

SAPinsider

SAPinsider Benchmark Report

The Future of Business Intelligence

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November 2021

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Executive Summary

Rapidly evolving customer expectations and proliferation of new and disruptive entrants across industries due to lower barriers to entry mean that organizations need to innovate products and services consistently, while simultaneously enhancing customer experience. Rise in business complexities is creating the need to build seamless visibility and control across the enterprise to manage complexities better. This is where the strategies to empower employees with digital skills and produce accurate, near-real-time visibility across the enterprise become critical. Aware of these challenges, SAPinsiders are taking a hard look at their data and business intelligence (BI) tools portfolios and are realizing that there is a need to have the right kind of data and BI infrastructure in place to support their critical strategies.

To understand the perspective of SAPinsiders, as far as building the future of BI capabilities and associated data tools goes, SAPinsider surveyed 139 members of our community in September and October of 2021.

The research highlighted enhancing customer experience (58%), managing business complexities (38%), and competing with new entrants (36%) as the key business drivers. SAPinsiders want their employees to be data-driven and equipped with data and analytics expertise to provide customers the best possible experience on existing products and services when leveraging these tools and generating enhanced or new products and services. One of the most important tools in their analytics tool chest is BI tools and the data infrastructure nuances associated with these tools. Most organizations (91%) indicated that they already have BI tools implemented, which is not surprising since BI tools in some forms have existed for decades. However, as we can see in **Figure 1** and other survey responses, the legacy portfolio of BI tools that many organizations have, has limitations that do not allow them to leverage these tools effectively.

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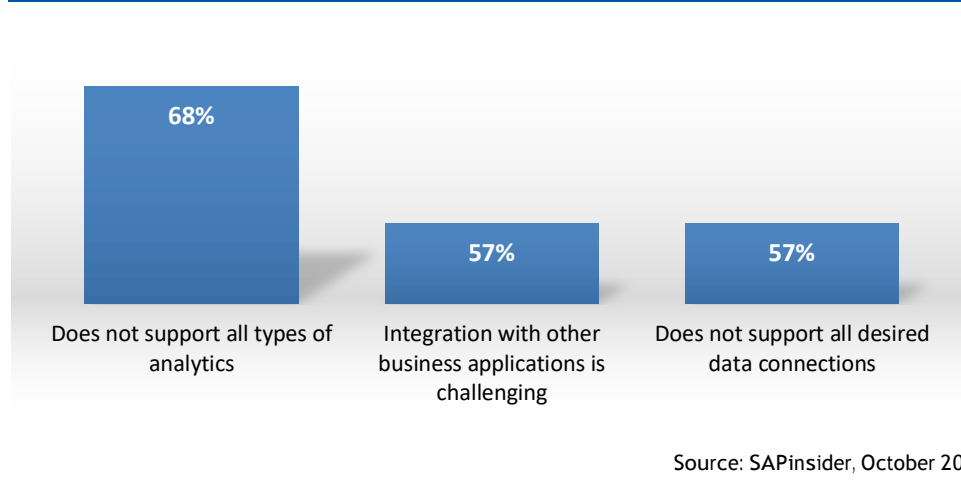


The consistent fluctuation in customer demand led to the bullwhip effect during the pandemic and was an important factor in bringing many limitations of our analytics systems to attention.



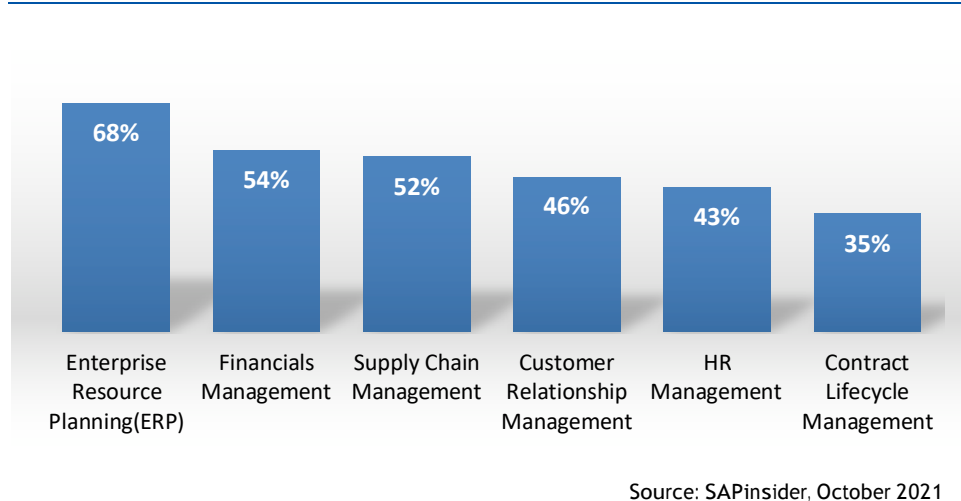
- Associate Director, Planning and Analytics
Retail Company

Figure 1. Challenges with legacy BI tools and technologies



The challenges that SAPinsiders experience in their current portfolio of BI tools are varied. While the primary challenge is that their existing portfolio does not support all types of analytics approaches that they need, the other key challenges relate to the underlying data. These challenges highlight that the data being leveraged by the tool is as critical as the tool itself. Integration with other business applications is becoming more and more vital as organizations frequently need to integrate analytics tools with critical business applications to generate insights that will help them run their daily aspects more efficiently. Critical business applications that BI tools need to interface with, as identified by SAPinsiders, are shown in Figure 2.

