



Promising AI Use Cases for the Enterprise in 2024

Presented by: William McKnight

"#1 Global Influencer in Big Data" Thinkers360

President, McKnight Consulting Group

3 X **Inc 5000**



 /in/wmcknight

www.mcknightcg.com
(214) 514-1444



McKnight Consulting Group Partial Technology Implementation Expertise

Big/Analytic/Vector/Mixed Data Management



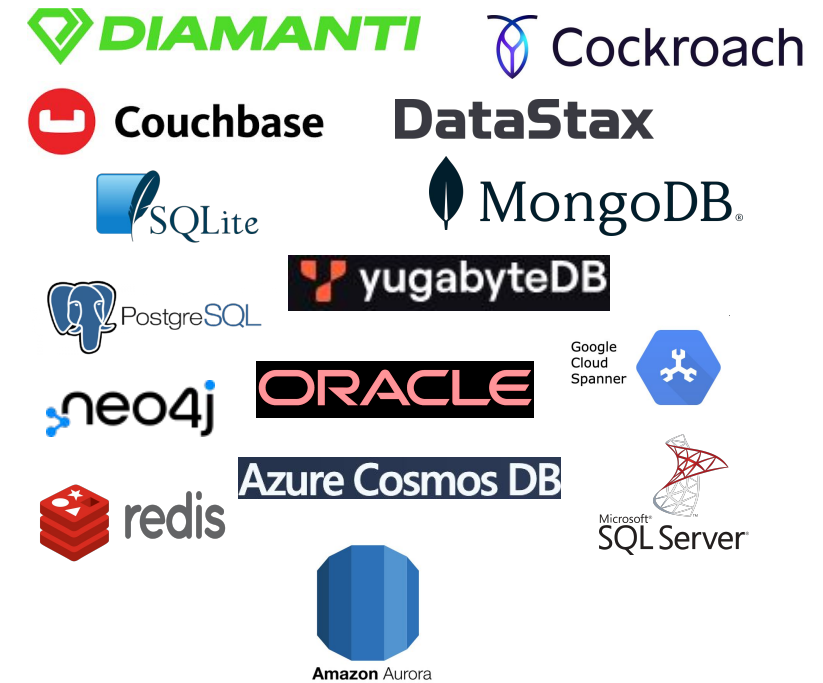
Data Movement and APIs



Data Management



Operational/Transactional Data Management





2022: The Promise of AI

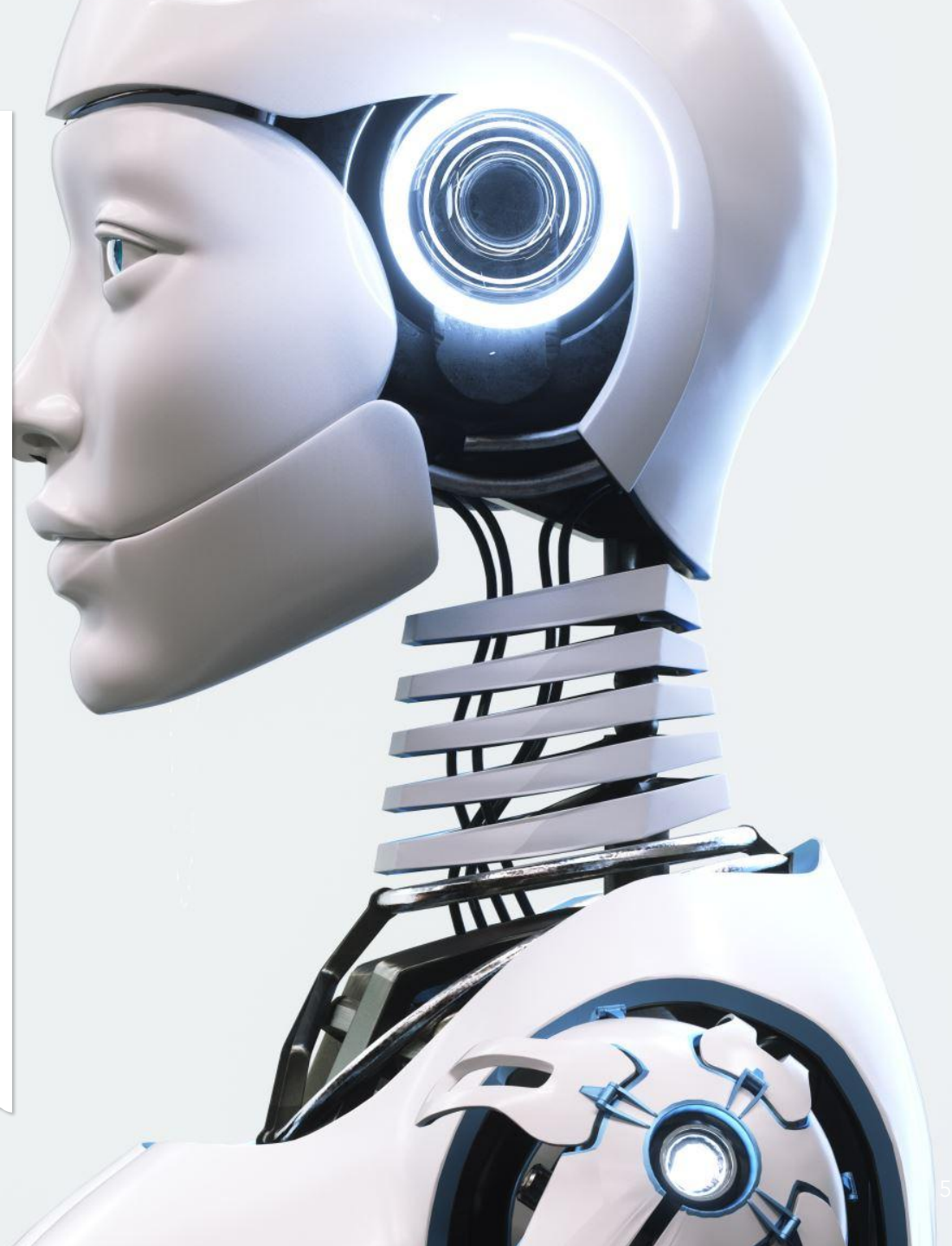
- Music, Art
- Deepfakes
- Reading-Intensive
- Healthcare: Genomic Medicine, Virtual Visits, Tele-health, AI Diagnostics, Robotics
- Logistics
- Hundreds of companies will be built around an API for something like ChatGPT
- AI Companions
- Personalized Education

The AI Market

- The global AI market is expected to reach **over \$1.8 trillion** by 2030.
- Staff productivity is increasing due to the technology.
- Most businesses are expecting that AI implementation will drive sales growth.
- The current talent pool is insufficient.
- GDP is expected to grow in the next few years as a result of AI.
- Policies for AI Ethics and biases are largely undeveloped.

Common Types of AI

- Generative AI
- Robotic Process Automation (RPA)
- Data Science
- Speech Recognition
- Computer Vision



Realities

- 65% of predictive models are never implemented in production
- 5 months is the average to develop, test, validate, deploy and scale one new analytical mode
- Data is still challenging: A majority of a data scientist's time is data wrangling
- Projects are still poorly run, without good goals
- Spending is still flat





Areas of AI Implementations and Use Cases



Ground Rules

- Use Cases In Production
- Enterprise
- Idea Generating
- “Real” AI
- The “best” out there (that can be talked about)

Automated Customer Service

- Chatbots and virtual assistants driven by AI may reply to customer questions whenever they arise, improving customer response times.
- Chatbots, conversational AI, and AI-powered content marketing allow businesses to automate workflow processes, optimize operations, and customize customer experiences.
- To boost sales and marketing growth, AI models can be used for hyper-targeted advertising, dynamic pricing optimization, and highly personalized leads.
- These technologies can also help businesses manage risks, obtain insights from data, and make wise decisions.
- They can also predict future occurrences, promote innovation and creativity, and ensure security and compliance.

