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Supply Chain Planning Drives Better Business Performance

in the Modern Enterprise

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IDC OPINION

The supply chain continues to undergo almost unparalleled levels of change, and planning is at the core of that change. Productivity, quality, forecast accuracy, and service are performance measures that still apply of course, but digital supply chain transformation is now poised to change everything. Indeed, after a long history of being relegated to support status, the supply chain is now perceived by manufacturers and retailers as a strategic tool for business performance and growth. Supply chain planning is at the heart of the modern supply chain and is central to overall supply chain transformation. If companies don't get supply chain planning right, they put their sales and profits at risk.

IDC conducted a recent global research study that explored current and future pressures on supply chain planning and how modern digital technologies can drive supply chain transformation initiatives. Key findings from the survey include:

-  Companies with more mature supply chain planning capabilities utilizing an integrated planning suite and broad functional collaboration outperform less mature competitors in their markets.
-  Although 65% of companies believe that their supply chain planning capabilities are a source of competitive differentiation today, this number will fall to 35% by 2023. This suggests that companies either do not view their supply chains as adaptable or are unconvinced that the resources they have in place today will service them well into the future.
-  Companies with supply chains that are further along in their digital transformation efforts are twice as likely to think that their capabilities will remain a competitive differentiator in the future.
-  Supply chains that are resilient to both internal and external disruptions are critical, and resilient supply chains are better positioned to leverage market opportunities and new business models.

IN THIS WHITE PAPER

This IDC White Paper, sponsored by Kinaxis, explores the results from a research study about current and future pressures on supply chain planning and how modern digital technologies are driving supply chain transformation initiatives. Supply chain transformation is both how companies improve efficiency and effectiveness in the short term and how they drive for supply chain resiliency/agility in the longer term to respond to business changes and avoid business disruption. Technology transformation is shifting from manual, Excel-based functional processes to investments in end-to-end processes and sophisticated analytics including artificial intelligence (AI)/machine learning.

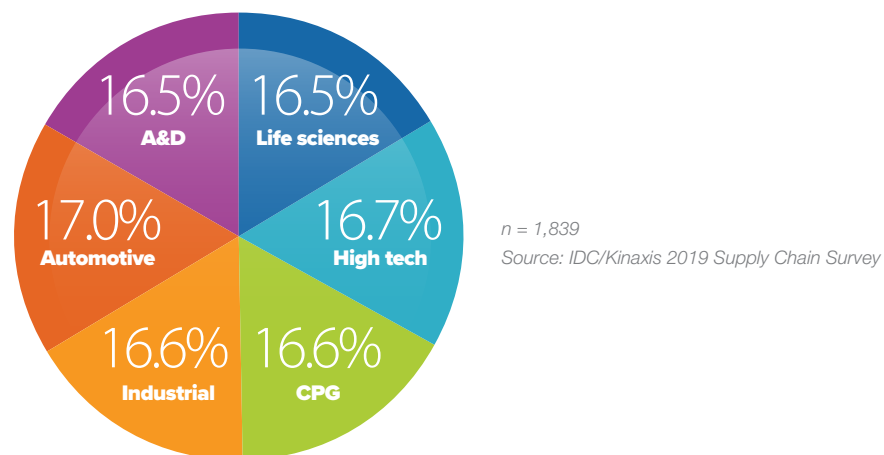
The survey that underpins this study looked across three broad topics: the overall business and supply chain environment, supply chain transformation efforts, and supply chain planning efforts specifically.

METHODOLOGY

Survey Demographics

The survey was conducted in the third quarter of 2019 and included 1,839 respondents across three regions and six different subindustries within manufacturing. Figure 1 shows industry demographics.

Figure 1. Industry Demographics



Key demographics include:

- Respondents were evenly distributed across North America, EMEA, and APAC.
- Of the companies surveyed, 16% were large enterprise companies above \$5 billion in annual revenue, 70% were medium-sized companies with \$1 billion to \$5 billion in revenue, and 14% were small companies with \$500 million to \$1 billion in revenue.
- All respondents either work in or have significant influence over their supply chain and self-identify as either supply chain planners (people doing the actual supply chain planning) or supply chain planning leadership personas.

One important goal for the survey was to poll a broad audience to generate as rich and diverse a set of results as possible. This document focuses on the overall findings while weaving in notable industry, region, persona, or company size insights.

KEY FINDINGS

The survey provided a wealth of data and insight for supply chain planning and transformation, and we have identified five key findings that we will explore in greater detail in this document:



Companies with more mature supply chain planning capabilities utilizing an integrated planning suite and broad functional collaboration outperform less mature competitors in their markets. Overall supply chain planning maturity is improving, with 25% of survey respondents judging their supply chain to be currently in the top 2 stages of maturity (managed and optimized) that correlates significantly with higher revenue growth performance. It is notable that supply chain planners (those doing the actual supply chain planning work) view their planning tools more problematically than do their managers.



Supply chain planning will decline significantly as a source of competitive differentiation by 2023. Fully 65% of companies in this survey see their supply chain as a competitive differentiator today, but that optimism will fall to 35% in the next three years, suggesting that either their supply chains are not viewed as adaptable or the in-place capabilities today will not suffice for tomorrow.



Companies that are growing well ahead of their industry average are much more likely to view themselves as more advanced in their supply chain transformation efforts, and twice as likely to see their supply chain as a competitive differentiator in the future.

Supply chain transformation efforts are progressing, and companies that view themselves as more mature expect their supply chains to be a competitive differentiator in the future. Note that 63% of surveyed companies are still below the transformation maturity midpoint, making continued progress imperative lest they become vulnerable to disruption.



Survey respondents clearly identified data and supply chain visibility as the most significant impediments to better supply chain planning.

The inability to see what is happening in the supply chain in real time and to access timely, accurate data are the biggest impediments to improving supply chain planning specifically and supply chain performance overall. Over half of the companies still use spreadsheets significantly to facilitate their supply chain planning efforts, which speaks to the level of the opportunity to improve planning.



Resilient supply chains will be better positioned to leverage new opportunities and new business models.

Although current levels of resiliency may be viewed as able to meet current business needs, resiliency is equally viewed as inadequate as business requirements and models shift. It seems clear that resiliency is one of the key capabilities that must evolve if supply chains are to remain a competitive differentiator. Indeed, companies are 20% more likely to prioritize supply chain resiliency over things such as customer centricity or new product innovation.





CHALLENGES AND OPPORTUNITIES IN SUPPLY CHAIN PLANNING

The supply chain continues to undergo almost unparalleled levels of change, and planning is at the core of that change. Productivity, quality, forecast accuracy, and service are still important metrics, yet digital supply chain transformation is poised to change everything. In the various surveys IDC has fielded since 2018, three broad observations have consistently risen above all others:

- After years of being relegated to support status, the supply chain is now perceived by manufacturers and retailers as a strategic tool for business performance and growth — moving from a “cost center” to an “opportunity center.”
- Digital technology is a significant driver of change in the supply chain, reflecting both the potential for driving transformation and the lack of full clarity into true potential.
- Supply chain planning is central to overall supply chain transformation — if you don’t get planning right, you don’t get the supply chain right.

