ADELANTE

Moving Supply Chain & Logistics Leadership Forward

COMPETING ON CUSTOMER EXPERIENCE

The Driving Force Behind Supply Chain Innovation

2018
SUPPLY CHAIN
MARKET RESEARCH

Introduction

"Amazon.com is a very interesting retail concept, but wait till you see what Walmart is gearing up to do… IBM is already generating more revenue, and certainly more profit, than all of the top Internet companies combined." [1]

The year was 1999 and Louis V. Gerstner Jr., IBM's Chairman at the time, spoke those words at a meeting with analysts and investors. He also pointed out that in the previous year IBM's Internet sales were five times greater than Amazon's.

Fast forward to today and Amazon is the dominant e-commerce leader. According to e-commerce analytics provider One Click Retail, Amazon's e-commerce sales accounted for an estimated 44 percent of total e-commerce sales in the U.S. for 2017. [2] IBM doesn't even crack the Top 10 list, while Walmart was expected to capture just 3.6 percent of total e-commerce sales last year. [3]

"Nokia: One Billion Customers – Can Anyone Catch the Cell Phone King?" That was the cover story of the November 12, 2007 issue of Forbes magazine, featuring a smiling photo of Nokia's then-CEO, Olli-Pekka Kallasvuo, holding a soon-to-be-outdated Nokia phone to his ear. In the article, he was quoted as saying: "We have the widest portfolio in the industry and the deepest understanding of it, as opposed to having one or two hit products at a time." [4]

Forbes

---

[1] "IBM Chairman Says Internet Will Play Big Role in Future," Wall Street Journal, May 13, 1999
[2] "You'll Never Believe Amazon's Share of the E-Commerce Market," NASDAQ.com, January 11, 2018
[3] Ibid.
[4] "The Next Billion," Forbes, November 11, 2007

We now know the answer to the cover story's question: Apple and Samsung not only caught Nokia, they forced it out of the cellphone business.

There are many other examples of companies that were once industry leaders, but today are either laggards or out of business completely; companies such as Kodak, Lotus Software, Polaroid, Tower Records, BlackBerry, Circuit City, and Blockbuster.

Therefore, it's not surprising that "Disrupt Yourself Before Someone Else Does" has become a new business mantra, and why there's a lot of discussion today about the importance of innovation and improving customer experience.

Where does supply chain management — its people, processes, and technologies — fit into this conversation?

That is the main question this research will explore, along with other related questions:

- ⊘ Why is improving customer experience becoming a bigger priority today?

- ⊘ What factors are driving supply chain and logistics innovation today?

- ⊘ What are the biggest barriers to supply chain and logistics innovation?

- ⊘ Which technologies will drive the next wave of supply chain innovation?

Defining Supply Chain Innovation

What is Supply Chain Innovation (SCI)?

"SCI is not well understood," writes Ken Cottrill and Jim Rice in an MIT Center for Transportation & Logistics white paper on the topic.[5] *"There is no clear, commonly accepted definition of the concept; one company's SCI is another company's process improvement."*

The MIT Center for Transportation & Logistics (MIT CTL) launched a research project in 2013 to better understand SCI, and to help companies assess the potential of new ideas in terms of their supply chains. In the white paper referenced above, the authors share some of their early findings, including the following:

A common misconception is that a true innovation has to be new. Yet many (in fact most, according to the early observations of the MIT CTL research) highly successful innovations in the supply chain field are established ideas that have been redeployed in creative ways.

To help provide some clarity about the definition, we offer the following based on early observations from our research: *Supply chain innovation is the combining and application of a mix of inventions, existing processes, and technologies in a new way that achieves a desirable change in cost, quality, cash and/or service.*[6]

Another misconception is that supply chain innovation needs to be disruptive, but as Rice comments in a recent *Supply Chain Management Review* (*SCMR*) article, "A lot of time people expect supply chain innovation to disrupt an industry, but 98% of the time the process changes are not nearly as disruptive as the smartphone was for the mobile phone world. Instead, most of the innovations in the supply chain give you incremental improvement and are what Clay Christensen calls sustaining innovations. What's most important is that innovation is an ongoing effort. It shouldn't be episodic."[7]

---

[5] "Innovative or Inconclusive? Evaluating New Supply Chain Ideas," Ken Cottrill and Jim Rice, MIT CTL white paper, Spring 2013
[6] Ibid.
[7] "Next Gen Supply Chain: The NextGen Interview," Gary Forrger, Supply Chain Management Review, September 1, 2017

In another *SCMR* article, Rice and co-author Ashley Dorna, EVP Supply Chain and IT at Niagara Bottling, LLC, share the following insight:

> The vast majority of initiatives that qualify as a supply chain innovation (SCI) will not come from "light bulb" revelations. Instead, most will come from a series of incremental changes and continuous improvement initiatives in response to competitive pressures and market dynamics. This approach may not sound sexy — but it is very effective. MIT CTL's research points to this. Successful SCIs take a lot of patience, hard work, adoptive creativity, and trial-and-error learning over an extended period of time.[8]

Of course, as the MIT definition highlights, technology plays an important role in enabling supply chain innovation. Going back to Thornton May's observation, "Disruptive technology doesn't sneak up on anybody; it's nearly always loudly heralded long before its victims fall prey to it." There are many technologies being "loudly heralded" today, including Artificial Intelligence and Machine Learning, Blockchain, Internet of Things, Mobile Devices and Applications, Drones and Driverless Trucks, Robots and Warehouse Automation, and Supply Chain Operating Networks ("Network Effects" Platforms).

> Which of these technologies will truly disrupt an industry? Which ones will help companies achieve incremental improvements in cost, quality, cash and/or service? Which ones will ultimately fail and fade away?

