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SAPinsider Benchmark Report

Modernizing Supply Chain Planning and Operations

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Research Partner





Research Partner

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Executive Summary

Now more than ever, in a year marked by the need to adjust to massive changes in business, restricted shipping capabilities, and limited providers, supply chain managers need modern planning tools to adapt to the volatility of the market as well as the ability to share and execute their plans. These tools include demand, supply, and inventory planning solutions; sales and operations planning (S&OP) solutions; integrated supplier networks; real-time production scheduling; automated data management solutions; and self-service analytics solutions.

In Q3 of 2020, SAPinsider surveyed 298 members of our community to understand their needs in supply chain planning and operations. We found that SAP Integrated Business Planning for Supply Chain (IBP) represented the most popular dedicated planning solution among respondents with 39% using SAP IBP.

When it comes to managing the supply chain with ERP, 64% of respondents use SAP ERP Central Component (ECC), while 25% have upgraded to SAP S/4HANA. Both SAP ECC and SAP S/4HANA have Material Requirements Planning (MRP) capabilities, and SAP S/4HANA now has advanced available-to-promise (aATP), embedded analytics, and real-time production scheduling; however, neither of these systems include S&OP nor advanced demand and supply forecasting.

Conversely, SAP IBP does include S&OP and demand and supply planning, but it does not include real-time production scheduling.

SAP IBP customers had the highest satisfaction rates with 58% saying their solutions met their needs and 85% able to measure forecast accuracy today. With comparable on-time fill rates, GIB customers followed closely with 57% saying their solutions met their needs and 74% able to measure forecast accuracy. Those using GIB had better operational



PERSPECTIVE

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Our supply chain needs are not being met with our highly customized instances of SAP ECC. We often have inventory on hand at one plant needed at another plant and no process for identifying that and getting the inventory where we need it. Each manufacturing plant has its own customized instance of SAP ECC with unique codes for part numbers and SKUs. We might have a dozen redundant SKUs for the same type of part and few documented alternate parts.

”

~ **Product Engineer,**
Global Contract
Manufacturer

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visibility with 64% saying they had the visibility, quality, and granularity they need for supply chain operational data versus 57% of SAP IBP customers.

The survey results revealed several other trends for supply chain planning and operations in the SAPinsider Community:

- Outside of SAP's own products and the GIB Suite, no solution had more than 4% market share among respondents.
- Regarding product orders from the past year, respondents had a median on-time fill rate or on-time demand satisfaction rate (orders shipped on-time or early/orders placed) of 83%. The top quartile had on-time fill rates of 94% or better, while the bottom quartile had rates of 77% or worse.
- Respondents chose “Modernizing demand and supply forecasting to make data-driven decisions” as the most popular key strategy (62%).
- Respondents chose a deep integration between supply chain planning and operational execution as the most important requirement for a successful supply chain planning and operations strategy (87% selected as important or very important).

Required Actions

Supply chain managers and demand planners must consider taking the following actions to ensure success:

- **Identify the best data to drive demand forecasts.** Most respondents (81%) ranked data-driven demand forecasts as important or very important. However, it will take an ongoing process to identify the right data to drive forecasts, and demand planners must work with the best available data. They will need to constantly test and combine parameters and data



PERSPECTIVE



The pandemic has brought supply chains to the forefront, and supply chains are now a boardroom discussion topic. Now, we are seeing planning as a key driver during and post COVID-19. The key is having better visibility of actual demand (e-commerce is huge right now) and the ability to shorten planning cycles (weekly S&OP not monthly). Do what-if analyses and simulations to be more responsive and enable a resilient supply chain.



~ Richard Howells,
Vice President of Awareness
and Thought Leadership,
SAP Digital Supply Chain,
SAP America, Inc.

sources in different ways to learn how to get the most accurate possible forecasts and better results.