Automated Customer Service Use Cases

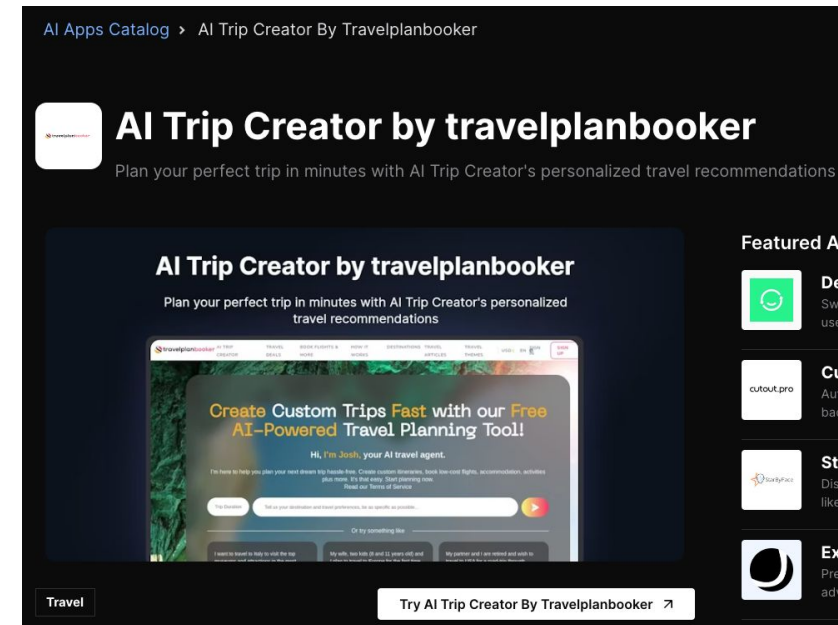
- Brink's Home
 - Leveraged AI to optimize service call scheduling and cross-sell recommendations
 - Boosted Average DTC Package Size
 - Increasing customer acquisition cost (CAC) and competitive pressure.
 - Significantly increased average DTC package size and revenue
- **Compliance Aspekte**
 - Replaced rule-based algorithms with AI-powered features
 - Developed a new "co-pilot" chatbot with advanced capabilities
 - Automatically associates documents with compliance requirements
 - Provides relevant insights and instructions



Automated Customer Service Use Cases

- **TravelPlanBooker**

- Rule-based system struggled with complex user inputs.
- Prone to conflicts and scalability issues.
- Implemented generative and conversational AI for:
 - Handling abstract user queries.
 - Offering nuanced travel advice.
 - Users adjusted plans on the go.



Automated Customer Service Use Cases

- Estée Lauder
 - Voice-enabled makeup assistant for visually impaired users.
- Lufthansa Group
 - Accelerated its move toward digital transformation during the COVID-19 pandemic by leveraging AI.
 - Its AI takes in crew availability and locations, passenger demand, aircraft maintenance status, weather, and many other variables.
 - It will then send suggested scenarios – for example, a particular aircraft for a specific flight – to human operations controllers to support their decision-making.
 - Uses AI to manage high volumes of customer queries about canceled and rescheduled flights, which helped improve the overall customer experience.



Predictive Maintenance in Manufacturing

- AI algorithms analyze data from machinery to predict failures before they occur, reducing downtime and maintenance costs.
- AI can create efficient maintenance plans based on equipment usage, wear and tear, and predicted failures.
- Proactive maintenance minimizes unexpected equipment failures, leading to increased production uptime.
- By understanding equipment health, manufacturers can optimize asset usage and performance.
- Prevents costly emergency repairs and reduces overall maintenance expenses.
- Identifies potential safety hazards before they occur, protecting workers and equipment.
- Provides actionable insights into equipment performance and maintenance needs.
- AI can be used to create virtual replicas of equipment for testing maintenance scenarios.

Predictive Maintenance in Manufacturing Use Cases

- GE
 - Uses AI to monitor aircraft engines, identifying maintenance needs proactively to ensure safety and efficiency.
 - Detect anomalies in engine performance before they escalate into critical failures.
 - Determine the optimal timing for inspections and repairs, reducing downtime and costs.
 - By preventing unexpected engine failures, GE significantly improves aviation safety.
 - Optimized maintenance schedules lead to increased aircraft availability and reduced operational costs.
 - Data collected from engine performance informs future engine designs and material selections.
- Rockwell Automation
 - Uses AI to streamline manufacturing.
 - Analyze sensor data to predict equipment failures and recommend preventative maintenance.
 - Automate complex tasks and optimize production lines.
 - Reduced downtime, minimized waste, optimized production schedules, cost savings, and increased output.
- Rolls-Royce
 - Uses AI for jet engine predictive maintenance, improving efficiency and reducing carbon emissions.
- District of Columbia Water and Sewer Authority
 - Employs AI for predictive maintenance on water main breaks and pipe assessment using CCTV footage.
 - DC Water utilizes "Pipe Sleuth" for real-time sewer pipe maintenance analysis.

