

Applying AI — Business Domains

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Initiatives: [Artificial Intelligence](#); [Enterprise Applications Evaluation and Selection](#)

AI methods improve a broad range of processes across business functions within enterprises — for instance, human capital management, sales, customer service and supply chain management. This research aids in identifying how AI is used through the compilation of crucial related Gartner resources.

Additional Perspectives

- [Invest Implications: Applying AI — Business Domains](#)
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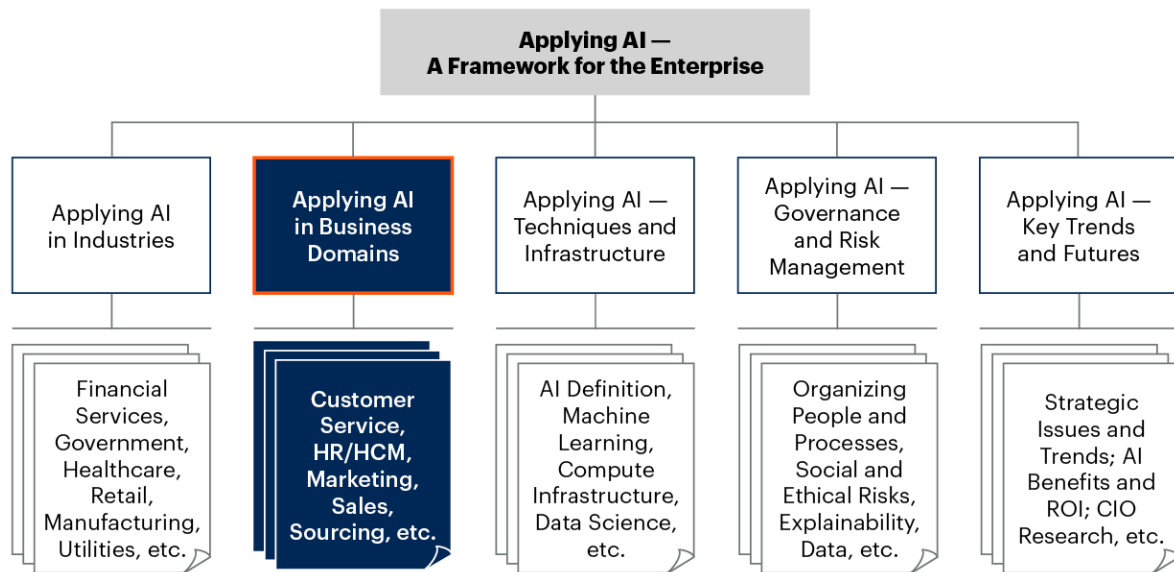
Analysis

AI is a part of over 50 separate research areas within Gartner. To make research and resources easier to locate, Gartner divides this broad topic into the research areas below. The top-level research note is called [Applying AI — A Framework for the Enterprise](#).

This report focuses on AI in business domains.

Figure 1: Locating AI-Related Research and Resources

Locating AI-Related Research and Resources



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The links below take you directly to the resources outlined in Figure 1.

- [Applying AI in Industries](#) describes where and how AI is applied in industries such as financial services, healthcare, retail, manufacturing and government.
- [Applying AI — Business Domains](#) (this research note) describes where and how AI is applied within business domains and enterprise departments, such as customer service, HR, marketing and sales.
- [Applying AI — Techniques and Infrastructure](#) includes the fundamental techniques and practices that comprise AI and AI engineering.
- [Applying AI — Governance and Risk Management](#) includes strategies and methods related to transparency, interpretability, ethics, privacy and security issues. It also addresses personnel and skills development, staffing, developing AI centers of excellence, and defining the ROI for AI projects.
- [Applying AI — Key Trends and Futures](#) focuses on the key trends and the future of AI, both in terms of strategic emerging technologies and key skills and governance options. It includes a focus on CIO and CTO executive priorities.