Those are the questions that companies and supply chain professionals wrestle with today. Some of them make the mistake of becoming enamored with and chasing these "shiny new things" without first identifying or understanding the problem or business opportunity they want to address. As Rice cautions, "Innovation can't just come from someone in top management who just read a great article or book about innovation and then demands his or her company to be innovative." [9]

Others make the mistake of ignoring or dismissing the trends altogether. In Kodak's case, for example, "they saw the digital world coming on, but [they] were convinced that digital cameras wouldn't have traction outside of the professional market." [10]

Success at supply chain innovation, therefore, requires taking the middle path, between irrational bliss and stubborn complacency.

---

[8] "Perseverance Pays in the Innovation Game," Ashley Dorna and Jim Rice, Supply Chain Management Review, May/June 2014
[9] Forrger
[10] Diamandis

Survey Results

Is delivering an enhanced "Customer Experience" becoming a defined and measured objective within supply chain organizations? What factors are driving supply chain and logistics innovation today, and what are the biggest barriers? Which technologies will drive the next wave of supply chain innovation?

To gain insights on those questions and more, Adelante SCM and BluJay Solutions conducted a web survey of supply chain and logistics professionals in March 2018.

As part of the survey, we asked manufacturers, retailers, Logistics Services Providers, and other companies in the Americas, EMEA, and APAC to rate their company's supply chain performance relative to peers in their industry (ranging from "Significantly Below Average" to "Significantly Above Average"). We also asked them to characterize their company's culture with regards to technology adoption (ranging from "Laggards" to "Innovators"). This enabled us to compare the responses between Above Average and Innovator companies with those from Below Average and Laggard companies.

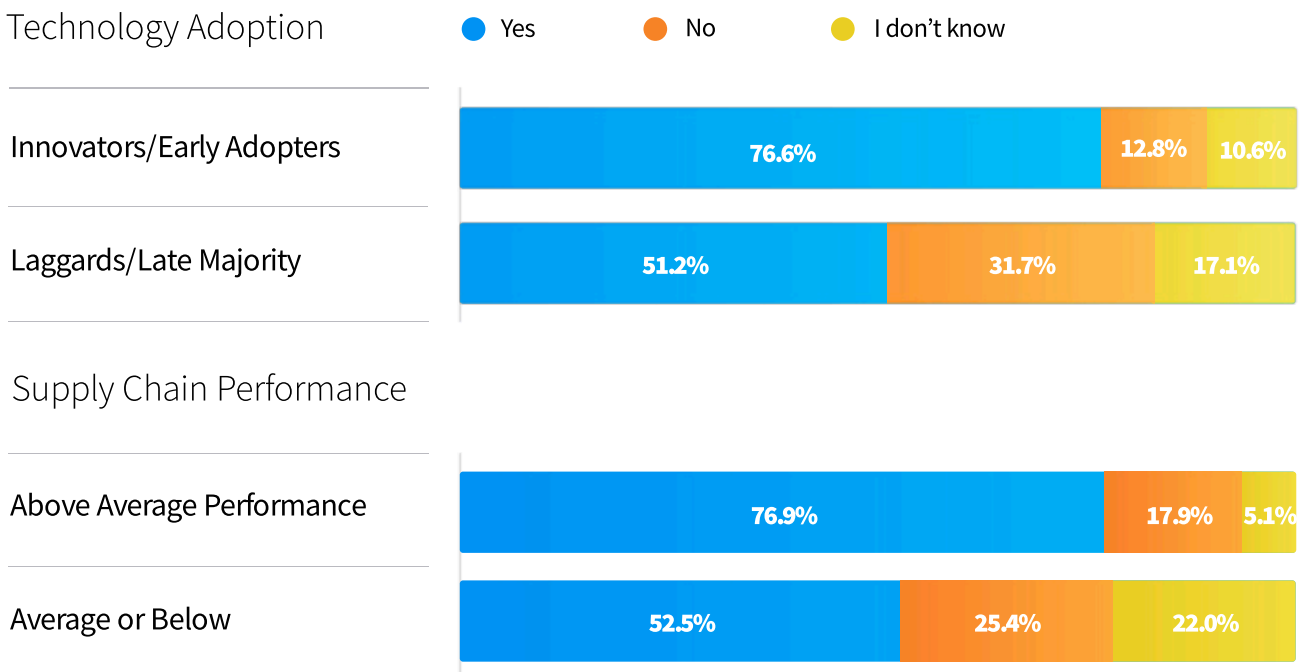The following sections summarize some of the key findings from the survey results.

Customer Experience: Top Driving Force for Innovation for High-Performing and Innovator Companies

Two-thirds (66.4%) of the respondents reported that delivering an enhanced customer experience is a defined and measured objective within their supply chain organizations.

There are two ways to view these findings: You can either say it's discouraging that many more companies aren't incorporating customer experience within their supply chain performance metrics, especially as the "Amazon Effect" ripples across all industries, or you can say it's encouraging that so many supply chain organizations are already focusing on customer experience because you had assumed the percentage would have been much lower.
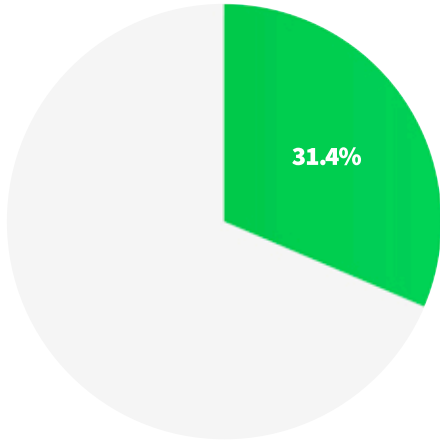
Delivering an enhanced customer experience, however, was notably higher among Innovator/Early Adopter and Above Average Performance companies (76.6% and 76.9%, respectively), and it was lower for Laggard/Late Majority and Average/Below Average Performance companies (51.2% and 52.5%, respectively).

Is delivering an enhanced Customer Experience a defined and measured objective within your supply chain organization?