Fraud Detection in Finance

- AI systems analyze transaction patterns to identify and prevent fraudulent activities in real-time
- Machine learning anomaly detection
- Real-time risk assessment and transaction authorization
- Network analysis
- AI-powered identity verification



Fraud Detection in Finance Use Cases

- **JP Morgan Chase**

- Employs over 200 data scientists and machine learning engineers, focusing on enhancing security measures and fraud detection capabilities.
- AI used to detect fraudulent activities, assess credit risk, and manage market volatility.
- AI can automate routine tasks, optimize processes, and reduce costs.
- AI can help the bank comply with complex regulations by automating compliance checks and identifying potential risks.

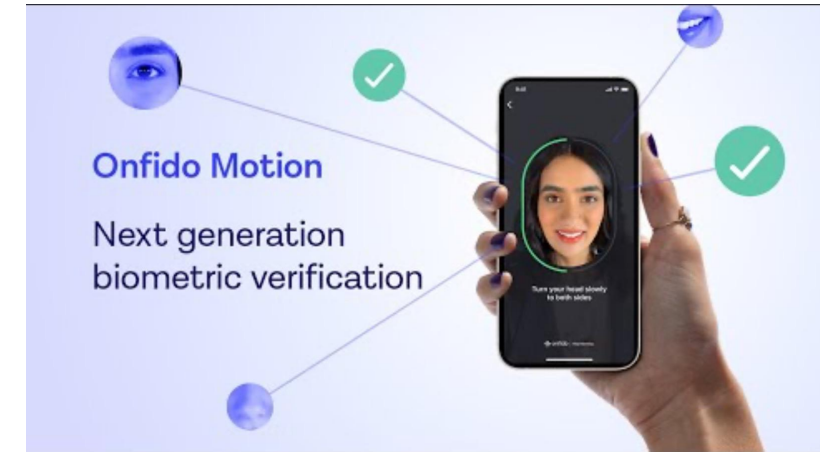
Fraud Detection in Finance Use Cases

- **Intuit**

- Through its Generative AI Operating System (GenOS) platform, Intuit AI offers precision in financial analysis and contributes to more secure financial operations.
- Custom-trained financial large language models (LLMs) that specialize in solving tax, accounting, marketing, cash flow, and personal finance challenges.
- Intuit's GenOS empowers Intuit technologists to design, build and deploy breakthrough generative AI (GenAI) experiences with unparalleled speed.
 - With this robust data set, Intuit is delivering personalized AI-driven experiences to more than 100 million consumer and small business customers, with speed at scale.
- The LLMs, informed by a vast data layer, combined with Intuit's network of domain experts and data protection controls position the company to provide customers with relevant, personalized information and advice across our product portfolio.

- **Onfido**

- Employs advanced AI and machine learning algorithms to authenticate individuals through a combination of document verification, facial biometrics, and other data points.



Personalized Marketing

- AI analyzes customer data to tailor marketing campaigns, improving engagement and conversion rates.
- Data is analyzed to identify patterns, preferences, and segments.
- AI algorithms create detailed customer profiles, dividing the audience into specific segments based on shared characteristics and behaviors.
- By analyzing historical data, AI can predict customer behavior, such as purchase likelihood, churn risk, or product preferences.
- AI-powered recommendation engines suggest products or services based on individual customer preferences and past behavior.
- AI can optimize product pricing in real-time based on customer demand, inventory levels, and competitor pricing.
- AI analyzes campaign performance data to refine targeting, messaging, and channels for maximum impact.
- AI can visualize the customer journey and identify touchpoints for personalized interactions.
- AI-powered chatbots provide personalized customer support and assistance.

Personalized Marketing Use Case

- **Spotify**

- Spotify's AI system personalizes music recommendations, significantly enhancing user experience and engagement
- Spotify meticulously collects data on user listening habits, including genres, artists, songs, and playlists.
 - This data is then analyzed to identify patterns and preferences.
- AI-powered algorithms create custom playlists based on user behavior, offering a tailored music experience.
- By analyzing listening history and trends, Spotify can anticipate user preferences and recommend new music or artists.
- Using user data, Spotify delivers highly relevant ads, increasing ad engagement and ROI.
- Spotify divides users into segments based on listening habits, demographics, and other factors to tailor marketing campaigns.
- Spotify's platform adjusts recommendations based on real-time user behavior, ensuring the experience is constantly evolving.
- Features like Spotify Wrapped leverage user-generated content and social sharing to amplify brand awareness.

