

"Innovation's new speed limit: human comprehension, not computational power".

“Generative AI for Business Leaders”

Jan 15, 2025



What is AI?

AI or Artificial Intelligence refers to technology that can do “human-like thinking”. The technologies include neural nets, Large Language Models (LLMs), and expert systems.

Common AI tools include: **ChatGPT**, Siri, **Perplexity.AI**, Google Gemini, **Microsoft CoPilot**, etc.

NOTE: Real / “True” / “General” artificial intelligence (ie human-equivalent AI) does not exist yet.



How fast is AI changing?

Technology Rate of Change

Since 1965 Computer chips, phones etc. have roughly doubled in power **every 24 months** (this is called Moore's Law).

AI Rate of Change

Since 2023 when OpenAI ChatGPT came out AI functionality is doubling faster than Moore's Law. Performance is currently doubling roughly every **3 to 12 months** and it is accelerating.

“In the AI age, how fast we learn matters more than how powerful computers become.”



Big Investment In AI

Company	Estimated Investment Amount	Time Frame	Focus Areas
Microsoft	\$100 billion	Announced in 2024	AI infrastructure, including data centers and energy supplies
Google	\$0.930 billion	2024	Data centers in Nebraska, part of a \$4.4 billion investment over five years
Amazon	\$150 billion	Next 15 years	Data centers to support AI and digital services
Apple	\$10 billion	Next five years	Data center construction in the U.S., part of broader AI and tech investments



You are already using AI

You probably use AI already

1. **Predictive spell check** and typing “compose” assistance
2. **Realtime Language Translation**
3. **Preferences / recommended products** (social media, Amazon, ads etc.)
4. **Microsoft Project** (resource leveling, Critical Path Analysis etc.)
5. **Self-Driving Vehicles**
6. **Google Search**
7. **Virtual Voice Assistants** (Siri, Google, Amazon Alexa etc.)
8. **Text interaction** (ChatGPT 4o, Perplexity, Claude, etc.)



Good AI tools

Here are my top 5 free/paid FREE tools. Keep in mind you should NEVER share confidential information, social security info, banking, HIPAA or PPI with these tools

1. **Perplexity.AI**
2. **Microsoft Co-Pilot**
3. **ChatGPT**
4. **Claude.AI**
5. **Google Gemini**

“The REAL innovators won't be the ones who know the most about AI, but those who leverage it best.”



Yet more AI tools

These are good tools but keep in mind you should NEVER share confidential information, HIPAA or PPI with these tools

- **Meta.AI** – Fairly good tool for document creation
- **Gab.AI** – Fairly good for creation of advertising and human language documents.

There are numerous other tools such as: Canva (for Design & Content Creation), Zapier (for Workflow Automation & App Integration), You (AI Search/research), GFP-GAN (Photo Restoration), Lumen5 (Video Creator), Canva's AI Art Generator, Lalal.ai (Splits out a single voice from audio stream), and Grok (x.ai Twitter/Elon Musk AI)



AI Success

Is AI (LLM) technology really making a difference? **YES**

AI is already changing the world. It is used every day and has profound tangible results in science, technology and healthcare

“AI is like any other tool – its true power lies in how creatively we use it.”



AI Success Example 1

Nuclear Fusion Reactions

Princeton researchers developed an AI system to address tearing mode instabilities in nuclear fusion reactions, extending stability from 5 seconds to 17 minutes and 36 seconds.



AI Success Example 2

Protein Structure Prediction

Google DeepMind's AlphaFold 2 predicted the structures of 200 million proteins, revolutionizing drug discovery and understanding diseases. This advancement has significant implications for tackling challenges like antibiotic resistance and plastic pollution.

***"The smartest AI can't help if you ask the wrong questions.
Innovation starts with better questions."***



AI Success Example 3

AI-Driven Healthcare Diagnostic Tools

AI-driven diagnostic tools, such as those developed by PathAI, have significantly improved cancer detection rates. Platforms like Atomwise utilize AI to accelerate drug discovery processes, identifying potential therapeutics more efficiently.

***"Want breakthrough AI results?
Start with breakthrough questions."***



AI Success Example 4

Battery Material Exploration

A research team explored 32.6 million potential battery materials in just 80 hours, resulting in 18 promising candidates. Six were given to PNNL researchers for further evaluation, and one material was ultimately selected for synthesis and testing.



