



Episode 5:
Intelligent
Automation with AI

Agenda



Introduction + Foundation



Key Benefits + Use-Cases



Challenges + Strategies



Future Outlook + Recap



Introduction & Foundation

My Style



Interaction Throughout



Informal Style



My Audience



Data Professional

Data professionals are individuals who specialize in managing, analyzing, and interpreting data to support data-driven decision-making within organizations.



Business User

Business users are individuals within an organization who utilize data analytics tools and insights to make informed decisions, enhance operations, and achieve business objectives without necessarily having deep technical expertise in data science.



Leader

Business leaders are executives and managers who drive the strategic direction of an organization by leveraging data insights to make high-impact decisions, foster innovation, and ensure competitive advantage.

AAA Webinar 2024 Season Episodes

May 28th: [Demystifying AI for Business Leaders](#)

June 25th: [Training Pre-Trained AI Models](#)

July 23rd: [Augmented Analytics Explained](#)

August 27th: [AI and Data Management](#)

 September 24th: [Intelligent Automation with AI](#)

October 22nd: [AI for Good](#)

Decision Intelligence Enablement

A holistic approach to decision-making, ensuring that organizations can navigate complex environments and make better strategic choices.

Item	Description	Owner	Enablement Outcomes
Outcomes	The final results or impacts that arise from decisions and processes.	Executives	Clearly defined and aligned KPIs are required and must be managed as a learning tool, not a pass or fail grade.
Processes	The actions and steps taken to achieve outcomes informed by decisions.	Decision-Maker(s)	Ensure processes are in alignment with desired outcomes and decisions, and define operational KPIs.
Decisions	The choices made to inform processes and achieve outcomes based on the decision-maker's criteria.	Decision-Maker(s)	Identify the decision-maker(s) and default decisions based on bias, information and criteria.
Applied Analytics	Findings & insights from data mining and analytics are used to inform the criteria needed to make decisions.	Analytics & Application Teams	Provide transparency in how insights were derived and clearly state how they relate to questions, allowing for partial answers.
Data Mining & Analytics	The systematic computational analysis of data or statistics to discover, interpret, and communicate meaningful patterns that can inform decision-making.	Data & Analytics Teams	Fully defined models & methodologies, clear training & testing data delinations, and defined derived fields.
Data Management	The process of collecting, organizing, maintaining, and securing data to ensure it is accurate, accessible, and reliable for decision-making.	Data & Analytics Teams	Created data is understood, trusted and made available through data governance, quality and architecture.

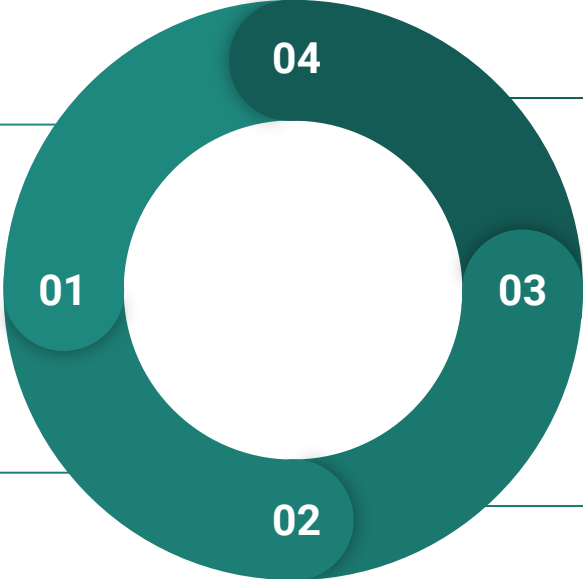
Decision Intelligence

Decisions

The choices made to inform processes and achieve outcomes based on the decision-maker's criteria.

Processes

The actions and steps taken to achieve outcomes informed by decisions.



Applied Data & Analytics (including AI)

The end-to-end process of collecting, processing, analyzing, and interpreting data, then using those insights to inform actions and strategies that align with business objectives.

Outcomes

The final results or impacts that arise from decisions and processes.



