

Session Title: Transforming your End to End Supply Chain off a Digital Network Platform

Past supply chain investments; e.g.; track and trace, contract manufacturer collaboration, integration with logistics providers, end to end visibility, and Control Towers, created the foundations for digital supply chain transformation. The challenge is that they were often done by different groups and for different reasons across the business operating model – today many are disconnected. Roddy Martin, Chief Digital Supply Chain Strategist ex Accenture Partner, Oracle SC VP, and SVP Supply Chain Research at AMR Research Gartner will discuss the journey creating a E2E business network that enables stage 3 - 4 demand-driven supply capabilities. Emerging two-sided digital network platforms collaboratively connect upstream and downstream ecosystems to bring exponential agility and improvements to companies across the network all striving to win at every customer; delivering products on time, every time, and safely, in order to responsively meet demand.

Paper by Roddy Martin

Traditional Supply Chain Strategies Will Change Forever with Disruptive Digital Network Platforms

Introduction

All stakeholders in traditional internal and external supply chain ecosystems and specifically in life science supply chains, enormous digitally enabled breakthrough opportunities lie ahead.

Every company today is looking to transform the capabilities of their supply chains to holistically improve business performance and build new capabilities. I am “tired” of hearing C-level executives lament that they see “too” many supply chain projects but don’t see a change in business results!

Isn't it time to start asking “why” and “what’s wrong” and “what” we need to do differently?

To start, industry leaders today see “Supply Chain” as the business operating model, not just a linear set of point to point connections across functions in the business to efficiently move materials and expected to cut and contain costs on a repeatable and annualized basis!

The reality is that today's supply chains are being fundamentally transformed and disruptive new capabilities are emerging. These can be articulated by characterizing the change:

1. **From** Supply Chain as efficiency driver and cost eliminator **to** Supply Chain as business growth engine and competitive weapon.
2. **From** separate Manufacturing, Supply Chain, Operations and Logistics, Sales, Marketing, and Business Management functions **to** one horizontal end to end customer and market focused demand-driven organization and business processes.
3. **From** a set of integrated business functions (like manufacturing, logistics, procurement) **to** an End to End Demand-driven Value Network (DDVN) that is designed from the buyer and

customer back to the supply network and focused on key metrics like On Time In Full (OTIF) , and Customer Service Levels (CSL), and Customer Safety and compliance.

4. **From** supply-driven, inside-out processes largely based on ERP and Manufacturing systems, processes, and technologies; **to** outside-in Demand-driven capabilities where supply is driven by true demand sensed in the market and with customers.
5. **From** IT and functionally focused supply chain leadership **to** converged business and digital leadership of the end to end Business Operating Model and Strategy.
6. **From** integrated supply chain system-driven mental models, where complexity is embedded in complex architectures of integrated IT applications, heterogeneous vendor solutions, data bases, “*sort of* master data” and organization models (siloed departments and business units) **to** Enterprises operating off Cloud-based Digital Network Platforms (DNP) like AWS, Microsoft, Google that provide application-based services geared specifically to provide specific business capabilities like planning, track and trace, serialization, visibility, Artificial Intelligence orchestration and planning models (AI).
7. **From** a complicated architecture of interconnected IT systems and databases without master data management across the enterprise **to** cloud-based two-sided Digital Network Platforms that support “ canonical-based” collaboration and fulfillment processes across networks of ecosystem partners (for example a Healthcare Ecosystems from contract manufacturers, suppliers, manufacturers, distributors and wholesalers, hospitals retail pharmacies to patients).
8. **From** traditional transactional analytics answering questions the business knows it has (for example; how much. how many, when....) and using traditional relational historical data bases and packaged application software packages (such as Enterprise Resource Planning (ERP), Manufacturing Execution Systems (MES) , Advanced Planning and Scheduling Systems (APS) , Transportation Management Systems (TMS) **to** advanced and predictive analytics systems such as Machine Learning (ML) and Artificial Intelligence (A) that enable the business to build and refine analytics models off a Digital Network Platform to holistically orchestrate the business.
9. **From** integrated thinking and integration strategies supported by Project Management Organizations and external consultants (PMO’s) **to** Centers of Transformational Excellence (COE’s)’ and integrative thinking that is continually assessing and diagnosing progress and surfacing constraints holding back business performance improvement across people, process, and technology elements.

None of these challenges are not trivial if dealt with strategically, even if dealt with singularly!