Examples of AI in Research

- Research markets and your competition
- Summarize long content documents
- New Product research and development
- Structured Research (super google)

“The new great leaders won't be those with the best tech, but those who ask the best questions and then apply the answers to make positive change the fastest.”



Examples of AI in Content Creation

- . Create Advertising / Marketing
- . Meeting Prep and Automatically Generate Minutes
- . Improve reports, rewrite reports for different audiences
- . Create Policy
- . Content Moderation
- . Create training guides and materials



Examples of AI in Operations

- Legal (contracts, agreements) law review
- Customer Support (Chat Bots and interactive knowledge bases)
- Assessing and Writing Computer Code and programming *“LLMs can produce interesting ideas and tool suggestions even if the output can't be used as is. By requesting ‘Write better code’ ”*
- Staff and customer recruitment
- Create a comprehensive business plan
- Fraud Detection
- Supply chain optimization
- Predictive maintenance and planning
- Financial forecasting



Better Prompts = Better Results

A detailed prompt identifying who the AI is writing as, who the audience is including details and reading level, the expected outcome/goals, the length and format of the response all help get you the answer you want. *(Prompt Engineering)*



EXAMPLE SHORT PROMPT

Acting like a social media manager for the yard waste company called "Green Bin Heroes." Create 20 humorous social media post ideas that will entertain our followers while promoting our services.

“AI / LLM technology can give us answers, but humans still need to ask the right questions”



Short Prompt Results

1. "Lawn and Order": Post a picture of a perfectly manicured lawn with the caption: "In the court of yard waste, we always deliver justice! #GreenBinHeroes"
2. "Waste Not, Want Not": Share a meme of a sad plant in a pot with the caption: "When you realize your yard waste is more than just leaves... Don't worry, we've got your back! #WasteNotWantNot"
3. "The Great Escape": Create a comic strip showing yard waste trying to escape from a messy yard, with the final panel showing them happily inside a Green Bin. Caption it: "No more running! We'll take you home! #GreenBinHeroes"
4. "Leafy Love": Post a photo of a pile of leaves with the caption: "Roses are red, violets are blue, if you have yard waste, we'll come for you! 🌹 🍂 #PoetryInWaste"
5. "Compost Confessions": Share a funny confession from compost (like "I was once just a banana peel") to highlight the benefits of composting with Green Bin Heroes.



10 parts of a Detailed Prompt

“Prompt Care”

1. **Purpose/Task/Objective:** Clearly define the purposes, objective or task you want the AI to accomplish.
2. **Role (persona):** Specify the role or persona the AI should adopt.
3. **Organization/Context:** Include relevant background information to help the AI understand the scenario better.
4. **Method/Instructions:** Offer specific directions on how the AI should complete the task.
5. **Perspective/Scope:** Limit the scope to one specific goal or task per prompt.
6. **Tone:** Indicate the desired tone or style for the response.

7. **Communication Type/Format:** Specify the desired output format or structure, if applicable.
8. **Aim/Audience:** Consider and specify the target audience for the AI's response.
9. **Requirements:** Provide necessary context, conditions, and limitations to guide the AI's response.
10. **Examples:** When helpful, provide examples of the expected output.

*“The old GARBAGE IN, GARBAGE OUT rule still applies.
Better, more detailed questions give better outcomes.”*



Example Detailed Prompt

Writing as a Social media advertising agency, create engaging and humorous content for Green Bin Heroes to promote yard waste disposal services in Kewaunee County, WI. The posts will be tailored for Facebook and Instagram and will include a variety of content types such as puns about yard work, rhymes, funny anecdotes, light-hearted jokes, and relatable memes. The tone should be witty, playful, and family-friendly, appealing to homeowners and gardeners in the area. Additionally, each post should suggest image ideas or memes and aim to encourage likes, shares, and comments to foster community engagement.



Detailed Prompt result examples

Rhyming Riddle: **"Waste Not, Want Not"** Caption: **"Roses are red, violets are blue, your yard waste is green, and we know what to do! 🌹 🌿 Let us take care of your garden's green scene. #WasteNotWantNot #GreenBinHeroes"**
Image Idea: A split image showing a messy yard on one side and a clean, bin-free yard on the other.

Relatable Meme: **"Weekend Plans"** Caption: **"When you realize your weekend plans include battling the jungle that is your backyard... 🏠 🌿 Let us handle the wild side of your yard work! #WeekendWarrior #GreenBinHeroes"**
Image Idea: A meme with a before-and-after photo of someone looking overwhelmed by their overgrown yard and then relieved after it's cleaned up.



