



How to leverage AI

Artificial Intelligence information and training

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With you today



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Matt is a Principal in Grant Thornton's Risk Advisory Practice.

Matt has deep and extensive experience in Internal audit and Sarbanes-Oxley (SOX) compliance. He leads IA innovation and the technology risk solutions, including IT audit, Artificial Intelligence (AI) and control automation, for the industry practice.

Matt started his career as an IT auditor and quickly gained further experience and certifications to understand the business processes as well as the IT systems. This allows him to connect business processes with how the IT systems are built, maintained, and controlled.

He has worked all over the world and run large global Internal Audit programs and SOX implementations. He has worked with a number of organizations, from fortune 500 companies to significantly smaller organizations. He has helped evaluate and improve the efficiency and effectiveness of their audit and SOX programs through enhanced processes and technology. He has also led the integration of offshore teams to ensure the highest quality and collaboration, while minimizing the cost of delivery.

Matt has been presented and been published multiple times in industry publications on a variety of topics including AI, control test automation, and IT audit. Matt is part of the IT and AI Center of Excellence for the firm and presents quarterly on a variety of IT audit topics.

Education, Memberships & Professional Certifications

- B.S., Business Administration. Decision and System Sciences, Saint Joseph's University in Philadelphia, PA 2006
- Project Management Professional - PMP - Certified
- Certified Information Systems Auditor - C.I.S.A - Certified
- AWS Certified Cloud Practitioner

Presentations and publications

“Control automation is the future”, Corporate Risk and Insurance 10/2019

“Manage risks, not rituals”, Grant Thornton, 3/20

“Disruptive Innovation Disrupting Internal Audit”, The Institute of Internal Auditors, 5/21

“Best Practices for Project Assurance: Pre/Post-implementation system reviews”, 4/21

“NIST 2.0: Internal audit's role in cybersecurity program initiatives”

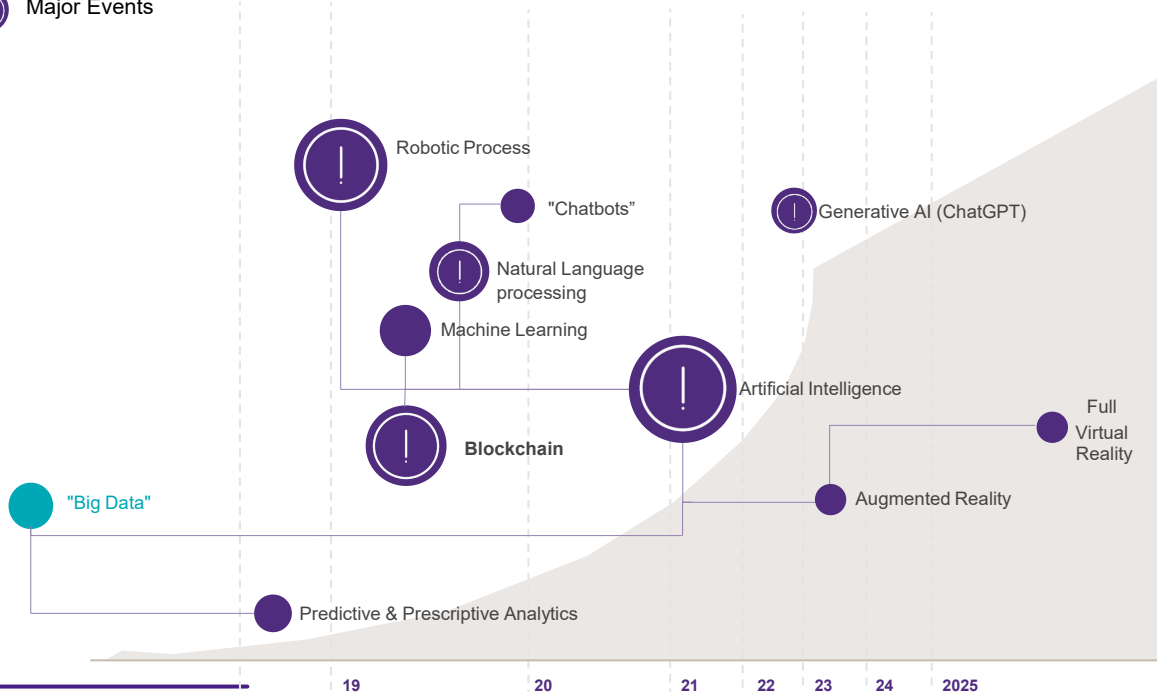
Artificial Intelligence Overview

History and Opportunity

History

● Start of the “serious” disruption window (size = impact potential)

ⓘ Major Events



Opportunity

The future of insurance carriers using AI is full of promising opportunities. Here are some key areas where AI can make a significant impact:

- Risk Assessment and Underwriting
- Fraud Detection and Prevention
- Claims Processing
- Customer Service
- Predictive Analytics
- Operational Efficiency

By embracing AI, insurance carriers can not only improve their operational efficiency and customer service but also innovate and stay competitive in a rapidly evolving market.

