

IBM Intro For Forrester Report – “Introducing Ai-Powered, Human- Controlled Digital Decisioning Platforms”

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Introducing AI-Powered, Human-
Controlled Digital Decisioning Platforms

IBM INTRO FOR FORRESTER REPORT – “INTRODUCING AI-POWERED, HUMAN-CONTROLLED DIGITAL DECISIONING PLATFORMS”

The increasing complexity of decision making is compelling organizations to look for novel ways to adapt. Simplistic decision support approaches like excel based planning have given way to more sophisticated tools and techniques that deliver the speed, accuracy and agility for today’s business demands.

Data science techniques like machine learning are leading the way in helping organizations drive better decisions with predictive insights. Powerful insights can be fascinating, but they can be rendered ineffective if those insights do not translate to actions that drive business outcomes. High growth organizations are accelerating the use of data science to bridge the gap between insights and actions by focusing on 3 key enablers – Automation, Prediction and Optimization.

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Automation facilitates a faster insights-to-action cycle and enables businesses to quickly scale machine learning with smaller data science footprints. Automation brings in more people into data science, while enabling expert data scientists to be more productive. Predictions provide powerful insights around “What will happen next,” and Optimization technology enables organizations to realize significant ROI* by prescribing actions that improve customer experiences, operational efficiency and drive product innovation. Across industries, decision optimization technology has driven cost savings and increased revenue by helping streamline critical activities such as production planning, route optimization, workforce scheduling and other use cases.

However, while machine intelligence delivered by techniques like decision optimization and machine learning is often touted as the cure for decision-making challenges, the role of human domain expertise in enabling better decisions cannot be ignored.

Combine machine intelligence and human domain expertise for speed, accuracy and agility

While machine learning can help scale AI, there is a lot of value in combining human subject matter expertise with the computational power of machines. Consider an industrial example, where factory managers are tasked with scheduling maintenance for critical assets like those used for production. This is critical because unplanned repairs can be costly, whereas performing maintenance too early would lead to unnecessary costs.

A machine learning model can predict asset downtime and determine the optimal maintenance day based on data around historical failure, maintenance history, machine usage and real-time sensor data. However, the machine learning solution does not factor in constraints and dependencies like spare parts availability, staff availability on a specific day or the impact on productions levels due

to machine downtime. This is where decision optimization solutions can drive better outcomes by taking in the predictive insights to identify the best course of action that helps achieve often conflicting objectives such as cost, service levels etc, while also factoring in all the physical, legal and business constraints.

The factory manager can then use the recommendations provided by the decision optimization model and conduct multiple what-if scenario analyses to assess the impact of choosing one solution over another and choose the solution that best meets business objectives.

With such an approach, organizations can tap into the combined power of machine intelligence (predictions and optimization) and human expertise to drive improved business outcomes. And this is true not just for the industrial scenario described here, but for any business decision that involves large number of variables, constraints and trade-offs.

And when situations change, this same approach can be used to quickly build alternate plans and schedules in an agile manner. In this context, optimization solutions offer a distinct advantage because they do not entail hard coding of business logic into decision support applications. Optimization solvers can sift through millions of alternatives and recommend optimal solutions to address business objectives.

Best practices to drive better outcomes leveraging machine insights

1. Simplify decision intelligence implementations

Don't stop at Insights, Focus on actions. Complementing machine learning with decision optimization models can help inject decision intelligence into applications and thereby drive operational efficiency gains, improved customer experiences and higher revenues.

[IBM Watson Studio Premium](#) for Cloud Pak for Data helps you take advantage of decision optimization, visual modeling and open source data science tools within a unified data and AI platform so that you can drive innovative solutions to complex business problems by easily combining prediction and optimization techniques. Industry leaders are harnessing the combined power of prediction and optimization to create workforce schedules, build supply chain plans and dynamically allocate resources to realize [millions of dollars in ROI](#).

2. Harness the breadth of human expertise to drive better machine insights

You can create better AI models and improve business outcomes when you tap into the treasure trove of expertise that resides across cross-discipline teams. Choose a data science platform that fosters collaboration across data scientists, business analysts, line of business during model building, and improve the quality of your models.

