SAPinsider

BENCHMARK REPORT

# Supply Chain Planning in The Cloud

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July 2022

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# TABLE OF CONTENTS

# Executive Summary

Supply chain planning capabilities have evolved from a portfolio of tools and technologies used to run and plan supply chain operations, to a set of capabilities that can be leveraged to build business agility and resiliency in today's complex business environment. SAPinsiders have indicated in previous research, like, Analytics in The Cloud, that cloud can provide transformational capabilities to supply chain planning and analytics technologies, helping them align better with the rapid proliferation of data, system complexities, and business complexities. To better understand our community's perspectives in this area, SAPinsider surveyed 106 members between June and July 2022.

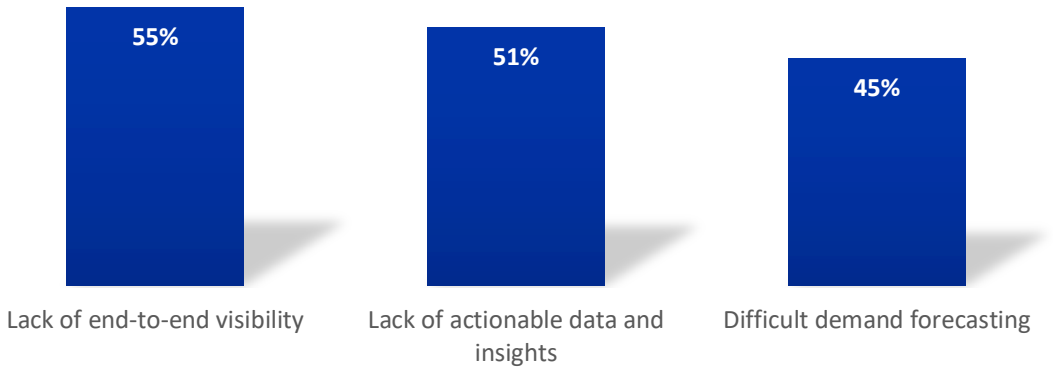
This focus on cloud-based capabilities in supply chain planning stems from the challenges being faced with legacy planning solutions. SAPinsiders highlighted that a significant satisfaction gap exists in supply chain planning capabilities. Only 14% of respondents indicated that they are completely satisfied with their current supply chain planning capabilities whereas 32% indicated that they were "somewhat satisfied." Lack of visibility is a key current state pain point in supply chain planning. When asked to identify the current pain points with supply chain planning, lack-of-end-to-end visibility (55%) and lack of actionable data and insights (51%) emerged as the top two planning challenges (figure 1). The criticality of supply chain visibility and analytics has been a consistent theme in the responses, featuring in business drivers, strategies, and requirements as well, considering the role visibility and analytics play in building business agility and resiliency. SAPinsiders consider visibility a foundational aspect of integrated planning and believe that the level-of-end to-end visibility they envision can be delivered by the cloud.

**INSIDER PERSPECTIVE**

" The scope of supply chain planning is expanding rapidly. This is making our current on-premises portfolio obsolete in many ways. Therefore, we are evaluating how cloud-based planning will help us take the leap. "

~ **Director- Supply Chain Planning Consumer Goods Company**

**Figure 1: Top challenges with current state supply chain planning capabilities**




**Source: SAPinsider, July 2022**

54% of SAPinsiders believe that challenges with current solutions, like lack of actionable data and insights, challenges in demand planning and lack of supply chain visibility, can be addressed only by cloud-based supply chain planning solutions and technologies.

Overall, 83% of respondents indicated that at least some elements of their supply chain planning capabilities are, or will be, cloud-based, validating our hypothesis that SAPinsiders are increasingly looking at cloud-based supply chain planning capabilities.

Cloud can play a critical role in eliminating some other big gaps SAPinsiders identified in their portfolio of current state planning solutions. Integrated planning remains a big gap since only 28% of respondents indicated that they currently had integrated financial planning with supply chain planning, but 75% agree that it is critical to building this type of integrated planning capability. 56% indicate that they may not have seamless connectivity between demand forecast and inventory planning, which highlights the lack of integration at the foundational level for many SAPinsiders.

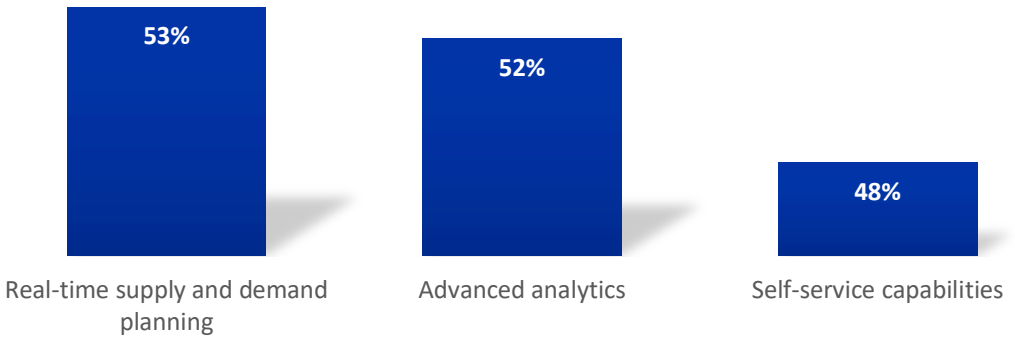
Business agility and resiliency were key themes that emerged across multiple responses. It is, therefore, not surprising that real-time planning emerged as the top success criteria for successfully implementing supply chain planning capabilities in the cloud (53%). This is where SAPinsiders believes that Infrastructure-as-a-service (IaaS) and Platform-as-a-service (PaaS) can help, providing visibility into supply chains with a multitude of partners and vendors. They expect IaaS to help support cloud-based data management and planning, including its interconnection with Internet of Things (IoT) enabled edge devices.

**INSIDER PERSPECTIVE**

" We do capture the data surrounding the planning cycle. When the plan is produced, it provides purchase requisitions and planning time fences, but it does not explain how it achieved that result. Actionable data and insights are critical. "

~ **Director- Business Solutions Industrial Manufacturing**

**Figure 2: Success criteria for cloud-based planning solution implementations**




**Source: SAPinsider, July 2022**

The survey revealed several other trends regarding supply chain planning in the cloud:

- The need for infusing advanced analytics in supply chain planning is also a priority among SAPinsiders. Lack of it was identified among the top two pain points with the current solutions (51%), and the ability to have this was identified as one of the top success criteria (52%). Advanced analytics also emerged as the top technology SAPinsiders believe can help them build optimal supply chain planning capabilities in the cloud (86%).
- Among those actively using integrated planning solutions, Sales and Operations Planning (S&OP) is the most widely used supply chain planning feature being used (35%), followed by demand forecasting (33%). Supply chain control towers (51%) and response and supply planning (47%) are the next step focus areas.

