



Using AI to Improve Internal Audits

Dylan Parsons

Introductions

- Dylan Parsons
- Introduction
- Background





Session outcomes

By the end of this session, participants will be able to:

- Understand core AI concepts relevant to internal audit
- Identify audit activities that can benefit from AI
- Have knowledge of AI tools to improve audit planning, testing, and reporting
- Recognize AI risks and governance requirements
- Use generative AI responsibly while maintaining audit quality



Subject area steps for the session:

1. Introduction & definitions
2. AI for Risk Assessment and Planning
3. AI for Audit Testing and Continuous Monitoring
4. Generative AI for Audit Documentation
5. AI Governance, Ethics, and Risk Management
6. Example & Case Studies



Step 1 – Introduction & definitions

**Definitions
and
meanings**

**Risk
assessment &
Planning**

**Audit testing
& continuous
monitoring**

**Audit
documents &
reporting**

**Governance,
Ethics & risk**

Examples

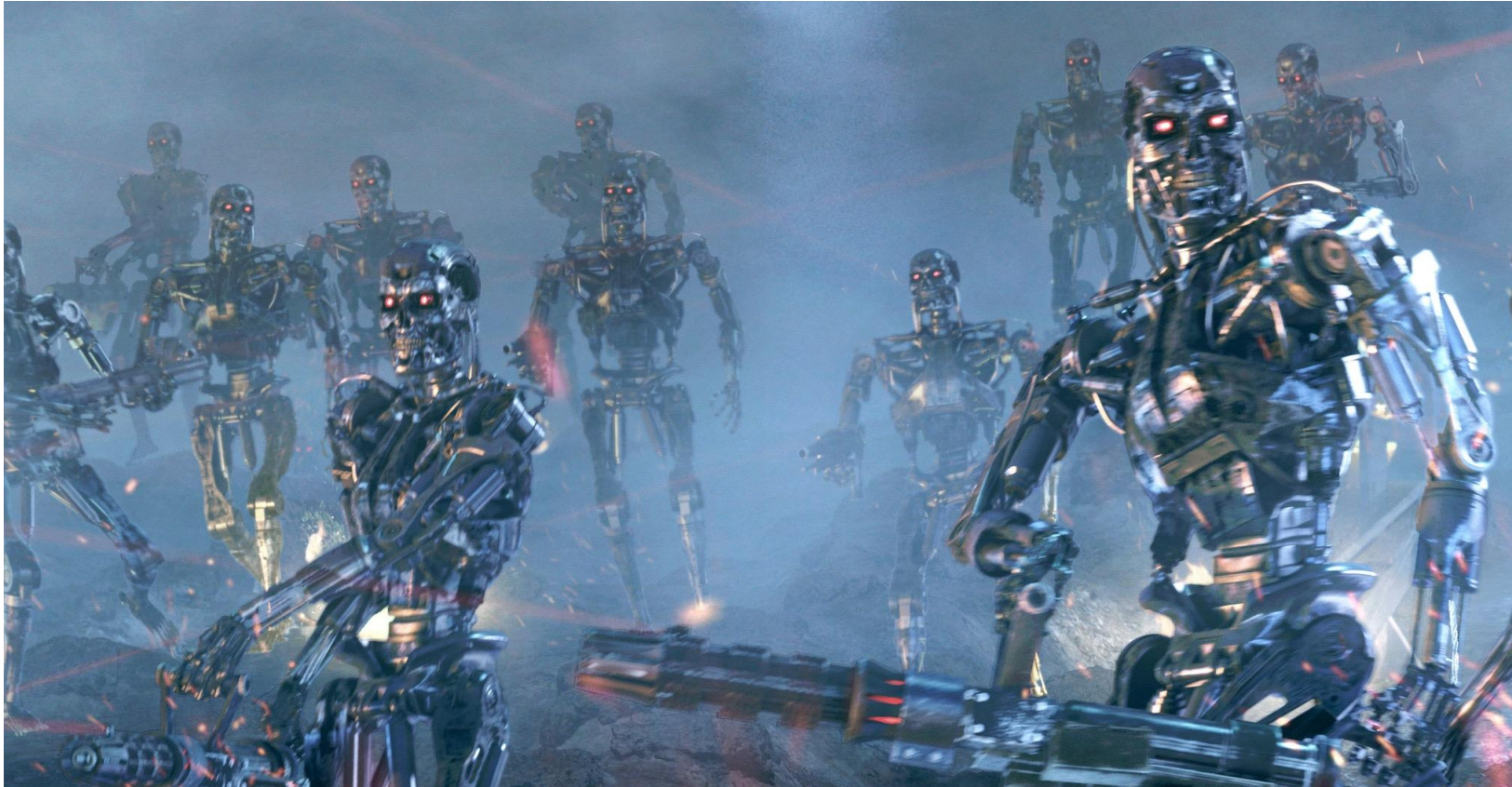


The Definition of AI

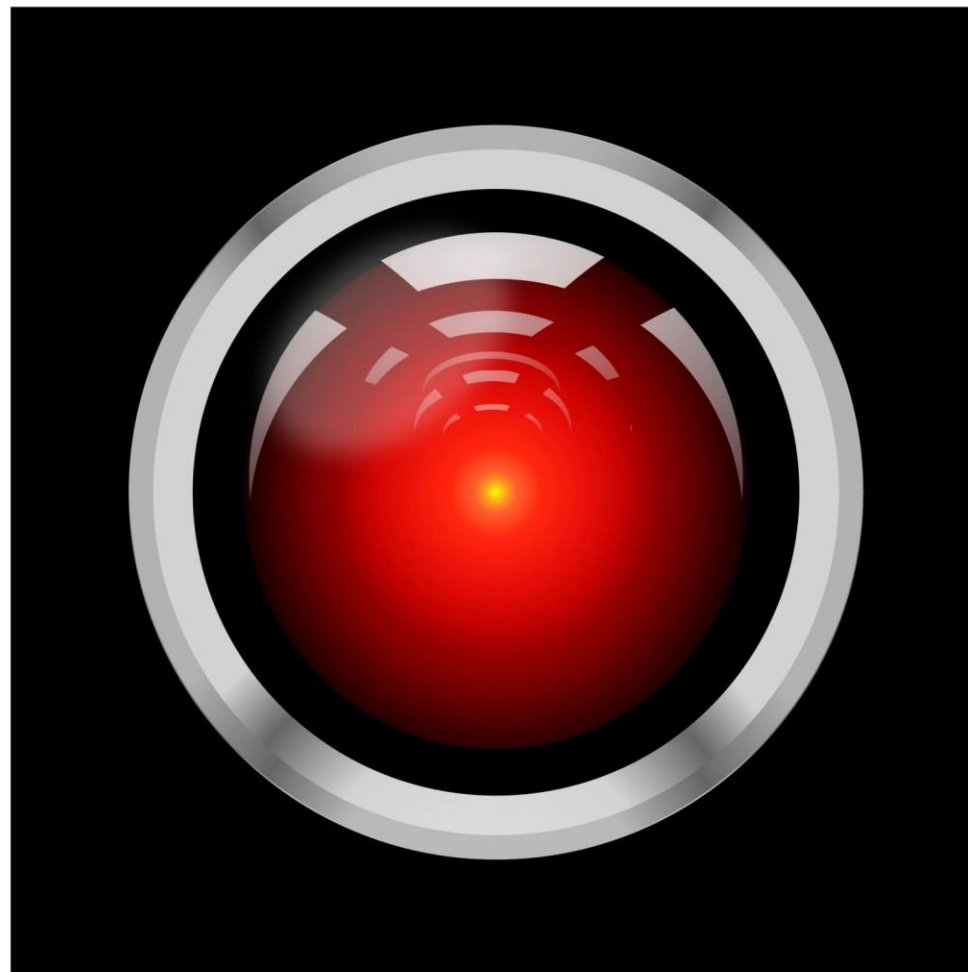
Artificial Intelligence (AI) is the development of computer systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, problem-solving, and decision-making.

