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Promising AI Use Cases for the Enterprise in 2025

Presented by: William McKnight

"#1 Global Influencer in Big Data" Thinkers360

President, McKnight Consulting Group

3 X   **Inc 5000**

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(214) 514-1444

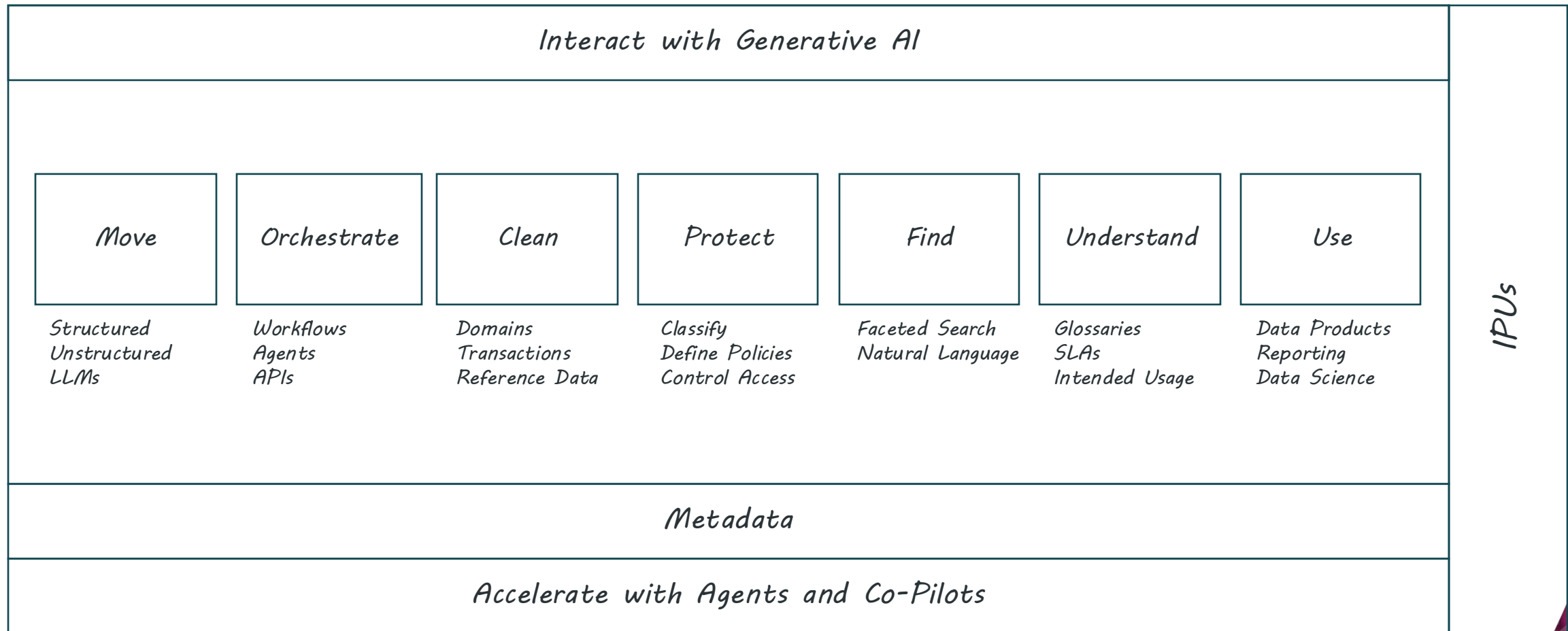# Data Management & AI

June 12, 2025

Chris Pierpan, Sr Director, Technical Sales Strategy & Communities of Practice Leader

How does the data delivery chain apply to AI?

Interact with Generative AI

Move	Orchestrate	Clean	Protect	Find	Understand	Use
Structured Unstructured LLMs	Workflows Agents APIs	Domains Transactions Reference Data	Classify Define Policies Control Access	Faceted Search Natural Language	Glossaries SLAs Intended Usage	Data Products Reporting Data Science

IPUs

Metadata

Accelerate with Agents and Co-Pilots

Three key pillars for AI success

And how getting data ready or a solid foundation makes this possible

RELEVANT AI

AI-ready data is accurate, transparent, and contextual, leveraging a **universal metadata** foundation that helps deliver AI answers tailored to your unique business.