You can also address the data science talent shortage by empowering data and analytics experts everywhere with support for both visual and programmatic approaches to build models. Several organizations are improving productivity of data scientists with tools like [IBM AutoAI](#), that enables teams to do more with existing data scientist resources.

3. Innovate Anywhere

Your data and applications reside across multiple environments – public cloud, private cloud, on-premises. Why should your data science models be locked into one environment?

By adopting a multicloud data and AI platform like [IBM Cloud Pak for Data](#), your data science teams can build models once and deploy them anywhere (any cloud, on-premises), so that you can tap into innovation across multiple clouds.

4. Build your models on a solid data foundation

Your machine intelligence models are only as good as the data they are trained on. It is critical to simplify access to all the right data required for your AI models in a governed manner.

Choose a data and AI platform that provides a solid foundation of trusted data. Tools like data virtualization and data preparation simplify data access and help your data scientists spend more time doing what they love i.e., Build great models.

Summary: Accelerate decision intelligence with integrated data and AI platforms

To accelerate value from insights, patterns and other discoveries to anticipate what comes next and simplify decisions, it is imperative to adopt a modern data and AI platform. These platforms provide a trusted data foundation that simplifies access to governed data, so data science teams can build AI models with confidence. They allow data scientists to focus on higher value work by spending less time on mundane tasks like data collection and data preparation. Industry leaders are setting themselves up for their next chapter of growth by adopting multicloud data and AI platforms that enable the flexibility to deploy models anywhere so that they can tap into innovation across multiple environments.



Modernizing data science within a multicloud data and AI platform like [IBM Cloud Pak for Data](#) enables organizations to accelerate the path from data to insights to actions by improving decision-making agility. Organizations can simplify decision intelligence implementations by combining discovery, predictions and optimization technology within a unified environment. For example: By extending IBM Cloud Pak for Data with

[Watson Studio Premium](#), you can tap into core technologies that drive decision intelligence like predictive analytics and decision optimization within a containerized, multicloud environment. Accelerate time to value, and also save costs associated with maintaining disparate tools.

Source:

*<https://www.informs.org/About-INFORMS/News-Room/Press-Releases/2020-INFORMS-Franz-Edelman-Award-World-s-Leading-Operations-Research-and-Analytics-Competition-Selects-Finalists>

Introducing AI-Powered, Human-Controlled Digital Decisioning Platforms

Use DDPs To Encapsulate Decision Logic Powered By The Best Of Analytics, AI, Math, And Human Logic

by Mike Gualtieri and Boris Evelson
August 11, 2020

Why Read This Report

Digital decisioning platforms (DDPs) allow application development and delivery (AD&D) pros to combine the best of human decision logic with the best of AI to implement application-embedded automated decisions, i.e., digital decisions. DDPs accomplish this by providing a suite of capabilities that enable business subject-matter experts to define decision logic, incorporate data-driven decision intelligence technologies such as machine learning (ML), govern change, and deploy digital decisions within business applications.

Key Takeaways

Digital Businesses Require Digital Decisions

The volume, rapid pace, and individuality of digital business operations demand automated, real-time decision making. Within business process applications, digital decisions can determine prices, solve fulfillment issues, and make other operational and customer decisions with consistency and speed that humans can't match.

AI Supercharges Plain Old Business Rules

Enterprises have long used business rules management systems to encode and execute human decision logic. In today's business climate, enterprises must implement digital decisions not only with human decision logic but also with data-driven AI technologies such as ML models.

Digital Decisioning Platforms Fuse The Best Of Humans And AI

Humans are smart, and AI is smart — albeit in different, but complementary, ways. The genius of digital decisioning platforms is that they expertly provide AD&D pros with tools to use the best of both to make consequential, digital decisions in the applications that business runs on.

