The Art of the Possible: Actionable Analytics for Value Networks

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Research

This report is based on discussions with over thirty manufacturers and retailers over the course of 2012. It is a thought leadership piece to help companies think more holistically about analytics.

Disclosure

Your trust is important to us. As a research analyst firm, we are open and transparent about our financial relationships and our research processes. This independent research is 100% funded by Supply Chain Insights.

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Research Methodology

The sources of information to write this thought leadership report are three-fold:

- Quantitative survey research completed in the fall of 2012
- Interviews with thirty manufacturing and retail thought leaders in analytics
- Discussions with technology leaders from **Accenture, Enterra Solutions, IBM, SAP,** and **SAS Institute**.

Executive Overview

When companies say the word *"analytics,"* it is often a synonym for *"reporting."* Most lack the understanding of the "Art of the Possible." They are searching for how to win with new forms of analytics. In general, manufacturers lag insurance and financial organizations in the use of more advanced analytical technologies. Most manufacturers are unaware of technologies like text mining, sentiment analysis, listening posts, learning systems, new forms of visualization and rules-based ontologies.

Over the last decade, most of the investments in analytics within manufacturing have been focused on reporting to support the implementation of traditional transactional systems and applications that drive business insights from these transactions, i.e. Enterprise Resource Planning (ERP), Advance Planning Systems (APS), Customer Relationship Management systems (CRM) and Supplier Relationship Management systems (SRM). There was a belief that supply chain excellence would happen through tight integration of these systems with the ERP backbone. What we find a decade later is that the tight integration of the value network with ERP has taken us backwards, not forwards. By and large, these are systems of record with traditional reporting and dashboards/scorecards. They are a part of the required analytics framework, but not the foundation for the "Art of the Possible."

We feel that it is time to use analytics to drive corporate advantage. In our analysis of two decades of financial balance sheets and income statements, we find that all industry segments are facing slowing growth, are struggling with pressures on margins, battling an increase in complexity, and feeling a need to speed up cycles. Analytics offer a promise to help, but traditional analytics are not sufficient.

As a result, we feel that it is time to start a new journey to build the "Art of the Possible" within retail and manufacturing organizations. The journey begins with brainstorming how new forms of analytics can increase organizational capabilities. Some possibilities are outlined in table 1.

Table 1. Driving the Art of the Possible and Changing Organizational Behaviors

Function	From	To
Clock Speed	Days and hours.	Minutes and seconds.
Customer Service	Responding to orders.	Sensing and shaping based on market signals.
Focus	Asking for more detail on what is known.	Building analytics to learn what is not known. Listening for early alerts.
Investment	Functionally-focused efforts.	Multi-year cross-functional organizational focus.
Marketing	Marketing-driven: Yell the message to the market.	Market-driven: Listen and delight customers.
Operations	Matching demand and supply.	Orchestrating volume and price, market-to-market, to combat demand and supply volatility.
Organization Focus	Reporting on history.	Learning systems.
Orientation	IT runs reports.	Self-service with user-based analytics.
Process Design	Inside-out.	Outside-in.
Sales Channel Management	Sell into the channel.	Sell through the channel.
Speed & Latency of Data	Data with high latency.	Data with near-zero latency.

Source: Supply Chain Insights LLC

The lack of understanding of the future of analytics is limiting future business opportunities. This report is designed to help companies build a comprehensive vision of how to win with analytics.

Why It Matters

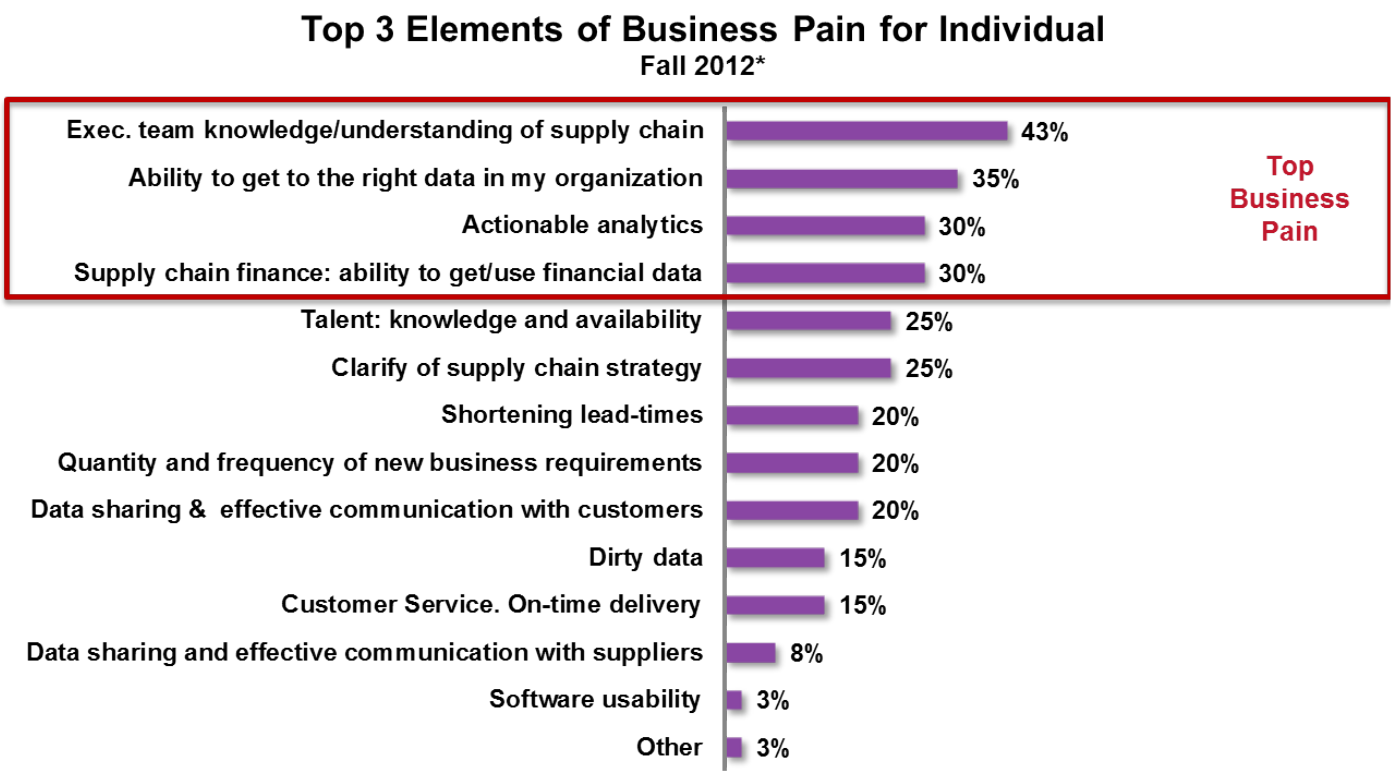
Data is growing in volume, velocity and variety. It is piling up at the doorstep of most organizations. Why? There is no place to put new forms of data into existing traditional Information Technology (IT) architectures.