# Required Actions

Based on the survey responses, organizations should make the following plans around their supply chain planning in the cloud strategies:

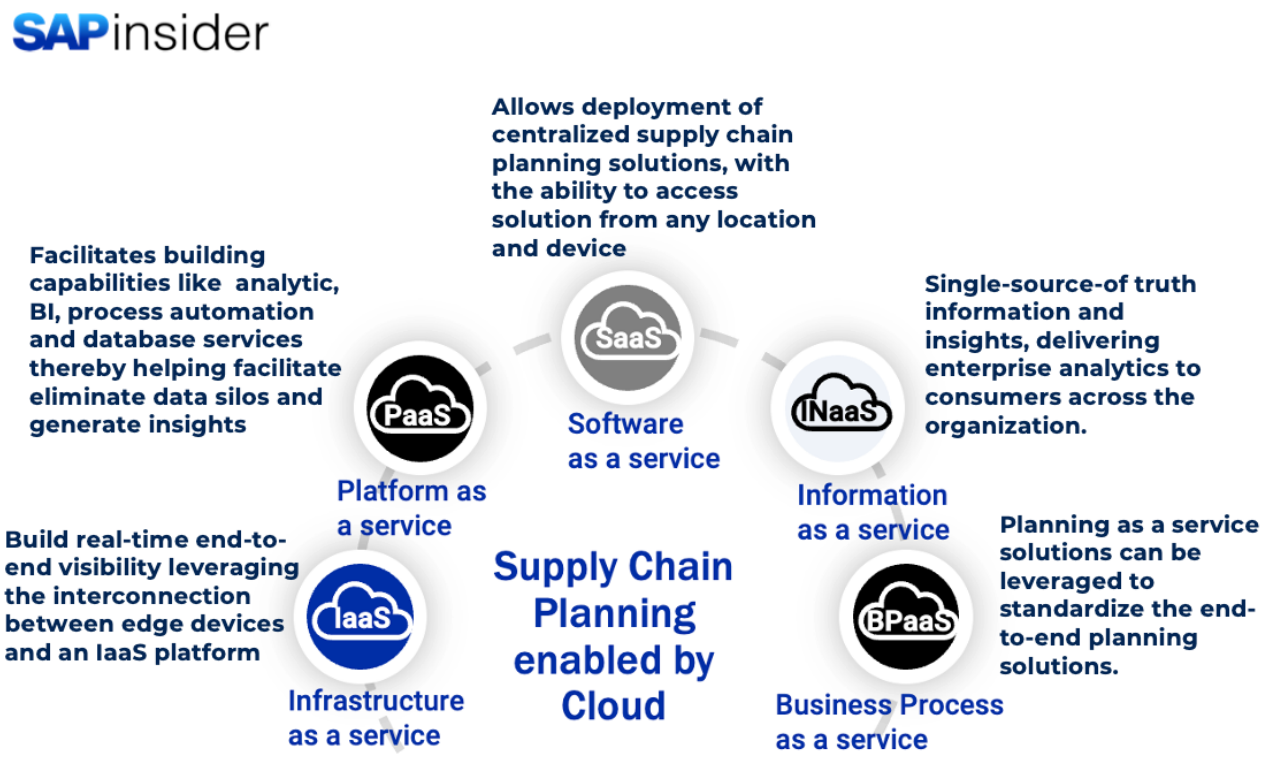
- **Understand your journey to the cloud.** Cloud computing is essentially a portfolio of solutions or offerings, as illustrated in Figure 3. To understand where your gaps are, and what your journey needs to be, it is important to perform a mapping like the one shown in Figure 3. The goal should be:
  - Understand what current state capabilities you have in these layers. Each offering can help build certain competencies, and many of these offerings are essentially a combination of other offerings. Starting by mapping current portfolio under each bucket shown in figure 3 can help you structure your journey framework.
  - Explore the challenges these offerings can help address. As shown in figure 3, many of the pain points and challenges identified in previous section can only completely be addressed by these cloud-based capabilities. This exploration will help document the current state vs future state gap.
  - Build and plan your journey accordingly. Once you have identified the gap areas, you then need to formulate the journey to get from your current state to the future state.

**INSIDER PERSPECTIVE**

" Difficult demand management, specifically for custom build products is a major pain point, partly due to unreliable supplier lead times. Timely visibility and insights can help "

~ **IT Verticals Lead Food and Beverages Company**

**Figure 3: Understanding cloud-based supply chain capabilities requirements**



- **Understand the limitations and requirements of real-time planning**. Don't boil the ocean! While in many aspects of supply chain planning, like last mile fulfillment, real-time planning is becoming an imperative, there are supply chain scenarios where you may not need to build real-time capabilities. Building real-time planning capabilities is resource intensive, so it is critical to map out:
    - Where and how you need to build real-time planning capability. This requires a robust understanding of many different aspects of supply chain planning. Also, often, there will always be some level of latency in data transfer. So not only do you need to identify the junctures that need real-time data, but you also need to determine the acceptable level of latency.
    - The second critical aspect then is how your real-time data interacts with the dataset that does not need to be updated in real-time. Optimal planning does not happen in silos. In your end-to-end planning process, you will certainly end up leveraging both real-time and data with considerable latency. The synergy and integrity aspect needs to be baked in to ensure that the plans are feasible.
- **Actively promote citizen analysts and data scientists**. Every supply chain planning professional is aware that planning processes are becoming more data driven. The solutions are evolving accordingly. However, the good news is that though solutions these days are becoming more powerful, and leveraging more complex algorithms, they are also using power of AI and ML to make these solutions easy to use for those who are not technically advanced. The true benefit of any supply chain planning technology investment can be reaped only by putting the tools in the hands of those who work within these processes. Hence, actively training those who will leverage these processes, and recruiting a new breed of planners who understand these solutions and use their creativity with data, is critical.
- **Make integration a key feature.** The key idea behind integrated business planning is that optimal supply chain planning can happen only when various sub-elements of supply chain planning are tightly integrated. Hence, integration needs to be a focus irrespective of whether you are investing in an off-the-shelf solution, making updates to an existing solution, or developing a custom supply chain planning solution in the cloud. The second element of integration then is ensuring integration with other planning solutions like financial planning, which has been highlighted as a key requirement by SAPinsiders (75%).

# Chapter One: Supply Chain Planning in The Cloud Overview

SAPinsiders view supply chain planning as an important tool to build business resiliency and agility. This was evident in the choice of top business drivers highlighted by SAPinsiders. Organizational resilience and agility dominate the business drivers (Figure 1). The need to improve visibility (39%), the capability to plan end-to-end (38%), and the need to respond to challenges fast (34%) all pertain to resiliency and agility. Supply chains, in many industries, support how the business fulfills its objective of meeting consumer demand. It is therefore not surprising that resilience and agility in this function have attained paramount importance.