Introducing AI-Powered, Human-Controlled Digital Decisioning Platforms

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by [Mike Gualtieri](#) and [Boris Evelson](#)

with [Srividya Sridharan](#), [Brian Hopkins](#), [Chris Gardner](#), Jeremy Vale, and Diane Lynch

August 11, 2020

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[Enterprise Speed: The Key To Being Adaptive](#)

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Digital Decisions Are Fast And Frequent Automated Decisions

What makes a business shine brightly, ride out storms, and become an industry leader? The answer is “right and timely decisions.” Decisions about pricing. Decisions about what products and services to offer. Decisions about how to serve customers. The success of an enterprise doesn’t stop at getting insights; it depends on the collective efficacy of decisions and actions about customers, operations, and strategy.¹ Humans make tactical and strategic decisions, but AD&D pros must automate high-frequency, real-time operational and customer decisions in business applications. Forrester calls automated decisions implemented in applications “digital decisions,” which we define as (see Figure 1 and see Figure 2):²

Business decision logic defined by business experts, informed by analytics, and embedded in applications to make real-time, repeatable operational and/or customer engagement decisions that establish a fact, identify a pattern, make a choice, trigger a process, determine policy compliance, route an event, and/or surface knowledge.

FIGURE 1 Applications Must Act On A Range Of Perishable Insights To Get Value From Data And Analytics

