



## Creating Value from Complexities in the Supply Chain

Every bit of food we consume, the automobile we drive and the electronic gadget we purchase has an incredibly complex story behind how each went from raw materials to your kitchen, garage and doorstep. This story plays out every day through enormous numbers of transactions taking place all across the world through what we know as the supply chain.

What if we could capture every detail about every transaction from every supplier in every industry from raw material to finished product to delivery and beyond? How might gaining meaningful insights about these journeys change the way we produce, sell and even deliver goods and services around the world?

Throughout this report, we examine the trends driving complexity in the supply chain and share insights into how our thinking about business must change in order to meet the needs of our customers and our customers' customers.

### About Jabil

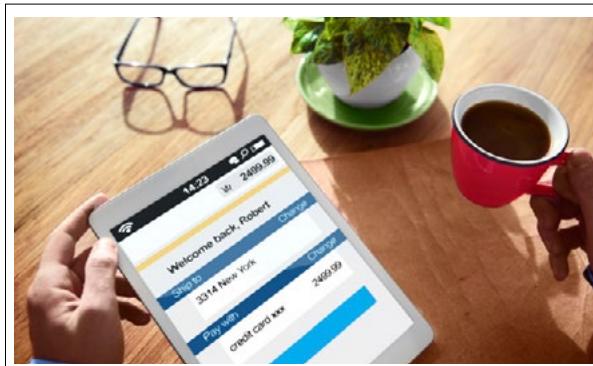
Built on a foundation of empowered employees in over 101 plants in 28 countries, Jabil strives to be the world's leading global manufacturing solutions partner. Jabil's unique combination of global expertise, ingenuity, analytics and financial performance has contributed to the success of the world's most well known brands. We help companies design, build and take their products to market quickly, affordably and efficiently. But more than that, Jabil helps customers intelligently design their supply chains to be agile, economical and effective even in uncertain times.

## Anticipating Market Shifts

Right now, some of business complexity lies within the changing consumer base, as a growing percentage of the world's consumers will eventually come from emerging markets. Furthermore, consumers from established markets and emerging markets alike are reshaping industries such as healthcare, where health and fitness start-ups are forcing change in the traditional healthcare industry. The ubiquity of mobile devices connecting people to commerce, other people and even things is shaping new consumer habits and expectations around the world.

For example, established market consumers now expect a healthcare experience as convenient and transparent as their banking, retail and transportation purchases<sup>1</sup> while emerging market consumers see more affordable, accessible healthcare options from companies outside of traditional healthcare.

E-commerce is another example of how consumers are changing things. Major brands report dramatic growth and revenue trends in online sales. In fact, mobile commerce will make up 45 percent of all U.S. e-commerce retail sales by 2020 and now represents \$155 billion market or



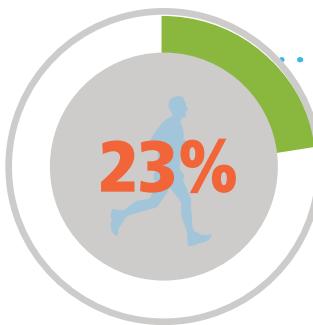
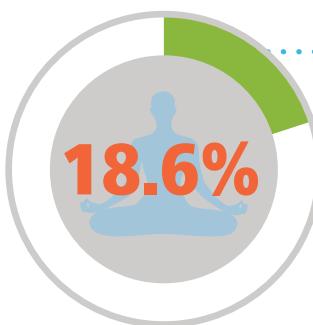
6 percent of total retail sales.<sup>2</sup> Alibaba's Alipay, with more than 450 million monthly active users, owns more than 50 percent of the online payments market in China.

In other words, an increasing percentage of goods and services are bypassing traditional brick-and-mortar retail outlets and going directly from the manufacturer to the consumer. How will this change in consumer behavior affect your business?

**"Mobile devices are driving demand. They can create an impulsive buying moment at any point in the day because they are with you all the time, right in your pocket."**

- Andrew Lipsman, Vice President, comScore

## THE GROWTH OF E-COMMERCE



OF LULULEMON'S REVENUE IN 2015 WAS FROM ONLINE SALES <sup>3</sup>



INCREASE IN U.S. WINERY-TO-CONSUMER SHIPMENTS <sup>5</sup> – 4X FASTER THAN WINE RETAIL OUTLETS <sup>6</sup>

With the emergence of the intelligent digital supply chain applied across all industries, we can begin to understand and even foresee impacts of market shifts as supply chains overlap and consumer patterns change. We can prepare for change based on predictive wisdom instead of reacting to changes as they begin to disrupt a market.