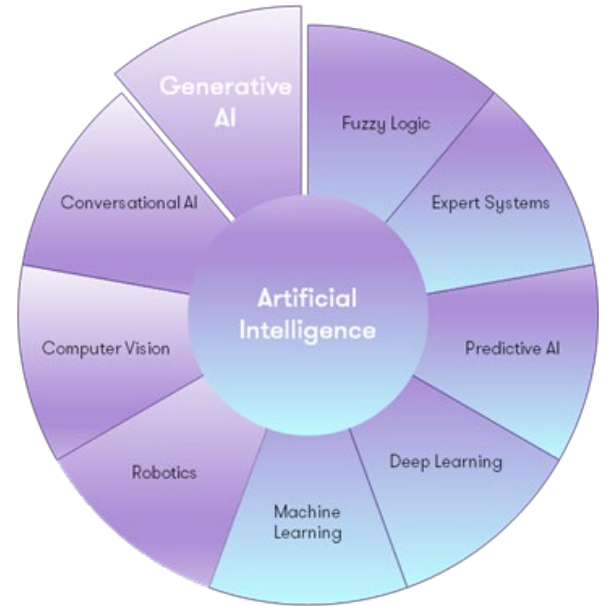
“But that I’m not breathless about. That will evolve over the next number of years. That will be iterative. That won’t be this instant game-changer for the industry [that] I hear some people naively talk about.” – Evan Greeberg

Legacy and Generative AI

AI is an enabling machine or system to sense, reason, act, or adapt like a human. AI uses logic and decision trees to learn and self-correct. Generative AI is one of several AI models.

Generative AI (GenAI)		GenAI can produce audio, code, image, text, simulation, and video content. It learns from examples it has been shown to create something entirely new.	
“Human, I have some suggestions”	Scrutinize the analysis	“What happens when”	Scenario creation
Validate Connections Suggest Improvements		Analyze Risk Simulate Events	

Legacy AI	Legacy AI represents Artificial Intelligence solutions which have been commercially available for an extended period of time.	
Robotic Process Automation (RPA)	Machine Learning	
Mimic repetitive human tasks such as extracting data, filling in forms, moving files, etc.	Learning algorithms which perform logical tasks such as categorizing images, analyzing data, or predicting price fluctuations.	



AI Definition:
Technology that can perform tasks that traditionally require human intelligence

Differences Between RPA, ML, and AI

Definitions

Robotic Process Automation (RPA)

- **Software robot that mimics human actions based on a set of rules and structured steps.**
- Aimed at relieving repetitive tedious, high-volume, and time-consuming tasks.

Machine Learning (ML)

- ML is an application of AI that uses algorithms to automatically learn from data.
- **ML allows machines to learn from data so that they can give accurate output for specific tasks, such as pattern recognition in massive data sets.**

Artificial Intelligence (AI)

- AI is the broadest term used to classify machines that mimic human intelligence.
- **AI is focused on maximizing the chances of success.**
 - Learning (acquires information and contextual rules).
 - Reasoning (makes conclusions based on analyzing data).
 - Self-correction (learns from successes/failures)

Differences

Process-driven

Data-driven Learning...

“Doing”

“Learning” & “Thinking”

Uses structured inputs

Develops own logic based on unstructured inputs

Applications

Automate routine, highly structured tasks:

- Move and copy files
- Open email and attachments
- Log into applications

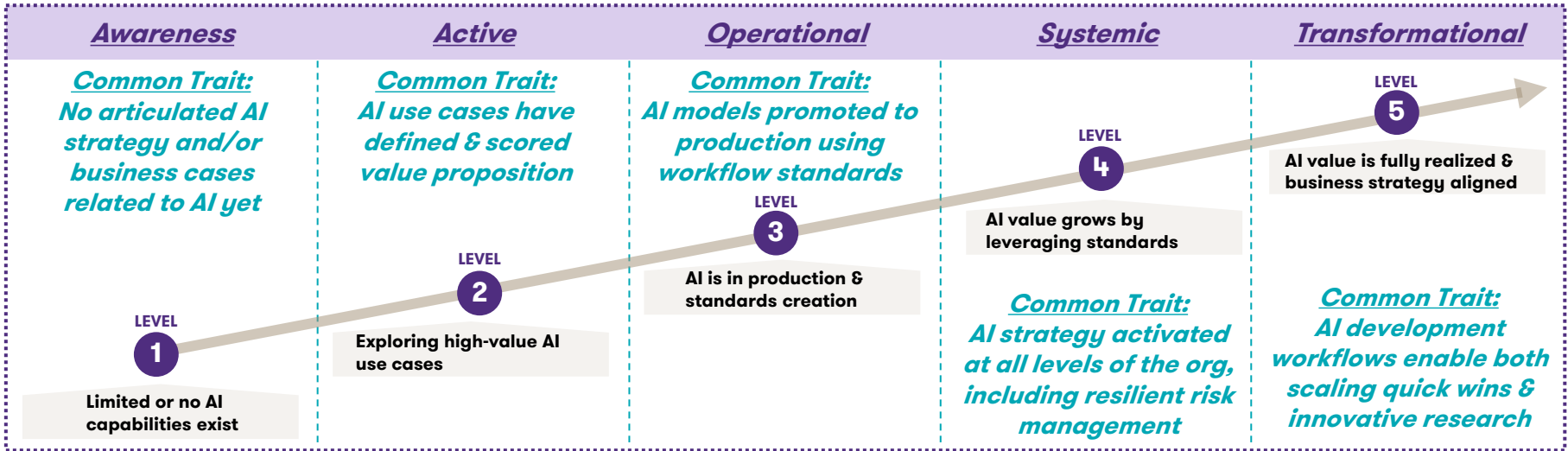
ML is concerned with the accuracy of results and patterns, and is a pathway to AI:

- Text recognition - Extract structured or semi-structured data from bodies of text (e.g., contracts, forms).
- Personalized recommendation services - information/content tailored to what you are likely to like.

Learning + Reasoning + Self-correction:

- Vision - Image recognition, facial recognition.
- Language - Speech recognition, Natural language generation, Chatbots,

Organizational AI Maturity Model



Additional traits:

- IT infrastructure & data have not been assessed for AI readiness
- Org lacks skills to evaluate, build, deploy AI & key integrations
- Informal or “shadow” AI risk management

- AI priority is sponsored by leaders.
- Actionable AI strategy evolved from development to being communicated out & shared down/across teams.
- IT strategy & roadmap assessed for AI readiness & enablement road mapped
- AI skill building or skills are isolated in pockets of the org.

