Big Data

Go Big or Go Home?

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Contents

Research

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Disclosure

Your trust is important to us. As such, we are open and transparent about our financial relationships and our research process.

Ecosystem Input

The research for this report was conducted from April 2012 through June 2012. It is based on discussions with 32 industry leaders currently working on Supply Chain Big Data initiatives. These interviews are supplemented by data from an online, quantitative research survey completed by 53 respondents at over 40 companies. Details on the quantitative survey methodology and the respondent demographics are outlined in the Appendix section at the end of this report.

Fig. 1 Companies Participating in the Quantitative Survey for this Report

Sample of Companies Surveyed*		
3M	FCI GBS	Metro Supply Chain Group
AAFES	Del Monte Foods	OnLineShoes
The Boelter Companies	General Mills Inc.	Orion Corporation
The BonTon Stores, Inc.	GNC	Rolls-Royce
BP	The Golf Warehouse	RR Donnelley
Carlsberg	Harris Teeter	Seas-nve
The Clorox Company	Henkel	SelectClassics
Conair Corporation	Hewlett Packard	Shar Product Companies
Crate&Barrel	Kellogg Company	Slumberland Furniture
CSC	Lapp Group	Speedway
Dawn Food Products	Lowes	SPX Dry Cooling
Dean Foods	Mars	Stanley, Black & Decker
Eastman Kodak	Master Lock Company LLC	TEC

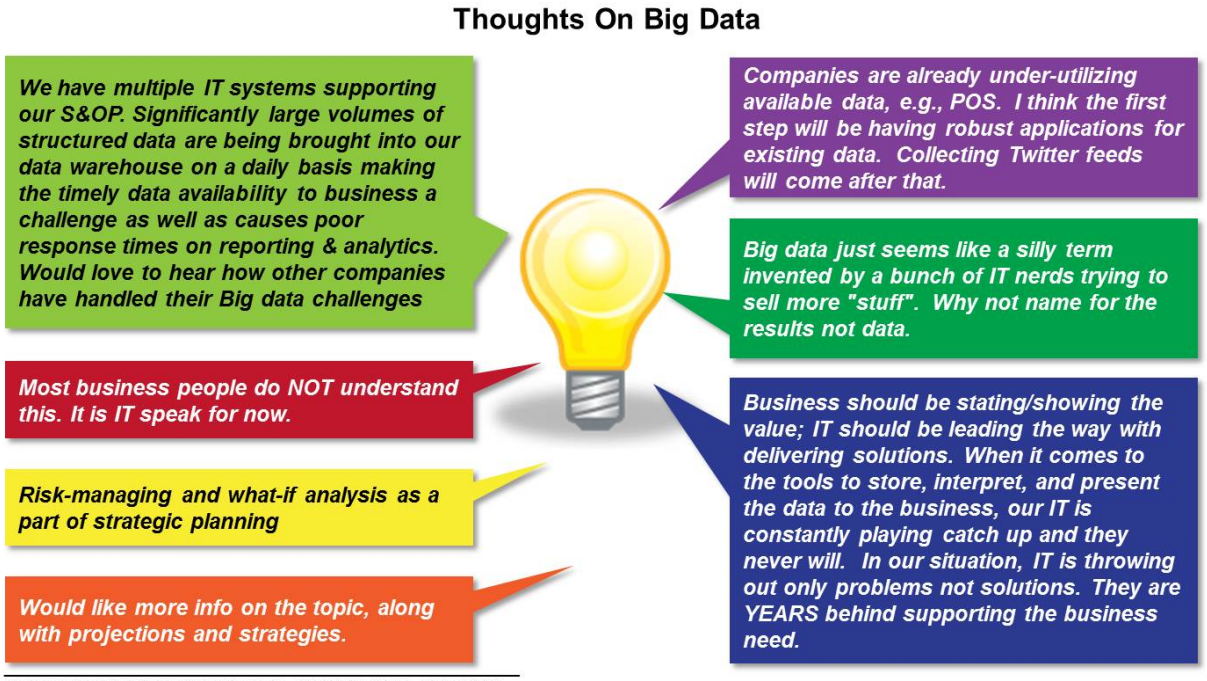
Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53)
*Includes only those who volunteered their company name
Q2. First, what is the name of your company?

Executive Summary

For the supply chain leader, Big Data is a new concept. It is not one that is currently well understood. It will be overhyped and overpromised before the concepts reach mainstream adoption. However, it is here to stay. The goal of this report is to better educate and prepare the supply chain leader for this change. In this report, we define the concepts and share insights to help leaders better understand how Big Data concepts can help solve problems in today's supply chain.

For most respondents, the quantitative survey that accompanied this report was tough to complete. The concepts are new and not well understood. So much so, that only one-in-four survey respondents could complete their responses to the questionnaire. While over 240 people started the survey, only 53 could finish it. The open-end comments from the study listed below sum up the current state of the industry well. They are shown in figure 2.