Going Forward, Face Facts and Reality

New emerging digital technologies and changing requirements to build new business capabilities are disruptive to all elements of the business, both individually and collectively; people, process, and technology. In particular, because of the siloed manner they have been traditionally managed and led; delivering business agility and value as the need for market responsiveness is increasingly demanding and volatile, today’s supply chain operating models and agility are being challenged to deliver business and economic value.

Face up to the fact that today, to survive and thrive, businesses need new, invigorated, innovative supply chain leaders that are first and foremost business partners, can lead pervasive digital transformation pragmatism, able to drive convergence of business, digital, and IT strategies , and most

importantly lead fundamental rethinking, questioning, reengineering, reskilling, reorganizing, repositioning, unlearning and relearning of the traditional business at strategy and leadership level. The hard part of this “big” statement is that these dramatic changes must be led and executed from the top of the organization downwards; not classically a strength of supply chain strategy execution! The reality is that businesses can no longer afford to wait for years for IT to implement expensive and complex IT systems on questionable supply chain businesses cases that are often siloed and flawed!

I once heard a leading supply chain executive say off an international presentation stage “*we thought we understood supply chain and we had had nailed it, now digital has appeared and we are all confused*”. Staggering!

So, what needs to change and what stays the same?

Facing facts and reality, the business challenge of enabling value from end to end demand driven supply chains, now regarded as a Demand-driven value network boil down to a few fundamental use cases.

Recognizing that the overarching business goals and Moments of Truth haven’t changed (*even with the advent of digital!*) these use cases are:

1. Deliver products and services safely and responsibly
2. Innovate for growth
3. Product integrity and traceability *every time*
4. On Time in Full (OTIF) delivery to customers, buyers, and patients every time
5. Responsive to sensed demand and buying signals
6. Ensuring that agreed Customer Service Levels are met
7. Always available when a business promotes product and services
8. An insightful and segmented understanding why consumers choose and use a company’s products and services

As they journey down this transformation route, businesses and leadership teams are learning that “*integrative and systemic thinking*” is needed to ensure that the collection of siloed projects, metrics, and measures bring about transformative business performance that is sustainable and in the process do not compromise overall end to end business performance.

For example, learning to quickly and effectively identify and manage scenarios and build capabilities such as:

1. Siloed metrics that conflict overall end to end business performance (logistics costs compromise customer service levels, cycle time goals compromise product quality, poor master data and visibility compromise product and visibility).
2. Leadership that continuously evaluates the stage of business maturity and capabilities, maps to the performance of projects, initiatives, performance goals and programs to quickly identify challenges and constraints and accordingly adapt priorities and plans.
3. Continuously leading and managing change and quickly adjusting to challenges by addressing softer issues such as roles and responsibilities, resources, organization designs, and skills.
4. Ensuring that functional excellence initiatives are not siloed, independencies are surfaced and that initiatives do not negatively compete and compromise each other.

Going forward; in order to focus efforts, the business must reevaluate the key capabilities that need to be built to transform business performance. A galvanizing approach being used by leaders is to by

identify the use cases and then mobilize resources around these prioritized use cases to drive transformation.

Start by deconstructing, analyzing, building and executing the following strategic use cases:

1. The business leads and manages the pivot of the business operating model from supply-driven to demand- driven by adapting metrics, processes, people, and technology elements to outside - in processes.
2. Providing accurate and real time in process demand-visibility with business context.
3. Providing accurate and real time in process supply-visibility with business context.
4. Executing “smart” orchestration of continuous, integrative business planning (versus traditional supply-driven Sales and Operating Planning meetings and events).
5. Availability of continuous end to end visibility and traceability of all products and services from the start of supply into the hands of the ultimate product and service user (treating visibility as a process requirement versus a software system like an inwardly focused Control Tower). Many leaders are creating digital twins of operations to separate product and information flows.
6. Building a Digital Network Platform of services and applications and expanding the network of partnerships to leverage the power and economic value of two-sided networks.
7. Continuously monitoring, leading, and actively managing transformative change.
8. Holistically leveraging and deploying digital technologies to fundamentally change work practices and business capabilities to drive for improvements of X100's not just X2-X10's!

Transformation is a Journey

A fair question to ask is how leaders manage this arduous journey while keeping the business operating and yet transforming capabilities in the process?

The answer is that leading companies have adopted the use of the 5 Stage maturity and capability model originally developed at AMR Research and now continuing to be researched and developed by Gartner. This model is used as the basis of workshops we conduct to help companies identify their stage of maturity and plan their transformation journey.