Companies are also facing a performance plateau. Growth has stalled, costs are rising, inventory levels are increasing, and complexity reigns. To help the reader, we have shared insights on these challenges in our September 2012 report Conquering the Supply Chain Effective Frontier, and provided more in-depth analysis in our February 2013 report What Drives Supply Chain Excellence?

Executives are frustrated. They have invested in systems, people and processes; but yet, progress is elusive. As frustration rises in the boardroom, there is a tendency to have a knee-jerk reaction. Well-intended executives try to improve singular metrics without understanding the impact on the business as a holistic

system. As shown in figure 1, organizational frustration with this pattern is mounting and the gaps in analytics are ubiquitous. Teams struggle with how to get the right data and how to drive actionable analytics.

Figure 1. Analytics is a Source of Pain



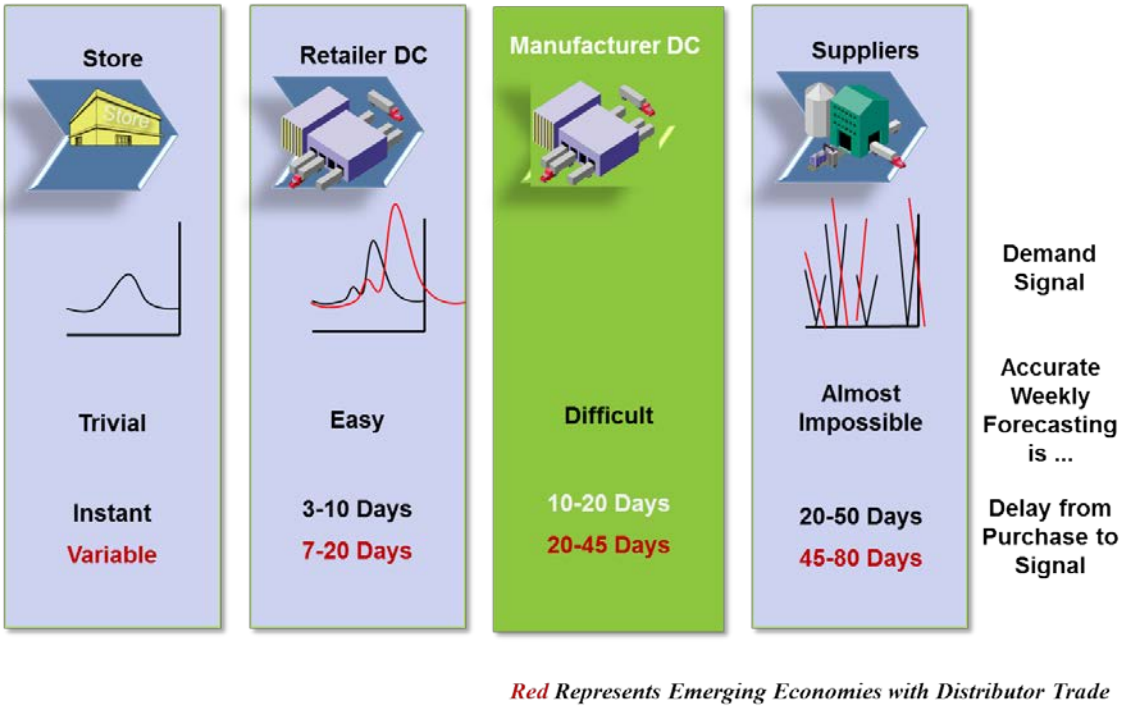
Source: Supply Chain Insights LLC, Voice (Wave 2: Oct-Dec 2012)
Base: Manufacturers – Fall 2012 (n=40)
Q19A. When it comes to supply chain management, which of the following are the top 3 elements of business pain for you personally/
*Not asked in Spring 2012

Overcoming the Obstacles

To move forward on building an analytics strategy requires a break with tradition. Traditional supply chains respond, they do not sense. They are dependent on transactional data. There is no place to put unstructured data. The systems are designed for enterprise data. There is no place to put inter-enterprise data that will fuel the future of value chains and value networks. The opportunity to improve cycle time, reduce waste, and improve growth is largely in the links of the value network.

Today, companies make critical decisions based largely on order and shipment data. Too few companies realize that this data is inaccurate and late. Traditional architectures have paid little attention to latency of order data and the issues with demand translation that result in the distortion and amplification of order and shipment data. As shown in figure 2, this is commonly referred to as the “bullwhip effect.” Only the consumer electronics industry has been aggressive in the use of channel data to manage channel inventories and diminish this impact.

Figure 2. Bullwhip Effect in the Consumer Value Network



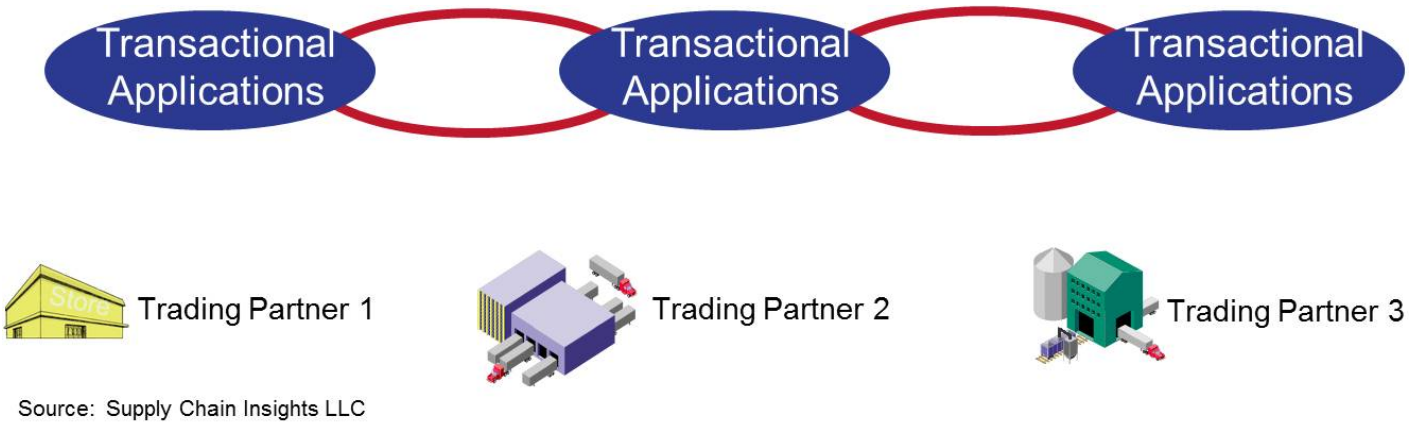
Over the last decade, manufacturing companies have made deep investments in Enterprise Resource Planning (ERP) technologies. There was an assumption that the investment in ERP architectures would serve as the backbone for value chain analytics. The belief was that the end-to-end value chain would be created by hooking up a series of ERP systems. It is now clear to the enlightened executive that this is not the case.

