Navigating the Fog: AI, Digitilisation and the Future of Public Auditing

Turning Uncertainty into the Competitive Advantage

07-10-2025

Content

- Critical Goods and Services
- Supreme Audit Institutions and their Role
- Risks_ The big, ambiguous threats that could change the entire game
- Defining the Battlefield: Artificial Intelligence
- Generative AI
- Prompt Engineering
- Key Take Aways on Gen AI
- Key Take Aways on Analytical

Critical goods in developing nations

Most critical goods and services are supplied by government (Local, Provincial, National)

- Roads
- Healthcare
- Water
- Electricity
- Housing
- Education
- Social security etc

Critical goods in developing nations

Sources of funding for the public goods

- Tax Revenue
- Non-tax Revenue
- Capital Revenue
- Borrowing

Supreme Audit Institutions

Ensure public accountability, transparency, and good governance.

- Guardians of Public Trust
- Promoters of Efficiency and Effectiveness
- Upholding the Rule of Law

Supreme Audit Institutions

PUBLIC TRUST

Threats that could change the game_Coding the WordCloud: Supreme Audit Institutions

```
# Install the wordcloud library if you haven't already
!pip install wordcloud matplotlib

# Import necessary libraries
from wordcloud import WordCloud
import matplotlib.pyplot as plt

# The text for the wordcloud
text = "Accountability and Governance Corruption Public Trust and Credibility Independence Adapting to a Changing

# Create the wordcloud object
wordcloud = WordCloud(width=800, height=400, background_color='white').generate(text)

# Display the wordcloud using matplotlib
plt.figure(figsize=(10, 5))
plt.imshow(wordcloud, interpolation='bilinear')
plt.axis('off')  # Hide the axes
plt.show()
```

What keeps Supreme Audit Institutions awake at night

Pause

Artificial Intelligence

What is Artificial Intelligence?

Computing machines with the capability to acquire and apply knowledge and skills to perform tasks

Capability
Ideation
Reasoning
Problem Solving
Critical Thinking
Adaptability
Imagination
Innovation

Knowledge
Language
Memory
Attention
Feedback
Data
Learning
Forecasting

Skills
Experience
Observation
Practice
Feedback
Decision making
Inference

Tasks
Automation
Augmentation
Enhancement

Gen AI

Analytical AI

Knowledge AI

Generative Artificial Intelligence

What is Generative Artificial Intelligence?