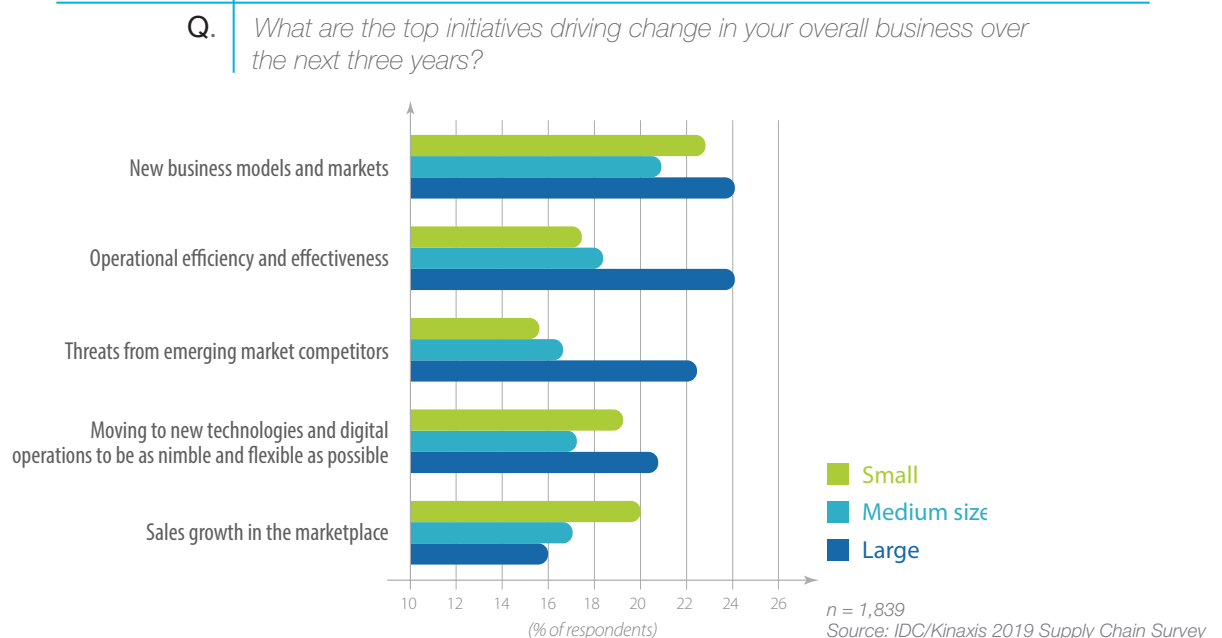
Supply chain planning is unique in the context of the main elements of a modern supply chain because it overarches all activities. Thinking about product design in the supply chain requires planning for manufacturing. Thinking about manufacturing requires planning for demand, supply, execution and delivery. Thinking about delivery/execution means planning for warehouse and transportation capacity. Thinking about design and manufacturing requires planning for postsales operation and maintenance. Indeed, planning is at the heart of the modern supply chain and the glue that holds it together. It is critical, therefore, that as businesses move along their supply chain transformational journey, they stop planning in silos within their company (demand planning, supply planning, inventory planning) and integrate multitiered supply, downstream demand, and postsales support.

Those companies that fully integrate and synchronize supply chain planning across the enterprise and better utilize the massive breadth of data now available to their organizations will define the best-in-class supply chains of the future. More than anything else, the ability to leverage information across the extended enterprise will be the critical capability. Companies with disconnected or non-synchronized supply chain planning capabilities will simply not be able to do this well. If we further accept that consumers/customers are the drivers of change in all industries, the supply chain must be able to make the right strategic decisions with agility and resiliency — meaning responsive planning processes that can sense changes and respond to them in real time.

As the manufacturing supply chain has become a more significant contributor to overall business success, a principal driver of business change is the ability to support new business models in either existing markets or new markets (see Figure 2).

Cost and operational efficiency will always be an important part of the modern supply chain. Yet the most significant challenge most frequently expressed by manufacturers is the evolving customer dynamic and the resulting changing business models that manufacturers must adapt to and adopt. New business models and markets is the top driver of business change based on the survey. The ability to adapt to/adopt new business models is particularly important for the small and medium-sized companies. Interestingly, larger companies disproportionately view emerging market competitors as a threat. Among small and medium-sized companies, this sentiment is less so, because in part these companies are the emerging competition.

Figure 2. Drivers of Business Change Over the Next Three Years







SUPPLY CHAIN PLANNING PROCESS MATURITY

Companies with higher levels of supply chain planning maturity outperform their less mature competitors.

In the survey, we strove to identify a broad assessment of supply chain planning maturity by asking respondents questions about process, collaboration, and technology. While the ability to measure the relative maturity of a company's supply chain planning capabilities is complex and multidimensional, for the purpose of this document, we have synthesized it into three dimensions:

-  Self-rating of supply chain planning processes based on a five-step scale from poor to best in class, including overall integrated business planning, demand planning, supply planning, S&OP, production planning, control tower, and inventory planning.
-  The level of collaboration between supply chain planning and other functional areas (extended to sales, marketing, external suppliers, and customers), from active collaboration through consulted to just being informed.



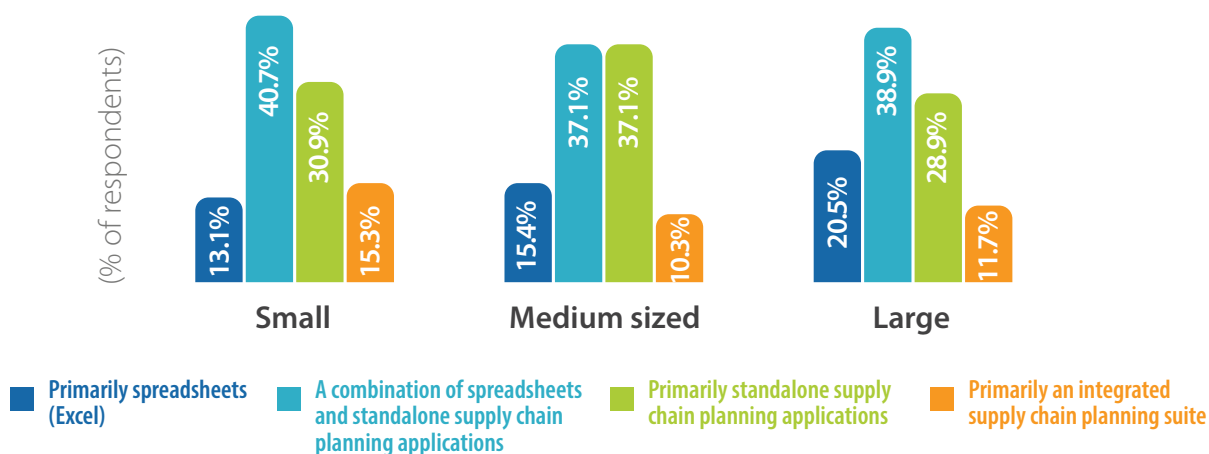
The technological foundation of supply chain planning, ranging from the use of spreadsheets as a primary tool through standalone planning applications to the use of a single, integrated supply chain planning suite.

While there is a tendency to think of reliance on older technology as a small company problem, the reality is that large companies are just as likely to use older technology and may in fact have greater issues with collaboration than their smaller competitors. The use of spreadsheets as the primary planning tool is seen more commonly in large enterprises (21%) than we see in small (13%) and medium-sized (15.4%) companies (see Figure 3). ***In other words, large companies are 50% more likely to be using spreadsheets than smaller companies.*** Some of this is a function of the age of the business, and thus something of a legacy effect, but some of it is also the recognition by smaller businesses that technology is a way for them to win against larger competitors that have scale. We also see that the combination of spreadsheets with standalone supply chain planning applications is the dominant technological underpinning for supply chain planning across companies of all sizes. The use of older technology also varies considerably by region, with ***EMEA companies 20% more likely to be relying on spreadsheets for key supply chain planning processes.***

The goal of using a few different dimensions for supply chain planning maturity is to better understand where companies really are holistically with supply chain planning — something that can be difficult to tease out from just a single question about maturity.

