Arion Research LLC

Guiding innovation through insights

RESEARCH
REPORT

Decision Intelligence

TL;DR

AI-Driven Decision Intelligence:
Businesses are transforming business decision-making processes with decision intelligence (DI) through AI and machine learning, focusing on efficiency, accuracy, and automation to handle large volumes of complex decisions rapidly.

Fully Automated Decisions: Businesses benefit from fully automated decision processes, enhancing speed, accuracy, and scalability. These systems leverage AI to handle routine decisions quickly and effectively, reducing human error and operational costs.

Human-AI Collaboration: In high-criticality decisions, a combination of AI support and human oversight ensures nuanced and ethical decision-making. This collaboration improves decision quality and maintains the necessary human touch in complex scenarios.

Key Industry Applications: There are various applications of decision intelligence across industries, including supply chain optimization, customer insights, financial services, healthcare, and retail, highlighting the diverse benefits of AI-enhanced decision-making.

Challenges and Considerations:
Challenges include data quality, bias and fairness in AI models, the necessity of human oversight, integration complexities, and regulatory compliance. Ensuring transparency and explainability in AI decisions is crucial for trust and adoption.

Technological Innovations: The emergence of digital twins and synthetic organizations are significant advancements. These technologies allow for detailed simulation of operational and strategic decisions, providing businesses with powerful tools for analysis and optimization.

Table of Contents

Introduction: The Problem with Business Decisions

Making business decisions based on data has been a business goal for many years. During the big data and business intelligence era, decision support was often a dashboard with predetermined data sets and visualizations, or custom queries delivered by IT or data scientists/analysts over some period of time. Timeliness was an issue, as was data completeness due to a fragmented data infrastructure. With broader interest in artificial intelligence (AI) over the past year or so, new ways to approach decision processes are gaining momentum. For routine business decisions, generative AI and integrated data models are rapidly changing the approach away from basic business intelligence (BI) and analytics solutions, and the subsequent dashboards and queries derived from them, to a natural conversation with the data to uncover the necessary answers to support the decision. This move to a natural question and answer process over pre-built dashboards and queries, accelerates the decision process and enables users to find specific answers much more simply and independently, instead of relying on either predefined and thus limited views of the data; or IT, data scientists and data analysts for custom views. This is a big step forward for day-to-day decision making as well as more complex business activities.
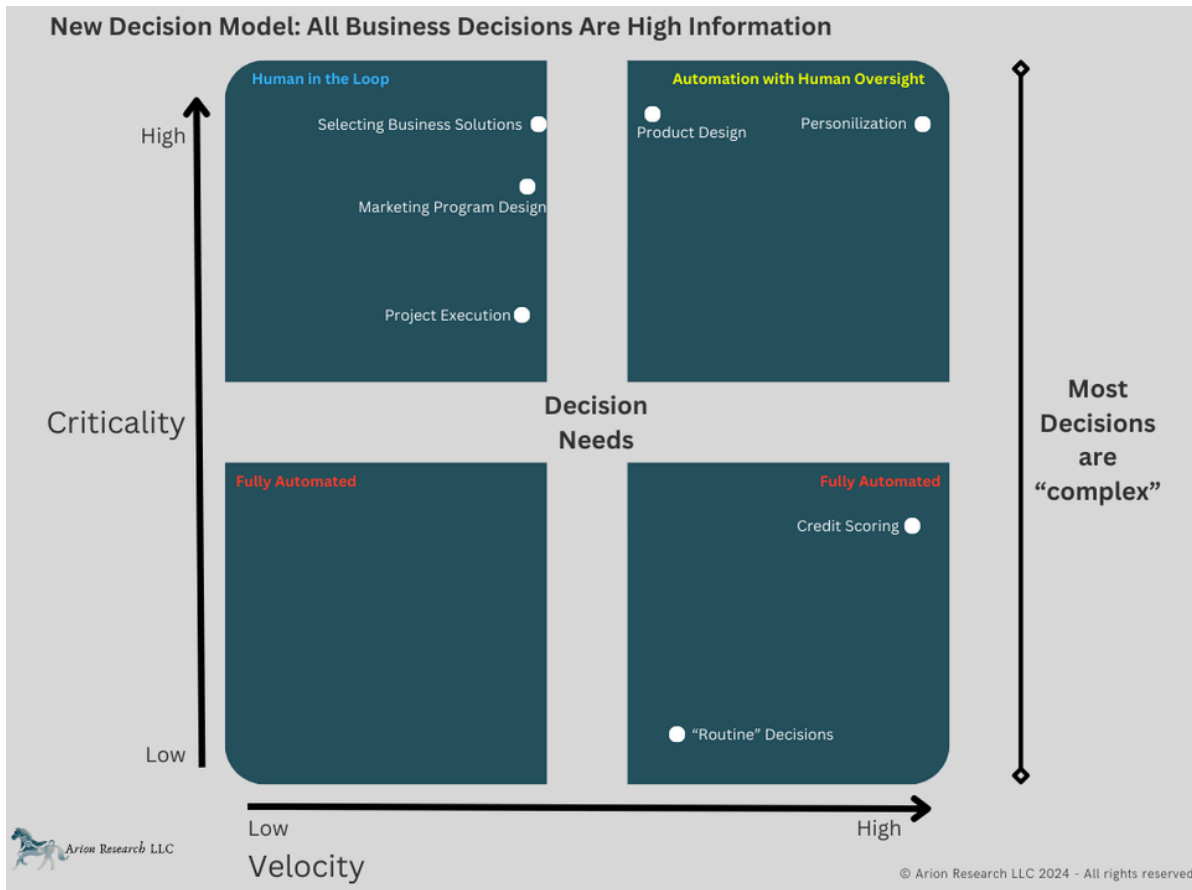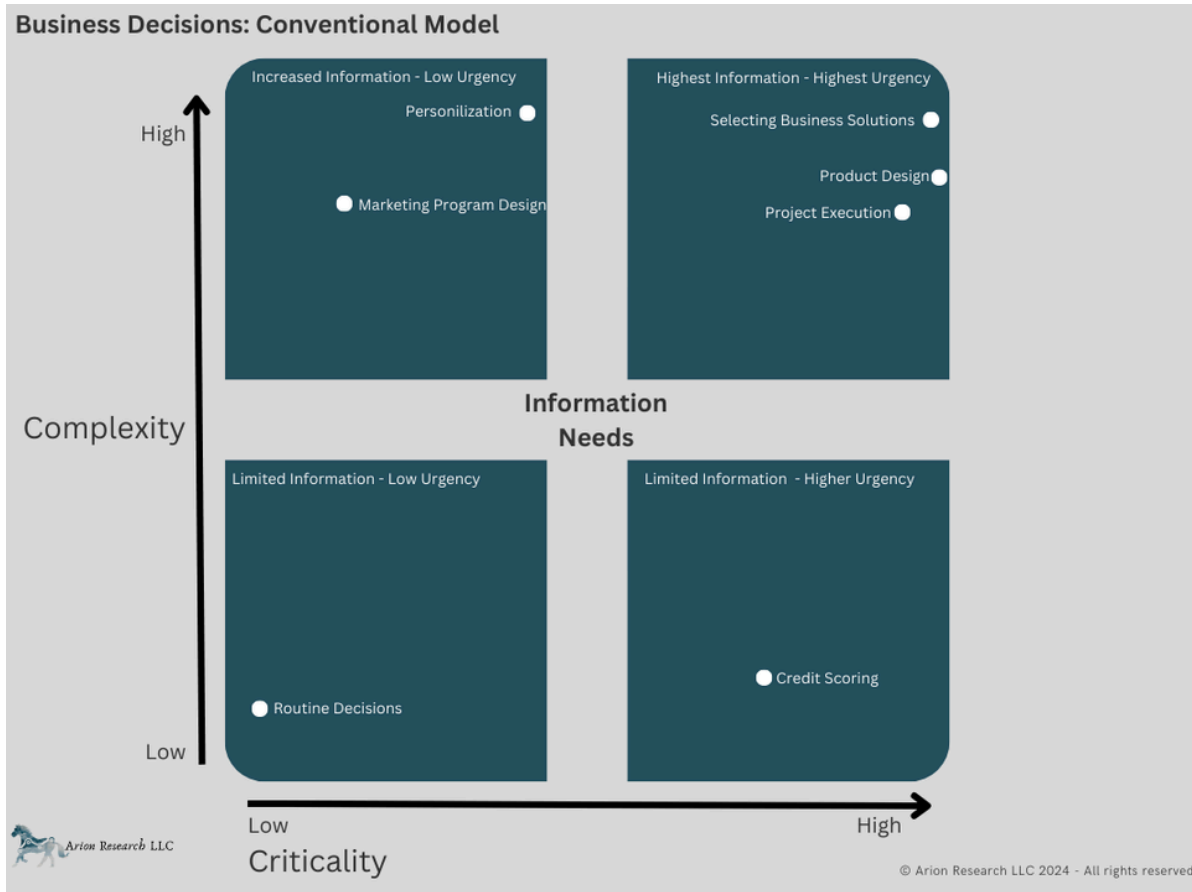
Historically, when you examined business decisions, you could evaluate them based on the information needed (or complexity of the decision) and the importance or criticality of the decision. Business has changed though. The shear velocity of change in everything from market conditions to the underlying technology capabilities makes most decisions complex. Small and seemingly unimportant decisions, taken individually, don't have a big impact, but taken in mass, and considering the quantity of data related to each decision and the need for accuracy, it's easy to see how employees could be overwhelmed and prone to mistakes. Add to that the need to make those decisions at an ever increasing pace to prevent falling behind, and it creates a critical need for decision intelligence that includes highly accurate automation.