**INSIDER PERSPECTIVE**

" Increasing business uncertainty, like ocean freight lead times makes planning challenging. This is where actionable data and insights can help. For example, insights from suppliers on delays can be extremely helpful and timely insights from our logistics partners can allow us to effectively commit shipment and delivery dates "

~ **Vice President- IT**
**Food and Beverages Company**

## 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.

In this report, the need to improve business visibility emerged as the top driver, followed by the capability to perform end-to-end business planning. To satisfy these drivers, respondents indicated that they need to build end-to-end supply chain visibility, create single-source-of-truth for planning, and generate real-time insights into business operations.

To make their supply chain planning in the cloud strategy successful, survey respondents identified several requirements, including the requirement of having a centralized, single source of data that is integrated and harmonized, integrating analytics with supply chain visibility capabilities, developing the capability for real-time demand-driven forecasting, and eliminating supply chain processes silos. Respondents also use or plan to use a wide range of SAP and SAP partner tools and technologies to support these requirements for their supply chain planning in the cloud capabilities initiatives.

Respondents' answers to our survey and interview questions revealed clear trends that are summarized in **Table 1** and will be examined throughout the report.

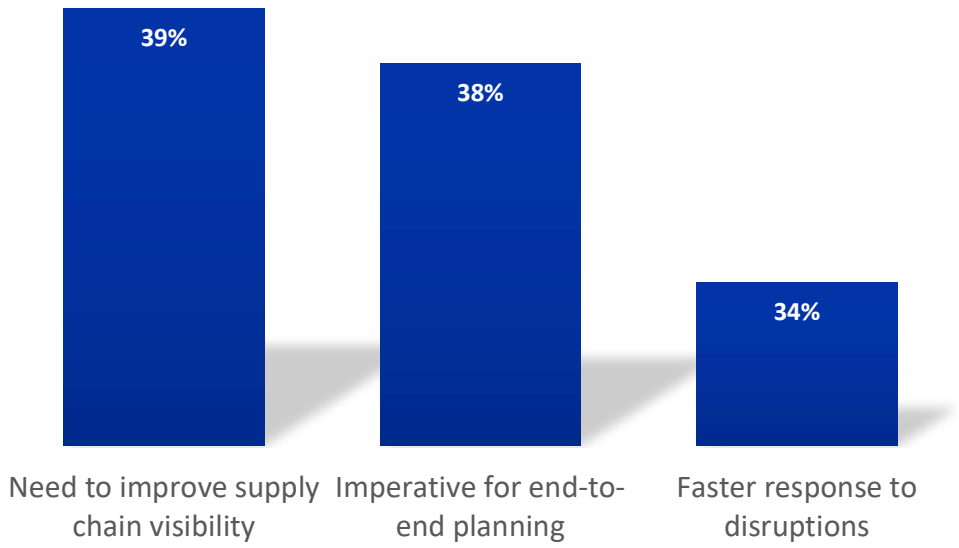
**Table 1: DART model framework for supply chain planning in the cloud**

| Drivers | Actions | Requirements | Technologies |
|---|---|---|---|
| • Need to improve business operations visibility (39%)<br>• Develop end-to-end business planning capabilities (38%)<br>• Ability to respond to business disruptions faster (34%) | • Build end-to-end supply chain visibility (67%)<br>• Develop a single-source-of-truth for insights and planning in the supply chain (39%)<br>• Develop the capability to generate real-time insights in supply chain operations (38%)<br>• Generate process efficiency through advanced planning (36%) | • Centralized and cleaned single source of data for supply chain (85%)<br>• Pairing advanced analytics-based planning capabilities with supply chain visibility (80%)<br>• Real-time data-driven demand forecasting (79%)<br>• Eliminate supply chain process silos (75%)<br>• Integrate operational and financial planning (71%) | • Advanced analytics-based planning solutions (87%)<br>• Integrated advanced planning solutions (83%)<br>• S&OP Solutions (91%)<br>• Centralized data lakes and hubs (77%)<br>• Advanced capacity planning solutions like Available to Promise (ATP) (74%)<br>• Demand-driven MRP (DDMRP) for replenishment planning (73%) |

# What Drives Supply Chain Planning in The Cloud?

SAPinsiders view supply chain planning as an important tool to build business resiliency and agility. This was evident in the choice of top business drivers highlighted by SAPinsiders. Organizational resilience and agility dominate the business drivers (Figure 1). The need to improve visibility (39%), the capability to plan end-to-end (38%), and the need to respond to challenges fast (34%) all pertain to resiliency and agility. Supply chains, in many industries, support how the business fulfills its objective of meeting consumer demand. It is therefore not surprising that resilience and agility in this function have attained paramount importance.

**Figure 4: Top drivers for supply chain planning in the cloud**




**Source: SAPinsider, July 2022**

The need to improve business operations visibility needs to be supported by having end-to-end supply chain visibility, so it is not surprising that it emerged as the top driver (39%). The supply chains that most organizations need to leverage to deliver customer expectations are becoming increasingly complex due to global footprints, product proliferation, systems complexity, and evolving intricacies of key processes like logistics and inventory management. These complexities lead to more risk exposure across the supply chain. This increased risk, in turn, significantly increases the probability of supply chain disruptions, which may then impact customer satisfaction. To better manage supply chain risks and disruptions and build capabilities to deliver the right product in the right quantity and at the right time to enhance customer satisfaction, organizations need end-to-end visibility, control, and planning in their supply chains.

**INSIDER PERSPECTIVE**

" Integrated and visible realistic planning of demand, supply, production, stocking etc. is a must have capability now to address business challenges we face today. And a key foundational aspect is real-time information availability. "

~ **SCM Solutions Expert**
**Retail and Consumer Goods**

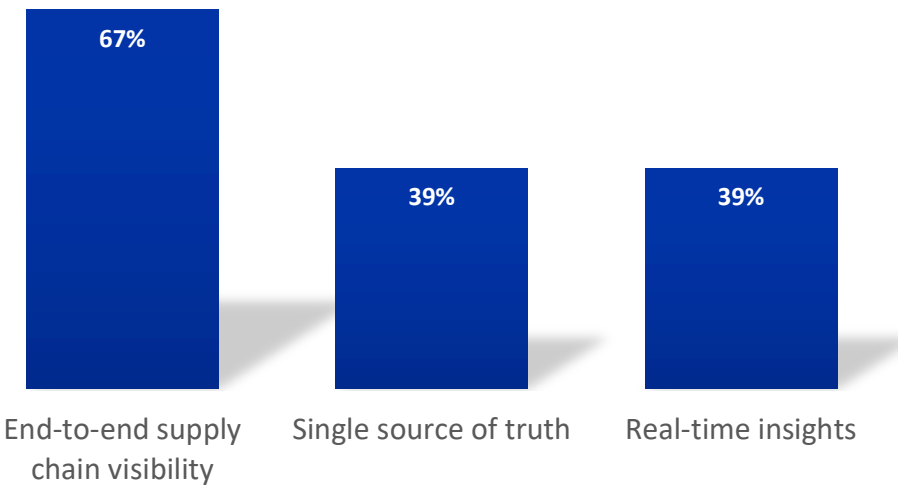
Visibility is powerful only when capabilities exist to leverage that visibility and act upon it. One aspect is obviously to leverage that data to respond to any occurring or possible disruptions much faster. Visibility data not only provides an opportunity to address disruptions but can also be leveraged for real-time operational planning. The ability for end-to-end planning hence emerged among the top drivers as well (38%), followed by a faster response to disruptions (34%)

Fragmentation of data remains a key obstacle on the path of integrated supply chain planning. Many organizations have invested in point systems for planning various elements of supply chains over the years, have legacy systems, and have data pertaining to supply chains residing in enterprise systems like ERP, CRM, etc. With the advent of Big Data, the number of data sources and opportunities for data fragmentation have also increased. Supply chain data is therefore fragmented in data silos across multiple systems and data sources across the enterprise. This is one of the factors behind SAPinsiders selecting creating a "single-source-of-truth" as one of their key strategies as it pertains to supply chain planning.