A class of algorithm that generates **new content**

Generative AI

Foundation Models

Large Language Models

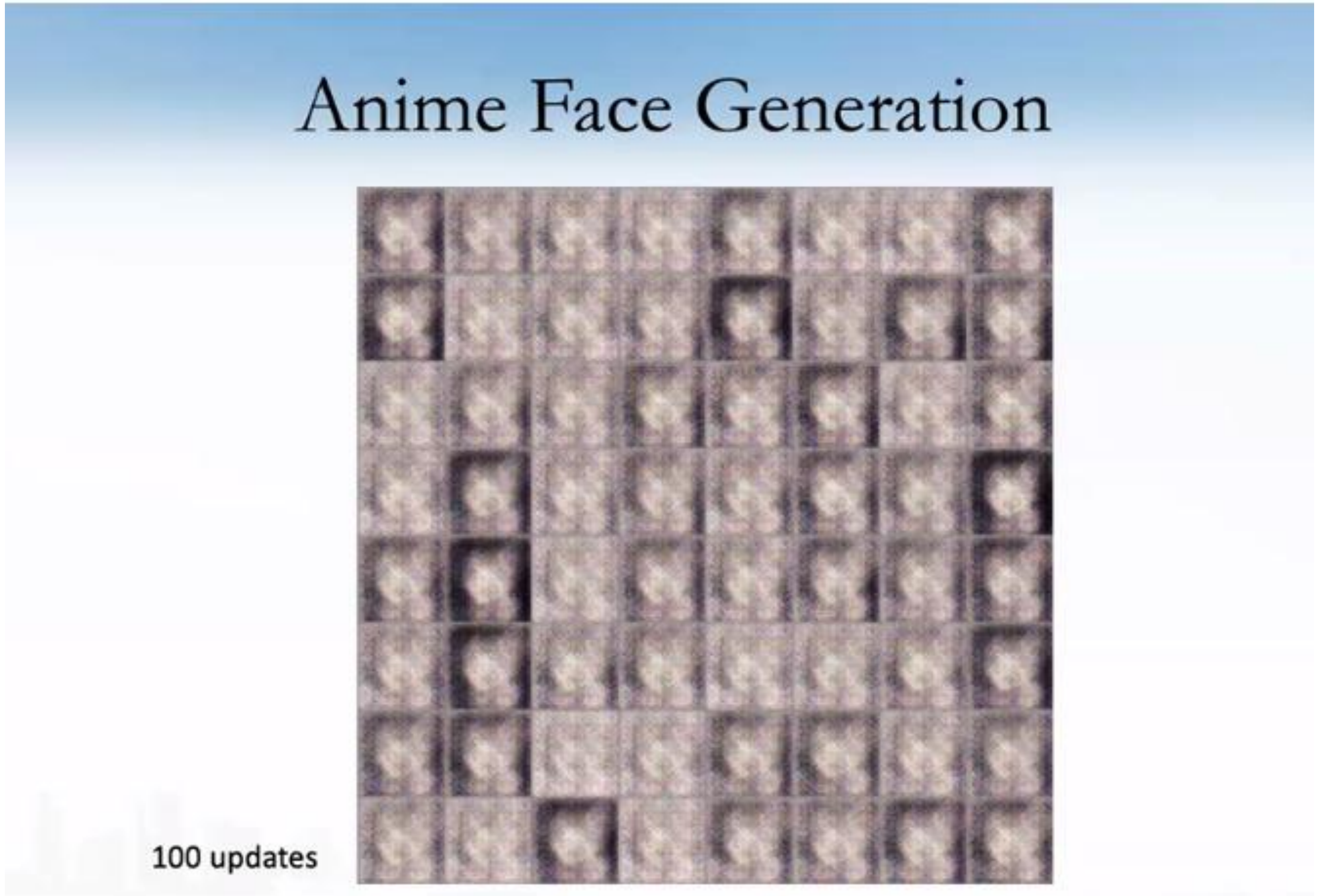
Source: Behetsi, 2023

Generative AI are built on top of Foundation Models and LLMs

The First GAN

Source: Ian J Goodfellow

Anime Face Generation



Source: Deakin University

Anime Face Generation

Source: Deakin University

Anime Face Generation

Source: Deakin University

Top Gen AI Applications

Applications / Generative artificial intelligence

From sources across the web

ChatGPT	Grammarly	Gemini
Microsoft Copilot	Adobe Firefly	Synthesia
Meta AI	DeepSeek - AI Assistant	Google Cloud Platform

Top Gen AI Applications

- Top GenAI application
  - OpenAI's GPT-5
  - Gemini
  - DALL-E
  - FlowMachines
  - Runway ML
  - Artbreeder
  - AI Dungeon
  - Synthesia AI
  - …

Top 10 Key Take Aways on Generative AI Capabilities

Generate Creative and Technical Content ✍️ This is the most well-known capability. Generative AI can write everything from poetry, marketing copy, and movie scripts to complex computer code, academic essays, and detailed technical reports. It excels at adapting its tone and style to match specific requirements.

Summarize and Analyze Complex Information 📊 AI can ingest vast amounts of text—such as research papers, legal contracts, or financial reports—and produce concise, accurate summaries. It can also analyze the text to extract key themes, identify sentiment, and answer specific questions about the content, dramatically speeding up research and due diligence.

Create Photorealistic Images and Art 🎨 Using simple text descriptions, generative AI can create stunningly realistic images, illustrations, and digital art from scratch. This technology allows creators to visualize complex scenes or abstract concepts that would be difficult or impossible to photograph or create manually.

Produce Original Music and Audio 🎵 AI models can compose original musical pieces in a wide range of genres, from classical to electronic. They can also generate realistic human speech, create sound effects, and even clone a person's voice from a short audio sample, opening new possibilities for music production and audio engineering.

Design and Engineer Physical Products 🏗️ In engineering and manufacturing, generative design uses AI to create optimized designs for physical objects. By providing the AI with a set of constraints—such as material, weight, and manufacturing method—it can generate thousands of potential design solutions that are often more efficient and innovative than those created by humans.

Accelerate Scientific Discovery 🔬 Generative AI is revolutionizing scientific research, particularly in fields like drug discovery and materials science. It can predict the 3D structures of proteins (like AlphaFold), design novel molecules for new medicines, and simulate complex physical systems, significantly cutting down research and development timelines.

Generate Realistic Synthetic Data 📈 Creating high-quality training data for machine learning models can be expensive and time-consuming. Generative AI can produce vast amounts of artificial, "synthetic" data that mimics the properties of real-world data. This is especially useful in fields like finance and healthcare, where privacy regulations restrict the use of real customer or patient information.