An AI First decision model is a radical shift from a low information environment to a high information (or information rich) environment. Because of high information availability but often fragmented data infrastructure, all decisions become complex and require a systemic methodology. The goal is accelerating decision making while dramatically increasing accuracy. Automating routine decisions means the business can take advantage of more relevant data much more quickly with the machine taking action infinitely faster than a human or human / machine collaboration, and with much better outcomes. Speed and accuracy of the decision process becomes a competitive advantage.

In addition to fully automated decision processing, there is a need for the system to support 2 additional scenarios:

- **High velocity, high criticality decisions**: Automation with human oversight
- **Lower velocity, high criticality decisions**: Fully human in the loop

The following two illustrations show the **conventional decision model** and the **model with a full decision intelligence solution**:

Business Decisions: Conventional Model

Increased Information - Low Urgency
- Personilization
- Marketing Program Design

Highest Information - Highest Urgency
- Selecting Business Solutions
- Product Design
- Project Execution

High / Complexity / Low

Information Needs

Limited Information - Low Urgency
- Routine Decisions

Limited Information - Higher Urgency
- Credit Scoring

Low — Criticality — High

Arion Research LLC

© Arion Research LLC 2024 - All rights reserved

New Decision Model: All Business Decisions Are High Information

Human in the Loop
- Selecting Business Solutions
- Marketing Program Design
- Project Execution

Automation with Human Oversight
- Product Design
- Personilization

High / Criticality / Low

Decision Needs

Fully Automated

Fully Automated
- Credit Scoring
- "Routine" Decisions

Low — Velocity — High

Most Decisions are "complex"

Arion Research LLC

© Arion Research LLC 2024 - All rights reserved

All of these decisions benefit from a more structured, systematic process that enables collaboration, structured evaluation, a consolidated data model, and the chance to use automation for decisions that meet the required confidence level. **Decision intelligence solutions (DI)**, built on consolidated data infrastructure / model and enabled by decision science have emerged to provide a more effective method of making business decisions. From a decision perspective, the DI solutions should support the 3 basic scenarios; **1. Full automation, 2. Automation with human oversight and 3. Human led decision (human in the loop, or HITL) supported by DI**.

Fully Automated Decisions

Fully automated business decisions using DI systems with AI, decision science and an integrated data model represent an advanced approach to managing and optimizing business operations. This involves several key components working in harmony to facilitate intelligent, data-driven, high velocity decision-making processes independent of human interactions.

Benefits
- **Efficiency**: Speeds up decision-making processes by reducing the need for human intervention.
- **Accuracy**: Enhances decision accuracy by relying on data-driven insights and reducing human error.
- **Scalability**: Allows businesses to handle a large volume of decisions consistently and efficiently.
- **Agility**: Enables quick adaptation to changing market conditions and business environments.

Considerations
- **Model Reliability**: Models must be regularly updated and validated to maintain their effectiveness.
- **Security**: Protecting sensitive business data from unauthorized access and breaches.

Example Use Cases
- **Supply Chain Management**: Automating inventory replenishment decisions based on demand forecasts and supplier performance data.
- **Customer Relationship Management**: Personalizing marketing campaigns and customer interactions based on predictive analytics.
- **Financial Services**: Automating loan approval processes using AI-driven credit risk assessments.
- **Manufacturing**: Optimizing production schedules and maintenance operations through predictive maintenance models.

Fully automated business decisions using Decision Intelligence Systems with AI and an integrated data model represent a significant advancement in how businesses operate. By leveraging the power of data and AI, organizations can make faster, more accurate, and scalable decisions, driving improved performance and competitive advantage.

Automation with Human Oversight

Despite the automation capabilities of DI systems, human oversight remains crucial in scenarios that are high criticality and high velocity, to ensure the decisions align with strategic goals, ethical standards, and contextual nuances. Humans validate, interpret, and adjust automated decisions as needed.

Benefits

- **Improved Efficiency**: Automation speeds up decision-making, reducing the time needed to analyze data and generate insights.
- **Consistency**: Automated systems apply the same criteria and rules consistently, minimizing human error and bias.
- **Scalability**: AI-driven decisions can handle large volumes of data and transactions, scaling operations without a proportional increase in resources.
- **Data-Driven Insights**: Integrated data models ensure comprehensive analysis, drawing from diverse data sources to enhance decision quality.
- **Risk Mitigation**: Decisions in this category have the potential to have large positive or negative impacts on the overall business. While the automation can handle most decisions effectively, having human oversight on a continuous basis provides another level of protection to the business.
- **Resource Optimization**: Frees up human resources to focus on higher-level strategic tasks rather than repetitive decision-making processes.

Example Use Cases

Financial Services:
- **Credit Scoring**: AI models analyze various financial data to automate credit scoring, with human oversight ensuring compliance with regulatory standards and addressing exceptional cases.
- **Fraud Detection**: AI detects unusual transaction patterns and flags potential fraud, with human investigators reviewing flagged cases for final decision-making.

Retail:
- **Inventory Management**: AI optimizes inventory levels based on sales data, demand forecasts, and supply chain information, with managers overseeing and adjusting parameters as needed.

Manufacturing:
- **Quality Control:** Automated systems inspect products for defects, with human inspectors verifying results and making decisions on corrective actions.

By combining the analytical power of AI with the contextual understanding and ethical considerations of human oversight, DI systems can significantly enhance some business decision-making processes.

Human-led Decisions (HITL)

In these scenarios DI combines AI with an integrated data model to enhance and support human-led business decisions. DI systems leverage data, machine learning, and advanced analytics to provide actionable insights, predict outcomes, and suggest optimal courses of action to augment human decision-making, not replace it, ensuring that decisions are both data-driven and contextually informed. These scenarios tend to be high criticality, low velocity, thus allowing the time for a well informed, but human-led process.

Benefits:
- **Enhanced Decision Making**: AI and DI systems process vast amounts of data to identify patterns and insights that might be missed by human analysts. This leads to more informed and accurate decisions.
- **Efficiency and Speed**: Automated data analysis and AI-driven recommendations can significantly speed up the decision-making process, allowing businesses to respond quickly to market changes.
- **Predictive Analytics**: DI systems can predict future trends and outcomes based on historical data, enabling proactive rather than reactive decision-making.
- **Consistency**: AI can help ensure decisions are consistent and based on data-driven insights, reducing the variability that might come from human biases.
- **Scalability**: These systems can handle large volumes of data and complex computations, making them scalable for businesses of all sizes.

Example Use Cases:
- **Mergers and Acquisitions:** Requires deep due diligence into the target company's financials, risk, legal standing, market synergies, product(s) fit and cultural fit.
- **Healthcare**:
  - **Diagnostic Support**: AI systems analyze medical data to suggest potential diagnoses, with healthcare professionals validating and interpreting AI-generated recommendations.
  - **Treatment Plans:** Automated systems propose personalized treatment plans based on patient data, while doctors review and adjust plans based on patient-specific considerations.

- **Entering new markets**: Analyzing unfamiliar market dynamics, staffing needs, regulations, market fit, competitor analysis and any supply chain risks.
- **Large scale product launches**: Multi-faceted execution coordination across marketing, R&D, supply chain, sales / go to market, legal and customer support.
- **Restructuring and downsizing**: Rapidly changing market conditions and dynamics, global economic disruptions, pandemics, supply chain disruptions, etc. can drive strategies to optimize cost structures.

DI Challenges and Considerations:

- **Data Quality**: The effectiveness of DI systems depends on the quality and accuracy of the data fed into them. Poor data quality can lead to incorrect insights and decisions.
- **Bias and Fairness**: AI models can inherit biases present in the training data, leading to biased decisions. Ensuring fairness and mitigating bias is a critical challenge.
- **Human Oversight**: While AI can provide recommendations, human oversight is essential to contextualize these insights and make final decisions, especially in nuanced or ethical matters.
- **Integration**: Integrating DI systems with existing business processes and IT infrastructure can be complex and require significant investment.
- **Transparency and Explainability**: It is crucial for users to understand how AI models arrive at their recommendations. Lack of transparency can lead to mistrust and reluctance to adopt the technology.
- **Human-AI Collaboration:** Balancing automation with human oversight requires careful management to ensure effective collaboration and trust in the system.
- **Regulatory Compliance**: Navigating legal and regulatory frameworks, especially concerning data privacy and ethical AI use, is essential.