Supply Chain Optimization

- AI predicts demand, optimizes inventory levels, and identifies efficient delivery routes, improving logistics and reducing costs.
 - Enabling businesses to anticipate fluctuations and adjust inventory levels accordingly.
- By analyzing historical data and real-time demand, AI optimizes stock levels, reducing carrying costs and stockouts.
- AI determines the most efficient delivery routes, considering factors like traffic, distance, and driver availability.
- AI analyzes various data points to create accurate demand forecasts, improving production and procurement planning.
- AI identifies unusual patterns in supply chain data, helping to prevent disruptions and losses.
- AI assesses potential risks, such as supplier disruptions or natural disasters, and helps develop contingency plans.
- AI optimizes the overall structure of the supply chain, including facility location and transportation modes.
- AI analyzes market trends and competitor pricing to determine optimal pricing strategies.

Supply Chain Optimization Use Case

- **Nordstrom**

- Uses AI for inventory control and order routing, showcasing the potential for AI to streamline supply chain operations.
- AI analyzes historical sales data, customer behavior, and external factors (e.g., weather, economic trends) to predict product demand accurately.
 - This enables Nordstrom to optimize inventory levels and prevent stockouts or overstocks.
- By analyzing real-time sales data and inventory levels, AI helps determine optimal product placement across different stores and distribution centers.
 - This ensures products are available where and when customers need them.
- AI algorithms calculate the most efficient routes for delivering orders, considering factors such as distance, traffic, and available resources.
 - This reduces delivery times and costs.
- AI analyzes return patterns to identify potential issues with products or shipping processes. This information is used to improve product quality and logistics.

AI in Healthcare for Diagnosis and Treatment

- AI algorithms assist in diagnosing diseases and developing treatment plans, improving patient outcomes. AI-powered symptom analysis
- Virtual consultations and AI-powered chatbots
- Health conditions monitoring and wearable integration
- Mental health support and self-care tools also



AI in Healthcare for Diagnosis and Treatment Use Cases

- **Moderna**

- Moderna's use of AI in drug discovery exemplifies how AI can accelerate the development of therapeutics, as seen with their rapid COVID-19 vaccine development.
- Moderna's AI platform analyzes genetic and protein data to identify potential drug targets. AI enables efficient mRNA therapeutic design.
- AI played a crucial role in identifying potential vaccine candidates, optimizing mRNA sequences, and predicting vaccine efficacy.
- Moderna leveraged AI to analyze vast amounts of biological data to understand the virus and inform vaccine design.
- AI helped optimize manufacturing and distribution processes, ensuring efficient vaccine delivery.
- AI-powered tools aided in patient recruitment, data analysis, and trial design.

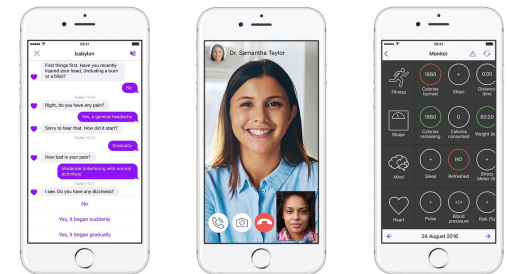
AI in Healthcare for Diagnosis and Treatment Use Cases

- **Freenome**

- This startup uses artificial intelligence to detect cancer with 93% sensitivity, beating out the current pancreatic cancer tests.
- This is a transformative development for patients, as swift and affordable cancer detection will inevitably lead to early treatment, with a higher chance of success.
- Freenome examines a vast array of biological data, including DNA, RNA, and proteins, to create a comprehensive picture of a patient's health.
- AI algorithms identify complex patterns within this data that indicate the presence of cancer, even at its earliest stages.
- Freenome develops and refines machine learning models to improve the accuracy and sensitivity of its cancer detection tests.
- By analyzing large datasets, Freenome gains deeper insights into cancer biology, enabling the development of new diagnostic and therapeutic approaches.