In the following sections, we provide an overview of Gartner’s written and analyst resources as related to the application of AI in business domains, enterprise departments and key business initiatives:

Business Domains

[Application Suites](#)
[Corporate Legal Management](#)
[Customer Service, Support and CRM/CX](#)
[Digital Commerce](#)
[Finance](#)
[Human Capital Management/Recruiting](#)
[IT Operations/Service Desk](#)
[Marketing](#)
[Sales and Lead Management](#)
[Security and Fraud Detection](#)
[Sourcing and Procurement](#)
[Supply Chain](#)
[Translation Services Enabled by AI](#)
[Workplace and Digital Workplace](#)

Business Initiatives

[Data Quality](#)
[Digital Business Initiatives](#)
[Internet of Things \(IoT\)](#)
[Hyperautomation](#)
[Robotics and Sensors](#)

Research Highlights

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Business Domains

Application Suites

[Back to Top](#)

As the digital revolution moves us further into the information age, the needs and challenges of businesses are becoming clearer. One of the most significant challenges is the growing use of AI in business application suites. AI’s demand for data, coupled with the need for flexibility and agility in processes, architectures and people, presents challenges for the adoption of these new capabilities.

Enterprise applications — such as those used for ERP, supply chain management (SCM), human capital management (HCM) and CRM — are increasingly incorporating AI-enabled enhancements. Many of these will not be recognized as AI by employees because they are “invisibly embedded.” Instead, they will simply be seen as new features of the applications.

Analyst resources: [Jim Hare](#), [Alys Woodward](#), [Kevin Quinn](#), Eric Goodness, Afraz Jaffri, Dennis Gaughan, John Santoro, Rajesh Kandaswamy, Annette Zimmermann, Balaji Abbabatulla

Research resources:

- [Quick Answer: How is AI Making Applications More Intelligent?](#)
- [Quick Answer: How Do Intelligent Applications Go Beyond Analytic Applications?](#)
- [Top Tech Provider Trend for 2023: Intelligent Applications](#)
- [Emerging Technologies: How Intelligent Applications Are Using Alternative Data and Algorithms](#)
- [How to Build Knowledge Graphs That Enable AI-Driven Enterprise Applications](#)
- [Quick Answer: How Will AI in Microsoft 365 Copilot Impact the Workplace?](#)

Corporate Legal Management

[Back to Top](#)

Legal departments often lag behind other corporate functions in utilizing technology to control costs and improve outcomes. AI-based solutions are seen as a shortcut, compared with conventional solutions without AI. But the relevance and readiness of the approaches in emerging solutions vary greatly. Buyers show increasing interest in the potential of AI-based solutions to automate manual tasks, discover new insights, increase operational efficiency and manage risk. In particular, ChatGPT will likely have a near-term influence on the legal technology market. Legal and compliance leaders are closely monitoring to see how ChatGPT and other large language models will impact functional operations and responsibilities.

Opportunities to improve legal practices using AI include:

- **Contracts** — Contract assembly, negotiation, due diligence, risk scoring, life cycle management
- **E-discovery** — Document classification, data extraction, text analysis
- **Legal spend** — Invoice classification
- **Litigation** — Legal research and insights

- **Generating legal documents** — Classification, search and document analysis
- **Legal self-service** — Improve speed and client satisfaction at a lower cost
- **Intellectual property** — Trademark/patent search and analysis, patent drafting and prosecution
- **Risk and compliance** — Regulatory tracking, internal monitoring and reporting

Analyst resources: [Ron Friedmann](#), Nicholas Sworek, Chris Audet

Research resources:

- [Market Guide for Corporate Legal Operations Technology](#)
- [Market Guide for Third-Party Risk Management Solutions](#)
- [Predicts 2023: Increasing Corporate Legal and Compliance Technology Investments Amid Economic Volatility](#)
- [Hype Cycle for Legal and Compliance Technologies, 2022](#)
- [Understanding the Legal Automation Opportunity](#)
- [Gartner Addresses Frequently Asked Questions on ChatGPT](#)
- [3 Law Firm Innovation Initiatives General Counsel Should Consider for Lower Cost and Better Outcomes](#)

Customer Service, Support and CRM/CX

[Back to Top](#)

AI-related technologies are used in multiple areas of customer service and support. Examples include using AI to predict what customers will ask for and to proactively deflect inbound inquiries; virtual customer assistants (VCAs) with speech recognition for self- and assisted service; sentiment analysis; automated/augmented quality assurance; and bot orchestration design tools.