Important Considerations:
- **Context is Key**: The size of the business matters. A decision that's routine for a multinational corporation might be existentially critical for a small business.
- **"Information Needs" is Subjective**: What is considered "high" information needs depends on leadership experience and access to resources for analysis. A decision might feel complex due to the lack of those things, rather than the intrinsic nature of the problem itself.

What is an Information Model

An information model is a structured representation of the essential concepts (entities) within a particular area of interest (a domain) and the relationships between them. It provides a blueprint for understanding how data and information are connected, organized, and should interact within a business system.
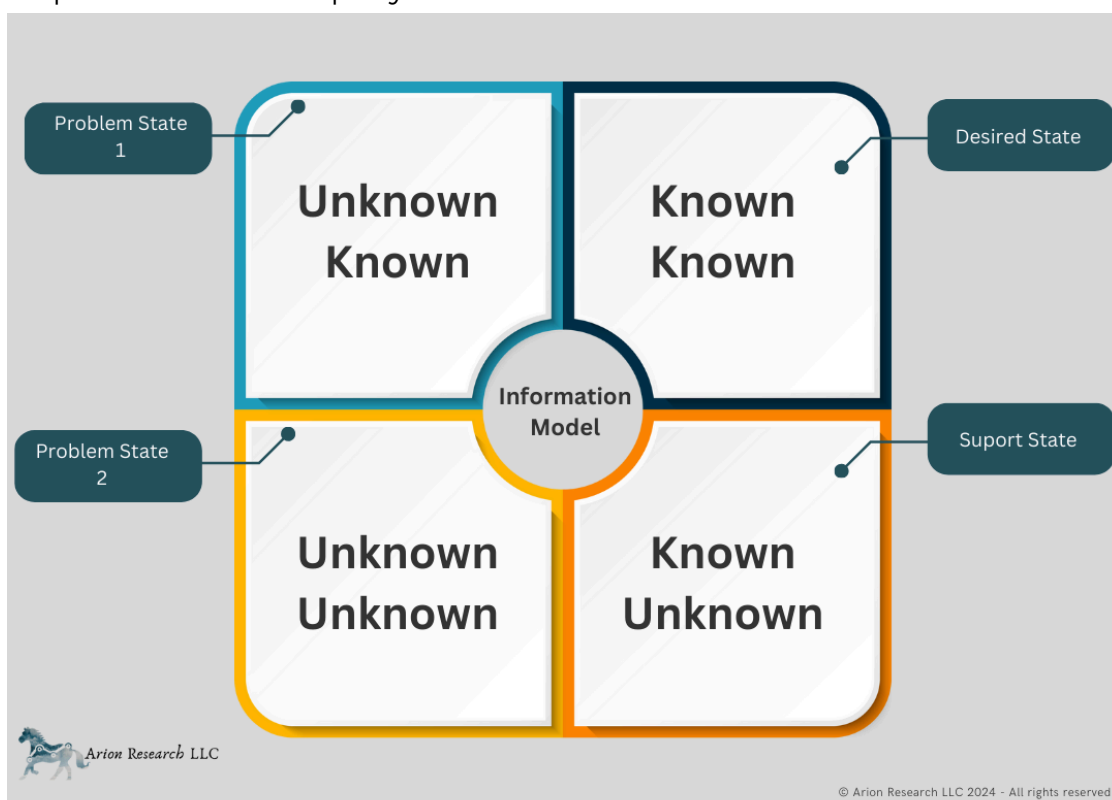
Think of an information model in these ways:

- **Language of a Business**: Determines how the business talks about its people, processes, locations, policies, and assets.
- **Foundation for System Design**: Acts as a blueprint for creating databases, software applications, decision support systems, and other systems that rely on the business's data.
- **Complete representation of the business**: Customers, employees, transactions, assets; and can be enriched from external sources depending on the specific needs of the business
- **Governance Tool:** Provides standards and rules to maintain clean, consistent, and trustworthy data.

Types of Information Models:
- **Conceptual Information Model**: A high-level, abstract view of the main concepts and their relationships that matter in a business domain. It's focused on the big picture and less on specifics.
- **Logical Information Model**: More detailed than a conceptual model. It includes specific information about data elements (attributes), the nature of their relationships, and sometimes even data types.
- **Physical Information Model**: Takes things to the implementation level by describing how the logical model will be physically stored within a database management system (DBMS).

Here's a simplistic view of company data in various "states":

In a very basic way, the model needs to provide the tools and processes to transform the data in the "problematic state" into the desired state, with the support state as an interim state in the model.

Benefits of an Information Model for Businesses
- **Clear Understanding of Entities and Relationships**: Provides everyone with a consistent understanding of their core business information.
- **Improved Data Quality**: Promotes data consistency thanks to standards and rules established during the modeling process.
- **Effective System Design**: Serves as a solid base for database design and creation of reliable software that maps to real business processes.
- **Better Decision-Making**: Supports AI / ML, generative AI, automation, analytics and business intelligence because information is structured in a clear, accessible manner.

Using the Information Model

Having a complete information model is the first step in providing an enhanced method to support decisions. The model alone, while an essential foundation for an intelligent decisioning process, is only a part of the overall solution. There needs to be an application layer to provide the ability to interact with the model, visualize the information, add in needed automation / AI / ML, and track the state of information as the business endeavors to fill in the gaps for a complete model to support the decision process. The system could look something like this:
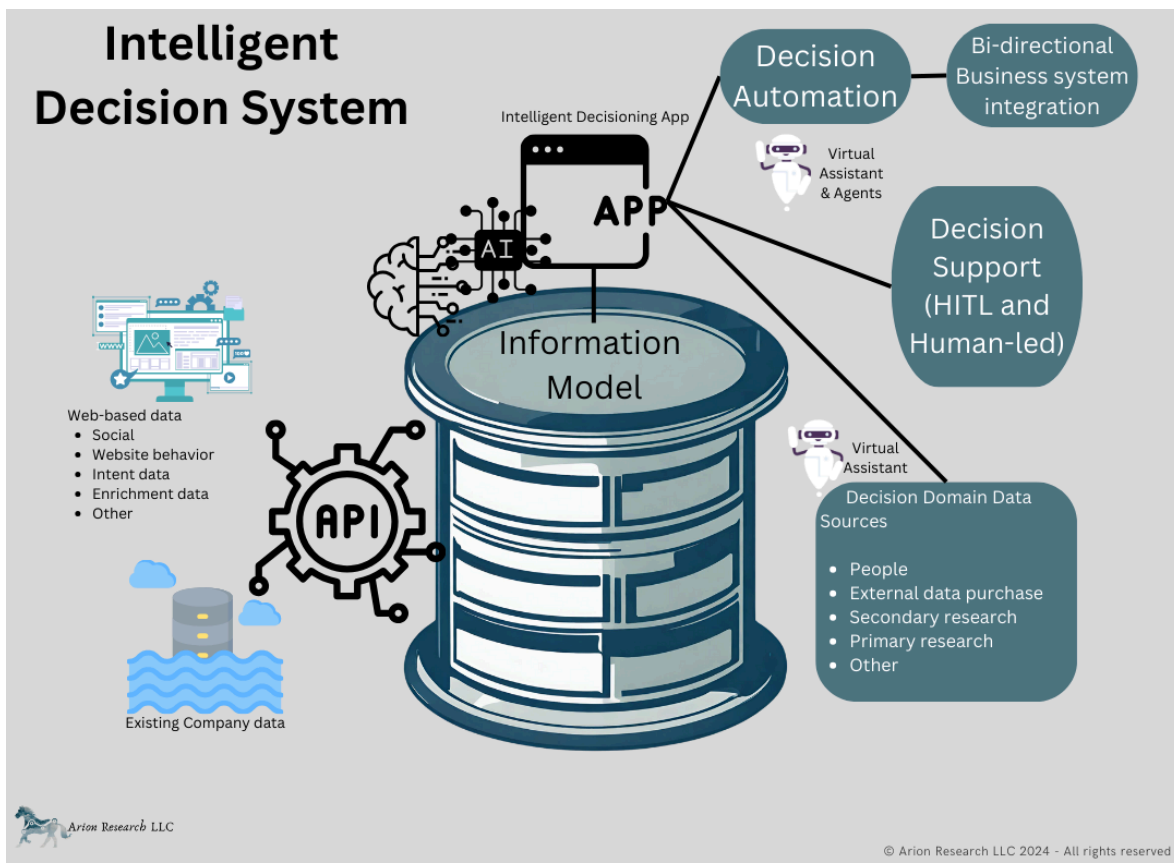
The application should provide:

- Natural Language custom query / questions (scenario based and user configurable)
- Provide a virtual assistant and AI agents to interact with the data in a conversational way and assist in data collection and analysis
- Data visualization to help resolve the "state" of data
- Method to collect (or facilitate collection of) needed additional input data
- Record and visualize progress
- Enable human in the loop and human-led decisioning
- Continuously improve the model based on available data and outcomes from previous decisions
- Add access to one or more language models (system design driven)
- Automation: Assess decision confidence and take automated action
- Bi-directional integration to business systems and preferred collaboration tool(s)

Other considerations:
- Integrated internal data - Internal data silos created by disparate data storage systems and stand-alone applications
- There may be a need for real-time information streams based on decision type

For data driven decisioning to be a reality, businesses need a complete information model and a system / application that enables the active use of the information including managing understanding around what information is available, and what is needed to complete the model. Adding AI / ML and automation in the application provides critical features including continuously improving the model and the decisioning process while automating scenarios fully or with human-led oversight. Using the system in a team / collaborative environment increases the accuracy over time, and can facilitate more effective employee onboarding / training and job satisfaction.