Make the AI figure it out for you

rewrite this as a better LLM Prompt

“Writing as a small business accounting and legal firm, create a business plan for a new bar and grill called the "The Topsy Toad," a lively bar and grill located near Lake Michigan in Kewaunee County, Wisconsin. The bar offers a warm, pub-style atmosphere with a full menu that includes popular items such as burgers, wings, and specialty drinks. Include all likely costs, provide a plan for staffing, advertising and budget”



AI generated “better” prompt

Create a comprehensive business plan for "The Tipsy Toad," a new bar and grill located near Lake Michigan in Kewaunee County, Wisconsin. The plan should include an executive summary outlining the concept, target market, and key financial projections; a detailed business description highlighting the unique selling proposition and legal structure; a market analysis featuring demographic insights and a SWOT analysis; a proposed food and drink menu with pricing strategy; and a marketing and sales strategy that covers branding, advertising channels, and community engagement initiatives. Additionally, provide an operations plan detailing location, equipment needs, staffing requirements, and operational procedures; introduce the management team with qualifications; present financial projections including startup costs, profit and loss forecasts, break-even analysis, and funding requirements; assess potential risks with mitigation strategies; and outline an implementation timeline with key milestones. Ensure that all financial projections are realistic based on market research for Kewaunee County, including specific costs for licenses, permits, and insurance necessary for operating a bar and grill in Wisconsin.



Embrace Change

Embrace change for YOURSELF AND YOUR STAFF. Leverage AI including virtual assistants, robots etc. If you aren't leveraging the tools and your competitors are, they will win.

Plan for CONSTANT Change



Digital / Virtual / AI Assistants

AI assistants are on the way.

They are already using natural language processing to tasks such as answering questions, providing recommendations, scheduling appointments and reminders, automating workflows, and more. To get an idea watch the [video](#) of ChatGPT 4o.

The availability timeline for a true AI personal assistant is roughly 6 to 24 months for the basics. With advanced features in the 3-5yr window. **ChatGPT has a smartphone App that sort of does this right now.**



AI and Change Management

The AI technology landscape will keep changing. There will be new options every 6 to 18 months.

At minimum AI tools' capabilities will double at least annually. Tools that don't exist today could be available in just a few months.

This will create both risks and opportunities.

***“The new ‘success speed limit’
is your organization's ability to change.”***



Upcoming AI Huddles



January 15 – Generative AI for Business Leaders *(this session)*

January 22 – How to Keep Your Team on the Bleeding Edge of Innovation

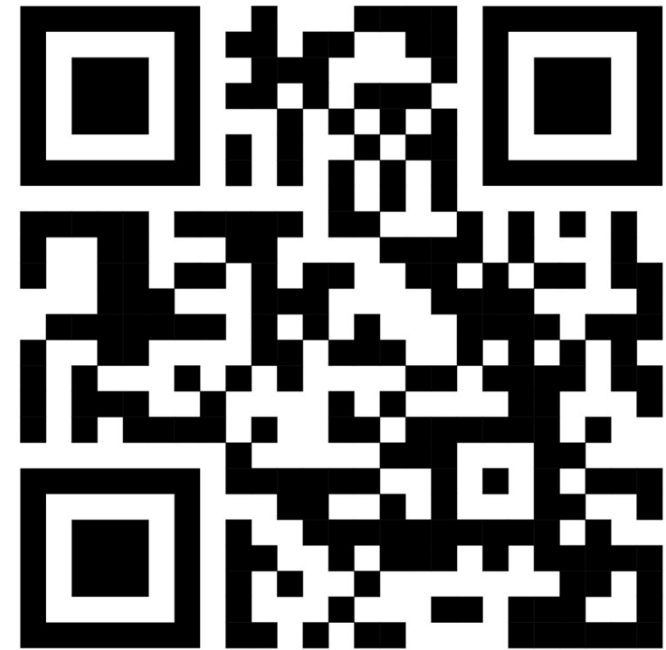
January 29 – AI Challenges and Opportunities for Leadership

February 5 – Integrating Generative AI into Business Strategy

February 12 – Build AI Aptitude in Your Organization as a Leader

February 19 – Leading Responsible AI in Organizations

Questions & Answers



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