- IT strategy roadmap is synched with AI’s needs.
- Change management practices actively guiding process evolution where AI has been integrated
- Skills progressively growing across teams to iterate & improve use of AI.
- AI risk management is active; may be concurrently happening across 1st, 2nd, 3rd lines of defense.

- Data management maturity to enable various uses of data, nimble model training & knowledge sharing across org.
- Business users trained & enabled with proper dashboards & visualization to take actions from AI models’ outputs & insights.
- AI risk management is akin to other compliance and audit workflows.

- Accountability for AI strategy & acceptable use across org.
- Fully managed AI risks & compliant teams are empowered to proactively mitigate risks.
- Proactively managed IT infrastructure & data governance strategies that incorporate AI’s and data’s growth needs.



Regulation, Risk Management, and the role of the Board

Foundational Enterprise AI Risk Management

Comprehensive Controls & Risk Classification

It is critical to take a dynamic approach to building AI in control.

- AI's rapid and pervasive adoption required to drive business value is moving faster than getting the right controls in place, having the capability to manage the risks effectively and providing assurance.
- Governance, risk and compliance practices and capabilities must develop alongside AI development.
- Leading enterprises have defined AI-specific risks and controls and have integrated into internal audit processes.

1

Foundational Enterprise AI Risk Management

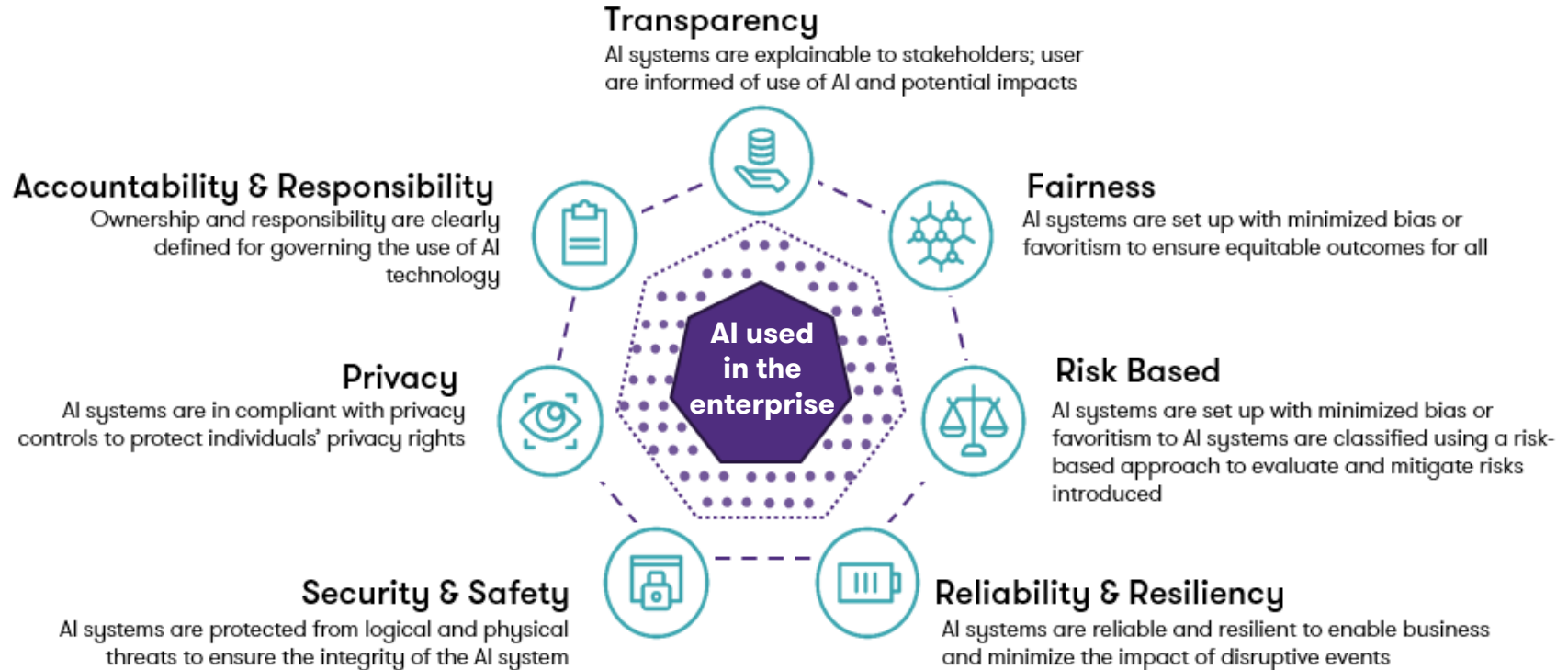
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Adherence to Enterprise AI Policy & Intended Use