## How Do SAPinsiders Address Their Drivers?

Since the top business drivers focus on resiliency and agility, strategies that SAPinsiders are formulating revolve around these as well, building end-to-end visibility (67%), Developing a single source of truth for the end-to-end supply chain (39%), and leveraging real-time insights (39%), all pertain to the resiliency and agility and support associated business drivers.

**Figure 5: Top strategies are taken to address the top drivers**




**Source: SAPinsider, July 2022**

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**INSIDER PERSPECTIVE**

" By providing single unified customer demand to the manufacturer and their suppliers, demand variability can be reduced significantly. Having visibility into supplier inventory is critical as well, as it helps develop trust and confidence in demand fulfillment planning. "

~ **BPM Lead- Supply Chain Energy and Utilities Company**

## Key Takeaways

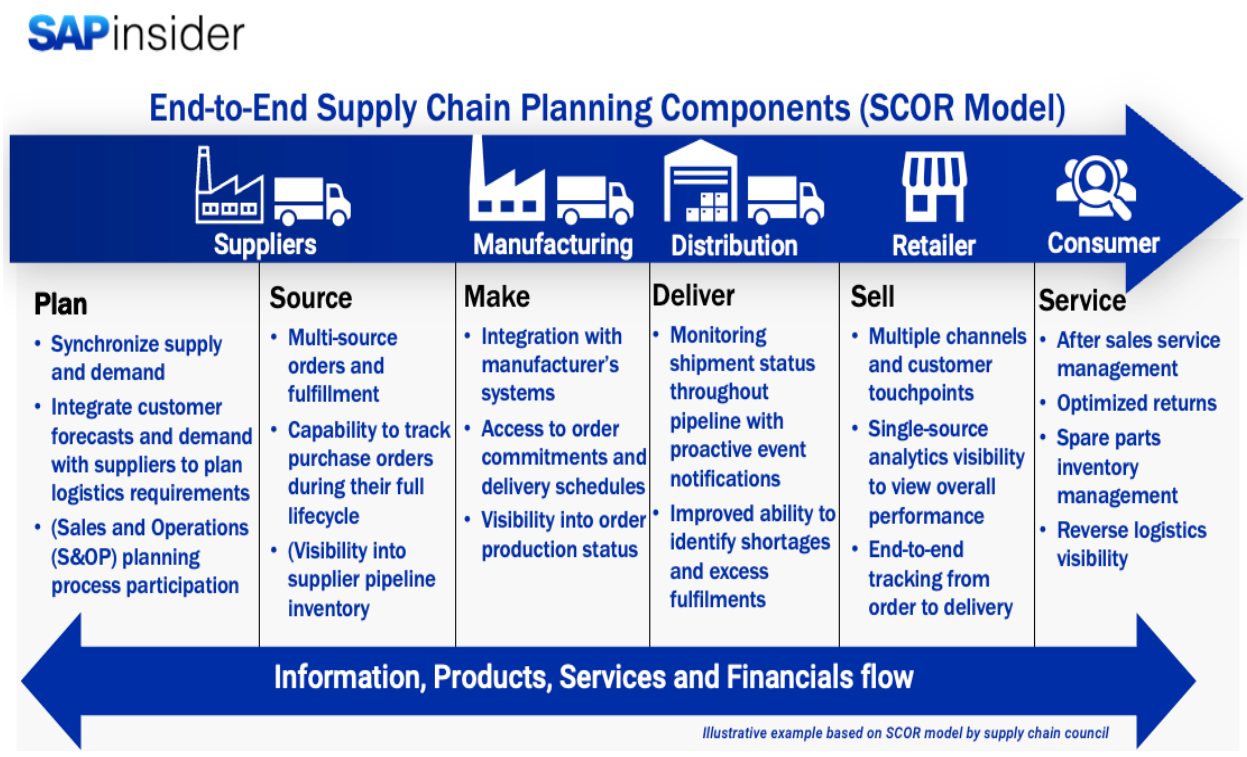
Based on our research with respect to supply chain planning in the cloud, the following takeaways are clear:

- **Develop a visibility roadmap.** While the survey was focused on the supply chain, remember that even siloed supply chain visibility, despite being end-to-end, may not always be the visibility you want for true business resiliency. This goes back to 75% of respondents indicating that they need integration between their supply chain planning and financial planning systems. At a high level, to map your visibility needs:
    - Document points of failures in your processes. Example: List all supply chain challenges that your organization normally runs into. Brainstorm to understand which of those challenges can be attributed to a lack of data visibility, despite the data being available within the organization.
    - If you already developed the visibility capability for the process in which the failure occurred, understand if the failure was a result of people, processes, or data.

- Understand how to eliminate those points of failure through changes or modifications in the element responsible while retaining the process visibility. Make the first three steps outlined a continuous process.
- For the challenges/disruptions identified in the second step, understand what the flow of data should have been if lack of visibility turns out to be the reason behind failure.
- Evaluate if the required visibility can be attained through existing systems or invest in solutions to build visibility. If not, understand and map the desired future state.

- **Understand the end-to-end planning process**. Common sense dictates that to build an end-to-end supply chain planning capability, there is a need to understand the end-to-end planning process. Document your end-to-end process, like the example shown in figure 6. The framework is one of many available that you can use and is based on the SCOR model by supply chain council. As evident from figure 6, it is critical to map not only your supply chain flows but also the key tasks that need to happen in major buckets indicated. The tasks in the illustration are indicative, not exhaustive but the goal is to understand the key imperatives, deliverables, and challenges, in tandem with planning requirements, and capturing all that in a single framework.

**Figure 6: Example framework to evaluate current state**




**Source: Illustrative framework based on SCOR model**

- **Eliminate information silos**. With the advent of Big Data, the number of data sources and opportunities for data fragmentation have also increased. Supply chain data is therefore fragmented in data silos across multiple systems and data sources across the enterprise. This is one of the factors behind SAPinsiders selecting creating a "single-source-of-truth" as one of their key strategies as it pertains to supply chain planning. And a critical step in supporting this strategy is to eliminate supply chain data silos. Some steps that you can take to plan this initiative are:

    - Map you existing data sources, across data categories. Examples of data categories can be a matrix of function (like procurement, manufacturing etc.), purpose (how is data being used), type (structured, unstructured etc.).