- **Evaluate solutions for supply chain planning and operations that integrate with SAP ERP and SAP S/4HANA.** Not every supply chain will require dedicated planning solutions, but most survey respondents have at least started evaluating such solutions. Survey respondents also agree on the importance of integration between supply chain planning and operational execution (88%) and that of an ERP that supports production scheduling and available-to-promise (76%).
- **When implementing SAP S/4HANA, prioritize supply chain professionals' access to data and ability to allocate inventory.** One survey respondent explained how a botched ERP implementation left the organization with stores and warehouses that could no longer allocate products for customers on demand. Educate employees and test ERP setup and integrations to avoid these integration and usage issues.
- **Optimize processes and integrations to maintain clean and harmonized data across systems and interfaces.** Clean and harmonized data means that data stays accurate and synchronized. The right processes and integrations should ensure that employees in different departments can make decisions based on the same, accurate, up-to-date data.

Chapter One: Supply Chain Planning and Operations Overview

Most members of the SAPinsider Community want to increase visibility of supply chain operations and collaborate closer between planning and execution. Deep integrations between modern planning solutions and the ERP can help them accomplish this.

Best Practices Model - DART™

SAPinsider grounds all its research insights in its proprietary DART model. This research model provides practical insights that connect business **D**rivers and **A**ctions to supporting **R**equirements and **T**echnologies. Drivers represent internal and external pressures that shape organizational direction. Organizations take Actions to address those Drivers. They need certain people, processes, and capabilities as Requirements for those strategies to succeed. Finally, they need enabling Technologies to fulfill their Requirements.

Respondents' answers to our survey and interview questions revealed clear trends. To support the business drivers of increased end-to-end visibility of real-time supply chain operations and increasingly complex operations that require closer collaboration, respondents modernize forecasting, improve cross-functional collaboration, and consolidate supply chain planning functions. To complete these actions, respondents require deep integrations between planning and execution, cleansed and harmonized data, data-driven demand forecasting, access to real-time inventory and available-to-promise (ATP) data, and an ERP that supports production scheduling and ATP. Respondents use or plan to use a wide range of tools to fulfill all the requirements.

These trends are summarized in **Table 1**.

Table 1: DART model framework for supply chain planning and operations

| Drivers | Actions | Requirements | Technologies |
|---|--|--|---|
| <ul style="list-style-type: none"> Need for increased end-to-end visibility of real-time supply chain operations (45%) Increasingly complex supply chain operations require closer collaboration between planning and execution (41%) | <ul style="list-style-type: none"> Modernizing demand and supply forecasting to make data-driven decisions (62%) Improving internal cross-functional collaboration and visibility into supply chain operations (61%) Simplifying operations and consolidating supply chain planning functions (49%) | <ul style="list-style-type: none"> Deep integration between supply chain planning and operational execution (87%) Cleansed and harmonized operational data across systems (85%) Data-driven demand forecasting (81%) Access to real-time inventory and available-to-promise (ATP) data for appropriate employees (79%) ERP that supports production scheduling and available-to-promise (ATP) (76%) | <ul style="list-style-type: none"> Sales & Operations Planning (S&OP) solution (85%) Advanced statistical forecasting for demand management (85%) Inventory planning and optimization solution (84%) Supply forecasting (82%) Self-service analytics solution for supply chain operational performance (75%) Real-time production scheduling (74%) Integrated supplier networks (69%) Advanced available to promise (69%) Automated data management solution (69%) Demand sensing (68%) |

