

Entrepreneurial leadership & Organizational behavior

Prepared by Dr. Amany Ramadan

PMG 612

Lecture 10



Artificial intelligence & Entrepreneurial leadership

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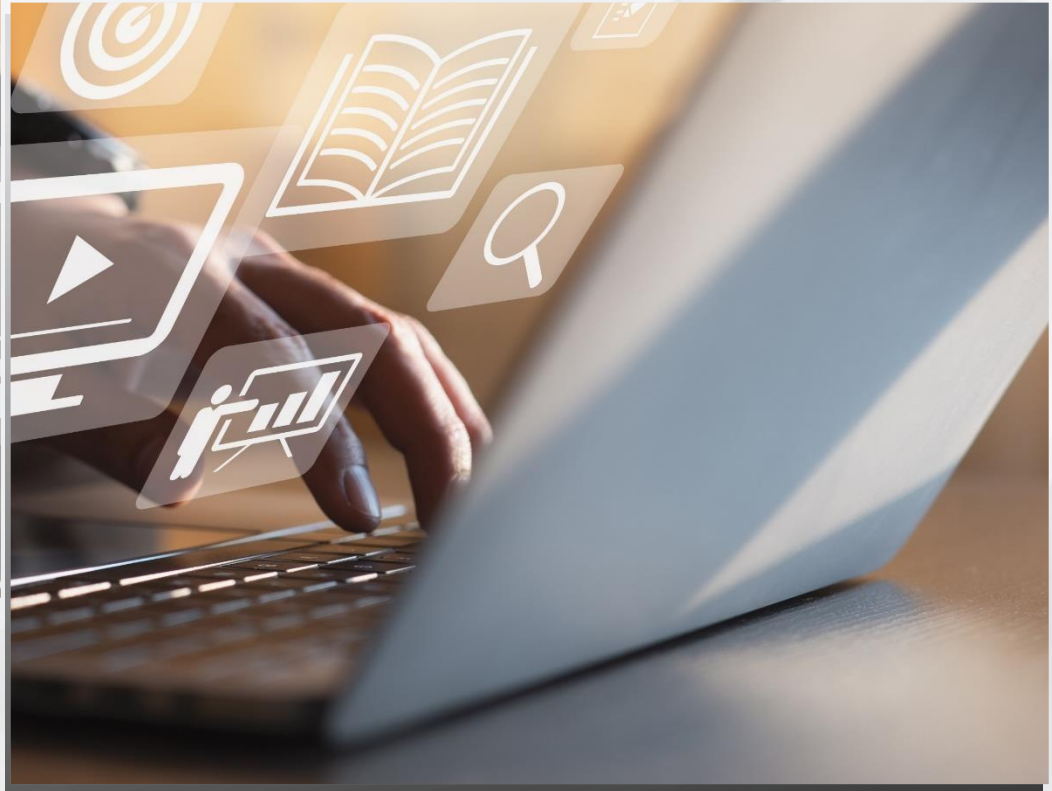
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Chapter

10

Artificial intelligence & Entrepreneurial leadership



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Artificial Intelligence (AI)



AI AND LEADERSHIP

Chapter

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Artificial Intelligence (AI) Definition

Artificial Intelligence (AI) is the simulation of human intelligence by computers and machines, enabling them to learn, reason, solve problems, and make decisions.



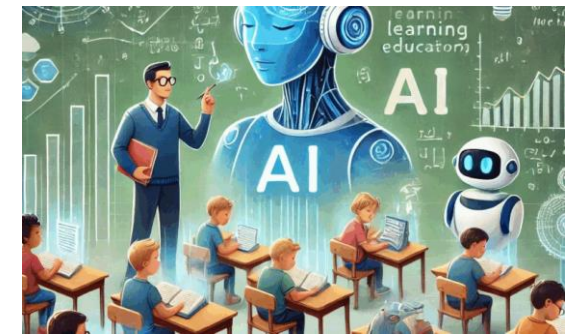
What is AI?

Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.



Chapter
10**Key Aspects of AI****Key Aspects of AI:**

- **Definition:** Machines designed to mimic cognitive functions, including learning from data and improving performance without constant human oversight.



Chapter
10**Key Aspects of AI**

- Usage Examples:
 - Generative Tools: Creating text, images, and code (e.g., ChatGPT, Midjourney).
 - Virtual Assistants: Chatbots and voice assistants like Siri, Alexa, and Google Assistant.



Chapter
10**Key Aspects of AI**

- Recommendation Engines: Algorithms used by Netflix, YouTube, and Amazon to suggest content or products.
- Autonomous Systems: Self-driving cars and drone technology.
- Predictive Analytics: Forecasting trends in finance and healthcare.

Benefits

Benefits of AI :

- Automation of repetitive tasks.
- More and faster insight from data.
- Enhanced decision-making.
- Fewer human errors.
- 24x7 availability.
- Reduced physical risks.



1-Automation of repetitive tasks:

AI can automate routine, repetitive and often tedious tasks including digital tasks such as:

- data collection
- entering and preprocessing
- physical tasks such as warehouse stock-picking
- manufacturing processes.

This automation frees to work on higher value, more creative work.

2-Enhanced decision-making:

Whether used for decision support or for fully automated decision-making, AI enables faster, more accurate predictions and reliable, data-driven decisions.



2-Enhanced decision-making:

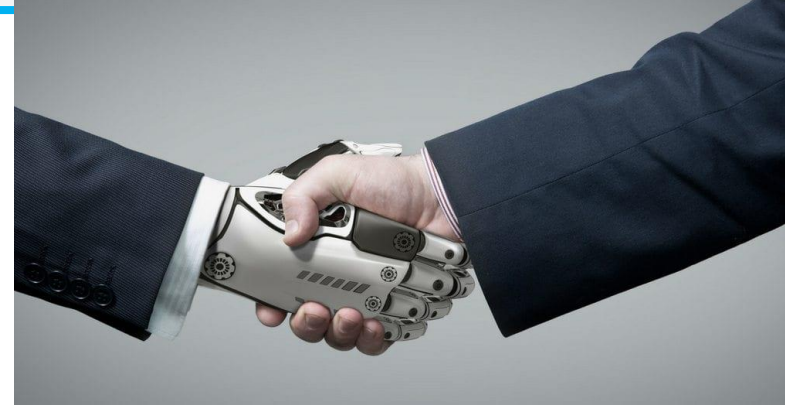
Combined with automation, AI enables businesses to act on opportunities and respond to crises as they emerge, in real time and without human intervention.



3-Fewer human errors:

AI can reduce human errors in various ways:

from guiding people through the proper steps of a process, to flagging potential errors before they occur, and fully automating processes without human intervention.