Figure 3. Technology Foundation of Supply Chain Planning

Q. How would you characterize the technological foundation of supply chain planning at your organization?



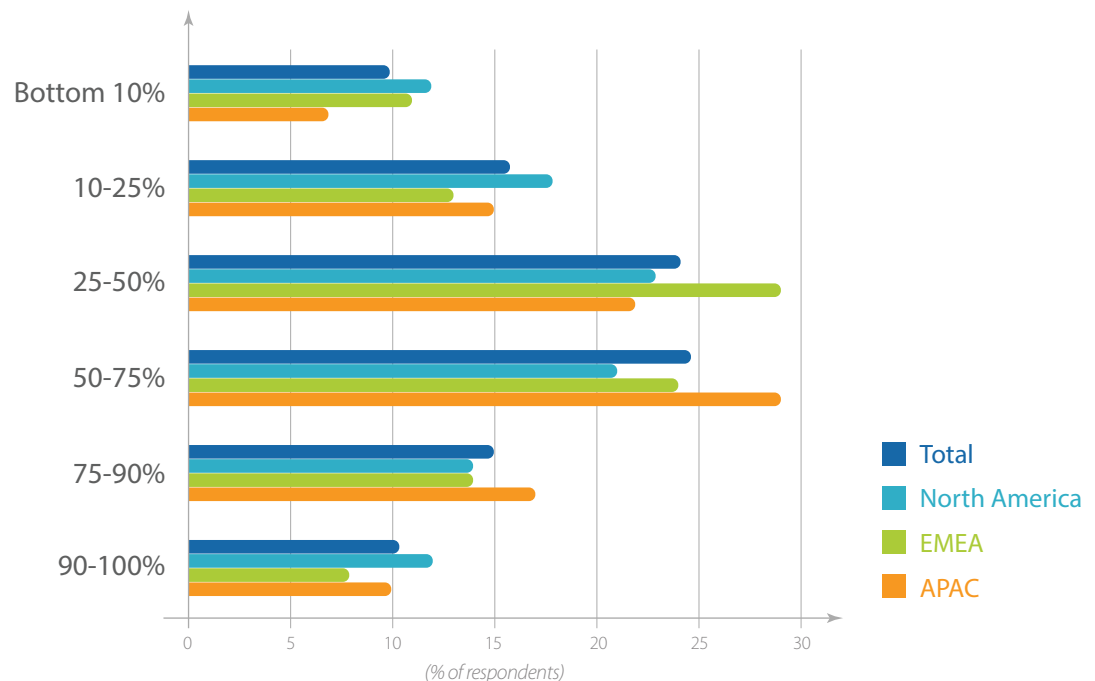
n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Supply Chain Planning Maturity Correlates Highly with Revenue Performance

Based on the survey data across the previously mentioned three dimensions, we get a six-stage supply chain planning process maturity that progresses from those least mature to those most mature (see Figure 4). This maturity follows a bell curve, with a relative minority of the companies exhibiting either very low or very high supply chain planning maturity.

As one might expect, those companies that we would judge to be more mature are much more likely to view the supply chain as a source of competitive advantage (see Table 1). 84% of companies rated as most mature view the supply chain as a competitive advantage versus just 2% that see it as a competitive disadvantage. Conversely, companies that are less mature are much less likely to view their supply chain as a competitive advantage.

Figure 4. Supply Chain Planning Process Maturity by Region



n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Table 1. Importance of the Supply Chain (% of Respondents)

	Bottom 10%	10–25%	25–50%	50–75%	75–90%	Top 10%
Competitive advantage	35	44	63	75	87	84
On par with competition	37	40	28	21	12	13
Competitive disadvantage	28	16	9	5	2	2

Source: IDC/Kinaxis 2019 Supply Chain Survey

A similar trend is seen when overall supply chain maturity is compared with revenue performance.

Companies that are judged to be higher in supply chain maturity report better revenue performance than those that are less mature (see Table 2). This does not mean, necessarily, that supply chain planning maturity drives business performance directly; companies judged as more mature tend to do better from an overall business growth perspective.

Table 2. Revenue Performance (% of Respondents)

	Bottom 10%	10–25%	25–50%	50–75%	75–90%	Top 10%
We are well ahead of the average market sales growth rate	31	39	33	46	59	56
We are slightly ahead of the average market sales growth rate	40	44	53	46	33	26
We are at the average market sales growth rate	21	13	12	7	7	17

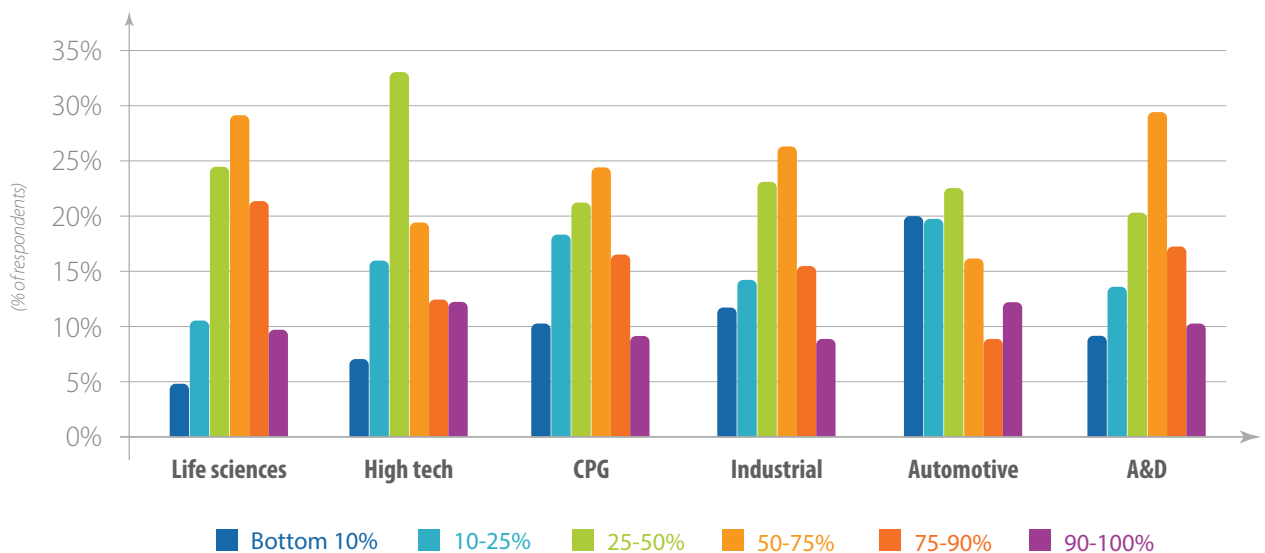
Source: IDC/Kinaxis 2019 Supply Chain Survey

There are some interesting differences by region. Survey respondents from APAC tend to skew slightly more mature than those in EMEA and North America. This is consistent with other IDC surveys where **APAC companies are more likely to be actively collaborating with external parties than either of the other two regions**. For example, 41% of APAC companies said they actively collaborate with customers versus 38% of EMEA and only 31% for North America. Given the critical importance of customers, clear opportunities exist for North American manufacturers.

There is also a legacy effect at play, with more mature regions tending to be less aggressive in the adoption of new technology and new approaches. Just as mobile phone penetration in EMEA and NA has lagged APAC because there was no wired infrastructure to get in the way, we see similar pressures in the adoption of supply chain planning technologies.

Interesting differences can be seen in overall supply chain planning maturity across industry (see Figure 5). Although automotive has the largest number of companies in the most mature stage of supply chain planning, **40% of automotive companies are in the two least mature stages**. Automotive is an industry subsegment where homegrown applications are common, suggesting that the transition to best-in-class tools remains a work in progress. Life sciences is the most mature, with almost **30% of companies in the two most mature stages**, which is generally consistent with other IDC surveys, driven, in part, by the industry's higher regulatory requirements.

Figure 5. Supply Chain Planning Process Maturity by Industry



n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

For the two most mature stages, company size wasn't a big driver of overall supply chain planning maturity.