Source: SAPinsider, September 2020

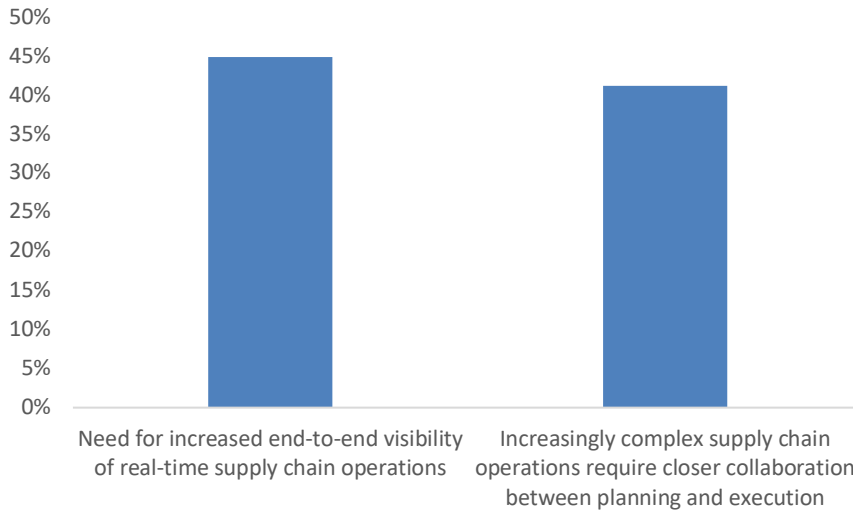
See **Appendix A** for more information on DART™.

What Drives Customers' Approach to Supply Chain Planning and Operations?

Drilling into the data, we found that 45% of survey respondents felt the need for increased end-to-end visibility of real-time supply chain operations, and 41% said increasingly complex supply chain operations require closer

collaboration between planning and execution (see **Figure 1**).

Figure 1. Top drivers for supply chain planning and operations



Source: SAPinsider, September 2020

Several survey respondents said that their demand planners need visibility into sales and operations to generate accurate forecasts, while purchasers, manufacturing managers, logistics professionals, and store managers need visibility into forecasts to procure and prepare based on those forecasts. Conflicts between business priorities such as efficiency versus product mix will always exist, but by improving visibility and sharing the same data sets, forecasts, and simulations, different business groups can collaborate to make better decisions, meet business needs, and balance priorities.

How Do SAP Customers Meet Their Business Drivers?

More than half (62%) of respondents reported modernizing demand and supply forecasting to make data-driven decisions as one of their primary strategies to address the



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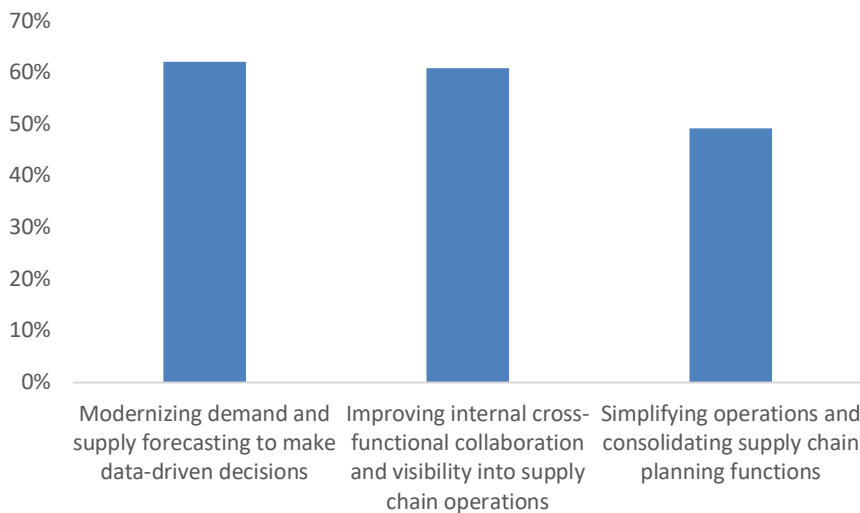
Our business has a lot of issues because everyone works in siloed areas. Stores want more stock. Purchasing has a limited budget. Distribution centers want greater efficiency by shipping whole boxes instead of individual products, but then the store has to sell the whole box. Purchasing wants to minimize spend, but you still need the right product mix. IT cannot solve those problems. The only thing IT can do is try to provide increased visibility.