Figure 2. Business applications that need to integrate with BI tools



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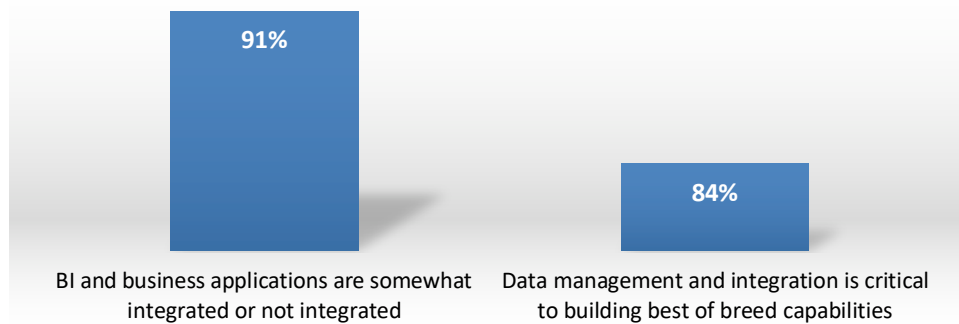
Post COVID, the ability to track shipments in near real time has become THE most important requirement in many industries and a key focus in digital transformation initiatives.



- Director, Supply Chain Consulting Company

SAPinsiders also highlighted the role of associated data infrastructure –84% of respondents believe that data management and integration are critical to building best-of-breed BI capabilities (see **Figure 3**). These tie with an integration imperative since data exchange within systems is essential to develop an enterprise-wide view in today's era. Thus, it is not surprising that building data integrity and consistency (86%) and ensuring seamless connectivity between analytics tools and business applications (73%) emerge as top requirements to address business drivers in our research. These were followed closely by the strategy to teach a data-driven culture for frontline employees (78%). These requirements address essential methods of effectively capturing data generated across the enterprise (64%), empowering employees with the correct data and analytics tools (59%) and ensuring insight integrity and quality (57%).

Figure 3. Key imperatives of data and systems integration



Source: SAPinsider, October 2021

As far as the analytics capabilities embedded within BI solutions, most respondents indicate that they leverage descriptive analytics (88%) only as a primary analytics tool, as shown in **Figure 4**. This is understandable since BI tools evolved primarily to extract insights from historical data to answer questions that start with "why." While some best-of-breed solutions have integrated predictive and prescriptive analytics methodologies into their solutions, they are not leveraged as extensively as descriptive analytics, as highlighted by the survey.

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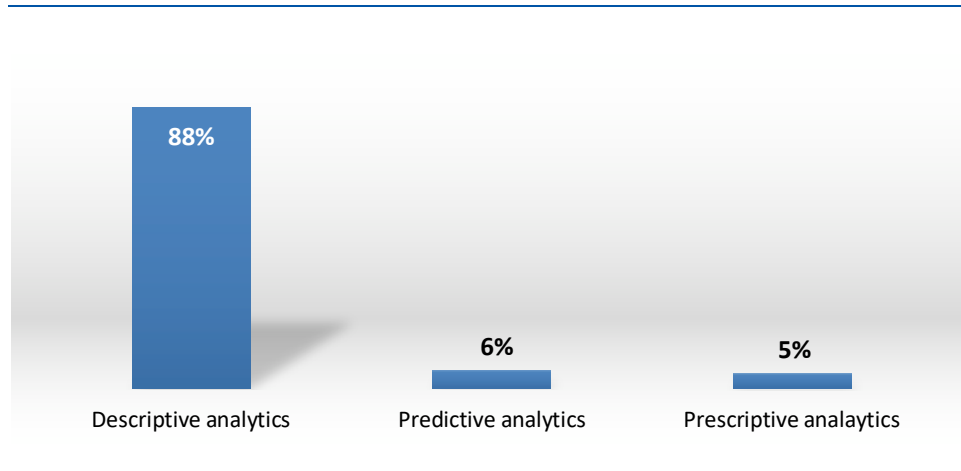
There is a significant opportunity in the market for data integration tools because data integration remains a big challenge for companies in their BI journey.



~ Senior Manager- Marketing
Software Company

However, SAPinsiders do understand the need to leverage more advanced analytics approaches, as indicated by many SAPinsiders in post-survey interviews. This recognition impacts their technology strategy as well.

Figure 4. Primary analytics methodology being leveraged currently



Source: SAPinsider, October 2021

More than half of the respondents (51%) indicate that they have already implemented data integration, data management, and data governance tools. This trend syncs perfectly with drivers and strategies that identify unified data as a critical foundational requirement. Hence, organizations are actively building foundational data capabilities, and almost all respondents indicate they will have this capability in place within the next 24 months. Over the next two years, advanced features like augmented analytics and BI in the cloud are the key priorities. This is in line with the need to empower employees with best-of-breed tools. Specifically, augmented analytics puts the power of self-service in the hands of frontline workers. Transitioning to the cloud allows the seamless integration and other advantages that frontline workers leveraging these tools desire in the context of leveraging these tools.

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The view of “what happened”, though still important, has taken a backseat. We are now more, if not equally, interested in “what-if” and “what can happen”.

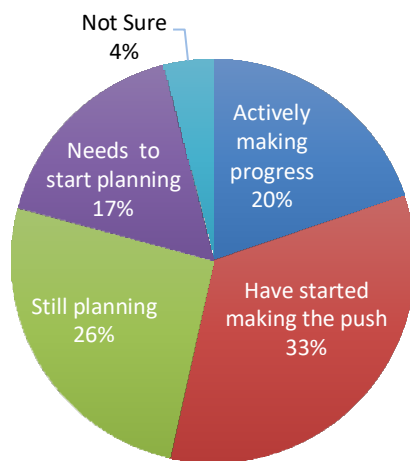
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~ Director - Strategic Planning
Manufacturing Company

Competitive Maturity Categories

We asked SAPinsiders to evaluate and self-report where they currently stand in their journey of building the future of BI capabilities. We provided them with five stages of planning, as shown in Figure 5, and asked them to indicate where they currently stand. We then translated these five stages into three different categories of leaders, industry average, and laggards.

Figure 5. Capability maturity assessment



Source: SAPinsider, October 2021

Based on the self-reporting capability assessment, we categorized organizations' respondents into the three categories highlighted below:

- **Leaders:** Actively making progress: **20%**
- **Industry Average:** Started making the push or planning: **59%**
- **Laggards:** Planning or not sure: **21%**

While these capabilities are self-reported, they align with other responses. As an example, more than half of laggards indicated that they don't have an existing, robust BI tool (legacy or current). These respondents also report being part of smaller organizations. Most leaders are respondents from organizations with more than \$1B in revenue, whereas the average is primarily respondents from organizations between \$200M - \$499M. Leaders typically have

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What was foundational for our early adoption success of more advanced BI tools was that we already had a data driven culture



- Program Manager
e-commerce company

moved beyond foundational stages of primary BI tools and data integration tools, into building more advanced capabilities like augmented analytics and near-real time visibility. Majority of laggards (53%) on the other hand indicated that they did not have or are not actively working on data integration capabilities.