Given that the use of technology was one of the three dimensions that we used to assess overall supply chain planning maturity, it is interesting to see how the employment of artificial intelligence (AI) and machine learning specifically relates to that maturity. The enormous potential for AI and machine learning in the supply chain to make sense of large data sets in real time makes these technologies a critical component of future supply chain performance; thus the degree to which companies are using them today is instructive. Indeed, the companies that are judged to be most mature based on their self-rating of planning processes, levels of functional collaboration, and technical foundation are much more likely to be using AI and machine learning in their supply

chain planning efforts. **76% of the most mature companies are using a form of AI today versus just 1% of the least mature companies.** Fully 70% of the least mature companies are still in the planning stages versus only 8% of the most mature companies. In terms of overall numbers, slightly more than one-third of the total respondent pool of 1,839 said that they are actively using AI and machine learning today (see Table 3).

The adoption and use of AI and machine learning have proven to be a good proxy for maturity overall, so the correlation here is both expected and warranted.

Table 3. Use of AI/Machine Learning by Supply Chain Process Maturity (% of Respondents)

	Bottom 10%	10–25%	25–50%	50–75%	75–90%	Top 10%
Using AI today	1	8	22	49	61	76
Starting to use for priority use cases	22	29	36	29	25	16
Plan to invest for priority use cases	45	47	32	18	9	5
Plan to invest, but unsure how	25	16	10	4	5	3
No plans	7	4	1	0	0	0

Source: IDC/Kinaxis 2019 Supply Chain Survey



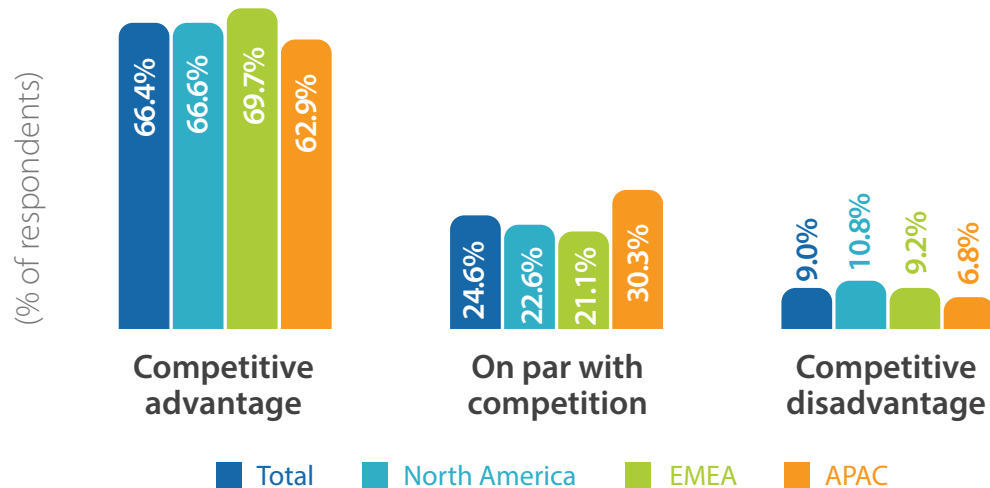


SUPPLY CHAIN PLANNING AS A COMPETITIVE DIFFERENTIATOR

Supply chain planning declines significantly as a source of competitive differentiation by 2023.

According to the survey, over 60% of companies across all three regions said that their supply chain was currently a competitive differentiator (see Figure 6). At IDC, we have seen a couple of broad trends that speak to these results. One, companies often have a very short-term view of their supply chain and fail to adequately anticipate requirement shifts. Two, companies often fail to fully understand the capabilities of competitors, making them vulnerable to disruption. Both trends are likely coming into play here because the reality is that most manufacturers run supply chains of broadly adequate capability, but only a few should be considered as true sources of competitive advantage. Figure 6 shows that APAC companies are almost twice as likely as EMEA companies to view their current supply chain as a source of competitive differentiation, with North America in the middle.

Figure 6. Supply Chain as a Competitive Differentiator by Region:
In the Next 12 Months

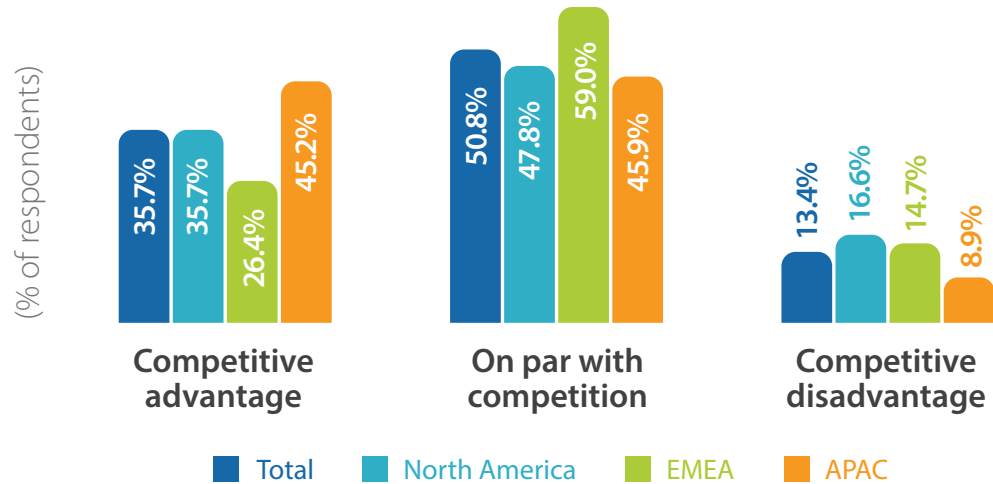


n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

The responses tell a dramatically different story as competence slips materially as we move ahead three years (see Figure 7). Indeed, ***supply chain planning competence today does not necessarily translate to competence tomorrow.*** The result for the next three years offers a fascinating shift. In EMEA, almost 70% of respondents said their supply chain differentiates them today, but that number falls to 26% in the next three years. In EMEA, approximately 30% of respondents said their supply chain is either on par or a competitive disadvantage; that number grows to slightly over 70% in the next three years, which represents a huge problem to solve. While future supply chain sentiments in North America and APAC are not as stark, ***essentially, across all three regions, confidence in the supply chain as a competitive differentiator falls more than 50% by 2023.***

In the next three years, EMEA companies are much less likely to see their supply chain continue as a source of competitive advantage than APAC companies. Indeed, ***less than half of the EMEA companies that see their supply chain as a source of competitive advantage today believed that will be true in the next three years.*** While APAC companies are less pessimistic, the number of APAC companies that view their supply chain as a source of competitive advantage falls by almost half.

Figure 7. Supply Chain as a Competitive Differentiator by Region:
In the Next Three Years



n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

The same kind of shifts by industry are illustrated in Table 4. While a majority of industries believe their supply chain to be a source of competitive advantage today, this rate declines dramatically in the next three years. Life sciences has the most dramatic drop; almost 40% fewer companies expect their supply chain to be a source of competitive advantage in the next three years versus today. Although these companies are well served by their supply chains today (among the most mature overall from Figure 5), the industry shift to personalized medicine is putting significant pressure on supply chain capabilities. Put another way: ***Less than half of life science companies that see their supply chain as a competitive advantage today believe it to be sustainable.*** Automotive companies are the least likely industry to see their supply chain as a competitive advantage today, so the difference of the decline by 2023 is more modest at about 20%.

In absolute terms, CPG is the most optimistic industry about its supply chain in the next three years, yet 6 in 10 companies believe that their supply chain will not be a source of competitive advantage by 2023. Clearly, not every company can have a supply chain that confers competitive advantage, yet if the expectation among generally optimistic supply chain professionals suggests a huge drop by 2023, that means that the ***survey respondents are extremely concerned about the ability of their supply chain to remain relevant.***

Among planning persona, there was not a huge change in how they viewed the supply chain as a competitive differentiator over time. Supply chain planners are generally more focused on the here and now, and they are better able to understand both current liabilities and strengths. Consequently, planners were somewhat more likely to see the supply chain today as a competitive liability versus planning managers. In the next three years, given that planning managers are likely to be more strategically driven with greater insight into future plans, they were slightly more likely (39%) to see their supply chain as driving competitive differences than planners (35%).

