

Introduction to AI in Business

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Quick reference guide – concise, organized, and easy to skim.

1. What Is AI?

Term	Definition
Artificial Intelligence (AI)	Computer systems that can perform tasks normally requiring human intelligence (e.g., perception, reasoning, learning).
Machine Learning (ML)	A subset of AI where algorithms improve automatically through experience and data.
Deep Learning	A specialized ML technique using multilayer neural networks to model complex patterns.
Generative AI	Models that create new content (text, images, code) from learned patterns.

2. Why AI Matters for Business

Benefit	Typical Business Impact
Automation	Reduces manual effort ? lower labor costs, faster turnaround.
Data-driven insights	Turns raw data into actionable recommendations ? better decision-making.
Personalization	Tailors products, services, and communications ? higher customer satisfaction & loyalty.
Risk mitigation	Detects fraud, predicts equipment failure ? protects assets and reputation.
Speed & scalability	Processes massive volumes of information in seconds ? supports rapid growth.

3. Core AI Applications in Business

Functional Area	AI Use Cases	Example Tools/Platforms

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Marketing & Sales	• Predictive lead scoring	HubSpot AI, Salesforce Einstein, Drift
	• Dynamic pricing	
	• Chatbots & virtual assistants	
Customer Service	• Automated ticket routing	Zendesk Answer Bot, IBM Watson Assistant
	• Sentiment analysis	
	• Voice bot support	
Operations & Supply Chain	• Demand forecasting	Llamasoft, ClearMetal, Azure IoT
	• Inventory optimization	
	• Predictive maintenance	
Finance	• Fraud detection	Kount, Zest AI, UiPath AI Center
	• Credit risk modeling	
	• Expense categorization	
Human Resources	• Resume screening	HireVue, Pymetrics, Eightfold
	• Attrition prediction	
	• Employee sentiment tracking	
Product Development	• Generative design	Autodesk Generative Design, Optimizely, Amplitude
	• A/B test automation	
	• Feature usage analytics	
Legal & Compliance	• Contract review	Kira Systems, LawGeex, Ayfie
	• Regulatory monitoring	
	• E-discovery	

4. Steps to Implement AI in an Organization

1. Define the Business Problem

- Start with a clear, measurable objective (e.g., “reduce churn by 15%”).

2. Assess Data Readiness

- Identify data sources, evaluate quality, and ensure governance/compliance.

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3. Choose the Right AI Approach

- *Rule-based automation* for simple, repeatable tasks.
- *Supervised ML* when labeled historical data exist.
- *Unsupervised/Generative models* for pattern discovery or content creation.

4. Select Technology Stack

- Cloud AI services (AWS SageMaker, Azure AI, Google Vertex AI) for rapid prototyping.
- On-premise or hybrid solutions for high-security environments.

5. Build & Validate a Pilot

- Develop a Minimum Viable Model (MVM).
- Use cross-validation and hold-out sets to test accuracy, bias, and robustness.