Technology Adoption   ● Yes   ● No   ● I don't know

Innovators/Early Adopters	76.6%	12.8%	10.6%
Laggards/Late Majority	51.2%	31.7%	17.1%

Supply Chain Performance

|			
Above Average Performance	76.9%	17.9%	5.1%
Average or Below	52.5%	25.4%	22.0%

The results were similar with regard to which factors are driving supply chain innovation at companies today. Overall, "To reduce costs" and "To deliver an enhanced customer experience" received the same percentage of top rank votes (31.4%), with "To create a competitive advantage" placing third (17.5%).
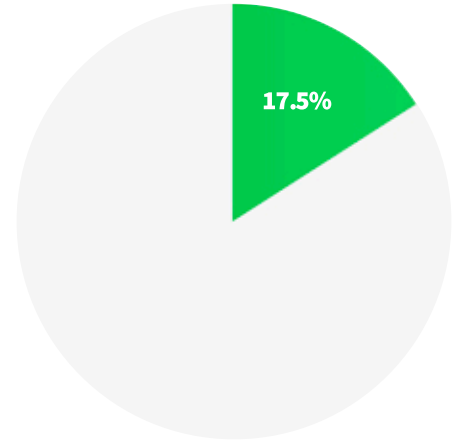
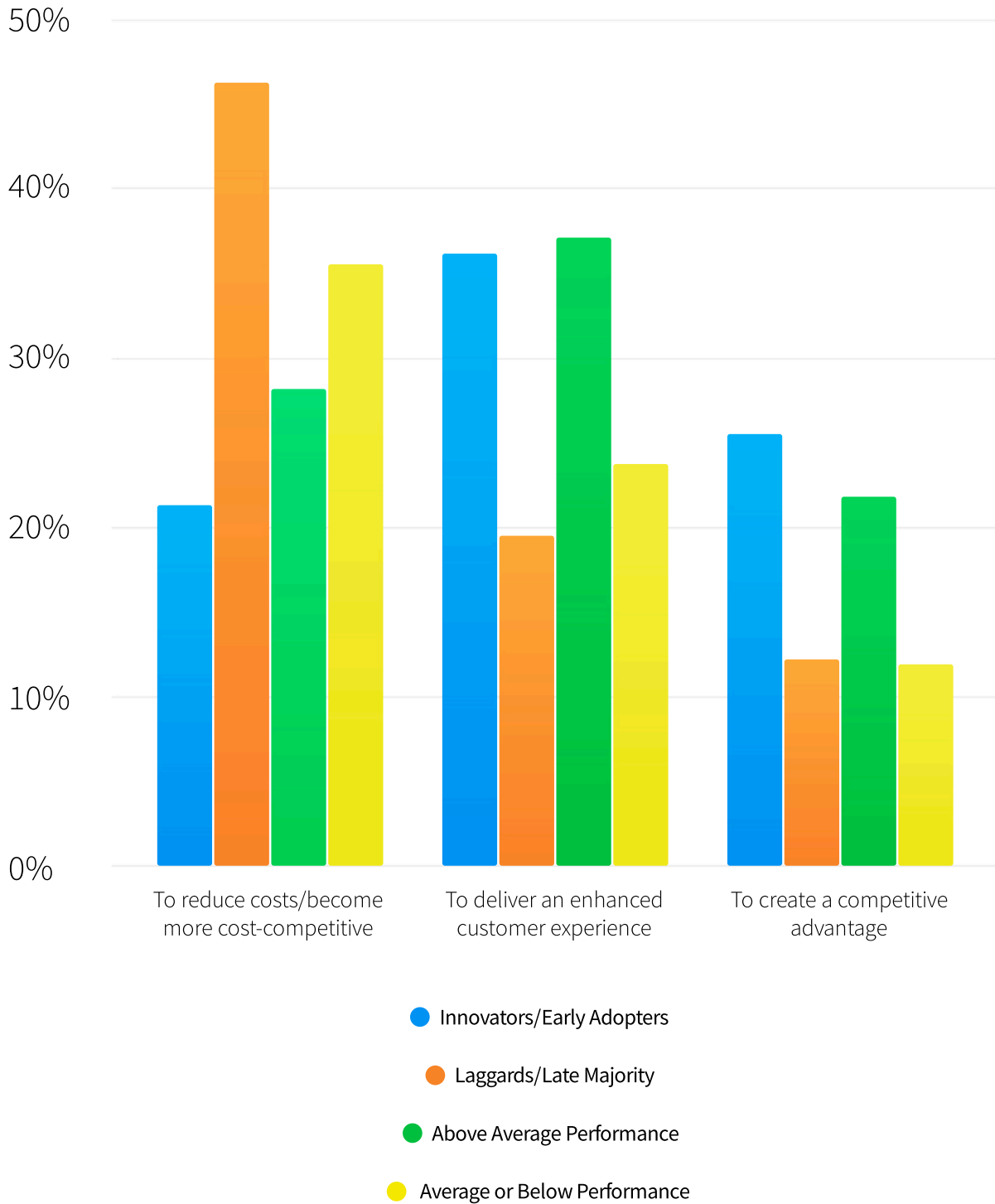⊘ To deliver an enhanced customer experience

⊘ To reduce costs

⊘ To create a competitive advantage

31.4%

31.4%

17.5%
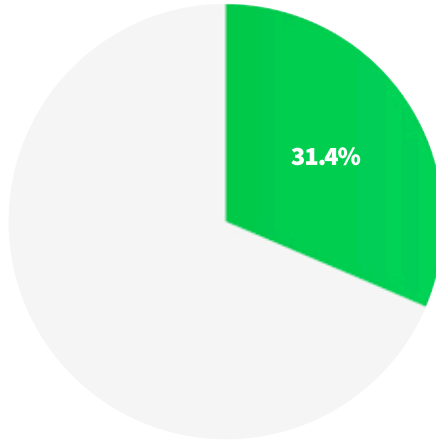
However, "To deliver an enhanced customer experience" received the most top rank votes from both Innovator/Early Adopter and Above Average Performance companies (36.2% and 37.2%, respectively). "To reduce costs" actually placed third for Innovator/Early Adopter companies (21.3%), behind "To create a competitive advantage" (25.5%).