With visibility into vast portions of the world's supply chains, we can make smarter decisions about how products should be built in the very earliest stage – the design phase. Anticipating shifting consumer patterns and industry trends, we can design a product's supply chain

around appropriate suppliers, locales and logistics to reduce inventory stockpile, decrease time-to-market and streamline costs.

For example, knowing that 80 percent of the environmental impact of a product and its packaging is determined in early design stages, the European manufacturing sector projects materials cost savings of \$630 billion by 2025<sup>7</sup> through designing for recyclability. This savings then stimulates economic activity in other important areas such as product development, remanufacturing and refurbishment.

# DESIGNING FOR RECYCLABILITY

BY 2025, THE EUROPEAN MANUFACTURING SECTOR SAVES  
**\$630 BILLION** ON MATERIALS, LEAVING MORE FUNDING FOR



PRODUCT DEVELOPMENT



REMANUFACTURING

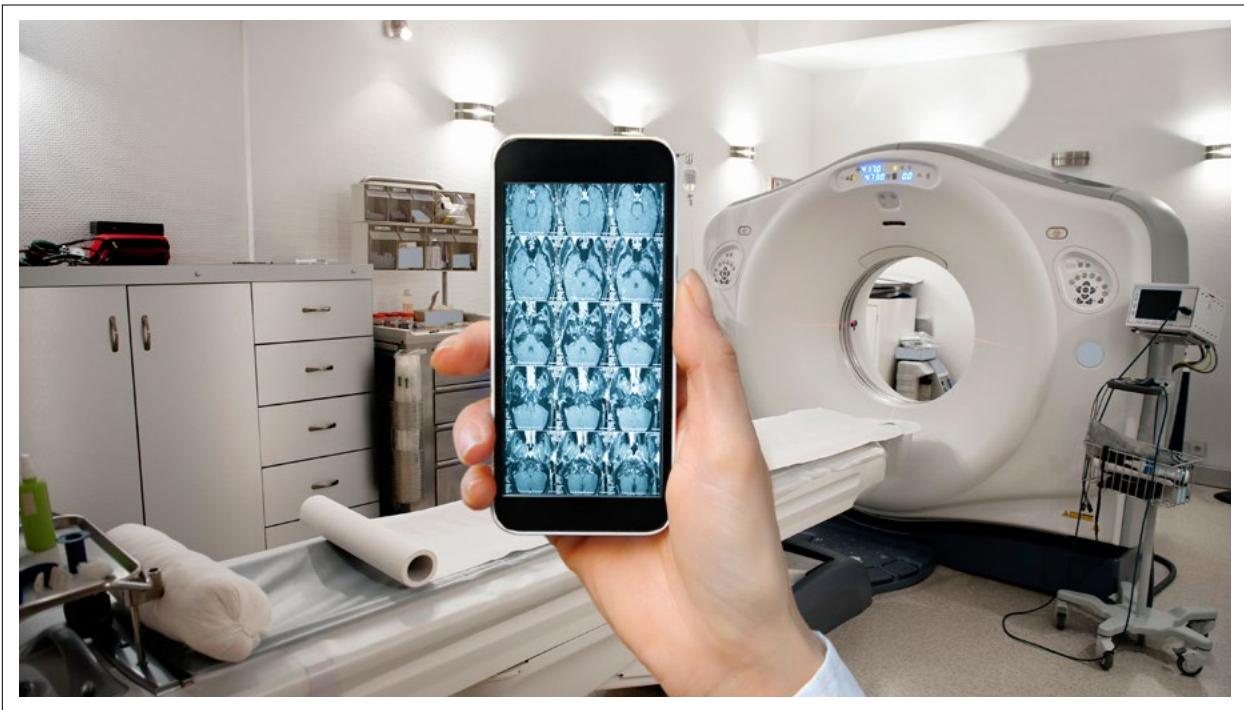


REFURBISHMENT

This approach to building a product helps determine things with very real costs associated with them, such as the geographic locations where products should be produced, how to minimize environmental impact, how to track and ensure fair labor practices and avoid purchasing raw materials from conflict zones.

