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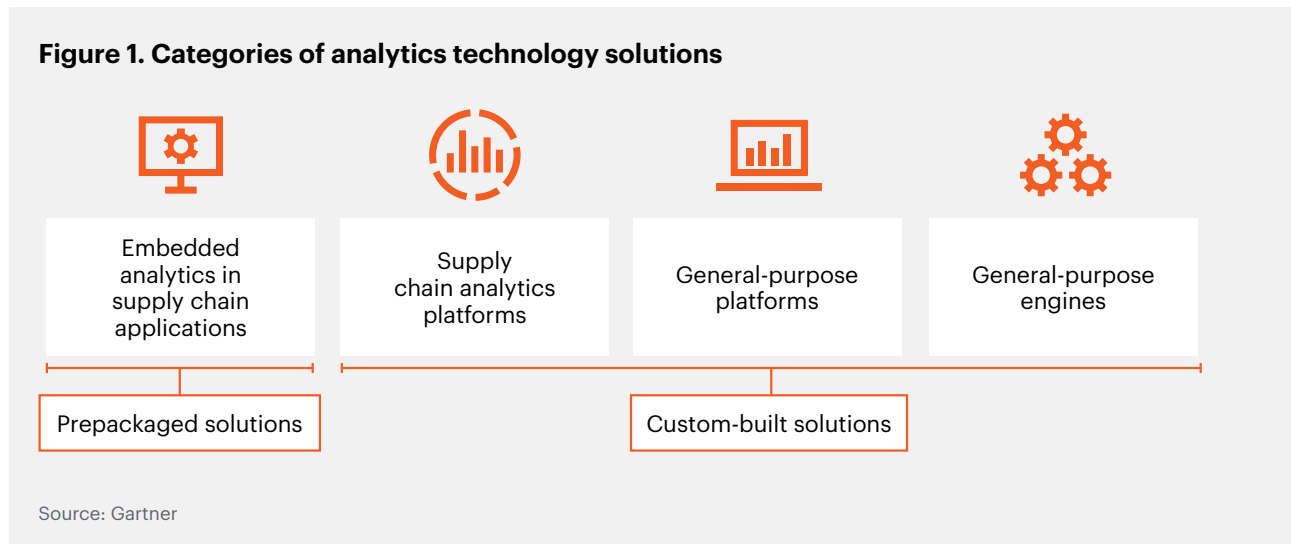
2021 Guide to Supply Chain Analytics Technology



Introduction

A Gartner for Supply Chain Leaders survey revealed that advanced analytics ranked among the top 2 emerging technology investments, with only 9% of supply chain organizations reporting no plans to invest.

However, the analytics technology market is still fragmented. Essentially, when selecting analytics technology, companies can choose from four different categories (see Figure 1).



Companies can leverage embedded analytics in supply chain technology applications. For example, a supply chain organization can use predictive analytics embedded in a planning system to generate demand forecasts. Alternatively, a logistics team can rely on the reporting analytics in their transportation management system for key performance indicators (KPIs).

On the other end of the spectrum, companies can employ a completely do-it-yourself strategy, with data scientists building unique analytics-based solutions. For that, data scientists can leverage open-source programming languages or commercial solvers and modeling languages.

Many organizations look for an approach that balances the speed to value and structure of embedded analytics with the flexibility and extensibility of homegrown solutions. This balance can be achieved by the use of supply chain or general-purpose analytics platforms.

Analytics platforms can be specific to supply chain or general to other functions across the enterprise. Supply chain analytics platforms include data models, algorithms and model libraries' KPIs that are specific to supply chain use cases and processes. General-purpose analytics platforms offer the same span of functionality but are not unique to supply chains. While capable of supporting supply chain use cases, these platforms offer general-purpose functionality that can be used across the enterprise.

This research explains the scope of analytics platform capabilities and provides advice for supply chain analytics leaders to guide their analytics technology strategy.

Understand the span of capabilities offered by analytics platforms

Analytics platforms offer a self-contained analytics environment for less technical — but analytically oriented — individuals to build use-case-specific apps. For the platforms to be effective, they must offer the following capabilities:



Data management. This includes data acquisition, ingestion and preparation. This enables users to source, ingest and harmonize data across diverse data sources.



Data visualization. This capability allows the user to conduct data discovery, looking for patterns and correlations.



Algorithm library. This is a collection of algorithms to be used in building and deploying analytics models. Examples include statistical models, machine learning, natural language and optimization models.