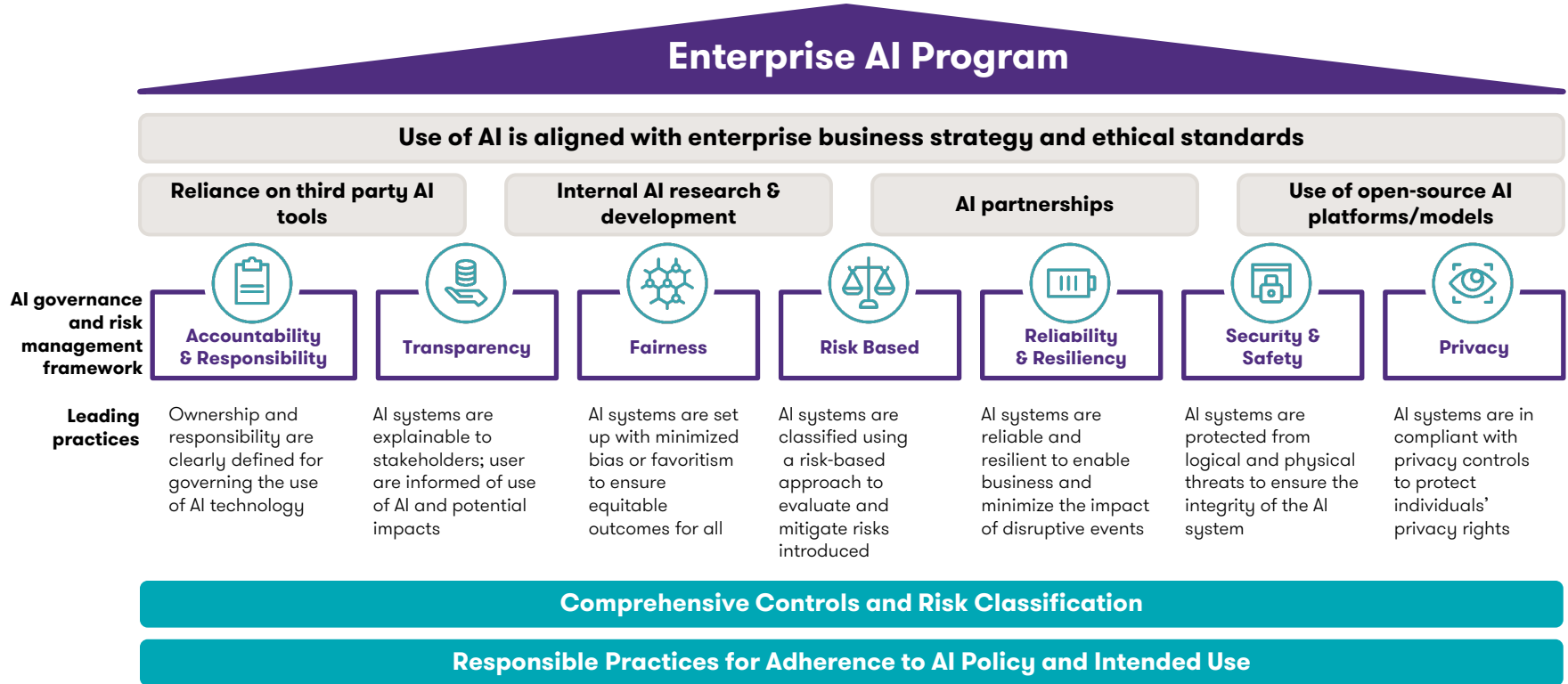
While the regulators solidify and roll out AI legislation, enterprises are being watched for how their AI can cause consumer harm, ranging from data breaches to lack of disclosure and other indirect negative impacts.

- Does the enterprise have an AI policy? What statements are made in the policy about AI's acceptable and intended uses in the enterprise? Are these uses being adhered to, from use case through to production deployment?
- Regulators have signaled that harmful impacts come from holistic AI systems including the data used and any 3rd party apps used, and not models or algorithms alone.

AI Governance and Risk Management Framework



Applying the risk framework to foundational elements



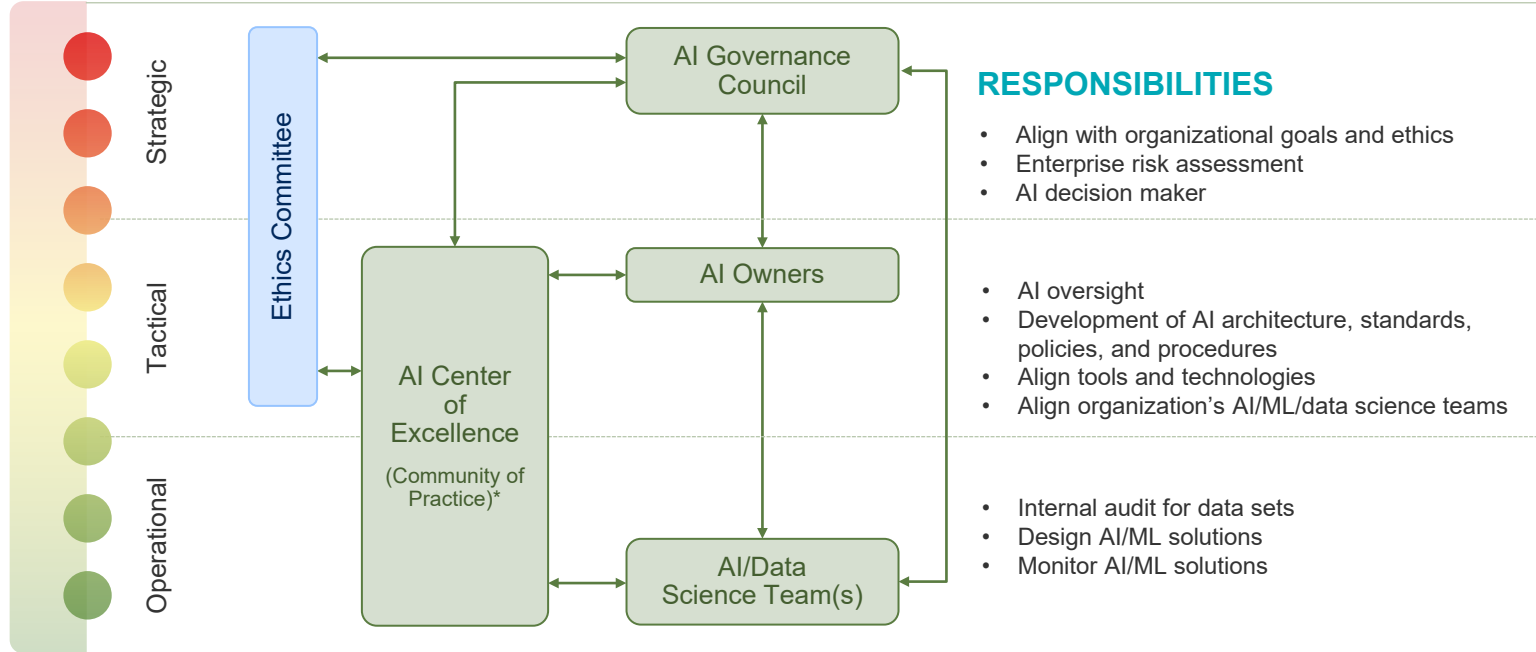
Apply more strict governance as project risk increases and integrate AI governance into existing processes