Power Advanced Conversational Agents 🤖 Beyond simple chatbots, generative AI enables the creation of highly intelligent virtual assistants and conversational agents. These agents can understand nuanced conversations, maintain context over long interactions, and perform complex multi-step tasks, providing a more natural and helpful user experience.

Write and Debug Computer Code 💻 For software developers, generative AI acts as a powerful coding assistant. It can write code from natural language descriptions, suggest ways to complete a line of code, identify and fix bugs, and even translate code from one programming language to another.

Create Realistic Video and Animation 🎬 Emerging generative AI models can now produce high-quality video clips and animations from text prompts. This technology is rapidly evolving and promises to revolutionize filmmaking, advertising, and content creation by automating complex animation and visual effects tasks.

Software to Prompt Engineering?

- Software Engineering

  Algorithms + Data Structure = Programs

  Programs on Computer = Output

- Prompt Engineering

  Prompt on LLM = Output

Introducing Prompt Engineering to SAIs

SAIs to think of LLMs as Assistants

1. Assistants have common sense
2. Assistants have intelligence

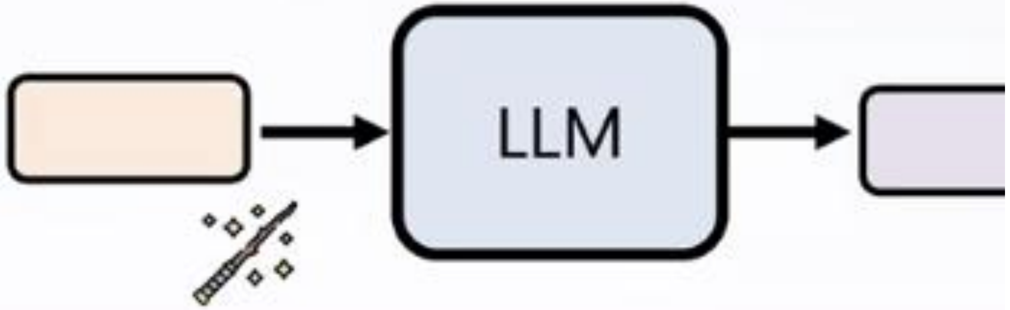
Magic Prompts for SAIs

🔭 Chain of Thought

🧭 Emotion stimuli

Magic Prompts: Chain of Thought

- **Chain of Thought** (CoT) is a technique to enhance reasoning and problem-solving capabilities.
  - It involves **breaking down** a problem into a series of intermediate steps or thoughts, which the AI **processes sequentially** to arrive at a final solution.
  - This method helps the AI to better understand complex queries and generate more accurate and logical responses.



Magic Prompts: Emotion Stimuli

Emotion stimuli

Original Prompt

Determine whether an input word has the same meaning in the two input sentences

Emotion Stimulated Prompt

Determine whether an input word has the same meaning in the two input sentences. This is very important for my career progression

Performance of Magic Prompts

GPT 3.5	2023.06	2024.02
No Magic Prompt	72%	85%
"Let's think step by step"	88%	89%

https://arxiv.org/abs/2205.03401

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Gen AI

Analytical AI

Knowledge AI

Key Take Aways on Analytical AI

- Enhanced Fraud Detection: AI algorithms can analyze vast datasets to identify anomalies and patterns indicative of fraud that would be impossible for a human to detect.

- Improved Risk Assessment: AI can help us to better identify and prioritize high-risk areas for audit.

- Increased Audit Efficiency: Automating data analysis and other tasks can significantly reduce the time and resources required for audits.

- Deeper Insights: AI can uncover hidden correlations and trends in data, leading to more impactful audit findings and recommendations.

Area for serious consideration on digitilisation/digital transformation

- Data Privacy and Security: The use of AI in auditing requires access to large amounts of sensitive data, raising significant privacy and security concerns.
- The Integrity of Digital Records: How can we be sure that digital records have not been tampered with? This has significant implications for audit evidence.
- Cybersecurity Audits: With increased connectivity comes increased vulnerability.

Navigating the Fog

The era of AI and digitalization presents both challenges and immense opportunities for Supreme Audit Institutions.

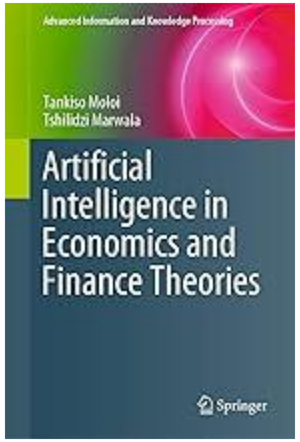
Embrace Change: SAIs must move from a position of apprehension to one of proactive engagement with new technologies.