- **Babylon Health**

- Symptom detection, future health forecasts, and even decisions on hospitalization.
- Babylon's AI system can assess patient symptoms, prioritize cases, and determine the appropriate level of care needed.
- AI enhances the virtual consultation experience by providing real-time data analysis and support to healthcare professionals.
- AI helps in monitoring chronic conditions, providing personalized care plans, and predicting potential health risks.
- AI-powered chatbots offer initial support and guidance for mental health concerns.
- In some regions, AI assists in generating prescription recommendations based on patient symptoms and medical history.
- Babylon leverages AI to analyze vast amounts of health data to identify trends, improve services, and support research.



AI-Driven Financial Advisory Services

- AI provides personalized investment advice based on individual financial profiles and market trends, enhancing decision-making for investors.
- AI-powered risk assessment and portfolio optimization
- Smart investment recommendations and stock analysis
- Automated rebalancing and tax optimization
- 24/7 AI-powered support chatbots
- Investment simulators



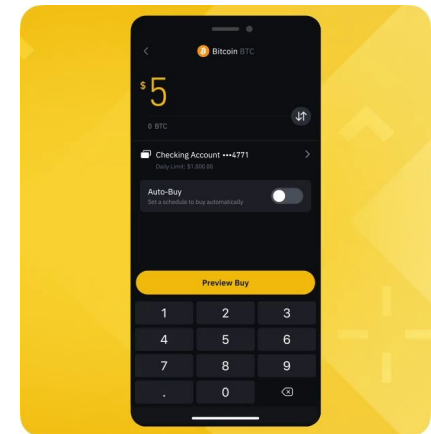
AI-Driven Financial Advisory Services

• **Enova**

- AI platform offers tailored financial analysis and advice, demonstrating the impact of AI in personalizing financial services
- Enova utilizes AI to evaluate creditworthiness more accurately, making credit accessible to those traditionally underserved by traditional financial institutions.
- AI-powered systems analyze vast amounts of data to detect fraudulent activities, protecting both Enova and its customers.
- AI helps identify distinct customer segments based on behavior, demographics, and financial profiles, enabling tailored product offerings.
- AI algorithms determine optimal pricing strategies for different customer segments, maximizing revenue while maintaining competitiveness.
- AI-driven chatbots and virtual assistants provide 24/7 customer support and personalized interactions.

• **Binance**

- AI algorithms analyze vast amounts of transaction data to identify suspicious activities and prevent fraudulent accounts.
- AI helps assess market risks, protect user assets, and ensure regulatory compliance.
- Trading Bot Development: Binance offers AI-powered trading bots that automate trading strategies based on market data analysis.
- AI-driven chatbots provide efficient and round-the-clock customer support.
- AI tools analyze market trends and sentiment to provide valuable insights to traders.
- AI is used to strengthen security measures, such as identifying potential vulnerabilities and threats.



Workforce and HR Analytics

- AI predicts hiring needs, identifies skill gaps, and forecasts employee turnover, aiding strategic workforce planning.
- AI algorithms can identify top talent by analyzing candidate data, including resumes, social media profiles, and assessments.
- By comparing employee skills to organizational needs, AI can pinpoint skill deficiencies and inform training initiatives.
- AI models can predict which employees are likely to leave, allowing for proactive retention strategies.
- AI can analyze employee performance data to identify top performers, areas for improvement, and potential career paths.
- AI helps forecast future workforce needs based on business objectives, economic trends, and demographic changes.
- AI can automate tasks like resume screening, scheduling interviews, and candidate sourcing.
- AI-powered tools can analyze employee feedback to improve engagement and satisfaction.

Workforce and HR Analytics Use Cases

- **Amazon**

- Has found (self-reported) great success in matching talented candidates with suitable roles, assessing them through video software and passing along this information to make contact with qualified candidates.
- Recommending relevant job openings based on browsing behavior.
- Suggesting suitable roles based on skills and experience extracted from resumes (using Natural Language Processing).
- Utilizing online assessments to evaluate skills objectively and offering flexibility.
- Employing ML to pre-screen candidates based on qualifications, increasing efficiency.