These technologies not only allow organizations to move assisted service requests to self-service in the contact center, they also allow customers to engage 24/7 across channels, delivering the experience that customers expect. AI is used in the channels of interactive voice response (IVR), web chat, email management, chatbots, VCAs, messaging and personalization. Intelligent assistants work with a human in the loop to assist when situations demand it. In some cases, a human provides supervised training to allow the virtual assistant to better learn its tasks.

Analyst resources: [Steve Blood](#), [Wynn White](#), [David Norrie](#), Andrew Charles Moorhouse, Bern Elliot, Uma Challa, Anthony Mullen, Melissa Davis

Research resources:

- [Use-Case Prism: Artificial Intelligence for Customer Service](#)
- [Introduction to AI for Service and Support Leaders](#)
- [Market Trend: Conversational AI for Agent Automation Delivers an Efficient Customer Contact Center Experience](#)
- [Quick Answer: How Customer Service Leaders Are Using Artificial Intelligence](#)
- [3 Ways AI Benefits Customer Service Organizations](#)
- [Magic Quadrant for Enterprise Conversational AI Platforms](#)

Digital Commerce

[Back to Top](#)

Digital commerce deals with a large amount of data related to products, pricing, promotions, inventory, orders, and customers, which comes in various formats such as text, image, video, and clickstreams. In addition, digital commerce has a short window of time to capture buyers' attention and convert them into customers. This makes digital commerce a fertile ground for AI, which helps to improve conversion and average order value by predicting event triggers more efficiently and dynamically.

AI in digital commerce is used not only in customer-facing use cases such as product recommendation, search and UI optimization, but also in back-end administrative tasks such as customer segmentation, product data enrichment, pricing optimization, customer analytics, and fraud detection. Many commerce vendors have employed AI in their products to improve the effectiveness of the solution and with proven results. Some vendors also support cold starts with little data and can continuously refine the model as more data becomes available. It is rare for organizations to build their own AI models for digital commerce, given the relatively high maturity of these solutions.

Analyst resources: [Sandy Shen](#), [Mike Lowndes](#), [Penny Gillespie](#)

Research resources:

- [Magic Quadrant for Personalization Engines](#)
- [Improve Product Revenue by Implementing the Right Visual Search Solution](#)
- [Hype Cycle for Digital Commerce, 2022](#)

Finance

[Back to Top](#)

CFOs and the finance team view and work with AI in two distinct ways. First, as the key business function focused on fiscal responsibility, managing investments, funding and overall financial performance – the finance function is often working closely with the CEO to ensure investments in AI are aligned to the business goals. The second focus of the finance team is to identify, vet and deploy AI and other technologies to ensure the highest performance of the finance function. This section is focused on the second category.

Gartner has extensive research focused on the finance function. Examples of key findings include:

- Leading AI finance organizations successfully deploy AI for twice as many use cases (eight) compared to others (four).
- Only 30% of finance organizations are leaders in AI, having implemented AI at the speed, quality and scale required to improve finance KPIs as well as enterprise outcomes.

- Four specific actions predict AI success in finance: (1) hiring AI-specific talent, (2) acquiring AI-embedded software, (3) experimenting broadly with AI across finance, and (4) selecting analytical leaders who are willing to lean into experimentation and new roles.
- All of these findings combined with action items can be explored in the following research: [4 AI Implementation Lessons From Leading AI Finance Organizations](#).

The top five most common use cases for AI deployment by leading AI finance organizations are:

- Accounting processes
- Financial analysis
- Back-office processing
- Cash flow forecasting
- Financial statement forecasting

Analyst resources: [Clement Christensen](#), [Mark D. McDonald](#)

Research resources:

- [Time to Impact of AI Investments in Finance](#)
- [Quick Answer: What Should CFOs Do Now About ChatGPT?](#)
- [The AI Generation — How to Start a Team of Experts Building the Future of Finance: Presentation](#)
- [Podcast: CFOs' Top 5 New Year's Resolutions](#)
- [Use Artificial Intelligence to Supercharge Your Finance Staff](#)
- [Accelerate AI Initiatives With A Citizen Data Scientist Skills Program Customized for Finance](#)
- [Tool: Finance Citizen Data Scientist Training Plan Template](#)