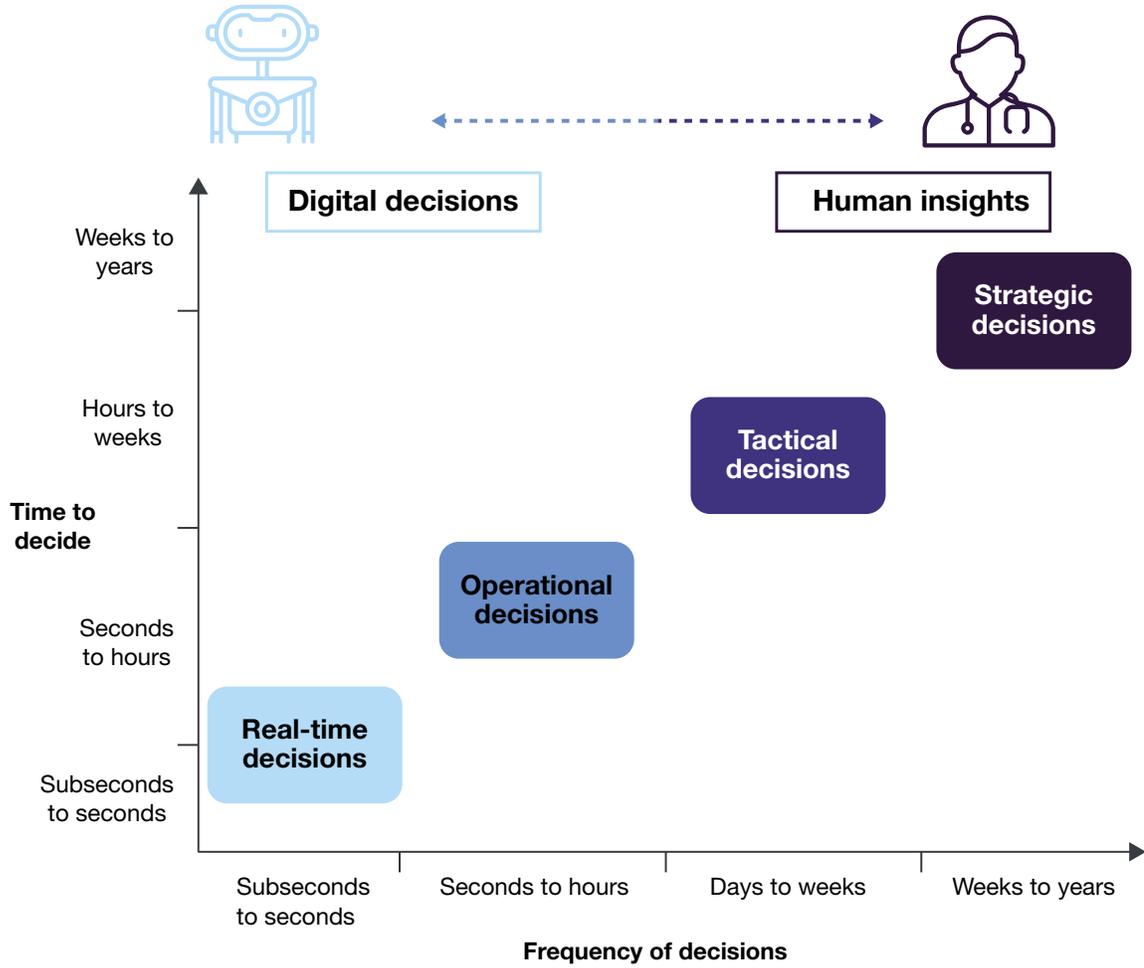


FIGURE 2 Digital Decision Types

Decision	Description	Example
Fact	Establish a fact	Wages and overtime rules for new employees comply with the latest local and federal regulations.
Identity	Recognize a pattern, object, condition, or state	An eCommerce application sends an email reminder a few days after a customer places goods in an online cart without purchasing.
Choice	Make a choice based on a set of defined outcomes	Human resources software enables users to request either sick leave or vacation leave.
Process	Trigger a process or branches within a process	A banking application approves a consumer loan.
Policy	Determine policy compliance	Insurance software checks coverage for a medical procedure against historical claims information.
Event	Route an event to an application	Opting out of email alerts prompts an online survey to gather information about the user's rationale.
Advice	Surface knowledge from an expert knowledge base	Lingering on a website for a specified amount of time prompts the option of speaking with a representative.

HARD-CODED DIGITAL DECISIONS FALL SHORT OF BUSINESS DEMANDS

There's nothing more routine in the application development world than coding business logic into applications. Business logic may represent a process, or it may represent decision logic — a digital decision. Decision logic, a subset of business logic, is gleaned from business needs, translated into requirements, and then coded by software development teams. The lion's share of digital decisions are implemented in this manner, but this method is sorely insufficient in today's world because this type of hard-coded decision logic is often:

- › **Expensive to develop and difficult to change.** Even with Agile development processes taking hold within enterprises, software development projects are expensive. Software teams require business analysts, architects, project managers, scrum masters, developers, testers, and DevOps to go from idea to production. Coded decision logic can also be hard to change because it requires application development teams to crack open the application code to go through the entire software application development lifecycle again.³ For instance, decision logic for paying an insurance claim in the US may be different for every state. Every time a state regulation changes, the code must be changed, retested, and rereleased.

- › **Devoid of analytics and AI.** Most enterprise decision logic is expressed as traditional business rules that represent human decision logic for a specific business use case. While humans are good at formulating rules based on experience, we're not so good at analyzing thousands or millions of data points. Analytics and AI are very good at analyzing data but are often separate disciplines within an organization and not incorporated within the same domain as business rules. For instance, a factory floor manager might express decision logic to shut down machines for maintenance based on a simple temperature threshold trigger. But AI technology such as ML could analyze actual data from the machine to determine that a higher operating temperature is OK as long as the vibration is low.

Digital Decisioning Platforms Combine The Best Of Humans And AI

Adaptive enterprises proactively rethink their identity as a business to deliver on emerging customer needs, seize opportunities that others miss, and respond to tumultuous change.⁴ They're able to undertake strategic innovations and business improvements, implement quickly, and improve frequently. Companies must be able to change decision logic within applications to adapt to change rather than slogging through the SDLC every time decision logic changes.⁵ This is where digital decisioning platforms play a key role (see Figure 3). They help define and deploy ever-changing digital decisions and draw from the best of both humans and AI to do it. They also extend various systems of insight to enable the activation of decisions (and the changes that come with them) within any business application. Forrester defines digital decisioning platforms as:⁶

Software that provides AD&D professionals and their business stakeholders with tools to author decision logic, leverage decision intelligence technologies such as machine learning, use digital decisions in a wide variety of applications, and manage the full decision logic lifecycle, including feedback loops to continuously improve decision logic.

Digital decisioning platforms provide an umbrella of capabilities to:

- › **Author decision logic using tools designed for business experts.** Digital decisions always start with a business requirement. Rather than hard-coding that logic in a programming language, DDPs support authoring decision logic using multiple visual techniques such as flowcharts (e.g., decision logic to approve or decline an insurance claim) or structures such as tables (e.g., decision logic to offer an interest rate on a mortgage based on the applicant's financial and credit profile). These techniques allow not just AD&D pros but also business subject-matter experts to model the decision rules and incorporate advanced analytics and/or AI models into the decision logic.