What are the top three factors driving supply chain innovation at your company today? [Percentage of top rank votes shown]

Legend:
- ● Innovators/Early Adopters
- ● Laggards/Late Majority
- ● Above Average Performance
- ● Average or Below Performance

Simply put, when it comes to what's driving supply chain innovation today, "cost reduction" is taking a backseat to "delivering an enhanced customer experience" for companies with above average supply chain performance and those that are innovators or early adopters of technology.

It is also interesting to note the differences between Shippers (manufacturers, retailers, and distributors) and Logistics Service Providers (LSPs) with regard to innovation-driving forces. For Shippers, "To reduce costs" received the greatest percentage of top rank votes (33.7%), but for LSPs, cost reduction actually placed third (21.1%), behind "To deliver an enhanced customer experience" (31.6%) and "To create a competitive advantage" (28.9%), which received far fewer top rank votes from Shippers (14.4%).

What are the top three factors driving supply chain innovation at your company today? [Percentage of top rank votes shown]

⊘ Shippers   ⊘ LSPs

Shippers: 33.7%, 31.7%, 14.4%
LSPs: 21.1%, 31.6%, 28.9%
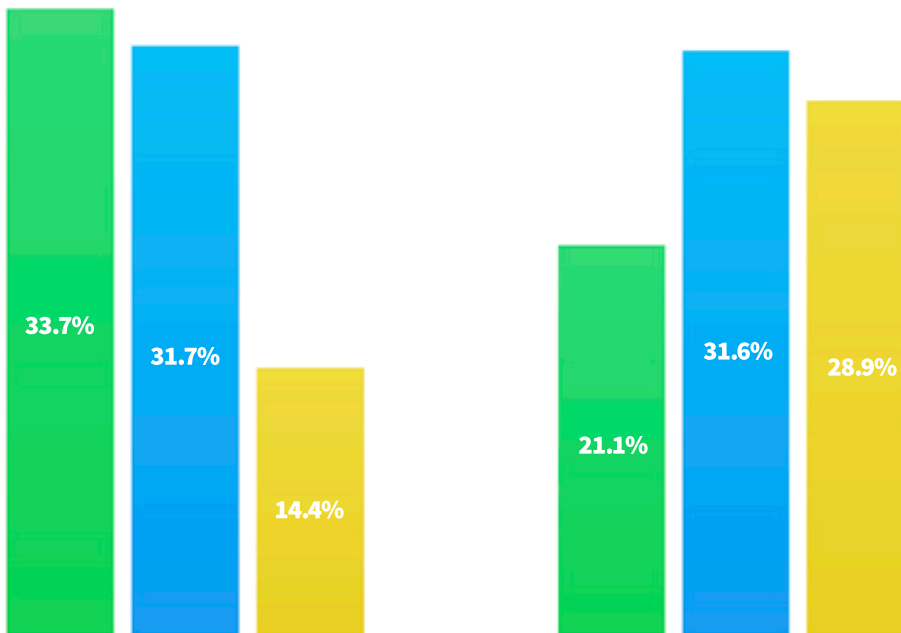
● To reduce costs/become more cost-competitive

● To deliver an enhanced customer experience

● To create a competitive advantage

In short, as LSPs look for ways to differentiate themselves from the competition, they are focusing less on competing on cost (which often leads to commoditization) and focusing more on competing on innovation.

## The Biggest Barriers to Innovation: Outdated IT Systems and Siloed Systems/Processes

"Change management hurdles" received the most total votes as a barrier to innovation — that is, the most votes for first, second, or third place combined.

However, for all respondents, "Existing IT systems are outdated" received the highest percentage of top rank votes (20.4%), followed by "Siloed systems and/or processes" (17.5%), "Lack of support from IT or other functional groups" and "Lack of flexibility/innovation of supply chain partners" (both at 16.1%), and "Change management hurdles" (15.3%).

In other other words, although "change management hurdles" is a barrier to innovation for most companies, outdated IT systems is a bigger barrier for most. This is particularly true for Laggard/Late Majority and Average/Below Average Performance companies.

What are the top three barriers to supply chain and logistics innovation at your company today? [Percentage of top rank votes shown]
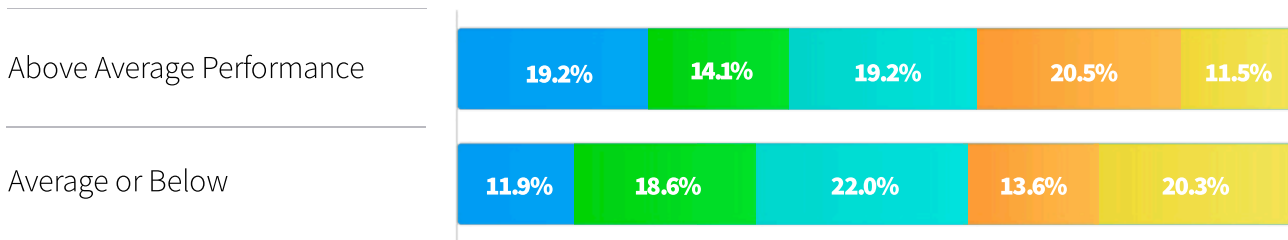
Technology Adoption

Innovators/Early Adopters	21.3%	19.1%	17.0%	12.8%	10.6%
Laggards/Late Majority	12.2%	14.6%	29.3%	19.5%	17.1%
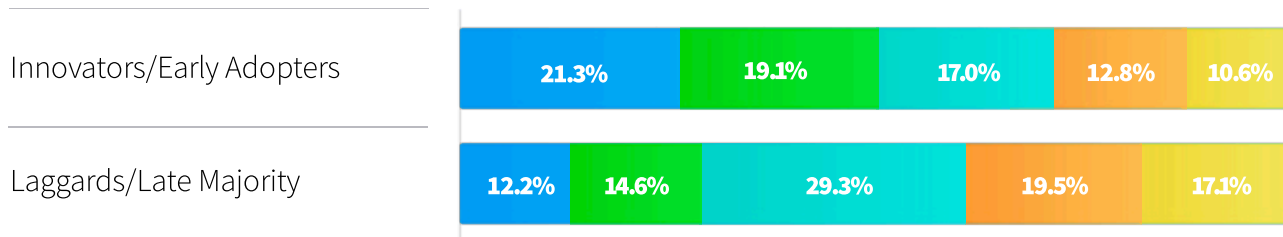
- ● Lack of flexibility/innovation of supply chain partners
- ● Lack of support from IT or other functional groups
- ● Existing IT systems are outdated
- ● Siloed systems and/or processes
- ● Change management hurdles

