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# Supply chain for a new age

Supply Chain 2.0 opens effective pathways through the digital world



# Supply Chain 2.0

**The age-old challenge of the supply chain** – to have the right product, at the right place, at the right time – has never been more complicated. And it continues to get ever more so.

- ▶ **Globalization** and the ability to both source and sell products all over the world has created tremendous opportunities for companies to generate new sources of income. At the same time, this has added significant costs, failure points and complexity, which today's supply chain organizations are not equipped to manage effectively.
- ▶ **Market volatility** is consistently increasing due to competition, more stringent regulatory requirements, constantly changing geopolitical factors and unpredictability in price and supply as a significant portion of the global commodity trade is now based on speculation.
- ▶ **Consumers are becoming more demanding** and want unique buying experiences with personalized product options, including expectations of omnichannel service and delivery to buy anywhere, collect anywhere, and return anywhere. Consumers' continuous need for something new is also driving faster product development, giving most products a shorter life span.
- ▶ **Retailers and consumer products companies** are responding with channel convergence and a branded experience across all channels, but **are struggling to manage the cost and complexity of this new omnichannel world.**

A massive amount of data is available across the supply chain from component suppliers to end consumers. **Additionally, the internet of things has made a vast amount of rich supply chain data available, from sources such as social media and connected devices with sensors and telemetry technology.**

However, most organizations are struggling to leverage this data to enable optimized decision-making across the supply chain.



- ▶ **Disruptive Digital & Technology Platforms** including cloud computing, in-memory processing, social networking, the internet of things and other technologies **are changing the way companies are able to manage their supply chain.** New technologies are evolving and enabling companies to collect and analyze data in near real time. Most companies are not utilizing these capabilities, however niche competitors are taking on global companies by bundling products and services, leveraging these digital technologies or appealing to a specific market segment.

**The end result...complexity is growing** at an exponential rate and supply chain organizations and their associated capabilities need to start to evolve now to manage this complexity in the future.

# Today's supply chain

Most of today's supply chains seem to be like analog machines trying to solve problems in a digital world.

**Traditional supply chain organizations are fragmented and operate in functional silos that focus on optimizing a particular aspect of the supply chain**, often at the expense of another part of the organization, rather than optimizing across the entire value chain.

Among the many challenges faced by traditional supply chains, some of the most pressing are:

## Lack of Visibility

Current technology and processes limit the ability to have end-to-end supply chain visibility at order, product or shipment levels. **This results in inaccurate supply chain plans, higher fulfillment costs and an inability** to sense problems as they occur and resolve them quickly.

2

## Poor Response Times

Operating models, organizational layouts and processes aligned by functions create silos. Decision-making becomes linear. **Delays arise as information is exchanged among silos**, which causes the information to be out-of-date and lengthens supply chain response time.

1

## Conflicting Priorities

Each supply chain function has its own priorities and performance measurement metrics. **These are aligned with other functions, overall supply chain objectives and business outcomes.**

3

Accenture believes that while many companies have made significant supply chain investments in the past 10 to 15 years, most have failed to deliver substantial return on investment.

**Large technology investments have helped to standardize fragmented processes and enabled greater process controls**; however, these changes rarely addressed the fundamental issues of poor visibility across the supply chain and lack of ability to execute seamlessly across planning and fulfillment within the organization and outside in the extended supply chain.

## Inefficient Fulfillment Model

Most company's fulfillment models seem to be static and struggling to manage the cost and complexity of the new omnichannel world. **Traditional distribution and transportation models have been created to support high volumes and fewer SKUs.** They can prove to be inflexible and inefficient when extended to individual customized orders, wider product assortment and multiple last-mile delivery options of the omnichannel world.

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Ensuring **the supply chain can consistently meet business objectives** in this increasingly complex environment **is becoming more and more difficult through traditional operational structures and mindsets.**

It's critical that there is not only an alignment of the supply chain strategy to a Company's overall growth strategy, but also consideration of the direction in which the world is heading.

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## Inflexible Technology

Legacy technology platforms created around supply chain functions or silos **are considered time-consuming, costly to deploy and inflexible** to extend to solve the growing needs of tomorrow's supply chain.