For example, Australia's largest water and sanitation business authors and deploys decision logic within a self-service web application to automatically render decisions on more than 25,000 land-development applications per year.⁷

- › **Leverage decision intelligence technologies to enhance human decision logic.** Humans are arbiters of decision logic but certainly aren't omniscient. Decision logic can become much smarter when it includes analytics and AI such as ML models. DDPs provide tools and integrate with decision intelligence technologies such as analytics, ML, and mathematical optimization. Analytics can be as simple as aggregate analytics about how much a customer spent on products last month or as sophisticated as an ML model that predicts the next best offer to a customer. The decision logic may even include a mathematical optimization model to determine how much, if any, discount to offer to the customer, with some constraints around budget and spend.

For example, a global automobile manufacturing enterprise uses ML models to automatically flag potential fraud in credit applications, leading to savings of more than £1 million per year.⁸

- › **ModelOps to deploy and monitor digital decisions in production.** DDPs store and manage all decision logic in a single repository, making digital decisions easier to govern and change — a single place to author, collaborate, manage versions, test, and debug decision logic. Model operations (ModelOps) are an emerging set of capabilities that include the ability to deploy decision models and monitor the effectiveness of those models against KPIs.⁹ The ability to monitor models in production is critical to ensuring that the decision model is still having a positive impact on the desired business outcome.

For example, a global bank uses ModelOps capabilities to deploy, monitor, and govern ML models used in commercial loan application process to determine the likelihood of a loan default event.¹⁰

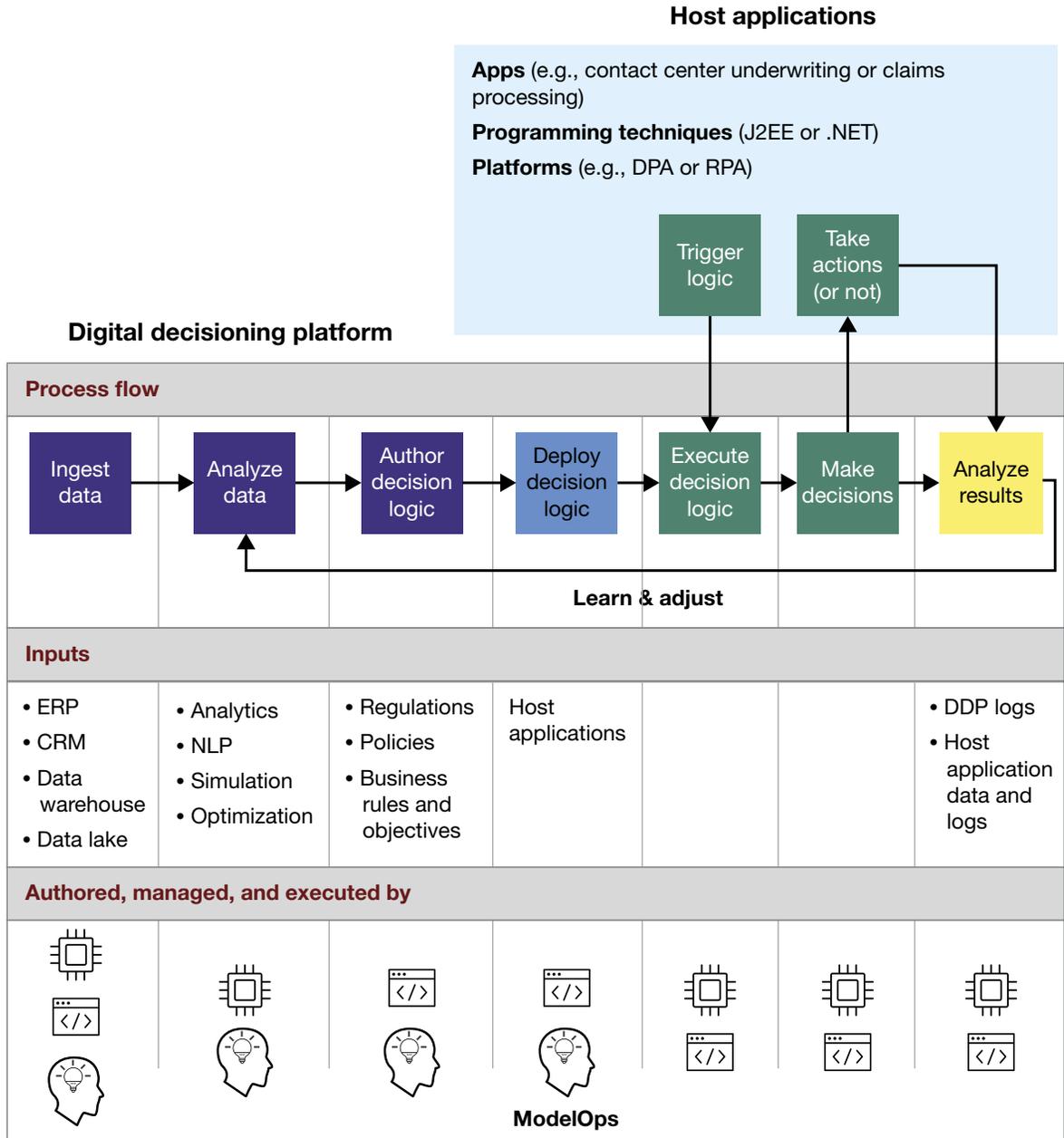
- › **Evolve digital decisions with feedback loops to improve decision logic.** Digital decisions must evolve to improve or maintain effectiveness. In some cases, decision logic itself might be flawed or may degrade over time. Measuring and analyzing the effectiveness (or ineffectiveness) of enterprises' decisions allows AD&D professionals to refine or redo decision logic to make it better. This can be as simple as marketing managers reviewing email conversion rates and adjusting the decision logic to target an additional segment. Alternatively, it can be as sophisticated as embedding an ML model in the decision logic for an email marketing campaign to automatically adjust what content goes to target audiences, based on real-time campaign effectiveness.