As MABE's data needs continue to grow, Informatica was clearly the most robust and comprehensive platform, enabling us to implement a whole data lifecycle, from creation to visualization, and pave the way for AI.

Ricardo Rodríguez
Data Analytics and Governance Leader

mabe

RESPONSIBLE AI

AI-ready data is governed, democratized and secure, aligning to **set standards,** helping you deliver AI that is compliant, private and unbiased.

As a biopharmaceutical company, we're literally in the business of bringing data to life. To get therapies to our patients as quickly as possible, that means a focus on access, governance, quality and trust so our data is AI-ready.

Barbara Latulippe
Chief Data Officer

Takeda

ROBUST AI

AI-ready data is complete, resilient, **enterprise-scale,** and consistent, making AI more powerful and reliable.

AI and digital transformation are imperative to business growth, but these efforts are only as strong as the data behind them. Whether it's building a report or utilizing the most advanced Generative AI model, access to trusted data is critical to ensure accurate and reliable outcomes.

Kelle Fontenot
Chief Digital Officer

KPMG

Informatica

Gen AI tools for a modern platform

Simplifying how organizations manage and consume data

CLAIRE® Copilot

In-Context Intelligence to generate data management artefacts like data pipelines, data quality rules, and glossary terms. Also includes ML-powered automations like next transformation recommendations and entity matching.

CLAIRE® GPT

Talk to your data across a complex enterprise ecosystem. Discover datasets, Explore using natural language questions, establish trust with metadata, and generate data management artefacts.

CLAIRE® Agents

Automate end-to-end data management goals with intelligent autonomy. Harness advanced AI reasoning and planning models to deliver a new level of productivity, data accuracy and scale.

Informatica®

Customer impact across industries

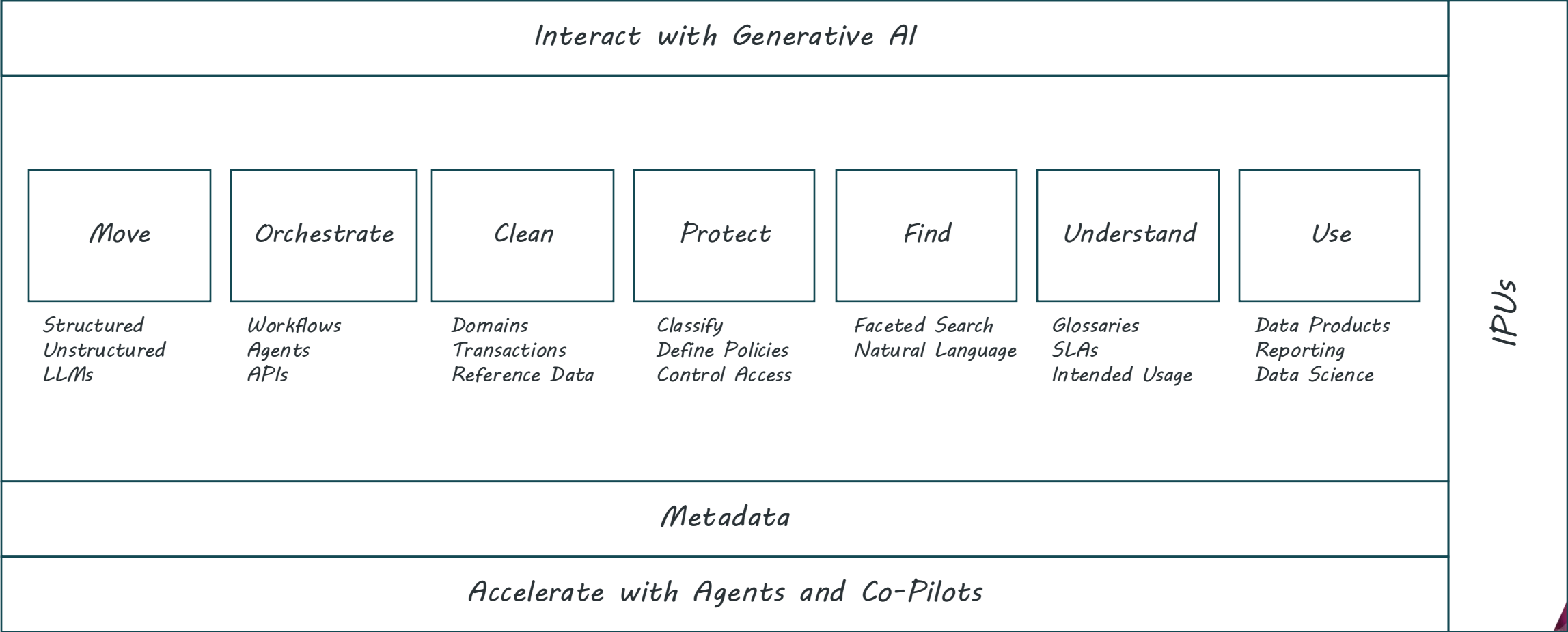| Education	Software	Healthcare	Finance	Insurance	Personal Care
$4M	**90%**	**20%**	**75%**	**80%**	**30%**
Achieved in retained revenue	Reduction in data wrangling times	Reduction in development timeline	Reduction in data discovery time	Reduction in ingestion operational costs	Reduction in IT costs
LA TROBE UNIVERSITY	Paycor	sanofi	Point 72	Liberty Seguros	Great Clips