Human Capital Management/Recruiting

[Back to Top](#)

HCM and recruiting leverage AI technology and solutions in multiple ways. The principal applications are as follows:

- **Recruiting** — A wide variety of applications of AI exist in the recruiting space, often focused on matching talent supply and demand or predicting recruitment success.
- **Skills and job ontologies** — Using more advanced natural language processing and knowledge graph techniques to establish skill and job ontologies on a global basis (multilingual) is allowing for a new generation of search and matching capabilities to emerge.
- **Sentiment analysis and theme detection** — Used in voice of the employee and employee engagement measurement tools.
- **Recommendation engines** — Used for learning content, mentors, career paths and adaptive learning paths.
- **Chatbots and hyperautomation** — In HR service management, chatbots are primarily used for Tier 0 or Tier 1 support of employees seeking support, information or basic services. Hyperautomation is most frequently used to enable the automation of administrative processes.

Because these solutions involve personal data about workers, digital ethics principles need to be applied. Responsible employers take this into account, putting the necessary controls into place to ensure the proper build and usage of machine learning (ML) on employee data.

Analyst resources: [Helen Poitevin](#), [John Kostoulas](#), [Eser Rizaoglu](#), [Travis Wickesberg](#), [Jackie Watrous](#)

Research resources:

- [Quick Answer: Can ChatGPT Be Used in HR?](#)
- [Innovation Insight for Internal Talent Marketplaces](#)
- [Infographic: Artificial Intelligence Use-Case Prism for HCM Technology](#)
- [Innovation Insight for AI-Enabled Skills Management](#)

IT Operations/Service Desk

[Back to Top](#)

AIOps platforms maximize monitoring investments and minimize the data science expertise required. Integrating automation into the AIOps landscape amplifies the value, but the realistic intersection between automation and AIOps is relatively small and dependent on traditional and static automation assets.

AI is also being applied in IT service management (ITSM) in the form of virtual support agents (VSAs). VSAs provide IT support in an ITSM scenario, alongside the IT service desk. It extends chatbot capabilities by taking action on behalf of the business user to perform tasks such as resetting passwords, deploying software, escalating support requests and carrying out changes to restore IT services. Integrated AI for automated and assisted insight is one of the core capabilities in ITSM tools for pulling relevant information from knowledge management sources.

Analyst resources: [Steve White](#), [Pankaj Prasad](#), Gregg Siegfried, Matt Crossley, Padraig Byrne, Chris Matchett, Rich Doheny, Siddharth Shetty

Research resources:

- [Infographic: Artificial Intelligence Use-Case Prism for AIOps](#)
- [Monitoring and Observability for Modern Infrastructure and Applications](#)
- [Market Guide for Infrastructure Monitoring Tools](#)
- [Market Guide for AIOps Platforms](#)
- [Infographic: 6 Opportunities to Automate Incident Management](#)
- [Magic Quadrant for IT Service Management Platforms](#)

Marketing

[Back to Top](#)

AI for marketing comprises systems that use analysis of data and training regimens for marketing use cases to derive working models without being explicitly programmed. AI technology often surprises and confuses people by executing tasks formerly thought to require human intelligence, such as carrying on conversations, recognizing facial expressions or writing effective marketing copy.

AI often has its most pragmatic applications for marketing as an ingredient in broader marketing applications such as personalization engines, multichannel marketing hubs, content marketing platforms (CMPs) and account-based marketing (ABM) platforms. Recent advancements are leading to end-to-end solutions that are providing the foundation for truly transformational products. Use cases include improving advertising with better targeting, generating new content, assembling dynamic experiences and improving marketing engagement with tools such as channel preference models and send-time optimization.

