing, improve customer responsiveness, reduce inventory, increase agility, drive employee efficiency....

HOW: Implement integrated system to achieve supply chain end-to-end visibility, collaborative “what if”, risk and revenue based decision making.

VISION

Supply

Product

Demand

A system of technologies and processes that senses and responds to real-time demand signals across a supply network of customers, suppliers and employees.

Source: 2012 Gartner Top 25

Business Value

Business is getting complex: steep growth in SKUs and parts require scalable supply chain collaboration, visibility and BI solutions.

Quicker Ramps

• Solution is BU/product agnostic
• Scalable to support quick ramp

Better Revenue Vs. Risk decisions

• Scenario assessment/what-if modeling to make fast and accurate data based decisions

Inventory & Scrap Cost Reduction

• Lower engineering change impact on inventory
• Financial liability analysis to lower inventory exposure
• Scrap root cause visibility

Customer Satisfaction

• Respond to customer request in hours not days/weeks

Employee productivity

• Workflow management for internal collaboration
• Event management with drill down for quick root cause and corrective action

Better OHS scores

• Less stress on employees = better organization health scores
### Server BU Supply Chain

- Suppliers
- Subcontractors
- Warehouses
- Customers
- Intel chips
- Chassis
- Power Supplies
- OEM
- Channel
- Raw Materials
- Semi-finished Goods
- Finished Goods

**CYBE key to addressing the Bullwhip Effect**

Source: APICS CSCP Learning System

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### Stage 4 Work-in-Progress

<table>
<thead>
<tr>
<th>Stage</th>
<th>Capability</th>
<th>1: Multiple Distinction</th>
<th>2: Semi-Functional Enterprise</th>
<th>3: Integrated Enterprise</th>
<th>4: Extended Enterprise</th>
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</thead>
<tbody>
<tr>
<td>Internet</td>
<td>Static Web sites</td>
<td>Online catalogs</td>
<td>Internet across all functions</td>
<td>E-commerce</td>
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<tr>
<td>Integration</td>
<td>New, no team/work</td>
<td>Batch</td>
<td>Internal process integration, teams</td>
<td>SC networks, process integration</td>
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<tr>
<td>SC planning</td>
<td>Little information exchange</td>
<td>Informal, no initiative coordination</td>
<td>Formal/global enhanced logistics</td>
<td>Integrated/global planning; SC vs. SC competition</td>
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<td>Production scheduling</td>
<td>Basic MRP</td>
<td>MRP II</td>
<td>MRP—ERP</td>
<td>Externally Integrated ERP</td>
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<td>Integration with suppliers</td>
<td>Fax/phone</td>
<td>EDI; some low price</td>
<td>EDI with all large suppliers</td>
<td>VM, online KPI</td>
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<td>Customer delivery</td>
<td>Research</td>
<td>Local inventory</td>
<td>ATP</td>
<td>CTP</td>
<td></td>
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</tbody>
</table>

Source: APICS CSCP Learning System
What’s Changing?

Streamlined information flow
Integrated and automated data
Highlight business exceptions
Rapid resolution process

Platform for Multi-Enterprise Collaborative Execution

Subcontractor
Subcontractor
INTEL

Make vs. Buy Comparison

Rough Estimated Timeline

Make
- Better control of solution and roadmap
- Still behind best-in-breed after 3 years (i.e. vendors have taken 5-10 yrs. or more to develop their solutions)
- Challenge to agree on requirements, design, and data integration
- Expandability across different segments?

Buy
- ~12 months – Quicker implementation/time to value
- Latest technology – best-in-breed
- Proven solutions in high tech industry
- Highly expandable
- SaaS unchartered territory
- Data security risk for Fab’s?
CVBI Pilot Timeline

Key Deliverables

- Complete inventory visibility
- Global supply demand view and exception management
- ODM BOM visibility and critical parts management
- “What-if” scenario planning capability
Collaboration/Visibility Execution

- Continuously monitor activities
- Prevent disruptions: big, fast data
- Evaluate impact and collaborate decision

N-Tier Process Orchestration/Execution
- Seamless processes
- Exception-Driven Alerts
- Integration with existing systems

Single Source of Truth
- Panoramic visibility
- Single version of truth
- Total Concurrency: instant impacts

Trading Partner On Boarding/Connectivity
- Real-time on cloud-based platform
- Any-to-any connectivity
- Self-Service Partner Onboarding

Results Achieved

CVBI Server BU Pilot
- B2B connectivity to multiple suppliers
- Multi-level inventory visibility across the supply network
- Response to customer upsides in hours
- Exception management with drill down capability
- “What if” analytics to make faster decisions
- One tool, one version of the truth
Pilot Challenges

Developing “use cases” that employees/vendors understand

Scope creep a daily go around

Internal IT and business expertise constraints

Subcontractor data sharing—IT resources—Trust....

Users located across several time zones

Q3 '12
Q4 '12
Q1 '13
Q2 '13
Q3 '13
Q4 '13
Q1 '14
Q2 '14
Q3 '14
Q4 '14
Q1 '15
Q2 '15
Q3 '15
Q4 '15
Q1 '16
Q2 '16
Q3 '16
Q4 '16
Program definition and funding

Funding & Solution selection Pre-work & resourcing

Option A - Short TTM (3rd party)

Data integ & small deployment

(SAP data + 3 Subcons)

Proliferation to BU's using SAP

MRP & procurement

Onboarding of additional Subcons

Data integration for non-SAP data locations

Proliferation to additional BU's Onboarding of additional Suppliers

Option B - Longer TTM (Internal build)

Define data integration approach and solution

Build FE and initial functionality for pilot BU (collaboration & what-if)

Proliferate initial functionality to other BU's Onboarding of Subcons/Suppliers

Develop incremental functionality #2

Develop incremental functionality #3

Pilot Challenges

Key Learning’s

Success

APICS

Sponsor

ROI

What and why?

End state

Vision

Scope

Use cases

External and internal

Data

Cloud

Brave new world

CSCP as foundation

Executive and business

APICS 2013

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Survey

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