Fig. 2 Open End Responses to the Survey on Big Data



Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53)
Q19. Is there anything else that you think we should know about when it comes to your thoughts about the Big Data opportunity?

To ensure clarity, let's start with definitions. There is no industry standard definition of Big Data. There are many bandied about in the industry. For the purposes of this report, Big Data is defined as data that is too large and complex in either volume, velocity or variety to be used in traditional supply chain architectures. Similarly, each company may define the term "supply chain" differently. It can be narrow (focused on logistics) or broad (processes that encompass

the end-to-end value network). In the development of this report, we used a broad and overarching definition. We defined the supply chain as processes that stretch from the customer's customer to the supplier's supplier to better manage information, cash and product flows.

Going forward, we feel that the concepts of Big Data Supply Chains will underpin most value network initiatives. Supply chains are moving into the digital world through multiple initiatives simultaneously. It will not be about data for the sake of data, or mobile for the sake of mobile, or social data for the sake of social; instead, it will be about the convergence of these new technologies. As they converge, an underlying data set will grow not only in volume, but also in variety and velocity. It will fuel a new set of predictive analytics and capabilities. These new understandings will forge a path forward enabling a new foundation for supply chain leaders to solve new business problems. Today, we are just at the starting line, but the pace will accelerate.

While new today, soon every technology vendor will speak the language of Big Data. It will make the headlines of industry publications. The challenge for supply chain leaders will be to sidestep the hype and stay above the fray to leverage Big Data concepts to fuel new forms of process innovation. This report is designed to help. Our goal with this report is to give supply chain leaders the understanding to lead their teams forward to drive real value and drive early adopter advantage.

Big Data: A Revolution not an Evolution

For the supply chain leader, and their teams, Big Data is a new concept. It comes with new terms and revolutionary thinking. The world of supply chain applications that has been defined by neat, nice packaged applications where the vendors are well-known is changing. Over the past ten years these older technologies have consolidated, matured and prices have fallen. This has happened just in time to enable many manufacturers and retailers to roll out multi-year implementations for their global teams.

Traditional supply chain applications evolved to use transactional data to improve the supply chain response. The foundational element of supply chain systems is order and shipment data. These data forms are used extensively in the three primary applications of supply chain management: Enterprise Resource Planning (ERP), Advanced Planning Systems (APS) and Supply Chain Execution (SCE). The genesis of Enterprise Resource Planning (ERP) systems was to improve the order-to-cash and procure-to-pay functionality and maintain a common code of accounts for financial accounting. Similarly, Advanced Planning Systems (APS) applied

predictive analytics to these two data types to plan and improve the supply chain response. In parallel, Supply Chain Execution (SCE) systems evolved to improve organizational order-to-shipment capabilities.

> *"This is new language and a new way of thinking. Where do I go to learn these new concepts?"*
>
> Supply Chain Leader at a Food and Beverage Company

The gap in importance and perceived performance of enterprise applications for supply chain management has never been higher (reference Supply Chain Insights Report, Voice of the Supply Chain Leader, May 2012). For the business leader, it is not about data. It is about solving the business problem. In fact, as supply chain leaders try to tackle new problems, most do not realize that they are entering into the world of Big Data, it just happens. The term is not in their vocabulary. They just want to do more, and solve new problems, with new forms of data. They are frustrated with current systems. The projects that can border into Big Data concepts include:

- **Anticipate through Advanced Analytics.** Traditional business analytics are set to answer the questions that leaders know to ask. But what about the questions that are important but companies do not know to ask? As companies build risk mitigation strategies an important question is, "How long does it take the company to learn about product and service failures in the market?" These are the questions that the organization does not know to ask. Techniques like text mining and rules-based ontologies are used to build listening capabilities to learn early and mitigate issues quickly.
- **Listen, Test and Learn.** Today's technologies allow corporations to know their customers and get direct feedback in the form of ratings and reviews, blog comments and feedback through social media. These data forms are largely unstructured. As digital marketing programs become digital business, organizations are seeking to listen cross-functionally to customer sentiment and use advanced analytics to test and learn in vitro to the market response. Less than 3% of supply chain leaders can effectively listen to social data and use it cross-functionally to understand customer sentiment. For most companies, social data is limited to the digital marketing team.

- **Sense before Responding.** The traditional supply chain responds. It is often a late and inappropriate response. It is based on history not current market data. As a result, the traditional supply chain is poor at sensing either changes in demand or supply. As companies mature, they quickly realize that sole reliance on order and shipment data

increases the latency and delays the time to respond to market shifts thus putting the supply chain on the back foot.

- **Adapt to Change.** Today's supply chains are hard wired. They are inflexible. The response is based on average values and simple "if-then-else" logic. Supply chain leaders today are looking for more flexibility in their systems, but they are not sure what this means. Leaders are turning to new forms of predictive analytics—rules-based ontologies—to map *"multiple ifs to multiple thens"* through learning systems. The combination of new forms of pattern recognition, optimization and learning systems is improving the ability for the organization to improve the response.