Analyst resources: [Jason McNellis](#), [Nicole Denman Greene](#), [Andrew Frank](#), Noah Elkin

Research resources:

- [Use Generative AI to Enhance Content and Customer Experience](#)
- [Quick Answer: How Should CMOs Respond to ChatGPT Today?](#)
- [Predicts 2023: AI, Social Toxicity and Disappearing Customers Forge the Future of Marketing](#)
- [Quick Answer: How Can Influence AI Improve My Customer's Digital Experience?](#)
- [Podcast: Who's Afraid of Generative AI? — With Nicole Greene](#)

Sales and Lead Management

[Back to Top](#)

AI and sales technologies can be seen in, for example, capabilities for:

- Identifying new leads and opportunities based on similar existing customers
- Analyzing customer and seller conversations to deliver engagement insights and sentiment analysis, as well as to improve sales coaching, skill building, and topic modeling for suggested next best actions

- Suggesting content for sellers to send to prospects that they will be most likely to engage with
- Forecast prediction, which uses insights on deals in the pipeline that sellers expect to close in a given period and makes a prediction on likelihood to close on multiple levels of the sales hierarchy

AI in sales continues to proliferate with increasing use cases within the sales technology landscape. Moreover, Gartner continues to see investment and releases by vendors in a few notable areas, such as conversation intelligence, AI-guided selling, revenue enablement, and activity intelligence. More recent developments promise to infuse sales technologies with generative AI capabilities to improve personalization within sales communication mediums, as well as on content generation.

Increasingly, foundational technologies such as sales force automation platforms (CRM for sales) are signaling a shift from mere systems of record to systems of engagement and insight through AI-enabled capabilities. This shift has allowed sales organizations to partake in AI sales features and capabilities through out-of-the-box enhancement and releases from this foundational technology, with some not needing to invest adjacent resources and additional expenses. Much of these inherited features are best suited for non-complex sales processes and data models. The influx of AI technologies for sales and lead management use cases is being posited for multiple sales roles such as sales leadership, sales managers and sales representatives.

Analyst resources: [Adnan Zijadic](#), [Melissa Hilbert](#), Guy Wood, Varun Agarwal, Julian Poulter

Research resources:

- [Hype Cycle for CRM Sales Technology, 2022](#)
- [Magic Quadrant for Sales Force Automation Platforms](#)
- [Introduction to AI for Sales](#)
- [2022 Strategic Roadmap for Sales Analytics](#)

Security and Fraud Detection

[Back to Top](#)

“AI” is a term that is used in different ways within security and fraud detection. Advanced analytics are transforming security and fraud use cases, markets and vendors, which are in turn evolving. Organizations are adapting to all these changes.

AI technologies are being applied to the four phases of adaptive security architecture: protect, detect, respond and predict. Gartner research looks at the integration of these techniques into different security and fraud detection domains, and how this is being applied to solve old and new problems.

Analyst resources: [Akif Khan](#), [Jeremy D'Hoinne](#), [Peter Firstbrook](#), Pete Shoard, Felix Gaehtgens

Research resources:

- [5 Best Practices CISOs Must Adopt for a Successful AI Implementation](#)
- [Infographic: AI Use-Case Prism for Cybersecurity](#)
- [Market Guide for Online Fraud Detection](#)
- [Buyer's Guide for Fraud Detection in Banking](#)

Sourcing and Procurement

[Back to Top](#)

The major opportunity of AI in the areas of sourcing, procurement and vendor management (SPVM) is in automating manual tasks. A result of this opportunity is that AI is rapidly becoming the subject of hype as more technology product managers are working to incorporate it into their roadmaps and into existing products and workflows.

Existing AI applications in SPVM are quite few and tend to be narrow in scope. They use basic ML technologies and include spend classification and contract analytics. Additional use cases are emerging in areas such as risk management, candidate matching (within contingent workforce management), sourcing automation, virtual purchasing assistance and voice recognition.

To be effective, AI for procurement will require data. But data will be scarce as long as adoption of underlying procurement applications, such as source to pay (S2P) and external workforce management solutions, remains limited.

Analyst resources: [Patrick Connaughton](#), [Kaitlynn Sommers](#), [Micky Keck](#)

Research resources:

- [Infographic: AI Use-Case Prism for Sourcing and Procurement](#)
- [Lack of Focus on AI Licensing Will Result in Higher Costs, Risks and Long-Term Headaches](#)
- [Market Guide for E-Sourcing Applications](#)

Supply Chain

[Back to Top](#)

In the supply chain, AI can be deployed to improve supply chain functional and cross-functional performance. It augments human decision-making ability or automates routine and nonroutine tasks.