Required Actions

Based on the survey responses, organizations should make the following plans around their developing BI capability strategies:

- **Evolve your BI strategy into an enterprise-wide analytics strategy.** A typical large organization today leverages multiple BI tools and other point analytics systems. These systems tap into varied data sources, potentially creating more than one version of the truth. This fragmentation of analytics tools and data sources creates information and analytics silos within the organization. These silos can have a significant impact on the value your analytics investments generate. Therefore, it is essential that as you think about the future of your BI capabilities, you think about it from an enterprise-wide perspective, eliminating both data and insight silos. This can be achieved by either a single enterprise analytics platform or an analytics portfolio, where analytics systems across the organization tap into a single source of truth and analytics systems exchange data seamlessly with each other in near real time.
- **Incorporate business strategy as a key input into defining your BI and analytics strategy.** As SAPinsider's DART methodology highlights, a technology strategy needs to be tightly intertwined with business imperatives and strategy. Therefore, it is critical that when you formulate your enterprise analytics strategy, you consider your mid- and long-term corporate strategy. As an example, if you are a retailer looking to transform into an actual omnichannel enterprise, your analytics strategy, and hence future BI capabilities planning, need to take that business strategy into account. This means that your future vision will be significantly different from a typical brick-and-mortar retailer.
- **Make cloud an essential cog in your analytics machinery.** Every organization needs to formulate a cloud strategy in today's digital era. All the benefits of the cloud that are often touted,

such as flexibility, scalability, agility, and rapid prototyping, translate to cloud-based analytics solutions as well. Pair this with the fact that many hyperscalers provide you tools to develop your BI solutions or associated enhancements in the cloud. An example is augmented analytics capabilities for your BI solutions. Leading cloud-based solutions like SAP Analytics Cloud (SAC) already offer this capability, but you can build this in an agile way in the cloud as well, leveraging solutions from hyperscalers.

- **Look at AI and ML as competitive differentiators.** AI and predictive analytics will become more common as both artificial intelligence (AI) and BI technologies progress. Machine learning will be tasked with making an increasing number of tough decisions as it becomes more adept at understanding a company's routines and trends. Machine learning will be able to assist in the creation of forecasts, the prediction of client churn, the identification of new customers, and other tasks. According to *Harvard Business Review*, despite its ever-increasing capabilities, only 8% of companies have basic processes that promote AI adoption across the board (2019). AI is an obvious area where companies may acquire a competitive advantage.

Chapter One: The Future of Business Intelligence Overview

Across multiple research and interactions, SAPinsiders have frequently cited limitations that they are experiencing in the evaluation of their existing BI tools portfolio. This need to evaluate is a result of some key business drivers that these organizations are experiencing as their business ecosystems evolve. These business drivers are forcing organizations to formulate strategies that can help address them. The real value of any strategy is derived from its flawless execution. There are some fundamental capabilities, however, that need to be in place for that. Defining these capabilities is the process step where a majority of SAPinsiders have identified the need to explore the future of BI tools and technologies.

Best Practices Model - DART™

SAPinsider grounds all its research insights in our proprietary DART model. This research model provides practical insights that connect business Drivers and Actions to supporting Requirements and Technologies. 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, top drivers were rapidly evolving customer demand expectations, increasing business complexities as well as new and disruptive entrants entering every industry. To address these drivers, respondents indicated that their key strategies are to 1) ensure that insights are captured across the end-to-end enterprise, 2) employees are empowered with best-of-breed data and analytics tools, and 3) there is a single, integral source of truth across the enterprise from a data perspective.

To support their strategies there are several requirements that our survey respondents indicated they needed. These requirements

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There are manufacturing-on-demand companies that can fulfill demand from anywhere in the world for unique parts, at half the price. Digital and emerging technologies have made the market much more competitive

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~ Senior Manager-
Corporate Strategy
Manufacturing company

include building data integrity and consistency across the enterprise, establishing a data-driven culture among frontline employees, ensuring seamless connectivity between analytics and business applications, and developing an edge computing infrastructure to capture data across enterprise in near real time.

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

Table 1: DART Model Framework for The Future of Business Intelligence

Drivers	Actions	Requirements	Technologies
<ul style="list-style-type: none"> • Rapidly evolving customer expectation and demand (57%) • Significant increase in business complexities and disruptions (46%) • Proliferation of new, agile, and disruptive entrants across industries (39%) 	<ul style="list-style-type: none"> • Attain visibility across the end-to-end enterprise (83%) • Ensure uniformity, consistency, and quality of insights generated across the enterprise (80%) • Build a data-driven culture among frontline employees (47%) • Understand the factors that will enhance customer expectations (41%) 	<ul style="list-style-type: none"> • Build data integrity and consistency across the enterprise (90%) • Empower employees with easy-to-use data and analytics solutions (79%) • Ensure seamless connectivity between analytics and business applications (77%) • Build an edge-computing infrastructure to capture data across the enterprise (76%) 	<ul style="list-style-type: none"> • Business intelligence tools (55%) • Data integration tools (51%) • Augmented analytics (45%) • Self-service analytics (27%) • Business Intelligence as a Service (BaaS) (27%) • AI and machine learning (27%) • Edge computing and analytics (31%)