Informatica

Data Management & AI

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Where data & AI come to LIFE™

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McKnight Consulting Group Partial Technology Implementation Expertise

Big/Analytic/Vector/Mixed Data Management

databricks · Pinecone · Google BigQuery · snowflake · Azure Synapse · MySQL HeatWave · teradata · amazon REDSHIFT · CLOUDERA · SAP Datasphere · Exasol · VERTICA · Starburst · ACTIAN activate your data · Azure HDInsight · SingleStore · Apache Impala · amazon EMR · Yellowbrick · Cloud Dataproc · ORACLE AUTONOMOUS DATABASE · ORACLE

Data Movement and APIs

Airbyte · Informatica · Qlik Replicate® · Fivetran · SYNADIA · CONFLUENT · apigee · talend · MATILLION · Stitch · Kong · Astera

Data Management

MONTE CARLO · Anomalo · SNOWPLOW · SAP Datasphere · alteryx DESIGNER CLOUD · Profisee · splunk> · NGINX Part of F5 · Collibra · IMMUTA · elasticsearch · Azure MLOps

Operational/Transactional Data Management

DIAMANTI · Cockroach · Couchbase · DataStax · SQLite · MongoDB · PostgreSQL · yugabyteDB · neo4j · ORACLE · Google Cloud Spanner · redis · Azure Cosmos DB · Microsoft SQL Server · Amazon Aurora

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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.