”

~ Senior Business Analyst
for Supply Chain,
North American Home
Décor Retailer

above drivers (as seen in **Figure 2**). This implicitly supports the top two drivers because modernized forecasting that can be used for data-driven decisions will lead to increased visibility by providing the data necessary for collaboration. Modernized forecasting empowers planners to forecast based on a variety of data and needs. For instance, one respondent explained how improved planning and forecasting tools make it possible to forecast and schedule to capacity rather than lead time.

Figure 2. Top strategies prioritized to address the top drivers of change



Source: SAPinsider, September 2020

Additionally, 61% of respondents chose improving internal cross-functional collaborations and visibility into supply chain operations. This clearly addresses both drivers. Visibility holds the key to collaboration because the different functions need to work based on the same harmonized data to collaborate and make decisions together.

About half (49%) of respondents chose simplifying operations and consolidating supply chain planning functions. This will address both major drivers as it will centralize planning and forecasts, which should help avoid discrepancies and improve collaboration. One survey



PERSPECTIVE



We will deploy our new planning solution in the next ninety days to continue to drive business change where we can schedule to capacity, which we cannot do today. Today, we schedule to lead time in spreadsheets in a simplified model based on how much labor we have available to support the lead time. As new orders come in, we calculate delivery dates based on that lead time. With our new planning and forecasting solutions, we will forecast our needs and schedule to capacity rather than lead time. That will be a fundamental shift.



~ Demand Planner,
North American Building
Products Distributor and
Manufacturer

respondent spoke about how his organization had teams of supply chain planners dedicated to each factory that worked independently of both the factories and each other. They have started to consolidate these planning teams to improve procurement and distribution of parts between factories.

Key Takeaways

Based on our research with respect to drivers and strategies for supply chain planning and operations, we recommend that organizations consider the following advice:

- **Increase visibility to improve collaboration.** If planners, purchasers, manufacturing plants, distribution centers, and stores all have the same data sets with which to work, they can more easily collaborate and make decisions together based on that data.
- **Identify the needs and constraints that shape and limit the supply chain's capacity.** For instance, if available workforce limits how much product the organization can produce and ship, include those limits as forecast parameters.
- **Consider modernizing demand and supply forecasting.** Modern forecasting tools can combine different data inputs and can forecast based on a wider variety of needs than traditional tools.
- **Consolidate supply chain teams wherever synergies might arise.** The different supply chain functions should have access to shared data and work as a consolidated team. This should empower that team to improve the efficiency of spend and distribution and enable them to reallocate existing inventory to meet demand.

Chapter Two: How Do Customers Approach Supply Chain Planning and Operations?

For both supply chain planning and operations to achieve their desired results, planning and operations professionals need to collaborate on integrated software solutions to make data-driven decisions. This section explores how organizations prioritize the different requirements and capabilities they need for a successful supply chain planning and operations strategy and the tools they have used or plan to use to meet those requirements.

Top Requirements for Supply Chain Planning and Operations

Respondents to the survey selected deep integrations between supply chain planning and operational execution as the most important requirement, with 87% indicating this was important or very important to the success of their

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In traditional planning tools, forecasting is based too much on existing methods. We have played around with the algorithms. We do not look at pre-defined parameters anymore. By combining different parameters in a different way and giving it time to learn, you get better results.