RISK

As the risk of an AI project increases, higher levels of governance become more engaged.

Factors:

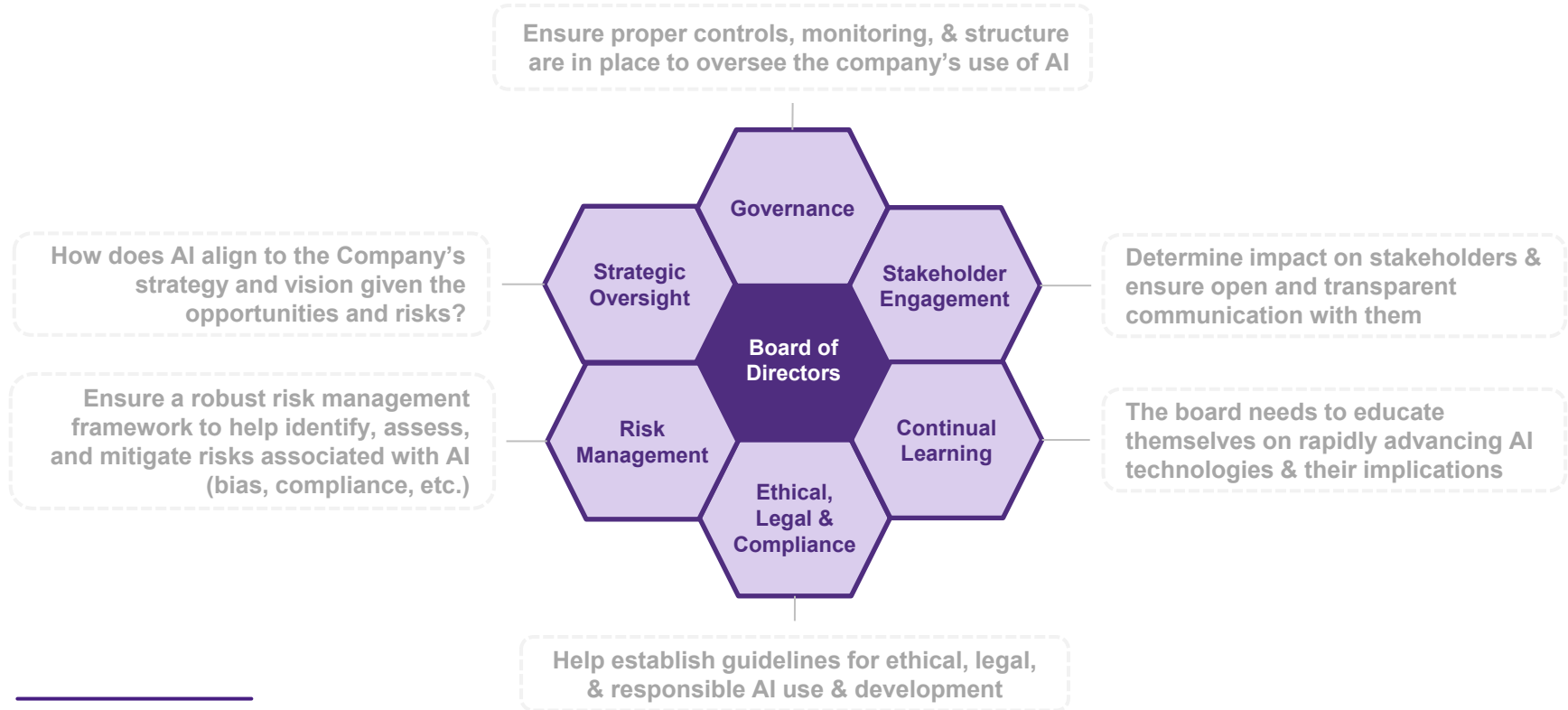
- Development difficulty
- Data sensitivity
- Need for accuracy
- Regulatory pressure
- Amount of change required



* AI Center of Excellence is defined for organizations that have multiple AI/data science teams or want to separate operational activities (design and implementation) and tactical activities (creation of policies, standards, and community of practice).

