Gartner.

Guide 3 of 5

When to Augment Decisions With Artificial Intelligence

Guides for Effective Business Decision Making

By 2025,

95% of decisions that currently use data will be at least partially automated.

Source: Gartner

In the Gartner 2021 Reengineering the Decision Survey of executives, 47% of respondents said they expected decisions to become increasingly complex over the ensuing 18 months. This is driving interest in the application of data and analytics (D&A) to improve the quality of those decisions. However, organizations are also interested in improving the speed and accuracy of decisions, and that often requires automation.

Decisions that use data can be automated in a variety of ways but fall somewhere between being mostly human-based and entirely automated. Organizations that embrace some degree of decision automation are likely to achieve competitive advantage through more rapid decision making (algorithmic trading outpacing human-based trading in response to market volatility), more sophisticated decisions (inventory levels based on a wide variety of market signals) and more granular decision making (microsegmentation of customer segments).

The key for D&A and business leaders is to understand where to expand decision automation for better outcomes.
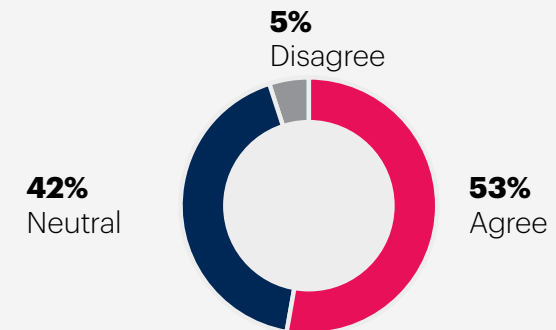
Gareth Herschel
VP Analyst, CDO Leadership

The decisions I make are more complex (stakeholders, choices) than 2 years ago

5%
Disagree

30%
Neutral

65%
Agree
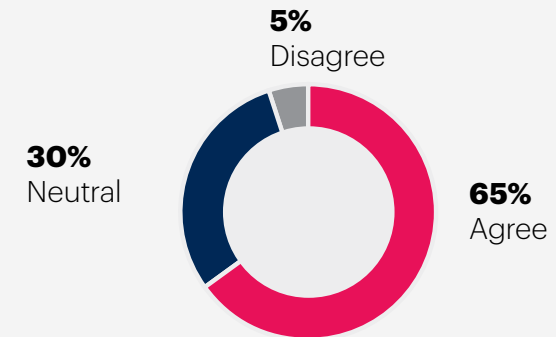
There is a higher expectation for me to be able to explain or justify my decisions

5%
Disagree

42%
Neutral

53%
Agree

Source: Gartner

How to Use This Guide

1

Prepare

Understand the role of automation in decision making.

2

Establish

Know how, in practice, to blend human and artificial intelligence (AI) in hybrid decision making.

3

Engage

Use a decision intelligence framework to assess when to augment/automate decision making.

4

Tips for Delivery

Act intentionally to create an organizational competency in decision intelligence.
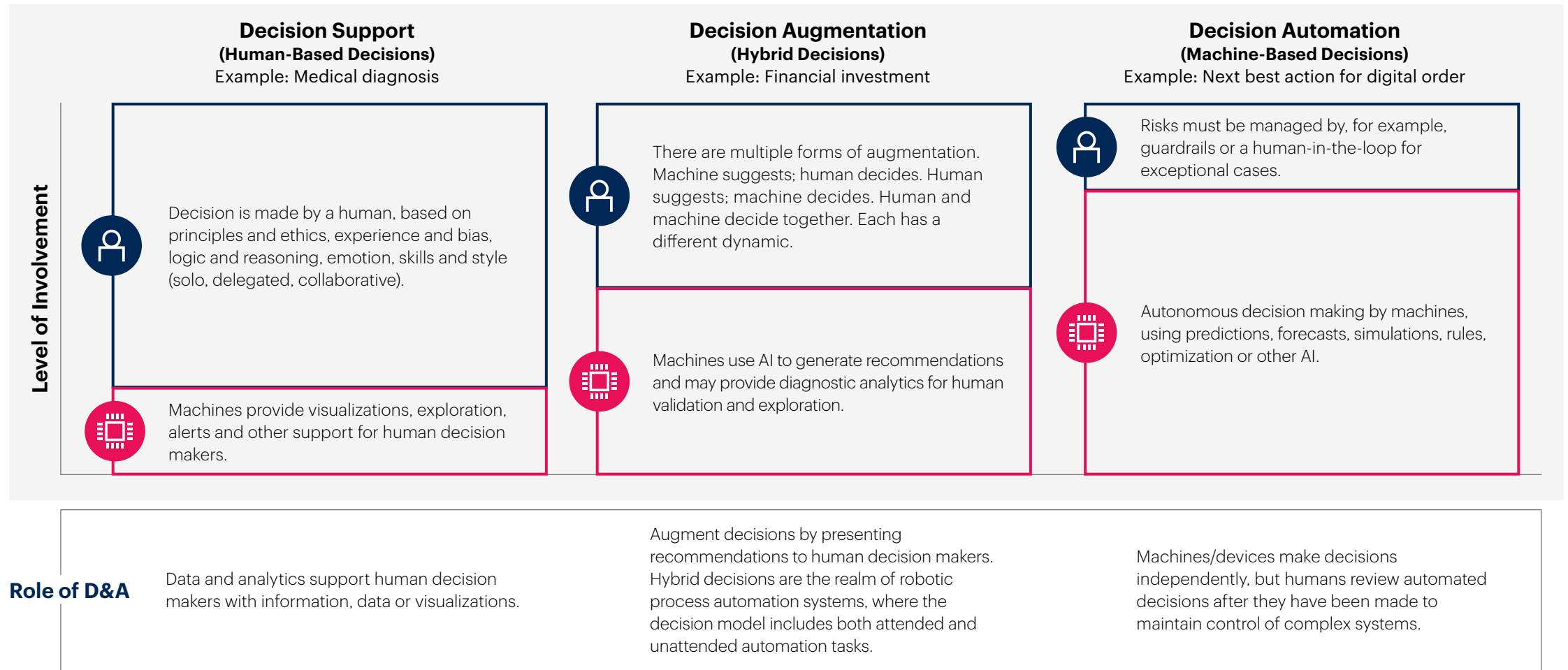
Prepare