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## Lack of Advanced Cross-Functional Skills

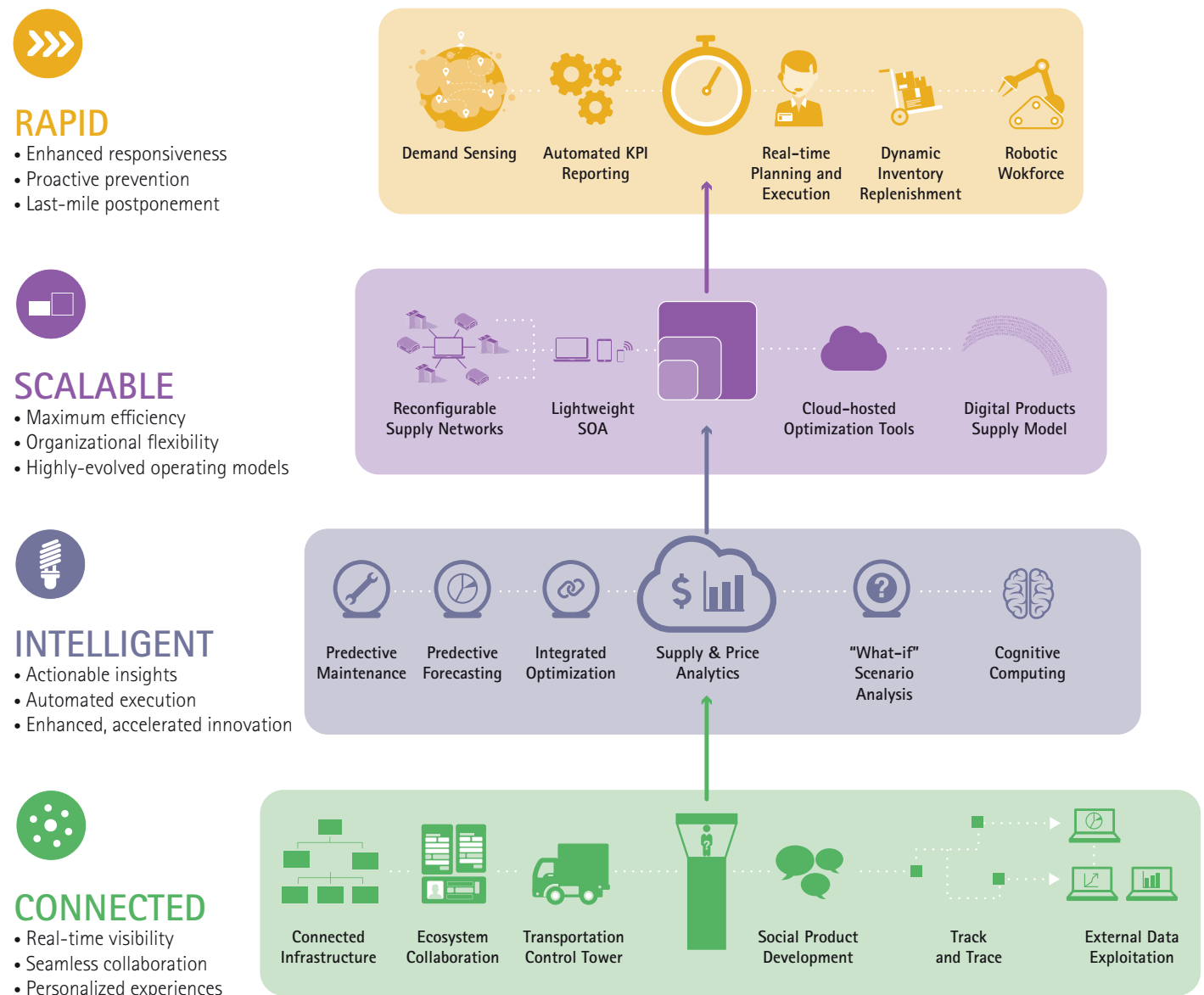
Most of the operational skills in supply chain today seem to be specific to a function. **The ability to understand end-to-end dependencies, the associated financial and operational impacts of decisions** across functions and the ability to analyze information across functions is limited.