Not surprisingly, "Existing IT systems are outdated" was the barrier that received the highest percentage of top rank votes from Laggards/Late Majority companies (29.3%), but it ranked third for Innovators/Early Adopters (17.0%). For Innovators/Early Adopters, the barrier that received the highest percentage of top rank votes was "Lack of flexibility/innovation of supply chain partners" (21.3%).

"Existing IT systems are outdated" was also the barrier that received the highest percentage of top rank votes from Average/Below Average Performance companies (22.0%). For Above Average Performers, the barrier that received the highest percentage of top rank votes was "Siloed systems and/or processes" (20.5 %).

What are the top three barriers to supply chain and logistics innovation at your company today? [Percentage of top rank votes shown]

Supply Chain Performance

Above Average Performance				
19.2%	14.1%	19.2%	20.5%	11.5%

Average or Below				
11.9%	18.6%	22.0%	13.6%	20.3%

- Lack of flexibility/innovation of supply chain partners
- Siloed systems and/or processes
- Lack of support from IT or other functional groups
- Change management hurdles
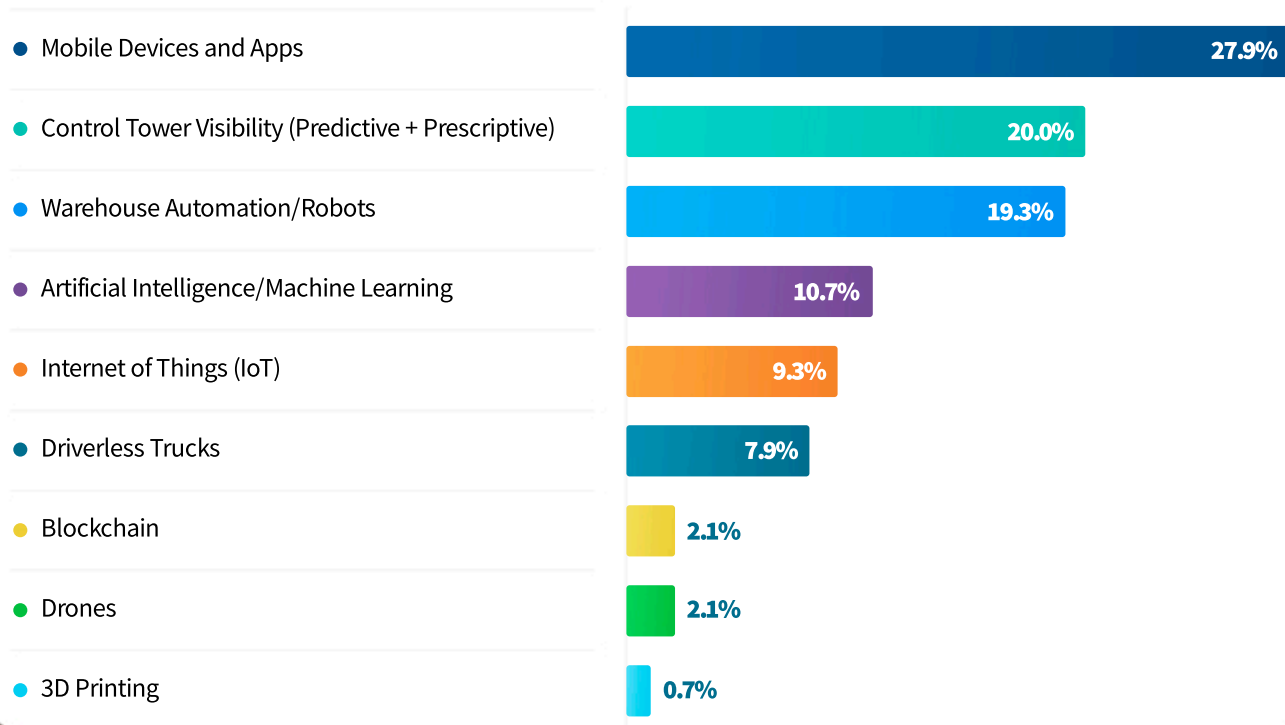- Existing IT systems are outdated

These findings suggest that in order to drive faster and more efficient supply chain innovation, companies need to replace their outdated IT systems with modern ones and eliminate the silos that still exist between their systems and processes.

Mobile Technology, Control Tower Visibility, and Warehouse Automation/Robots Lead the Way in Delivering Innovation Benefits

Despite all the hype surrounding blockchain, drones, and driverless trucks, those technologies ranked near the bottom of the list for delivering value in the next five years in terms of percentage of top rank votes (2.1%, 2.1%, and 7.9%, respectively).

At the top of the list? "Mobile Devices and Apps," which received the most total votes and highest percentage of top rank votes (27.9%). Control Tower Visibility (20.0%) and Warehouse Automation/Robots (19.3%) ranked second and third, respectively.

In five years, which technologies will have delivered the most supply chain innovation benefits? [Percentage of top rank votes shown]

Technology	Percentage
Mobile Devices and Apps	27.9%
Control Tower Visibility (Predictive + Prescriptive)	20.0%
Warehouse Automation/Robots	19.3%
Artificial Intelligence/Machine Learning	10.7%
Internet of Things (IoT)	9.3%
Driverless Trucks	7.9%
Blockchain	2.1%
Drones	2.1%
3D Printing	0.7%

In general, the top three technologies are all further along the maturity curve and have more established records of delivering benefits than the technologies lower on the list. The findings suggests that perhaps there's still a level of skepticism or "wait and see" attitude among supply chain executives when it comes to some emerging technologies, like blockchain and drones.