For example, a large retailer uses a digital decisioning platform to define merchandising decision logic and can quickly change the decision logic based on feedback from store data.¹¹

- › **Standardize decision logic within a wide range of application platforms.** Enterprises typically use numerous platforms to build custom applications, including coding (e.g., J2EE or .NET), low-code platforms such as digital process automation (DPA), robotic process automation (RPA), digital experience (DX) platforms, and many others. AD&D teams that use DDPs for digital decisions can abstract decision logic, use advanced analytics, and call this logic within any of these platforms through either direct integration or service calls. Some DDPs include their own application development tools that can be useful for new applications that have limited scope.

For example, a commercial line insurance carrier uses a digital decisioning platform to allow underwriters to author decision logic and deploy as microservices callable by all relevant applications for consistent digital decisions.¹²

FIGURE 3 Decisions Are The Heart Of Insight-To-Action Cycles



- Develop/analyze
- Deploy
- Execute
- Analyze
- Machine learning (ML)
- Subject-matter expert (SME)
- Code (non-ML)

INSIGHTS TECHNOLOGIES MAKE DIGITAL DECISIONING PLATFORMS SMARTER

DDPs aren't purely intelligence technologies. In fact, a DDP is just one component in the full arsenal of technologies that support insights-driven business capabilities. Therefore, DDPs must have the ability to integrate with other technologies that can boost decision intelligence. For example, a supply chain decision about rerouting shipments might use an ML model, a mathematical optimization model, and human decision logic to decide the best way to reroute a shipment. The ML model may be implemented in an external predictive analytics and machine learning (PAML) solution, but it's imported into the digital decisioning platform to become part of the decision logic. Insights technologies play three roles in DDPs (see Figure 4):

- › **Data ingestion.** Ingesting structured and unstructured data into a DDP is a crucial first step in moving to insights and then decisions. Many leading DDP platforms have their own data ingestion functionality. However, AD&D pros must also be able to integrate data pipeline/stream processing platforms, as most enterprises have already standardized their [data extraction, integration, and movement processes](#) on these. For example, data pipelines can use a batch approach to move data from a data warehouse/data lake to a DDP, or a data stream to continuously ingest data from sources like website clickstreams or the internet of things (IoT). For unstructured data, platforms like [text analytics](#) and [search](#), using natural language processing (NLP), can enrich DDP data with topics and other concepts extracted from emails, chats, contracts, and other text-based documents. Additionally, while all these platforms end up physically moving data from the source to a DDP platform, [data virtualization](#) platforms can perform many of the integration and transformation functions without physically moving data.
- › **Decision optimization.** A jack of all trades is a master of none. While leading DDP platform vendors have invested heavily in decision logic optimization using ML, predictive analytics, mathematical optimization, simulation, and other tools, they often can't compete with the specialists on the richness of functionality. For example, data scientists will frequently use [external PAML platforms](#) to build and train decision logic models to approve a loan based on many factors, including a credit risk variable, which a predictive model can derive. In another instance, enterprise data scientists can lean on an external mathematical optimization — a process of finding the optimal solution to a problem that has numerically expressed constraints — to determine the best decision logic to allocate advertising dollars to multiple marketing channels or determine the best allocation of supply chain resources.
- › **Decision analysis.** In addition to using analytics platforms for data ingestion (NLP) or optimization (PAML), data scientists and citizen data scientists can use them for post-decision analysis. They can use operational analysis, which might include the number of decisions triggered or the number of decisions made to approve or decline a loan (enterprises often use [streaming analytics](#) platforms for this use case). They can use tactical analysis, such as whether too many decisions are resulting in declining insurance claims, whether the decision risks a regulatory inquiry, and whether the