The extent of change needed to get most companies ready to operate in the new world requires more than a minor upgrade. **Organizations that are only looking to tweak their models are running a huge risk.** Business journals are full of case studies of companies that did not anticipate and react to a changing model and went from leading the market to leaving it. For those companies that are able to adapt and enhance their supply chain capabilities **to meet these new demands there are tremendous opportunities** to capture market share, increase brand loyalty, and increase overall profitability. **Welcome to Supply Chain 2.0.**

# Supply Chain 2.0 – Supply Chain as a Digital Value Chain

The ultimate goal for Supply Chain 2.0 is to create a blueprint of the next generation of supply chain that will drive a company's business in the future. **Getting to the next generation of supply chain capabilities would require breaking down functional silos, redefining priorities, and building synchronized planning and fulfillment capabilities.** These three steps are the key to a future supply chain that is rapid, scalable, intelligent, connected and digital to drive a business into the digital age and beyond.

## Characteristics of Supply Chain 2.0, Rapid, Scalable, Intelligent, and Connected



These characteristics of Supply Chain 2.0 are enabled by **six core building blocks** that include the following:



### **Consumer-driven Supply Chains** that are Rapid and Responsive

Design the supply chain operating model to start with the end-consumer demand (consumer sales data, social data, etc.) aligned with supply realities.



### **An Integrated Supply Chain Operating Model** that Breaks The Silos and Provides Connectivity

Enabling visibility and planning & execution capability across the end-to-end supply chain. Business processes that span across functional silos. Cross functional Network Planner with end-to-end visibility and overall responsibility for supply chain performance.



### **Performance Management** that is Aligned Across The Organization

Automated predictive analytics & scenario modelling to drive operational decision making. Business & financial metrics to drive supply chain process.



### **Clear and Differentiated Supply Chain** Segmentation Strategies

Smaller and increased segments to satisfy diverse requirements while still maintaining operational efficiency and flexibility.



### **End-to-end Collaboration** Capacities Within The Organization and Across External Trading & Service partners

Collaborating within and outside the organization on social media platforms for faster decision making.



### **Digital Capabilities & Technology Platform** that is Scalable, Intelligent and Connected, Providing End-to-end Visibility, Enabling Automated Concurrent Planning & Fulfillment with Collaboration Across The Organization

Digital platform that is Cloud enabled with cognitive capabilities and is extensible for building plug and play applications. Enables collaboration on social media & mobile framework. Provides real time connectivity to internet of things.

# Consumer-driven Supply Chains

In order to become a truly rapid and responsive supply chain, **companies need to move away from traditional Make-to-Stock supply chain strategies to a more consumer-driven operating model.** The wealth of available consumer data will be leveraged to drive analytics that can predict trends and patterns. This will not only drive the downstream supply chain replenishment process, but will also offer insights into Trade Promotion effectiveness, New Product Launch success and End of Life Cycle decisions.

- ▶ **Supply Chain 2.0 solutions would collect data from exponential sources such as end consumer devices, multiple point of sales and internal and external data warehouses.**
- ▶ **Additionally, Supply Chain 2.0 would solicit feeds from Social data platforms such as Facebook, Twitter, etc., in addition to connected devices equipped with sensor and telemetry capabilities.**

For example, **Chatter on social media could be analyzed and converted into predictive demand signals** for a particular product at a location. This information could be used to adjust the supply chain plan in real time to make product placement decisions.

Similarly, **a telemetry signal from a truck can provide real-time visibility to the inventory movement.** If the truck breaks down, the supply chain system is able to sense the problem and take corrective actions to prevent a stock out / stock low situation.

**Sensors attached to oil storage tanks can send a signal to supply chain systems** which could drive the replenishment cycle. This leads to optimal inventory levels driving huge savings by avoiding overstock and stock out situations.

**There are a growing number of cross-industry examples where data from connected devices is being leveraged to make optimal supply chain decisions** – airlines, railway, oil & gas, automotive, consumer goods to name a few.