Decision Science

Decision science is an interdisciplinary field that studies how decisions are made, the processes and methodologies involved, and how these can be improved. It integrates knowledge from various domains, including psychology, economics, statistics, operations research, and management science, to understand and optimize decision-making in both personal and organizational contexts.

Key Components of Decision Science

Decision Theory
- **Descriptive Decision Theory**: Examines how decisions are actually made, often using insights from psychology and behavioral economics.
- **Normative Decision Theory**: Focuses on how decisions should be made to be rational and logically consistent, often using mathematical models.
- **Prescriptive Decision Theory**: Combines descriptive and normative approaches to provide guidance on making better decisions.

Decision Analysis
- Involves systematic evaluation of different decision options using quantitative techniques.
- Tools include decision trees, utility theory, risk analysis, and cost-benefit analysis.

Behavioral Decision Science
- Studies the psychological factors and biases that influence decision-making.
- Concepts include heuristics, cognitive biases, prospect theory, and framing effects.

Operations Research
- Uses mathematical models, statistical analyses, and optimization techniques to solve complex decision problems.
- Applications include logistics, scheduling, resource allocation, and supply chain management.

Data Science and Analytics
- Employs data mining, machine learning, and statistical techniques to analyze large datasets.
- Aims to extract insights and inform decision-making through data-driven approaches.

Applications of Decision Science

- **Business and Management**
  - Strategic planning, resource management, financial forecasting, and marketing analysis.
- **Healthcare**
  - Medical decision-making, healthcare management, and policy analysis.
- **Public Policy**
  - Policy formulation, risk assessment, and program evaluation.
- **Engineering and Technology**
  - Product design, systems engineering, and project management.
- **Personal Decision-Making**
  - Financial planning, career choices, and lifestyle decisions.

Importance of Decision Science

- **Improved Outcomes**: By using systematic approaches, decision science helps achieve better outcomes.
- **Risk Management**: Identifies and mitigates risks associated with different decision options.
- **Efficiency**: Enhances operational efficiency through optimized decision-making processes.
- **Data Utilization**: Leverages data to make informed and evidence-based decisions.
- **Behavioral Insights**: Understands human behavior to tailor decisions that account for biases and cognitive limitations.

Decision science is essential for navigating the complexities of modern decision-making environments, offering tools and frameworks to make more informed, rational, and effective choices.

Decision Intelligence: Process and Technology

Decision intelligence (DI) is a technology and process that leverages artificial intelligence (AI), data science and decision science to enhance and automate business decision-making. It integrates data from various sources, applies advanced analytics, provides actionable insights to optimize business outcomes (Human in the loop and Human Oversight) and automated decision making across multiple functions and industries.

DI involves the application of AI with decision science principles to the decision-making process in businesses, focusing on achieving specific business objectives. It aims to optimize every department within an organization by using predictive and prescriptive analytics models and AI simulations to anticipate market trends, optimize operations, mitigate risks, and ensure decision consistency; ultimately automating decisions with high confidence recommendations and putting humans in the loop for exceptions and lower confidence recommendations.

Key Capabilities

Overall	Decision Support	Decision Automation	Decision Platform
AI capabilities to assist in data analysis (ML and/or GenAI)	Human in the Loop	Intelligent RPA / intelligent virtual agents that can take independent actions	AI capabilities to assist in data ingestion, and data quality
Bi-Directional Data Integration (APIs)	Human Oversight	Business System APIs	Process Templates / Custom Processes
Predictive Analytics	Data visualization	AI capabilities to assist in simulation / synthetic organizations	Bring your own (BYO) language model(s) support
Data Security and Privacy Protection	Intelligent virtual assistants	Prescriptive Analytics	Low and/or No-code development tools
Decision Rules Engine		Multiple LLM Support	Integration to collaboration systems

Key Components of the Decision Intelligence Market

Technology Solutions
- **AI and ML**
  - **AI/ML Algorithms**: Algorithms that learn from historical data to make predictions and provide recommendations.
  - **Natural Language Processing (NLP)**: Enables the understanding and generation of human language to analyze unstructured data.
  - **Computer Vision**: Analyzes visual data to extract meaningful information.
  - **Generative AI**: Generative AI refers to a subset of AI that involves creating new content from existing data. It leverages models like Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), and Transformer-based models (such as GPT-4) to produce text, images, music, and other forms of data. These models learn patterns and structures from the training data and use this knowledge to generate new, similar content

- **Data Management and Analytics**
  - **Big Data Platforms:** Tools and platforms for processing and managing large volumes of data (e.g., Hadoop, Spark).
  - **Data Warehousing:** Centralized repositories for storing structured and unstructured data.
  - **Data Integration Tools:** Solutions that combine data from various sources to create a unified view.
  - **Data Federation Tools:** Data federation is a data management technique that provides a unified view of data from multiple sources without the need to physically integrate and store the data in one location. Instead of copying data into a new database, data federation uses a virtual database that allows users to access and manipulate data as if it were all contained in a single database. This approach is especially useful for querying and aggregating data from disparate sources in real-time.

- **Business Intelligence (BI) Tools**
  - **Data Visualization:** Tools like Salesforce Tableau, Microsoft Power BI, and Looker that help visualize complex data through interactive dashboards and reports.
  - **Reporting Tools:** Solutions for generating detailed reports on business performance and trends.

- **Decision Support**
  - **Expert Systems:** AI systems that emulate the decision-making ability of a human expert.
  - **Predictive Analytics:** Techniques that use historical data to predict future outcomes.
  - **Prescriptive Analytics:** Prescriptive analytics is a type of data analytics that focuses on finding the best course of action for a given situation. It's one of the more advanced forms of analytics, building on descriptive analytics (which answers the question "What has happened?") and predictive analytics (which answers "What could happen?"). Prescriptive analytics uses advanced tools and technologies like mathematical models, algorithms, and machine learning techniques to suggest decision options and show the potential outcomes of each decision.

- **Automation and Robotics**
  - **Robotic Process Automation (RPA)**: Automates repetitive tasks to increase efficiency and reduce errors.
  - **Intelligent Automation**: Combines RPA with AI to handle more complex processes.

Business Processes Enhanced by Decision Intelligence
- **Strategic Planning**
  - **Market Analysis**: Analyzing market trends, customer preferences, and competitive landscape to inform strategic decisions.
  - **Forecasting**: Predicting future business conditions and demand for products/services.

- **Operational Efficiency**
  - **Supply Chain Management**: Optimizing inventory levels, logistics, and supplier relationships.
  - **Resource Allocation**: Ensuring optimal use of resources like labor, capital, and materials.

- **Customer Relationship Management (CRM)**
  - **Customer Insights**: Analyzing customer data to improve engagement, satisfaction, and loyalty.
  - **Personalization**: Tailoring products and services to meet individual customer needs.

- **Risk Management**
  - **Fraud Detection**: Identifying and mitigating fraudulent activities.
  - **Compliance**: Ensuring adherence to regulatory requirements and standards.

- **Financial Management**
  - **Budgeting and Forecasting:** Improving accuracy in financial planning and forecasting.

Market Trends and Growth Drivers

- **Increasing Data Availability:** The proliferation of data from various sources, including IoT devices, social media, and transactional systems, is driving the need for advanced data analysis and decision-making tools.
- **Advancements in AI, Generative AI and ML:** Continuous improvements in AI, generative AI and ML technologies are enhancing the capabilities of decision intelligence solutions.
- **Demand for Real-time Analytics:** Businesses are increasingly seeking real-time insights to make timely and informed decisions.
- **Focus on Customer Experience:** Companies are leveraging decision intelligence to better understand and serve their customers.
- **Broad need to Automate**: Business dynamics at a high velocity creates the need to automate as much as possible to increase both speed and accuracy of decisions.
- **Regulatory Compliance:** The need for compliance with regulatory requirements is pushing organizations to adopt more sophisticated decision-making tools.