In fact, only 13.6% of the respondents characterized their companies as "Innovators" when it comes technology adoption, compared to 30% who characterized their companies as "Laggards" or "Late Majority."

It is interesting to note, however, that Warehouse Automation/Robots received the highest top rank percentage from Innovator/Early Majority companies (26.5%), while Mobile Devices and Apps ranked third for them (14.3%). This suggests that for these companies, Warehouse Automation/Robots is higher up on the innovation scale than mobile technology and control tower visibility.

Innovators Achieve Higher Levels of Supply Chain Performance

Overall, 45.3% of the respondents rated their companies' supply chain performance Slightly Above Average, with 32.8% rating their performance Average and only 11.7% rating themselves Significantly Above Average.

However, a greater percentage of Innovator/Early Adopter companies rated their supply chain performance Significantly Above Average (23.4%) compared to Laggards/Late Adopters (2.4%) and all total respondents (11.4%). This suggests that technology Innovators/Early Adopters tend to achieve higher levels of supply chain performance.

How would you rate your company's overall supply chain performance relative to peers in your industry?

⊘ Innovators/Early Adopters

23.40% 12.77% 57.45%

⊘ Laggards/Late Majority

12.20% 29.27% 56.10%
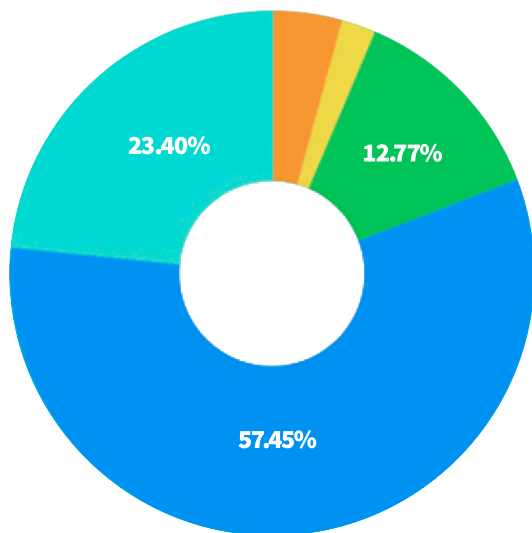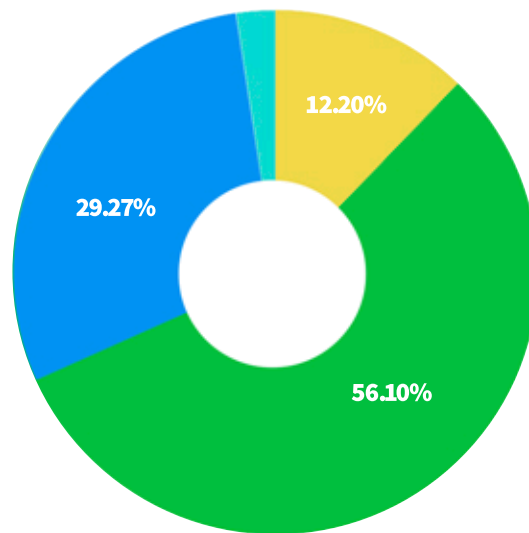
- ● Significantly below average
- ● Slightly below average
- ● Average
- ● Slightly above average
- ● Significantly above average

Laggards/Late Majority Companies Rely More on Excel Spreadsheets

Overall, the most used supply chain systems are TMS (74.6%), Excel spreadsheets (67.4%), ERP/OM (55.8%), WMS (55.1%); the least-used systems are GTM (16.7%), solutions from 3PLs (27.5%), and Business Intelligence (39.1%).

As you would expect, a much greater percentage of Laggards/Late Adopters use Excel spreadsheets compared to Innovators/Early Adopters (78.0% to 56.3%). Meanwhile, a greater percentage of Innovators/Early Adopters use TMS and WMS solutions compared to Laggards/Late Adopters (77.1% vs. 61.0% for TMS, and 56.3% vs. 43.9% for WMS).

What systems do you currently use to manage your supply chain? Check all that apply.

	Innovators/Early Adopters	Laggards/Late Majority
Excel Spreadsheets	56.3%	78.0%
WMS	56.3%	43.9%
TMS	77.1%	61.0%

● Innovators/Early Adopters

● Laggards/Late Majority
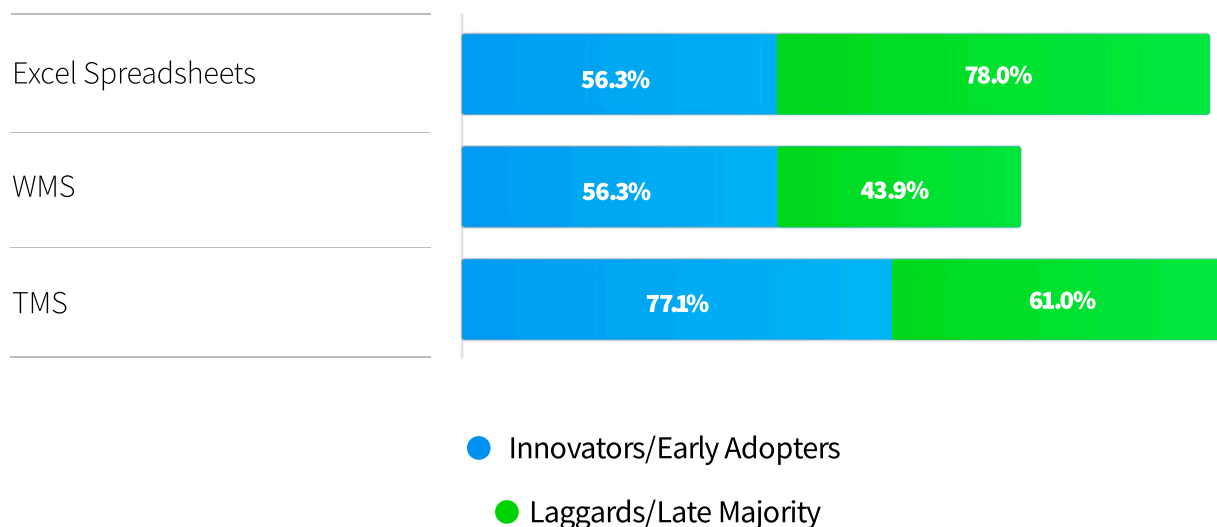
Since Laggards/Late Majority companies report having lower levels of supply chain performance compared to Innovators/Early Adopters (see previous section), these findings suggest that their greater reliance on Excel spreadsheets and lower use of WMS and TMS solutions might be contributing factors.