# Integrated Supply Chain Operating Model

Today's supply chain silos exist across multiple dimensions of process, organization and technology. **Current supply chain organizations are structured around functions** such as demand planning, supply planning, manufacturing, product lifecycle management, transportation management and customer service. Each group focuses on executing their individual processes, has disparate systems aligned to each function and attempts to maximize the performance metrics for their particular function. **For the supply chain to be truly integrated, all these silos would need to be broken down and their capabilities realigned** so that the entire supply chain works towards one shared goal.

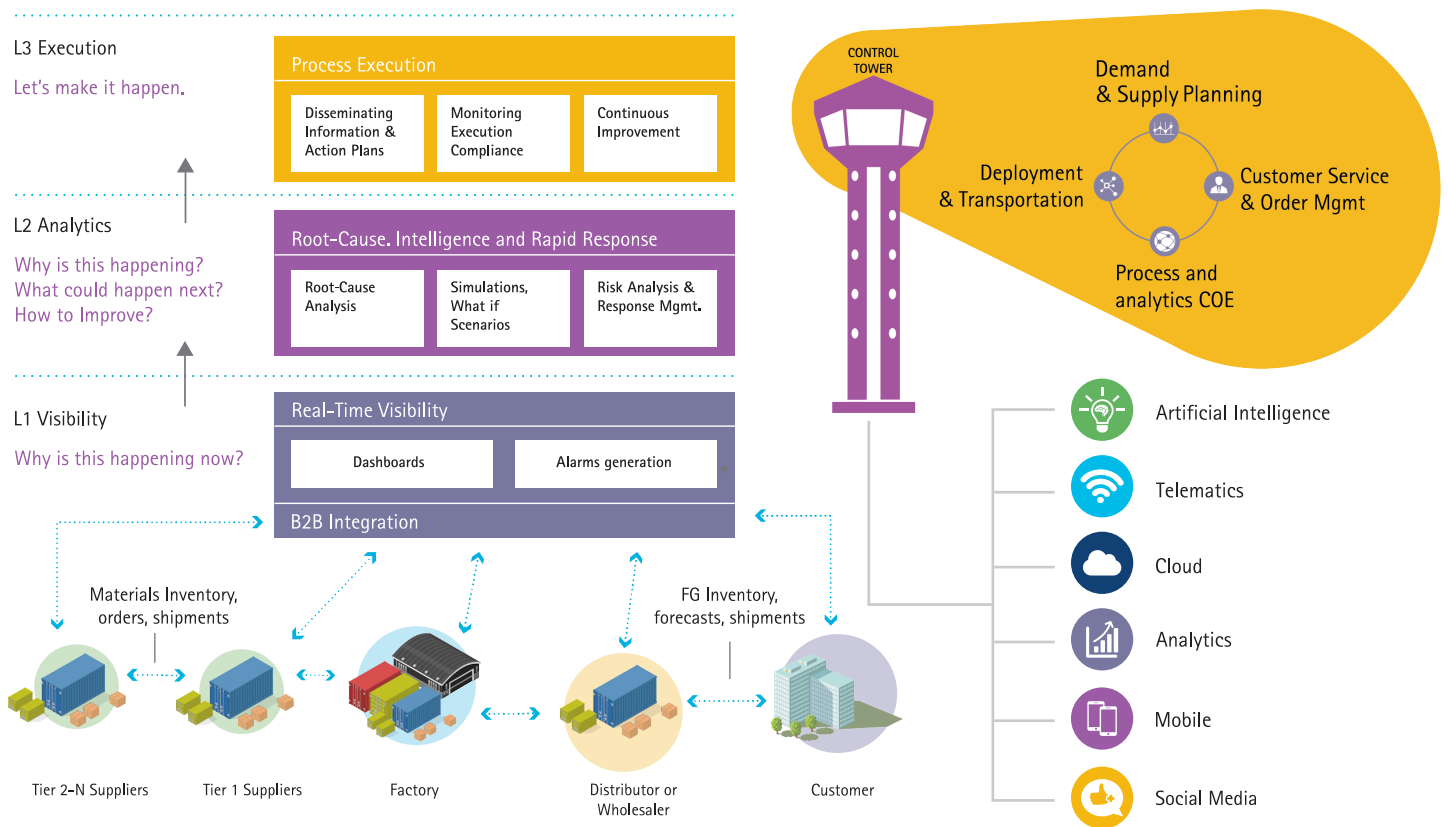
The following are key capabilities in Supply Chain 2.0 that lead to an integrated operating model:

## ▸ Visibility, Planning & Execution

In Supply Chain 2.0, many of the planning and fulfillment functions would be organized in integrated control towers and/or centers of excellence (CoE) that drive cross-functional collaboration and decision-making. **Control towers would provide 3 layers of capabilities across the entire supply chain** which includes the company, customers, vendors and vendor's suppliers. An integrated control tower will drive:

- 1 ► An integrated framework providing **real-time visibility**, root cause analytics enabling rapid response and continuously improving process execution
- 2 ► A set of capabilities **to combat rising volatility, complexity and uncertainty**
- 3 ► An **integration of supply chain processes** and tools across silos (enhanced collaboration)
- 4 ► A focused approach **to deliver a specific set of business outcomes – targeting improvements** in costs, inventory, quality, customer service and asset utilization

# Integrated Supply Chain Operating Model Example



Source: Accenture, Digital Supply Network

## ▶ Process

In Supply Chain 2.0, processes are aligned to drive business outcomes, they are end-to-end in nature and span across the traditional functions or silos and physical supply chain. Processes such as new product introduction, demand supply balancing and exception management are a few examples.

▶ A brand new set of processes would also need to be created to enable end-to-end supply chain planning and fulfillment, such as the process for resolving exceptions at a vendor's facility when the entire supply chain is planned centrally

**Traditional functional processes** such as Demand Planning, Master Production Scheduling, Material Requirements Planning, Warehouse and Transportation Planning, Customer Service and Order Management **also become much more integrated and streamlined.**

In Supply Chain 2.0, control towers will seek to continue to evolve into truly integrated organizational constructs, creating seamless information flows and handoffs between the planning and fulfillment organizations. **Planning, Fulfillment, Manufacturing, Sourcing, Order Management and Customer Service** will all be integrated to allow real-time visibility of stock levels, in-transit status, customer priorities and exceptions.



## ► Organization

In Supply Chain 2.0 the **planning and fulfillment organizations** become aligned by **end-to-end business processes** such as Plan-to-Execute, Order-to-Cash, and Procure-to-Pay. Enabling the new integrated end-to-end capabilities would require a new breed in a cross-functional role, the Network Planner.

- The network planners would have the ultimate responsibility for supply chain performance.

A Network Planner would have complete visibility of the end-to-end supply chain, enabling them to execute the end-to-business processes and make cross-functional decisions. **The network planner would enable cross-organizational collaboration such as working with Sales & Marketing** on alignment with business plans and finance to manage financial performance expectations of the supply chain. **Network planners also represent the supply chain outside the company** and will enable collaboration with Vendors and Customers on topics such as expectations alignment, developing cross-organizational supply chain plans and exceptions resolution. **Such an operating model establishes supply chain as a key enabler of the business plan for the company.**

- This alignment would need to happen at all levels within the organization starting from the network planner to the head of the supply chain working with the C-suite.

As the business processes become end-to-end and are no longer executed in each of the functional silos, **the role of functional planners** such as demand planner **and supply planner would be more focused on generating the output from each of the functions**, which is then used to drive the end-to-end processes.

# Performance Management

When supply chain effectiveness is measured within individual functions or silos conflicting priorities arise. **The attainment of performance measures for each silo does not ensure attainment of the overall business or supply chain objectives.** For example, increasing capacity utilization would affect inventory, which can make one part of the process look good at the expense of another.

- ▶ In Supply Chain 2.0, metrics are re-aligned in an approach that supports overall business objectives.

- ▶ As the complexity of supply chain increases, it will be critical that performance management frameworks provide an automated approach that optimize operational decisions and activities.

This framework will include the following characteristics

## PREDICTIVE SCENARIO MODELING

- ▶ Enhanced capabilities will enable network planners to evaluate various scenario options. This capability will be used to adapt plans and address issues as they occur. Examples include corrective plans for missed supplier shipments or evaluating new promotional campaigns against established performance measurement scorecards to make operational decisions.

