

2018

think  
**supply  
chain**  
think SAPICS

# Connected Supply Network - The Internet of Supply Chains (IoSCs)

THOMAS GAAL & LARS MAGNUSSON

  
your supply chain community

SAPICS 2018 ANNUAL CONFERENCE: CAPE TOWN, SOUTH AFRICA | 10 – 13 JUNE 2018

Digital readiness is the Holy Grail we have been searching for but have not defined what it is nor have we created a pragmatic tool-set to enable companies to be digitally integrated in a supply network. Of course, the giants out there are digital, forcing the agenda, and are being the evangelists but the bulk of companies are made up of small- to medium-sized and they simply cannot keep up.

The giants, from Amazon to GE, are reaping the benefits of digitalization but primarily in their supply chains (silos!) and not truly across a digital supply network. Here is one dilemma – the nucleus supply chain - forcing partners to “go digital” will never realize the promise of a digitized supply network until at least 30-50% of all business partners are at the same level of digital readiness.

We need a new paradigm. The old “one power-player in a supply network” is a thing of the past. Forcing suppliers into Supply Portals is missing the core value of digitalization, which is to join a platform to become better, faster, cheaper in a value network. We need to improve information exchange with partners and expand with quality data, etc. and we need a different engagement model with customers if we are to enrich the customer experience.

The new model will empower all players in the value network and create a new paradigm that can be reached through data standardization.

### **Data Integration - Still the Problem and “Dumb Big Data”**

Data with different meaning from disparate sources (ERP, data models, spread sheets) is the blocking point for digital business and reaching the promise of Advanced Analytics and AI/Machine Learning. A digital supply network needs the ability to quickly onboard a new supplier and exchange data beyond the scope of traditional EDI messages. We are drowning in “Big Data” that is by itself “dumb” until we solve the data integration problem to result in “Smart Big Data”

### **Smart Data - Data Integration - Start with Data Standardization**

It is time to realize we have a landscape of data silos and we need to move beyond that to use data intelligently and ultimately enable AI/Machine Learning techniques. A Data Lake is also not the answer. Feedback from companies that have implemented them is that they are experiencing them as an enterprise-level file organization solutions analog to your personal file system on your hard drive. Data lakes are not data integration layers but rather central data hub locations that solve the problem of access to data but not the problem of data being integrated, or “linked”. Linked means data is stored in its relationship to other data points and not based on rows-and-columns in relational database. The emerging digital technology of knowledge graphs, the further evolution of databases, can deliver the answer of organizing data in relationships based on semantic data management.

Let’s use technology now already available and employed at the core of how Amazon, Google and others master exchanging data with their partners, searching through massive amounts of big data out there, and through that creating new digital business models and making money.

Have you ever wondered how Facebook, LinkedIn, Google and Co. “link”, or “connect” you to friends, contacts, or the next local restaurant? That all happens with data organized in a knowledge graph, not a legacy database.

Semantic data science acts as a data glue linking data we consider to be business concepts through a Meta data model that is easily adaptable and based on common data definitions. It is based on the logic we use in grammar. For exam, Mark (person – subject) has a Date-of-Birth (property) of July 4 (a value). We use this subject/predicate/object logic when constructing sentences in our language because that is how we understand context. If our brains did not work like this in our day-to-day speech we would have difficulties understanding each other.

## Digital Readiness is defined by Maturity in Using Data

As we start to use data for more added value we will move from improving the current mode of operations through digitalization to command & control the transactional layer of the supply chain to finally collaborating with a partner in the value network with advanced automation of processes and autonomous (self-executing) processes. Ultimately, our AI/Machine Learning algorithms will augment staff intelligence in decision-support taking over many tasks.

When we talk about digital supply chains, going digital, digitalizing the supplier interface, etc., what do we really mean? We have to get pragmatic to ensure a business outcomes focus. At the heart of that is improving current mode of operations with digitalization. We are suggesting three levels of digital readiness that will also reflect your company's personal journey on the digital maturity model. These levels are based on how we use data:

### Level 1

- Reducing transaction effort by having data with common meaning, or as stated above, standardized

### Level 2

- Process automation: buyer/supplier order exchange & synchronizing updates in product master data, decision-support processes in e2e SC, escalations in material management

### Level 3

- Smart collaboration with customers and suppliers exchanging more and more data, e.g., tier 2/3 supply status, sensor data from production, co-development of business intelligence based on this shared data

## Digital Readiness – A tool for the Supply Chain practitioner

Pressure to “digitalize” is growing. To help executive management understand current capabilities we are suggesting a digital readiness workshop. At its core is the paradigm of a data object (e.g., order) having a lifecycle in a supply chain. A company is controlling its data in a manner that would enable smart collaboration if it understands, manages, and consistently provisions this data (object) to all its staff and systems with no degradation of the quality

SCOR version 12 delivers a new best practice “SCM Object Synchronization – “3/4-way match” and is described as such:

“The ability to follow an object through the entire lifecycle across a supply chain is a foundational element in creation of visibility in order to gain supply chain control. The focus is to create object synchronization from Sales to Cash, to enable systems integration & digitalization.”

## Authors:

**Lars Magnusson**, Business Architect, Core Process Deliver, Ericsson [lars.m.magnusson@ericsson.com](mailto:lars.m.magnusson@ericsson.com)

**Thomas Gaal**, Director Digital Transformation, RFS, [thomas.gaal@rfsworld.com](mailto:thomas.gaal@rfsworld.com)



**Lars Magnusson** is a supply process development expert with more than 25 years international experience in supply chain management. He is currently responsible for business architecture for the deliver process of Ericsson AB in Stockholm, Sweden. He has extensive expertise in a range of design subjects in the supply area, from production system design, automatic ID systems and design of global distribution systems to the digitization of supply chains and supply-related IT development. Lars has been active in developing the APICS SCOR, DCOR, PLCOR and xCOR frameworks. He leads the APICS RISC Sensing Committee, is past vice chair of the APICS SCC Research Committee, past president of the APICS SCC Board, and a former vice chairman of the SCC Technical Development Steering Committee. He holds a master's degree in industrial engineering from Lund University in Sweden.



**Thomas Gaal**, Director Digital Transformation, RFS - Radio Frequency Systems

Thomas Gaal leads supply chain innovation and heads the digitalization office at Radio Frequency Systems (RFS). Previously Thomas was program manager at Nokia evaluating and implementing emerging digital technologies and is engaged in collaboration with industry, university and association partners pursuing ways to disrupt value networks, innovate with data, and expand this body of knowledge. He has deep experience in SC architecture, business/IT alignment, and demand-driven operations. Earlier in his career Thomas led transformational projects such as process-driven enterprise and integrated business planning. Thomas is an instructor of SC design and in the gamification of value network simulation. He chairs APICS RISC Sensing Subcommittee and contributed to developing SCOR version 12. Thomas is a native of Connecticut and holds a degree in electrical engineering from the University of Connecticut. He has executive education from IMD in Switzerland and has worked in Germany, the U.S. and the Netherlands.