

ORACLE

# From Data to Decision: How a smart, responsive supply chain can deliver bottom-line results



# Smart, fast decision-making drives results in today's economy.<sup>1</sup>

## 2X higher profit

## 2.5X higher growth

## 30% return on invested capital

But sound decision-making can often be a challenge due to the hypergrowth of business data, such as:

- Customer records
- Drone video
- Financial transactions
- Sensor data
- Shipment data
- Social posts
- Sustainability data

Supply chain leaders must face this challenge—now. [According to Gartner](#), a technology research and consulting firm, decisions have become **65% more complex since 2020**. In fact, executives spend almost **40% of their time making decisions**—and believe most of that time is poorly used.

<sup>1</sup> McKinsey (June 2021) & McKinsey (2018)



“The current state of decision-making is unsustainable.”<sup>2</sup>

How can we manage and analyze these immense data resources to systematically make better business decisions and improve performance?

<sup>2</sup> Gartner, “How to Make Better Business Decisions,” Mike Rollings, October 20, 2021

# Data describes the forces that shape your business

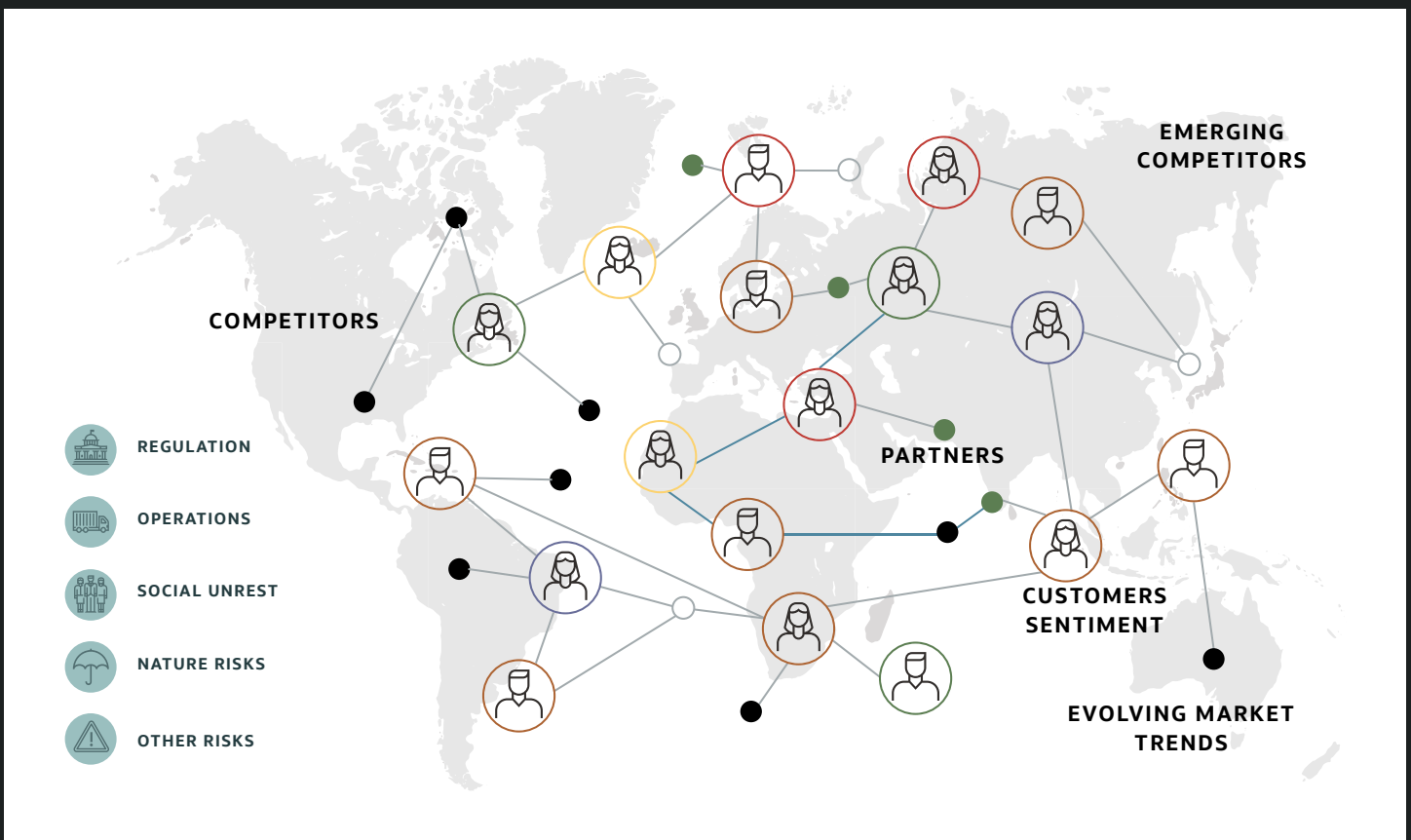
The global business ecosystem is in perpetual flux and generating new information that you need to consider to respond effectively.