AI, Analytics & Data

Data Mining & Analytics (including AI)

The systematic computational analysis of data or statistics to discover, interpret, and communicate meaningful patterns that can inform decision-making.




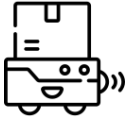

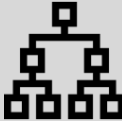





Applied Analytics (including AI)

1 Findings & insights from data mining and analytics are used to inform the criteria needed to make decisions.

Data Management

3 The process of collecting, organizing, maintaining, and securing data to ensure it is accurate, accessible, and reliable for decision-making.

Data & Analytics (AI) Landscape

Applied Analytics	 <p>Decision Support & Optimization</p>	 <p>Intelligent Automation</p>	 <p>Recommendations & Personalization</p>
Data Mining & Analytics	 <p>Rule-Based Analytics</p>	 <p>AI Model Creation</p>	 <p>AI Model Use-Case Tuning</p>
Data Management	 <p>Data Architecture & Integration</p>	 <p>Data Governance & Quality</p>	 <p>Data Privacy & Security</p>

Intelligent Process Automation (IPA)

IPA converges fundamental process redesign and Robotic Process Automation (RPA) with the power of Artificial Intelligence (AI).

RPA

RPA is a technology that uses “software robots” to automate tedious and repetitive work. RPA can emulate the actions of human users, including keystrokes, navigation, identification and extraction of data, and other movements. These robots can complete these actions quickly and without errors.



AI/ML

AI/ML services rely on data-driven learning where systems create their own rules based on examples provided by humans. Through ML, automated systems can continuously improve by analyzing data, predicting outcomes, and handling exceptions more intelligently, making processes smarter and more efficient over time compared to traditional automation solutions.



Key Benefits + Use-Cases

The Role of AI in IPA

AI in Intelligent Automation allows for more dynamic, flexible workflows, handling exceptions and improving over time—leading to smarter, more efficient operations.



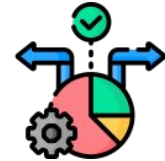
Unstructured Data Processing

Analyze and extract meaningful information from data that lacks a predefined format or structure (e.g., emails, PDFs, images, and voice recordings).



Machine Learning Improvement

Unlike traditional automation, which relies on static, predefined rules, AI-driven systems can modify their behavior based on past experiences and new inputs.



Real-Time Decision-Making

Take on more complex tasks using AI to quickly analyze data, identify patterns and refine operations based on the newest data.

Benefits of Intelligent Automation



Efficiency

AI automates complex workflows, reducing manual intervention and saving time.



Accuracy

Machine learning models improve decision accuracy by learning from data.



Scalability

AI can scale automation beyond repetitive tasks, handling exceptions and new inputs.



Error Reduction

Fewer human errors and reduced manual labor lead to lower operational costs.

Use-Cases of Intelligent Automation

Finance

JP Morgan's AI fraud detection system has significantly reduced fraudulent activities. It is reported to have identified billions of dollars in fraudulent transactions each year, reduced manual investigation times and reduced support cases.

Healthcare

UnitedHealthcare reduced the average processing time for claims by 70% using OCR (Optical Character Recognition) and NLP (Natural Language Processing) to scan and extract key information from medical documents, such as diagnosis codes, patient information, and billing details.

Manufacturing

Siemens has seen a significant reduction in stockouts and overstock situations, improving production efficiency and cutting down on inventory holding costs using AI in its supply chain to forecast demand fluctuations and automate inventory management.

A person wearing a dark jacket and a helmet stands on the edge of a rocky cliff, looking out over a vast, hazy ocean. A bicycle is leaning against their legs. The background is a soft, misty landscape with distant mountains visible on the horizon.

Challenges + Strategies

Challenges and Risks in Automation



Operations & People

These involve the day-to-day functioning of automated systems. Over-reliance on automation, lack of flexibility, error propagation, and handling exceptions are key concerns here. Automation systems can fail or generate errors if they encounter situations not accounted for in their design, or if underlying data is flawed.



Data & Bias

Poor data quality or integrity can lead to inaccurate decisions, and improper handling of data can expose organizations to significant risks. Additionally, AI systems trained on biased or incomplete data may produce skewed or unfair results.