Table 4. Supply Chain as a Competitive Advantage by Industry: In the Next 12 Months and Three Years (% of Respondents)

Q.	What role does your supply chain play in differentiating your organization versus your competition in the next 12 months? And what role do you expect it to play in three years?	
	In the Next 12 Months	In the Next Three Years
Life sciences	75	36
High tech	64	37
CPG	73	42
Industrial	58	39
Automotive	55	34
Aerospace and defense	69	36

n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey



THE PROGRESSION OF DIGITAL TRANSFORMATION IN SUPPLY CHAIN PLANNING

Companies that are more mature in their supply chain digital transformation efforts are twice as likely to continue to see their supply chain as a competitive differentiator in the future.

Clearly, overall supply chain planning maturity and transformation are related: Companies that make progress on their transformation efforts will inevitably become more mature overall, while those companies that do not progress in the digital transformation journey will fall behind, even if they judge their supply chain today to be a source of competitive advantage. Digital supply chain transformation is about establishing a vision and road map for how digital technologies drive process and capability change. Supply chain transformation is both about how companies improve efficiency and effectiveness in the short term and how they achieve supply chain resiliency in the longer term to help avoid business disruption. IDC describes the five digital transformation maturity stages as follows:



Ad hoc. Supply chain digital transformation is poorly defined, and efforts are inconsistent. Success depends on individual effort.



Opportunistic. Some basic digital capabilities and initial business cases have been identified. Execution is on an isolated project basis, and progress across the supply chain is neither predictable nor repeatable.



Repeatable. Supply chain digital transformation is aligned to near-term strategy, and key business cases are identified for product or service delivery and customer experiences but are not yet focused on their disruptive potential.



Managed. Capabilities for digital transformation are embedded in the supply chain and tightly linked to the overall strategic vision. The supply chain delivers digitally enabled product and/or service experiences on a continuous basis.



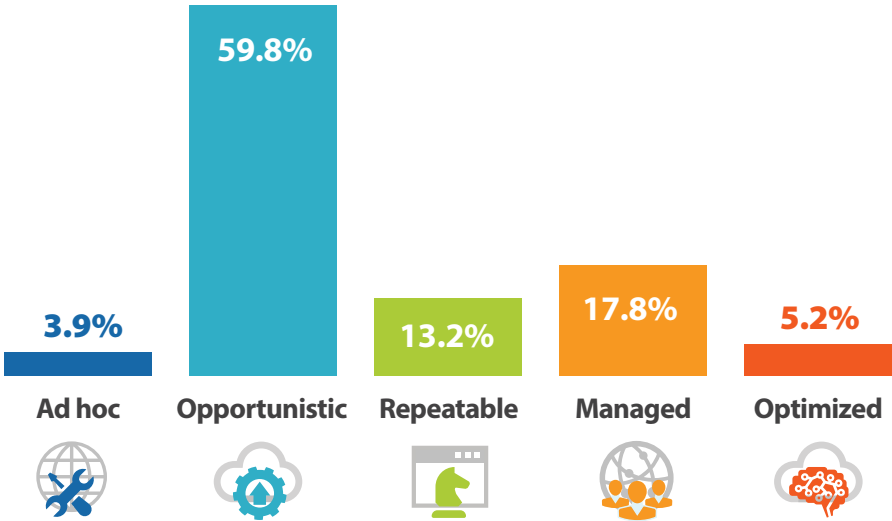
Optimized. The supply chain is aggressively disruptive in the use of new digital technologies and business models to affect our markets. There is clear strategic executive alignment with comprehensive identification of business cases.

For a more detailed discussion of the five stages of supply chain transformation maturity, see *IDC MaturityScape Benchmark: Digitally Enabled Thinking Supply Chain in the United States, 2019* (IDC #US44930219, March 2019).

IDC research indicates that 8.5% of companies rate their supply chain maturity stage as optimized, and 15.1% of companies put themselves in the managed stage. On the lower ends of the spectrum, 20.6%, 50.9%, and 4.9% rate themselves as repeatable, opportunistic, and ad hoc, respectively. Data from the Kinaxis survey reinforces previous IDC research, indicating that companies need to make much progress in their supply chain. Figure 8 illustrates the same five maturity stages updated with data from the survey. While there has been some progression of those already in the more advanced stages of maturity, there is very little movement from those companies that are less mature. In some sense, this is a widening of the gap between “thrivers” and “survivors,” where companies that were already more advanced in their digital supply chain transformation journey continue to push forward versus those less advanced that either struggle to get major traction or are simply stuck. Analysis of the underlying data does reveal, however, that those companies that judge themselves to be more advanced in their digital transformation efforts are more likely to see

their supply chain as a source of future competitive advantage. In other words, **companies that are progressing on their supply chain transformation efforts are twice as likely to view their supply chain as a source of competitive advantage by 2023 than those companies lagging behind in their efforts.**

Figure 8. Supply Chain Digital Transformation Maturity Normalized








n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Table 5 shows digital supply chain transformation maturity by region. There are some nuanced differences: At 25% in the managed and optimized stages, APAC leads all regions, with North America at 23% and EMEA at just slightly over 20%. Although this suggests that APAC companies are moving slightly faster in their transformation efforts, the regional differences are quite minor.

North American companies are slightly more likely to have moved beyond the two least mature stages, yet they lag behind APAC slightly in the two most mature stages. Overall, **EMEA is the least mature in their supply chain transformation efforts.** One factor at work is the binary nature of manufacturers in emerging regions. In other words, there are dramatic differences between those manufacturers that have adopted technology, usually as a way to support modern trade practices, compared with those that have not adopted technology, or do not deploy technology well, often because the requirements of traditional trade make technology adoption unnecessary, at least in the short term.

Table 5. Supply Chain Transformation Maturity by Region
(% of Respondents)

Q. Which of the following statements best describe the state of digital transformation progress in your supply chain?

	Worldwide	North America	EMEA	APAC
 Ad hoc	3.9	4.7	3.2	3.5
 Opportunistic	59.8	57.1	64.5	60.3
 Repeatable	13.2	15.3	11.8	11.5
 Managed	17.8	17.8	16.0	19.0
 Optimized	5.2	5.2	4.5	5.7

n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Across the six surveyed industries, high tech is farthest along overall in terms of supply chain transformation efforts; aerospace and defense (A&D) companies lag behind the most. Indeed, **high-tech companies are almost twice as likely to view themselves in the two most mature stages as aerospace and defense.** Prior IDC surveys indicated that industry progress on supply chain transformation tends to be inversely proportional to the barriers to entry within an industry. That A&D probably has the most significant barriers to new competition likely speaks to the relative lack of supply chain transformation progress. New competitors in high tech are common — thus the need to continue to transform supply chain capability to avoid potential disruption. CPG companies are also relatively well advanced along the supply chain transformation continuum, again because barriers to new competition are quite low.

From a persona perspective, supply chain planners are somewhat more positive about the progress of supply chain transformation than managers who are more sanguine about that progress. In part, this is driven by supply chain planning tool migration to the cloud — significantly impactful to the day-to-day planner yet viewed as less “transformational” by leadership. Those **companies that are growing well ahead of their industry average are much more likely to also view themselves as more advanced in their supply chain transformation efforts.**

The supply chain must have the ability to adapt to new capabilities while remaining competitive to currently defined requirements. According to IDC, 60% of companies surveyed in 2018 felt that supply chain–related disruptions would impact their company by 2021. Companies that are falling behind in their supply chain transformation efforts run the risk of opening themselves to a higher likelihood of business disruptions.