- **Deliver Products Safely.** Temperature controlled supply chains are based on volumes of data. As sensors improve, the data is increasing in both volume and velocity. RFID sensors/pallet or tote sends high volumes of data requiring new forms of pattern recognition to better sense and respond. The cold chain is ripe for a Big Data transformation.

- **Drive New Channel Programs.** As companies rethink channel programs, the combination of mobile and social programs with eCommerce and digital devices offers new opportunities. It means different things in different industries. In retail it is termed Omni channel, while in consumer products it is termed Digital Path to Purchase (DP2P). For retailers and consumer products companies, they know that decisions are made at the shelf; yet the data that they see and respond to every day is limited to their own company data. This is pushing a process redesign. Processes are moving from inside-out (from the company out) to outside-in (from the channel back). Mobile, social and eCommerce data is being combined with downstream data (e.g., Point of Sale (POS) data) to make this a reality. This data for some leaders is quickly approaching a petabyte.

- **Digital Manufacturing.** The use of mobility and digital inputs from equipment sensors and Programmable Logic Controllers (PLCs) is transforming process manufacturing. Production lines are moving from event-based planning to real-time sensing based on the Internet of Things. Maintenance programs, production schedules and planning can now be based on machine output, not theoretical meantime failure calculations.

- **Digital Service.** In a similar fashion, the use of mobility and digital inputs from heavy equipment are transforming service industries. Airplanes communicate equipment health on landing, expensive earth movers transmit signals in remote locations regularly, and windmill components send signals at regular intervals to control towers. These signals are then used to plan service and part replacement. The Internet of Things is transforming service industries. The data is streaming with high volumes.

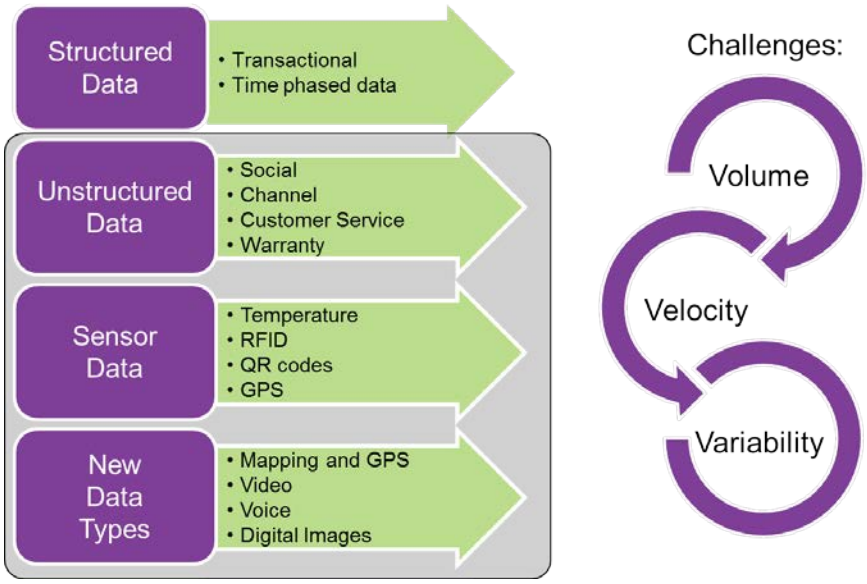
- **Rethinking of Supply Chain Visibility.** Geolocation, mapping data and visualization along with supply sensing transmission (e.g., sensors on items, totes, trucks, and rail cars) transforms supply chain visibility from near real-time to real-time data feeds augmented by actual location information. For many, this is transformational.

These initiatives are spread throughout the organization. Most are in their infancy. One by one, companies are trying to use new forms of data to improve supply chain excellence. However, as they work on the projects, they stumble into new territory. They stumble into the world of Big Data supply chains where data no longer can fit within relational databases, and analysis requires new forms of parallel processing. They learn, albeit sometimes the hard way, that it requires a new approach. They learn that they cannot stuff these new forms of data into yesterday's systems.

Supply Chain Leaders Meet Big Data

Today's supply chains are more complex. The data has grown in volume, variety and velocity. While the structured data and the systems that use them will not go away, the new forms of data offer new opportunities for companies to solve previously unanswered problems. These new data types do not fit into traditional applications or data models as well. It is for this reason that it is a revolution not an evolution. Big Data systems are a means to an end.

Fig. 3 The Big Data Emerging in Supply Chain



The conundrum for many is that this is happening at a time when companies do not believe that they use the data that they have very well. Dirty data is the number one issue for supply chain teams, and these new forms of data are largely a mystery.

A Look at History

The world's technological per-capita capacity to store information has roughly doubled every 40 months since the 1980s. Today's supply chains are surrounded by mounds of external data that cannot be used by traditional supply chain systems. As of 2012, 2.5 quintillion ($2.5X10^{18}$) bytes of data are created every day[1].