By reaching deeply into the complexities of the supply chain, we gain incredible insights into consumer trends, the health of our global economy, our work and our lives.

## Supply Chain Visibility into Broad Markets



What makes supply chains exponentially harder to manage is that industry supply chains are often intertwined. For example, automobile supply chains have suppliers within the medical industry. And the medical supply chain shares suppliers in consumer products as consumers healthcare expectations change.

Few industries can see the interplay of these nodes – and by only seeing a portion of the supply chain – most businesses miss important cues. For example, what happens when components common to separate industry supply chains suddenly become highly in-demand in one industry? How can a supply chain insular to a single industry avert component shortages?

A recent example is Oculus, the virtual reality hardware and software maker who's Rift headset was significantly delayed by months due to component shortages.<sup>8</sup> To be sure, the cost of fulfilling delayed shipments of pre-ordered products goes well beyond the free shipping Oculus is offering to global customers affected by the delay. Not only will Oculus likely have to pay a premium for components to

suppliers with which it may not have relationships, many of its customers reportedly canceled their orders and chose a competitor product instead.<sup>9</sup>

Ultimately, the inability to predict disruptions and manage expanding supply chains impacts negatively on a brand. In order to grow, companies must drive to new markets for cost advantages and to serve new consumers. This means selecting new suppliers, and understanding new cultures and business requirements. But this isn't just a manufacturing issue; it is about brand protection. Getting any of these wrong significantly impacts a brand, costing millions if not billions of dollars due to revenue drops and investor exits.

Global manufacturing companies that build products for all major industries can identify unique supply chain opportunities among massive stores of digital information about suppliers, customers, logistics and more. Better still, visibility into multiple markets means predicting this type of supply shortage before it happens and creating a supply chain strategy that minimizes this sort of risk.

## Understand Operations. Add Digital Thinking. Reshape Industries.

Not every company has to have a digital business to tap into digital thinking. Gaining an edge from digital thinking by simply adopting a technology or process is not the key. Companies willing to reimagine operations and then incorporate the technologies that support new processes are the ones that create significant value for customers and shareholders.

A great example of radical digital transformation comes from a Chilean copper mining company. Codelco, the world's largest copper producer, is transforming what can be a dirty, dangerous and labor-intensive business into one powered by digital technology. When Codelco realized its people were more valuable in knowledge and innovation roles than in brute-force labor jobs, it completely transformed its business. By implementing automated systems, real-time monitoring and predictive management to perform the most dangerous parts of mining, it is getting closer to the day when no miner may ever need to work underground. Instead, workers increasingly focus on operational innovations that bring even more value to the company.<sup>10</sup>

By applying the same discipline to operations with a focus on the supply chain yields similar outcomes in business to consumer industries, too. Under Armour is doing just that. Connected fitness is one of Under Armour's most important future growth areas, enjoying a 26 percent higher order value for digital sales from its connected fitness platform than its other online sales.<sup>11</sup> By tying connected fitness products to a customer's intimate usage data, Under Armour can make suggestions to customers that may lead to more sales. For example, based on customer

information, Under Armour knows that a customer from Miami is hiking in Vermont and saving her routes to MapMyHike.

**"We know she lives in a place like Miami and doesn't have gear for hiking. We can recommend gear she'll use and potentially deliver to her hotel."**

- Robin Thurston, then CEO of MapMyFitness

To successfully deliver on this kind of personalized service to individual customers across its entire consumer base, the intelligent digital supply chain is absolutely a key value proposition for an Under Armour customer.



# VALUE DELIVERED TO PRODUCERS & CONSUMERS BECAUSE OF THE INTELLIGENT DIGITAL SUPPLY CHAIN



Source: Boston Consulting Group<sup>12</sup>

## Using Intelligence and Analytics to Improve Lives

Part of business complexity for some of the world's best-known brands is hidden inside huge supply chains. Things like keeping track of the vast labor force, individual components and a vast array of suppliers and sub-suppliers are incredibly complex tasks for companies without sophisticated supply chain expertise.