The survey results revealed some other interesting findings:

- ☑ A greater percentage of Above Average Performance companies use Business Intelligence solutions compared to Average/Below Average companies (46.8% to 28.8%).

- ☑ A greater percentage of North American companies use TMS solutions compared to European companies (80.0% to 57.6%).

- ☑ A greater percentage of Logistics Service Providers use TMS solutions compared to Shippers (92.1% to 69.5%). Meanwhile, a greater percentage of Shippers use Demand Planning solutions compared to LSPs (49.5% vs. 21.1%).

- ☑ A greater percentage of large companies (over $1 billion in revenues) use TMS, Demand Planning, and Business Intelligence solutions compared to smaller companies (86.4% vs. 63.9% for TMS, 53.0% vs. 31.9% for Demand Planning, and 51.5% vs. 27.8% for Business Intelligence).
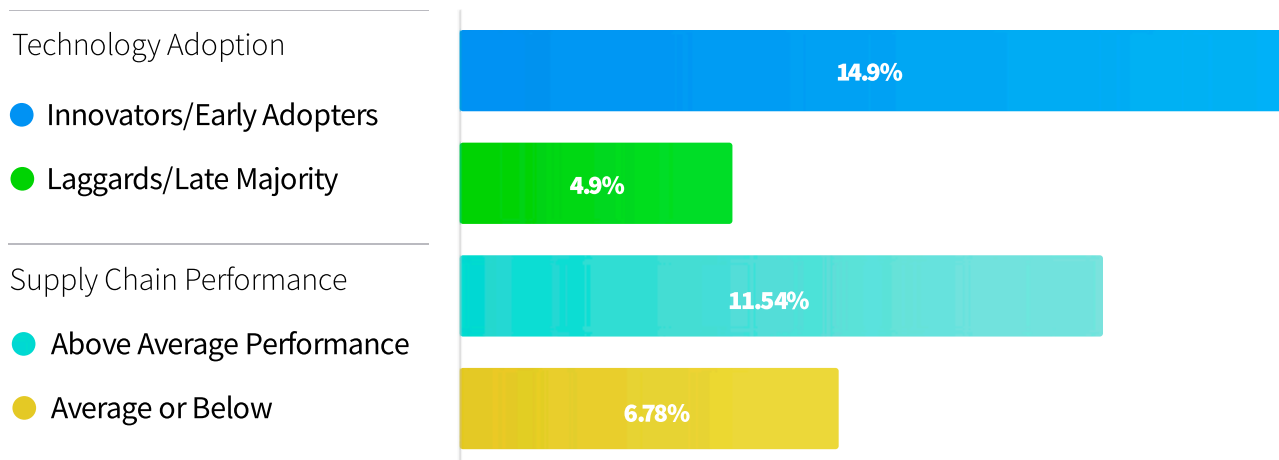
Trading Partner Connectivity: A Greater Priority for Innovators and Above Average Performance Companies

Overall, the five supply chain investment priorities that received the greatest percentage of top rank votes were Transportation (28.5%), Supply Chain Visibility (19.7%), Warehousing (19.0%), BI/Analytics (13.1%), and Trading Partner Connectivity (9.5%). The results are not too surprising considering that many of the respondents are involved with transportation, and that many of these investment areas, especially Supply Chain Visibility, are always near the top of the list.

The most interesting finding is how different segments of the respondents ranked Trading Partner Connectivity.

For example, Trading Partner Connectivity (TPC) received 14.9% of top rank votes from Innovators/Early Adopters, but only 4.9% of top rank votes from Laggards/Late Adopters. Similarly, TPC received 11.5% of top rank votes from Above Average Performance companies, but only 6.8% of top rank votes from Average/Below Average Performance companies.

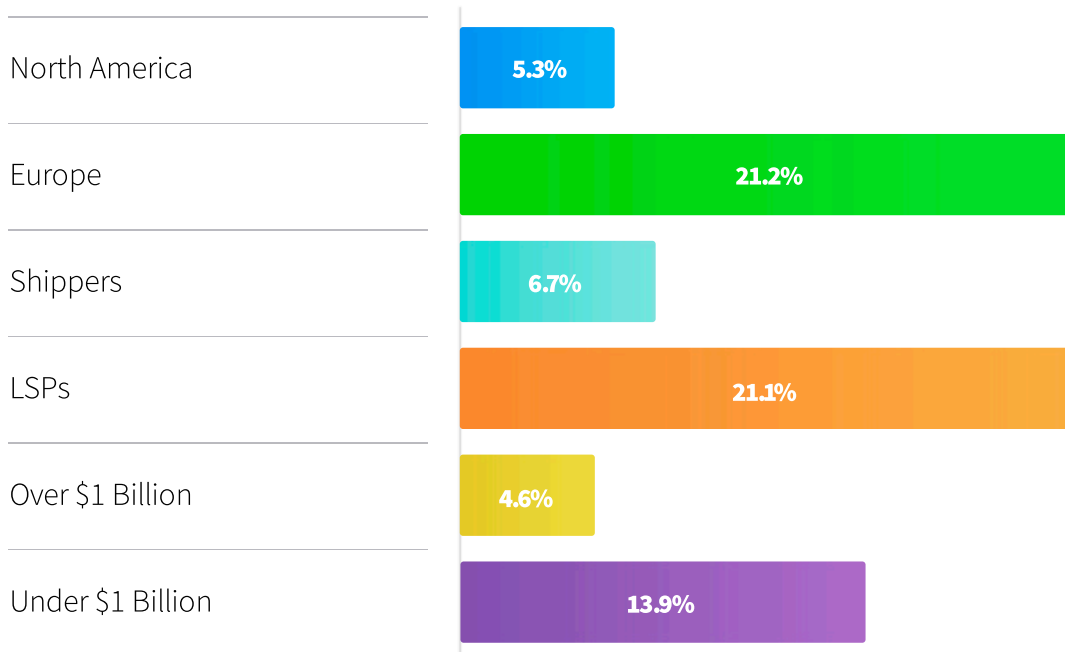## Percentage of Top Rank Votes for Trading Partner Connectivity

