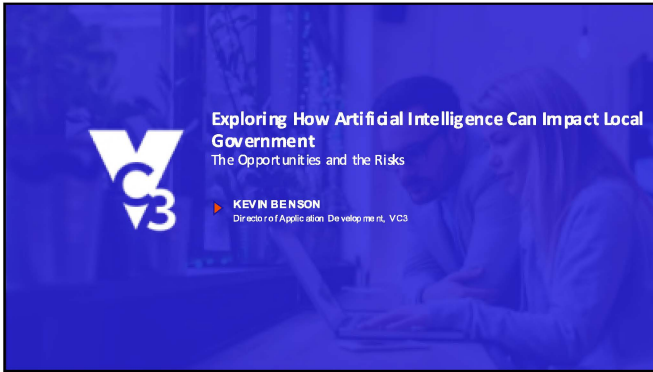
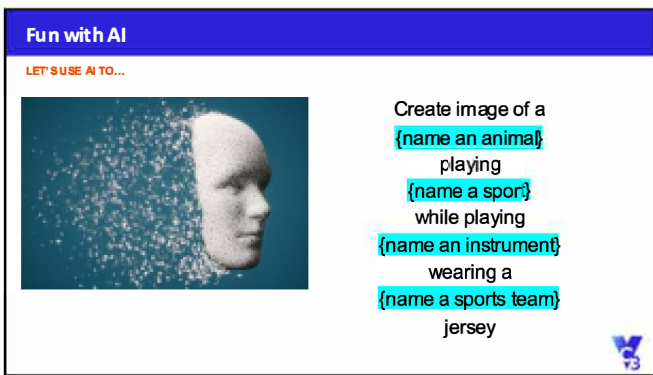


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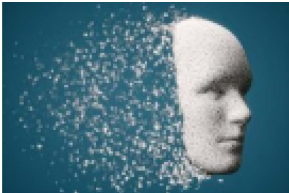
Exploring How Artificial Intelligence Can Impact Local Government
The Opportunities and the Risks

▶ **KEVIN BENSON**
Director of Application Development, VCS

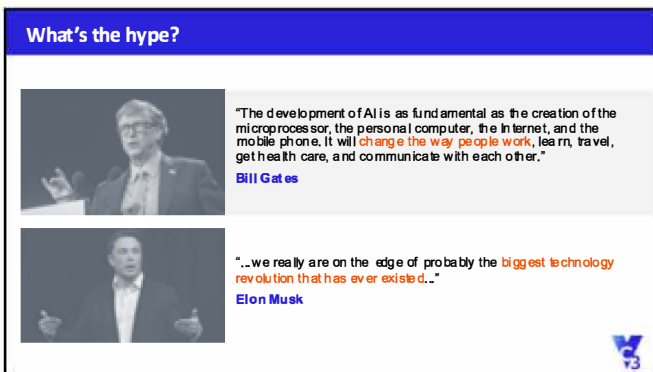


Fun with AI


LET'S USE AI TO...




Create image of a
{name an animal}
playing
{name a sport}
while playing
{name an instrument}
wearing a
{name a sports team}
jersey



What's the hype?




"The development of AI is as fundamental as the creation of the microprocessor, the personal computer, the Internet, and the mobile phone. It will **change the way people work, learn, travel, get health care, and communicate with each other.**"
Bill Gates




"...we really are on the **edge of probably the biggest technology revolution that has ever existed.**"
Elon Musk


The Digital Revolution




- ▶ The digital revolution started in the **1940s-1950s** with the term "Artificial Intelligence" coined at a conference at Dartmouth College, beginning research into machine learning and AI.
- ▶ The ARPANET (precursor to the Internet) was created in the **1960s**, connecting four university computers and allowing them to share data over long distances.
- ▶ In the **1970s**, ethernet is invented by creating the foundation for local area networking (LAN).



The Digital Revolution



- ▶ In the **1980s**, Microsoft Windows is released marking the beginning of widespread personal computing adoption.
- ▶ In the **1990s**, the World Wide Web goes public, revolutionizing how people access and share information globally.
- ▶ The **2000s** saw the rise of mobile revolution and social media, with the release of the iPhone marking the beginning of the smartphone era.




The Digital Revolution



- ▶ AI became mainstream in the **2010s**, with technologies like voice assistants becoming widely adopted.
- ▶ The **2020s** are expected to see significant advances in natural language processing and automation with the prominence of AI applications.




What's the hype?



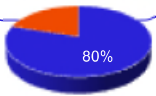
The majority of people believe we've been unique in our ability to envision and **create something new.**

While you're reading this sentence, artificial intelligence (AI) programs are creating art, making music, and responding to chat messages.




What's the hype?

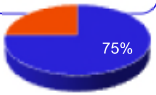
80%
of companies will have incorporated AI by 2028




AI is expected to see an annual growth rate of
37%
from 2023 to 2030



75%
of consumers are concerned about misinformation from AI



<https://www.frost.com/newsroom/press-releases/ai-adoption-expected-to-reach-80-percent-by-2028>
<https://www.cnn.com/2023/08/02/ai/growth-forecast/index.html>






Agenda Overview


1. What is AI?
2. What are the risks?
3. Real world uses of AI for local government
4. What AI tools are available?

What is AI?

What is Artificial Intelligence?




Artificial intelligence is the ability of machines to perform tasks that typically require human intelligence, such as visual perception, decision-making, and natural language processing.



What is AI?

How do humans learn?




Experience and Practice
We learn by doing things. Repeated actions help the brain create stronger connections, which makes tasks easier over time (like riding a bike).

Observation
Watching others helps us learn, especially when we see someone else performing a task or solving a problem.