It is common for some organizations to leverage a PESTLE analysis that investigates key external indicators that influence a business ecosystem—political, economic, social, technological, legal, and environmental.

But these indicators are constantly changing. Novel information types come online. New data streams open while others become obsolete. All of it sparked by real events in the global economy, such as:

- Competitor actions
- Health restrictions
- Macroeconomic indicators
- Market regulations
- Raw materials prices
- Social unrest
- Transit disruptions
- Weather conditions

Some of these indicators are probably already central to your decision-making. But some are being ignored—at your peril and to your disadvantage. To expand your visibility and control of your supply chain, you must be able to systematically incorporate new signals. This is done by integrating new indicators to be cross-referenced with B2B transactions and other internal data, allowing organizations to glean new insights and make better decisions across their entire business ecosystem.



## Your industry ecosystem changes continuously

Some of the business ecosystem forces that continuously influence and reshape the value chain for you and your competitors.



# The evolution of decision-making

In the early days of enterprise supply chain planning, companies searched their own business data for the insight needed to manage changes occurring outside the walls of the organization. These data types included customer and channel information, point-of-sales data, trade areas, working conditions, competitive data, and much more. Well-connected enterprises could also share data with business partners to get a better view of external disruption. But they still lacked the visibility needed to build an effective response.

Companies then started to incorporate external data sources to augment that internal data. Information about weather conditions, regulatory changes, and raw material shortages gave context to internal data and helped to drive better decision-making.

Today, the external business environment is even more complex. More than [two-thirds of world trade](#) occurs through [global value chains](#) (GVCs), where production crosses at least one border before final assembly. Adapting to GVCs requires data that helps **detect change, reveals alternate courses of action, and supports effective execution**. Industries with heavily externalized value chains, such as high tech and manufacturing, are great examples of future complexity. How can we incorporate a decision framework into this reality?

# Key barriers to effective decision-making

The answer to this question seems to be straightforward: The decision framework must be designed to continuously improve the quality and speed of decisions so that organizations can better adapt to change.

To make this happen, supply chain leaders need to address two significant challenges that can limit visibility into changes in the supply chain: access to dynamic data and the adoption of flexible processes.

## ⇒ Access to dynamic data sources

In the past, systems and processes did not consider today's unstructured data sources, such as environmental, social, and governmental data feeds. In addition, systems did not account for data originating from the business ecosystem where many challenges start. We could not tell how an organization's performance would be affected. Moving forward without these key pieces of information can be the difference between success and failure.

Companies are encouraged to adopt a **decision framework architecture** that can detect, decide, execute, and continuously add new pieces of information that increase their ability to resolve challenges across the enterprise and their business network. Changes applied systematically enable continuous improvement as the framework adapts to multiple business conditions and learns from the final decisions made by the business user. Based on those decisions, the framework will respond and recommend better alternatives for future events.

## ⇒ Flexible process architecture

The intake and organization of data requires process and discipline. But you cannot adopt an approach that paralyzes your organization while it works to reengineer a new system or even roll out incremental changes. You are better off enabling a smart and responsive continuous improvement process architecture that will position your organization on a better path for growth.

Implementing a modern process design allows employees in your organization to question what can be done to improve the way a decision is made. Whether adopting a new application, moving specific solutions to the cloud, or integrating new business units, this new framework must be compatible with traditional, structural, and incremental changes that offer a clear return on investment.

