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Credit Modeling: Using AI to Improve Performance

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Agenda

- Current State and Usage
- AI Defined - Education
- Strategy Assessment
- Policy and Controls
- Implementation
- Recap and Discussion

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Organizations are already using AI in Credit Management

- Credit Decisions
 - Research
 - Flag Policy violations or missing data
 - Draft base credit memos
- Portfolio Monitoring
 - Automate routine performance monitoring
 - Early Warning
 - Portfolio Optimization
- Other Use
 - Example: Prepopulate Climate Risk Questionnaires

In our survey, 80% of credit risk organizations expect to implement gen AI technologies within a year.

Expectations for implementing generative AI (gen AI), % of respondents

Already have at least 1 use case implemented	Will implement within the next 3-6 months	Will implement within the next 6-12 months	Will implement within the next 1-2 years
30	40	30	20

80% expect to implement gen AI technologies within a year

*Question: When do you expect to have implemented your first generative AI use case? (n = 124). Source: October 2023 roundtable of chief credit risk officers.

McKinsey & Company

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Other Common Uses

- Supply Chain Disruption - Prediction
- Fraud detection –especially credit card and insurance
- Sales Force – Contact Management
- Pricing Optimization

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AI is a broad term that is overly used

- Chat GPT sets record for fastest growing user base
- Alphabet Soup
 - AI
 - Generative AI
 - Deep Learning
 - NLP
 - GANs
 - Transformer Models
 - Synthetic Data
- Implications of DeepSeek

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What is AI? I asked ChatGPT

AI, or **Artificial Intelligence**, refers to the field of computer science focused on creating machines or systems that can perform tasks that typically require human intelligence. These tasks include things like learning from data, recognizing patterns, understanding language, making decisions, and even performing complex problem-solving.

AI can be broken down into several categories:

1. **Machine Learning (ML):** A subset of AI where algorithms improve automatically through experience. ML allows systems to learn from data and make predictions or decisions without being explicitly programmed.
2. **Natural Language Processing (NLP):** This area of AI involves enabling computers to understand and respond to human language, like in chatbots or virtual assistants.
3. **Computer Vision:** The ability of AI systems to interpret and understand visual information from the world, such as recognizing objects in images or videos.
4. **Robotics:** AI applied in robots, where they can perform tasks autonomously, like manufacturing or even surgical procedures.
5. **Reinforcement Learning:** A type of machine learning where an agent learns by interacting with an environment and receiving feedback, often used in gaming or autonomous driving.

Overall, AI is about making machines "smarter" and able to tackle tasks that once required human intervention! Does that help clarify things?

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Key Concepts

- LLM – Large Language Models
 - Large Number of Parameters
 - ChatGPT – (Generative Pretrained Transformer) – billions and even trillions of parameters
 - Training on Massive Datasets
 - Contextual Understanding
 - Text Generation
 - Specialization and Fine Tuning
- Training the Model

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Models are trained to learn from data

- Data Collection
- Data Processing
- Multiple Models
 - Linear Regression
 - Neural Networks
 - Decision trees
 - Support Vector Machines
- Training Sets and Teaching Sets
- Synthetic Data

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Risks

- Data Accuracy
- Bias and Discrimination
- Loss of Privacy
- IP Infringement
- Control and Accountability
- Security Concerns
- Overdependence
- Misinformation and Manipulation

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Assessment and Strategy – What are the Use Cases?

- Personalizing Trade Terms
 - AI can analyze customer behavior
 - Allows you to customize volume discounts, payment terms or delivery conditions
- Analyzing Market Trends and Competitor Data
- Analyze Performance of Suppliers
- Analyze Financial Data
- Flag Potential Issues
- Dynamic Payment Options

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Build or Buy It

- AI CRM Systems – Salesforce or Hubspot
- Pricing Systems – PROS or Dynamic Pricing
- Contract Management Platforms – Docusign or Ironclad
- Supply Chain AI Tools – Oracle or Llamasoft
- Credit Scoring – CreditRiskMonitor, Kabbage, D&B

This is a sampling and not meant to be a comprehensive list

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Benefits of AI for Credit Analysis

- Accuracy
- Speed
- Incorporate Alternative Data
- Cost Effective

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Implementation – Safety and Scale

- Move beyond ad hoc approach
- AI Roadmap
 - Integrate with business strategy, systems and processes
- Secure the technology
- Governance, Audit and Validation
- Dynamic and Upgradable

