

Artificial Intelligence for Business Competitiveness

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### ***Part 1. Overview***

Topic Chosen: How are businesses deploying Artificial Intelligence to become more competitive? How can AI tools like ChatGPT or Bard (Large Language Models, LLMs) be deployed at your work as a student and/or as a professional?

Artificial Intelligence (AI) has transformed from theoretical models to practical tools driving operational efficiency, strategic decisions, and customer engagement. Businesses leverage AI for process automation, predictive analytics, personalized recommendations, and natural language processing. I chose this topic because AI's scalability, adaptability, and rapid evolution have made it one of the most disruptive technologies of this era. Understanding AI's deployment prepares me to harness tools like ChatGPT and Bard as a student for enhanced research, summarization, and ideation, and as a professional to automate routine tasks, generate insights, and augment decision making. Moreover, the relevance of AI extends to every industry, offering a versatile framework to create competitive advantages through innovation, cost reduction, and improved customer experiences.

## Part 2. Challenges, Trends, Company Examples

### (a) Challenges and Emerging Trends

Despite its transformative potential, AI implementation faces several critical challenges:

- **Data quality and privacy:** AI models depend on large volumes of accurate, clean data for training and inference. However, data is often fragmented across silos, stored in unstructured formats, or restricted by privacy regulations such as GDPR in Europe and CCPA in California. Ensuring data governance, anonymization, and compliance adds complexity and cost.
- **Bias and ethics:** AI models risk inheriting and amplifying biases present in their training data, leading to unfair or discriminatory outputs. This is particularly concerning in sensitive sectors like hiring (HR), banking (loan approvals), healthcare (diagnosis), and law enforcement (predictive policing). Developing frameworks for ethical AI use and bias mitigation is becoming a strategic imperative.
- **Integration complexity:** Embedding AI solutions into existing legacy IT systems often requires extensive reengineering, upgrades, and change management initiatives. This can delay deployment timelines and increase upfront costs before benefits are realized.
- **Workforce displacement and skill gaps:** As automation streamlines repetitive tasks, employees express concerns about job security. Simultaneously, there is a shortage of professionals skilled in AI, data science, and related technologies to design, implement, and manage these systems effectively.

Emerging trends shaping AI deployment include:

- **Explainable AI (XAI):** Enhancing model interpretability to ensure stakeholders understand how AI decisions are made, thereby increasing trust and regulatory compliance in fields like finance, healthcare, and legal.

- **Federated Learning:** A distributed training approach where AI models learn across decentralized data sources without directly accessing raw data. This protects data privacy while enabling robust model performance, particularly useful in healthcare and banking.
- **Generative AI expansion:** Tools like ChatGPT, Bard, and Copilot are revolutionizing knowledge work by enabling rapid content creation, summarization, idea generation, coding assistance, and automated customer support, making employees more productive and creative.
- **AI democratization:** Low code and no code AI tools are empowering non technical users to build and deploy AI applications, accelerating innovation across business units.

## **(b) Company Examples**

### *Morgan Stanley:*

The global investment bank deployed an OpenAI powered GPT 4 assistant to support its financial advisors. This AI tool allows advisors to quickly access the firm's extensive research database, draft personalized client communications, and respond to client queries with accuracy and compliance assurance. This enhances advisor productivity, decision quality, and client satisfaction while reducing time spent on research tasks.

(Source: Business Insider, 2023. <https://www.businessinsider.com/morgan-stanley-using-openai-gpt4-ai-assistant-financial-advisors-2023>)

### *Duolingo:*

Duolingo integrated GPT 4 to create its "Roleplay" feature, where language learners engage in realistic conversational practice with AI driven characters. This enhances learning immersion, user confidence, and

app stickiness, giving Duolingo a competitive edge in user engagement and retention within the crowded language learning market.

(Source: TechCrunch, 2023. <https://techcrunch.com/2023/03/14/duolingo-taps-openai-gpt-4/>)

*KPMG Australia:*

KPMG utilizes AI based Document Intelligence to automate the review and analysis of complex contracts, financial statements, and compliance documents. This significantly reduces manual effort, turnaround time, and the risk of human errors, enabling professionals to focus on high value advisory tasks while improving service accuracy and profitability.

(Source: KPMG Australia, 2023. <https://home.kpmg/au/en/home/insights/2023/02/ai-document-intelligence.html>)

*Amazon:*

Amazon employs AI extensively across operations from personalized product recommendations and Alexa voice interactions to warehouse robotics for inventory management and automated quality control in fulfillment centers. This holistic AI integration drives cost efficiency, enhances customer satisfaction, and strengthens Amazon's market dominance.

*Netflix:*

Netflix uses AI algorithms to analyze viewing patterns and optimize content recommendations, driving higher user engagement and retention. Additionally, AI informs content creation decisions by identifying trending genres and optimizing production investments.