This new architecture would extract more value from each of your employees on a daily basis. Similar to how manufacturing environments operate using [total quality management](#), [six sigma](#), and lean as a continuous improvement process or series of continuous [kaizen events](#), a flexible process architecture enables each member of the organization to deliver better quality for a given product or service.

To achieve this, companies must invest in ways to combine functional requirements, business processes, and system and solution upgrades with a continuous improvement framework that is frictionless and always evolving with your business.



# Detect, decide, and execute: A continuous improvement framework

A continuous improvement framework helps you make better business decisions to include all data sources, all data types, and a process to connect the extended value chain to react to both internal and external changes. An extended value chain responds to incoming data from business-to-business (B2B) transactions, internal systems, and the ecosystem where it operates.

Oracle has many years of experience in this area and we have built an inventory of data sources for B2B transactions and internal systems—including financials, advanced analytics, Internet of Things (IoT) sensors, yields, quality projections, and much more.

There is a sea of data describing how your ecosystem influences your performance. This is the same ecosystem that influences the performance of each of your partners and value chain links and includes your contract manufacturers, their key raw material suppliers, your distributors, and your design partners. The first step is to include these datasets describing the ecosystem where your value chain operates so you can visualize all the changes affecting the performance of the extended value chain.

# The future of supply chain decision-making

A smart detect-decide-execute framework that enables a supply chain network response is a must-have in today's business environment.

To create and deploy such a framework, you need to complement your existing architecture with one that seeks continuous improvement in the way your company makes decisions every day. This is an important paradigm shift.

Future-ready frameworks adapt to your current systems-analytics-process architecture, their goals, and budget constraints. While this new continuous improvement architecture expands the traditional incremental roadmaps that are tied to specific reengineering budgets, it still needs to deliver incremental value using what you have today—and every day after. Starting with one predefined use case will accelerate adoption and allow you and your stakeholders to realize value right away.

This concept, also known as a **supply chain command center**, enables organizations to converge, become more connected, and orchestrate with cross-functional process efficiency and decision quality for specific use cases within their business ecosystem and across multiple time horizons.

To build a smarter decision-making framework, there are three key steps to consider. They include running a partially or very externalized value chain and deploying a continuous improvement architecture to deliver better results every day.

## 1 Detect changes by getting data into your data lakehouse

Let's first talk about the data we need and then how to transform it into business value using a continuous improvement framework. A data lakehouse is a modern, open architecture solution that enables you to store, understand, and analyze all your data. Loading data into a data lakehouse from various sources—internal and external—requires a tool that can within operate the extended value chain “data plumbing”—just as if the data links were connected with real pipes.

Having a centralized hub of information with prebuilt processes and an intuitive user interface is critical. Business ecosystem partners need immediate access to information with clear definitions of their functions—both upstream and downstream—in the extended supply chain. These ecosystem partners include contract manufacturers, internal assembly units, product design teams, and distribution or transportation service providers.

The framework should provide us with the “pipes” that connect each internal and external data link and deploy the best possible processes that connect the right partners for a given business challenge. It's not only the data interchanged that creates value; the link-to-link connection process creates a good level of differentiation in value generated. The framework must enable continuous process improvement at the pace of business changes without the need to replace your current solutions.

The data interchanged with each link in your value chain must be indisputable and complete. You will be making critical decisions with the information gathered through this new framework that could involve the enforcement of terms and conditions and even contract reviews to securely manage these data connections. The last thing you need is to have doubts about the data you are using.

You should never have to ask, Who sent the data? When did a particular transaction happen? And data concerning more than one party should always be complete on both ends.

Finally, you should be able to gradually deploy more and more connections to data sources in your ecosystem.

## 2 **Decide** how to act based on insight from your data lakehouse

Your business context is different from your competitors', customers', and partners' context.

To get usable business insights, you need to augment your data lakehouse content with the right data from your internal systems. This will help extend the data lakehouse with details about your specific business context: from upstream supplier issues to downstream distributor and customer challenges.

But many organizations have this data-into-insight contextualization process working in manual mode, sometimes semiautomated. They use Excel files and static dashboards. Some companies use simple data mining working in siloed data repositories to try to understand supply chain performance. Others use Excel file integrations with backend data to put data into context.