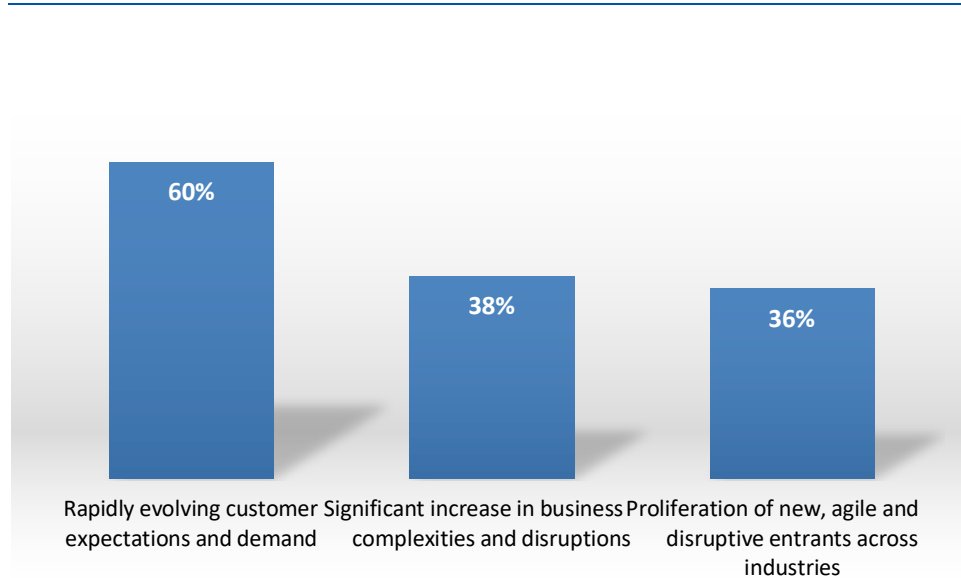
Source: SAPinsider, October 2021

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

What Drives Focus on The Future of BI?

As organizations try to evolve to keep pace with the rapid evolution of business ecosystems around them, they are experiencing many business imperatives which are making them evaluate the future of BI. The most significant driver they are experiencing is the need to enhance customer experience, followed by the need to address rapidly increasing business complexities and increasing competition from new entrants (**Figure 6**).

Figure 6. Top Drivers for The Future of BI



Source: SAPinsider, October 2021

Customer centricity has attained unprecedented levels in organizational strategy. The age of e-commerce has been cited as one of the primary drivers behind extremely demanding customer behavior, and the explosion in ecommerce and omnichannel during the pandemic has made this aspect much more critical for companies. They are rapidly exploring strategies to help address customer expectations and demand. Also, as technology and computing power lowers barriers to entry, organizations across industries are competing with newer and more nimble players for the same customer pool. In this context, it is critical for organizations that they innovate to build products and services that can not only help enhance customer experience, but also effectively compete against these new disruptive competitors.

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Customer today have many channels to express their angst. This means we have minimal bandwidth for mistakes.



Senior Manager
Industrial Distribution Company

An organization is only as good as its employees, and employees are at the forefront of delivering customer experience. Organizations need to upskill and empower their employees to not only enhance their experience with existing products and services, but also build products and services that will take the customer experience to whole new level. This empowerment need is at the core of building data-driven organizations. The wave of supply chain disruptions that consumers have experienced first-hand since the onset of the pandemic is a good example of why organizations need that rapid access to data. An empowered employee, well-versed in data and analytics tools and technologies, is ineffective if they don't have access to data when they need it.

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We are now realizing how difficult it is to build end-to-end visibility. This may take years to build.

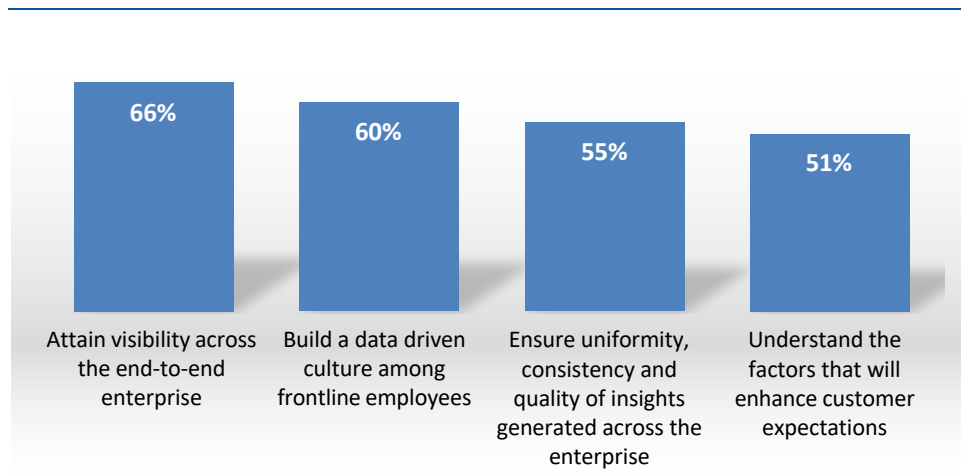
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Director - Supply Chain Systems
Chemicals Company

How Do SAPinsiders Address Their Drivers?

Organizations facing these business imperatives need to strategize about addressing them to thrive and succeed. To address the business drivers indicated earlier, SAPinsiders have identified specific strategies. Over half (66%) of respondents said that a key strategy is to ensure that they have visibility across the end-to-end enterprise, while 60% of respondents want to build a data-driven enterprise, whereas 55% said that they want to ensure that the data is integral, consistent, and integrated across the enterprise. Developing an understanding of factors that enhance customer expectations is also a critical strategy for 51% of respondents (Figure 7).

Figure 7. Top Drivers for The Future of BI



Source: SAPinsider, October 2021

The imperative of managing business complexities, specifically in the wake of recent disruptions, has made the need for capturing data generated across the enterprise a key strategy. There are two key aspects to this. One is to ensure that all relevant data is being captured and collected to provide the much-needed organizational visibility and generate insights from that data. The second aspect is to ensure that all the insights being captured and generated come together to create a cohesive, enterprise-wide view. Together, they will allow organizations to address the business complexities driver.

Whether it is to compete effectively or to enhance customer experience, innovation is critical, and the onus of innovation is on employees of the company. To generate innovation, they need varied skills, with data and analytics skills the most critical ones. Empowering non-technical, frontline employees who work "in the process," is fundamental to building data-driven organizations. And for this, these employees need to have access to the right tool set. This strategy is critical to addressing all three key business drivers discussed in the previous section.