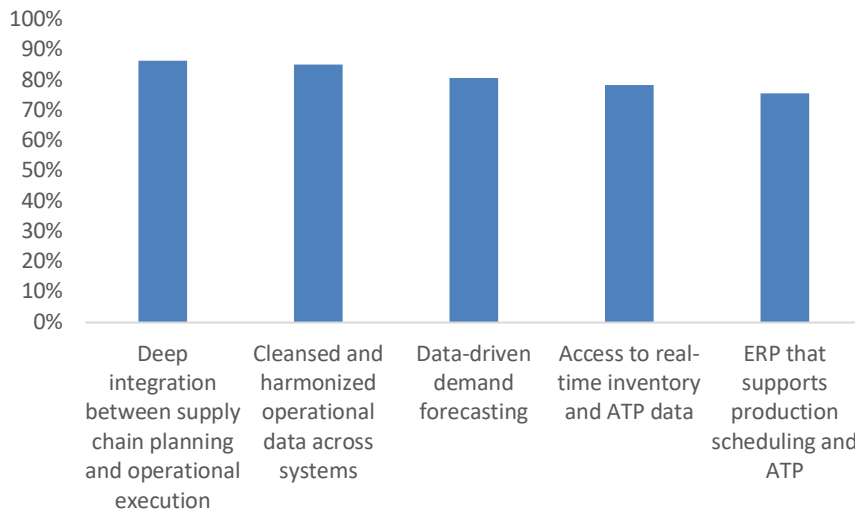
”

~ Peter De Coninck,
Supply Chain Expert,
DXC

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supply chain planning and operations strategies (see **Figure 3**). If demand remains stable, planning and execution can remain somewhat siloed without disrupting the business because they have more time to react to slow market changes, but when demand fluctuates rapidly, as it has for many industries through the 2020 COVID-19 crisis, planners and operational execution professionals must collaborate more closely.

Figure 3. Top requirements for supply chain planning and operations



Source: SAPinsider, September 2020

Respondents chose cleansed and harmonized operational data across systems as the second most important requirement (85%). This means that the ERP and all business solutions share synchronized and accurate data. This supports the strategy for modernizing demand and supply forecasting because planners cannot generate accurate forecasts without clean and up-to-date data. It also helps improve collaboration because different functions need harmonized data to effectively work with each other.

Also, survey respondents see a clear need for data-driven demand forecasting. Different companies will look to different data sources to drive demand forecasting. Some will rely more on historical data and seasonality while others might need a wider range of data including current sales



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Right now, we only using derivation of order intake with consumption to drive demand forecasts. We need to include more data like how many active salesforces do we have and how many events have been booked. We are crawling right now. We will make a big move by implementing a more advanced forecasting solution to improve the quality of our forecasts.

”

~ Head of Operations,
International Cookware
Company

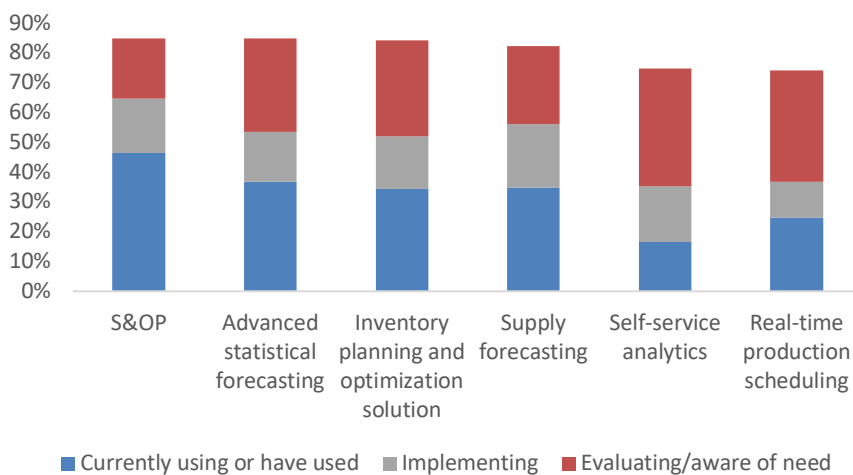
and operations data, weather forecasts, or social media trends. Importantly, the data must stay clean and up-to-date, and planners must investigate outliers in both the input and the output.

Other top requirements included access to real-time inventory and ATP data and an ERP that supports production scheduling and ATP. The functionality in SAP S/4HANA cannot support all of the above requirements by itself, but it can support these two, which help simplify operations and improve collaboration and visibility.