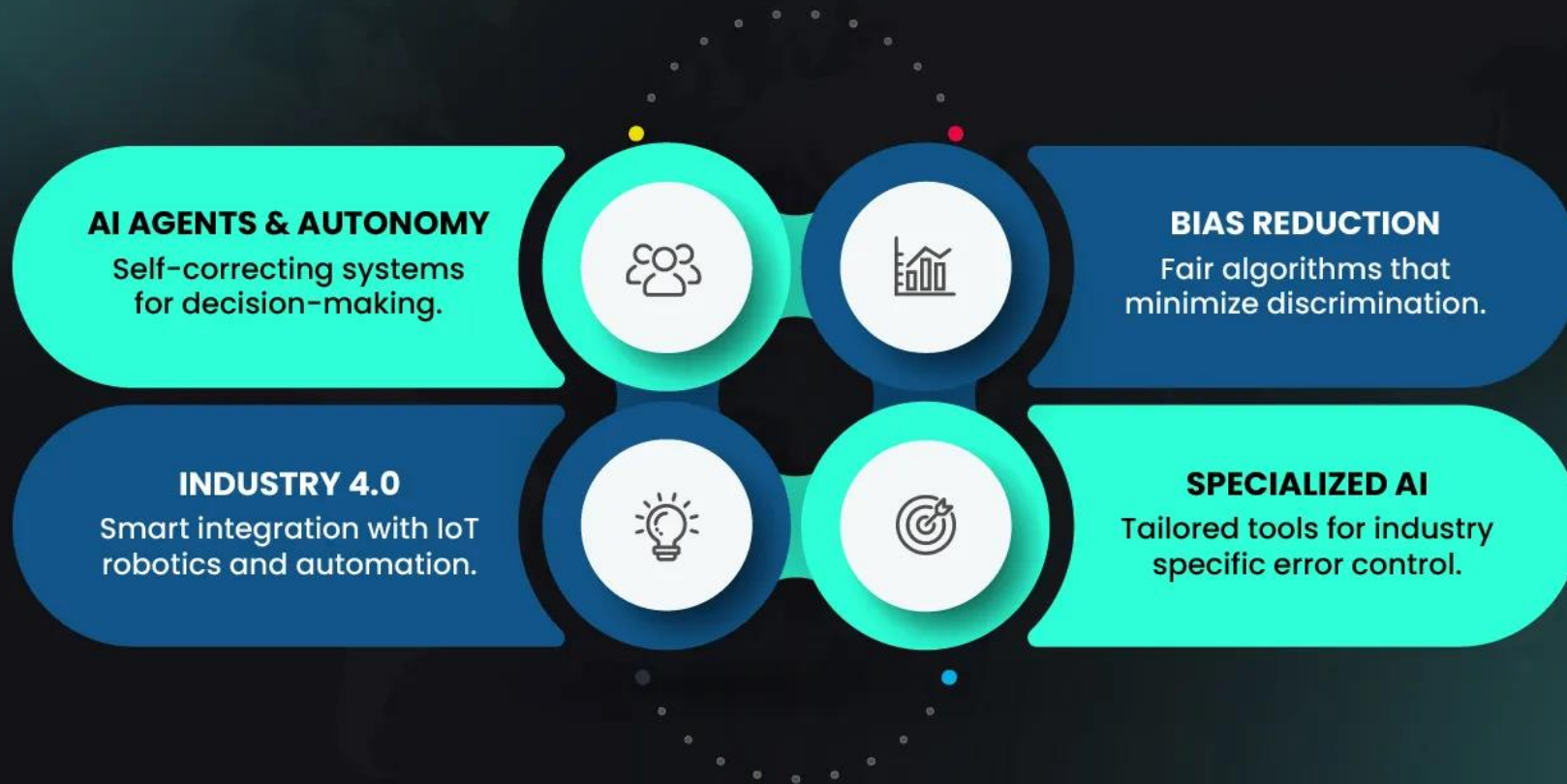
3-Fewer human errors:

This is especially important in industries such as healthcare where, for example, AI-guided surgical robotics enable consistent precision.

Machine learning algorithms can continually improve their accuracy and further reduce errors as they're exposed to more data and "learn" from experience.



FUTURE TRENDS IN AI ERROR PREVENTION



4-Round-the-clock availability and consistency:

AI is always on, available around the clock, and delivers consistent performance every time.

Tools such as AI chatbots or virtual assistants can lighten staffing demands for customer service or support.



4-Round-the-clock availability and consistency:

In other applications such as materials processing or production lines, AI can help maintain consistent work quality and output levels when used to complete repetitive or tedious tasks.



5-Reduced physical risk:

By automating dangerous work such as animal control, handling explosives, performing tasks in deep ocean water, high altitudes or in outer space, AI can eliminate the need to put human workers at risk of injury or worse.



History of AI

The idea of "a machine that thinks" dates back to ancient Greece.

1950

Alan Turing publishes Computing Machinery and Intelligence. In this paper, Turing famous for breaking the German ENIGMA code during WWII and often referred to as the "father of computer science" asks the following question: "Can machines think?"