Another important factor in making sure that your employees can innovate, is to ensure that they believe in and trust the tools and technologies they leverage. This is what will make them use these tools and technologies prolifically in their day-to-day work and help them generate innovation. And the most important criterion to generate that trust is making sure the underlying data is good. A fundamental rule of analytics is GIGO, an acronym that stands for "Garbage In Garbage Out." What this essentially means is that if the underlying data behind an analytics tool is bad, the insights or models generated by the tool will be useless and may even be detrimental. Therefore, the strategy to ensure data integrity, consistency, and integration is the foundation. This also aligns with all the three key drivers. After all, an organization becomes data driven only when the employees trust the data.

Key Takeaways

As organizations evaluate the drivers in their business ecosystem that are pushing them to modernize logistics and inventory tracking capabilities and plan actions to address those drivers, there are some aspects they need to keep in mind:

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We have a disruption coming to us every other week. Right data and accurate analytics can be a lifesaver.



~ Director-Logistics Operations
Third-party Logistics Company

Based on our research with respect to the future of BI, the following takeaways are clear:

- **Understand how relevant insights can transform your customer experience strategy.** Rapidly evolving customer expectation is the leading business driver identified by SAPinsiders. The foundational requirement to enhance customer experience is to understand the factors that impact the experience of your customers. Is it on-time delivery? Frustration-free packaging? Shelf assortment? All that information is embedded in the data that is hidden within multiple systems in your organization and will help you not only improve customer experience but also help you innovate. This understanding of key data points also helps you in evaluating your BI portfolio, and to understand if your current portfolio can help generate these insights.
- **Connect the dots between business complexities, disruptions, and near-real-time insights.** While terms like near-real-time visibility have become trending marketing buzzwords in the digital era, the important aspect is always to understand how a specific capability will help your business. Understand what your business complexities are and what the implications are on your business operations. This will then help you understand how your technology capabilities can help address these complexities. An example is getting near-real-time visibility data from manufacturing operations in your BI dashboard. This allows you to evaluate critical aspects like material mix, process flow, and quality, all key aspects that impact manufacturing complexity.
- **Use the number of citizen data scientists and analysts as true indicators of a data-driven culture.** Building a data driven organization has been identified as a critical strategy, but it is important to understand the criteria for evaluating penetration of analytics within an organization. The fact is that a data-driven organization is not one that has a large army of data scientists. It is one in which some fundamental skills of data scientists and data analysts are embedded within the skill sets of your frontline workers – those who work within the processes. While, as mentioned in the executive summary, you do need a centralized team of data science experts, it must be complemented by a significant number of citizen data scientists and analysts in frontline teams.

Chapter Two: How Do SAPinsiders Approach the Future of BI?

There is no doubt that the business dynamics of today's era have exposed the limitations in current BI tools for many organizations. As they formulate strategies to address their business drivers, they are also trying to understand the capabilities required to execute those strategies. This is the impetus for the evaluation of their BI and associated analytics technologies portfolio. Aligning these capability requirements with existing technologies are helping them identify the missing pieces of the puzzle needed in the future, plugging the holes in their current BI portfolio.

Top Requirements for The Future of BI

The key theme of requirements needed to support the strategies that the survey highlighted is to embed data and analytics culture deep within the organization by empowering frontline workers with best-of-breed technology tools, pairing that with a data infrastructure that captures data in near real time and providing clean, consistent, integral data to these frontline employees. Majority of respondents (86%) believe that building that capability of a solid foundation in data is important or very important. This aligns with the data strategy of having an integral and reliable data view. But this is also imperative to building a data-driven culture. No amount of upskilling or investment will generate a data-driven culture if the employees leveraging these tools do not trust the results. Issues in underlying data impact results, thereby corroding the progress on building a data-driven culture with employees, which is the second-most important capability identified by SAPinsiders (80%) as seen in **Figure 8**.

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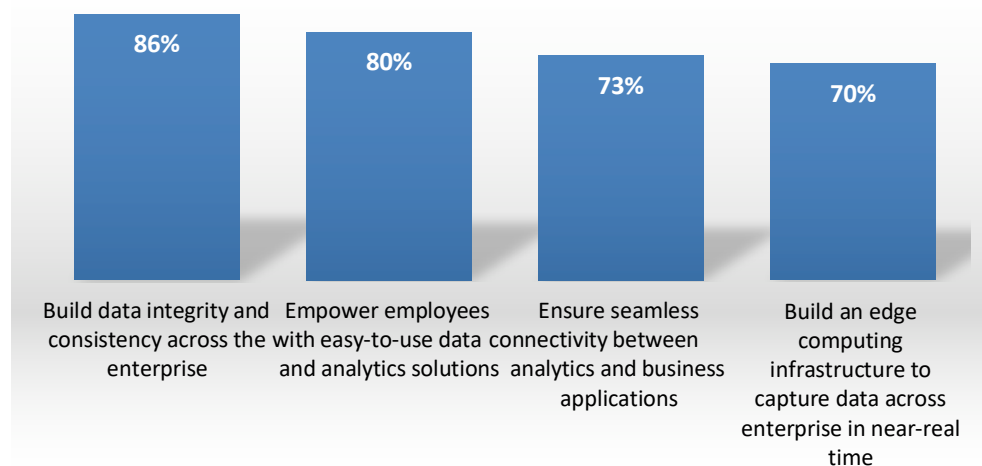
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We implemented a demand planning system that was best-of-breed. It did not take-off properly since it was not very intuitive to use for our planners.

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- Director- Procurement IT
Agriculture Products
Company

Figure 8. Top Requirements for The Future of BI



Source: SAPinsider, October 2021

The enterprise view of analytics is becoming more and more critical with every passing day. This is very much evident from the drivers listed earlier that organizations are facing, like the need to integrate visibility across the enterprise. This enterprise view cannot be attained unless you have seamless integration not only between analytics tools but, more importantly, integration between analytics and business applications. Hence, it is not surprising that 73% of our respondents believe that the capability to integrate analytics and business applications seamlessly is very important.