Understand the Role of Automation in Decision Making

Human **Machine**

Decision Support
(Human-Based Decisions)
Example: Medical diagnosis

Decision Augmentation
(Hybrid Decisions)
Example: Financial investment

Decision Automation
(Machine-Based Decisions)
Example: Next best action for digital order

Level of Involvement

Decision is made by a human, based on principles and ethics, experience and bias, logic and reasoning, emotion, skills and style (solo, delegated, collaborative).

Machines provide visualizations, exploration, alerts and other support for human decision makers.

There are multiple forms of augmentation. Machine suggests; human decides. Human suggests; machine decides. Human and machine decide together. Each has a different dynamic.

Machines use AI to generate recommendations and may provide diagnostic analytics for human validation and exploration.

Risks must be managed by, for example, guardrails or a human-in-the-loop for exceptional cases.

Autonomous decision making by machines, using predictions, forecasts, simulations, rules, optimization or other AI.

Role of D&A

Data and analytics support human decision makers with information, data or visualizations.

Augment decisions by presenting recommendations to human decision makers. Hybrid decisions are the realm of robotic process automation systems, where the decision model includes both attended and unattended automation tasks.

Machines/devices make decisions independently, but humans review automated decisions after they have been made to maintain control of complex systems.

2

Establish

3 Key Steps to Hybrid Decision Making in Practice

In practice, the role of automation in decision making is nuanced, with a series of categories defining a transition from decision support to augmentation to automation. Use the framework to the right to clarify where humans can and should be involved in decision making and the types of investment required.

3 Keys to Implementation

1 Move from one level to the next on the basis of organizational need, not technical ability.

2 Blend different levels, even within one decision, to balance risk and opportunity.

3 Do not view Level 7 as an automatic best practice or objective; the optimal level will vary for different decisions and depend on your culture.

The 7 Levels of Hybrid Decision Making

	Decision Support		Decision Augmentation			Decision Automation	
Level	1	2	3	4	5	6	7
	Human	Advisory	Recommendation	Approval	Veto	Audit	Autonomous

Data or Analysis Used
Determined by need and preference of human decision maker
Pre-identified in the context of the decision

Who Proposes the Decision
Human (potentially using data and analytics)
Human and decision system both create
Decision system

Role of Human in Decision Approval
Approval of decision is an explicit action
Rejection of decision is an explicit action

Decision Oversight
Review of decision process and choice
Routine review of previous decisions
Exception-based review of previous decisions
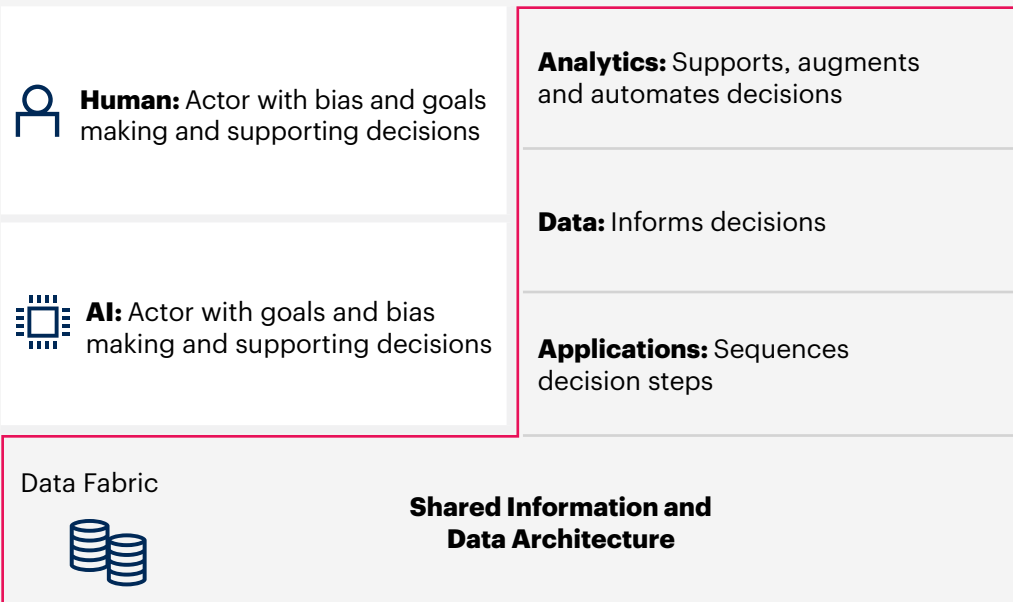
Source: Gartner