Rather than following strict, pre-programmed rules, AI systems analyse massive datasets to recognise patterns & make predictions

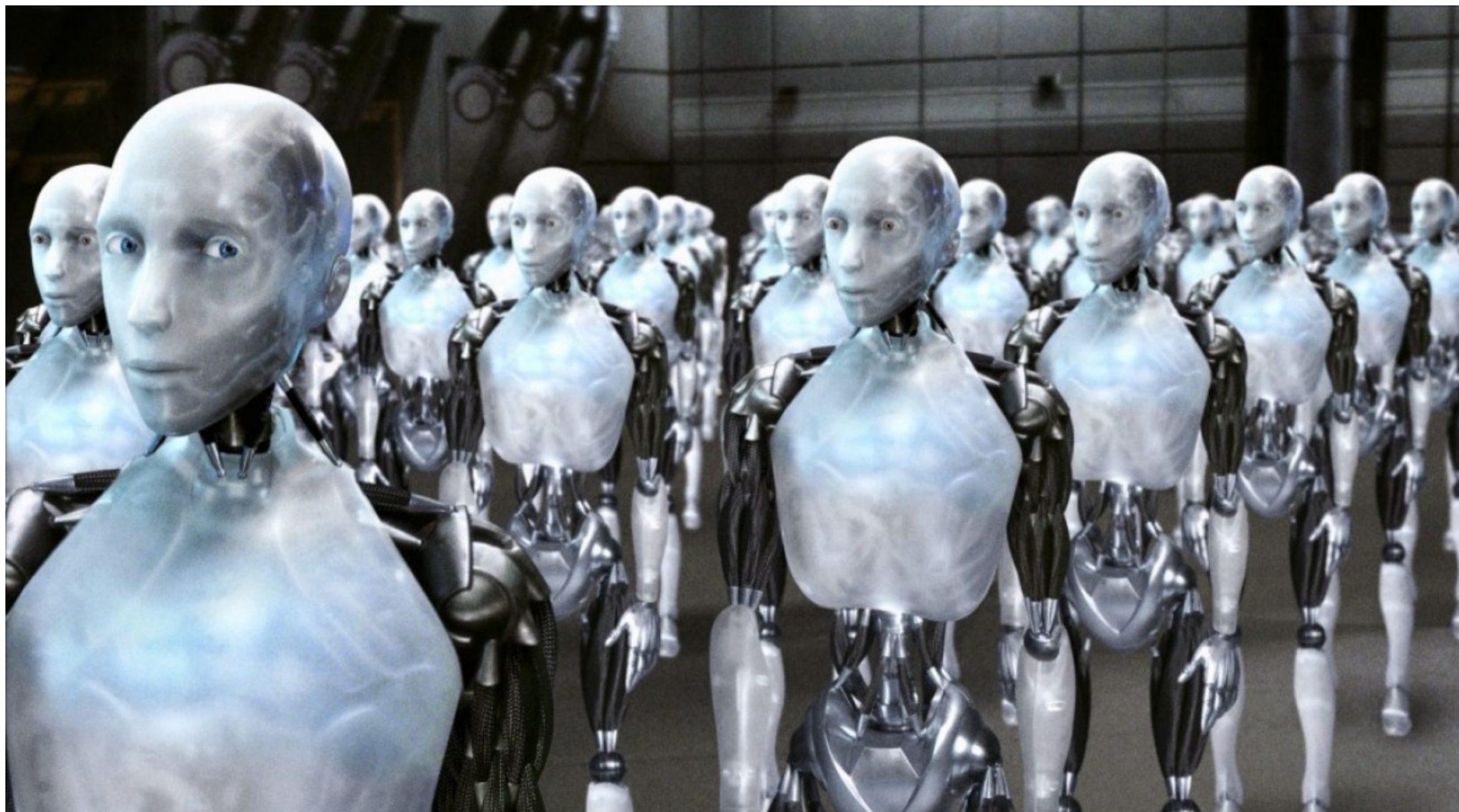
AI – In Operations?



AI – In Quality?

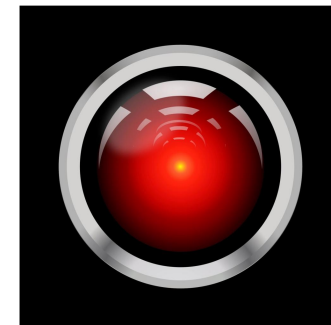


AI – In audit?



What is AI?

- Artificial Intelligence
- Machine Learning
- Natural Language Processing (NLP)
- Generative AI
- Robotic Process Automation (RPA)





Types of AI

Narrow AI (Weak)

- Specialized in performing specific tasks

General AI (Strong AI)

- Hypothetical system with human-like cognitive abilities across multiple domains

Superintelligent AI

- Advanced AI that surpasses all human intelligence.