- **Schneider Electric**

- Support their employees' development by using AI to match learning and networking opportunities with thought leaders and new projects in the organization.
- OTM grants employees ownership over career development by allowing them to market their skills and volunteer for projects.
- OTM helps identify and fill skill gaps within the organization by connecting employees with relevant opportunities.
- OTM boosts employee satisfaction and retention.
- OTM collects data on employee skills, preferences, and project performance to inform talent management strategies.

Content Creation and Management

- AI generates and optimizes content, improving efficiency and creativity in marketing and media production.
- Tools have revolutionized content creation, enabling businesses to produce high-quality written content at scale.
- Personalized learning paths based on proficiency levels
- AI-driven predictive analytics and adaptive assessments
- Virtual tutors
- Gamification and personalized rewards



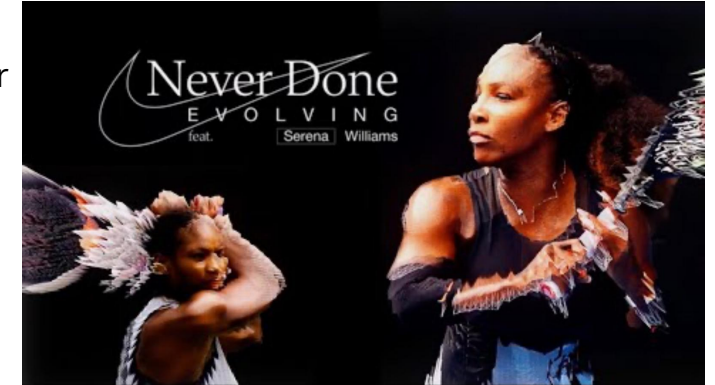
Content Creation and Management

- **Nike**

- Used AI to generate a video of Serena Williams in a match with her younger self in its Never Done Evolving ad campaign.
- AI algorithms analyze customer data to create tailored content, from product recommendations to personalized marketing campaigns.
- AI is used to monitor social media platforms, identify trends, and generate engaging content.
- AI can be used to generate design ideas, create product visuals, and even produce short video clips.
- AI analyzes content performance to optimize future content creation and distribution.
- AI helps identify potential influencers and measure the impact of influencer campaigns.
- AI monitors social media and other platforms to gauge customer sentiment and identify potential issues.