To get real business insight, your data inflows (where all changes are contained) must be integrated into your current SaaS and analytics layer. This will create a detect-decide-execute framework that dynamically adapts to new business conditions and delivers actionable business insight.

### 3 **Execute** efficiently based on new business insight

After modeling the impact of your next move, you will respond to changes with your next best action. In some cases, a predefined model for a particular business challenge is so stable that you will want to automate the response to execute on the same changes moving forward.

In this scenario, your business is already waiting for the given business challenge to happen again. It is not totally unexpected, and you can predefine an automatic response while focusing on other strategic areas of your operations.





# Responding to any business condition with predefined use cases

Applying use cases to the detect-decide-execute framework will ensure that your decisions are derived from a common harmonized data layer and improve decision-making quality and speed by focusing on each business challenge.

A predefined use case combines data, intelligence, and recommendations, providing the fastest response available to keep your enterprise operating at peak performance. We've listed a few common use cases we can all relate to:

## Automated inventory balancing

If you get the signal from your customer's shelves that one of your products is below reordering level and that particular item is under one of your vendor-managed inventory contracts, then you will be able to automatically send the corresponding amount of product directly to your customer to refill the planned stock level. Right after taking this action, you could also automatically send an invoice to your customer using the terms and conditions in the contract.

## Manufacturing constraints

Detect manufacturing bottlenecks by using IoT sensors on the production equipment that collect and process data. Built-in processes automatically send work orders to start the necessary repairs. At the same time, extra units are automatically coming from a different source to compensate for this capacity loss.



## Demand risk management

You could use real-time weather conditions or port congestion news to project delays of a specific item arriving at your or your contract manufacturer's location. Keep the process moving efficiently by using this insight to automatically reschedule the proper manufacturing assembly orders waiting for these components.



## New product introduction

Between ideation and full-scale production, there are always risks involved with introducing new products—and delays can be costly. So if you learn that a new product (or service) will not be ready on time for a market launch, you need to explore alternative scenarios. It's important to have the capability of defining new scenarios and gauging the consequences of each of them—including the risks involved with each alternative—before making a final decision.

You may research how to reallocate marketing funds in old products, market segments, and geographies. Other alternatives include postponing the opening of a particular market, canceling the hiring process already in progress, or taking that loss into your fiscal year results. There will probably be a few more alternatives to consider before you make your final decision. This what-if analysis will require a common, harmonized data layer stored in your data lakehouse and a sales and operations planning (S&OP) process to orchestrate decision alignment for your executives to make a coordinated and confident decision.

# Enabling quick response and decision automation

We frequently see how manual responses get automated when possible. The detect-decide-execute framework should allow for increased use of machine learning, artificial intelligence, and advanced analytics to help make coordinated responses in both manual and automated cases.

Minimizing response time is critical to mitigate risk and fully realize the value impact. With built-in advanced analytics, you can make data-driven decisions and then automatically put new plans into action throughout your organization.

Having two silos, one making decisions and the other getting them into action, creates business value loss. The decide-execute step of the framework is particularly important in extended supply chains. The way you plan your response, how you deploy it, and how you execute it across your network must be seamlessly integrated.



## Conclusion

Creating a supply chain command center will allow you to easily connect consumable internal data with external and network data to improve decision-making quality and speed with predefined use cases that are focused on your unique business challenges. A supply chain command center facilitates real-time recommended actions that are focused on the best possible outcomes, and it will learn from each supply chain network action, enabling decision automation where needed.

Your organization will be empowered with comprehensive, connected insights for better, faster, and more-aligned business decisions.

Oracle's approach to a supply chain command center—powered by Oracle Fusion Cloud SCM—combines a detect-decide-execute framework with predefined use cases that support your employees' daily endeavors and improve the quality and speed of decision-making.

A smart, responsive supply chain command center enables you to move from insights to decisions and actions—putting a strategy in place that will guide your business for years to come.

## Learn more about decision frameworks and the supply chain command center.

[Visit our site](#)

Copyright © 2023, Oracle and/or its affiliates. This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