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Use Cases

The Better the Question – The better the Result

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I am meeting with the CFO of AAP

ChatGPT said:
Advance Auto Parts (AAP) is currently facing a significant disparity between its revenue figures and market capitalization. Despite generating approximately \$10.70 billion in revenue over the trailing twelve months, the company's market capitalization stands at about \$2.11 billion as of March 7, 2025. [stockanalysis.com](#)
Several factors contribute to this valuation gap:

- 1. **Declining Sales Performance:** In the fourth quarter ending December 28, 2024, Advance Auto Parts reported net sales of \$2.0 billion, a decrease of 0.9% compared to the prior year. Additionally, sales at stores open for at least a year declined by 1.0% during the same period. This stagnation in sales, especially when competitors are experiencing growth, raises concerns about the company's ability to maintain its market position. [The Sun+1timesunion.com+1](#)
- 2. **Store and Distribution Center Closures:** As part of a restructuring plan, Advance Auto Parts announced the closure of approximately 700 stores and four distribution centers by mid-2025. While these measures aim to streamline operations and reduce costs, they also signal potential challenges in market reach and service capabilities, which can negatively impact investor perception. [The Sun+1timesunion.com+1](#)
- 3. **Supply Chain Overhaul:** The company is undertaking significant changes to its supply chain, including consolidating distribution centers and opening larger regional hubs. While these initiatives aim to improve efficiency, they come with execution risks and may disrupt operations in the short term, affecting profitability. [The Wall Street Journal](#)
- 4. **Market Sentiment and Stock Performance:** Over the past year, AAP's stock has declined by approximately 41.89%, reflecting investor concerns about the company's strategic direction and financial health. This decline in stock price directly impacts market capitalization, irrespective of revenue figures. [Chartmill+2stockanalysis.com+2tradingview.com+2](#)
- 5. **Analyst Outlook:** The consensus among 16 analysts is a "Hold" rating for AAP, with a 12-month average price target of \$45.00, suggesting a potential upside of about 22.42% from current levels. This cautious outlook indicates tempered expectations regarding the company's near-term performance. [TipRanks+2stockanalysis.com+2stockanalysis.com+2](#)

In summary, while Advance Auto Parts continues to generate substantial revenue, factors such as declining same-store sales, extensive restructuring efforts, supply chain challenges, and subdued investor sentiment have collectively contributed to a lower market capitalization. Engaging with the CFO, it would be pertinent to discuss strategies to revitalize sales growth, manage operational changes effectively, and restore investor confidence to bridge the gap between revenue and market valuation.

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GROK

I am a hospital supply company. What customers pose the most risk of paying me back?

As a hospital supply company, assessing customer risk for repayment involves analyzing several factors. While I don't have access to your specific customer data, I can provide a framework based on general industry insights and risk indicators. Here's how you can identify customers who might pose the most risk of not paying you back:

Key Risk Factors

- 1. **Financial Health of the Customer**
 - **Hospitals or Clinics in Financial Distress:** Smaller hospitals, rural facilities, or those with publicized budget cuts (e.g., staff layoffs, service reductions) may struggle to pay on time. For-profit hospitals with declining revenue or high debt levels are also risky.
 - **Credit History:** Customers with a history of late payments, bankruptcy filings, or low credit scores are red flags.
- 2. **Size and Type of Facility**
 - **Small Practices or Independent Clinics:** These often have tighter cash flows compared to large hospital networks, making them more vulnerable to delays in payment.
 - **Underfunded Public Facilities:** Government-run hospitals or clinics in regions with budget constraints might delay payments due to bureaucratic funding issues.
- 3. **Payer Mix Dependency**
 - Customers heavily reliant on reimbursements from insurance companies or government programs (e.g., Medicare/Medicaid in the U.S.) may face cash flow delays if those payers slow down. This is especially true for facilities with a high percentage of uninsured or underinsured patients.
- 4. **Operational Instability**
 - **High Turnover or Leadership Changes:** Facilities undergoing frequent management or ownership changes might indicate instability, affecting their ability to prioritize payments.
 - **Recent Legal or Regulatory Issues:** Hospitals facing lawsuits, fines, or sanctions could divert funds away from paying suppliers.
- 5. **Geographic and Market Factors**
 - **Economically Depressed Areas:** Facilities in regions with high unemployment or poverty may serve patients less able to pay, straining their finances.
 - **Competitive Markets:** Hospitals in oversaturated areas might face revenue pressure, increasing repayment risk.