## BUSINESS AND FINANCIAL METRICS

- ▶ These would be the prime measure of supply chain performance, but would be supplemented by productivity and asset utilization metrics. Integrated supply chain processes will drive attainment of these metrics. If revenue for a category is below plan, the network planner would follow an established process to identify the root cause and then resolve it across functions.

## END-TO-END SUPPLY CHAIN METRICS

- ▶ With the new capability of an end-to-end integrated supply chain, new metrics need to be created. These may include performance or cost measurements across multiple functions such as procure-to-pay or order-to-cash. Each functional area will contribute to the overall performance, but the end-to-end activity will be measured.

## FUNCTIONAL METRICS

- ▶ The effectiveness of the individual functional area such as demand planning and transportation management would still be measured by forecast accuracy and asset utilization.

# Supply Chain Segmentation Strategy

Current supply chains use a one-size-fits-all approach with limited segmentation to address unique customer, market, product or channel requirements. **In Supply Chain 2.0, new segmentation strategies would be required to satisfy diverse requirements while promoting operational efficiencies and increased flexibility.** There will be smaller and increased numbers of segments that identify customer-personalized needs by channel, service level and even within market areas. Supply chain segmentation will use increased visibility to demand requirements to align physical supply chain infrastructure and capabilities with dynamic planning and decision-making. This in effect may result in multiple supply chain models for a single integrated network.

Key considerations in developing segmentation strategies include: Customer profiles – B2B, B2C, Distributor; Channel volatility – Order patterns and drivers; Product type and characteristics – Value, shelf life; Business Strategy – Margin contribution, growth potential, and strategic importance. **Segmentation intelligence would enable improved forecasting and dynamic inventory decisions for better balancing bulk vs. ecommerce order handling and transportation capacities management.**

# End-to-end Collaboration

Collaboration both within and across organizations is key for fast decision-making and exception resolution. **Activities in current supply chain organizations are typically driven by the sales and operations planning cycle.** Collaboration within and outside the organization happens at certain times via meetings, phone calls and emails with information/data being shared using spreadsheets and powerpoint. **This presents real challenges**, most notably:

Certain decisions can only be made at a certain time. If a new opportunity develops right after the cycle it would have to wait until the next cycle to be reviewed.