The background is that the 5 Stage framework model is broadly used by leaders to diagnose the state of current business and supply chain capabilities, plan their transformative change, and assess and report progress to the larger business.

The maturity model itself describes and codifies the roadmap of progressively evolving business and supply chain capabilities (work practices, processes, people, and technologies) that a company or system needs to systematically build, develop, and integratively deploy as the business (or a function, business unit, and even process) evolves from linear & reactive supply chains, operations and business problem solving capabilities, through to the ultimate advanced and orchestration Stage of capabilities (Stage 5+) where the end to end business and supply chain is part of an extended end to end partner networked operating model; for example, the end to end life sciences and healthcare ecosystem.

The 5 Stage Model is an extremely useful leading and managing change tool if it is used systematically.

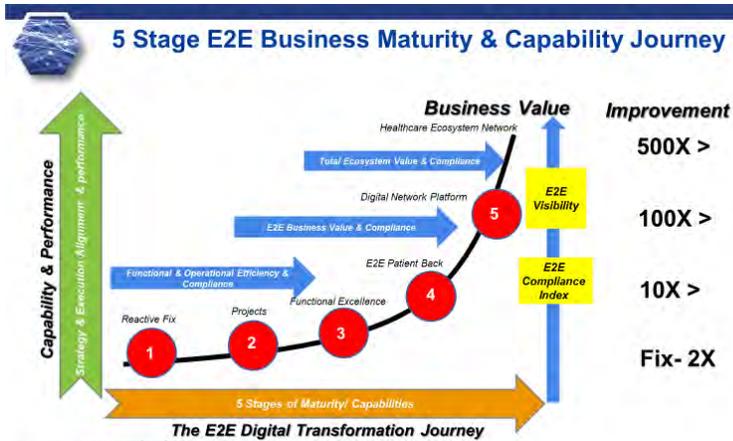
The Model provides a framework to:

1. Describe pertinent industry trends in a staged manner.
2. Describe, diagnose, and assess the state of a business's capabilities.
3. Provide a roadmap to describe and plot the journey to a specific industry or business vision and aspirations.
4. Answer specific questions based on best and current practices, metrics, and benchmarks in the current stage of a business's capabilities.
5. Identify specific challenges within the current stage of capability.
6. Describe and articulate behaviors and practices that represent "what good looks like" also to articulate potential pitfalls and constraints.
7. Outline and benchmark best practice learnings and opportunities for organizations; for example, within the life sciences networked ecosystem.
8. Make recommendations and articulate the status and progress pertinent to a company's stage of capability.
9. Support decision making and project prioritization as companies evolve their technology and digital transformation roadmap.
10. Support companies evolve their organization, talent pool, and business operating models as the journey to a networked partner ecosystem progresses.

The model is a useful change management *framework* to use for *developing leadership and business practices* as companies mature from linear point to point businesses, supply chains, and operations to a non-linear multi sided network platform of players in the complete two-sided networked market ecosystem.

The capability model is a valuable reference framework to help companies plan and prioritize their development roadmap as they develop, monitor progress, and *ultimately drive to coalesce people, process and technology elements* into a unified digitally-platformed, supply chain networked ecosystem.

The following diagram illustrates the high-level foundations of the 5-stage maturity model used at TraceLink to describe the evolving end to end ecosystem-based Digital Network Platform



The stages of the maturity model can be described at a high level as follows:

- Stage 1: Reactionary Stage – How can I identify and fix a problem I didn't expect?
- Stage 2: Project-Based Improvement – How can I formulate and manage a project and implement a solution that addresses the issue moving forward?

- Stage 3: Integrative Functional Excellence— How can I work with my function partners to improve efficiency and achieve functional excellence?
- Stage 4: Outside -in Collaborative Customer, Patient-driven Operating Models - How can I work with partners to become market and demand-driven?
- Stage 5: The Orchestrated Market Network – How can I be part of global digitally networked ecosystem focused on winning at every customer?
- Stage 5+: The Unfolding Vision – What is the future and ongoing value from a fully digitalized market ecosystem?

Conclusion:

All stakeholders in market-based ecosystems and specifically for example the life sciences supply chain network, have enormous digitally enabled breakthrough opportunities ahead. The benefits will not just come from a significant reduction in traditional technology and data integration complexity and its constraining implications, but from the economic power of scale, collaboration, responsiveness, visibility and transparency across all networked partners in the two-sided platformed market segment for example, healthcare ecosystem.