    - Evaluate the grids in the matrix to understand how the boundaries can be erased. Examples of thought process can be: Can the same system provide data for multiple purposes? This will help consolidate your data sources for planning

    - Eventually, with your final set of data sources, you can start working on building the single-source-of truth data hub or data lake.

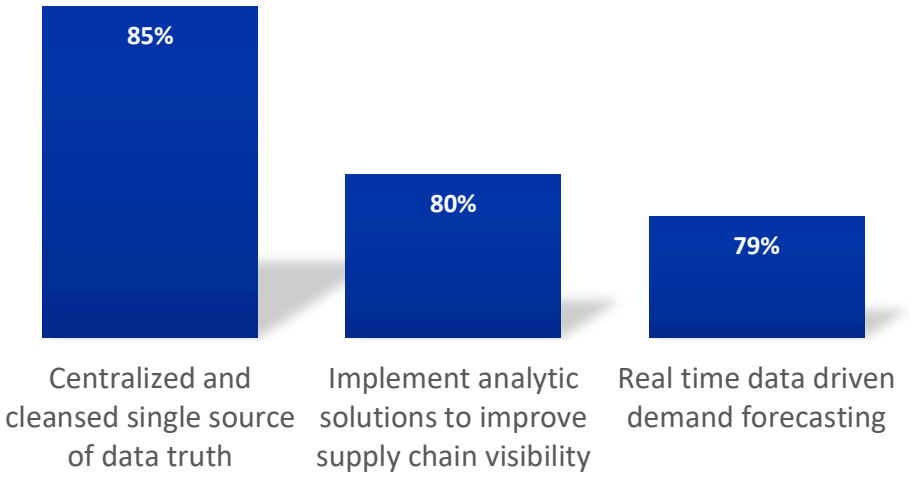
# Chapter Two: How Do SAPinsiders Approach Planning in The Cloud?

Data and analytics form the core of supply chain planning capabilities today and this was very much highlighted by SAPinsiders when identifying the requirements to build optimal supply chain planning capabilities as well as in identifying top technologies. The strategy of building a single-source-of-truth and creating end-to-end visibility translated into centralized and cleansed single source of data truth emerging as the top requirement (85%). The strategy of real-time insights translates into the requirement for real-time data-driven forecasting (79%) as well as having the analytical capabilities to draw insights from visibility data (80%). Advanced analytics was the top technology capability identified by SAPinsiders for supply chain planning capabilities in the cloud (87%).

## Top Supply Chain Planning in The Cloud Requirements

Fragmentation of data remains a key obstacle on the path of integrated supply chain planning, as highlighted by SAPinsiders. Many organizations have invested in point systems for planning various elements of supply chains over the years, have legacy systems, and have data pertaining to supply chains residing in enterprise systems like ERP, CRM, etc. With the advent of Big Data, the number of data sources and opportunities for data fragmentation have also increased. Supply chain data is therefore fragmented in data silos across multiple systems and data sources across the enterprise. This is one of the factors behind SAPinsiders selecting creating a "single-source-of-truth" as one of their key strategies as it pertains to supply chain planning.

**Figure 7: Top requirements for supply chain planning in the cloud**




**Source: SAPinsider, July 2022**

**INSIDER PERSPECTIVE**

" The most critical aspect to improve supply chain planning process efficiencies in my opinion is the ability to have real-time information. Building dashboards that present this information across all possible consumers of this information is important. "

~ **Director- Business Solutions Industrial Manufacturing**

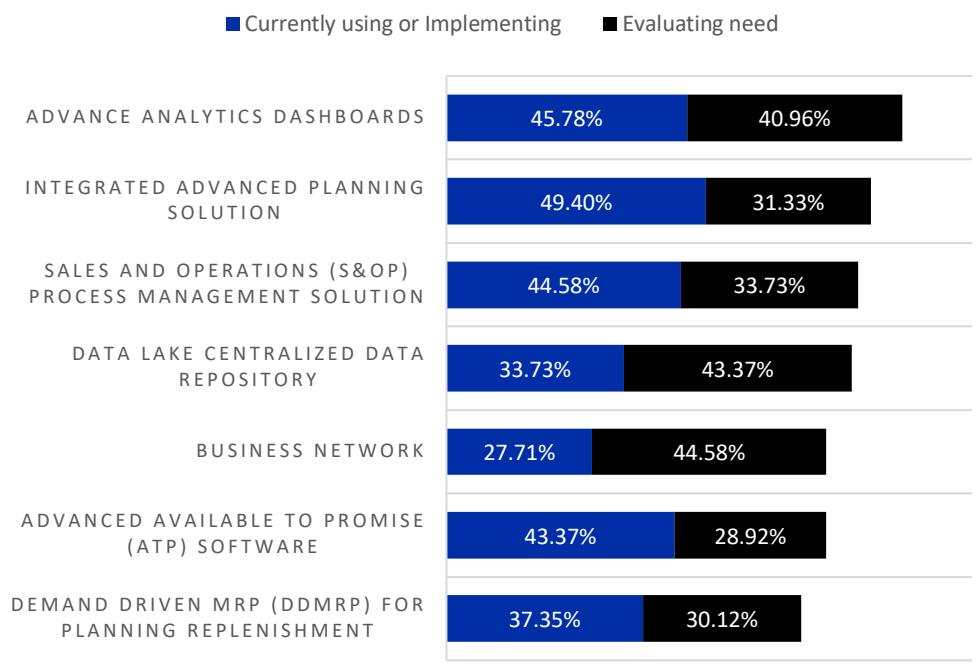
Respondents from high-tech and Industrial manufacturing companies place the most importance on centralized and cleansed single-source-of-truth data (42%). Industries like automobile and semiconductor have recently seen massive disruption, some of which took the shape of strategic crisis. There is hence an increased focus on digital transformation and centralized, integral data source is the foundational requirement of successful digital transformation, as highlighted in SAPinsider research Future of Business Intelligence. The role of cloud as a critical tool for building centralized data sources emerged in this research as well. It is therefore not surprising that SAPinsiders believe this requirement needs to be met with cloud-based planning capabilities.

This aspect of having a centralized and harmonized data source also goes together with another requirement of real-time data-driven demand forecasting (79%). The underlying data is one of the most important foundational elements of robust demand forecasting. Having a centralized, single-source-of truth that also captures real-time data is increasingly becoming an imperative, as highlighted in the SAPinsider Dec 2021 report Analytics in The Cloud. Cloud-based data sources help integrate data from a plethora of sources, including internal data being generated by an organization's systems and devices, from external partners in the network, as well as any public datasets that need to be leveraged for supply chain planning like traffic or weather data.