We also now know that the tightly integrated supply chain built on an ERP backbone was a mistake. The outcome was inflexible. The supply chain was too rigid. In our research, only 10% of manufacturing companies are satisfied with their "what-if" capabilities, and only 24% of companies can easily determine the profitability of decisions.[1]

The tight integration of ERP to Customer Relationship Management (CRM) and Supplier Relationship Management (SRM), augmented by predictive analytics from Advanced Planning Systems (APS), is also not sufficient to move companies off of the supply chain performance plateau. While ERP is still needed as a system of record, it is not suitable as the system of reference, synchronization or visualization. Instead, as shown in figures 3 and 4, companies need to augment these architectures.

[1] Supply Chain Insights S&OP Study (April 2012) and Supply Chain Insights Transportation Survey (Aug-Oct 2012)

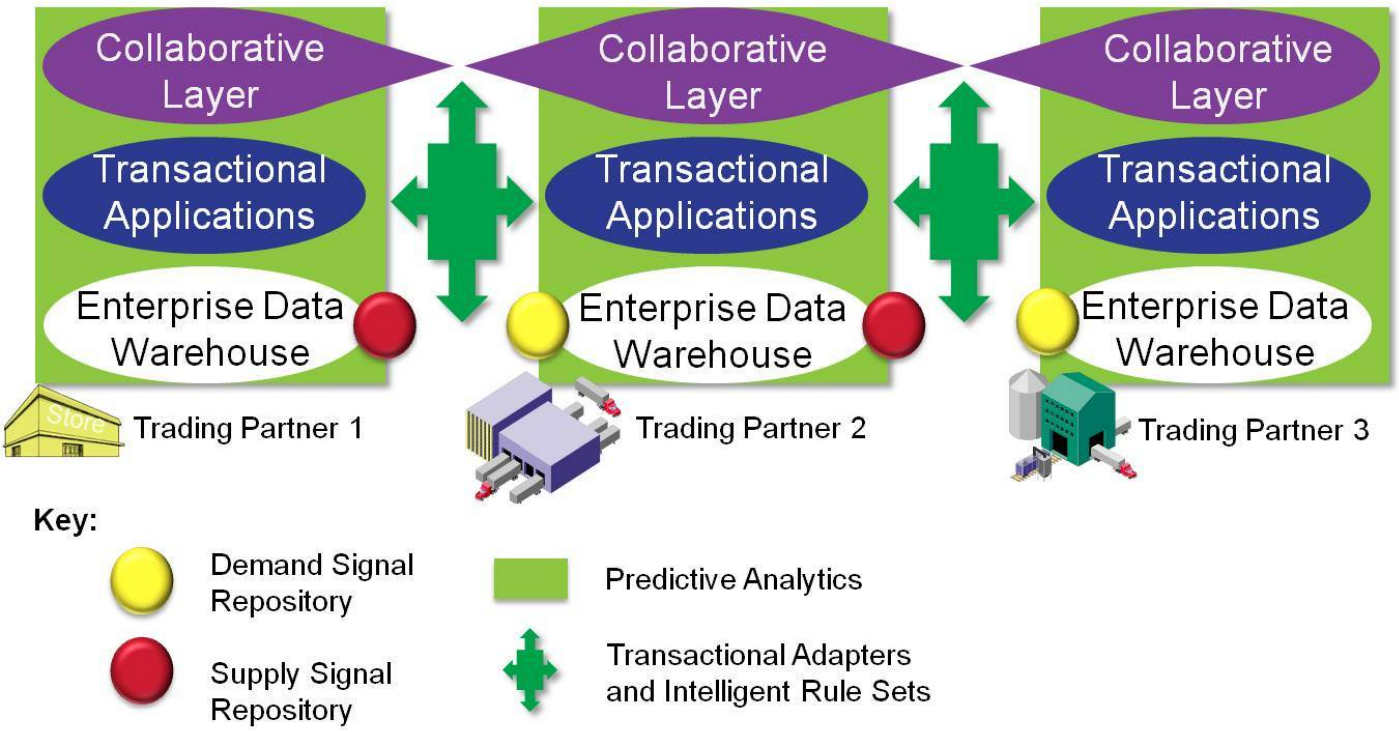
Figure 3. Traditional View of Supply Chain Architectures



Source: Supply Chain Insights LLC

This does not mean that there is not a need for an ERP system of record. A system of record is still a requirement for an organization. Instead of replacing their ERP investments, companies need to move forward with the understanding that the ERP system is not the backbone for the extended supply chain. The backbone of the extended supply chain looks more like figure 4. In this drawing, the systems of record are surrounded by new forms of predictive analytics and visualization that will come largely from best-of-breed solution providers over the next decade. Most will be Software as a Service (SaaS) analytics. As a result, companies should stabilize their investments in ERP, attempt to reduce the costs of maintenance and focus on partnering with these new forms of analytics to drive new advantage.

Figure 4. Emerging View of Supply Chain Architectures



Source: Supply Chain Insights LLC

While leaders accept these facts as true, it is easier to gain agreement on the current state than the future vision. Leaders struggle with how to move forward to win with analytics. As companies attempt to articulate this future vision, they will face several problems:

Problem #1: Actionable Analytics Is a Problem Across the Organization and Across the Value Network.