THE CRITICAL ROLE FOR DATA AND SUPPLY CHAIN VISIBILITY



The role of spreadsheets in supply chain planning remains pervasive, limiting a company's ability to leverage data for competitive advantage and constraining efforts for supply chain visibility.

IDC believes that those companies that use data better will have competitive differentiation for the supply chain in the future. The notion of a data-driven supply chain with comprehensive visibility is central to IDC's six-stage supply chain maturity model. Indeed, in past IDC surveys, visibility and the use of data have consistently been identified as key drivers of future performance in the supply chain.

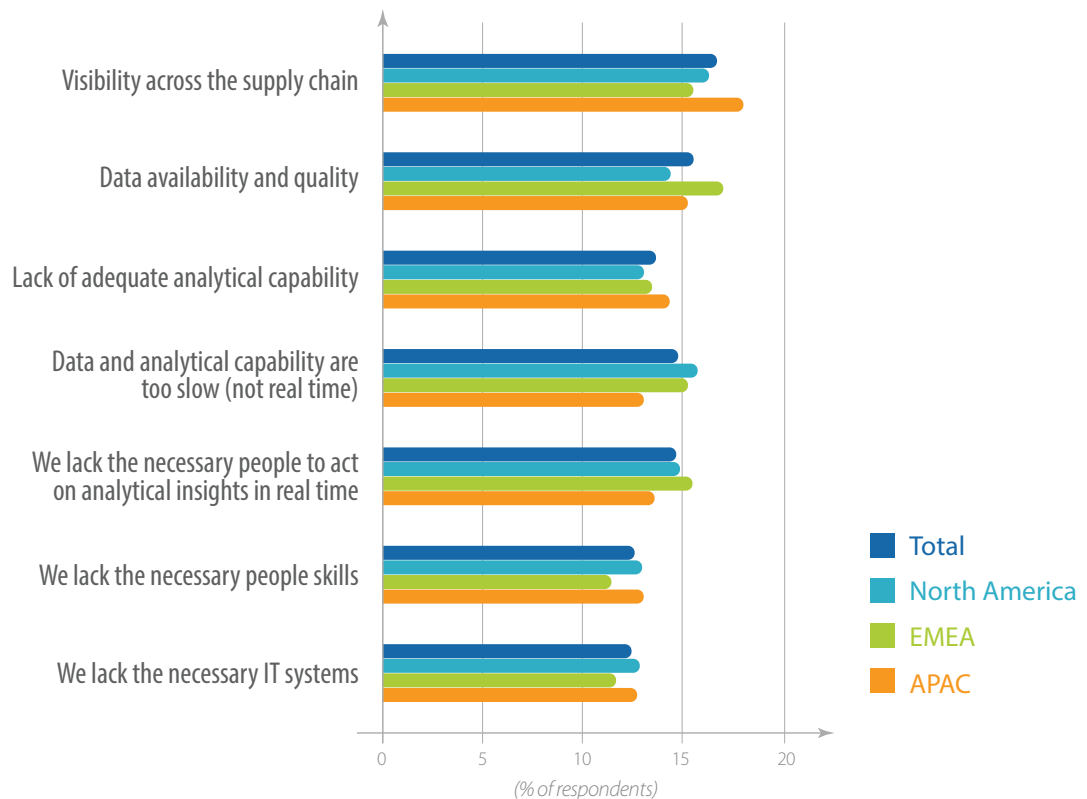
Responses from the IDC/Kinaxis survey support the hypothesis that supply chain visibility, or the lack thereof, and data availability and quality are the biggest impediments to improving supply chain planning efforts overall (see Figure 9). Indeed, when factoring in the adjacent challenges of analytical capability and speed, a picture emerges of companies inadequate to perform the data tasks ahead of them.

IDC has long observed growth in data. Yet companies frequently find themselves either without the necessary analytics capability to handle that data or they lack the response mechanisms to act on the insights from that data. While the results in Figure 9 suggest that analytical capabilities are

beginning to catch up to the amount of data — though timeliness is often lacking — the lack of people to act on analytical insights in real time is a problem, particularly in EMEA. Interestingly, there is an inverse correlation between companies that said acting on real-time insights is a problem and companies using AI and machine learning. In other words, ***an important emerging use case for AI and machine learning is the ability to augment people’s capability to respond to data insights.***

Beyond data, survey respondents cited a lack of visibility as the top impediment to better supply chain planning. Indeed, both North American and APAC companies cited a lack of supply chain visibility as the primary impediment to better planning. For EMEA companies, a lack of visibility is second behind the availability and quality of data. Although there are some other differences by region, the picture painted is fairly consistent, in which a lack of visibility, poor data, and deficient analytical capability conspire to restrict planning performance.

Figure 9. Impediments to Better Supply Chain Planning by Region



n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Table 6 shows some interesting differences when it comes to barriers to better supply chain planning from an industry perspective. In life sciences, impediments have less to do with data and are more about either analytical capability being too slow or not having enough people to act upon the insights from analytics capabilities. There is also a notable correlation between the lack in people resources and the use of spreadsheets. Although companies in life sciences judge themselves to be generally mature in terms of their overall supply chain planning capabilities, they are also 50% more likely to primarily use spreadsheets in their planning efforts than any other industry, suggesting both that they are not best utilizing the people resources that they have and that there are opportunities to better leverage technology.

For the other industries, impediments to better supply chain planning are either about visibility (high tech and automotive) or data availability and quality (CPG, industrial, and A&D). In reality, the inability to have access to good data, analyze the data in real time, and act upon the insights derived from that data is a problem broadly across industry.

Last, in terms of impediments to better supply chain planning, we see a curious difference between the views of supply chain planners and supply chain managers. Although both personas see visibility and data as equally important to better planning, supply chain planners tend to view their IT tools as deficient, whereas supply chain managers tend to view the people skills as deficient. The differences are not huge, but they are big enough to suggest that the **planners doing the actual supply chain planning work view their tools as more problematic than do their managers.**

Table 6. Impediments to Better Supply Chain Planning by Industry (% of Respondents)

Q. What is the top obstacle you face when attempting to achieve better supply chain planning and responsiveness?

	Life Sciences	High Tech	CPG	Industrial	Auto	A&D
Visibility	14.5	17.6	16.2	15.7	17.3	16.7
Data availability and quality	12.2	15.0	17.0	20.1	14.6	16.9
Analytical capability	16.0	11.2	13.7	10.1	16.6	11.8
Analytical capability is slow	16.5	15.8	11.1	17.6	13.9	15.0
Lack of people for real-time insights	20.4	13.1	13.5	14.4	13.0	13.0
Lack of people skills	11.2	14.1	15.2	9.4	11.3	13.0
Lack of IT systems	9.2	13.3	13.3	12.7	13.3	13.6

n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey



SUPPLY CHAIN RESILIENCY AND THE IMPLICATIONS OF NEW BUSINESS MODELS

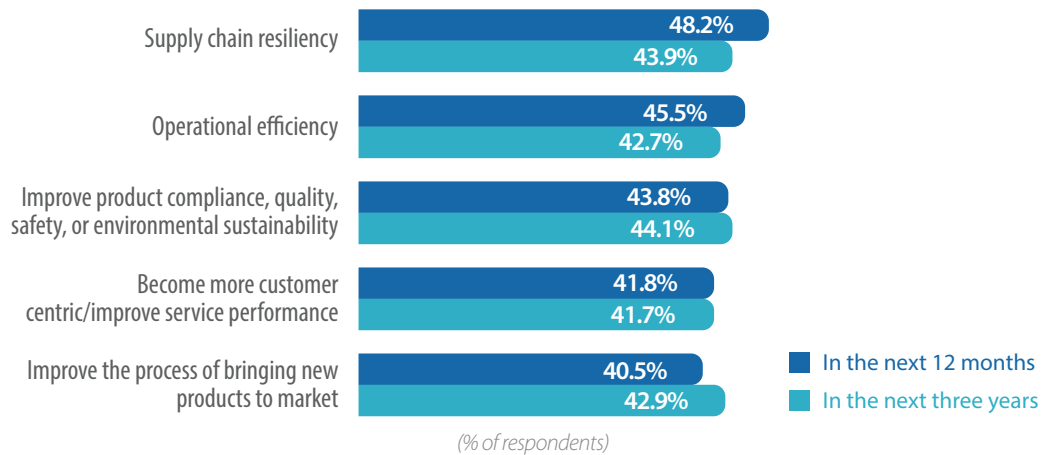
Resilient supply chains will be better positioned to leverage new opportunities and new business models.