Board of Directors Role in Artificial Intelligence

The Board plays a critical role in the adoption of emerging technologies through **risk management, governance and strategy**



Board Best practices (AI)

Public company boards play a crucial role in overseeing AI within their organizations. Here are 5 key considerations:

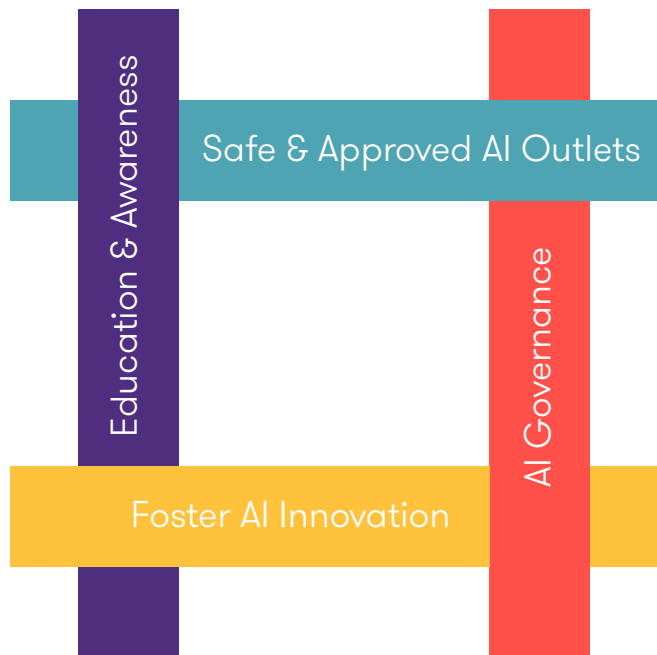
- **Strategic Direction:** Boards should set the strategic direction for AI adoption. They need to understand how AI aligns with the company's mission, vision, and long-term goals.
- **Alignment with Values:** Ensure that AI practices align with the organization's core values. Boards should assess whether AI decisions uphold ethical standards, diversity, and fairness.
- **Risk Oversight:** Boards must oversee management's approach to AI risks and opportunities. This includes understanding potential risks (e.g., bias, security, legal) and ensuring proper risk management.
- **Literacy:** Board members should have sufficient AI literacy to make informed decisions. They need to grasp the basics of AI technologies, applications, and implications.
- **Regulatory Awareness:** Boards should stay informed about regulatory challenges related to AI. Compliance with data privacy laws, transparency requirements, and industry-specific regulations is essential.

To promote responsible AI Boards can:

- **Ethical Frameworks:** Develop and adopt clear ethical guidelines for AI deployment. These should address fairness, transparency, privacy, and accountability.
- **Risk Assessment:** Regularly assess AI-related risks. Consider bias, unintended consequences, and potential harm to stakeholders. Implement risk mitigation strategies.
- **Diverse Expertise:** Ensure board members have diverse expertise, including technology, ethics, and legal backgrounds. This diversity helps in informed decision-making.
- **Oversight:** Regularly review AI initiatives. Monitor compliance with guidelines, assess performance, and address any deviations promptly.
- **Stakeholder Engagement:** Involve stakeholders (employees, customers, regulators) in AI discussions. Seek feedback and address concerns transparently.

AI First Steps

4 Steps to Get Started



Step 1: Education & Awareness

Educate at all levels with a comprehensive program addressing AI strategy, implementation, practical and safe use, and opportunity identification.



Step 2: Provide Safe & Approved AI Outlets

Deploy a secure, enterprise-grade, language model for employees to leverage. This safe outlet for AI usage will mitigate the risk of 'shadow AI'.



Step 3: Establish AI Governance Framework

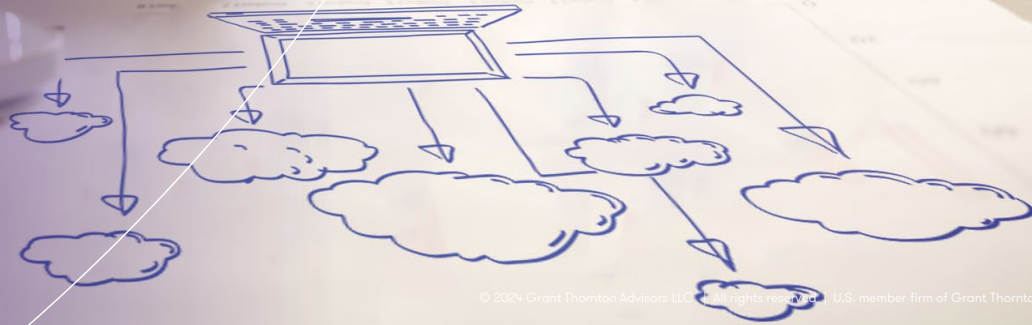
Define operating model, oversight roles and risk management protocols that will comply with regulations and ethical guidelines.



Step 4: Foster Organization Wide AI Innovation

Establish a structured approach for use case intake, use case prioritization/selection, rapid PoCs, and monitoring of success metrics.

Foresight and Use Cases: Creation and Examples



Foresight

“When it comes to the future, there are three kinds of people: those who let it happen, those who make it happen, and those who wonder what happened.”

6 Steps:

Framing – Issues and organizational mission

Scanning - Societal, technological, economical, environmental, and/or political

Alternatives Futures – possible, probable, and preferred

Preferred Future – where we are vs where we want to be

Planning – Bridge the gap

Acting – What, How, RACI

Time Horizon

Near-term
1- 3 years

Mid-term
3 – 5 years

Long-term
10 – 15
years

Foresight example

Mission Statement: To accelerate the advent of sustainable transport by bringing compelling mass market electric cars to market as soon as possible



The issue being addressed:

1. Electric cars are ugly
2. Electric cars are expensive to make
3. Electric cars will need access to energy

The master plan is:

- Build sports car
- Use that money to build an affordable car
- Use *that* money to build an even more affordable car
- While doing above, also provide zero emission electric power generation options

The Master Plan, Part Deux is:

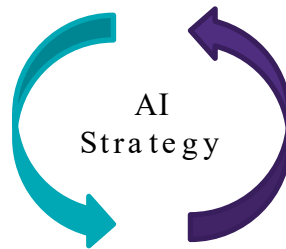
- Create stunning solar roofs with seamlessly integrated battery storage
- Expand the electric vehicle product line to address all major segments
- Develop a self-driving capability that is 10X safer than manual via massive fleet learning
- Enable your car to make money for you when you aren't using it

AI use cases align to your enterprise AI strategy

Diverse AI use cases are emerging in every industry. Defining your outcomes, awareness of your market/competitors' maturity levels, and aligning to your enterprise AI strategy are critical to success.