Realities

- Most 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

AI in the last 12 months

- Agentic AI

- Enhanced Intelligence and Reasoning Capabilities

- Multimodality

- Industry-Specific Applications

- Increased Transparency

- Hardware Innovation

- Staff Acceptance

- Categories of implementation haven't changed much

Ground Rules

O Meta AI
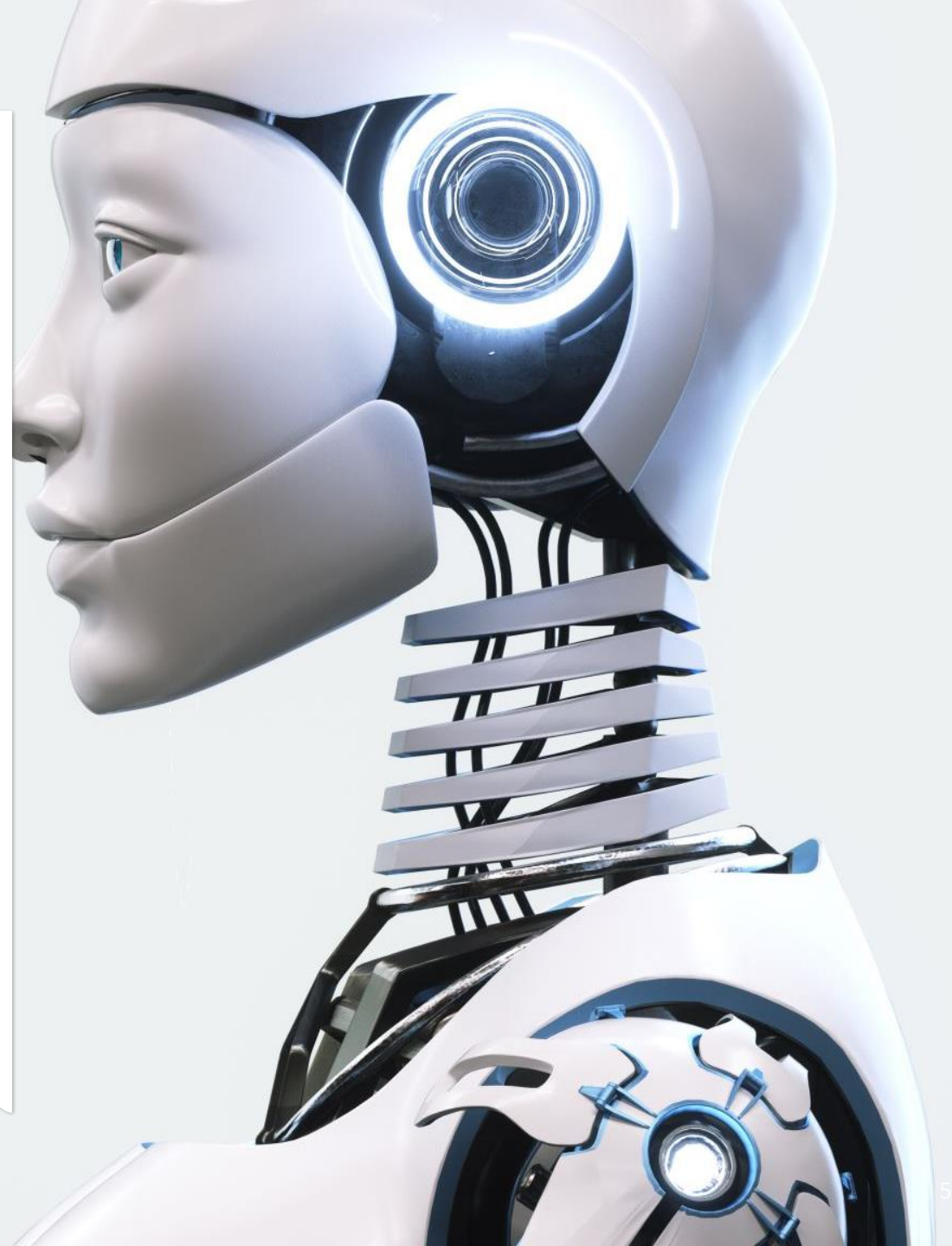
- Use Cases In Production
- Enterprise
- Enterprise Named
- Idea Generating
- "Real" AI
- The "best" out there (that can be talked about)
- I have some connection to it

Categories of AI Implementations and Use Cases

Drug Discovery

- **Accelerated Discovery**: AI can analyze vast amounts of data, identifying potential drug candidates faster than traditional methods.

- **Improved Accuracy**: AI can predict drug efficacy and safety, reducing the risk of costly failures in clinical trials.

- **Data Analysis**: AI analyzes large datasets, including genomic, chemical, and clinical data, to identify patterns and insights.

- **Target Identification**: AI identifies potential drug targets, predicting their efficacy and safety.

- **Molecule Generation**: AI generates new molecular structures, optimizing their properties for drug development.

- **Virtual Screening**: AI screens virtual libraries of compounds, identifying potential hits and reducing the need for experimental screening.

Drug Discovery Use Cases

- **Atomwise**
  - Deep Learning: Atomwise utilizes deep learning algorithms to analyze vast amounts of structural data on small molecules and their interactions with proteins.
  - Convolutional Neural Networks (CNNs): Their AI platform employs CNNs to predict the binding affinity of small molecules to specific protein targets.
  - Structure-Based Drug Design: Atomwise's AI analyzes the 3D structure of proteins and small molecules to identify potential binding sites and predict binding affinity.
  - Virtual Screening: Their platform performs virtual screening of large libraries of small molecules to identify potential hits for a specific protein target.

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Financial Research

- **Data Analysis**: AI can process vast amounts of financial data, identifying patterns, trends, and insights that may elude human researchers.

- **Predictive Modeling**: AI-powered models can forecast market movements, credit risk, and other financial outcomes, enabling more informed investment decisions.

- **Natural Language Processing**: AI can analyze financial news, reports, and documents, extracting relevant information and sentiment to inform research and decision-making.

- **Risk Management**: AI can help identify potential risks and anomalies in financial data, enabling researchers to mitigate potential losses.

- **Quantitative Trading**: AI-powered trading systems can analyze market data, identify trading opportunities, and execute trades at high speeds.