Types of AI

Narrow AI (Weak)

- Specialized in performing specific tasks

General AI (Strong AI)

- Hybrid **Current auditing practices focus across**
multiple **on narrow AI application**

Superintelligent AI

- Advanced AI that surpasses all human intelligence.



Why do we audit?

We have to:

- it's a mandatory requirement of 91XX, ISO9001, ASA-100 etc.
- Customers require it as part of their contractual flow-down.

We want to:

- If undertaken correctly it will drive the continual improvement process and link to **risk management**
- Because it demonstrates an independent review of the achievement of customer requirements and objectives.



Why AI Matters in Internal Audit

- Increasing data volumes and complexity
- Pressure for faster assurance and deeper insights
- AI enables continuous monitoring and anomaly detection
- Supports more strategic and predictive auditing

The data lake



Key AI Technologies for Auditors

- Machine Learning for anomaly detection
- Natural Language Processing (NLP) for document review
- Generative AI for summarization and drafting
- Robotic Process Automation (RPA) for repetitive tasks

The paperwork trail



Internal Audit Activities Enhanced by AI

- Risk assessment and prioritization
- Transaction testing and fraud detection
- Control monitoring and exception reporting
- Policy and contract review
- Audit reporting and issue tracking

Example: AI-Powered Continuous Auditing



- Automated monitoring of transactions
- Real-time alerts for suspicious activity
- Trend analysis across departments and regions
- Reduction in manual sampling effort

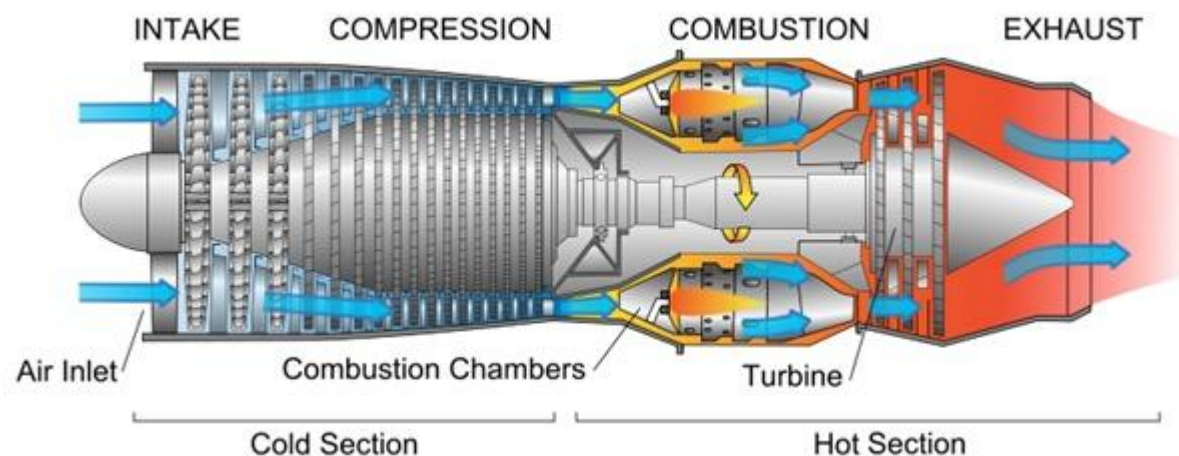


Traditional vs AI-Enabled Auditing

Traditional Audit	AI-Enabled Audit
Periodic reviews	Continuous monitoring
Manual sampling	Full-population analysis
Reactive identification	Predictive insights
Labor intensive	Automated workflows

Group discussion

- What are the most time-consuming audit activities today?
- Which activities rely heavily on manual review?
- Where could AI improve efficiency or quality?





Step 2 – Risk assessment & Planning

Definitions
and
meanings

**Risk
assessment &
Planning**

Audit testing
& continuous
monitoring

Audit
documents &
reporting

Governance,
Ethics & risk

Examples



Risks and Challenges

- Data privacy and confidentiality concerns
- Bias in AI models and outputs
- Overreliance on automation
- Regulatory and governance requirements
- Need for staff upskilling
- **Helps prioritise based on risk**



AI driven risk assessment examples

- External data monitoring
- Trend identification
- Risk heatmaps
- Predictive indicators



Data Source examples

- ERP systems
- HR systems
- Finance systems
- Incident logs
- Regulatory databases



Risk Assessment with AI example

Example: Cybersecurity Auditing

A bank uses AI to audit user access logs across thousands of systems. The AI detects that a contractor account is accessing sensitive customer records at unusual times & from unusual locations.