When all tools and technologies are in place, the most important strategy then is to ensure that the frontline employees have the skill set to leverage these tools and technologies. Hence, training employees on how to best leverage analytics lands in one of the top capabilities identified, with 70% of respondents believing that this is important or very important. Note that while these are separate capabilities, one influences the other, and hence they need to be built in tandem.

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Yes- we had a BI tool for decades. But at this point it has become more of a data source than a tool that is used prominently for analytics.

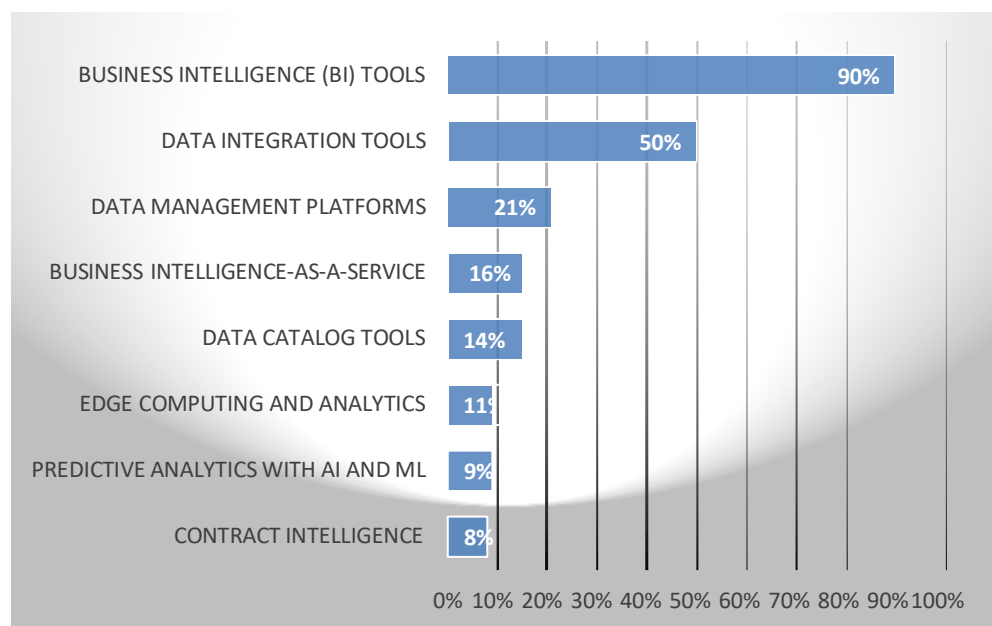
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- Manager (Buyer)
Consumer Goods
Company

Which Technologies Do Respondents Use to Support Their Future of BI Strategies?

The majority of respondents (90%) indicated that they already have BI tools implemented (Figure 9), which is not surprising since BI tools in some form have existed for decades now. However, as other survey responses and subsequent interviews have indicated, many of these older tools do not have the capabilities that BI tools increasingly need, which is making SAPinsiders take a hard look at their existing capabilities. SAPinsiders also have data integration tools (71%) and Business Intelligence as a Service (BlaaS) (52%) in their existing portfolio, indicating that many of them have already started taking steps to build BI capabilities needed in the near future.

Figure 9: BI and associated technologies currently being used



Source: SAPinsider, October 2021

As SAPinsiders embark to build the future of BI capabilities, they have developed game plans and roadmaps that they shared in the survey questions.

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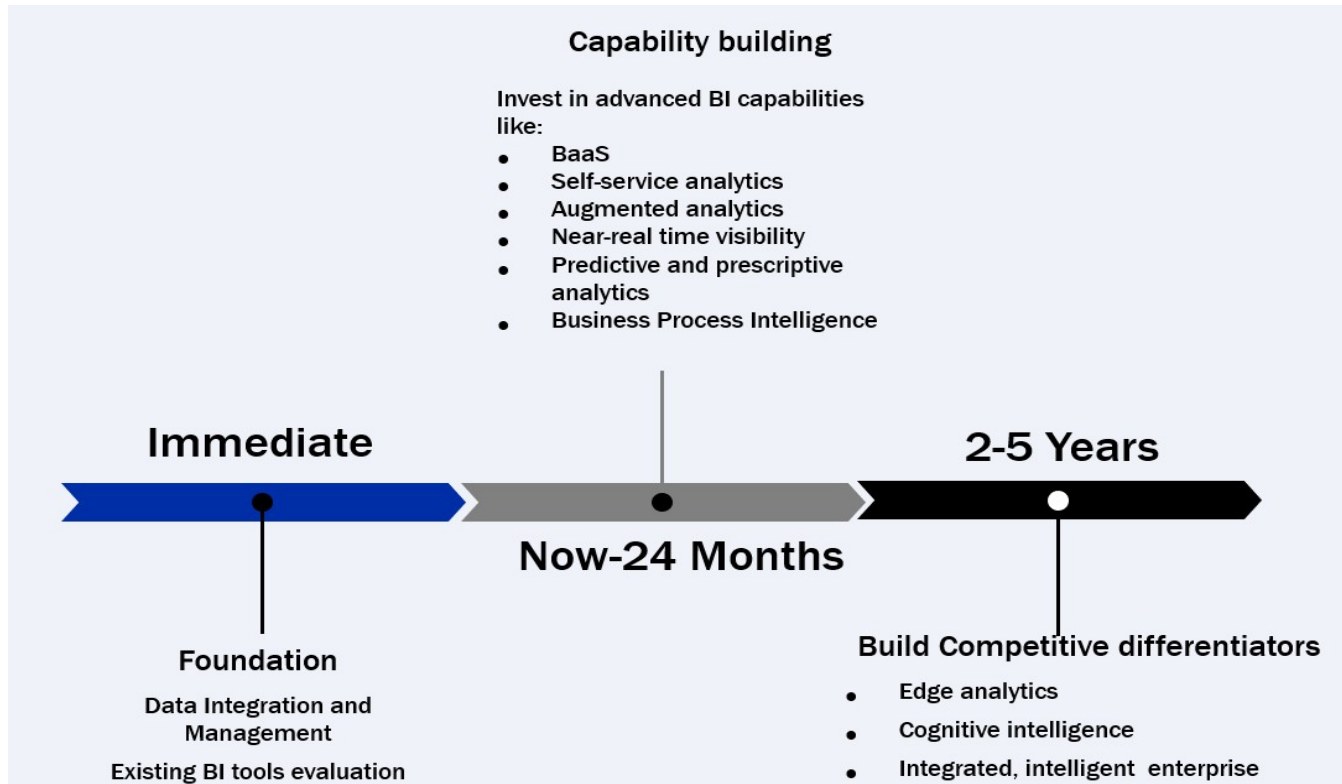