Supply chain resiliency is a fascinating topic for the supply chain as it is both something that companies claim to have already and a top aspirational priority. In the survey, companies that rate themselves highly in terms of resiliency already (65%) cite supply chain resiliency as their top priority over both the next 12 months and the next three years (see Figure 10). ***This suggests that although current levels of resiliency may be viewed as having the ability to meet current business needs, it is equally viewed as inadequate as business requirements and models shift.*** This reinforces the finding about the supply chain as a competitive advantage today versus in the next three years. ***It seems clear that resiliency is one of the key capabilities that must evolve if supply chains are to remain a competitive differentiator.***

It also may be that companies are throwing a lot of human capital at the resiliency problem and thus are structurally overestimating where they are today. It is also fair to suggest, based on the survey findings, that if visibility and data accuracy are the main impediments to better supply chain planning, companies are fundamentally not resilient. Interestingly, the importance of resiliency is mostly independent of overall supply chain planning maturity. Across the six maturity bands (refer back to Figure 4), supply chain resiliency is the top priority for all six. This is an important point:

Supply chain resiliency is the top priority for all companies, regardless of their overall supply chain planning maturity. Even companies that we judged to be most mature still believe that resiliency improvement is critical.

Figure 10. Supply Chain Top Priorities: In the Next 12 Months and Three Years

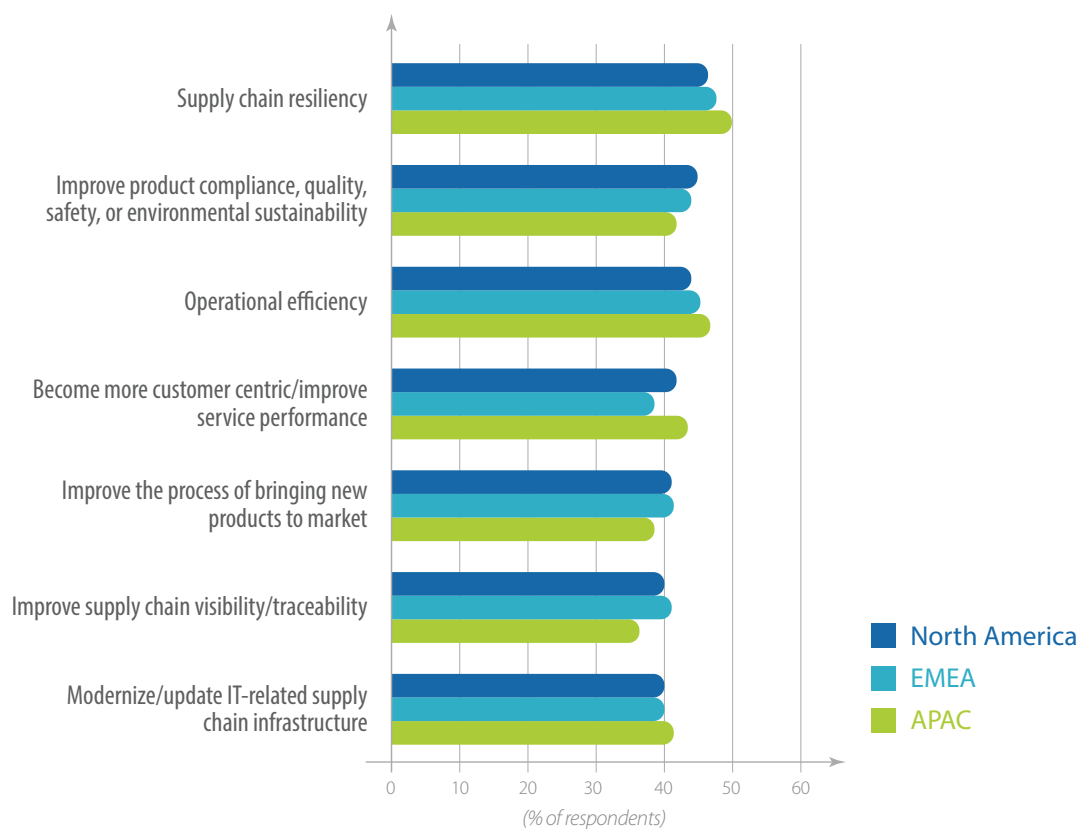


n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Operational efficiency and product compliance will always be important to the supply chain, but they are more about managing the current business model than anticipating a new model. The old saying that “you cannot cost cut your way to a best-in-class supply chain” is prescient here. Considering the forward-looking capabilities, **companies are 20% more likely to prioritize supply chain resiliency over things such as customer centricity or new product innovation.** Clearly, those other things are important, but it seems that supply chain resiliency is viewed as a foundation upon which those things can be built.

From a regional perspective, supply chain resiliency is the most important priority for all three regions over the next 12 months: North America at 47%, EMEA at 48%, and APAC at 50% (see Figure 11). Supply chain resiliency will remain the top priority for APAC three years in the future but will fall below product compliance and quality for EMEA and operational efficiency for North America.

Figure 11. Supply Chain Priorities by Region: In the Next 12 Months



n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Table 7 shows supply chain priorities by industry. With the exception of high tech, all the industries prioritize supply chain resiliency as their top focus. For high tech, resiliency is second behind operational efficiency. This is not surprising for high tech where short product life spans and the imperative to shrink time-to-volume cycles create a premium for operational efficiency. Although IDC has seen resiliency being prioritized highly in other surveys, the consistency across industry is particularly striking and suggests that the ability to respond to changes in the marketplace is impacting all companies in all markets.

Table 7. Supply Chain Priorities by Industry Over the Next 12 Months (% of Respondents)

Q. *What will be the top priority for your supply chain over the next 12 months?*

	Life Sciences	High Tech	CPG	Industrial	Auto	A&D
Operational efficiency	45.3	46.5	44.2	46.8	42.9	47.2
Become more customer centric/improve service performance	42.1	39.9	45.1	39.2	42.6	42.1
Improve the process of bringing new products to market	45.8	42.8	38.4	37.2	37.7	39.5
Improve product compliance, quality, safety, or environmental sustainability	43.7	40.1	46.4	42.2	48.1	41.5
Supply chain resiliency	46.6	45.0	48.2	50.3	52.4	48.9
Improve supply chain visibility	36.7	42.0	40.3	38.9	34.0	41.7
Modernize IT-related supply chain infrastructure	39.7	43.8	37.4	44.8	41.7	39.0

Source: IDC/Kinaxis 2019 Supply Chain Survey

The other important observation linked to resiliency is the ability to adapt to/adopt new business models.

Indeed, in terms of the key drivers of change, new business models and markets was the top driver across manufacturers of all sizes (refer back to Figure 2). The ability to adopt new business models or enter new markets was also cited as most important when considering future supply chain capabilities. Regionally, adopting new business models was the top-ranked capability for both North America (16%) and APAC (18%); it was third in importance for EMEA (13%).

Future capabilities by industry are summarized in Table 8. Life science companies prioritized operational efficiency as their top future capability, and for A&D companies, talent was a priority. Among the other four industries, companies cited the ability to adopt new business models as their priority. It seems quite clear that a big driver of resiliency for these companies is the ability to adapt to new business models. That these models are “as yet undefined” means that the supply chain must be resilient.