Supply chain systems are now thirty years old. They were first defined based on limited sets of enterprise data that could be represented through rational database models and processed in minutes or hours. The threshold for an organization to think about Big Data may be stimulated by the size of the data or by the need to use new forms and types of data to solve new data problems. For most, it will be about FAR more than parallel processing or cloud-based services. Supply chain teams will never be early adopters of the concepts.

Late in the 1990s, the concepts of Big Data started in science when meteorologists mapping weather, scientists modeling large physics simulations and/or biologists mapping genomes were no longer able to use conventional techniques. Difficulties were encountered in data capture, storage, search, sharing and analysis leading to new techniques.

[1] "The World's Technological Capacity to Store, Communicate, and Compute Information", Martin Hilbert and Priscila López (2011), Science (journal), 332(6025), 60-65;

In 2008, it was adapted by eCommerce and telecommunication giants when they could not solve business problems through conventional means. Web search had the problem of querying very large distributed aggregations of loosely structured data. The data was usually large (then petabytes and exabytes and now approaching zetabytes), the variety of data was high and the velocity of the data was high (streaming data, sensor data, and mobile data). It was also often incomplete and inaccessible (requiring inference from new forms of predictive analytics). As a result, it required new techniques and architectures to process the data and to sense data problems.

As we extend the concepts of supply chain from the customer's customer to the supplier's supplier, supply chain leaders are also facing this boundary. The data is no longer structured. We cannot listen, test and learn about consumers without embracing unstructured data. While the largest complaint in enterprise supply chain systems is dirty data, we will slowly realize that the current data is not dirty, but different. We will also learn that the road before us will magnify the differences. Supply chain leaders have not seen anything yet. The building of the end-to-end supply chain will give us new forms of different data (that will initially be called dirty) that will need to be embraced using new and different techniques. This is the world of Big Data.

Table 1 Characteristics of Traditional and Big Data Analytic Environments

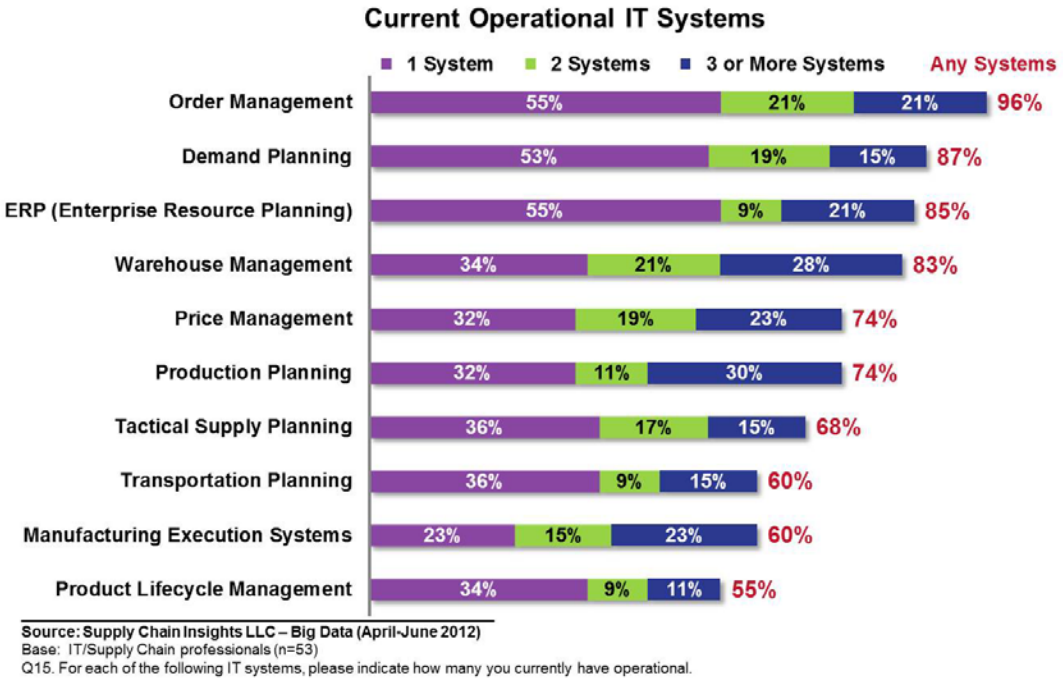
Traditional Data Environments	Big Data Analytic Environments
• Centralized data sources that are controlled and monitored (usually enterprise data that can be represented through relational database formats) • Usually updated based on a frequency of hour, day, week, month, quarter, year • Analytics are designed by rows and columns to be run in a production environment • Predictive analytics are largely optimization and simulation engines	• Data from many sources inside and outside the organization including traditional data warehouses • The data sources are often physically distributed and will often contain a variety of data elements both structured and unstructured • There is often a need to iterate to find the best solution when solving business problems • Large memory resources are required to support computational iterations • Every iteration of the problem solving usually requires a complete reloading of the information