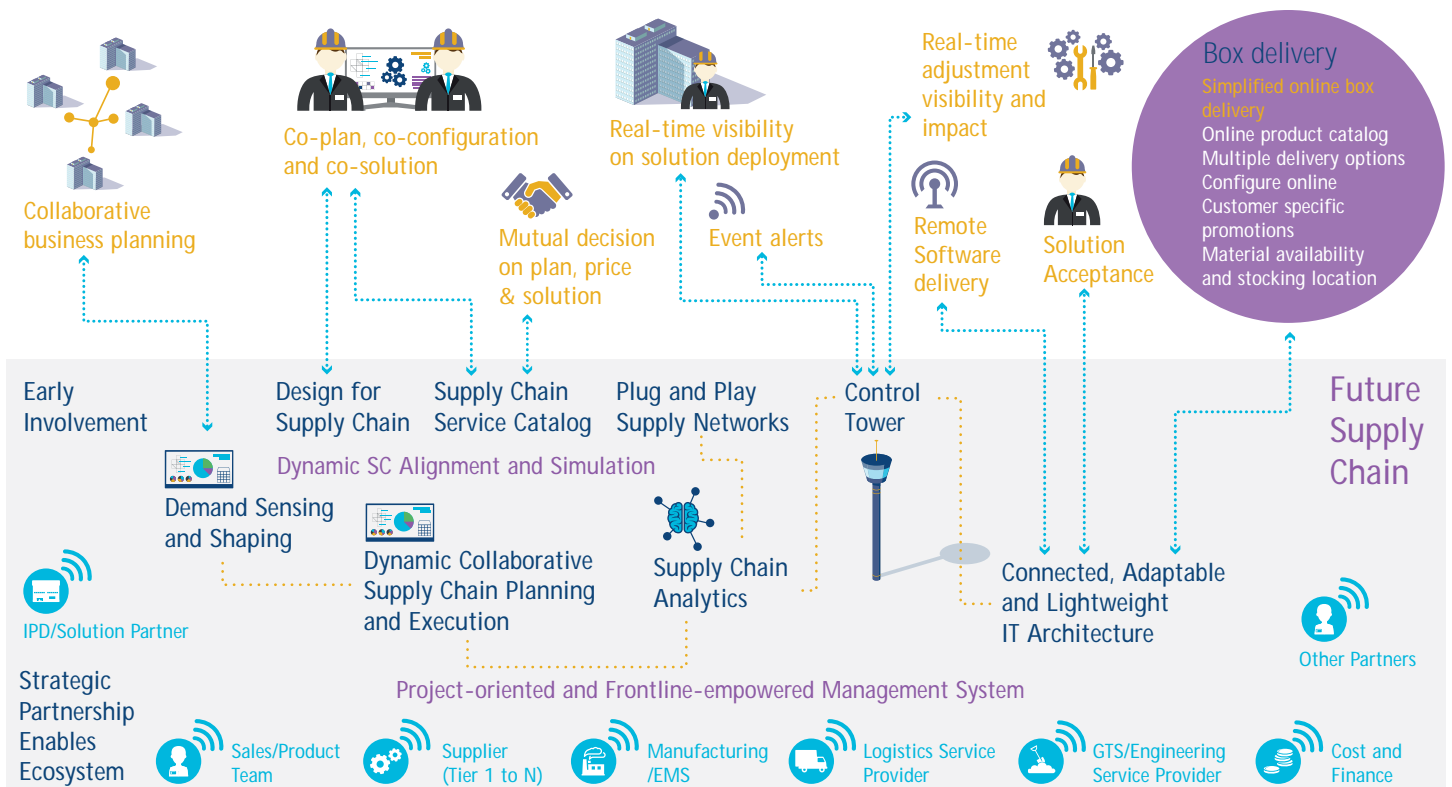
A lot of effort and time is spent gathering data and generating information to drive these meetings. At the time of the executive review, some of the information is already out-of-date.

The decisions made are executed by entering them back into the respective systems, which adds to the time and effort already spent.

None of these could enable fast, flexible and efficient decision-making. **With Supply Chain 2.0, collaboration would be enabled on social platforms which are part of the supply chain system.** Here the participants interact with colleagues and stakeholders and share qualitative information & real time quantitative data from the supply chain systems. Reports and scenarios can be shared, discussed, reviewed and approved in the supply chain system and the decision is executed right away. **The sales and operations planning process can become continuous and real time.** As exceptions are generated or opportunities arise, the network planner can create resolution options, share with appropriate stakeholders, discuss over social media and apply the agreed changes. All the discussion (qualitative information that is currently in emails) is also saved along with the changes.

## Digital Capabilities & Technology Platforms

### Future Customer Experience - Solution delivery



**Digital Technologies and Supply Chains are converging to create a new Digital Supply Chain Network, driving greater business value.** Supply Chain 2.0 will enable a truly transformational digital platform to drive next-generation Supply Chain Capabilities.

Technology for Supply Chain 2.0 would be:

## Digital

Cloud based platform enabling it to connect & scale to support the data from exponential data sources such as end consumer devices, multiple points of sale, internal and external data warehouses. **The Supply Chain 2.0 application should be based on in-memory technology to support capabilities** such as advanced analytics and algorithms such as cognitive computing. Supply Chain 2.0 technology should act as a platform or operating system (much like Apple's iOS) where applications (apps) can be created and deployed in a "plug and play" fashion to support the known needs of today and the unknown needs of tomorrow.



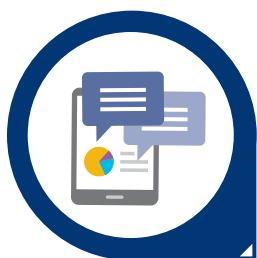
## Integrated Control Tower

The Supply Chain 2.0 technology platform will have real-time visibility of the end-to-end supply chain. Advanced algorithms will enable real-time concurrent supply planning and execution. **As underlying inputs are changed, the entire supply chain plan is refreshed right away, so plans are always current and exceptions are generated in real time as soon as any metric exceeds a set tolerance level.** Advanced predictive analytics and scenario-modelling capabilities would help enable swift what-if analysis. Network planners will be able to execute an integrated supply chain process on these systems seamlessly and concurrently.