1956

John McCarthy coins the term "artificial intelligence" at the first-ever AI conference at Dartmouth College. (McCarthy went on to invent the Lisp language.) Later that year, Allen Newell, J.C. Shaw and Herbert Simon create the Logic Theorist, the first-ever running AI computer program.

1967

Frank Rosenblatt builds the Mark 1 Perceptron, the first computer based on a neural network that "learned" through trial and error. Just a year later, Marvin Minsky and Seymour Papert publish a book titled Perceptrons, which becomes both the landmark work on neural networks.

1980

Neural networks, which use a backpropagation algorithm to train itself, became widely used in AI applications.

1995

Stuart Russell and Peter Norvig publish Artificial Intelligence: A Modern Approach, which becomes one of the leading textbooks in the study of AI. In it, they delve into four potential goals or definitions of AI, which differentiates computer systems based on rationality and thinking versus acting.

1997

IBM's Deep Blue beats then world chess champion Garry Kasparov, in a chess match (and rematch).

2004

John McCarthy writes a paper, What Is Artificial Intelligence?, and proposes an often-cited definition of AI. By this time, the era of big data and cloud computing is underway, enabling organizations to manage ever-larger data estates, which will one day be used to train AI models.

2011

IBM Watson® beats champions Ken Jennings and Brad Rutter at Jeopardy! Also, around this time, data science begins to emerge as a popular discipline.

2015

Baidu's Minwa supercomputer uses a special deep neural network called a convolutional neural network to identify and categorize images with a higher rate of accuracy than the average human.

2016

DeepMind's AlphaGo program, powered by a deep neural network, beats Lee Sodol, the world champion Go player, in a five-game match. The victory is significant given the huge number of possible moves as the game progresses (over 14.5 trillion after just four moves). Later, Google purchased DeepMind for a reported USD 400 million.

2022

A rise in large language models or LLMs, such as OpenAI's ChatGPT, creates an enormous change in performance of AI and its potential to drive enterprise value. With these new generative AI practices, deep-learning models can be pretrained on large amounts of data.

2024

The latest AI trends point to a continuing AI renaissance. Multimodal models that can take multiple types of data as input are providing richer, more robust experiences. These models bring together computer vision image recognition and NLP speech recognition capabilities. Smaller models are also making strides in an age of diminishing returns with massive models with large parameter counts.





•What is AI Leadership?

•Artificial Intelligence (AI) has moved from theory into every corner of enterprise strategy. AI leadership is the ability to guide organizations in adopting and managing AI responsibly while aligning it with long-term business goals.