As a final point on resiliency and new business models, both supply chain planners and their managers selected the ability to adapt to new business models as their top future capability, although planning management felt it to be more important (18%) than did the actual planners (15%).

Table 8. Supply Chain Future Capabilities by Industry
(% of Respondents)

Q. What will be the most important future capability for your supply chain?

	Life Sciences	High Tech	CPG	Industrial	Auto	A&D
Deep insight into our customers and consumers	12.6	9.4	14.0	11.8	6.4	12.4
A robust pipeline of new products or complementary services	11.3	13.1	13.8	10.7	8.6	10.7
Adopt new business models or enter new markets	14.0	17.1	14.8	19.1	17.4	13.1
Respond to market changes or disruptions	13.7	13.4	13.0	16.2	12.4	12.1
eCommerce/direct to consumer	11.2	11.2	11.2	8.4	12.1	12.9
Operational efficiency and effectiveness	15.7	12.0	8.2	17.7	17.1	11.6
The ability to attract and retain top talent	10.2	12.0	14.0	11.4	11.7	15.2
Training or business tools for employees to do their jobs well	11.3	11.9	10.9	4.7	14.1	11.9

Source: IDC/Kinaxis 2019 Supply Chain Survey



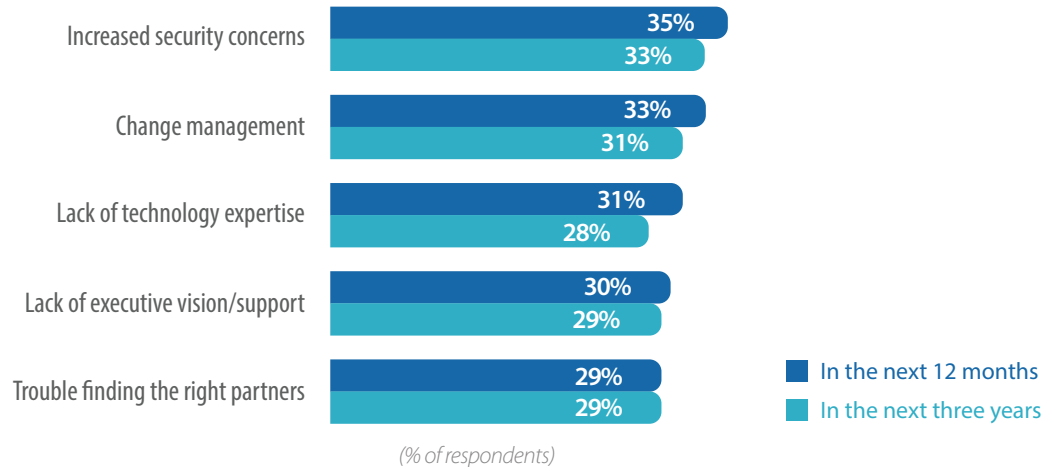


FUTURE CONSIDERATIONS

There is little question that the supply chain is critical to the future success of the manufacturer and that supply chain planning is critical to the success of the supply chain. In the survey, respondents across the board — irrespective of region, industry, company size, or persona — consistently ranked supply chain planning as among the top 2 considerations for success.

Yet, if we look back at the overall supply chain planning maturity, or the progression of digital supply chain transformation, the story is a somewhat sluggish one. If supply chain planning is as important as companies say, why is progress not being made faster? The answers lie in the challenges that companies face in transforming their supply chain. Figure 12 shows the myriad issues that make transforming the supply chain hard — whether those issues are addressed in the next 12 months or in the next three years. While security concerns still dog digital transformation efforts, legacy systems, lack of technology expertise, and budget issues all present roadblocks to progress.

Figure 12. Transformation Challenges: In the Next 12 Months and Three Years



n = 1,839 Source: IDC/Kinaxis 2019 Supply Chain Survey

Different regions view the challenges in different ways. North American and EMEA companies are most concerned about security, driven in part by intellectual property. This is a challenge for these regions in both the short term and the longer term. For APAC, having the right people and technology resources in the short term is the most pressing concern, but security takes over in the longer term as the region shifts from a labor arbitrage model to a model focused on innovation.

From an industry perspective, security, lack of technology expertise, and change management emerge as the most frequently cited transformation challenges. The top 3 challenges for each industry are as follows:

- **Life sciences:** Change management, budget/resources, and technology expertise
- **High tech:** Change management, security concerns, and a lack of bandwidth to explore possibilities
- **CPG:** Elusive business case, security concerns, and technology expertise
- **Industrial:** Security concerns, difficulty finding the right partners, and technology expertise
- **Automotive:** Security concerns, difficulty finding the right partners, and technology expertise
- **Aerospace and defense:** Security concerns, change management, and technology expertise

The discrete heavy equipment manufacturers (industrial and automotive) profile identical top 3 challenges. Security is the most important challenge, followed by difficulty in finding the right supply chain transformation partners and the related challenge around technology expertise. A&D also posts similar concerns as industrial and automotive, though trading the partner challenge for overall change management. Life sciences also cites budget and resource constraints as a top 3 challenge — the only industry to do so. CPG struggles with identifying the business case, and high tech laments a lack of resource bandwidth to explore possibilities in the supply chain. Beyond security concerns and broader change management issues, the reality is that challenges present in different forms to different companies within industries. In many ways, the key to a successful supply chain transformation journey is to engage with the right partners in the early stages of the effort.

How to Be Competitive in the Next Three Years

Measures of maturity and transformation aside, the central question for companies is: What do they need to begin to do today to be competitive in the next three years? Will there be a bigger gap in the future, or are companies generally moving in the right direction? All companies are using spreadsheets, even if there are those that are making a move to integrated supply chain planning suites. If new business models are to become the norm across most or all industries, then resiliency and the ability to quickly assess available data become critical. Whether companies believe they are ripe for disruption or not, the imperative must be to start moving now.



ESSENTIAL GUIDANCE

Technology transformation is shifting from manual, Excel-based functional processes to investments in end-to-end processes and sophisticated analytics including artificial intelligence/machine learning. The IDC/Kinaxis survey looked across three broad topics: the overall business and supply chain environment, supply chain transformation efforts, and supply chain planning efforts specifically.

Based on the key findings from the survey, the conclusion is clear that progressions in supply chain planning process and technology maturity pay off in ways both big and small. Whether in the ability to be more efficient or effective in the short term or to be able to easily adapt to or adopt important new business models in the longer term, there is a clear correlation with supply chain planning maturity and better business performance. Supply chains that do not focus on improving supply chain planning capability run the risk of seeing eroding sales and market share.



Actions to Consider

Companies that judge their supply chains to be a source of competitive advantage today expect that distinction to erode over time. The reality is that today's leaders, if they do nothing to continue to enhance their supply chains, will not be leaders in the future. IDC advises the following:



Seek external help. To be successful at transforming the supply chain, companies need to leverage outside resources. This is not just because companies do not or will not have internal skills to understand and implement new technologies, it is also because the distraction of managing existing IT projects may preclude focusing on the new and transformative transformation-related business opportunities.



Build for flexibility and resiliency. There's every reason to believe that the pace of supply chain change will accelerate and that the supply chain of the future will be in a constant state of flux. Companies that can build supply chain flexibility and resiliency more quickly will be better positioned to support their consumers/customers and thus grow their businesses more effectively.



Prepare and adopt now. Although supply chain transformation remains behind the median in terms of maturity, leaders are moving quickly, believing there is an early-mover advantage. The reality is that transformation is happening now, and there are many use cases that can be adopted now. The key is for companies to prepare today.



Tap into the feet on the ground. Companies should look to their supply chain planners for insights. The people who are doing the actual planning will have a perspective on what works and what doesn't work in a way that executive leadership do not.

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