Data integration remains the most significant challenge. When we probe data quality issues, we find that we may have a better version of data in one system and a bad version of the same data points in another. Data integration will ensure both data integrity and quality.



~ Senior Manager-
Data Engineering
System Integration Company

Figure 10: Roadmap for Building Future of BI Capabilities



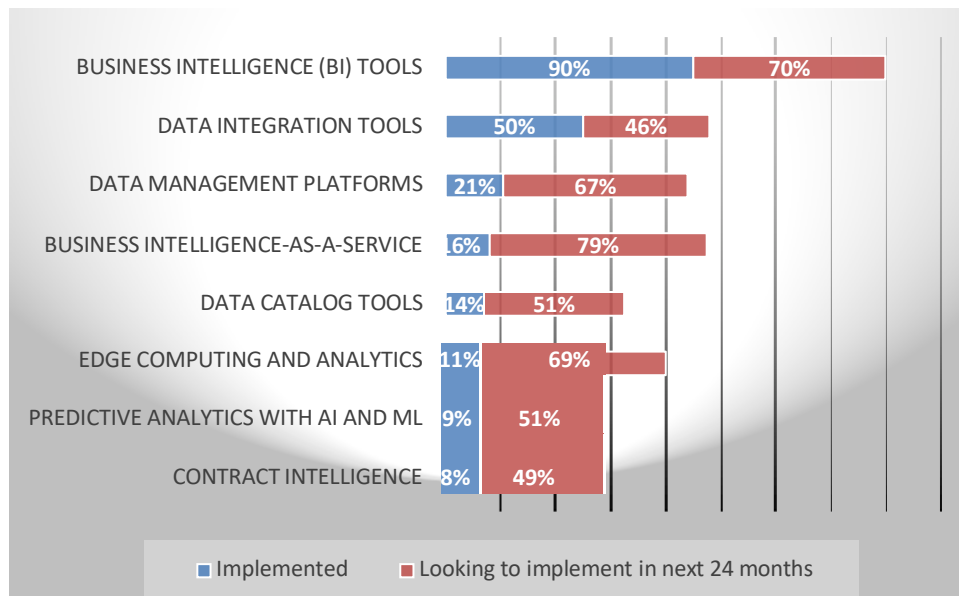
Source: SAPinsider, October 2021

In terms of specific technologies, as Figure 11 highlights, BI capabilities already exist within the organization for most respondents. More than half of the respondents (51%) indicate that they have already implemented or are implementing data integration, data management, and governance tools. This syncs perfectly with drivers and strategies that identify unified data as a key foundational requirement, and hence organizations are actively working on it, and almost all respondents indicate they will have this capability in place within the next 24 months.

Advanced features like augmented analytics and BI in the cloud are the key priorities in the next 24 months. This is in line with the need to empower employees with best-of-breed tools. Specifically, augmented analytics because it puts the power of self-service in the hands of frontline workers. Business Intelligence-as-a-Service (BlaaS) is another key focus area for next 24 months since transitioning to the cloud allows these tools to extract all the benefits of scalability and agility that the cloud offers. The foundation for building near-real-time visibility will also be laid in

the next 24 months, with the goal of having true end-to-end visibility with edge analytics capabilities within the next five years. Most respondents indicate that their organizations aim to become, or be far ahead in their journey of becoming, an integrated, intelligent, and cognitive enterprise.

Figure 11: Plan for Future of BI Tools and Technologies



Source: SAPinsider, October 2021

Key Takeaways

When it comes to equipping organizations with the capabilities and technologies required to develop BI capabilities of the future, consider the following:

- Make Data integration tools, data hubs, and data lakes pivotal to your intelligent enterprise strategy.** The need for data integration, integrity, quality, and consistency has been emphasized several times so far in this report. Fortunately, technology in this arena has progressed significantly and we now have several options to create data infrastructure solutions that can help address these requirements. From low-code, self-service data integration tools to centralized data hubs and data lakes, the opportunities to build a true high quality and integral data infrastructure are many. The exact architecture, however, needs to be designed due to the many different aspects involved.

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Yes- we had a BI tool for decades. But at this point it has become more of a data source for ad-hoc analysis than a tool that is used prominently for analytics.



- Manager (Buyer)
Consumer Goods
Company

- **Make edge data and associated analytics the true competitive differentiator.** BI tools evolved from tools that looked at historical data. With advances in technology and computing, these tools are now used to not only gain near-real-time insights but also make near-real-time decisions based on those insights. But this also means that the need to capture and process near-real-time data has increased manyfold. And this is where the importance of edge computing and analytics comes into the picture. The first key requirement is to make sure that data is collected at the edge –where the activity is happening – to allow for more efficient processing. An example is collecting data from the manufacturing shop floor. The second important aspect is to ensure that the data is seamlessly absorbed by associated BI systems. Often, some preliminary analytics can be done by the edge device itself, so that the data received by BI tools are more meaningful.
- **Make data and analytics tools portfolio evaluation a continuous process.** There is no doubt that technology and computing are evolving at an exponential pace. This will eventually make a continuous evolution of your BI tool portfolio a business imperative. A key point is that you don't have to keep investing in new technologies every few years. Most solution providers will incorporate these advances in their solutions. Hence, an integral part of your evaluation is to understand that you have the latest version that provides you the power of these enhancements to help run your enterprise more efficiently and continue providing a great customer experience.