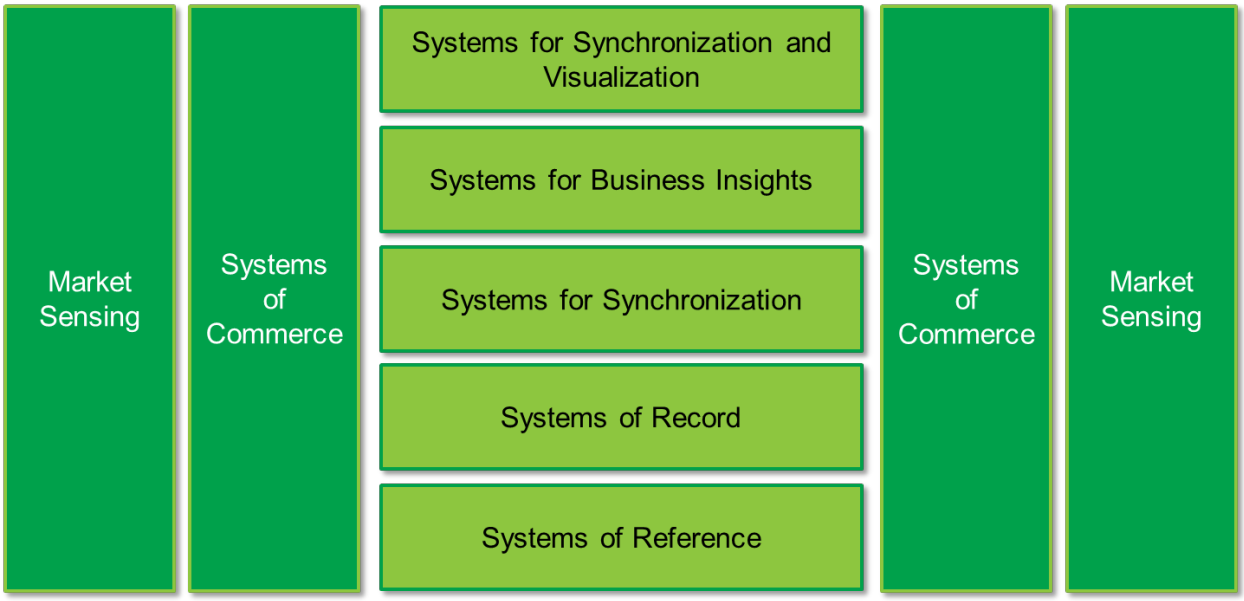
The average company has over 150 systems. The concept of ERP reporting meeting the business needs of the supply chain department never materialized. The environments are heterogeneous and dynamic. More and more companies are dependent on a network of suppliers. It is for this reason that cloud-based solutions are growing in acceptance. The use of cloud-based analytics offers quick time-to-value, industry benchmarking, and standardized onboarding. Wherever possible, companies should select a Software as a Service (SaaS) model over a conventional licensed deployment.

Problem #2: Reskill to Think Differently

In the last decade, we defined a new set of terms to describe enterprise requirements. Today, these three-letter acronyms are an impediment versus a useful aid to help buyers of technology. The old terms—APS, ERP, CRM, PLM and SCM—have lost meaning. With a broken ecosystem of analysts, consultants, and technology providers there are fewer checks and balances. There is more selling and less education. The focus is on the sales cycle, not on raising the level of dialogue. It has become a stew pot largely driven by sales-motivated legacy vendors to close tactical, short-term deals. Innovation is slow and the adoption of new approaches for analytics is painful. Companies want to adopt the “safe” approaches to move with yesterday’s tried-and-true vendors. Ironically, this is the riskiest strategy. We strongly believe that the path forward does not come from the large vendors. Acquisition and consolidation have reduced innovation among the large technology providers. Most are moving the market backwards, not forwards.

To meet the organization’s new goals, change the dialogue. Consider the framework in figure 5 below. Focus on systems of reference, systems of record, systems of insights, and systems of synchronization, with a strong focus on market sensing and commercial orchestration. Through the use of this model, we can elevate the discussion to embrace new forms of analytics to enable digital path-to-purchase in consumer products, multi-channel retail, learning systems for manufacturers, and listening posts for the customer-driven value network. This framework frees us to use new data forms (unstructured and structured data, video, maps, etc.), innovation in visualization (geo-mapping, heat maps, control towers and new forms of predictive analytics) and cloud-based solutions across an extended network.

Figure 5. Rethinking Analytics



By giving up the constraints of enterprise acronym babble, companies can make market-driven orchestration across the network of 3PLs, suppliers, transportation providers, and third-party cloud-based solutions a reality. Yesterday's solutions for distribution resource planning (DRP), forecasting, merchandising and assortment/fulfillment are just not up to the task; and ERP needs to be recognized as an important system of record, but not the platform for the market-driven retail value network.