AI is a prerequisite to supply chain digitization. Unlike traditional decision support, AI combines a variety of data science techniques to analyze large sets of data. AI identifies and predicts patterns, and learns from past performance to arrive at conclusions. AI augments human decision making with actionable recommendations. AI supports the vision of digitalization by automating decisions and execution with little to no human intervention.

With increasing complexity, supply chains struggle to contextualize events, understand trade-offs and make timely decisions. With AI, supply chain organizations can identify complex patterns, and automate decision making and execution. The potential for AI adoption is vast across a multitude of use cases in supply chain functions and external trading partners. In addition to improving decision quality, AI adoption can free up human talent to take on higher value-added responsibilities.

Analyst resources:

- **Logistics and transportation** — [Carly West](#), [Jose Reyes](#)
- **Manufacturing** — [Simon Jacobson](#)
- **Warehouse** — [Dwight Klappich](#)
- **Supply chain planning** — [Tim Payne](#), [Amber Salley](#), [Pia Orup Lund](#)

- End-to-end supply chain — [Noha Tohamy](#), Christian Titze

Research resources:

- [Infographic: Artificial Intelligence Use-Case Prism for Supply Chain](#)
- [Use-Case Prism: Artificial Intelligence for Transportation](#)
- [Leverage Advanced Analytics in Transportation to Reduce Costs and Improve Processes](#)
- [Predicts 2023: Supply Chain Technology](#)

Translation Services Enabled by AI

[Back to Top](#)

Gartner defines AI-enabled translation services as those able to use AI methods to improve the speed, quality and cost of language translation workflows. The AI-enabled service with the most profound effect is neural machine translation (NMT). However, other services are now being deployed to augment and automate additional tasks in the enterprise translation process. Examples include:

- Translation management system workflow classifications that use ML methods to train the workflow classification based on feedback about the results
- Adaptive post-editing machine translation (PEMT) and computer-assisted translation (CAT) editing tools that incorporate any edits back into the translation model
- Translation risk assessments that use composite AI (that is, multiple different methods) to provide real-time predictions of the level of risk in a given translation
- Enterprise translation hubs that allow enterprises, via a single interface, to select the optimal resource — for instance, selecting between different NMT solutions based on cost or quality
- NMT data cleaning and preparation services, which allow for improved NMT model training and customization

These solutions may be used to augment the current translation processes or to develop new workflows.

Analyst resources: [Gabriele Rigon](#), [Bern Elliot](#)

Research resources:

- [Market Guide for AI-Enabled Translation Services](#)
- [Toolkit for AI-Enabled Translation Services — Vendor Profiles for Market Guide](#)
- [Cool Vendors in Translation Technology](#)
- [Best Practices for Localizing Your Chatbot Initiative](#)
- [Maverick* Research: Machine Translation Can Save the World's Languages From Extinction](#)
- [Hype Cycle for Natural Language Technologies, 2022](#)

Workplace and Digital Workplace

[Back to Top](#)

The broad embrace of AI in the workplace should be done with a focus on improving the digital employee experience — the primary goal of a digital workplace. Digital employee experience is the purposeful delivery of personal and team productivity tools with a focus on human-centric outcomes — increasing intent to stay and reducing the digital friction involved in the modern workplace.

In the context of a digital workplace, most employees will be exposed to AI services — which they may or may not recognize as AI — without any IT involvement, because they come packaged as features in SaaS applications. These “everyday AI” features perform tasks such as suggesting email replies, recommending content and people, and identifying patterns in structured data. Such an introduction of AI services will expose the workforce to the benefits — and limitations — of AI in the context of everyday work.

Emerging capabilities for virtual assistance that would greatly benefit from AI include arranging workplace schedules based on collaboration patterns, making workplace reservations based on preferences and previous behavior, and nudging employees to come to the workplace.