The activity is flagged immediately, leading to an investigation that uncovers compromised credentials. The threat is contained before customer data is stolen.



Examples contd.

AI reduces:

- Data breach risk
- Regulatory compliance risk
- Financial losses
- Reputational damage

The key point is that **AI usually doesn't replace auditors**—it helps them focus on the areas with the highest likelihood of error, fraud, or non-compliance, which lowers overall organizational risk.



Benefits

- Better risk visibility
- Faster planning cycles
- Dynamic audit planning



Step 3 – Testing & monitoring

**Definitions
and
meanings**

**Risk
assessment &
Planning**

**Audit testing
& continuous
monitoring**

**Audit
documents**

**Governance,
Ethics & risk**

Examples

AI for Audit Testing & Continual Monitoring



Examples could include:

- Duplicate payments
- Unusual events
- Segregation of duties violations
- High-risk vendor payments
- Long-term maintenance tasks

Changing focus from manual checking to strategic risk management



Continuous Monitoring

- Real-time alerts
- Automated exception reporting
- Transaction pattern analysis
- Trend monitoring

Continuous & faster detection methods with reduced manual effort



Step 4 – Audit documentation

**Definitions
and
meanings**

**Risk
assessment &
Planning**

**Audit testing
& continuous
monitoring**

**Audit
documents &
reporting**

**Governance,
Ethics & risk**

Examples



Tools every auditor needs

- **ChatGPT** for analysing audit data & drafting reports
- **Power BI** – for visualising patterns and anomalies
- **Mindbridge** – detecting risk through machine learning
- **Alteryx** – automating repetitive audit testing

- Many other examples of systems.

- Use ChatGPT to develop and complete audit reports



Recommended AI Tools for Int. Audit

Category

- Data analysis
- Process Automation
- Generate AI
- CI monitoring

Example tools

- Power BI, Tableau, ACL Analytics
- Microsoft Copilot
- Chat GPT
- AuditBoard
- Power Automate



Step 5 – Governance, Ethics & Risk

**Definitions
and
meanings**

**Risk
assessment &
Planning**

**Audit testing
& continuous
monitoring**

**Audit
documents &
reporting**

**Governance,
Ethics & risk**

Examples



AI Governance for Audit Teams

- Define approved AI use cases
- Establish human review requirements
- Maintain audit trails and documentation
- Monitor AI model performance
- Align with organizational policies

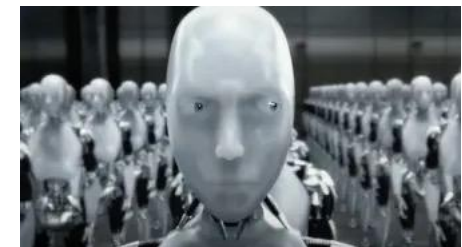


Using Generative AI Responsibly

- Draft audit summaries and interview notes
- Generate testing ideas and control questions
- Summarize policies and regulations
- Always validate outputs with professional judgment

Three Laws of Robotics

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.