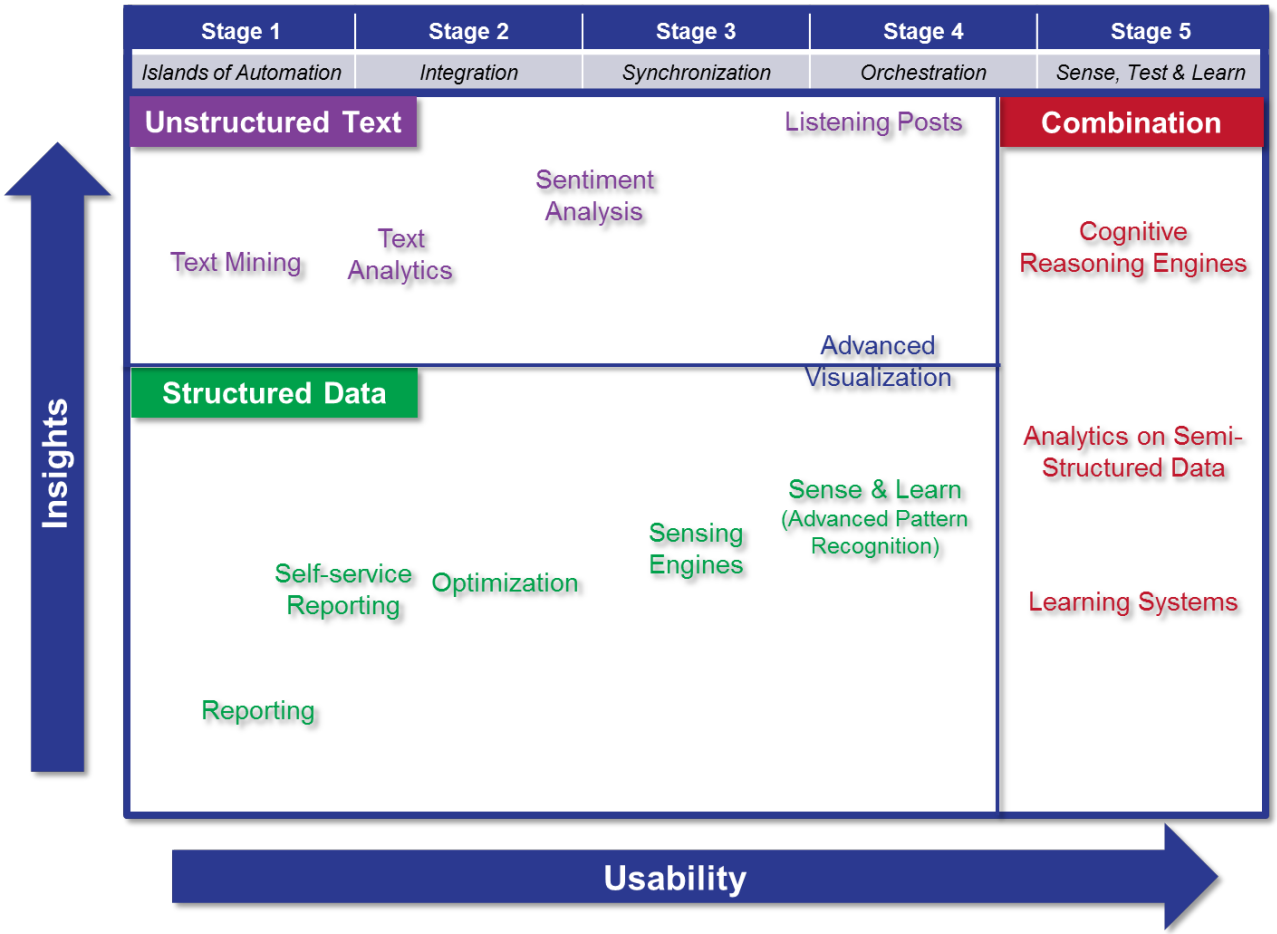
The definitions for figure 5 are listed below:

- **Market Sensing:** The use of buy- and sell-side market data to sense changes in markets. For the channel this includes the use of downstream data, customer sentiment data, wholesale distributor sell-through, returns, and competitive data. For the supplier base, this includes supplier text mining for conformance to social responsibility programs, changes in price and commodity markets, and the use of supplier scorecards.
- **Systems of Commerce:** For most organizations, the systems of commerce include contract management, order management, purchase order processing, and product catalogues. Most of the contract management and product data is unstructured.
- **Systems of Reference:** The system of reference is the foundational data for the organization including product characteristics and platforms, customer and supplier masters, and planning reference data for the network.
- **Systems of Record:** The systems of record are the transactional systems to support accounting, human resources and operations. This is usually ERP.

- **Systems of Synchronization and Visualization:** These cross-functional systems enable role-based views of data across the organization. They synchronize and translate data across functions to drive cross-functional alignment.
- **Systems of Business Insights:** The use of predictive analytics to drive insights from data. These come in many forms including optimization, text mining and analytics, and learning systems.

Problem #3: Ability to Use Different Data Sources. After defining the architecture in figure 4, companies then need to think about data types. The traditional investment strategies are focused on investments that use structured data. The value of unstructured data is not well-understood in most organizations. Companies should begin with an audit of all of the forms of unstructured data that could be used to drive business insights. For most organizations this includes social data, customer call center data, contract management information, distributor and warranty data, quality data, third-party contract manufacturing comments on production reliability, and supplier development compliance sensing. As organizations mature, they develop listening posts and combine structured and unstructured data to drive orchestration. The stages of maturity are outlined in figure 6. Most manufacturing companies and retailers are in stages 1 and 2. There are a few leaders, including Dell, IBM, and Wal-Mart, that are in stages 3 and 4. The most advanced companies in this model are financial and insurance companies in stage 4 and Amazon.com in stage 5.

Figure 6. Analytics Maturity Model



Problem #4: Funding: The last problem to tackle is funding. The organizational funding model is a mess. Frustration with current IT organizations is high, and most sales and marketing organizations have begun to fund their own applications. Both are a problem. Companies need to build centers of cross-functional analytics and focus on cross-functional outside-in processes. This funding needs to be focused as an "investment" as opposed to a "definitive return on investment." It is analogous to the investment in personal computers and mobile devices. This investment drove over a 300% improvement in revenue/employee for the average company, but it drove a competitive advantage for some.

Consider tables 2 and 3. Over the last two decades, computing power and connectivity improved employee productivity, as can be seen by the advances in peer group revenue/employee numbers.

Table 2: Advances in Industry Productivity due to Computing Power and Connectivity

Revenue per Employee (1990-2012)			
Industry	**1990-1999**	**2000-2009**	**2010-present**
Consumer Packaged Goods	226	345	464
Hi-tech & Electronics	530	597	720

Source: Supply Chain Insights LLC, Corporate Annual Reports 1990-2012
Consumer Packaged Goods: Colgate-Palmolive Co., The Procter & Gamble Co., Unilever N.V./PLC
Hi-tech & Electronics: Apple Inc., Dell Inc., Intel Corp., Motorola, Inc. and Motorola Solutions, Inc
Revenue per Employee = (revenue)/ (employee count)

However, within an industry peer group the adoption of these technologies drove even greater competitive advantage. Over the last decade, this group of competitors has competed in the food manufacturing market. We have followed the progress of all of these companies closely. **General Mills, Inc.** did the best job of implementing analytics, and their ERP platform, and drove a competitive advantage in revenue per employee performance. Ironically, while many system integrators tout their own capabilities, the General Mills work was largely driven through internal leadership. They built early core competence in ERP implementations and business intelligence (BI) centers of excellence. They relied less on IT outsourcing. They believed that IT needed to be a core-competency. We believe that the race for analytics is analogous.