- **Portfolio Optimization**: AI can help optimize investment portfolios by analyzing market data, risk tolerance, and investment goals.

- **Credit Scoring**: AI-powered models can assess creditworthiness by analyzing credit history, payment behavior, and other factors.

- **Market Sentiment Analysis**: AI can analyze financial news and social media to gauge market sentiment and predict potential market movements.

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Financial Research Use Cases

- **Bloomberg**
  - Bloomberg uses generative AI to summarize earnings call transcripts into concise bullet points, highlighting key topics like financial guidance, product updates, and macro trends.
  - Summaries are context-aware, trained on Bloomberg's proprietary financial data to ensure accuracy and relevance.
  - Interactive features link bullet points to transcript sections and related Terminal tools, enabling deeper analysis.
  - Accessible across platforms, including Bloomberg Terminal desktop, mobile apps, and Bloomberg Pro for Vision.
- **Moodys**
  - Identifies and extracts specific entities, such as companies and people.
  - Provides deeper insights and patterns in data, supporting research and analysis.
  - Automates manual research tasks, saving time and effort while improving accuracy.

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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.

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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

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Automated Customer Service Use Case

- **Zurich Insurance**
  - Multilingual Support: Zara understands 12 languages and converses on web, mobile, and social channels, built using Microsoft Azure AI.
  - Customer Engagement: Zurich achieved a 20% increase in customer engagement and an 80% resolution rate for policy inquiries with Zara.
  - Return on Investment: Zara generated a 4X return on investment within 1 year, demonstrating her effectiveness.
  - Empathetic Interactions: Zara's programming includes empathy, allowing her to acknowledge customer frustration and provide calm, clear guidance, building trust with customers.

Predictive Maintenance in Manufacturing

- AI algorithms analyze data from machinery to predict failures before they occur, reducing downtime and maintenance costs.

- 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.

- 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.