While this transformation is already happening in other industries with companies like Amazon, Google, and Apple, it is a new and evolving concept for many industries and massively transformational for many companies.

For partners in a market-based network; in addition to managing the deployment of digital technologies such as cloud and then codifying connecting to a Digital Network Platform; the transformation involves a 5 Stage transformation capability-building journey as laid out in this paper.

Traditional inside-out, point to point supply-driven value will still come from Stage 1,2,3 supply chain, operations, and manufacturing capabilities. These will remain a critically important foundation for any company and its own internal operating model with functions such as logistics, operations, and procurement; as well as the management of external customer relationships such as contract manufacturers, suppliers, retail pharmacies, hospitals, distributors, and suppliers. In early stages of the journey these will still be point to point and largely transactional in nature. However, non-linear exponential economic value kicks in in stages 3+, 4, 5 where the power of the network becomes the ecosystem differentiator. The stronger the partner network, the higher the economic value!

In respect of digitization; in early stages of maturity (Stages 1-3), digital initiatives tend to be immature, not broad strategy-founded, discovery-orientated and exploratory!

The economic value of a market-based network originates from the power of all the market elements and partners collaborating as a networked ecosystem off a Digital Network Platform that leverages the network effect. Economic value is derived value from the real time transparency and collaboration processes between all interconnected partners in the market network-based ecosystem. Its as simple as going from a 1-1 connection to the exponential implications of many to many partners in the network, collaborating and exchanging data with each other.

The reduction in collaboration complexity, improved sensing and response capabilities stem from the fact that the constraints to doing business are no longer based on the time to visualize-integrate-respond and the complexity of integrating different IT systems, businesses, organizations and data bases

across the business's own and network partner ecosystem. The codified connectivity embedded in the DNP for example the AWS platform with its cloud-based applications and services is the heart and soul of the networked ecosystem.

The 5 Stage model provides both a capability reference framework and a diagnostic assessment tool to assess where a company's capabilities are today, a framework to articulate a company's aspirations for tomorrow and develop a prioritized execution roadmap for the journey. The 5 Stage capability "language" provides the common foundation for everyone in a business to be referencing and articulating, in the same language, today's maturity, gaps, opportunities, wins, capabilities together with tomorrow's aspirations against a common backdrop framework that allows a network of partners to benchmark and share learnings and best practices.

In short, the model provides leaders and practitioners the ability to determine where their current capabilities are within their own business and supply chain as well as within the market-based network ecosystem and what the best practices are for the journey where they need to build towards.

The best practices in the form of behaviors, work practices, shared learnings, and benchmarks described and codified into the 5 stage framework will provide a guiding north star for stakeholders to achieve ultimate Stage 5 + capabilities, a Networked Market Ecosystem with responsiveness, effectiveness, and customer safety embedded into the DNA.

In a final few important conclusive notes it is firstly important to stress that achieving stage 5 capabilities *is not a competition; it is to* articulate and communicate a capabilities-based roadmap for a led and managed transformation journey.

Secondly, it is also important to note that different parts of a business, even business units (for example diagnostics, vaccines, biotech) may be at different stages of capability. The model is ideal in this sense in that it allows for the assessment, diagnostic, analyses, and differentiation across the entire ecosystem or inside of a business.

Thirdly, *and I always get asked this question; why can't I just skip straight to stage 5 capabilities?*

The answer is that core capabilities like improvement projects and functional excellence in early Stages 1-3 are important foundations for Stage 4 end to end customer-driven capabilities. The platformed network cannot operate if partners can't execute basic performance improvement and deliver reliably to plan and schedule. By focusing on quickly and effectively building, leading and managing stage 2-3 capabilities and simultaneously having visionary leadership describing and leading the organization to defined stages 4 and 5 capabilities, it is less likely that a business gets stuck in a stage because they have entrenched themselves in a capability that they are "very" and too comfortable operating and staying in.

Generally industrial companies are very engineering and project centric whereas Stage 2 CPG and process and process-based operations tend to be low Stage 3. Distributors, warehousing and logistics operations are typically Stage 2 and 3. Retail and hospital operations have the ideal opportunity of articulating and building Stage 5 aspirations because they are directly impacted by availability, usage, and sale at the point of sale and consumption. They exist at the ultimate moment of truth for any system; winning at every customer, buyer, patient, and user!

In compliance terms; stage 2 and 3 serialization and track and trace capabilities and excellence are the ideal starting block for the rest of the partner network platformed transformation journey.