Table 3. Financial Performance in the Food Group over the Period of 2000-2011

Industry	Company	Operating Margin	SG&A Margin	Return on Assets	Revenue per Employee (K$)
Food	Campbell Soup Co.	0.17	0.77	0.12	338
	General Mills, Inc.	0.18	0.78	0.08	430
	Groupe Danone S.A.	0.13	0.64	0.06	201
	Kellogg Co.	0.16	0.73	0.09	393
	Kraft Foods, Inc.	0.14	0.79	0.05	363
	Nestlé S.A.	0.13	0.59	0.10	299
	Average	**0.15**	**0.71**	**0.08**	**336**

Source: Supply Chain Insights LLC, Corporate, Annual Reports (2000-2011)

Problem #5: Leadership. Invest time to understand what is happening in analytical investments for leaders. Form a cross-functional team and build a guiding coalition focused outside-in. Spend time with industry-specific best-of-breed vendors such as **IBM Software** and **SAS Institute** to understand the progress in predictive analytics. Ask for case studies and reference contacts. Be zealous on learning the stories of leaders in e-commerce, and the financial and insurance industries, and then brainstorm what this can mean for your organization. Listen to insights of the leaders in these organizations and then apply the lessons learned. To make the most progress, focus outside of the manufacturing organizations and build in-house leadership. Avoid counsel from traditional system integrators until you have built a guiding coalition on what the "Art of the Possible" means for your organization.

Recommendations

As you start your journey, we wish you success and offer these recommendations:

1. **Stabilize Traditional Investments.** Rethink multiyear ERP road maps and deployments and stabilize investments in traditional transactional analytics. Form centers of excellence (led by line-of-business leaders) to evaluate new forms of analytics.
2. **Avoid Buzzword Bingo.** Terms like "supply chain visibility," "control towers" and "demand sensing" are overused in the market and have lost meaning. Have the courage to ask for definitions and build a maturity model for each of these terms. Gain organizational alignment on all terms used. To help, we have added a glossary of terms, from our Big Data report, starting on page sixteen.
3. **Build the Organizational Muscle.** The first step in building an analytics framework is using the data that is available in the enterprise. Companies must first effectively work with enterprise data before they tackle inter-enterprise analytics. The typical enterprise is not dealing with the petabytes of data that are driving Big Data analytics. However, it is coming.

While many will espouse the use of data scientists, resist this recommendation. Instead, try to build the confidence to use the technical capabilities of analytics. Tune optimization, build learning engines and get good at text mining. Let the prebuilt analytics do the work that they are supposed to do. Let the solutions give you insights that you do not know. Try not to limit this with the predisposed views of the human mind. In our opinions, manufacturers have been too slow to accept the outcomes of "black boxes" and analytics. While it requires human review, the problem is too big and important to be solved through manual analysis and spreadsheets. It is time to drive an organizational redefinition and build the organizational muscle in cross-functional centers of excellence.

4. **Structured and Unstructured Technologies Are Like Oil and Water. Treat Them as Such.** Last month, I was at a chemical manufacturer, and the Chief Supply Chain Officer walked me to the elevator. He said, *"Lora, you write a lot about social technologies. We use Yammer. I don't get it. I just don't understand the value proposition. All of these conversations are out there in a disconnected way. What value is this to my organization?"* This conversation typifies the discussion. For most leaders in supply chain and manufacturing, social data is a new world, and not one that is well understood or valued.

   When you make a salad dressing with oil and water, you need an emulsifier. An emulsifier is a substance to suspend one liquid in the other. I think that this is an appropriate analogy. Supply chain systems are based on transactional data. These technologies are VERY structured with well-defined data models. Social technologies are unstructured and random. By definition, the tagging and categorization of social communities yields a flat architecture. We can already see this in the launch of **SAP**'s Streamworks and **INFOR'**s Infor10 ION Workspace. We believe that **Microsoft'**s acquisition of Yammer and **VMware**'s purchase of SocialCast are also steps in this direction. We believe that **Jive** and **Lithium** will get purchased by the enterprise players and embedded. These efforts will help, but the assimilation will not be fast. Invest in architectures that enable semi-structured data and combine structured and unstructured data. In this effort, try to purchase technologies that enable cross-functional capabilities. While companies can invest in the first generation of text mining technologies for social listening, a more strategic decision is to invest in a reusable text mining capability to build listening posts across the organization.

5. **Use Advanced Analytics for Listening:** For leaders (**Dell**, **REI**, and **Newell Rubbermaid**), **Twitter** can enable a customer service transformation. Customers WANT to be heard. **Twitter** is an enabler. The struggle is helping the organization to **listen.** Sometimes it takes a baseball bat. The ability to listen usually happens only through failure.

   Meet @dooce. When Heather Armstrong (@dooce)'s **Whirlpool** washing machine broke down, she called the **Maytag** repair man. **Maytag** is known for customer service, but not for @dooce. When her calls to customer service, and the subsequent visit by the repairman, did not resolve the problem, she

turned to **Twitter.** She first warned the customer service representative that if she did not get service, she would ask her legion of over a million **Twitter** followers to not buy **Maytag**. It was seven years ago when **Twitter** was in its infancy and the customer service team did not take her seriously.

Then there was the first tweet. It was: "DO NOT EVER BUY A MAYTAG." It was followed in three minutes by a tweet of "I repeat: OUR MAYTAG EXPERIENCE HAS BEEN A NIGHTMARE." It was then followed by "Have I mentioned what a nightmare our experience was with Maytag?" For **Whirlpool**'s customer service team, it was their 12th tweet received as a newly formed organization to focus on listening to customer sentiment through social mediums. The incident made national news.

@dooce had an impact. Today, the **Whirlpool** customer service team has been transformed to listen to the customer. They meet weekly cross-functionally—marketing, customer service, field service and product management—to listen to the voice of the customer from **Twitter** and **Facebook**. Unlike @dooce, I had a great response from **Whirlpool** customer service. I had bought a Kitchen Aid mixer that did not have an instruction manual. I tweeted for help, and had a great response within an hour. This experience was far different than the one that I experienced with **Delta** on a delayed flight out of Atlanta on my birthday. Here is an excerpt from that tweet stream:

@Delta. You are killing me. Delta flight 9869 is delayed. Moved gates in ATL 3X. I will arrive home 7 hours late and miss my birthday party. #travel

@lcecere. Your flight is not the responsibility of Delta. It is a code-share partner. Take up your issue with them.

Imagine how I felt, sitting at an Atlanta C-gate during what was supposed to be my birthday party. If only I was @dooce with over a million followers, maybe I would have gotten a more positive response. Unfortunately, for 80% of the companies that I interviewed, this is the case. They are not ready for @dooce. Most are unaware that danger lurks ahead. They are unaware that they can now have meaningful consumer dialogue through the design of listening posts and social analytics. We can now have a customer-driven value network, but only if companies begin to listen through advanced analytics.