Current State

While it is new, companies are beginning to recognize that they have a problem. And, that they need to do something. Among the respondents in the survey, we find that:

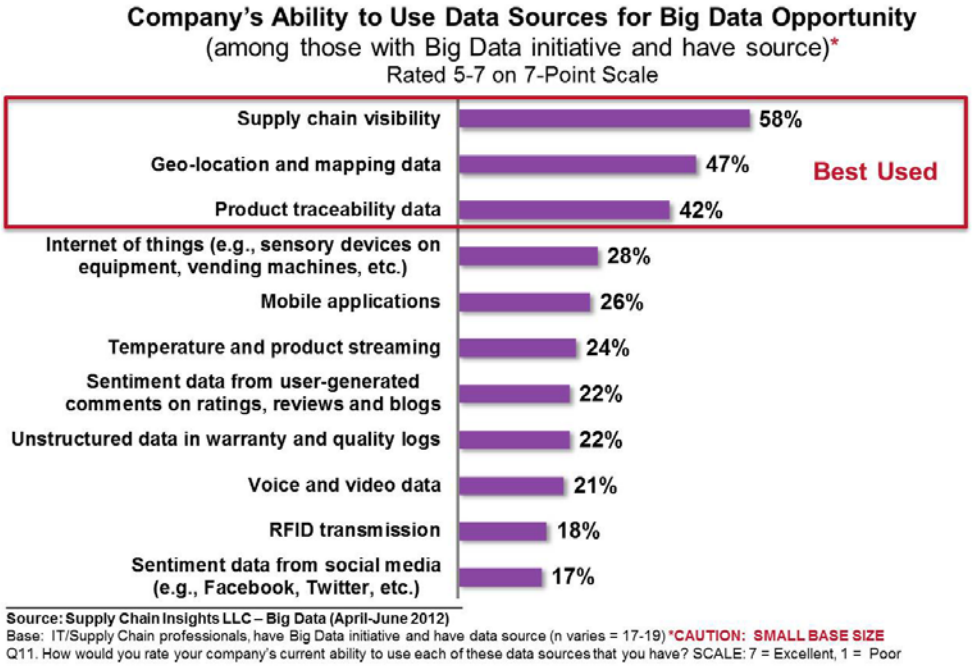
- **One-in-three Companies has a Big Data Initiative.** Today, 36% of organizations currently have a cross-functional team evaluating the potential of Big Data for their supply chains.
- **Primarily Led by IT Leadership.** The leader of the team evaluating Big Data usage and technologies is usually the Chief Information Officer/IT (47% of respondents). It is less frequently a cross-functional team (21% of respondents) or the line of business leader (21% of respondents). The responses to the survey show a low understanding of the concepts by supply chain leaders.
- **System Complexity is High for Transactional Systems.** The average supply chain leader has many systems. On average, they have two instances of Enterprise Resource Planning (ERP). The largest ERP instance in the survey was five terabytes. The companies surveyed had 150 unique systems supporting their supply chains. The promise of a single ERP system for most is an unfulfilled dream. Today's landscapes for supply chain leaders are large, diverse and growing.

Fig. 4 Current System Complexity in Supply Chain Operations



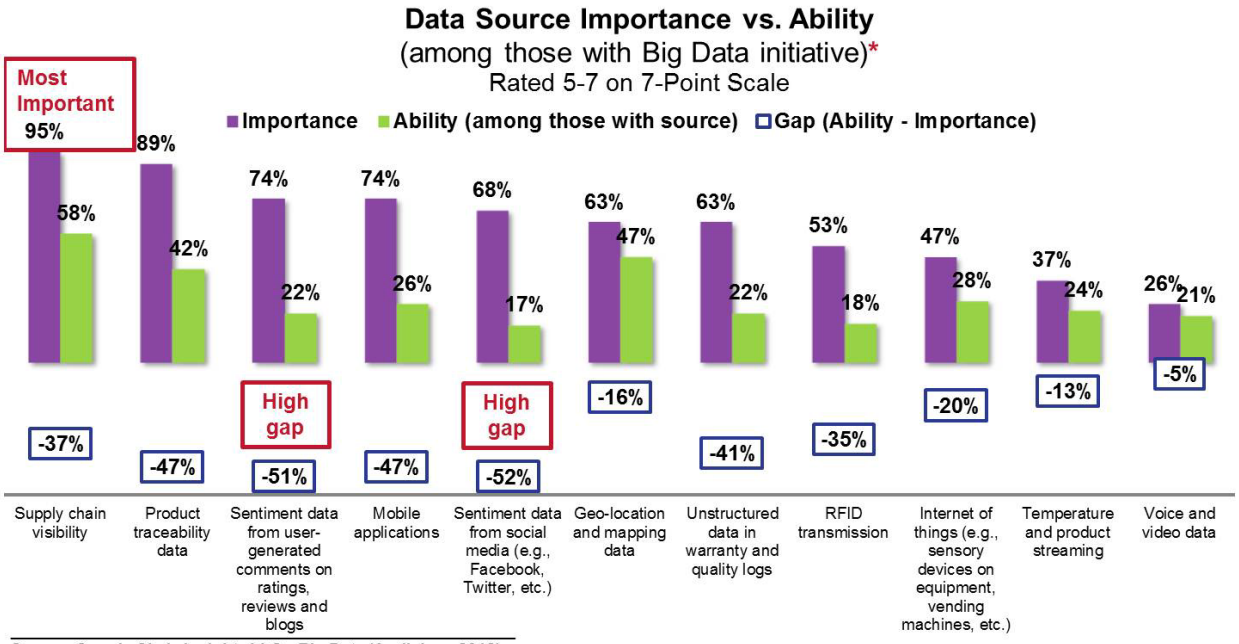
- **Data is Growing in the Enterprise.** Today, 8% of respondents have a Petabyte of data in a single database. It is growing. It is a concern of survey respondents. 47% of companies responding to the survey either have or expect to have a database with a petabyte of data in the future. It is higher for those currently having Big Data initiatives underway (68%). The petabyte is the new terabyte.
- **Greater Comfort with Structured Versus Unstructured Data.** Traditional supply chains have largely focused on transactional data, so it should come as no surprise that respondents of the survey with Big Data initiatives have greater comfort with structured data types. As seen in figure 5, they are least comfortable with social data.