## Part 3. Technology Creators and Vendors

### *Leading Vendors*

#### **OpenAI**

- **Product/Offering:** ChatGPT and GPT 4 API
- **Market Position:** Recognized as a global leader in Generative AI, OpenAI's models power conversational AI, summarization, content generation, coding assistance, and research across industries.
- **Revenue/Impact:** Microsoft has invested over \$10 billion into OpenAI, strategically integrating GPT models into its products. Notable integrations include Office 365 Copilot, enhancing productivity tools like Word, Excel, and Outlook, and Azure OpenAI Service, which offers APIs for businesses to build AI powered solutions.
- **Success Story:** Canva integrated OpenAI's API to create Magic Write, a generative text feature embedded within its design platform. This allows users to instantly draft social media captions, presentations, and marketing copy, accelerating content workflows and boosting user engagement.

(Source: Canva Newsroom, 2023. <https://www.canva.com/newsroom/news/magic-write/>)

#### **Google DeepMind**

- **Product/Offering:** Bard (built on the Gemini family of LLMs)
- **Market Position:** A formidable competitor to OpenAI, leveraging Google's vast data ecosystem and existing products to deploy LLMs at scale. Bard is integrated into Google Workspace, enabling features such as summarizing emails in Gmail, drafting documents in Google Docs, and enhancing user productivity with AI powered suggestions.

- Revenue/Impact: Alphabet reports AI driven features are significantly boosting user engagement across services. Bard's integration into Android and Google Search is set to redefine mobile and web experiences by making AI assistance natively accessible.
- Success Story: Google Ads uses Bard based models to automatically generate and optimize ad copy variations. This enhances advertisers' campaign performance by improving relevance and increasing click through rates.

(Source: Google Blog, 2024. <https://blog.google/products/bard/>)

#### *Other Notable Vendors:*

Microsoft: Through Azure AI and Copilot integrations, Microsoft democratizes AI tools for enterprise use, embedding them seamlessly into productivity ecosystems.

Salesforce: Einstein AI provides predictive analytics and natural language insights within CRM, automating lead scoring, opportunity analysis, and customer support responses.

These vendors empower organizations to reduce time spent on drafting, researching, and coding tasks, enabling human capital to focus on strategic initiatives such as innovation, customer engagement, and market expansion.

## **Part 4. Relevance to My Employer / Industry**

As an ERP Specialist and aspiring IT executive, AI tools offer transformative potential in my field:

#### *Business Process Automation:*

AI can automate repetitive ERP activities such as journal entries, reconciliations, inventory reordering, and invoice processing. For example, AI driven bots can validate transactions against business rules, reducing manual errors and accelerating month end closes.

#### *Intelligent Data Insights:*

Integrating Large Language Models with ERP analytics modules enables natural language queries. Executives can ask questions like, “What was last quarter’s operating margin variance by region?” and receive instant, structured insights without manually building reports.

#### *Enhanced User Training and Support:*

Deploying AI chatbots within ERP platforms can provide real time user support, troubleshooting guides, and onboarding tutorials. This reduces dependency on IT support teams, accelerates user adoption, and enhances system utilization rates.

#### *Predictive Maintenance and Planning:*

In manufacturing ERP modules, AI can analyze equipment data to predict maintenance needs, reducing downtime and optimizing production schedules.

#### *Customer Experience Enhancement:*

AI powered CRM modules within ERP systems can personalize customer communications, forecast demand more accurately, and recommend cross selling opportunities, driving revenue growth.

Overall, AI increases operational efficiency, enhances employee and customer experiences, and creates a financial edge by optimizing resources, reducing error rates, and enabling data driven strategic decisions.

## **Part 5. Learnings and Relevance to My Career**

This course has provided me with foundational and strategic insights that are directly applicable to my career goals:

### *Importance of Data Quality:*

Clean, structured data is the backbone of AI and BI success. As an ERP specialist, this reinforces my commitment to robust data models, governance, and master data management to maximize technology investments.

### *Emerging Trends in AI and BI:*

Learning about trends such as Explainable AI, Federated Learning, and Generative AI tools equips me to propose modern, scalable solutions to clients and employers, positioning me as an innovator within IT teams.

### *Strategic Role of IT Investments:*

Understanding that IT investments drive competitive advantage not merely operational support transforms my approach to ERP implementations from tactical to strategic, aligning technology roadmaps with organizational goals.

### *Vendor Landscape Understanding:*

Familiarity with major vendors like OpenAI, Google, Microsoft, and Salesforce enhances my ability to evaluate, recommend, and integrate optimal AI solutions in enterprise environments.

### *Critical Evaluation and Executive Thinking:*

Analyzing technologies holistically assessing their benefits, risks, challenges, and organizational impact sharpens my strategic decision making skills, essential for roles such as CIO, IT Director, or Technology Strategy Consultant.

## **References**

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