6. **Start with New Product Launch. Power Growth.** In recent research, we see 20% of high-technology companies using **Twitter** as a listening post for customer sentiment in new product launches.[2] This work is nonexistent in other manufacturing industries. Consider the case of **Newell Rubbermaid**'s Product Saver launch presented at South by Southwest by social pioneer, Bert Demars:

[2] Supply Chain Insights Big Data Study (July 2012)

Figure 7. Newell Rubbermaid Product Review Case Study

In short, consumers were using the product without reading the instructions, and not receiving the desired results. Without watching the **Facebook** feedback and having the benefit of syndicated reviews from **Bazaarvoice**, **Newell** would have never known. Because **Newell** could listen, they were able to reverse the negative consumer sentiment and save the new product launch. The answer was simple, "*Don't wash your vegetables."*

The connection of **Twitter** streams, syndicated review feedback, and **Facebook** dialogue to R&D happens the most often in consumer durables, high-tech & electronics and the largest consumer packaged goods (CPG) companies. The use of social technologies as listening posts gives companies the ability to listen, but few are up to the task.

Conclusion

Currently, companies are at a plateau of business performance. To drive growth, and improve costs while better managing inventories, analytics offers an answer. It is about much more than reporting and needs to be driven cross-functionally. New forms of analytics offer great promise to provide the required computing power necessary to support outside-in horizontal processes fueled by big insights. These are systems that will sense,

orchestrate and drive an intelligent response. They help to actualize the “Art of the Possible” as outlined in table 1.

New solutions are promising. They are evolving. To capitalize on the opportunity requires thinking out of the box. We believe that leaders will use them to power growth and reduce costs, understanding that it requires innovation and co-development with many small startups, while laggards will let the opportunity pass them by.

Definitions

Early adopters of Big Data systems have defined a new set of techniques and terms to know. These are provided to help the supply chain leader become conversant, but not an expert in reading about Big Data systems and the use of more advanced forms of analytics.

Cascading. A thin Java library that sits on top of Hadoop to allow suites of MapReduce jobs to run and be managed as a unit.

(Apache) Hadoop. An Apache Foundation Project of open source code written in Java and used for the retrieval and storing of data and metadata for computation in Big Data systems. It is a platform consisting of a distributed file system and a distributed parallel processing framework. Hadoop implements a computational paradigm named MapReduce.

(Apache) Hive. A data warehouse system for Hadoop providing an SQL interface but also allowing the plug-in of other custom MapReduce programs.

MapReduce. Developed by Google to support distributed computing on large data sets on computer clusters. It is a parallel programming model for distributed data processing designed to address the needs of naïve parallel problems. There are three phases:

MAP Phase: Reads input and filters and distributes the output of the results.

Shuffle and Sort Phase: Takes outputs from the MAP and sends to the reducer.

Reduce Phase: Collects the answers to the sub-problems and combines the results.

Ontology. A new form of predictive analytics. It defines the vocabulary for queries and assertions to be exchanged among agents. Rules-based ontologies enable the mapping of “multiple ifs to multiple thens”.

Parallel Processing. Distributing data and business processing across multiple servers simultaneously to reduce data processing times.

Pattern Recognition. Techniques to sense patterns in data that can be used in decision making.

Pig. A programming platform often used to simplify MapReduce programming. The language for this platform is called Pig Latin.

Ratings and Review Data. Consumer product and service evaluation data. It is largely unstructured.

Sentiment Analysis. The use of natural language processing, computational linguistics, and text analytics to identify and extract meaning from customer data.

Social Data. Data from social networks like **LinkedIn, Facebook, Pinterest,** and **Twitter.**

Structured Data. Transactional data that can easily be represented by rows and columns and stored in relational databases.

Survival Mining. Use of predictive analytics to identify when something is likely to occur in a defined time span.

Text Mining. The process of mining unstructured text for pattern recognition and context.

Unstructured Data. Data that cannot be easily represented in relational data bases. Common unstructured data in supply chains includes quality, customer service and warranty data.

Appendix

The data in figure 1 came from surveys fielded by Supply Chain Insights in the spring and fall of 2012. These were web-based surveys. The respondents answered the surveys of their own free will. The only offer made to stimulate a response was to share the survey results in the form of Open Content research at the end of the study.

The names of those that completed the surveys are held in confidence, but the demographics are shared to help the readers of this report gain perspective on the respondents. The demographics supporting these figures are found in Figures A-C.

Figure A. Study Overview

WHY

- Objectives:
  - To understand the current state, pain points, goals and issues facing supply chain executives.
  - To be conducted twice a year to track changes.
- Hypothesis:
  - There is a gap between importance and performance of supply chain applications. Companies that are more mature in their thinking have a greater gap.

WHAT

- Survey topics included:
  - Supply chain organization definition
  - Supply chain excellence
  - Supply chain pain points and focal points
  - IT operations & trends