# Which Technologies Do Respondents Use for Planning in The Cloud?

In responses to the survey for our upcoming research report, Supply Chain Planning in The Cloud, SAPinsiders highlighted advanced analytics capabilities, as leveraged in the context of supply chain planning, as the top technology when the current state and immediate next steps timeframe are considered together, as shown in figure 1. As you can see from figure 1, SAPinsiders have indicated that they have started building capabilities in foundational aspects like advanced analytics and integrated planning, and those who have not done it yet are actively evaluating it. Some planning processes like S&OP and ATP that have been leveraged for a while also show high adoption in the current state. Technologies like centralized data lakes & hubs as well as business networks are key future state focus areas.

**Figure 8: Supply chain planning in the cloud tools and technologies**




**Source: SAPinsider, July 2022**

Advanced analytics emerged as a key requirement as well as a key technology to support the requirement. Lack of relevant and timely data and insights was identified as a major pain point with current planning solutions portfolio as well (51%). Analytics plays a key role across the end-to-end supply chain planning process and can do so in non-technology aspects like collaboration and building trust. Network-wide initiatives like Collaborative Planning & Forecasting (CPFR) where every player in the supply chain leverages data to forge collaboration and trust is an example. Obviously, analytics forms a

**INSIDER PERSPECTIVE**

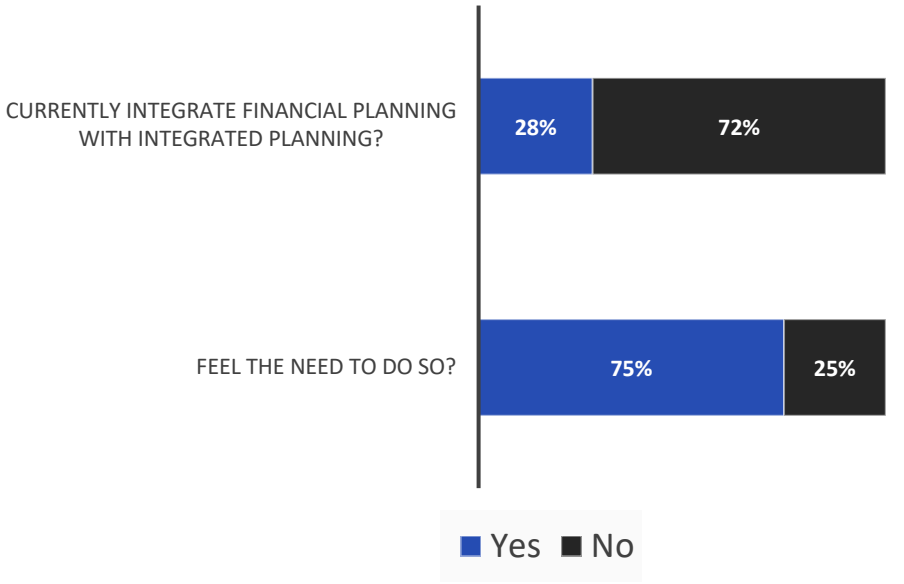
" When it comes to processes like Sales & Operations Planning (S&OP), we feel that the lack of end-to-end visibility hampers optimal planning. Data availability and integrity adds to the pain. "

~ **IT Business Partner- Supply Chain**
**Consumer Goods Company**

critical component of the core planning processes themselves. In that context, a key aspect that many SAPinsiders highlighted is that advanced analytics capability should not be viewed necessarily as a standalone technology capability. Any form of analytics, including advanced analytics methodologies, are essentially extensions of other capabilities, like supply chain planning technologies to create enablers. While even simple KPIs and metrics can be characterized as analytics, advanced planning incorporates almost all the three key forms of analytics- descriptive, prescriptive, and predictive. Devoid of analytics capabilities, these tools will not exist. Following their trend of identifying advanced analytics-based visibility as a key requirement, Retail and consumer goods take a lead in identifying analytics as the top technology (61%).

Integration of planning process, whether it is internal, between various supply chain planning processes, or external, like integration with systems like financial systems, was highlighted as a major challenge by SAPinsiders. 49% of SAPinsders have either already invested in building this capability or are actively working on it. Integration spans aspects beside planning and can address other pain points, strategies and requirements identified by SAPinsiders in their responses. As an example, the end-to-end visibility strategy can only be addressed if there is seamless integration across planning functions as well, to get insights across the entire value chain.

**Figure 9: Integration of financial planning solutions with integrated planning**




**Source: SAPinsider, July 2022**

Sales and Operations Planning (S&OP) solutions are among the top current state technologies as well (44%). This is not surprising since these solutions have been around for few decades now. However, as many SAPinsiders highlighted in their post survey interviews and quotes, S&OP solutions have evolved over the years and these evolutions have addressed conventional pain points associated with them. A critical component, as

**INSIDER PERSPECTIVE**

" Having advanced demand forecasting capabilities are obviously helpful. However, proper demand management also is a major change management exercise, and that angel needs to be managed as well in addition to the technology component. "

~ **Director IT**
**Oil and Gas Company**

highlighted both in requirements as well as technology sections of the survey, is demand forecasting. Demand forecasting plays a key role in S&OP. Advances in technology and computing power now allows solution providers to embed more advanced forecasting algorithms in their solutions. This has helped improve forecast accuracy. Even a small increase in accuracy can bring a significant level of certainty in not only the S&OP process but the entire end-to-end supply chain planning.

Business network emerged as one of the key focus areas in the near term (45%). Increasing complexity of supply chain networks and the imperative for end-to-end visibility of SAPinsiders, as highlighted in multiple responses, makes the ability to extend supply chain visibility beyond internal systems and processes a must. It is therefore not surprising that business network emerged as a critical focus area. Again, analytics plays a key role for this technology as well. As explained previously, visibility without insights and associated optimal planning, is not very useful. Hence, advanced analytics, combined with business network visibility, is powerful.