decisioning logic needs to be adjusted. Or they can use strategic analysis, which might include determining if the decision outcomes align with the product or enterprise strategy. Enterprises often use [business intelligence platforms](#) for tactical and strategic analysis.

FIGURE 4 The DDP Ecosystem

	Platforms	Data ingestion	Decision optimization	Decision analysis
	Data pipelines/ stream processing	Transform; integrate; move data to DDP	N/A	N/A
	Data virtualization	Transform; integrate data virtually, without physical data movement	N/A	N/A
	DBMS	Move data to DDP via queries	Provide additional data (from static data sources) points for decision logic at runtime/execution	N/A
	Text analytics/ search	Transform; enrich unstructured data using NLP	Search; explore various unstructured data sources to build/improve decision logic	Explore state of decision execution/ triggers and outcomes
	Streaming analytics	N/A	Provide additional data (from streaming data sources) points for decision logic at runtime/execution	Analyze (using existing models) state of decision execution/triggers and outcomes in real time
	Business intelligence	N/A	Analyze (using existing models) data to build/improve decision logic	Analyze (using existing models) state of decision execution/triggers and outcomes via queries
	Predictive analytics and machine learning	N/A	Author new ML models to provide new variables to feed into the decision logic or make a probabilistic decision themselves	Analyze (by authoring new models) state of decision execution/ triggers and outcomes
	Mathematical optimization	N/A	Find the optimal solution to a problem that has numerically expressed constraints	N/A
	Simulation	N/A	Build mathematical models designed to predict the behavior of or the outcome of a real-world or physical system	N/A

Recommendations

Decide To Decide Digitally

Digital decisioning platforms bring the best of human logic, advanced analytics, and AI to make the best possible digital decisions. Every single enterprise makes dozens, hundreds, and sometimes thousands of digital decisions. These decisions cry out for governance, agility, feedback loops, intelligence, and ubiquity. Digital decisioning platforms can give your enterprise the ability to make AI-powered, human-controlled decisions. To take advantage of digital decisioning platforms, AD&D pros must:

- › **Build a pipeline of high-ROI digital decision opportunities.** Inventory all applications where decision logic is stored. Then ask how complex the logic is, how often it requires changes, whether you're duplicating it elsewhere, and whether eliminating an AD&D pro in the middle would improve quality and agility. Build a list of applications that have the most complex decision logic, change frequently, and get copied across several applications and where time-to-market has consistently been a challenge. These are your top candidates for a DDP proof of concept.
- › **Start with digital decisions — always.** Decisions correlate to business outcomes. Instead of starting with the data, analytics, and code, start with digital decisions to ensure that extended teams, including business, development, and data science, focus on high-ROI use cases for AI. Then work backward to determine what combination of human expertise, AI technologies, and other advanced analytics you can use to make the best possible digital decision.
- › **Stop the hard-coding madness.** The reality is that most digital decisions are hard-coded in programming code such as Java, .NET, and Cobol. Coded decision logic often suffers from requirements that get lost in translation between the business and application development. It's also frequently duplicated for decisions that span applications that are slow to change because code must go through a complete SDLC, even if it's Agile. AD&D leaders should beseech their Agile teams to identify digital decisions in both net-new requirements and any refactoring to surface opportunities to externalize digital decisions into a digital decisioning platform.
- › **Aim to deliver a quick digital decision win.** Digital decisioning may seem overwhelming because many teams and the artifacts they produce must work in unison. However, one smarter, automated decision can be worth millions in terms of customer acquisition, retention, and operational efficiency. For example, an enterprise can combine an ML model that predicts customer churn with business rules to decide what personalized actions to take to prevent it. Business leaders can identify a few decisions that they know impact business outcomes to prove the value of digital decisioning.
- › **Accept that the CDO must think like a chief decision officer.** Leading enterprises that wish to become more insights-driven now have a chief data officer (CDO) in place.¹³ That means driving better business outcomes that leverage data and analytics with key executive support. Some of the best use cases for data and analytics improve consequential, highly repeatable operational and customer decisions. CDOs wishing to focus on valuable insights-driven use cases can make digital decisioning platforms a key mechanism for value delivery of data and analytics projects.