Fig. 5 Company's Self-Rated Capabilities to Use Different Types of Data



- **Future is Demand. Current Focus is Supply.** The greatest perceived benefits and the lowest current performance ratings are in the area of demand data. However, due to the greater familiarity with transactional data and supply systems, the most common initiative is supply chain visibility. This was frequently seen in retailers with long supply chains crossing many borders. The current focus (importance) and actual performance for companies with Big Data initiatives are outlined in figure 6.

Fig. 6 Importance and Current Performance of Big Data Projects in Companies with Big Data Initiatives



Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals and have Big Data initiative (n=19) *CAUTION: SMALL BASE SIZE
Q10. How important do you think each of the following data sources is in order to seize the Big Data opportunity?
Base: IT/Supply Chain professionals, have Big Data initiative and have data source (n varies = 17-19) *CAUTION: SMALL BASE SIZE
Q11. How would you rate your company's current ability to use each of these data sources that you have? SCALE: 7 = Excellent, 1 = Poor

How to Get Started

To get started, map the current projects within the organization and evaluate if they are approaching the limits of traditional packaged applications and are requiring more advanced techniques. Start with focused projects that have large data sets and requires deep analytics:

- **Use Big Data Services.** Where possible in buy- and sell-side markets, use Big Data services. Examples include **Bazaarvoice** for ratings and review data and **Dun and Bradstreet** for supplier sensing. To get started quickly, look for Big Data Services.

- **Invest in Sentiment Analysis.** If being customer-driven is important to you, build cross-functional processes to use new forms of customer data to evaluate new product launch, market effectiveness of channel strategies and customer feedback on product changes. While many companies outsource social listening to public relations agencies, consider investing in text mining and sentiment analysis to be sure that you can listen for the questions that you don't know to ask. Supply Chain leaders review customer data at least weekly cross-

functionally (marketing, sales operations, customer service, product development and manufacturing operations).

- **Make Data a Core Competency.** Supplier data and channel data needs to be cleaned, enriched and harmonized. Invest in data repositories through **GreenPlum, IBM Netezza, SAP** or **Teradata** to active data management on large data sets. Closely evaluate the needs for ETL/Integration and data quality through vendors like **Informatica, IBM, SAP and SAS**.

- **Use Black Boxes.** The advanced analytics that come with Big Data systems are packaged as black boxes. Encourage the analysts to let the technology do its job. Make it systemic. Avoid the trap of the *Data Scientist* where individuals are allowed to do one-off nonreplicable analysis.

Recommendations

As organizations move forward, we offer five recommendations. As your read through them, remember that it is a journey not a destination. It is a marathon not a sprint. The practices are evolving; there are no experts today in building Big Data Supply Chains.

Our recommendations for the supply chain leader are:

- **Sidestep Hype. There is No Need to be an Early Adopter.** Each traditional vendor, in their efforts to offer something new, will try to offer a Big Data solution. In your discussions with technology providers, note that there is no ONE Big Data solution. Instead it is a set of techniques for using large data sets that have high velocity and data variety. It is not about stuffing new forms of data into old architectures. It is about MUCH more than parallel processing or shared services in the cloud. Instead of investing in hype, carefully invest by following industry maturity carefully. Build organizational capabilities. Invest time to attend conferences to learn, and spend time with telecommunication and eCommerce giants to sort through fact and fiction.