Unscrupulous operators enter the supply chain by employing underage workers or requiring mandatory unpaid overtime in potentially dangerous conditions. For example, in certain parts of the world where armed militia groups use valuable mining operations to fund expansion, these two worlds collide and the minerals of interest to manufacturers are often secured through illegal means. These minerals are often referred to as Conflict Minerals.<sup>13</sup>

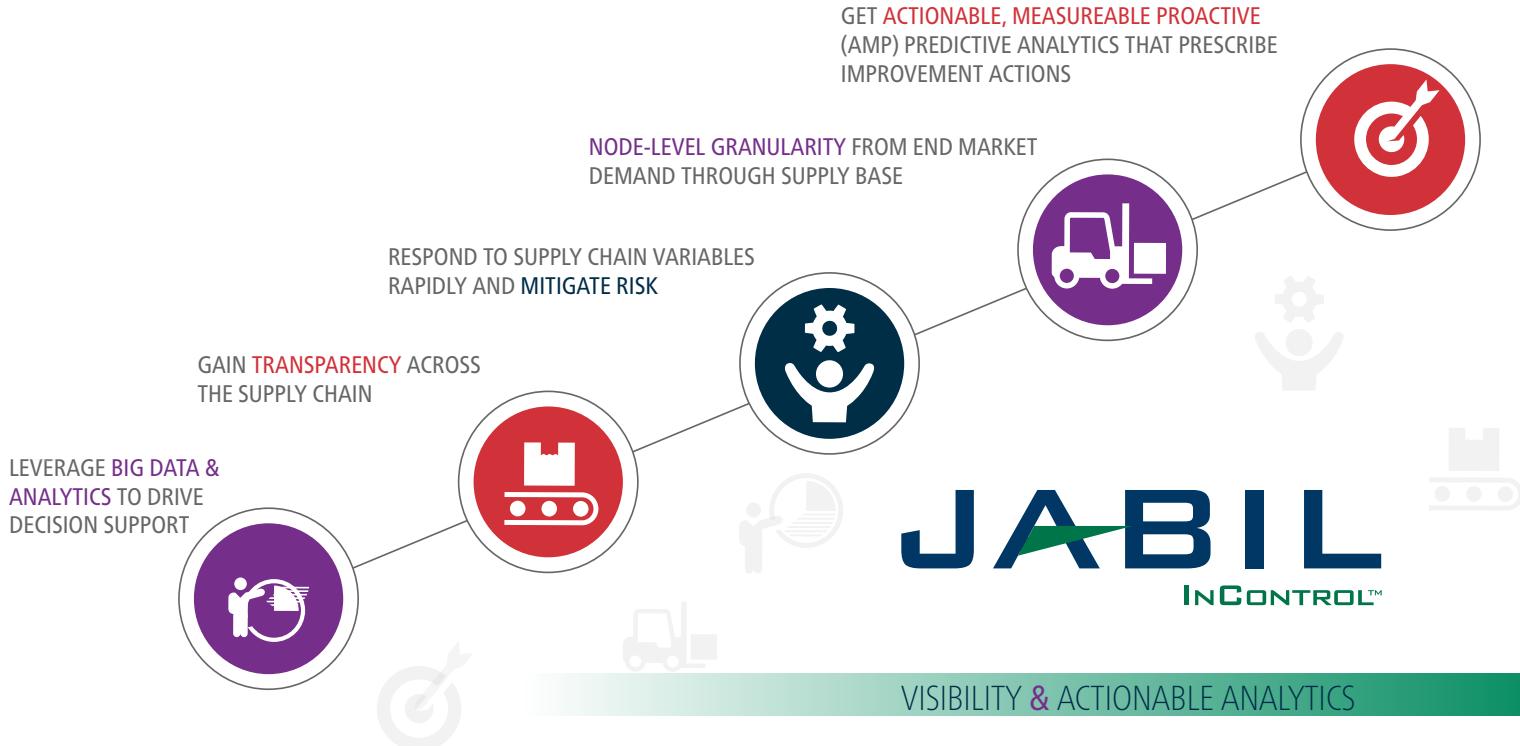
In the U.S., the Dodd Frank Wall Street Reform and Consumer Protection Act requires companies to identify where the minerals in their products come from and has successfully reduced the revenue to militias by 65 percent.

Ensuring that suppliers meet the requirements of the Dodd Frank act also means ensuring the safety and security of global workers, especially those in conflict regions. However, there is massive complexity in tracking and authenticating records for every worker for every supplier of every component at every level of the supply chain across the globe.