HOW

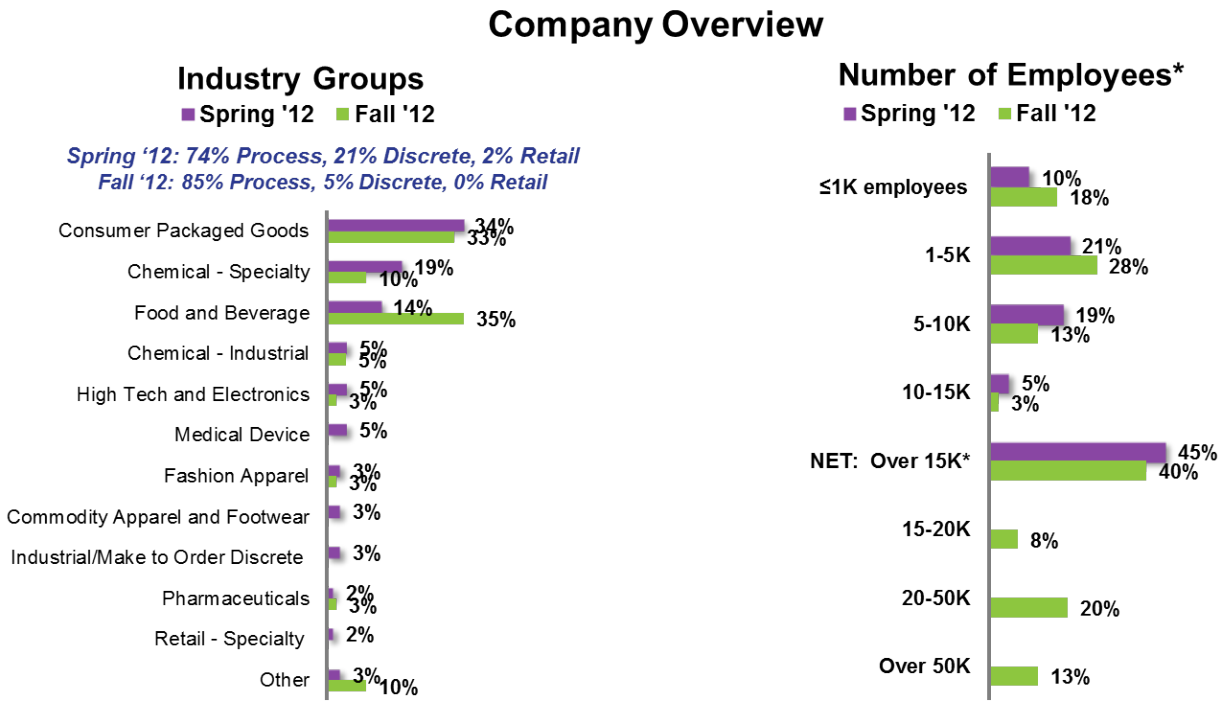
- Tracking study
- Surveys conducted online
- Survey dates:
  - Spring 2012 - Wave 1 (March 9 – April 9)
  - Fall 2012 - Wave 2 (October 4 – December 3)

WHO

- Respondents:
  - Manufacturers only
- Number of respondents per wave:
  - Spring 2012: 58 respondents from 35 companies
  - Fall 2012: 40 respondents from 35 companies

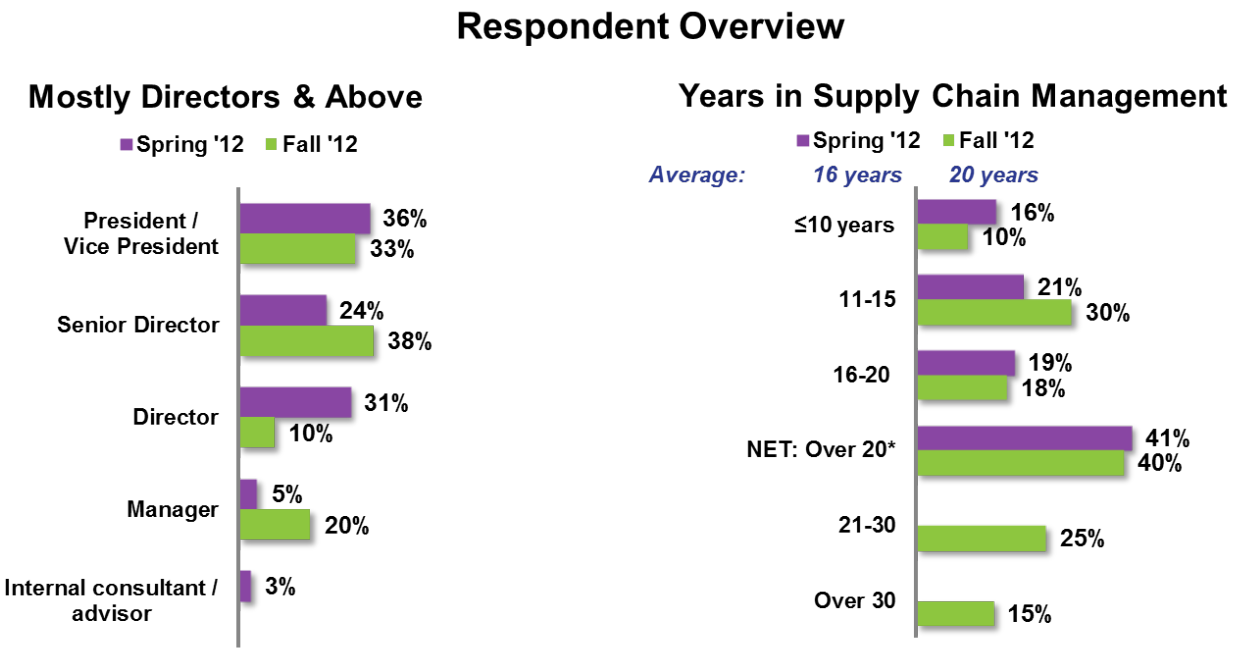
Source: Supply Chain Insights LLC, Voice (Wave 1: Mar-April 2012; Wave 2: Oct-Dec 2012)

Figure B. Industry and Company Demographics



Source: Supply Chain Insights LLC, Voice (Wave 1: Mar-April 2012; Wave 2: Oct-Dec 2012)
Base: Manufacturers – Spring '12 (n=58), Fall '12 (n=40)
Q2. Which industry grouping best defines your company? Please select the one that best applies.
Q3. What is the size of your company, in terms of number of employees? *Asked as range in Spring 2012, write-in in Fall 2012

Figure C. Position within the Supply Chain Organization



Source: Supply Chain Insights LLC, Voice (Wave 1: Mar-April 2012; Wave 2: Oct-Dec 2012)
Base: Manufacturers – Spring '12 (n=58), Fall '12 (n=40)
Q4. Which of the following best describes your current position? Please select the one that best applies.
Q5. For how long have you been a supply chain management professional?
*Range not broken out for "over 20" in Spring 2012

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About Supply Chain Insights LLC

Supply Chain Insights LLC is a research and advisory firm focused on reinventing the analyst model. The services of the company are designed to help supply chain teams improve value-based outcomes through research-based Advisory Services, a dedicated Supply Chain Community and public training. Formed in February 2012, the company is focused on delivering **actionable and objective advice for supply chain leaders**.

About Lora Cecere

Lora Cecere (twitter ID @lcecere) is the Founder of Supply Chain Insights LLC and the author of popular enterprise software blog Supply Chain Shaman currently read by 5,000 supply chain professionals. Her book, **Bricks Matter**, (co-authored with Charlie Chase) published on December 26th, 2012.

With over nine years as a research analyst with **AMR Research, Altimeter Group, and Gartner Group** and now as a Founder of Supply Chain Insights, Lora understands supply chain. She has worked with over 600 companies on their supply chain strategy and speaks at over 50 conferences a year on the evolution of supply chain processes and technologies. Her research is designed for the early adopter seeking first mover advantage.