- **Big Data Needs to be Focused on Delivering New Value-based Outcomes.** The discussions of Big Data should start with the business need state and the impact on value-based outcomes. Start with the problem, analyze the data set

requirements and then look for appropriate technology. The ah-ha moment comes when you find that these new data forms do not neatly fit into traditional enterprise applications. It is not data that neatly stuffs into BI, ERP, APS or SCE architectures. They are too large, too different, and moving at too fast of a rate of speed.

- **It Needs to be Led by Line of Business Leaders.** While most organizations have their Big Data efforts led by IT or the CIO, I find this problematic. IT budgets are under attack and most of the initial funding for Big Data will need to be investment dollars not funded through cost reduction initiatives. The focus needs to be on value-based outcomes, and the business leader needs to drive the funding. As a result, IT leaders need to educate the line-of-business leaders and build a guiding coalition.

- **The Use Cases are Many. Start Simple.** There are so many use cases, that the problem for many teams may be where to start. Start where the data is the most available and the business requirements are the highest. Work with the teams to plan for the future by plotting future projects on a road map. Look for those that offer promise. After plotting these projects, look for data source similarities and build a skills capability matrix to begin the process of education and awareness.

- **Don't be Limited by Traditional Paradigms.** The uses of new types of data allow supply chain leaders to solve new problems. Don't limit your thinking by traditional paradigms. When you hear Business Intelligence (BI), think beyond rows and columns to seize the Art of the Possible.

Conclusion

We are entering the era of Big Data supply chains. Unstructured, mobile, streaming and geolocation data offers great promise to improve supply chain processes. However, it cannot happen without embracing Big Data techniques. Start slowly, focus on the use of the data and build with the end in mind. For the supply chain leader, we believe that now is the time to embrace the future concepts of the Big Data supply chain. In the near future, it will be Go Big or Go Home. Leaders will capture the art of the possible, while laggards will think in rows and columns. Now is the time to prepare, invest and re-evaluate what is possible.

Big Data Terms to Know:

Early adopters in the definition 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:

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.

Hadoop. An Apache Foundation Project 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.

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

Map Reduce. 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 language often used to simplifies MapReduce programming.

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. A 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

This report is based on qualitative interviews and a quantitative study conducted in the period of April-June 2012. For the qualitative study there were 53 respondents from over 40 companies. Respondents are IT professionals or members of their company's supply chain team.

Big Data Study Overview

WHY

- **OBJECTIVE**: To understand how supply chain leaders are building capabilities to harness big data.
- **HYPOTHESIS:** Big data investments offer great opportunity, but supply chain leaders are not moving quickly to harness the opportunity.

WHAT

SURVEY TOPICS:

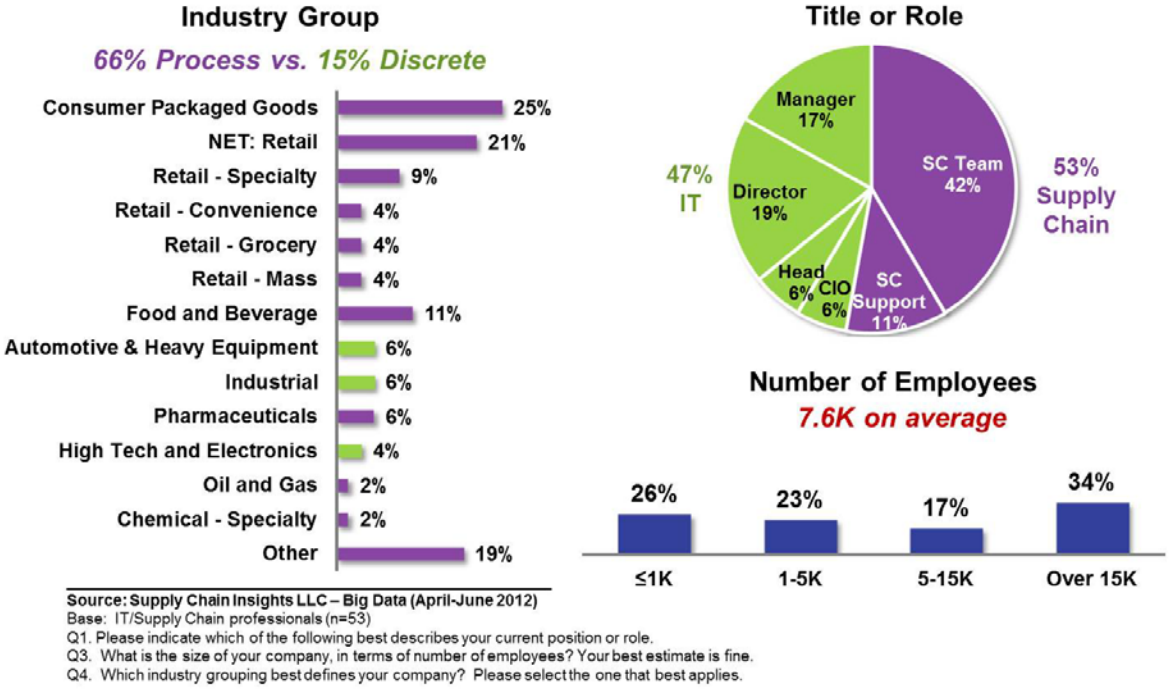
- IT systems, trends, and how systems will be impacted by Big Data strategies
- Importance and ability of data sources to take advantage of Big Data opportunity
- Techniques investigating for Big Data opportunity
- Supply chain pain points

WHEN & HOW

- Surveys conducted online.
- Survey dates: April 12 – June 25, 2012.