Model library. This is a library of prebuilt models specific to a use case or a problem. In supply chain platforms, models are specific to supply chain use cases. Model libraries provide model documentation and the ability to maintain models throughout their life cycle to avoid a proliferation of outdated solutions.



Insight sharing. This is the ability to present results and insights from data and models. It spans identified patterns, KPIs, predictions, scenarios and recommended actions. Platforms can leverage structured text, charts or natural language for insight sharing.



Integration and deployment. The platform must be capable of integrating with other systems to embed the models in business processes, such as demand planning.

Complement embedded analytics in supply chain solutions with analytics platforms

While embedded analytics in business applications might prove inflexible for further customization and extensibility, they should be the first go-to resource for analytics needs. After all, these are likely tried and true solutions to commonly observed use cases. For example, demand planning solutions typically have strong statistical modeling capabilities to forecast demand. Using these capabilities can result in faster speed to value. Using platforms can complement the functionality of embedded analytics. It can support more differentiated requirements and use cases.

For example, a company might be using embedded analytics in a supply chain planning suite to optimally balance supply and demand. To further automate the supply-to-demand matching, the company deploys a machine learning platform. The platform identifies common patterns in the exceptions generated by the planning solution. Once identified, the company can take actions to eliminate the root causes behind those exceptions. In this scenario, the deployment of the platform can, in fact, further the company's ability to generate ROI from their planning technologies.

Use analytics platforms to support agile development of analytics solutions

To support continuous improvements in existing supply chain processes, many supply chain organizations look for proven analytics solutions that can be deployed at scale. However, leading organizations also look for analytics capabilities that can support their need for fast agile development. Developed solutions can be deployed to understand fit and potential benefits. If successful, the organization can scale the solution to be deployed more broadly. If not, effort is minimized and the organization moves on to consider other solutions.

More supply chain organizations are primarily attracted to platforms for their ability to support their teams' quick experimentation with analytics. Platforms allow for an "apps" environment. With internal or service provider's resources, the organization can leverage the platform to build specific capabilities to support a use case. The app is leveraged by a set of users to determine its fit, ability to solve the identified problem and demonstrate its potential ROI. Some apps will be scrapped due to lack of fit or inability to generate benefits. Others, that demonstrate enough potential benefit, will then be industrialized to more scalable solutions.

Partner with supply chain analytics platform providers to leverage their technical and industry expertise

Companies should consider leveraging supply chain analytics platform providers to take the most advantage of their solutions. The provider not only brings technical expertise but deep domain knowledge of supply chain challenges and priorities. They can propose novel approaches for how their platform has been able to tackle a broad spectrum of supply chain problems.

For example, a manufacturer might be looking to redesign its network to improve its resilience to major disruptive events. The manufacturer can work closely with the platform provider to leverage their experience in building a robust simulation model that can stress test a supply chain. The platform provider can then recommend using the same models to assess the network's ability to respond to demand spikes or manufacturing disruptions.

Platform providers can help the organization create an analytics center of excellence. The provider can train internal resources on the use of the platform, with the goal of independently building and deploying future applications.

Deploy analytics platforms for citizen data scientists to build advanced analytics

Platforms increase an organization's advanced analytics adoption with the help of citizen data scientists. Citizen data scientists are individuals who exhibit analytics proficiency, but not pure data science expertise. This role has become an effective way for an organization to further adopt advanced analytics without the need to acquire pure data science talent. This is because citizen data science talent is more available and can be developed internally. For example, a demand planner can become a citizen data scientist by taking advanced analytics courses online.

Alternatively, they can be trained by the platform vendor on how to best utilize the platform to build models or discover data.

The citizen data scientists can effectively use analytics platforms and work within a structured environment to prepare data, build analytics models and share results. They can leverage algorithms and model libraries to build custom-made applications for various use cases. The platforms also facilitate collaboration and knowledge transfer among citizen data scientists, enabling them to take advantage of already developed analytics solutions.

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Build a strong supply chain analytics strategy: How we help

Supply chain excellence depends on strong supply chain analytics strategy. Yet for many organizations, successful supply chain analytics adoption faces many challenges: Few have the data foundation needed, talent and skills relevant to supply chain analytics are limited, and adoption of supply chain analytics is low because ROI is unclear. To make better supply chain and organizational decisions, supply chain analytics leaders should harvest accurate and comprehensive data, secure the technical and business skills needed to maximize its value, and invest in real-time supply chain analytics and digital solutions. We can help supply chain leaders build a strong supply chain analytics strategy. Visit gartner.com to learn how we support our 2,500+ supply chain leader clients with insights, advice, data and tools.



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