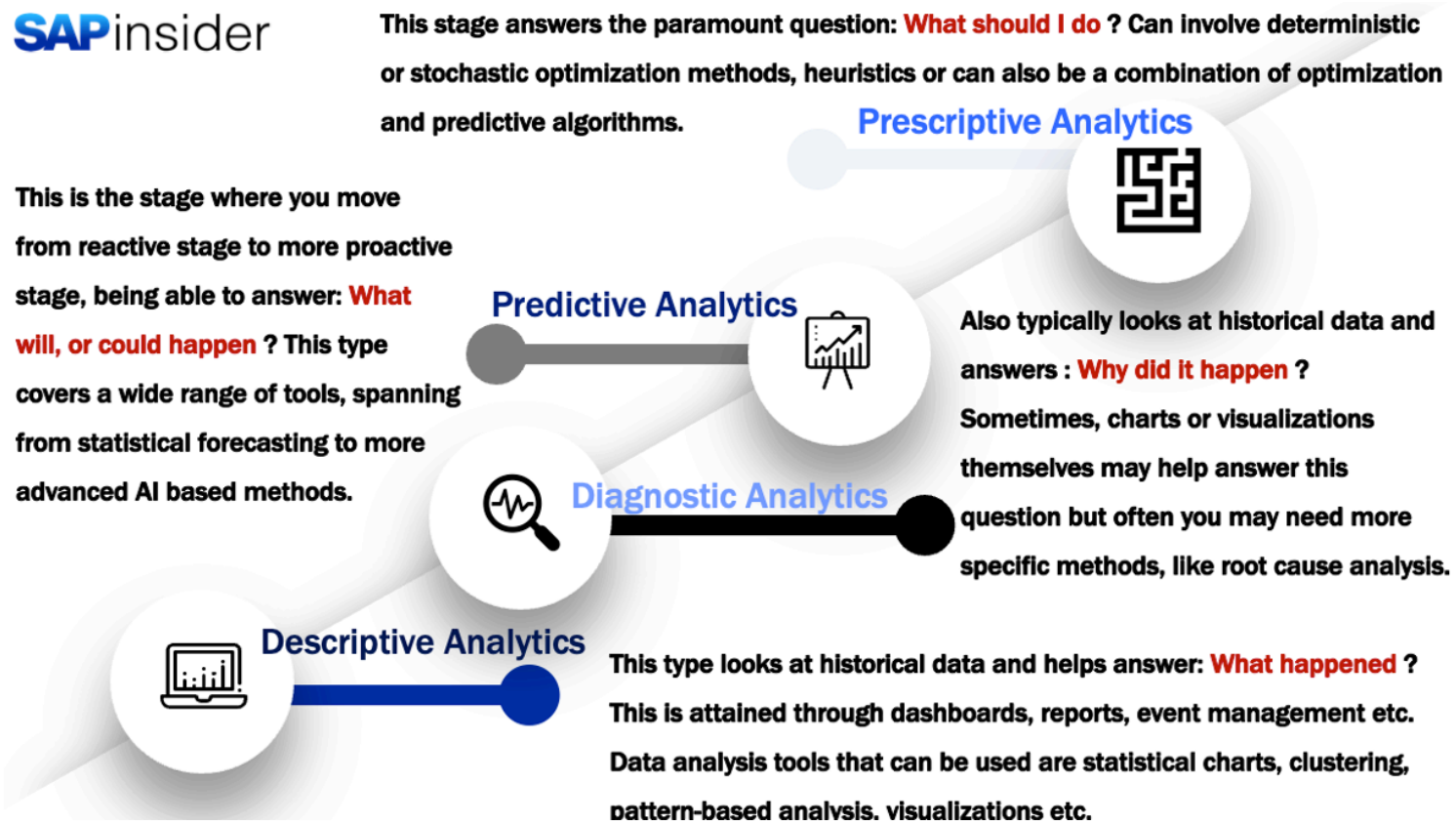
## Key Takeaways

When it comes to equipping organizations with the capabilities and technologies required to implement supply chain planning capabilities in the cloud, consider the following:

- **Focus on the data aspect before insights and analytics**. While we all want to reap the benefits from any planning technology investment as soon as possible, a firm groundwork in terms of data infrastructure is critical. There are three key areas, from a data perspective, that you need to be aware of:
    - Identify all your key data sources and ensure that you have the infrastructure in place to collect the data. Remember that near real-time is a key aspect of digital tracking, and hence your data ingestion capability must support this. If you do not have this in place, then this is the first step toward your modernizing imperative.
    - Ensure data integration of all siloed and fragmented data sources.Ensure data quality, integrity, and consistency. This is not only the critical but the difficult part. Once you have this firmly in place, leveraging analytics will be much easier.
- **Understand your data categories**. Get a handle on the type of data sources that you need to build that single-source-of-truth data repository. While one aspect is strategizing about how to eliminate data silos that exist internally within the organization, there are at least two additional buckets: Data generated by your supply chain partners and vendors and public data that needs to be leveraged like traffic or weather data. Data being generated may be in different files and formats as well. Hence, building a current state and future state data map is critical for any successful supply chain planning capability in the cloud.

- **Build stepwise analytics capabilities**. If you executed your visibility data strategy correctly, there are some advanced analytics methodologies that you can leverage on that data. An example of stepwise journey is shown in figure 10. Some more specific examples are reinforcement learning algorithms for inventory management and deep learning for logistics planning. But if you are not firmly established in the game, the best strategy is to start with elementary analytics methodologies, like descriptive and diagnostic analytics. This approach helps you build a gradual culture of analytics, redefine processes based on learning, and help establish a foundation for advanced approaches, like prescriptive and predictive analytics and eventually AI- and ML-based algorithms.

**Figure 10: Stepwise analytics journey in supply chain planning**



# Chapter Three: Required Actions

As companies around the world focus on transforming their supply chains to align with the turbulent business realities of today, the imperative of cloud computing technology is coming to the forefront. Disruptions and challenges being faced by organizations are also highlighting the pain points with their current set of solutions. Due to the transformational capabilities that it can bring into supply chain planning, like real-time visibility, collaboration, single-source-of truth and real-time actionable data and insights, cloud computing is being seen by SAPinsiders as a key enabler to transforming their supply chain planning capabilities.

## Steps to Success

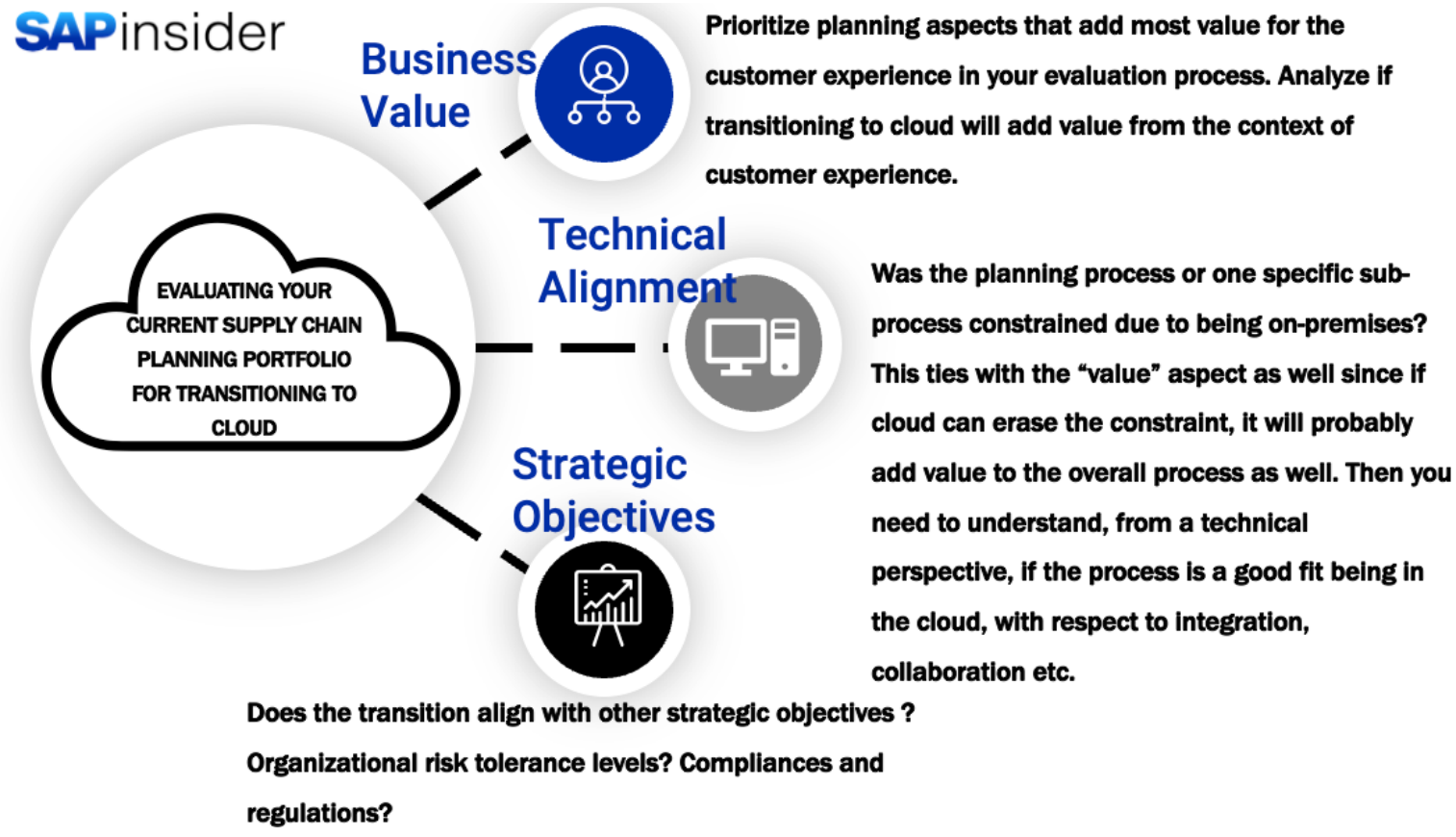
Our research reveals that SAP customers should apply the following key steps around their supply chain planning in the cloud strategy:

- **Build trust with supply chain partners.** For truly integrated planning, visibility and planning need to extend beyond the network of an organization. While the need to extend visibility by integrating with visibility platforms of supply chain partners and planning collaboration through approaches like CPFR is widely emphasized, this is easier said than done. Organizations' key bottleneck is a lack of trust between supply chain partners. Hence, it is extremely important that organizations work on building trust with all their key supply chain partners. This can be done by elevating the interactions from transactional to strategic partnerships. The benefits of building deep trust with key supply chain partners extend beyond supply chain visibility. Planning in the cloud can help you collaborate with your partners by sharing data and insights with them in real-time but how effectively that data will be leveraged depends on the level of trust established.

- **Harness the power of the cloud, edge analytics, TinyML, and AIoT**. The power of having access to good, near-real-time data visibility is immense. But the best way to leverage this near-real-time data is by leveraging the cloud. Whether it is cloud-based visibility nd planning platforms, or the end-to-end data and analytics infrastructure based in the cloud, the cloud must be a critical component in your supply chain planning modernization journey. And this is where you can strategically leverage edge computing and TinyML to add enhanced capabilities to your tracking and data-based planning infrastructure. An ideal configuration is that your fundamental analytics is distributed at the edge, with a centralized algorithm interfacing with the TinyML algorithms on edge devices. This architecture allows you to scale to advanced analytics approaches more easily, like deep learning, at a later stage.

- **Take a portfolio evaluation approach for transition to cloud**. Whether you are using a set of supply chain planning tools, or one comprehensive integrated business planning solution, it is important to understand how the solution(s) fit within the broader portfolio of your other supply chain and critical enterprise tools like ERP and CRM. The best way to envision the future state outcome is to start with how the transition will deliver value to the end customer. This allows alignment of the final objective since all stakeholders will agree that customer experience is what is most important today. Then you can map your existing workload on certain criteria. The illustration in figure 11 is an example framework that you can use but this is not a universal or exhaustive template. Also, this is not stepwise. You can pick any category and start your evaluation there and move to another if you are able to check the box. As an example, you can start with the the technology constraint bucket. Are capabilities of your current tool constrained due to the on-premises nature of the solution? If yes, you then evaluate it against other categories.

**Figure 11: Evaluating your supply chain planning portfolio for cloud migration**



# Methodology

Supply chain planning capabilities have evolved from a portfolio of tools and technologies used to run and plan supply chain operations, to a set of capabilities that can be leveraged to build business agility and resiliency in today's complex business environment. SAPinsiders have indicated in previous research, like, Analytics in The Cloud, that cloud can provide transformational capabilities to supply chain planning and analytics technologies, helping them align better with the rapid proliferation of data, system complexities, and business complexities. To better understand our community's perspectives in this area, SAPinsider surveyed 106 members between June and July 2022, to gain their perspectives on questions like:

- Can cloud based capabilities help address current supply chain planning challenges? If yes, what are those challenges and how do SAPinsiders intend to leverage cloud to address those challenges?
- What are the strategies that SAPinsiders have in mind to address the business imperatives that are making them explore cloud-based planning capabilities??
- What are the key technology requirements SAPinsiders have on top of their minds and which technologies are on their current and near-term technology roadmap?

The demographics of the respondents included the following:

- **Job function:** Functional areas reported by respondents include IT Management (30%), SAP Team (16%), IT Operations (11%), GRC and Compliance (8%), Security (6%), Systems Implementation and Integration (6%), Finance (5%), and Application Development (5%).
- **Market sector:** The survey respondents came from every major economic sector, including Retail, ecommerce, and consumer goods (32%); Industrial Manufacturing (20%); Healthcare and Life Sciences (18%) and High-Tech (14%)
- **Geography:** Of our survey respondents, 41% were from North America; 33% were from Europe, the Middle East, and Africa (EMEA); 21% were from Asia-Pacific, Japan, and Australia (APJ); and 5% were from Latin America (LATAM).

# 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 to 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.

# Report Sponsors

SAP Integrated Business Planning (IBP) for supply chain helps companies meet future demand profitably, and is enriched with features like supply chain analytics, what-if simulations, alerts and more to help organizations stay ahead of change and improve responsiveness. Powered by SAP HANA, this cloud-based solution combines sales and operations planning (S&OP), forecasting and demand, response and supply, demand driven replenishment, and inventory planning. The solution enables automated, tightly coordinated supply chain planning processes. It is also equipped with advanced machine learning algorithms and planning capabilities and can integrate natively with SAP supply chain control tower and other solutions.

https://www.sap.com/products/scm/integrated-business-planning/

Microsoft enables digital transformation for the era of an intelligent cloud and an intelligent edge. It partners closely with SAP to help joint customers accelerate their cloud journey on Azure. Microsoft Azure cloud provides solutions for organizations across industries to digitally transform their supply chain planning processes. It provides tools to organizations to leverage advanced technologies like AI, machine learning and Internet of Things (IoT) in their supply chain planning processes architectures, allowing them to build adaptable supply chains that automatically react to challenges using real-time visibility, agile planning, and business continuity

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