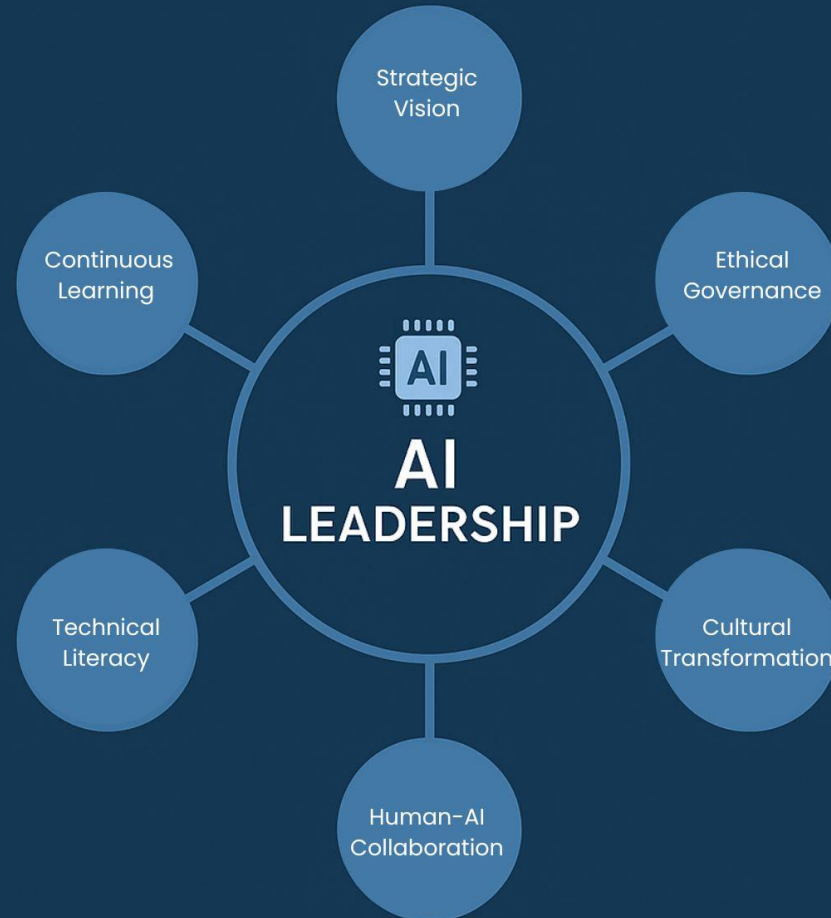


•What is AI Leadership?



- An AI leader understands both the technology and its human impact. They use data insights, automation, and intelligent systems to improve outcomes without losing sight of ethics or employee well-being. Effective AI leaders create a balance between innovation, governance, and human judgment, ensuring technology remains a tool for progress.
- To build this balance, many professionals begin with structured upskilling through AI Courses, which provides foundational and advanced certifications in AI strategy, leadership, and governance.

Key Aspects of AI Leadership



Strategic Vision

An AI leader sets measurable goals that link AI projects to organizational outcomes. Every initiative should serve a defined business purpose and align with the overall mission.

Ethical Governance

Responsible innovation requires ethical oversight. Leaders must implement frameworks that address fairness, data privacy, and accountability.

Cultural Transformation

AI adoption succeeds when employees feel empowered to experiment. Leaders build trust by fostering a culture of curiosity and learning rather than fear of automation.

Human-AI Collaboration

Humans and AI complement each other. Leaders promote collaboration where algorithms handle repetitive analysis while humans focus on creativity, empathy, and complex reasoning.

Technical Literacy

Understanding AI fundamentals, data pipelines, model limits, and system architecture helps leaders make informed strategic choices and communicate effectively with technical teams.

Adaptability and Continuous Learning

AI evolves constantly. Forward-thinking leaders embrace lifelong learning through programs to stay ahead of innovation.

Key Skills Every AI Leader Must Develop



Peer-Reviewed Research

Validate why change is needed.



Observation Comment Library

Create narratives on any evaluated practice.



Benefits of AI for Leaders

Streamline Communication

Facilitate team collaboration.



Personalized Feedback

Tailor content to meet individual needs.



Technical Fluency

AI leaders need to understand how machine learning, data science, and automation drive value.

Soft Skills

Empathy, communication, and adaptability remain crucial. AI leadership is about inspiring confidence and building alignment between technology teams and business goals.

Ethical Decision-Making

Every AI implementation has ethical implications. Leaders must ensure fairness, inclusivity, and transparency in how algorithms operate and decisions are made.

Strategic Thinking

AI leadership involves anticipating industry shifts, assessing competitive risks, and turning AI insights into actionable strategies that drive growth.

6 Trends Shaping the Future of Leadership for 2030



Future Trends Shaping AI Leadership

AI Governance and Sustainability

Responsible AI use will become central to enterprise policy. Leaders will need to integrate sustainability goals, ensuring AI initiatives reduce waste and energy consumption while maintaining transparency.

Human-Centric AI Design

Future systems will prioritize user experience and accessibility. Leaders will advocate for inclusive design principles that benefit diverse populations.

Future Trends Shaping AI Leadership

Integration of Generative and Predictive AI

As generative tools merge with predictive analytics, leaders must understand how to balance creativity with control and compliance.