Which Partner Tools Do Respondents Use to Support Their Supply Chain Strategies?

S&OP solutions, advanced statistical forecasting, supply forecasting, and inventory planning and optimization solutions represent the most popular technologies in use today with at least 34% of respondents already using each (see **Figure 4**). S&OP solutions provide the capabilities necessary to integrate deeply between supply chain planning and operational execution as they help different teams synchronize plans.

Figure 4. Popular technologies to support supply chain planning and operations



Source: SAPinsider, August 2020



“

Our planning solution visually ranks the status of all our materials daily. It is color coded, and it is a great visual. We went live with this solution in December of 2016 and went from monthly to weekly buckets. We knew we needed to wait two years from the go-live to avoid unnatural smoothing. Now that we have the actual weekly buckets, we have moved to exception-based planning. Now, we do not need to touch our most accurate forecasts. We are working from the outside-in, focusing on the outliers, and getting ahead of our forecasts.

”

~ Forecasting Analyst,
North American Automotive
Aftermarket Manufacturer
and Distributor

Inventory planning and optimization solutions can help quickly identify where a supply chain might have gaps, shortfalls, or extra inventory available. Similarly, supply forecasting can help reduce lead time by increasing visibility into how much product suppliers will have available and when. Both inventory planning and supply forecasting tools need integrated supplier networks to ensure that purchasers can proactively address problems.

Most respondents will invest in self-service analytics and automated data management solutions. Self-service analytics empower operations professionals to track KPIs and find bottlenecks, both in current operations and in simulations or forecasts for the future. They can also help identify data quality issues and make sure that master data meets business rules. Automated data management can simplify the collection and movement of data to and from the ERP without custom programming. This can help execute mass batch changes to production scheduling based on alterations to the forecasts.

Key Takeaways

Based on our research, we recommend community members consider the following:

- **Prioritize integrating planning and operations solutions and processes.** With 87% of respondents citing the importance of deep integration between supply chain planning and operational execution, this highlights how critical it is for organizations to focus on the integration and collaboration between planning and operations.
- **Educate employees on how to access relevant data and maintain its cleanliness.** Not all, but much of the data the supply chain planners and managers need for their jobs should already exist within the ERP. Take the time to educate every existing and new employee on how to use the ERP to access that data and

implement processes that actively prevent data entry errors.

- **Measure user satisfaction and acceptance in PoCs for new planning solutions.** The survey data showed no difference in on-time fill rates for different planning solutions, but it did show high levels of customer satisfaction among SAP IBP customers and better visibility into operational data for GIB customers. When running PoCs for new planning solutions, survey business users to understand if the solutions meet their needs.
- **Use a combination of an inventory planning solution, supply forecasting, and integrated supplier networks.** This combination should help preemptively identify inventory shortfalls, reduce lead time, and support procurement in proactively addressing problems.

Chapter Three: Required Actions

S&OP solutions, advanced statistical forecasting, supply forecasting, and inventory planning and optimization solutions already have significant adoption among survey takers with at least one-third of respondents already using each. Additionally, most respondents will invest in automated data management solutions, self-service analytics, and integrated supplier networks.

Together, all these tools support the requirements for integrations between planning and operations, clean and harmonized data to drive forecasts, and access to real-time inventory and ATP data.

Survey respondents reported modernizing forecasting, improving collaboration and visibility, and consolidating planning functions to address the top two drivers of needing increased visibility and complex operations that require closer collaboration.

Steps to Success

Our research reveals that SAP customers should apply the following key steps to execute their supply chain planning and operations strategies:

- **Align the objectives of different supply chain functions to ensure that each team has the same operational priorities.** Different functional teams across the supply chain will always have some conflicts between business priorities such as efficiency versus product mix, and therefore, to resolve these conflicts, executives need to communicate the overall priorities and objectives of the organization.
- **Evaluate each team's access to real-time information.** Supply chain managers need easy access to the data that helps them generate accurate

forecasts, monitor stock, and make decisions.