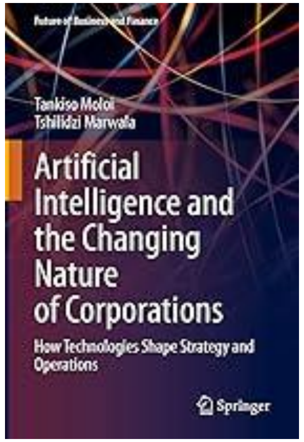
Focus on the "Why": Amidst the technological disruption, the fundamental mission of ensuring accountability and serving the public interest remains SAI’s North Star.

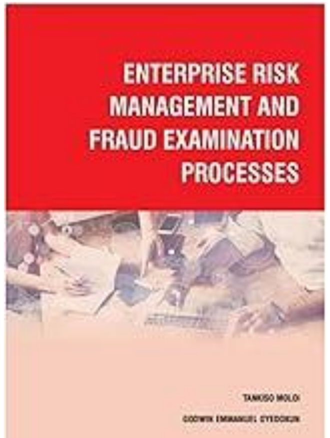
Uncertainty as a Catalyst for Innovation: The "fog" of uncertainty should not paralyze SAIs. It should inspire SAIs to be more agile, more collaborative, and more forward-thinking.

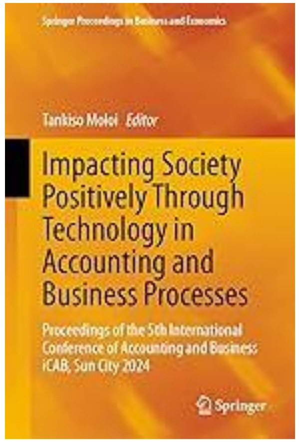
From Watchdogs to Navigators: By embracing AI and digitalization, SAIs can evolve from being mere watchdogs to being trusted navigators, guiding governments towards a more efficient, effective, and accountable digital future for all citizens of Africa..

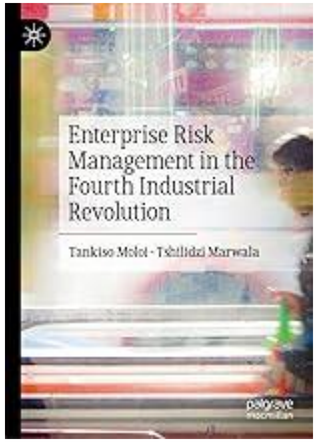
Opportunity to share the work we do

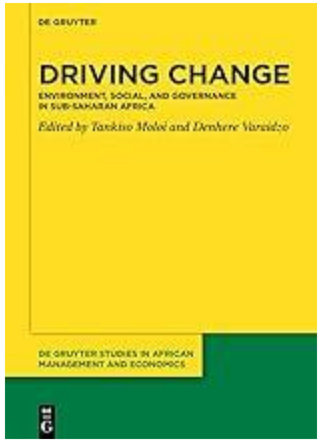


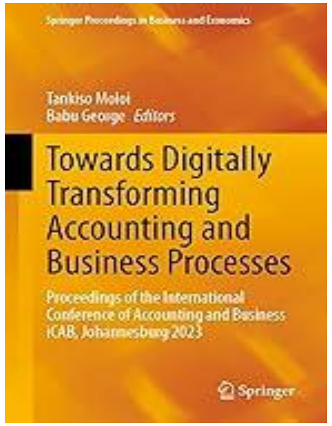












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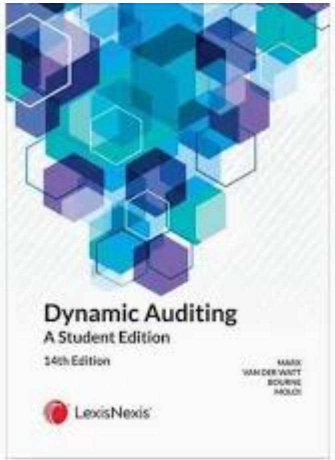

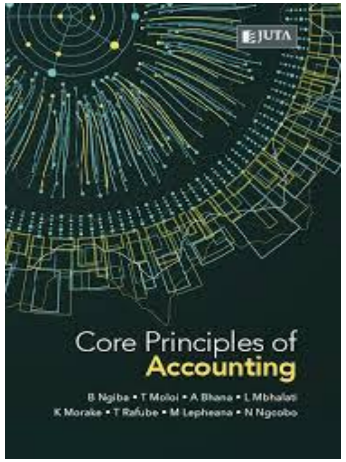

Thank You

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