Cross-Functional Collaboration

Departments once siloed will converge around data and automation. The next generation of AI leaders will oversee multidisciplinary teams that link data science, marketing, operations, and IT strategy.

How leaders get best use of AI in companies?

Leaders are focused on how to launch AI initiatives while also using AI as part of a deliberate sequence of traditional cost levers. Their goal is to deliver results immediately—and, ultimately, systematically.

companies implement AI-enabled cost transformations, we've identified four key success factors to generate better results.

Build a cross-functional AI team

Although AI relies on technology, it cannot succeed as an IT-only initiative.

Organizations benefit from forming a cross-functional team responsible for guiding AI adoption. This group typically includes representatives from technology, operations, finance, marketing and other key business functions.

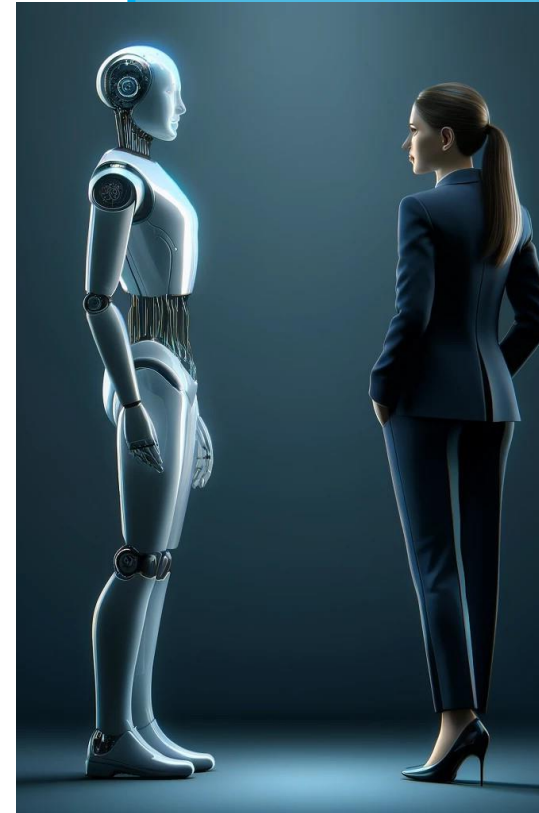
Their role is to help the organization move forward intentionally by:

- Identifying and prioritizing potential AI use cases
- Establishing governance and risk policies
- Selecting enterprise AI tools
- Encouraging adoption across departments
- Developing business cases for investment
- This team acts as the internal steering function that balances experimentation with strategic alignment.

Encourage grassroots innovation

One of the most transformative aspects of modern AI, especially generative AI, is its accessibility. Employees across the organization can experiment with these tools to solve everyday problems.

Organizations can benefit from encouraging this experimentation and capturing the best ideas.



Employees experiment with AI tools

Promising ideas are shared with the organization.
The most impactful use cases are evaluated and expanded.
Many AI platforms also provide usage data that can highlight successful workflows.

Focus on problems, not technology

A common mistake organizations make is starting with the question, "Where can we use AI?"

A better approach is to start with the problem. Ask, "What business challenge are we trying to solve?"

Capture everyday productivity gains

Not every AI benefit comes from large transformation projects. Some of the most immediate value comes from small improvements in daily work.



Capture everyday productivity gains

Employees are already using AI tools to help with tasks like:

- Drafting emails and reports
- Summarizing information
- Brainstorming ideas
- Structuring plans and strategies
- Working through complex problems



Strengthen governance and security

Security concerns are one of the biggest barriers organizations face when adopting AI. Leaders worry about sensitive data exposure, regulatory risks and the rapid growth of AI tools. Addressing these concerns requires a thoughtful approach.

Provide enterprise-grade AI tools

Organizations should offer secure AI platforms within their own environments. If employees lack access to approved tools, they will likely use public alternatives, which increases risk.

Providing enterprise tools gives employees a safe place to experiment.

Extend existing data policies

Most organizations already have data governance policies. AI policies should simply extend those rules.