Analyst resources: [Adam Preset](#), [Matt Cain](#), [Lane Severson](#), [Mike Gotta](#), [Nikos Drakos](#) (knowledge management), [Mike Fasciani](#), [Craig Roth](#), [Stephen Emmott](#), [Tori Paulman](#)

Research resources:

- [Quick Answer: How Can Everyday AI Improve Worker Digital Dexterity?](#)
- [Transform the Digital Employee Experience with an Evolving Digital Workplace](#)
- [Predicts 2023: Build the Digital Day of Tomorrow](#)
- [Market Guide for Workplace Experience Applications](#)

Business Initiatives

Data Quality

[Back to Top](#)

Trusted data forms the basis for achieving business objectives and is also a key enabler for building competitive advantage. Data quality remains a top priority in data and analytics initiatives. With rapid growth of distributed data landscapes, the diversity of data and urgent business requirements, organizations are seeking transformative approaches that are quick, cost-effective, and easy to implement to address ongoing and pervasive data quality challenges.

Augmented data quality represents an enhanced capability to evolve traditional data quality processes — for improved insight discovery, best-next-action suggestions and accuracy — through the use of metadata, knowledge graphs and AI-related technologies. This capability has shown a significant increase in efficiency and productivity by automating process workflows, minimizing dependency on humans and reducing time to value by means of data quality improvement.

AI and ML technologies augment the data quality life cycle of “discover, assess, associate, validate, correct and monitor” and are focused on working with individual datasets more efficiently. AI and ML techniques analyze datasets and detect anomalies or infer rules using functional dependency analysis. Cleansing of datasets can also be automated using clustering algorithms to spot outliers and recommend suggested corrections. This approach allows for a more in-depth and rapid execution of data quality actions on individual datasets. The modern data quality solutions with augmented capabilities are automating traditional data quality practices or introducing new processes to enhance data quality best practices.

Analyst resources: [Melody Chien](#), [Ankush Jain](#), [Jason Medd](#)

Research resources:

- [The State of Data Quality Solutions: Augment, Automate and Simplify](#)
- [Magic Quadrant for Data Quality Solutions](#)
- [Critical Capabilities for Data Quality Solutions](#)
- [Data and Analytics Essentials: Data Quality](#)

Digital Business Initiatives

[Back to Top](#)

AI innovation is one of multiple forces disrupting existing markets and enabling new digital business initiatives. AI technologies and methods are used as part of digital business initiatives to improve many types of business decisions by incorporating more kinds of data into decision algorithms and applying more sophisticated mathematical techniques such as machine learning and optimization. This provides more efficient resource allocation, reduces business risk and improves financial performance. Use cases include:

- Implementing digital agents and personal assistants through the use of natural language, audio and image recognition to enhance the human-machine interface
- Automating more aspects of business operations to reduce costs and provide faster, more-consistent business processes
- Developing digital applications in less time and making frequent updates easier and more practical by using generative AI software development techniques

Analyst resources: [Pieter den Hamer](#), [Arun Chandrasekaran](#), Brian Burke, Erick Brethenoux

Research resources:

- [Building a Digital Future: Emergent AI Trends](#)
- [2 Steps to Improve Business Decisions Using Data and Analytics](#)
- [How to Use Real-Time Analytics When Building an Enterprise Nervous System](#)
- [Market Guide for Event Stream Processing](#)

- [How to Use Machine Learning, Business Rules and Optimization in Decision Management](#)
- [4 Top Practices That Help EA/TI Leaders Add Value to Artificial Intelligence Initiatives](#)

Internet of Things

[Back to Top](#)

IoT-connected products, equipment and assets generate large amounts of data. AI — used to better understand the current/future state of connected things and to improve situation awareness — needs large amounts of data. This cycle between the IoT, edge and AI will initially have the greatest impact on visual, audio, temperature, weather, and machinery applications, but its use for condition, predictive maintenance, asset utilization, energy efficiency, and quality management is proliferating.

The IoT and AI primarily interact in one of three architectures:

1. **The IoT as input to the AI system:** A data-gathering mechanism for the AI system, especially for training. Examples include video surveillance cameras in smart cities and retail, environmental sensors in smart agriculture, and equipment sensors in manufacturing.
2. **AI as the application on the IoT system:** Examples include smart home devices, robots and self-diagnosing equipment.
3. **The IoT and AI as a two-way system:** Both IoT and AI systems interact with each other on a continuous basis. Examples include onboard inferencing engines in autonomous vehicles and embedded sensors in surgical robots.