Chapter Three: Required Actions

As businesses become more diverse and complex, so do their information systems and associated business analytics systems. Imperatives discussed earlier, like the need to build near-real-time visibility, or building a data-driven culture and digitalization, have forced many organizations to invest in a plethora of data and analytics tools and technologies. Though technology and computing power have rapidly evolved during the last decade to support this proliferation of tools and technologies, the underlying aspects of these tools themselves need to evolve as well to align with the business complexities.

These trends, along with the rapid emergence of fields like data science, the advent of artificial intelligence (AI) and machine learning (ML) algorithms, and rapid adoption of cloud computing, are disrupting the field of business analytics. One category of analytics tool that is ripe for disruption is business intelligence (BI) tools. BI tools have been around in some form for more than four decades. And like all other business analytics tools, they are evolving to catch-up with business trends in the digital age. Considering this evolution, many SAPinsiders who have been leveraging BI tools for a long time have a top-of-mind question – "What is going to be the future of BI tools?"

The future of BI tools is already taking shape in the form of more advanced features that have been discussed as the future of BI in this report. These technologies did not originate because of some chance invention but were developed to meet the needs of end users. While these needs are not new, the technology was not mature enough to address them. Fortunately, we now have the technology and computing prowess to define the future of business intelligence.

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AI certainly has the capability to transform the world of analytics. Maybe it is time to think about getting rid of the label BI and think about smart or cognitive intelligence.



- Management Consultant
Technology and Business
Consulting Company

Steps to Success

Our research reveals that SAP customers should apply the following key steps to build a successful integration landscape:

- **Understand the capabilities of your existing tools before investing in new ones.** While the majority of organizations do need to update their BI tools portfolio, the exercise should not begin with scouting what is the latest and greatest out there. Understand your current BI objectives (analytics capabilities, integration features, information dissemination aspects, etc.). Then evaluate how your current infrastructure aligns with these objectives. Define objectives by categories and sub-categories and then map these objectives to existing tools post evaluation. For example, does a business app already have embedded analytics? This impacts decisions for investing in new tools and types of tools. This exercise should result in a comprehensive documentation of your existing capabilities in this area.
- **Define a development agenda to create citizen data scientists and citizen analysts.** As mentioned earlier, the true analytics maturity of any organization is defined by the number of citizen data scientists and analysts. It is therefore imperative that you do not approach developing them in an ad-hoc manner. This should be one of, if not the most, critical aspects of your analytics strategy. Start by charting out unique analytics requirements for each team within each function. Then look for commonalities as well as uniqueness. Remember that analytics requirements, skill sets and associated tool functionalities, may vary between functions and sometimes between teams within the same function. This evaluation also ties directly with your current state evaluation and will act as input points for defining future-state tool requirements. Another critical step is to build an upskilling strategy that connects closely with the entire exercise. Tools do their magic only in the hands of those who know how to use them best.
- **Build trust in data and analytics tools by showcasing value and impact.** Use pilots and proper training to build confidence in the frontline workers that these tools matter. And for that to happen, you need to ensure that the tool addresses their day-to-day pain points and generates efficiency improvements in the work they do. Despite investing heavily in best-of-breed tools, most organizations are not able to leverage full value from

these tools. And the critical factor is the lack of credibility that employees have for these tools. This lack of credibility, in most scenarios, is not because there is some capability lacking in the tool, but rather a lack of proper education, training, and culture enhancements.

- **Create a hub and spoke model for analytics excellence.** While the penetration of analytics skills deep within your organization (in the form of citizen data scientists and analysts) measures your analytics maturity, true analytics excellence follows a hub and spoke model. A central team of data scientists, design thinking experts, and business strategists innovate ways to leverage analytics to create competitive differentiators. Then a dedicated squad takes over the responsibility of propagating these innovations and capabilities, to the spokes. Spokes are the frontline teams working within the processes. This propagation is in the form of carefully selected or developed tool and skillset enhancements. Establish and perfect this model, and you will never have to worry about building a data-driven organization. It will become a perfect and seamless engine. Perfecting this, however, requires strategic recruitment and organizational strategy capabilities.

Research Methodology

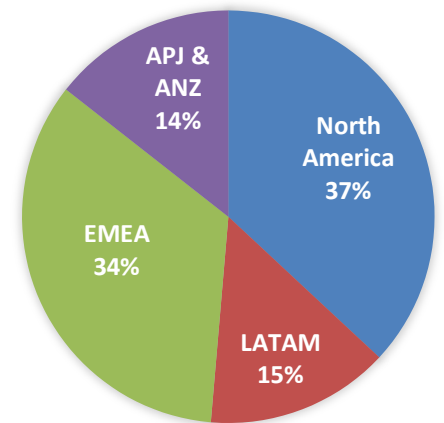
In September and October 2021, SAPinsider examined the experiences of businesses and technology professionals related to their overall plans for modernizing logistics and inventory tracking, their investment plans in digital tracking solutions, and their tracking technology implementation roadmap. Our survey was administered to 148 members of the SAPinsider community and generated responses from 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 some of the key actions that your organization intends to take to execute your logistics and inventory tracking modernization strategies?
- What are the top logistics and inventory tracking modernization tools that your organization plans to invest in within the next 24 months?
- What are the challenges your organization is encountering in its logistics and inventory tracking modernization journey?

The demographics of the respondents included the following:

- **Job function:** Functional areas reported by respondents include: Information Technology (32%), Finance/Tax (24%), Operations (12%), Customer Service (9%), and Finance (8%).
- **Market sector:** The survey respondents came from every major economic sector, including Industrial (28%), Financial Services & Insurance (32%), Retail, Distribution & CPG (13%), Media & Entertainment (10%), Public Services & Healthcare (13%) and Software & Technology (10%).
- **Geography:** Of our survey respondents, 37% were from North America, 34% were from Europe, the Middle East, and Africa, 14% were from Asia-Pacific, Japan, and Australia, and 15% were from Latin America.

PARTICIPANTS PROFILE



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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