For example, sensitive company data should only be used within approved platforms rather than public AI tools.

Clear guidelines help employees understand how to use AI responsibly while still enabling innovation.

Review security practices

AI systems often interact with large volumes of organizational data, which can expose weaknesses in existing access controls.

Organizations should review how administrative privileges and sensitive data access are managed. Strengthening these controls ensures AI tools do not unintentionally expand access to information.

Learn from external expertise

AI technology is evolving quickly, and many organizations lack deep expertise internally.

Leaders can accelerate progress by learning from external sources such as:

- Industry communities and professional groups
- Peer organizations experimenting with AI
- Advisors and technology partners
- Educational resources and training programs

Moving forward with AI

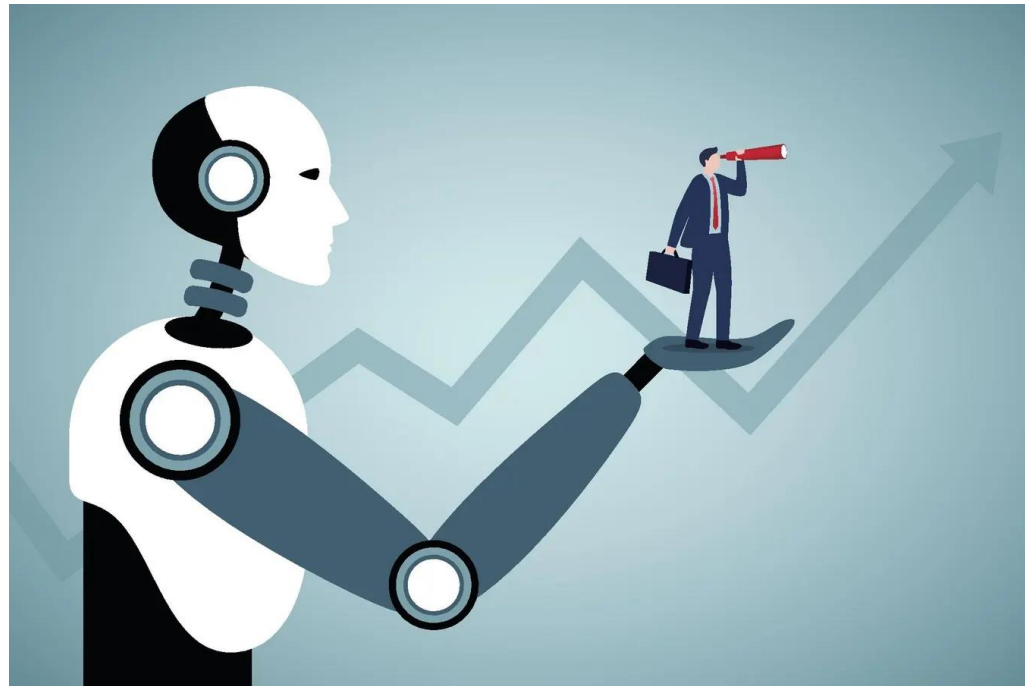
Organizations don't need a perfect strategy before they begin exploring AI.

What matters most is creating the right environment for progress.



That environment includes:

- Clear leadership support
- Cross-functional collaboration
- Safe experimentation
- Strong governance and security
- A focus on real business problems



AI is revolutionizing leadership development

by providing personalized learning paths, real-time feedback, and data-driven insights to identify potential leaders.

It enables cost-effective, scalable training through simulations and AI coaching, allowing leaders to refine soft skills like empathy and conflict resolution.

By blending AI with human mentorship, organizations can create more effective, tailored development programs.

Peer-Reviewed Research

Validate why change is needed.



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Benefits of AI for Leaders

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Tailor content to meet individual needs.



Streamline Communication

Facilitate team collaboration.



Streamline communication

Artificial intelligence (AI) can streamline communication and collaboration among leaders and their respective staff. For example, you can use it to:

- Schedule meetings: AI can automatically suggest meeting times that work for building or district teams, all staff, departments, or PLCs. This saves time and hassle and helps ensure everyone is on the same page.