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Specific Customer Examples (Hypothetical)

If you'd like, name some of your customers, and I can search the web or X for recent information about their financial stability as of March 10, 2025. Without specifics, here's a general profile of risky customers:

- A rural hospital recently in the news for staff cuts.
- A small clinic chain posting on X about delayed insurance payouts.
- A facility linked to a scandal draining its cash reserves.

Next Steps

- **Provide Customer Names:** If you share specific customers, I can dig deeper into their risk profile using available tools.
- **Credit Policies:** Consider tightening terms (e.g., shorter payment windows, upfront deposits) for high-risk customers.
- **Diversify:** Spread your sales across larger, more stable clients to offset risk.

What do you think—want me to analyze a specific customer for you?

It seems like you might be asking about Carson Valley Health in the context of your earlier question about customers posing repayment risks for a hospital supply company. I'll assume you're interested in assessing Carson Valley Health as a potential customer. Since you've named them specifically, I'll use my tools to provide an analysis based on available information as of March 10, 2025.

Overview of Carson Valley Health

Carson Valley Health (CVH) is a community healthcare system based in Gardnerville, Nevada. It operates a 25-bed hospital, five off-site primary care clinics, an urgent care center, and various outpatient services. CVH has partnerships with Barton Health (South Lake Tahoe) and Renown Health (Reno), which may bolster its operational and financial stability.

Risk Assessment for Repayment

Here's an evaluation of CVH as a customer, focusing on factors that could affect their ability to pay a hospital supply company:

1. Financial Health
- **Public Data:** As a nonprofit, CVH's detailed financials aren't as readily available as those of for-profit entities, but some insights can be gleaned. The American Hospital Directory reports financial data for the period ending December 31, 2023, showing operational metrics but not specific revenue or debt figures here. Historically, CVH has invested in expansions (e.g., a cardiac cath lab and new imaging equipment since 2019), suggesting access to capital or funding.
 - **Foundation Support:** The Carson Valley Health Foundation actively raises funds, recently announcing milestones like a \$4,500 grant from the James and Karen Sacherman Fund and a \$5,000 grant from SilverSummit Healthplan in 2025. This indicates community and external financial backing, reducing the risk of cash flow issues.
 - **CMS Rating:** CVH earned a four-star rating from the Centers for Medicare & Medicaid Services (CMS) in 2025, reflecting quality care and likely stable Medicare reimbursements—a key revenue source for hospitals.

- o **Growth and Capacity:** CVH has noted significant volume growth in nearly all services over the past five years, with some at or nearing capacity. This prompted a hospital expansion plan, indicating demand but also potential strain on resources if not managed well.
- o **Awards and Reputation:** CVH received the Outstanding Patient Experience Award from Healthgrades for two consecutive years, suggesting strong patient satisfaction and operational competence, which can correlate with steady revenue streams.

- o CVH serves a rural area (Gardnerville, Minden, and surrounding regions), where patients may rely heavily on Medicare/Medicaid or face higher uninsured rates. While their financial assistance policy supports uninsured patients, delays in government reimbursements could temporarily affect cash flow. Their partnership with Renown Health, a larger regional player, might mitigate this by providing a financial buffer.

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- o **Rural Setting:** Operating in a rural Nevada community could mean a smaller revenue base compared to urban hospitals, but CVH's expansion efforts and specialty services (e.g., cardiology, general surgery via Western Surgical Group) suggest they're adapting to local needs, potentially increasing revenue.
- o **Economic Context:** Douglas County, NV, isn't a major economic hub, but tourism from nearby Lake Tahoe and a stable population may support steady healthcare demand.

- As of March 10, 2025, no major red flags (e.g., closures, lawsuits, or financial distress) appear in recent news or X posts about CVH. Posts on X might mention community support or service updates, but I'd need to search further for specifics if you'd like. Their website highlights new providers and equipment, signaling investment rather than retrenchment.

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Recommendation

Carson Valley Health appears to be a relatively low-risk customer for a hospital supply company. To confirm:

- **Check Payment History:** If you’ve supplied CVH before, review their payment timeliness.
- **Credit Check:** Request a credit report or financial statement (if available) to verify liquidity.
- **Contract Terms:** Offer standard terms (e.g., Net 30) but monitor for delays, especially given rural payer dynamics.

Would you like me to dig deeper into CVH’s financials via specific web searches or analyze another customer instead?