Privacy & Security

As automation touches sensitive data and critical systems, organizations face greater exposure to cyber threats and privacy violations. Automated systems can also increase the attack surface by creating more interconnections between systems, making them attractive targets for hackers. Privacy concerns around the use and storage of personal data in automated processes are also significant.

Mitigation Strategies



Human in the Loop

Incorporate human oversight in critical parts of the automation process where decision-making or exception handling is needed. While routine tasks can be fully automated, complex scenarios should involve humans to ensure flexibility and context-based decision-making.



Continuous Monitoring and Auditing

Implement real-time monitoring systems that can track the performance of automated processes and flag any anomalies or errors.



Robust Data Governance

Establish strong data governance policies to ensure that data quality, security, and compliance are prioritized.



Advanced Cybersecurity

Secure all automated systems with robust encryption, access controls, and multi-factor authentication to protect against cyber threats.

Implementation Strategies

Start Simple

Begin by automating a single, well-defined process that can be clearly measured and tracked. Identify a pilot project where automation can deliver immediate, tangible benefits, such as reducing manual effort or speeding up a routine task.

Scale Success

Once a pilot project demonstrates success and the KPIs are met, gradually scale the automation initiative. Expand into other processes or departments that have similar tasks or workflows. Use insights from the pilot to refine automation models and ensure that the infrastructure can handle the increased scope.

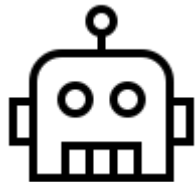
Put AI on It

While traditional RPA can manage rule-based tasks, adding AI enables automation systems to process unstructured data, make decisions, and adapt to new information. Orchestrate different systems to ensure seamless workflow automation across departments, ensuring AI and RPA mesh.

A person wearing a VR headset is shown in a desert landscape under a cloudy sky. The person is wearing a white t-shirt and the VR headset is black with a strap. The background is a vast, flat, sandy desert with mountains in the distance under a bright, cloudy sky.

Future Outlook + Recap

Future of Intelligent Automation



Hyperautomation

Hyperautomation involves expanding automation across entire business processes by integrating AI, machine learning (ML), and robotic process automation (RPA).



Autonomous Workflows

AI systems independently manage entire processes without human oversight. These systems will combine machine learning models, IoT devices, and advanced analytics to handle real-time data and make complex decisions on the fly.



Edge Computing

The rise of edge computing will enable intelligent automation systems to process data locally, closer to where it is generated, reducing latency and improving real-time decision-making in industries like manufacturing, healthcare, and transportation.

Recap & Key Takeaways

AI Enhances Automation Beyond RPA

- Intelligent automation leverages AI to process unstructured data, make real-time decisions, and adapt to new situations, making it far more flexible and powerful than traditional RPA.
- Example: AI systems in finance automatically detect and prevent fraud by identifying anomalies in large datasets in real time.

Start Small, Scale Strategically

- Begin automation initiatives with small pilot projects that have clear KPIs. Once success is proven, scale the solution across departments to maximize impact.
- Example: Healthcare organizations can start with automating claim processing and then expand automation to other administrative tasks like scheduling and billing.

Mitigation of Key Risks is Crucial

- Automation brings risks, such as over-reliance, error propagation, and data security concerns. Implement strategies like human-in-the-loop oversight, continuous monitoring, and robust data governance to mitigate these risks.
- Example: In manufacturing, combining AI with human oversight ensures adaptability in complex or unpredictable production scenarios.

Emerging Trends Like Hyperautomation and Edge Computing Will Shape the Future

- Hyperautomation integrates AI, machine learning, and RPA to automate entire business processes, while edge computing brings real-time processing closer to data sources.
- Example: Tesla's use of edge computing in autonomous vehicles shows how localized AI decision-making is transforming industries by reducing latency and improving real-time capabilities.

A light brown dog is standing on its hind legs, with its front paws raised high. The dog is looking upwards and to the left. The background is a plain, light-colored wall. The text "Dedicated Q&A" is overlaid in the center of the image.

Dedicated Q&A