Feedback
We learn from feedback—both positive and negative. When we succeed, it reinforces good actions. When we make mistakes, we learn what not to do.

Memory
Our brain stores new information in memory. With repeated exposure, this information can become a long-term memory, making it easier to recall later.



What is AI?


How does a machine learn?



Just like humans learn from experience, AI systems learn from data.

The more data they get, the better they can learn and improve over time.

However, AI can't think or feel—it just processes information to carry out tasks it was designed for.



What is AI?

How does it work?




- 1. Data Input:**
 - AI systems are fed with large amounts of data. This data can be anything: images, text, videos or numbers.
 - The AI needs this data to learn patterns, much like how humans learn from experiences.
 - For example, to train an AI to recognize cats, you'd show it thousands of pictures of cats.
- 2. Algorithms:**
 - AI uses algorithms, which are sets of rules or instructions that guide how it processes the data.
 - The algorithm helps the AI find patterns in the data.
 - For example, an algorithm might help an AI figure out that cats often have whiskers, pointy ears, and a certain shape, based on the images it's seen.




Search vs AI

The Librarian (Search) vs The Researcher (AI)


A **librarian** is responsible for organizing, managing, and providing access to information resources in a library setting. They are responsible for **cataloging** and **classifying** them for easy retrieval by library users.



A **researcher** collects, organizes, analyzes, and interprets data to explore issues, **solve problems**, and **predict trends**.



Generative AI (GenAI)



GenAI is a type of Artificial Intelligence that can create a wide variety of data, such as images, videos, audio, text, and 3D models.

It does this by **learning patterns** from existing data, then using this knowledge to generate **highly realistic** and **complex content** that mimics human creativity.


Examples:

- Image generation
- Audio generation
- Video generation
- Large Language Models (ChatGPT / DALL-E / Bard)

What are the risks?

- Bias and Fairness**
AI systems can inherit biases present in the data they are trained on, leading to unfair or discriminatory outcomes.
- Lack of Transparency**
Many advanced AI models, especially deep neural networks, operate as "black boxes" making it challenging to understand how they reach specific decisions.
- Security Concerns**
AI systems can be vulnerable to attacks where an attacker manipulates input data to deceive the AI model.
- Privacy Concerns**
AI technologies often collect and analyze large amounts of personal data, raising issues related to data privacy and security.

AI in action: Google Maps



How does AI help you navigate efficiently and predict your arrival time?

Data Sources

- Historical traffic
- Current traffic
- Weather conditions
- Road quality
- Social media

Results

- Estimated arrival time calculations are typically accurate within minutes

How might AI be used for local government?

Project Management & Meeting Notes



- Automated Note-Taking**
Transcription of Meetings
- Highlighting Key Points and Decisions**
AI-Driven Context Understanding
- Action Item Identification and Assignment**
Automatic Action Item Detection

How might AI be used for local government?

Data Analysis and Insights



Predictive Analytics
AI can analyze historical data (both structured and unstructured) and identify trends, helping organization forecast future demand, citizen behavior, and market changes.

How might AI be used for local government?


Human Resources and Recruitment



Candidate Screening
AI can scan resumes and job applications to identify candidates that match job requirements, saving time for recruiters.

How might AI be used for local government?

Financial Forecasting and Analysis



Budgeting
AI can streamline financial forecasting and budgeting by analyzing past financial data, predicting cash flow, and identifying potential cost-saving opportunities.

How might AI be used for local government?

Waste Collection



Data Sources


- > Volume of waste generated
- > Location of waste bins
- > Waste collection times
- > Weather forecasts
- > Road conditions
- > Traffic patterns

Results

- > Optimize collection routes and schedules
- > Reduce fuel consumption

How might AI be used for local government?

Municipal Planning



Data Sources

- > Population growth
- > Housing demand
- > Transportation & traffic data

Results

- > Predict future demand for housing or transportation
- > Plan infrastructure developments more effectively

How might AI be used for local government?

City Engagement and Emergency Response



Data Sources


- > Social Media
- > Complaint Systems
- > Public Safety Systems

Results

- > Proactively address common concerns among their residents

How might AI be used for local government?

Disaster Planning



Data Sources


- > Weather Data
- > Infrastructure
- > Traffic Data

Results

- > Predict traffic patterns and plan the best route for evacuation
- > Predict the impact of natural disasters like floods or hurricanes

What AI tools are available?

ChatGPT (Generative Pre-trained Transformer)




The tool you can use to answer questions and assist you with tasks such as composing emails.

Let's use AI to:

- > "Write a polite response to inform a client that they are past due on payment"
- > "What are key trends in the insurance industry that could impact our business over the next 3-5 years?"
- > "How can we improve our competitive positioning against major players in the insurance industry?"

What AI tools are available?

Data Analyst by ChatGPT

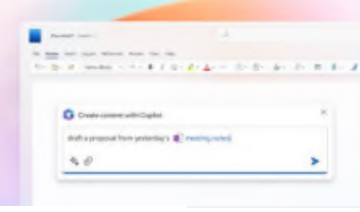


The tool you can use to ask questions about data that is uploaded to the platform to:

- Provide summaries and interpretations based on provided datasets.
- Identify trends in the historical data.
- Generate textual data trends descriptions and charts, aiding in the visualization process.

What AI tools are available?

Microsoft Copilot for Microsoft 365



Copilot works within the Microsoft 365 apps and content in Microsoft Graph, such as emails, chats, and documents that users are permitted to access.

It works alongside you, embedded in the Microsoft 365 apps:

- Word
- Excel
- PowerPoint
- Outlook
- Teams

HAVE MORE QUESTIONS?