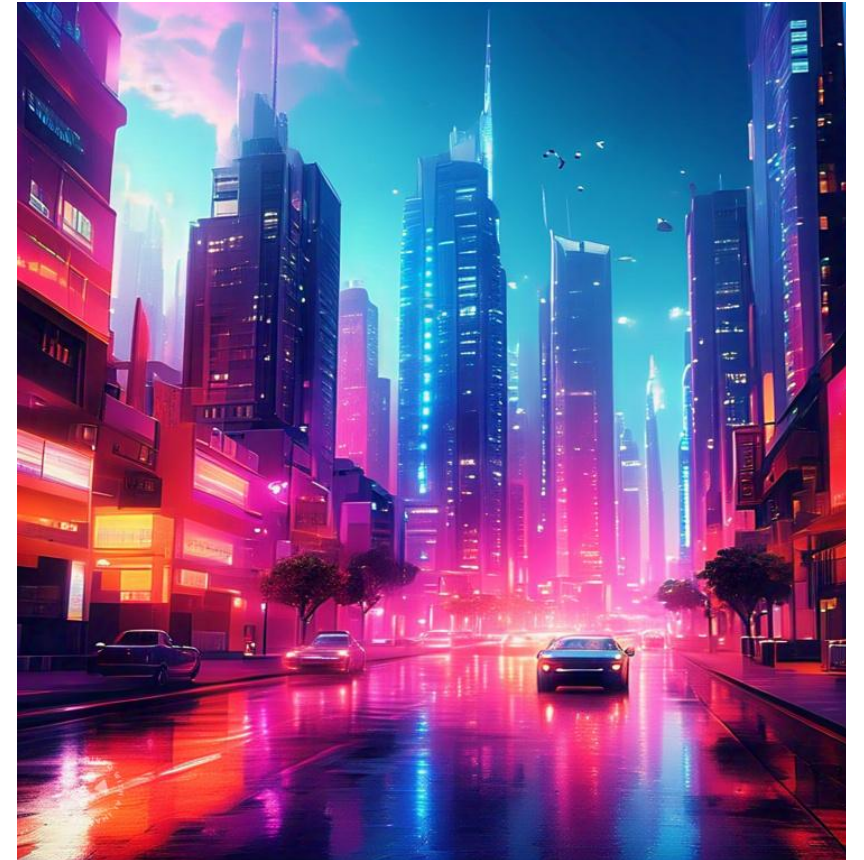
- **Coursera**

- AI analyzes student data to recommend courses and learning paths tailored to individual needs and goals.
- AI adjusts course content and difficulty based on learners' performance and understanding.
- AI-powered virtual tutors provide personalized guidance and support to learners.
- AI assists in generating course materials, such as quizzes, assignments, and video scripts.
- AI-driven chatbots offer immediate assistance with common questions and issues.
- AI helps identify and prevent academic dishonesty.



Cybersecurity and Risk Management

- AI enhances cybersecurity measures by identifying threats and vulnerabilities in real-time, protecting against sophisticated cyber-attacks.
- These use cases highlight the transformative potential of AI across various sectors, driving efficiency, innovation, and growth for enterprises in 2024.
- Threat Detection
- Incident Response
- Risk Assessment and Management
- Identity and Access Management
- Fraud Detection
- Security Operations Center Automation



Cybersecurity and Risk Management Use Cases

- **Netflix**

- Employs AI systems that help monitor their systems, detect inefficiencies, identify looming threats and prevent potential disruptions.
- AI algorithms constantly monitor network traffic, user behavior, and system logs to identify unusual patterns that could indicate a security breach or service disruption.
- AI is used to detect fraudulent activities like account takeovers, payment fraud, and content piracy.
- AI helps protect Netflix's intellectual property by identifying unauthorized content distribution and copyright infringement.
- AI accelerates incident response by automating tasks and providing insights into the attack's impact.

- **Uber**

- AI algorithms analyze vast amounts of data to identify fraudulent rides, payments, and driver accounts.
- AI evaluates potential risks to the platform, including cyberattacks, data breaches, and operational disruptions.
- AI helps identify potential safety risks by analyzing driver and rider behavior, location data, and trip details.
- AI-powered systems monitor for emerging threats and vulnerabilities in real-time.
- AI can automate certain incident response tasks, such as containment and recovery.

Cloud Pricing

- Organizations are using AI to reduce cloud costs and improve efficiency.
- Leads to Improved cost prediction, anomaly detection, cost-saving opportunities, and identification of more cost-effective resources.
- Optimization Recommendations
- Anomaly Detection
- Automated Resource Management
- Predictive Analytics and Forecasting



Cloud Pricing Use Case

- Airbnb
 - Employs AI to manage cloud capacity, build custom cost and usage tools, and optimize storage and computing.
 - Predicting fluctuations in user traffic and booking patterns to optimize resource allocation.
 - Using AI to set optimal pricing for cloud resources based on real-time demand and availability.
 - Identifying underutilized or overutilized resources and recommending adjustments.
 - Detecting unusual spending patterns or resource usage to prevent cost overruns.
 - Forecasting future cloud resource needs based on business growth and seasonal trends.
 - Optimizing the performance and cost-efficiency of AI models used for various Airbnb services.

Summary

- Though AI progress may feel like less than anticipated, it has still been strong in 2024
- Areas with the highest implementations include:
 - Automated Customer Service
 - Predictive Maintenance in Manufacturing
 - Fraud Detection in Finance
 - Personalized Marketing
 - Supply Chain Optimization
 - AI in Healthcare for Diagnosis and Treatment
 - AI-Driven Financial Advisory Services
 - Workforce and HR Analytics
 - Content Creation and Management
 - Cybersecurity and Risk Management
 - Cloud Pricing
- In a future powered by artificial intelligence:
 - A life sciences company would have access to all pertinent research data and exploit AI to create novel medications that would raise the prospect of treating illnesses like pediatric cancer.
 - A small family business that can grow steadily by tailoring offers to each individual customer based on AI's extensive understanding of their preferences in a world where every dollar counts.
 - Chatbots from banks make complex transactions easy, secure, and safe.
- Follow the leader – apply these to your enterprise





Promising AI Use Cases for the Enterprise in 2024

Presented by: William McKnight

"#1 Global Influencer in Big Data" Thinkers360

President, McKnight Consulting Group

3 X **Inc 5000**



 /in/wmcknight

www.mcknightcg.com
(214) 514-1444