Newest Capabilities driven by AI and generative AI:

- **Synthetic organizations:** Synthetic organizations refer to virtual constructs or models that simulate real-world organizations in a computer-generated environment. These simulations aim to replicate the complex interactions, decision-making processes, and operational dynamics of actual organizations. By doing so, they provide a platform for analysis, experimentation, and prediction that can enhance understanding and optimize decision-making in real organizations.
- **Digital Twins:** Digital twins and synthetic organizations are closely related concepts within the realm of simulation and modeling, often overlapping in their applications and purposes in decision intelligence systems. Both digital twins and synthetic organizations involve creating digital representations of real-world entities. For digital twins, the focus is typically on physical assets, processes, or systems (like machinery, buildings, or even entire cities), whereas synthetic organizations model the broader operational and decision-making frameworks of entire organizations. Digital twins can be seen as building blocks or components within the broader framework of a synthetic organization. They provide the detailed, operational-level data and predictive analytics that feed into the larger organizational models, allowing for comprehensive simulation and strategic planning at both micro and macro levels.

- **Simulated decisions:** Digital twins and synthetic organizations, when used together, provide a robust framework for simulating and analyzing decisions across various levels of an organization—from operational details to strategic management. Here's how these concepts could be employed to simulate decisions effectively:
    - **Operational Decisions Using Digital Twins:** Digital twins can simulate the performance and operation of specific assets or processes, allowing organizations to:
        - **Predict Maintenance and Downtime:** Use predictive analytics to determine when equipment might fail or require maintenance, thus avoiding costly downtime and improving operational efficiency.
        - **Optimize Operations:** Simulate different operational scenarios to find the most efficient use of resources, such as energy consumption, staffing, or raw material usage.
        - **Test Changes in Processes:** Before implementing a change in a manufacturing process or supply chain, simulate the change in a digital twin to assess potential impacts without risking actual operations.
    - **Strategic Decisions Using Synthetic Organizations:** Synthetic organizations take the insights provided by digital twins and apply them within the broader context of organizational strategy and market dynamics:
        - **Scenario Planning:** Simulate various market, economic, and competitive scenarios to see how different strategic decisions might play out. This can include expansion plans, mergers and acquisitions, and shifts in business strategy.
        - **Risk Management:** Assess the potential risks associated with strategic decisions by simulating their impact across the entire organization, including financial performance, brand reputation, and compliance issues.
        - **Human Resources Planning:** Simulate the impact of organizational changes on workforce dynamics, such as changes in workforce size, restructuring, or introducing new policies.
    - **Integrated Decision-Making Across Levels:** By integrating digital twins and synthetic organizations, decisions can be informed at both micro and macro levels:
        - **Feedback Loops:** Operational data from digital twins (e.g., production rates, failure rates) can feed into the synthetic organization model to reflect the potential impacts of operational decisions on strategic goals.
        - **Holistic View:** Synthetic organizations can provide a top-down view of how changes in one part of the organization affect others, integrating insights from multiple digital twins of different assets or processes.
        - **Iterative Testing and Learning:** Use the combination of both tools to continuously refine strategies and operational tactics through iterative testing, learning from each simulation to optimize both immediate operations and long-term strategic goals.

- **Enhanced Communication and Collaboration:**
  - **Visualization and Reporting**: Use the visual and data outputs from simulations to create detailed reports and presentations that can help communicate decisions and strategies to stakeholders, ensuring alignment and informed decision-making.

- **Practical Example**
  - A multinational manufacturing company is considering the relocation of one of its production facilities. Digital twins of the existing and potential new facilities could simulate the operational impacts of different locations based on labor costs, material availability, logistics, and energy consumption. Simultaneously, a synthetic organization model could simulate the strategic implications of this move, including changes in market reach, customer service levels, and overall business resilience.
  - Through these simulations, the company could make a well-informed decision that aligns operational efficiency with strategic growth objectives. This integration offers a powerful toolset for decision-makers, combining detailed operational data with strategic foresight.

Challenges
- **Data Quality and Integration**: Ensuring the quality and integration of data from disparate sources remains a significant challenge.
- **Skill Gaps**: There is a shortage of skilled professionals who can effectively implement and manage decision intelligence solutions.
- **Privacy and Security:** Protecting sensitive data while using advanced analytics poses privacy and security concerns.

The decision intelligence market is poised for significant growth as organizations increasingly recognize the value of data-driven decision-making. By leveraging advanced technologies such as AI, generative AI, ML, and big data analytics, businesses can enhance their decision-making processes, improve operational efficiency, and gain a competitive edge in the market.

Vendor Profiles

The following vendor profiles include the leading decision intelligence providers at the time of publication. The list is not exhaustive nor is it intended to be. The market is new and dynamic, thus changing rapidly. Many analytics and AI platforms make claims to supporting decision intelligence, and at some level do provide decision support. They are not optimized to include all the necessary features of a true decision intelligence provider. Providers are listed in alphabetical order.

ACTICO

ACTICO is a private company founded in 2015, headquartered in Immenstaad am Bodensee, Germany. It specializes in providing cloud-based digital transformation services, focusing on automation and digital decisioning. ACTICO platform integrates ML and AI to enhance business operations in areas like credit risk management, claims management, fraud prevention, and more.

The ACTICO Platform is designed to streamline operational business decisions through a low-code environment that simplifies the design, management, and execution of complex decision processes. It enables rapid implementation and empowers business users to manage their own rules with graphical drag-and-drop editors.

ACTICO operates globally and is used by a wide range of organizations, from small and mid-sized businesses to Fortune 500 companies. The company serves over 50,000 users across more than 25 countries.

Aera Technology

Aera Technology is a private company headquartered in Mountain View, California. Founded in 2017, Aera Technology specializes in software to digitize, augment, and automate decision-making processes with AI and machine learning. As a pioneer in Decision Intelligence, the company has developed a cloud software platform that automates and scales enterprise-wide decision making across multiple business functions, such as supply chain, finance, marketing, procurement, and more. The platform is designed to assist enterprises in making and executing decisions, leveraging real-time, scalable business/productivity software.

Aera, a digital agent, contextually understands business problems, delivers real-time recommendations, automates the execution of these recommendations, and learns from every outcome, improving the results of subsequent decisions. The platform collects data from siloed repositories across the enterprise into a harmonized data layer, providing enterprises with true end-to-end visibility of their operations. The agent's skills, which are customizable digitized decision processes, enable Aera to analyze data in real time, and apply artificial intelligence and decision logic to make recommendations for specific business needs. The platform also includes tools to develop, deploy, and manage these skills, enabling enterprises to quickly build and modify them as business needs change. The composable and configurable nature of the platform and skills allows users to benefit from decision intelligence tools that deliver insights, recommendations, predictions, and automation. Aera is in use across various sectors, including consumer goods, chemicals, high tech, manufacturing, life sciences / pharmaceuticals.

Aera Technology's key executives include Frederic Laluyaux, the President & CEO, and Shariq Mansoor, the Founder and CTO. The company employs around 400 individuals and maintains offices in multiple locations worldwide, including San Francisco, North Sydney, Paris, Pune, and Bucharest.

Cloverpop

Cloverpop is a private company based in San Francisco, CA, that specializes in cloud-based decision intelligence. Founded in 2013, the company leverages a combination of human and artificial intelligence to enhance the speed, quality, and transparency of commercial decision-making processes across various industries, including consumer goods, pharmaceuticals, and technology. The platform facilitates structured decision-making, cross-functional collaboration, automation of recommendations, and organizational learning from past decisions.

Cloverpop's application uses behavioral science principles to streamline enterprise decision-making, aiding organizations in making, communicating, and tracking decisions. It includes features like decision playbooks and flows, which help guide teams through decision logic, connect to data, and establish clear decision rights.

Cloverpop (Continued)

The company has raised a total of $8 million in funding to support its operations and development. Cloverpop's leadership team includes Eugene Roytburg as CEO and founder, Lanny Roytburg as President and co-founder, and Erik Larson as Chief Product Officer. The company maintains offices in both San Francisco, CA and Chicago, IL. The company was acquired by Clearbox Decisions, Inc. in 2021.

Cognyte

Cognyte, founded in 1998 and based in Herzliya, Israel, is a public company that specializes in investigative analytics software. The company's technology provides investigative, operational, threat intelligence, and blockchain analytics solutions aimed at empowering government and organizational security efforts. Cognyte's offerings help these entities accelerate investigations, identify threats, and enhance security measures by integrating and visualizing diverse data sets on a robust analytics platform.

Cognyte operates on a global scale, with a workforce of about 1,500 employees spread across 13 offices and 6 R&D centers worldwide. They serve clients in over 100 countries, reflecting the company's strong international presence and impact in the security sector. Their solutions cater to a variety of complex security needs, including network intelligence, operational intelligence, and threat intelligence, all designed to provide actionable insights for rapid and effective response to security threats.