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Endnotes

¹ In this April 2018 report, Forrester coined the terms “digital decisions” and “digital decisioning platforms” to describe the evolution of the business rules management systems market from strictly a rules-based to defining business decision logic to a broader approach that included rules and other decision intelligence technologies such as machine learning. In that report, we also emphasized that digital decisioning platforms support insights-to-action, meaning that decisions lead to actions. For example, a decision to make a loan would then result in an additional process to onboard the loan. Upon further research, we’ve determined that a digital decisioning platform doesn’t need to include a general application development capability such as a low-code or DPA. Some digital decisioning platforms do have this a capability as part of their portfolio. We emphasize that the essence of a digital decisioning platform is the capability to provide a combination of human and machine decision logic that can be embedded in or called from any common enterprise business application. See the Forrester report “[The Dawn Of Digital Decisioning.](#)”

For a detailed description of how to move from insights to decisions to action and embed insights within software in a closed-loop manner, see the Forrester report “[Digital Insights Are The New Currency Of Business](#)” and see the Forrester report “[Insights-Driven Businesses Set The Pace For Global Growth.](#)”

² See the Forrester report “[Perishable Insights — Stop Wasting Money On Unactionable Analytics.](#)”

³ See the Forrester report “[Best Practices In Implementing Business Rules.](#)”

- ⁴ See the Forrester report “[Enterprise Speed: The Key To Being Adaptive.](#)”
- ⁵ SDLC is the software development lifecycle.
- ⁶ DDPs differ from data-focused rules and automation platforms such as extract, transform, and load (ETL) and other data pipeline platforms in several ways. DDPs must have a way to define decision logic abstracted from data structures, whereas data pipeline rules mainly focus on data integration and transformation tied to very specific data structures, schemas, and queries. DDPs also specialize in triggering and executing decision logic in near real time, usually with a subsecond response time. This low-latency requirement precludes live (at the time of execution) database querying as well as any other interaction with an external system or application. Therefore, DDPs precompile all data necessary to execute decision logic in what’s often called a data payload.
- ⁷ Source: “Yarra Valley Water dramatically reduces application processing time with FICO Blaze Advisor,” FICO (<https://www.fico.com/en/latest-thinking/case-study/yarra-valley-water-dramatically-reduces-application-processing-time-fico>).
- ⁸ Source: “The Operationalization of Machine Learning Models,” Actico, June 2020 (https://cdn.actico.com/wp-3f76a-content/uploads/2020/06/16133738/Success_Story_ML_VW_FS_EN.pdf).
- ⁹ Source: “ModelOps: AI At Scale Isn’t Possible Without It,” Forrester (<https://www.forrester.com/fn/5NVraa31eBopO5IqYqUvx7>).
- ¹⁰ This example is from a confidential inquiry with a Forrester client.
- ¹¹ This example is from a confidential inquiry with a Forrester client.
- ¹² Source: “Insurance Rating and Underwriting,” InRule (<https://www.inrule.com/solutions/insurance-rating-and-underwriting/>).
- ¹³ See the Forrester report “[Put The Business Back In Your Data Management Business Case](#)” and see the Forrester report “[Forrester Infographic: Top Performers Appoint Data Insights Leaders.](#)”

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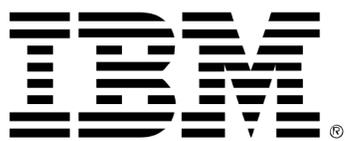
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