DEFENSIVE (BOTTOM LINE)

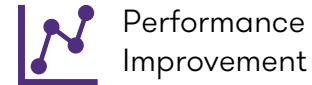
- Optimizes business process and operating expenses
- Capitalizes on economies of scale to generate additional value
- Aligns technology to reduce risk and promote business alignment



Target Benefits

OFFENSIVE (TOP LINE)

- Enhances brand recognition and associated public perception
- Supports new business processes and accelerates value creation
- Enables new employee insights and methods for collaboration



Drive rapid AI use case prioritization

Use Case Prioritization Criteria:

Category	Criteria	Definition	
Value	Financial Benefit (ROI)	Ability of use case to deliver additional funding that will result in top-line growth	<p>People</p> <ul style="list-style-type: none"> Identify stakeholders Drive alignment to enterprise strategy <p>Process</p> <ul style="list-style-type: none"> Intake use cases Understand challenges and business drivers <p>Data</p> <ul style="list-style-type: none"> Calculate ROI Assess complexity of value-generation <p>Technology</p> <ul style="list-style-type: none"> Evolve intake workflow and assessment tasks' automation over time
	Operational Excellence/Efficiency	Ability of use case to meet performance goals with fewer resources resulting in reduced cost	
	Compliance, Risk and Regulatory	Ability of use case to enable compliance with current and expected future regulatory, contractual, risk, or safety considerations	
	Ethical	Ability of use case to include data responsibility, fairness, transparency, trust, privacy, technology misuse and biases	
Feasibility	Technical Feasibility	Ability of use case to meet end desired goals when considering current technology complexity	
	Operational Feasibility	Ability of use case to meet end desired goals with current organization readiness	

Right-size the automation technology to the org's process, data and technology maturity levels

Robotic Process Automation (RPA)

Automates repetitive, rule-based tasks that are well-defined and stable

vs

Artificial Intelligence (AI)

Automates complex tasks that require intelligence and autonomy, such as decision making and pattern recognition

Automate manual, repetitive tasks

People

Augment human capabilities

Well-defined, stable processes

Process

Adapt to changing processes

Structured data

Data

Labeled, accessible data & sufficient volume for learning procedures

Infrastructure-agnostic, enterprise-ready

Technology

Cloud-enabled, Plug-ins, Copilots, AI enabled service providers

From AI pilot to fully realized, operational AI solution

Maturation of analytical and modeling capabilities results from scale (increased volume of data experiments) and increased business impact.

Use Case Identification & Modeling Objectives

Target the highest-value use cases. Address any specific compliance requirements.



- Assess and converge on robust business case.
- Strategize any sampling and appropriate validation.
- Obtain access to data and execute collection strategy.



- Address missing data, outliers, imbalance issues.
- Identify factors useful to the business problem.
- Assess data availability.
- Data anonymization.

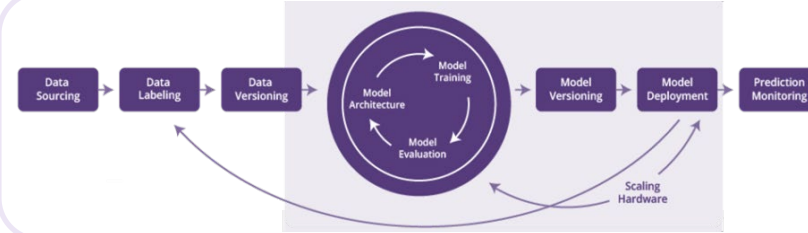


Data made consumable for modeling. Examples:

- Numeric data: binarization, binning, log, power, scaling.
- Text data: term frequency-inverse document frequency.
- Turn non-numerical variables into new numerical variables.
- Dimensionality reduction.

Build & Iterate the Modeling Procedure

Select model that gives good understanding of objective. Measure model performance.



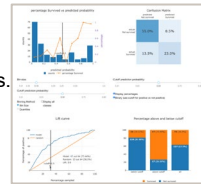
- Define evaluation metrics, analyze summary statistics of the models tried, and compare different models for the business problem.
- Final model is used to make predictions on new data.
- Fairness, explainability, robustness, data rights and compliance.
- Opaque models and performance drift require robust design and monitoring.

Decision Support Systems

Leverage automation to embed model workflows into decision-making. Integrate humans at key points in the system.

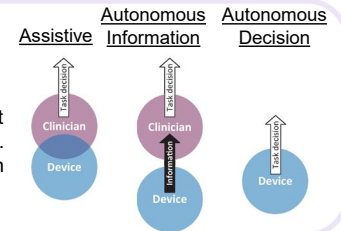
Examples:

- KPI dashboards to monitor and react to leading/lagging indicators of target outcomes.
- Self-service visualizations to broaden data-driven insight adoption.



Levels of data modeling autonomy using AI/ML-based devices (medical devices example):

- *Assistive* – overlap between the device and human SME. Human makes the final decision.
- *Autonomous Information* – separation between what the device and the human contribute to the decision.
- *Autonomous Decision* - device provides the decision on a task that can be enacted by the device or the human.