The company emphasizes innovation and trust in its operations, investing heavily in research and development to stay at the forefront of technology and maintain strong, trust-based relationships with its customers. This commitment to innovation and customer service is integral to Cognyte's mission of providing "Actionable Intelligence for a Safer World."

Corridor Platforms

Corridor Platforms, founded in 2017 and based in Paramus, New Jersey, is a provider of decision workflow governance and automation solutions, particularly focused on enhancing risk and marketing decisioning in the banking sector. The company's platform is designed to streamline decision-making processes by leveraging advanced analytics and real-time decisioning capabilities, making it crucial for financial institutions aiming to improve governance and compliance while speeding up credit decisioning processes.

Corridor Platforms' technology integrates AI to automate and govern decision workflows effectively, enabling businesses to adapt quickly to market changes and regulatory requirements. This blend of human-driven analytics and machine-driven automation helps institutions maintain competitiveness in a fast-evolving digital marketplace.

Decisimo

Decisimo provides cloud-based decision intelligence capabilities, specializing in automating business rule execution and decision logic. Their platform is designed to simplify the deployment and management of decision flows, enhancing decision-making across various business processes. The company's services are particularly valuable in sectors like fintech and insurtech, where they help streamline operations such as loan underwriting, credit limit management, and insurance claim processing.

Decisimo's platform allows users to design decision flows using a simple drag-and-drop interface, making it easy to integrate and deploy new decision logic without significant delays. This approach not only speeds up time-to-market but also reduces costs by minimizing the need for extensive developer involvement. The platform supports centralized decision-making, enabling businesses to automate decisions across different roles and systems efficiently.

Key features of Decisimo include the ability to handle complex decision-making processes, integration with third-party services, and a client-centric approach that focuses on building internal expertise and long-term success in decision strategy management. Additionally, Decisimo emphasizes security and compliance, holding certifications like ISO 27001 and GDPR compliance, ensuring that they meet high standards of data protection and privacy.

For businesses facing challenges with synthetic identity fraud, Decisimo offers integrated solutions like SEON to enhance anti-fraud checks during customer onboarding and transactions. This integration facilitates the creation of comprehensive risk profiles, helping businesses verify identities and prevent fraud effectively.

Decisions

Decisions is a company that provides a no-code automation platform designed to enhance business processes including customer experience, legacy system modernization, regulatory compliance, and general business automation. The platform empowers users who know their business needs to effectively implement solutions and make significant changes without requiring extensive technical expertise.

Decisions (Cont.)

The Decisions platform is distinguished by its user-friendly approach, enabling users to manage complex decision-making processes visually and interactively. This includes the ability to create and modify workflows, rules, and forms directly through a graphical interface, which facilitates quick adaptation to changing business requirements without the need for programming.

Key aspects of the Decisions platform focus on improving decision quality and speed, enhancing operational efficiencies, and ensuring compliance across various business functions. It leverages both business intelligence and artificial intelligence to optimize decision-making processes, helping businesses to make more informed, data-driven decisions.

eppTec DecisionRules

DecisionRules is a versatile business rules engine developed by eppTec, a software company based in Prague, Czech Republic. The company focuses on providing solutions that enhance decision-making processes in various industries including financial services, insurance, e-commerce, healthcare, and logistics. DecisionRules is designed to be user-friendly, supporting users with limited or no coding skills to create and manage complex decision-making rules effectively.

The platform is known for its agility and efficiency in setting up environments and creating rules, claiming to offer setup times and rule creation speeds several times faster than the market standard. It also boasts cost-effective infrastructure options. DecisionRules allows the integration of its rules engine into various applications using a wide range of supported technologies and SDKs, making it flexible and adaptable to different business needs.

Key features of DecisionRules include decision tables, rule flows, and scripting rules, all of which can be managed through an intuitive no-code interface. The platform supports comprehensive business intelligence capabilities, with functionalities like audit logs that help track rule usage and outcomes. This enables businesses to make informed decisions based on real-time data and analysis.

Diwo

Diwo is an enterprise software company that enhances decision-making through its Decision Intelligence platform. This platform integrates AI, ML, and contextual intelligence to transform complex data into actionable insights and recommendations. Diwo is designed to bridge the gap between data analysis and actionable decisions by providing tools that accelerate the decision-making process, thereby offering a significant speed advantage over traditional business intelligence tools.

The core of Diwo's platform is its ability to automate the analysis and synthesis of data, delivering insights that are both actionable and relevant. This process is powered by patented technology that combines data from various sources and applies contextual intelligence to provide recommendations tailored to specific business needs and scenarios. Diwo's tools are versatile, supporting a wide range of business functions such as inventory management, customer retention, and risk management.

Diwo's platform is particularly noted for its user-friendly interface, which includes no-code/low-code options, making it accessible to users across various roles within an organization. The platform supports rapid analysis and decision-making through features like a knowledge graph that contextualizes data and an insight engine that converts data into easy-to-understand recommendations

Exponential AI

Exponential AI is a healthcare-focused AI platform company that enhances smarter healthcare processes through its Decision Intelligence platform named Enso. The company was established with the goal of integrating decision intelligence into healthcare operations to handle the increasing complexity and demand within the sector. Exponential AI offers solutions such as Intelligent Provider Contracts, which uses AI to improve the accuracy and efficiency of provider data management by automating the extraction, validation, and loading of contract information.

Exponential AI's technology stack includes a reusable Decision Agent ecosystem that supports healthcare organizations by providing decision-making tools that streamline processes like provider contract management, claims handling, and patient data management. Their platform aims to reduce manual workloads, enhance data accuracy, and decrease operational costs significantly.

Exponential AI (Cont.)

The company's approach combines AI with deep healthcare industry insights to deliver scalable solutions that promote proactive and informed decision-making. Through its suite of tools, Exponential AI assists health plans and healthcare providers in managing complex contractual agreements and operational challenges effectively, ensuring compliance and improving overall efficiency

FICO Decision Management Platform

The FICO Decision Management Platform integrates data science with operational business decisions across various industries. The platform is designed to automate decision processes using advanced analytics, including AI and ML, which enables businesses to respond quickly and effectively to dynamic market conditions.

FICO's platform excels in areas such as credit scoring, fraud detection, risk management, and customer management, among others. It provides a robust environment that supports the development, testing, deployment, and management of automated decision services. This makes it possible for organizations to implement complex decision strategies that enhance operational efficiency and drive business growth.

The FICO Decision Management Platform is particularly noted for its ability to harness the power of predictive analytics and optimization technologies to improve decision accuracy. This is coupled with a suite of tools that facilitate the rapid development and scaling of operational decisions, making it a crucial tool for companies aiming to enhance their decision intelligence capabilities.

FlexRule Decision Automation Platform

The FlexRule Decision Automation Platform, developed by FlexRule Pty. Ltd., is designed to enhance organizational effectiveness and efficiency by automating complex business decisions. This platform is particularly useful in regulated environments where frequent data, process, and rule changes are common. FlexRule is recognized for its comprehensive end-to-end decision automation capabilities, which cover everything from business rules and data integration to decision robotics and machine learning.

FlexRule Decision Automation Platform (Cont.)

One of the platform's key strengths is its decision-centric approach, which emphasizes the importance of decisions in business processes and aims to make business decisions central to the organization's operations. This approach allows businesses to rapidly adapt to changing conditions without extensive IT involvement, thanks to FlexRule's user-friendly interface that supports non-technical users.

FlexRule's platform is versatile across various industries, including finance, healthcare, insurance, and energy, providing tailored solutions that address specific industry needs. The platform offers a range of features designed to support business agility, such as low-code authoring tools, extensive API integrations, and the ability to manage and execute decisions across multiple platforms and operating systems. For organizations looking to implement decision automation to enhance their operational efficiency and adaptability, FlexRule offers a robust and integrated solution that empowers both technical and non-technical users to manage complex decision-making processes effectively.

IBM:
IBM Automation Decision Services

IBM Automation Decision Services (ADS) is a sophisticated decision automation platform that enables businesses to model and manage business decisions using a low-code, user-friendly interface. This platform is particularly beneficial for automating operational decisions such as credit approvals, fraud detection, and claims processing, and can be deployed either as a standalone solution or integrated within IBM Cloud Pak® for Business Automation.

IBM ADS is designed to boost operational efficiency by automating routine decisions, thus reducing manual intervention and allowing staff to focus on more strategic tasks. This results in quicker response times and more consistent application of business rules and policies across the organization.

IBM Decision Optimization

IBM Decision Optimization is a comprehensive suite of software solutions that utilize prescriptive analytics to enhance decision-making and improve business outcomes across various industries. This platform supports complex decision challenges by integrating with IBM Cloud Pak® for Data, which allows for flexible deployment options both on the cloud and on-premises.