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

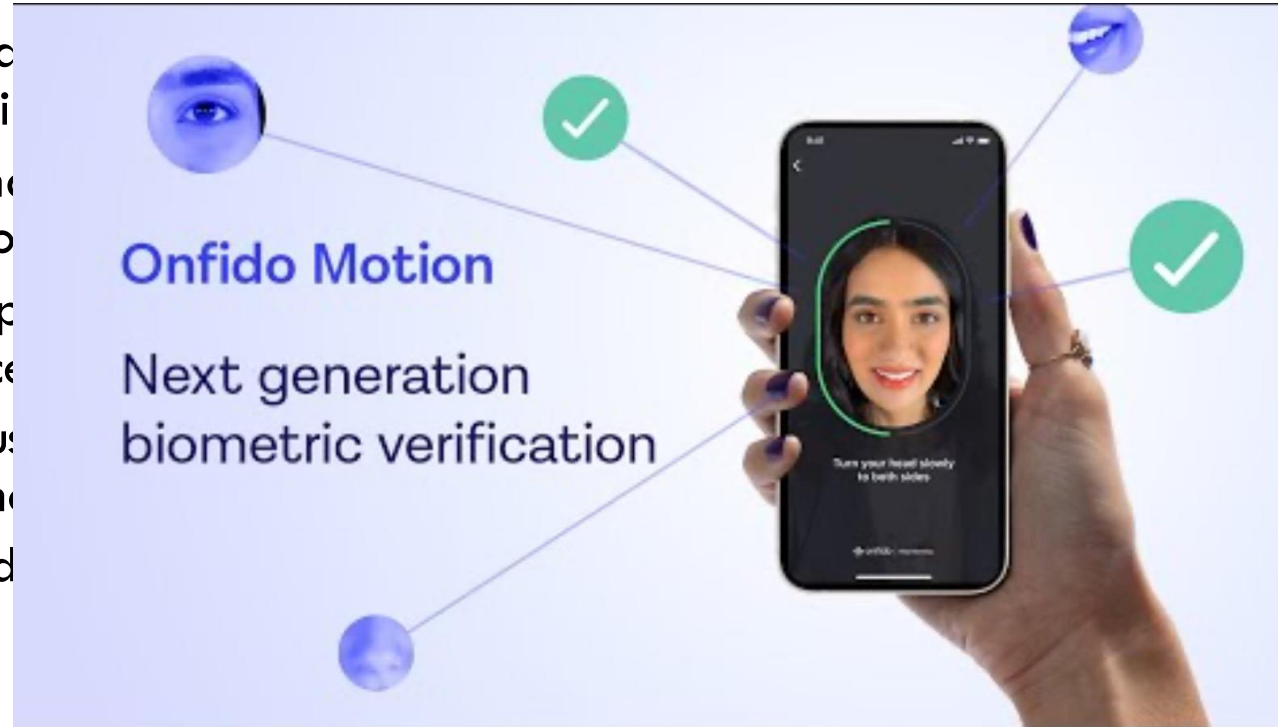# Fraud Detection in Finance Use Cases

- **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 Genera[...] [...]precision in financial analysis and contri[...]
  - Custom-trained fine[...] [...]tax, accounting, marketing, cash flo[...]
  - Intuit's GenOS emp[...] [...]hrough generative AI (GenAI) experience[...]
    - With this robus[...] [...]nces to more than 100 million consum[...]
  - The LLMs, informed [...] [...]ain experts and data protection controls [...] [...]sonalized information and advice across [...]

- **Entrust (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.

- 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 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
  - 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'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.

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Personalized Marketing Use Case

- **Starbucks**
  - Predictive Analytics: **Deep Brew** uses machine learning algorithms to analyze customer behavior, sales patterns, and market trends, enabling Starbucks to make data-driven decisions.
  - Personalization: The platform helps Starbucks deliver **personalized experiences, including targeted promotions, offers, and menu recommendations.**
  - Operational Efficiency: Deep Brew optimizes **inventory management, staffing, and supply chain operations,** reducing waste and improving efficiency.
  - Menu Optimization: The platform provides insights on menu performance, helping Starbucks refine its offerings and pricing strategies.

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Supply Chain and Inventory Management

- **Demand Forecasting**: AI's ability to accurately predict demand fluctuations, enabling businesses to adjust inventory levels and optimize production and procurement planning.

- **Inventory Optimization**: AI's capacity to analyze historical data and real-time demand to optimize stock levels, reducing carrying costs and stockouts.

- **Route Optimization**: AI's ability to determine the most efficient delivery routes, considering factors like traffic, distance, and driver availability, to reduce costs and improve logistics.

- **Risk Assessment and Contingency Planning**: AI's ability to assess potential risks, such as supplier disruptions or natural disasters, and help develop contingency plans to mitigate their impact.

- **Supply Chain Optimization**: AI's ability to optimize the overall structure of the supply chain, including facility location and transportation modes, to improve efficiency and reduce costs.

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Supply Chain Management 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.
  - By analyzing real-time sales data and inventory levels, AI helps determine **optimal product placement across different stores and distribution centers**.
  - AI algorithms calculate the **most efficient routes** for delivering orders, considering factors such as distance, traffic, and available resources.
  - AI analyzes **return patterns** to identify potential issues with products or shipping processes. This information is used to improve product quality and logistics.

Inventory Management Use Case

- **H&M**
  - **Demand Forecasting**: H&M uses AI to analyze historical sales data, market trends, and external factors to predict customer demand.
  - **Inventory Optimization**: AI-driven forecasts help minimize overstocking, reduce waste, and ensure high-demand items are in stock.
  - **Sustainability**: By reducing overproduction and waste, H&M contributes to its sustainability goals and improves operational efficiency.

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.
  - AI helped **optimize manufacturing and distribution processes**, ensuring efficient vaccine delivery.
  - AI-powered tools aided in patient recruitment, data analysis, and trial design.

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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.
  - Freenome examines a vast array of biological data, including **DNA, RNA,** and proteins, to create a comprehensive picture of a patient's health.
  - 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.

Cybersecurity and Risk Management

- AI enhances cybersecurity measures by identifying threats and vulnerabilities in real-time, protecting against sophisticated cyber-attacks.

- 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.

Cybersecurity and Risk Management Use Cases

- **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.

Summary

- The AI Market is growing fast

- Key trends and developments in AI include the growing importance of agentic AI, enhanced intelligence, and industry-specific applications

- Categories of AI Implementations and Use Cases include
  - Drug Discovery
  - Financial Research
  - Automated Customer Service
  - Predictive Maintenance in Manufacturing
  - Fraud Detection in Finance
  - Personalized Marketing
  - Supply Chain and Inventory Management
  - AI in Healthcare for Diagnosis and Treatment
  - Content Creation and Management
  - Cybersecurity and Risk Management

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