WHO

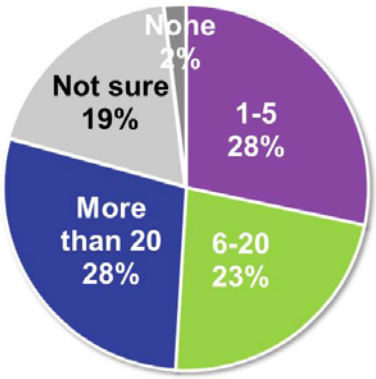
- 53 completed surveys from over 40 companies
- Respondents are IT professionals or members of their company's supply chain team



Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53)
Q1. Please indicate which of the following best describes your current position or role.
Q3. What is the size of your company, in terms of number of employees? Your best estimate is fine.
Q4. Which industry grouping best defines your company? Please select the one that best applies.

Unique IT Software Systems in IT Shop

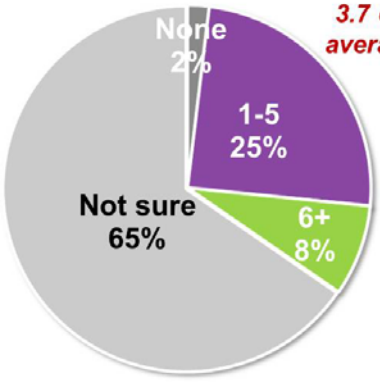
150 systems on average



Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53)
Q5. How many unique IT software systems do you operate in your IT shop (production only)?

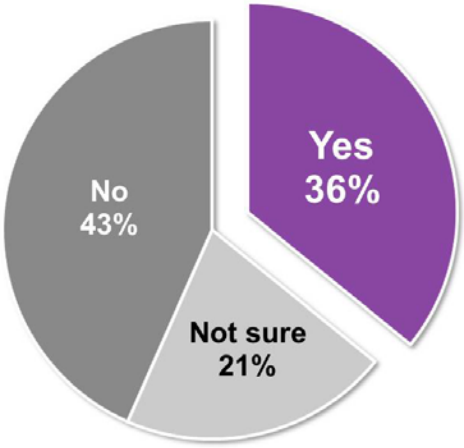
Size of Largest ERP Live Instance (Terabytes)

3.7 on average



Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53)
Q6. What is the size of your largest ERP (Enterprise Resource Planning) live instance? *Your best estimate is fine.*

Current Initiative to Evaluate Big Data



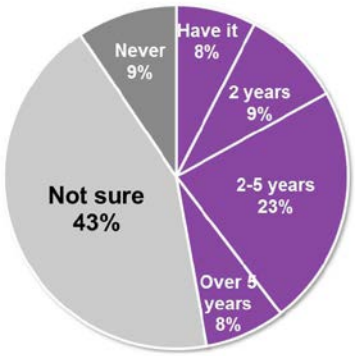
Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53)
Q7. Does your company currently have an initiative in place to evaluate the opportunity with Big Data?

Big Data Initiative Leader
(among those with Big Data initiative)*

53% of respondents are the Big Data Initiative Leader

Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals and have Big Data initiative (n=19) ***CAUTION: SMALL BASE SIZE**
Q8. Are you the one leading the initiative to evaluate the opportunity with Big Data?
Q9, What is the title or role of the person leading the initiative to evaluate the opportunity with Big Data?

When Expect Database = Petabyte



47% Overall have it or expect it vs. **68%** among those with Big Data initiative*

Source: Supply Chain Insights LLC – Big Data (April-June 2012)
Base: IT/Supply Chain professionals (n=53), Have Big Data initiative (n=19) – ***CAUTION: SMALL BASE SIZE**
Q6a. How soon do you expect to have a database that equals a Petabyte?

About Supply Chain Insights LLC

Supply Chain Insights LLC (SCI) is a research and advisory firm focused on helping supply chain teams improve value-based outcomes. The offerings include research-based Advisory Services, a Dedicated Supply Chain Community and Web-based Training. Formed in February 2012, the company helps technology providers and users of technologies gain first mover advantage.

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 4500 supply chain professionals. Her book, **Bricks Matter**, publishes in the fall of 2012.

With over eight years as a research analyst with **Altimeter Group, AMR Research, 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.