Technology Adoption

- ● Innovators/Early Adopters — 14.9%
- ● Laggards/Late Majority — 4.9%

Supply Chain Performance

- ● Above Average Performance — 11.54%
- ● Average or Below — 6.78%

These findings suggest that Innovators/Early Adopters, as well as Above Average Performance companies, are ahead of the curve in prioritizing Trading Partner Connectivity as an area to invest in to drive further supply chain innovation.

TPC also received a much greater percentage of top rank votes from European companies compared to North American companies (21.2% vs. 5.3%); a much greater percentage from Logistics Service Providers compared to Shippers (21.1% vs. 6.7%); and a greater percentage from small companies (under $1 billion in revenues) compared to large companies (13.9% vs. 4.6%).

Percentage of Top Rank Votes for Trading Partner Connectivity

Category	Percentage
North America	5.3%
Europe	21.2%
Shippers	6.7%
LSPs	21.1%
Over $1 Billion	4.6%
Under $1 Billion	13.9%

The fact that TPC ranks higher for Logistics Service Providers compared to Shippers makes sense since connecting with many trading partners is central to an LSP's business model and value proposition.

Why does TPC rank higher for smaller companies? One possible explanation is that they are getting renewed pressure from their larger trading partners to connect electronically, especially since faster and more affordable ways to connect (beyond EDI) are now available — via APIs and web services, for example.

Further research is required to understand the difference between European and North American companies.

Summary and Recommendations

The most important lesson learned from companies that have been disrupted is the danger of becoming too complacent with the status quo. Simply put, past performance is no guarantee of future results; the people, processes, technologies, and other factors that made you successful up to this point are not necessarily going to be the same as what enables you to achieve new levels of success moving forward.

One trend that is disrupting the status quo and serving as a catalyst for innovation is companies placing customers at the center of their supply chains. Competing on price is taking a back seat to competing on customer experience, which for Innovators and Above Average Performance companies is already the main driving force for supply chain innovation. It is important, however, to strike the right balance between delivering an enhanced customer experience and doing it profitably.

True supply chain innovation doesn't have to be completely new or disruptive. As defined by MIT, supply chain innovation is the combining and application of a mix of inventions, existing processes, and technologies in a new way that achieves a desirable change in cost, quality, cash and/or service.[11]

Success at supply chain innovation requires taking the middle path, between irrational bliss (chasing the next new shiny technology without a defined objective) and stubborn complacency (completely dismissing new technologies and competitors and believing that "the way we've always done things" will continue to deliver success).

Recommendations

Stay informed of technology trends and new competitors — and don't be quick to dismiss them!

As Thornton A. May pointed out, "Disruptive technology doesn't sneak up on anybody; it's nearly always loudly heralded long before its victims fall prey to it." [12] Model and simulate "What if?" scenarios on an ongoing basis, and don't be afraid to experiment and test new technologies and business models. In short, you don't want to get caught flat-footed and unprepared if and when the rules for success change.

---

[11] Cottrill and Rice
[12] May

Make "delivering an enhanced Customer Experience" a defined and measurable objective within your supply chain organization.

More research is required to understand how companies are measuring Customer Experience today, but our survey results confirm what industry analysts have been saying: Competing on customer experience is becoming a competitive differentiator, and Innovators and Above Average Performing companies are already ahead of the curve here.

Break down the silos between your systems and processes.

As our survey revealed, outdated IT systems is one of the biggest barriers to supply chain innovation, especially for Laggard/Late Majority and Average/Below Average Performance companies; these companies also tend to use Excel spreadsheets more than their counterparts. Simply put, it's very difficult to innovate when your IT systems are old and rigid.

Modernize your IT systems.

This recommendation is a long-standing one, but the survey results once again confirm that operating in silos is another big barrier to innovation, and by extension, a barrier to delivering an enhanced customer experience.

About Adelante SCM

Adelante means "forward" or "move ahead" in Spanish. We chose this as our name because we are moving supply chain and logistics leadership forward by making it easier for industry professionals to share ideas, knowledge, and advice with each other. Adelante SCM is a peer-to-peer learning and networking community for supply chain and logistics executives and young professionals.

Founder and president, Adrian Gonzalez is a trusted advisor and leading industry analyst with more than 18 years of research experience in transportation management, logistics outsourcing, global trade management, social media, and other supply chain and logistics topics.

He is a member of the Council of Supply Chain Management Professionals and is a LinkedIn Influencer with thousands of followers. Adrian has a B.S. degree in Materials Science and Engineering from Cornell University. He also earned a Graduate Certificate in Supply Chain Management from Northeastern University, where he also served as an adjunct instructor in their Executive MBA program.

About BluJay Solutions

BluJay Solutions delivers supply chain software and services to the world's most progressive retailers, distributors, freight forwarders, manufacturers, and logistics service providers. Transforming supply chain logistics with the BluJay Global Trade Network, we enable customers to unlock the power of more than 40,000 universally connected partners. With BluJay, companies can achieve greater trade velocity, transform their supply chain economics for disruptive advantage, and see beyond the horizon to optimize their future in the global economy. To learn more, visit: www.blujaysolutions.com.