



BBA

Semester V

Calicut University

Communicating with AI

Course Code: BBA5FS114 • Module 1 Notes

1. Artificial Intelligence: Basics, Scope, and Evolution

Artificial Intelligence (AI) represents a foundational domain of computer science dedicated to building hardware and software systems capable of performing tasks that traditionally require human intelligence—such as visual perception, natural language understanding, complex reasoning, pattern recognition, and autonomous decision-making. In modern business administration, AI has evolved from an experimental technology into a core driver of operational efficiency and strategic competitive advantage.

Definition and Scope of Artificial Intelligence

AI is categorized into distinct evolutionary tiers based on capability and scope:

Artificial Narrow Intelligence (ANI / Weak AI)

Specialized AI systems designed to excel at a single specific task (e.g., facial recognition, spam filtering, chess, language translation). All current commercial AI implementations operate within the ANI domain.

Artificial General Intelligence (AGI / Strong AI)

Hypothetical AI systems possessing human-level cognitive capabilities across diverse knowledge domains, capable of generalized reasoning, abstract thought, and autonomous learning without domain-specific programming.

Historical Context and Evolutionary Eras of AI

The development of AI spans key historical phases over the last seven decades:

Era / Phase	Time Period	Key Milestones & Architectural Drivers
Foundational & Symbolic Era	1950s – 1970s	Turing Test (1950), Dartmouth Conference (1956), rule-based logic programs, early expert systems.
AI Winters & Knowledge Boom	1980s – 1990s	Rise and collapse of Lisp machines; commercial adoption of rule-based Expert Systems; IBM Deep Blue defeats Kasparov (1997).
Machine Learning Expansion	2000s – 2010s	Big data explosion, cloud computing, statistical learning, support vector machines, and early neural networks.
Deep Learning & Generative Era	2012 – Present	AlexNet image recognition breakthrough (2012), Transformer architecture (Vaswani et al., 2017), Large Language Models (LLMs), and multimodal AI.

2. AI Applications and Role in Business Administration

Artificial Intelligence is transforming core business functions by enabling real-time data analysis, automating routine tasks, predicting market demand, and delivering hyper-personalized customer experiences.

Functional Applications of AI in Business

AI in Marketing & Sales

Automated customer segmentation, predictive churn modeling, real-time programmatic ad bidding, recommendation engines (Netflix/Amazon style), and AI-generated copy.

AI in Finance & Accounting

Algorithmic high-frequency trading, automated fraud detection algorithms, credit risk scoring, invoice processing, and automated audit anomaly detection.

AI in Human Resource Management

Automated resume parsing, AI video interview sentiment scoring, flight-risk employee retention modeling, and personalized employee onboarding bots.

AI in Supply Chain & Operations

Predictive machine maintenance, route optimization algorithms, automated warehouse robotics, and AI demand forecasting.

Real-World Successful AI Case Implementations

Prominent corporate examples demonstrating tangible business value from AI integration:

- **Amazon Logistics & Recommendation Engine:** Over 35% of Amazon's total sales revenue is generated directly by its AI recommendation algorithms, while warehouse robotics reduce order fulfillment times by 80%.
- **Netflix Personalization Engine:** Saves over \$1 billion annually in subscriber retention by using AI to dynamically personalize artwork, movie recommendations, and streaming quality.
- **JPMorgan Chase (COiN Platform):** Implemented contract intelligence AI that parses complex commercial loan agreements in seconds, saving 360,000 hours of manual legal review annually.
- **Unilever HR Recruitment AI:** Utilizes AI video screening and gamified cognitive assessments, reducing hiring time-to-fill by 75% while boosting candidate diversity.

3. Ethical Considerations, Challenges, and Risks

While AI offers unprecedented efficiency, its deployment introduces complex ethical, legal, and operational risks that organizations must actively govern.

Core Ethical Considerations in AI Deployment

Ethical Challenge	Risk Mechanism	Mitigation Strategy
Algorithmic Bias & Fairness	Training data containing historical human biases leads to discriminatory hiring, credit scoring, or pricing.	Conducting pre-deployment bias audits, balancing training datasets, and implementing fairness metrics.
Black-Box Opacity	Deep learning models make critical business decisions without providing explainable reasoning paths.	Adopting Explainable AI (XAI) frameworks to generate human-interpretable decision trails.
Data Privacy & Consent	Unauthorized scraping and training on proprietary or personally identifiable information (PII).	Enforcing strict compliance with GDPR/CCPA, data anonymization, and differential privacy.
Workforce Displacement	Automation of routine cognitive and physical roles creating labor disruptions.	Investing in corporate upskilling programs and promoting human-in-the-loop (HITL) collaboration models.

Operational Risks of Corporate AI

Organizations face major technical and strategic pitfalls during AI execution:

- **Hallucination and Misinformation Risk:** Generative models generating plausible but completely fabricated factual claims or erroneous financial numbers.
- **Intellectual Property and Copyright Liabilities:** Legal risks associated with AI models outputting copyrighted code, text, or visual assets without attribution.

4. Strategic AI Integration and Competitive Advantage

Integrating AI into business operations requires aligning technology adoption with long-term corporate strategy, re-architecting business models, and building sustainable competitive moats.

Strategies for Incorporating AI into Business Strategy

1. **Identify High-Value Use Cases:** Prioritize AI initiatives that directly impact core revenue drivers or significant operational cost bottlenecks.
2. **Build Data Infrastructure:** Establish clean, centralized data pipelines, as AI model efficacy is fundamentally bounded by data quality ("Garbage in, garbage out").
3. **Foster an AI-Ready Culture:** Encourage cross-functional collaboration between domain managers, data engineers, and business analysts to bridge the technical-business divide.
4. **Develop Data Network Effects:** Create flywheels where more users generate more data, improving AI model accuracy, attracting more users, and expanding competitive moats.

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