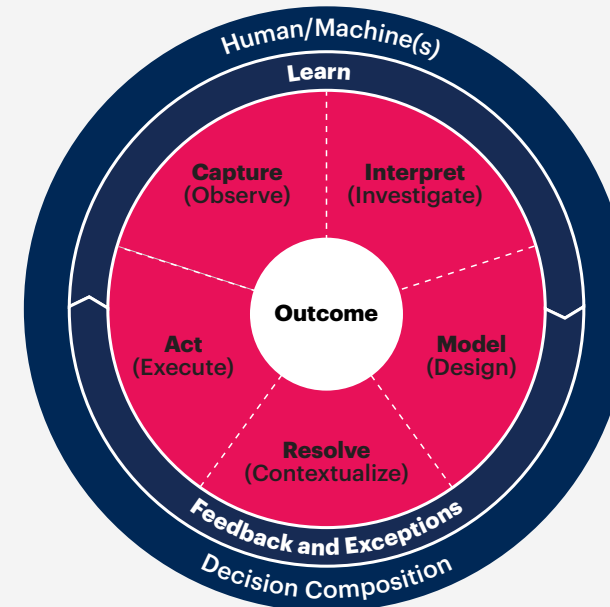## Engage
Leverage a Decision Intelligence Framework

The Gartner Decision Intelligence framework helps you model decisions while ensuring you detail the (re)design and application of components needed to support, augment or automate each phase in the decision flow.

Decision Intelligence

Gartner Decision Intelligence Components

Human: Actor with bias and goals making and supporting decisions

AI: Actor with goals and bias making and supporting decisions

Data Fabric

Analytics: Supports, augments and automates decisions

Data: Informs decisions

Applications: Sequences decision steps

Shared Information and Data Architecture

▶ **Gartner Decision Intelligence Loop**
(Every decision goes through the same 5 phases)

Human/Machine(s)

Learn

Capture (Observe) — Interpret (Investigate)

Outcome

Act (Execute) — Model (Design)

Resolve (Contextualize)

Feedback and Exceptions

Decision Composition

Source: Gartner

Tips for Delivery
Act to Build Decision Intelligence Capabilities

The ability to identify, prioritize and then to model and (re)engineer decisions for improvement (i.e., decision intelligence) will be a critical competency for a disruption-ready and resilient organization.

Recommended actions:

✓ Start with decision intelligence where business-critical decision making must be improved — requiring more data-driven support or AI-powered augmentation — or where decisions can be scaled and accelerated through automation. (Alternatively, start where there is the greatest dissatisfaction with current decision making as this could drive some quick wins.)

✓ Improve decision making by first explicitly understanding and modeling how decisions are currently made and how they could be reengineered, and then by incorporating human and/or AI decision-making capabilities and a feedback loop for measuring results.

✓ Build organizational competency in decision intelligence with a reusable, composable decision framework. This enables data-driven organizations to get the most out of their data. It turns the data into insights that target improvements in business performance and achievement of mission-critical priorities.

✓ Consider creating a role for decision engineers by hiring or upskilling experts who can work with decision makers to identify critical decisions, which can be improved through engineering decision intelligence.

Actionable, objective insight

Explore these additional complimentary resources and tools to make better business decisions.

Roadmap
Enhance Your Roadmap for Data and Analytics Governance

Set the right governance foundation.

Webinar
Data & Analytics Series: Modernize Your Data Strategy to Achieve Digital Success

Connect the strategy to your operating model.

Resource Hub
Chief Data Officer to Build Data & Analytics Leadership Traits

Create competitive advantage through D&A.

Roadmap
The IT Roadmap for Data and Analytics

Follow D&A best practices to create a strategy.

This guide is part of the Effective Decision Making Series. You can access other guides in this series to continue improving how your business makes decisions and learn:

- Which decisions to reengineer and why
- How to prioritize analytics and data
- What role data fabric will play in your data management
- Incorporating the right skills and capabilities in your D&A organization

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