IBM (Cont.):
IBM Decision Optimization

Key Components and Capabilities:
- IBM ILOG® CPLEX® Optimization Studio: This component accelerates the development of optimization models using a robust integrated development environment and supports multiple optimization approaches. It's particularly useful for tackling linear and integer optimization problems.
- IBM Decision Optimization for IBM Watson® Studio: This tool integrates optimization with machine learning within a unified environment, facilitating AI-infused optimization modeling.
- IBM Decision Optimization Center: Geared towards enterprise use, this platform supports the creation and deployment of decision support applications. It features a user-friendly GUI, collaborative tools, and "what-if" analysis capabilities.

IBM Decision Optimization finds extensive applications in sectors such as finance, manufacturing, healthcare, retail, and energy. For instance, it can be used in financial services for optimizing loan approval processes or in manufacturing to enhance production scheduling and resource allocation. In the healthcare sector, it supports scenario analysis to make better decisions regarding patient care and resource management.

IBM Operational Decision Manager (ODM)

IBM Operational Decision Manager (ODM) is a comprehensive decision management platform designed to automate and govern rules-based business decisions. It allows organizations to manage and respond to real-time data effectively, streamlining decision authoring, editing, and management processes with features such as traceability, simulation, version control, and auditing.

ODM can be used standalone or integrated with IBM Cloud Pak® for Business Automation. It offers the capability to make sophisticated decisions, such as loan authorizations or promotional offers, and can interact efficiently with systems through conversational AI capabilities when deployed in SaaS environments. IBM ODM provides flexible deployment options, including on-premises and cloud environments, and is compatible with various IBM technologies such as OpenShift® and IBM Watson® for enhanced machine learning integration.

IBM ODM is widely applicable across various industries, helping to increase operational efficiency, manage compliance more effectively, and improve overall agility in decision-making processes.

InRule

InRule Technology is a company specializing in AI decisioning platforms, aiming to make automation accessible for both technical and non-technical users. Founded in 2002 by CEO Rik Chomko and CTO Loren Goodman, InRule offers a platform that empowers users to automate complex decision-making processes without needing to code. This platform is particularly valuable in industries such as insurance, financial services, healthcare, and public sector, where decision automation can significantly enhance productivity and decision accuracy.

InRule's platform is known for its user-friendly approach that includes low-code solutions, enabling subject matter experts to directly manage decision logic using business language and decision tables. It supports integration with existing systems like Microsoft Dynamics 365 and Salesforce, enhancing workflow automation and data-driven decision-making across enterprise applications.

The platform also emphasizes security and compliance, offering features like automated monitoring and support for regulatory standards such as HIPAA and SOC 2. This robust security framework ensures that enterprises can safely deploy InRule's technology in various operational environments, whether on-premises or in the cloud.

Linkurious

Linkurious is a French company specializing in graph intelligence solutions, designed to enhance the analysis of complex connected data. Established in 2013, Linkurious provides tools that help organizations detect and investigate anomalies, fraud, money laundering, and other sophisticated threats effectively using advanced data visualization and graph analytics.

The platform excels in providing a clear visualization of interconnected data points, allowing users to uncover patterns and insights that traditional systems might miss. This capability is particularly useful in sectors like financial services, where understanding complex relationships and hidden networks is crucial for fraud detection and compliance.

Linkurious offers a user-friendly, intuitive interface that enables both technical and business users to navigate and analyze data efficiently. Its solutions are built to scale, accommodating the growing data needs of organizations without sacrificing performance. The company emphasizes collaboration, enabling teams to work together seamlessly, which enhances productivity and decision-making speed.

metaphacts metaphactory

metaphacts is a German software company that specializes in providing decision intelligence solutions through its main product, Metaphactory. This platform is designed to facilitate the adoption and democratization of knowledge graphs, allowing businesses to transform complex data into actionable, consumable knowledge. Metaphactory supports semantic knowledge modeling and enables easy access to insights that inform smarter business decisions.

The platform is particularly noted for its low-code approach, which simplifies the development of custom knowledge graph applications. This feature allows businesses to quickly adapt their digital services and products as their needs evolve. Metaphacts serves a diverse range of industries including life sciences, pharma, engineering, manufacturing, finance, insurance, and more.

metaphacts was acquired by Digital Science, a move expected to enhance its product capabilities and market reach by integrating with other technologies within the Digital Science portfolio. This partnership aims to create new opportunities for knowledge democratization across various sectors.

Oracle Real Time Decisions (RTD)

Oracle Real-Time Decisions (RTD) is a sophisticated decision management platform developed by Oracle that integrates rules and predictive analytics to provide adaptive solutions for real-time business operations. Oracle RTD is designed to enhance enterprise decision-making by instilling real-time intelligence into various business processes and customer interactions. It operates on a high-performance transactional server that delivers real-time decisions and recommendations, making it possible to create actionable intelligence from data as it flows through business processes.

Key features of Oracle RTD include the ability to implement closed-loop business logic, leverage analytical decisions using existing assets, and optimize business goals in real-time. These features are built on a service-oriented architecture, supporting a range of enterprise application servers like Oracle Application Server, BEA WebLogic, and IBM WebSphere, which ensures broad compatibility and integration capabilities.

Oracle RTD employs a detailed process involving session management, decision-making, and updating models based on ongoing transactions. The platform supports both rule-driven and model-driven decisions, allowing organizations to tailor the decision-making process to their specific needs. It also features a robust development environment, Decision Studio, and a web-based application, Decision Center, for monitoring and optimizing deployed solutions

Pega Customer Decision Hub

The Pega Customer Decision Hub is an advanced customer engagement and decision management solution. It integrates real-time decisioning with AI-powered analytics to deliver hyper-personalized next-best actions across various customer interaction channels. This platform is designed to enhance the customer experience by predicting their needs and optimizing engagement strategies in real time, thus maximizing customer lifetime value and driving long-term loyalty. Key features of the Pega Customer Decision Hub include:

- AI-Powered Decisioning: Utilizes predictive and adaptive analytics to anticipate customer needs and suggest optimal actions during each interaction.
- Unified Customer View: Integrates data, analytics, and interaction channels into a single, cohesive platform, enabling seamless and context-aware customer interactions.
- Real-Time Personalization: Employs a sophisticated AI engine that evaluates possible actions in real-time to determine the most appropriate next steps for each individual customer.
- Cross-Channel Coordination: Ensures consistent and relevant customer experiences across all touch points, whether digital or physical, inbound or outbound.

Pega's approach to customer engagement is centered around an "always-on brain" that keeps the system continuously learning from customer interactions to refine strategies and improve outcomes.

Progress Corticon

Progress Corticon is a robust Business Rules Management System (BRMS) designed to streamline and optimize decision management across various industries, including financial services, healthcare, insurance, and public sectors. The platform is recognized for its high-performance capabilities, enabling organizations to automate complex decision-making processes without the need for extensive coding.

Corticon operates through two primary components: Corticon Studio and Corticon Server. Corticon Studio provides a user-friendly, model-driven environment for designing and testing business rules. It allows users to capture business requirements and create rules that can be directly tested against organizational data. The studio environment supports non-programmers with intuitive modeling tools that reduce the development cycle and enhance decision accuracy.

Progress Corticon (Cont.)

On the other hand, Corticon Server processes rules created in Corticon Studio, ensuring reliable results and high performance. It can be deployed as a web service or integrated into applications, offering flexible deployment options that fit well within service-oriented architectures. This server component excels in executing decisions efficiently due to its pre-compiled inferencing system, which optimizes rule execution before deployment.

Advantages of using Corticon include enhanced scalability, integration flexibility, and reliable performance, ensuring that decisions are executed efficiently across an organization's operations. Additionally, Corticon emphasizes compliance and transparency in automated decisions, which is crucial in regulated industries. Overall, Progress Corticon equips businesses with the tools to automate and manage complex decision-making processes efficiently, ensuring accuracy, compliance, and operational efficiency

Quantellia

Quantellia is a company that offers advanced decision intelligence solutions, focusing on transforming complex data into actionable insights through a combination of AI and machine learning technologies. The company is led by Dr. Lorien Pratt, a pioneer in the field of decision intelligence and transfer learning. Quantellia provides a range of services aimed at enhancing decision-making processes across various sectors including healthcare, financial services, and public administration.

The company's flagship product, World Modeler™, facilitates the creation and integration of decision models that connect actions to business outcomes, leveraging data and AI for more informed decision-making. Quantellia emphasizes a methodology that begins with the end goals of the business, working backwards to align actions and data utilization to achieve these objectives. This approach helps organizations optimize their operations and strategy through tailored decision intelligence applications.

SAS:

SAS Decision Manager

SAS Decision Manager is an enterprise decision management system designed to enhance the efficiency and effectiveness of business operations by leveraging predictive analytics for decision-making. This platform automates routine decisions, which can significantly reduce the need for human intervention, thereby improving speed, accuracy, and compliance across various industries, including financial services, healthcare, and insurance.