- Assign tasks: AI can automatically assign tasks within your leadership team based on their skills and availability. This helps ensure that tasks are completed on time and that everyone is contributing to the task(s) at hand.
- Provide updates on change efforts: AI can automatically generate progress reports related to strategic planning, implementation of initiatives, professional learning, and facilities updates. This can help all leaders stay on top of their work and identify potential problems.



Implementing AI Leadership in Your Organization

- Introducing AI leadership requires a structured plan.
- Start by defining clear business objectives and identifying where AI can deliver measurable results.
- Build interdisciplinary teams combining domain experts and data professionals.

Implementing AI Leadership in Your Organization

- Train managers and staff to understand how AI supports their roles. Transparent communication helps reduce fear and resistance.
- Begin with pilot projects before scaling enterprise-wide adoption, ensuring success is measurable and repeatable.
- Employee buy-in is crucial.

Why Does AI Leadership Matter in Today's Organizations?

Enhanced Decision-Making

AI empowers leaders with accurate, data-driven insights. Predictive models and analytics tools help identify opportunities and risks quickly, allowing faster, smarter decisions.

Operational Efficiency

Automation reduces repetitive work and improves productivity. AI leaders design efficient workflows that integrate machine learning and robotic process automation into daily operations.

Innovation and Growth

By promoting experimentation and cross-functional collaboration, AI leaders encourage teams to explore new ideas and technologies, resulting in innovative products and services.

Improved Customer Experience

AI-driven personalization allows businesses to anticipate customer needs. Leaders ensure these systems operate transparently and protect customer trust.

Risk Management

Strong AI governance reduces data misuse and compliance risks. Responsible leaders establish clear policies for algorithmic transparency and accountability.

Impact of AI on essential leadership skills

This slide exhibits leaders leveraging important skills using AI due to strong cohesive teams, data-driven decisions, adapting to new challenges, and fostering innovative culture. It includes emotional intelligence, cultural intelligence, agility, and creative thinking skills.



Skills



Emotional Intelligence



Cultural Intelligence



Agility



Creative Thinking



Leadership activities

- o Social awareness
- o Relationship management
- o Add text here

- o Team leadership
- o Relationship building
- o Add text here

- o Risk management
- o Problem solving
- o Add text here

- o Idea generation
- o Strategic thinking
- o Add text here



AI Impact

- o Analyze communication patterns for emotional issues
- o Add text here

- o Analyze employee data for cultural backgrounds
- o Add text here

- o Analyze vast data sets to predict trends
- o Add text here

- o Generate creative text formats for new ideas
- o Add text here



Destructive forces

- o Overreliance on AI for conflict resolution
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- o Consists of cultural biases reflected in recommendations
- o Add text here

- o Lack of human element for change management
- o Add text here

- o Lack of clarity and incompleteness for every solution
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Overcoming Common Challenges in AI Leadership

Data Quality and Availability

AI outcomes depend on accurate data. Leaders must invest in data governance and create protocols for secure storage and sharing.

Scaling AI from Pilot to Production

Many organizations struggle to move from prototype to production. Collaboration with trained professionals, such as graduates of the AI Developer program, helps build robust systems that scale efficiently.

Lack of a Clear AI Vision

Without a unified strategy, projects become fragmented. Leaders must align teams under a common roadmap that defines purpose, budget, and metrics.

Talent Shortage and Skill Gaps

Upskilling the existing workforce is more sustainable than constant hiring. Continuous education keeps employees motivated and aligned with evolving technologies.

AI Bias, Transparency, and Ethical Governance

Bias undermines trust and can lead to compliance issues. Ethical frameworks, diverse datasets, and regular audits ensure fairness and reliability.

Workforce Resistance to Change

Employees may worry that automation threatens their roles. Clear communication and retraining opportunities demonstrate that AI enhances rather than replaces human capability.



Thank You