For instance, a simple smart phone has over 800 discrete components.<sup>14</sup> On any given day, there are billions of components in transit from hundreds of vendors around the globe. This doesn't even count the raw materials suppliers or consider supply shortages, natural disasters or even work stoppages that disrupt production.

With an intelligent digital supply chain, tracking this level of detail gets much easier. Underpinned by powerful cloud infrastructure and predictive and prescriptive analytics, manufacturers can easily identify non-compliant suppliers and the risks associated with an account.



## Conclusions

George Westerman, Research Scientist with the MIT Sloan Initiative on the Digital Economy and author of the book, "Leading Digital: Turning Technology into Business Transformation," underscores the value of leadership in digital transformations. He showed that companies that undergo successful digital transformation also happen to have 6 to 9 percent higher revenue and are 26 percent more profitable than competitors due to synergies across the digital business. Digital initiatives are reinventing industries by enabling new types of businesses. That's exactly what the intelligent digital supply chain has done. It has digitized everything about the supply chain and integrated comprehensive, real-time analytics to gain insights into operations that business leaders only dreamed about less than ten years ago.

What new opportunities could your business uncover through deep insights and real-time analytics into your supply chain? How many more Amazon-sized opportunities might emerge by finding the meaning behind the complexities in your supply chain?

## Jabil InControl™, a Market-Leading Intelligent Digital Supply Chain Solution for End-to-End Visibility

A winner of Gartner's "Supply Chain Innovation" award, Jabil's InControl is the world's leader in actionable analytics and intelligence, giving you the power to respond to the rapid changes in the digital economy.

Experts architect and engineer every supply chain solution according to your unique needs to ensure competitive advantage no matter how complex or massive the requirement.

World-class factory of the future technology, like 3-D printing and advanced automation – combined with digital supply chain intelligence – enable customers to thrive in the digital economy, unlocking unprecedented efficiencies, speed and execution.





**JABIL**

*Aim Higher.*

- 1 <http://www.pwc.com/gx/en/healthcare/publications/assets/pwc-global-new-entrants-healthcare.pdf>
- 2 [https://www.mckinsey.com/-/media/McKinsey/dotcom/client\\_service/Consumer%20Packaged%20Goods/PDFs/Trends%20that%20will%20shape%20the%20Consumer%20Goods%20Industry.aspx](https://www.mckinsey.com/-/media/McKinsey/dotcom/client_service/Consumer%20Packaged%20Goods/PDFs/Trends%20that%20will%20shape%20the%20Consumer%20Goods%20Industry.aspx)
- 3 <https://www.internetretailer.com/2015/12/15/lululemons-direct-consumer-sales-increase-nearly-16-q3>
- 4 <http://www.statista.com/statistics/503091/nike-s-dt-revenue-share-worldwide/>
- 5 <http://dtcwnewworkshops.com/2016/01/28/consumer-demand-shapes-dtc-wine-industry-in-2016/>
- 6 <http://www.businesswire.com/news/home/2016012500630/en/Direct-Wine-Shippers-Consumers-Grow-4X-Faster>
- 7 <http://ellenmacarthurfoundation.org/media/the-circular-economy-an-economic-opportunity-for-europe>
- 8 <http://money.com/2016/04/12/technology/oculus-rift-launch-fail/>
- 9 <http://www.forbes.com/sites/jasonvangelisti/2016/04/02/oculus-rift-shipments-delayed-by-unexpected-component-shortage/#1abac1bf387b>
- 10 <http://www.amazon.com/Leading-Digital-Technology-Business-Transformation/dp/1625272472>
- 11 <http://marketrealist.com/2016/01/amazon-takes-important-strides-connected-fitness-digital/>
- 12 <http://supplychainbeyond.com/digital-supply-chains/>
- 13 <https://www.sourceintelligence.com/what-are-conflict-minerals/>
- 14 <http://www.footmarkmobile.com/#007/c7bb>



**Joe McBeth**  
Nypro VP of Global Supply Chain



**Gina Clifford**  
Technology Communications Manager

 blogs.jabil.com

 facebook.com/JabilCircuitInc

 linkedIn.com/company/Jabil

 Twitter @JabilCircuitInc