Oftentimes, that data already exists in the ERP, but the business users lack access or do not know how to access it.

- **Use self-service analytics and automated data management solutions to get the right data to the right people at the right time.** Self-service analytics empower operations professionals to track KPIs and find bottlenecks, both in current operations and in simulations or forecasts for the future. They can also help identify data quality issues and make sure that master data meets business rules. Automated data management can simplify the collection and movement of data to and from the ERP without custom programming. This can help execute mass batch changes to production scheduling based on alterations to the forecasts.
- **Implement solutions that will empower multiple teams to collaborate and make decisions based on a shared set of forecasts and simulations.** Supply chain solutions should help fulfill the requirements of deep integrations between planning and operations and data-driven demand forecasting. This will help organizations execute their strategies for modernizing forecasting and meet their drivers of improving visibility and collaboration.

Participants Profile

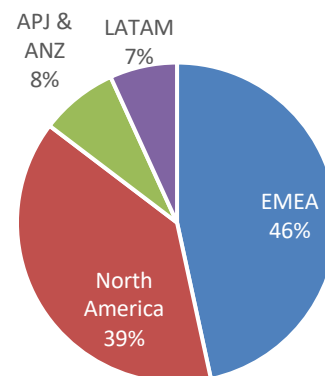
In Q3 of 2020, SAPinsider examined the experiences of business and technology professionals related to their supply chain planning and operations strategies. Our survey was taken by 298 members of the SAPinsider Community and generated responses across a wide range of geographies, industries, and company sizes. Respondents completed an online survey and provided feedback in customer interviews that questioned them on topics such as:

- What are the top drivers for supply chain planning and operations in your organization?
- What actions are your organization taking to address your organization's drivers?
- Which technologies and tools does your organization use or plan to use to support supply chain planning and operations?
- Which vendor's solutions does your organization use for supply chain planning?
- Are you able to measure forecast accuracy today?
- Does your organization have the visibility, quality, and granularity it needs for supply chain operational data?
- What is your organization's approximate on-time fill rate or on-time demand satisfaction rate?

Demographic information on the respondents included the following:

- **Job function:** Functional areas reported by respondents include: Information Technology (56%), Supply Chain Planning (29%), Operations (6%), Manufacturing (4%), Procurement/Purchasing (4%), and Logistics (1%).

PARTICIPANTS PROFILE



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- **Sector:** The survey respondents came from every major economic sector, including: Industrial (62%), Retail, Distribution, & CPG (15%), Software & Technology (13%), Public Sector (7%), Media & Entertainment (1%), Financial Services & Insurance (1%), and Hospitality, Transportation, & Travel (1%).
- **Geography:** Of our survey respondents, 47% were from Europe, The Middle East, or Africa, 39% were from North America, 8% were from Asia-Pacific, Japan, and Australia, and 7% were from Latin America.

Appendix A: The DART™ Methodology

SAPinsider has rewritten the rules of research to provide actionable deliverables from its fact-based approach. The DART methodology serves as the very foundation on which SAPinsider educates end users to act, creates market awareness, drives demand, empowers sales forces, and validates return on investments. It's no wonder that organizations worldwide turn to SAPinsider for research with results.

The DART methodology provides practical insights, including:

- **Drivers:** These are macro-level events that are affecting an organization. They can be both external and internal and require the implementation of strategic plans, people, processes, and systems.
- **Actions:** These are strategies that companies can implement to address the effects of drivers on the business. These are the integration of people, processes, and technology. These should be business-based actions first, but they should fully leverage technology-enabled solutions to be relevant for our focus.
- **Requirements:** These are business and process-level requirements that support the strategies. These tend to be end-to-end for a business process.
- **Technology:** These are technology and systems-related requirements that enable the business requirements and support the company's overall strategies. The requirements must consider the current technology architecture and provide for the adoption of new and innovative technology-enabled capabilities.

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