Step 6 – Examples & takeaway

**Definitions
and
meanings**

**Risk
assessment &
Planning**

**Audit testing
& continuous
monitoring**

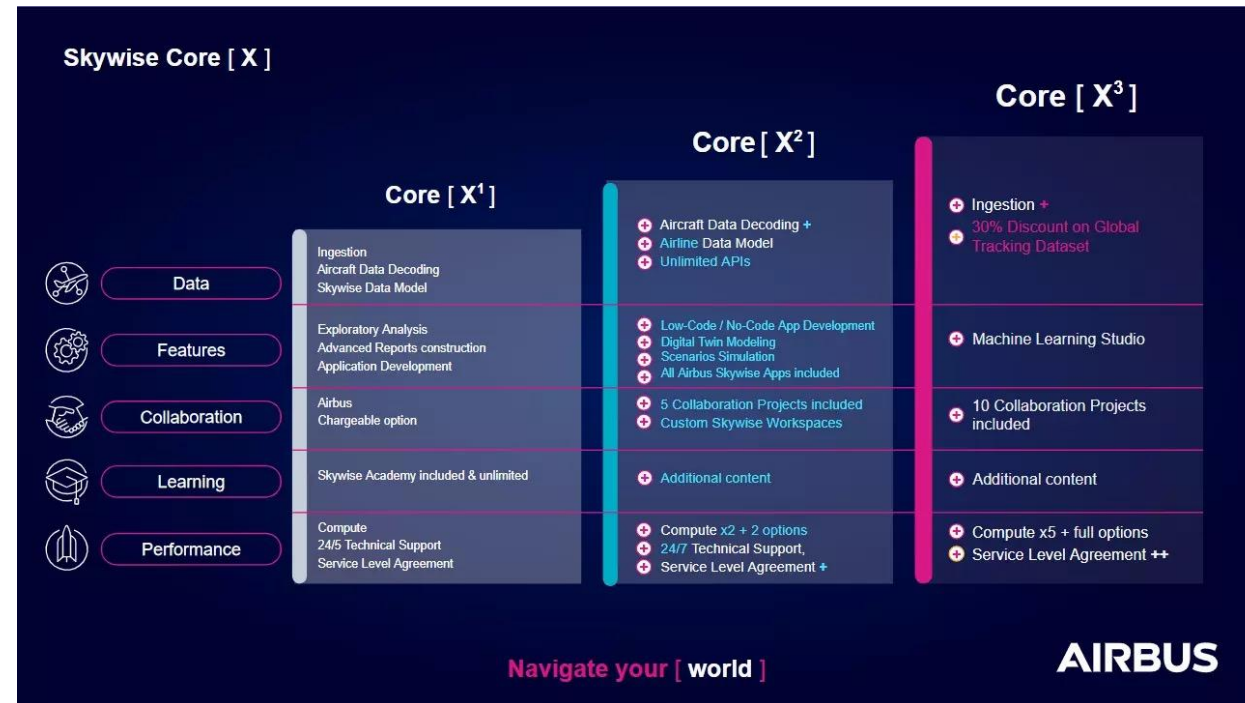
**Audit
documents &
reporting**

**Governance,
Ethics & risk**

Examples

Airbus & Skywise

Airbus relies on its **Skywise** platform as its central, aviation-focused data lake and analytics ecosystem, pooling massive amounts of flight, sensor & maintenance data from thousands of connected aircraft





Critical benefits from data ecosystem

Predictive Maintenance: By moving monitoring parameters from 400 to over 24,000 per flight, engineers & airlines can use the data lake to build machine-learning models. This allows for part-wear prediction and a proactive approach to fleet management.

Unified Flight Operations: An end-to-end digital services company, providing pilots, dispatchers, and engineers with unified, data-driven solutions.

The Data Lake: For security & confidentiality, Airbus is also developing sovereign data spaces that allow suppliers & airlines to share & analyse information without needing to move it into a single, centralized repository



Roll-out & benefits

Since 2017 Airbus has been pioneering the digital transformation of the aviation industry. With Skywise Core [X], airlines can embrace a data-driven strategy with features, tools and services that bring more rapidity and efficiency in decision-making to be more resilient to crisis, in a changing world.

Artificial Intelligence capabilities, Digital Twin creation, application builder without coding skills, etc., all the tools you need to simplify the data analytics process and maximise the insights are available in Skywise Core [X].



Skywise example

- <https://www.youtube.com/watch?v=j7HeCctcLv0>



Conclusion

AI presents a major opportunity for internal audit teams to evolve from reactive assurance providers into proactive, data-driven strategic advisors.

Organizations that combine AI capabilities with strong governance and skilled auditors will improve audit quality, efficiency, and risk visibility.



Key Takeaways

- AI enhances internal audit capabilities **but does not replace auditors**
- AI improves efficiency, coverage, and insight generation
- Governance and human oversight are critical
- Generative AI can significantly improve productivity when used responsibly
- Successful adoption requires training, controls, and phased implementation



Benefits of AI in Internal Audit

- Improved efficiency and coverage
- Better identification of emerging risks
- Enhanced data-driven insights
- Reduced manual workload
- More time for strategic advisory work



Skills Auditors Need in the AI Era

- Data literacy and analytics
- Critical thinking and validation
- Understanding AI limitations
- Communication of AI-driven insights
- Collaboration with IT and data teams

The Internal Auditor of the future must be tech-savvy, ethically grounded and agile in thinking

Questions?



Thanks for your input

