Supply Chain Management 4.0
Supply Chain Innovation towards Industry 4.0

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Envisioning SCM 4.0: Fourth Industrial Revolution

Mastering the Fourth Industrial Revolution
Industry 4.0 is characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human.

The resulting shifts and disruptions mean that we live in a time of great promise and great peril.

The world has the potential to connect billions more people to digital networks, dramatically improve the efficiency of organizations and even manage assets in ways that can help regenerate the natural environment, potentially undoing the damage of previous industrial revolutions.

Prof. Klaus Schwab (2015)
Founder and Executive Chairman
World Economic Forum
The key role of SCM 4.0

Under the paradigm shift of Industry 4.0, it is needed a strategic holistic vision to see the new growing forest, through the old trees.

With the confluence of social and business trends of Industry 4.0., and the emerging technologies, the value chain will become fully digital and globally integrated; from suppliers, factories to customers. Digitalization has started by the integration of information flows and the incremental digitalization of products and services supported by Internet of Things. Next will be the implementation of intelligent processes, fostered by Artificial Intelligence.

The global supply chain management will play a key role in the new paradigm looking holistically beyond the existing silos and functions. The decentralized and intelligent supply chain optimization will involve both hyper-communication and big data to achieve the highest agility.

Every single object in the value chain may have its own IP address communicating with others; like products, parts, materials... but also containers, trucks, manufacturing devices, plus new human-machine interfaces and digital-to-physical transfers.

Everything may become an individual part of the Smart Supply Chain supported by IoT and AI, where products, services and information converge. Companies need to change the way they plan, source, make, deliver and service having the customer in the gravitational center of a digital business ecosystem.
Envisioning SCM 4-0: Revolutionizing Business

Supply Chain Innovation
• The three stages of innovation: substitution, scale and structural effect.
• The impact of Internet on Supply Chain Management has lead to business opportunities far beyond supply chain integration.
• Supply chain structural changes resulted in important new profit centers.

Hau Lee (2015)
Stanford Graduate School of Business
Professor of Operations, Information, and Technology

Digital ubiquity is revolutionizing business
It is causing companies to transform their business models and change how they create and capture value. Companies that previously manufactured products or provided services are becoming software and analytics companies, developing new types of capabilities-like collaboration and coordination-and forming entirely new kinds of partnerships.

Digital ubiquity is also causing companies to completely rethink how they go about operations. Operations is often mistakenly viewed as "manufacturing," but operations is what gives a company its ability to act. As with every other aspect of a company, digital technology is enabling completely new operating models.

Marco Iansiti (2016)
Harvard Business School
David Sarnoff Professor of Business Administration
Unit Head, Technology and Operations Management and the Digital Initiative

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Envisioning SCM 4.0: Supply Chain Digitalization

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SCM 4.0 Model

\[ f'(Industry\ 4.0) = SCM\ 4.0 \]

\[ SCM\ 4.0 = SCM + IT + Emerging\ Technologies \]

SCM 4.0:
- Digital
- Agile
- Value Net
- Data Driven
- Real Time
- Control Tower
- Responsive
- Sensing
- Intelligent
- Social
- …

New Paradigm
Industry 4.0

New Business Context
IoT & AI

New Corporate Culture
Collective Leadership

New SC Management System
Skills, Competences and Processes
SCM 4.0

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SCM 4.0 Road Map

FOCUS
- Global Data System
- Demand & Supply Platform
- Global Digital Processes, Partnerships
- New SC Management System
- Global SCM Digitalization

OBJECTIVES
- Digital Planning, Order Fulfillment, Forecast Accuracy
- Global Inventory Optimization, Lead Time Reduction
- Real Time Responsiveness, Resilience & Agility
- Market Responsiveness, Servicing
- Digital Value Network

TODAY
- Cloud Control Tower
- Cloud SIOP
- Big Data
- Robots
- RFID

SCM 4.0
- Digital Value Network
- Industry 4.0
- IoT & AI
- Augmented Reality
- Simulations
- Factory 4.0
- Logistics 4.0

To BE
- End-to-end Digital Value Network:
  - Connected
  - Digital
  - Real time
  - Responsive
  - Intelligent
  - Scalable
  - Transparent
  - Collaborative

New:
- Skills
- Competences
- Systems
- Processes
- Culture

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SMC 4.0 End-to-End Digital Value Network

Adapted from Bovet y Martha (2000).
A paradigm shift needs a holistic vision.