## Cognitive Computing

As exceptions can be generated in real time, the supply chain system will be able to categorize them, resolve some, and flag only certain exceptions for the planners to review. **The introduction of cognitive computing in the world of supply chain planning would be the next evolution of Supply Chain 2.0.** Cognitive-computing-based planning systems would learn as the processes are executed and exceptions are resolved.

As the nature of the exception or resolution process changes over time, cognitive computing learns and adapts to it. This will enable supply chains to handle more complexity, make them more dynamic, flexible & adaptive and become more efficient by freeing up planners to focus on key decision-making and cross-functional collaboration.



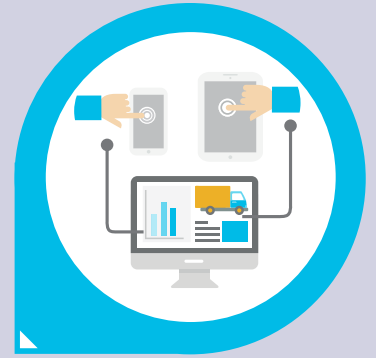
## Collaborative

Integrated **collaboration tools will provide a social media style collaboration platform** where supply chain professionals can interact across the organization and with external stakeholders and partners in the execution of processes, resolution of exceptions and decision-making in real time.

## Mobile

The global adoption of mobility would continue to be a significant technology enabler for Supply Chain 2.0.

**Mobility promotes the ability to access and integrate information almost any time and anywhere which will drive many end-to-end supply chain applications.** Mobility can communicate real-time demand and supply signals to promote supply chain planning. Examples include a sales person identifying new customer orders or a manufacturing person on the shop floor executing a new work order due to production line that is down. For transportation every driver is enabled with a two-way communications tool to provide status updates or receive planning information. Mobility will continue to play a greater role in driving predictive planning and event management.



## Connected

Applications built on the Supply Chain 2.0 technology platform would be able to connect to the Internet of things such as social media and connected devices and get real-time data feeds. **This data is then analyzed and converted into actionable information that can be used to drive various supply chain decisions.**

These digital capabilities and **technology platforms are at the heart of creating a new Digital Supply Chain Network** that will unlock tremendous value for those organizations that truly embrace them.

## Conclusion

Consumer expectations and requirements are changing rapidly and continue to become more complex. The proliferation of multi-channel fulfillment options combined with increased consumer delivery requirements necessitate new supply chain operating models. **Current supply chain strategies are at a crossroads.** New market demands are exceeding traditional functional capabilities and a significant transformation is required to efficiently meet new consumer paradigms. Companies have started to develop capabilities to support new requirements, but in many cases the current approach has been to run multiple supply chain models instead of one integrated ecosystem.

The 6 building blocks of Supply Chain 2.0 are foundational components for developing and executing a flexible, responsive and efficient supply chain strategy. **End-to-end supply chain operating models that integrate processes, organizations and technologies while promoting cross-functional collaboration will be essential elements for success.** However the level of adoption of digital capabilities would be the differentiator between leaders and laggards. This is the key ingredient that drives visibility, intelligence and automated capabilities necessary to manage the complexity of consumer choices.

**Supply Chain 2.0 will require some thoughtful change management** and the ability to embrace multispeed IT programs as the organization lays the groundwork for the future while keeping things running today. This transformation from current supply chain operating models to 2.0 is not simple, but not addressing these challenges will be an equation for losing market share in a growing competitive market. Supply chain end-to-end visibility, coordinated plans and the ability to leverage supply chains as a tool for achieving business growth is a requirement for market competitiveness.

Supply chain organizations need to recognize the urgency in moving to new strategies as the pace of change continues to accelerate. As new disruptive solutions continue to hit the market, traditional supply chains will be under pressure to adapt in order to maintain and grow market share.

**Supply Chain 2.0 provides a framework of capabilities that can help companies profitably meet future demands with increase market complexity and customer expectations.**

## About Accenture

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network—Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With approximately 373,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at [www.accenture.com](http://www.accenture.com).

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