Analyst resources: [Scot Kim](#), [Alfonso Velosa](#), [Milly Xiang](#), [Eric Goodness](#), Bettina Tratz-Ryan, Bill Finnerty, Rajesh Narayan, Emil Berthelsen, Paul DeBeasi

Research resources:

- [Magic Quadrant for Global Industrial IoT Platforms](#)
- [The 3-Step Process of Contextualizing IoT and Manufacturing Data to Enable Smart Factories](#)

- [Technology Opportunity Prism: IoT in Smart Cities](#)
- [Cross-Industry Insight: IoT Market Opportunities and Top Spend Use Cases](#)
- [Innovation Insight for Edge AI](#)

Hyperautomation

[Back to Top](#)

Business-driven hyperautomation is a disciplined approach that organizations use to rapidly identify, vet and automate as many business and IT processes as possible. Hyperautomation initiatives continue to be in high demand and funded by enterprises as they can address cost optimization, growth initiatives, or business model innovation or disruption. Hyperautomation initiatives may focus on targeted automation of tasks or processes, augmentation of humans or machines, or enabling autonomous business. As such, there are a myriad of technologies that are architected together to deliver business value.

Hyperautomation involves the orchestrated use of multiple technologies, tools or platforms. Examples include AI, ML, robotic process automation (RPA), integration platform as a service (iPaaS), low-code application platforms (LCAP), intelligent document processing (IDP), process mining, and other types of decision, process, and task automation tools.

One of the most important buyer trends that is emerging is that enterprises are focused on combining and architecting a number of different technologies to deliver on an overall hyperautomation initiative and moreover multiple concurrent initiatives. This evolution is giving rise to the demand for enterprise platform automation (EPA) options. Currently there is no single vendor that is able to fulfill on all these areas.

Analyst resources: [Frances Karamouzis](#), [Keith Guttridge](#), Laurie Shotton

Research resources:

- [Future of Work Trends: Hyperautomation Growth Initiatives Delivered by High-Performance Fusion Teams](#)
- [TechWave Podcast: Demystifying Hyperautomation and Technology Market Dynamics](#)

- [Beyond RPA: Build Your Hyperautomation Technology Portfolio](#)
- [Gartner Fast Answer: What Should I Know About Enterprise Low-Code Application Platforms?](#)
- [Quick Answer: How Can I Help Citizen Developers Be Successful With a Low-Code Application Platform?](#)
- [Infographic: Understand Intelligent Document Processing](#)
- [How to Select the Right Mix of Integration Technologies](#)
- [Choose the Best Integration Tool for Your Needs Based on the Three Basic Patterns of Integration](#)

Robotics and Sensors

[Back to Top](#)

Robotics is a branch of technology that deals with the design, construction, operation and application of robots, as well as with the technology for control, sensory feedback, data processing and AI dealing with spatial interaction. The technology provides machines that can take the place of or work alongside humans in dangerous environments or manufacturing processes, or that go beyond human capabilities in scale, speed or strength. Robots may offer behavior and/or cognition comparable to human processes, taking on tasks autonomously with minimal guidance from, or interaction with, humans.

Analyst resources: [Annette Jump](#), [Bill Ray](#), [Dwight Klappich](#), Nick Ingelbrecht, Jonathan Davenport

Research resources:

- [Emerging Technologies: AI Roadmap for Smart Robots — Journey to a Super Intelligent Humanoid Robot](#)
- [Emerging Tech Roundup: Capturing the Disruption Opportunities With Smart Robots](#)
- [Hype Cycle for Mobile Robots and Drones, 2022](#)

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Business Domains

Application Suites
Corporate Legal Management
Customer Service, Support and CRM/CX
Digital Commerce
Finance
Human Capital Management/Recruiting
IT Operations/Service Desk
Marketing
Sales and Lead Management
Security and Fraud Detection
Sourcing and Procurement
Supply Chain
Translation Services Enabled by AI
Workplace and Digital Workplace

Business Initiatives

Data Quality
Digital Business Initiatives
Internet of Things (IoT)
Hyperautomation
Robotics and Sensors