Key features of SAS Decision Manager include the ability to create and manage business rules and decision flows, which can be combined with predictive models and published for use by other applications. This integration facilitates a comprehensive approach to operational decision-making, allowing organizations to respond quickly to new information and market changes.

SAS Decision Manager is highly integrated with other SAS solutions like SAS Model Manager, SAS Visual Analytics, and SAS Micro Analytic Service, among others. This integration ensures a seamless environment where data and analytics are easily accessible and manageable through a consistent interface.

SAS Intelligent Decisioning

SAS Intelligent Decisioning is an advanced platform designed to automate and enhance decision-making across various business environments. This solution integrates business rules management, decision processing, and real-time event detection, all underpinned by powerful SAS analytics.

The platform supports the delivery of interactive, real-time decisions, utilizing sophisticated analytics and business rules. It ensures robust governance to make decisions reliable and understandable across the business. It's capable of handling high data volumes and scaling effectively thanks to its cloud-based architecture. Users can improve decision quality by incorporating AI and machine learning models, supporting a diverse array of business needs, from customer interactions to operational optimizations.

SAS Intelligent Decisioning is designed for enterprises looking to automate decision-making processes in real-time, ensuring that decisions are data-driven, timely, and efficient. The platform is particularly beneficial for sectors such as banking, healthcare, and retail, where decisions need to be both rapid and based on complex, dynamic data sets.

Scios AI

Scios AI is a strategic decision intelligence company that specializes in providing AI-driven solutions to enhance strategic decision-making in consumer markets. Founded recently, the company operates with a small team but has quickly established itself as a significant player in the field of decision intelligence.

The core offering of Scios AI is its human-centric AI platform that enables organizations to simulate market scenarios and consumer behaviors. This platform helps businesses understand their consumers' decision-making processes, allowing them to make strategic decisions efficiently and confidently. One of the standout features is its ability to create digital consumer twins, which are virtual representations of consumers that help in predicting and understanding consumer behavior and market dynamics.

Scios AI's technology leverages behavioral economics to deliver predictive and prescriptive analytics rapidly. The platform is designed to support robust human-AI collaboration, providing insights that are not only data-driven but also intuitively understandable by human strategists. This approach enhances trust and adoption of AI-generated recommendations within businesses.

The company also emphasizes the importance of experimenting with strategic decisions in a risk-free environment, allowing organizations to explore various scenarios and their potential impacts without real-world consequences. This capability is critical for businesses looking to innovate and stay competitive in rapidly changing markets.

Silico

Silico is a company that specializes in providing decision intelligence solutions through its innovative simulation platform, which leverages AI to generate decision recommendations for businesses. Founded in 2019, Silico is based in London, UK, and operates as a private entity. The platform focuses on simulating business processes to enable companies to make informed, data-backed decisions within their digital twin environments.

Silico's platform allows businesses to model their organization's processes, providing insights and predictive capabilities that enhance decision-making across various functions such as finance, ERP, and supply chain management. The company emphasizes a user-friendly approach with the ability to simulate changes and see the effects in real-time, promoting a proactive approach to business management and optimization.

Silico (Cont.)

To date, Silico has raised a total of $5.98 million through funding rounds to support its development and expansion. The company operates with a small team but has managed to carve out a niche in the decision intelligence market by focusing on process simulation that integrates with existing business systems to improve outcomes and efficiency.

Sparkling Logic SMARTS™

Sparkling Logic is a provider in the decision management technology sector, specializing in their flagship SMARTS™ Decision Management Platform. Based in Sunnyvale, California, Sparkling Logic focuses on empowering organizations to automate and enhance decision-making processes across various business operations and customer interactions using a low-code/no-code environment.

The SMARTS™ platform is designed for business analysts and non-technical users, enabling them to manage complex decision-making processes efficiently. It offers features such as rules authoring, AI and ModelOps, decision analytics, lifecycle management, and a robust technical architecture. This makes it possible to rapidly transform data into actionable decisions without extensive IT involvement, thus maximizing business agility and ensuring compliance throughout the decision lifecycle.

Additionally, Sparkling Logic emphasizes continuous innovation with the integration of generative AI through their AI Assistant tool. This tool aids users in managing decision logic and tasks within the SMARTS™ platform using natural language, enhancing usability and accessibility.

Sparkling Logic serves a global clientele across multiple industries, providing a scalable solution that supports various operational needs from financial services to healthcare and retail. The company's approach to decision management helps organizations streamline operations, reduce costs, and improve decision accuracy and speed.

Taktile

Taktile is a technology company founded in 2020, headquartered in Berlin, Germany, with a significant presence in New York, USA. It specializes in providing a cloud-native SaaS platform tailored for the financial sector, including banking, insurance, and asset management industries. Taktile's platform is designed to enhance data-driven decision-making processes such as loan underwriting, document processing, transaction monitoring, and more.

The company stands out for its focus on facilitating powerful automation and experimentation capabilities, allowing financial institutions to build, iterate, and deploy decision-making models quickly and efficiently. This is achieved through a user-friendly interface that supports no-code operations, enabling non-technical users to easily manage and optimize decision flows without needing extensive programming skills.

Taktile has successfully raised $24.7 million in funding to support its growth and expansion. The platform's ability to integrate with numerous data providers enhances its flexibility, making it an attractive option for companies looking to enhance their decision-making processes rapidly and with minimal dependency on IT resources.

Tellius

Tellius is an innovative company based in Reston, Virginia, founded in 2016. It specializes in AI-driven decision intelligence, focusing on data exploration, visualization, automated ML, and natural language analytics. Tellius caters to various sectors including pharmaceuticals, healthcare, communications, and insurance, offering solutions designed to streamline and enhance data-driven decision-making processes.

The platform enables users from technical and non-technical backgrounds to interact with data through natural language, aiming to make the process of deriving insights from complex data sets more intuitive and accessible. Tellius leverages artificial intelligence to automate insight discovery, allowing users to quickly identify trends, patterns, and outliers within their data.

Tellius has raised a total of $33 million to support its development and expansion, highlighting its significant growth and the trust investors place in its vision and technology.

1000minds

1000minds is a unique software that combines decision-making and conjoint analysis functionalities, which makes it applicable across a diverse range of sectors including government, healthcare, business, nonprofit organizations, and academia. Founded by Franz Ombler and Paul Hansen, it utilizes the Potentially All Pairwise RanKings of all possible Alternatives (PAPRIKA) method, a decision-making technique renowned for its simplicity and effectiveness in capturing and applying user preferences.

The PAPRIKA decision method is a structured problem-solving approach that was developed by Dr. Robert J. R. V. Abbott and Dr. Gert Jan Hofman. The acronym PAPRIKA stands for:
- ***Problem****: Clearly define the problem or issue at hand.*
- ***Alternatives****: Identify multiple solutions or options to address the problem.*
- ***Preference****: Evaluate the preferences and criteria for selecting the best alternative(s).*
- ***Recommendation****: Make a recommendation based on the best alternative(s).*
- ***Implementation****: Develop a plan for implementing the chosen solution(s).*
- ***Knowledge****: Identify any additional knowledge, information, or resources needed to implement the solution(s).*
- ***Accountability****: Assign responsibilities and timelines for carrying out the implementation plan.*

The PAPRIKA method provides a systematic approach to making decisions, allowing individuals and organizations to make informed, effective choices in various situations.

The platform is designed to be both powerful and user-friendly, allowing for applications such as creating transparent decision-making processes, conducting high-quality academic research, and facilitating group decisions. 1000minds is particularly praised for its ability to simplify complex decision-making, making it accessible to both technical and non-technical users. The software has been recognized with several awards for its innovation and impact, underscoring its utility and effectiveness in a wide range of decision-making scenarios.

1000minds supports various decision-making activities like budget allocation, investment portfolio selection, and resource distribution, ensuring that decisions are made fairly, transparently, and inclusively. Its scalability and the capacity to handle decisions involving many stakeholders or participants make it a versatile tool for both organizational and academic settings.

Providing Research on:

- Digital experiences

- Artificial Intelligence

- Building a subscription business

- Product led growth

- Business transformation / digital first / AI First strategies

- Customer advocacy and review strategy

- Market expansion and building new markets

- Service and high tech industries

- Technology trends and innovations

With Coverage on:

- Customer Experience (CX) & Customer Relationship Management (CRM)
  - Sales, marketing & customer service Technology

- AI, Generative AI & Business Automation

- Subscription Management & Subscription Experience

- Professional Services Automation & Project Management (PM)

- Employee Experience (EE)

- Enterprise Resource Planning

- Cloud Platforms

39

LINKEDIN.COM/COMPANY/ARION-RESEARCH-LLC

@MFAUSCETTE@TECHHUB.SOCIAL

X: @MFAUSCETTE

THREADS: @MFAUSCETTE

Contact

Arion Research LLC
+1 908.373.1044
www.arionresearch.com
info@arionresearch.com