AI & Automation use cases in selected finance functions

Generative AI can be used for a wide variety of finance functions. Documentation and reporting related tasks are readily achievable goals, however, more advanced use cases that deliver significant value relate to the following:

Function	Use Cases	Impact
Business Support with Finance Assistants	<ul style="list-style-type: none"> Intelligent ticket prioritisation & routing to appropriate agent or knowledge base Conversational AI to handle routine enquiries & build greater support capacity Knowledge base enhancement to improve search results Trend analysis on recurring issues leading to root cause resolution and preventing future tickets 	Stakeholders can be empowered with streamlined issue resolution, thereby maximizing productivity and minimizing disruptions to core financial activities. Also reduce processing within your Global Business Service hubs
Controllership	<ul style="list-style-type: none"> Optimized & automated accounting close process Improved journal entry & review by flagging unusual entries, errors & cross-reference data points to improve accuracy Enhanced financial controls & compliance monitoring Informed estimates for accruals & provisions on vast data 	Accurate financial reporting & compliance adherence can be ensured by elevating controllership activities & accounting processes
Financial Planning & Analysis (FP&A)	<ul style="list-style-type: none"> Enhanced forecasting & scenario modelling to simulate potential outcomes based on market conditions Automated variance analysis with root-cause identification between budgets and actuals Insightful report generation with clear, written summaries for easy consumption by stakeholders Predictive analytics to recognise emerging opportunities, or risks 	Through streamlined FP&A activities, the organization can drive strategic decision-making that steer performance & future preparedness
Transactional Finance	<ul style="list-style-type: none"> Automated invoice processing to extract information, handle exceptions & streamline approvals Streamlined payment reconciliation & fraud detection Intelligent transaction approvals based on risk 	Optimization of Transactional Finance services provides the opportunities of improving the flow of funds to build a stronger financial foundation
Treasury	<ul style="list-style-type: none"> Scenario-based risk analysis & hedging optimization to mitigate risks proactively Prescriptive analysis to enhance working capital management considering market conditions Accurate cashflow forecasting with comprehensive data inputs (real time indicators) 	Improving treasury undertakings, the organization can better safeguard the financial well-being & refine management of liquidity, mitigate risks, & maximize returns on financial assets
Supply Chain	<ul style="list-style-type: none"> Predictive demand forecasting and automated inventory replenishment tools Route optimization, real-time shipment tracking, and predictive maintenance for transport fleets 	Improved accuracy in demand predictions and inventory management reduces stockouts and excess inventory. Reduced transportation costs and delivery times through optimized logistics operations and enhanced visibility into shipment status, leading to more efficient and reliable supply chain management.



Additional use cases to be considered to support business operations (1 of 2)

Market to Sell

Marketing Content Creation

- Generate marketing content (blog and social media posts, news articles, educational content, and more)

Enhance Sales Effort & Customer Attrition

- Predict sales opportunity wins & losses to ensure you are leveraging resources (time / dollars) effectively

Pricing

- Optimize pricing and promotions

Procure to Pay

Invoice Processing

- Automate invoice generation and processing

Discrepancy Resolution

- Identification of discrepancies (i.e., price/quantity differences, short pay, missing or invalid PO nos.)

Supplier Management

- Determine supplier synergies based on A/P invoices and demand

Order to Cash

Order Management

- Automate customer service with chatbots & other technologies 24/7

Credit Management / Billing

- Predict customer defaults & determine "at risk" credits

Cash Applications

- AR reconciliation

Record to Report

General Ledger Accounting

- Automated GL transaction feeds & journal entry processing

Reporting

- Suggest reports & generate automated trend analysis based on the data

Tax

- Reconcile Sales and Use Tax

Human Resources

Talent Acquisition

- Search and screen talent
- Develop job descriptions

On-Boarding

- Generate training / onboarding content

Talent / DEIB

- Leveraging AI/RPA to remove / examine unconscious bias

Payroll / Time Tracking

- Variance analysis / register reconciliation

Workforce Planning

- Monitor forecast v. actual demand

HR Customer Support

- Case analysis / ticket resolution

Additional use cases to be considered to support business operations (2 of 2)

3rd Party Supplier Risk Mgmt

Extended Supplier Network

- Illuminate secondary and tertiary suppliers to identify risk

AI Subscription Analytics

- Leverage data to identify problematic suppliers

Enhanced Sourcing & Supplier Management Protocol

- Build predictive models to proactively predict issues

ML in Demand & Supply Planning

Machine Learning Algorithms

- Improved baseline statistical forecasting at SKU level

Identification of Buying Patterns

- Predict the actual demand pattern and order quantities

Multi-Echelon Inventory Optimization

- Broader channel & demand coverage with less inventory

SCADA, MES & Predictive Failure

Asset Level SCADA

- Real time manufacturing asset performance data

Industry 4.0 Technologies

- IoT connectivity for advanced analytics

Proactive Maintenance Prior to Machine Failure

- Improved throughput & OEE with less downtime

Digital Twin

Near Real Time Cost to Serve Analytics

- SKU and product level cost to serve data by customer

Customer Segmentation & Variable Order Fulfillment

- Predictive cost to serve based on customer segment

Dynamic Pricing

- Proactively know when to adjust pricing and/or terms

Optimized Margin

Predictive Variance Analytics (Purchase Price & Labor)

- Advanced notice of where variances are likely to occur

Machine Learning to Enhance Costing & BOMs

- Recommendations to adjust standard cost or BOMs

Profitability By SKU and Customer

- SKU and product level margin data data by customer

Process Mining & DAP

Transactional Data Via Process Data Mining

- Tap into ERP other tech platforms to identify bottlenecks

Fact Based Analytics for Optimization

- Produce data to inform process optimization efforts

Digital Adoption Platforms

- Tools for guided user navigation when using technology



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