Delivering AI-at-Scale

Surviving and Thriving in the Age of AI

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Key Topics

Digital Transformation

https://AlanWBrown.gumroad.com

Code: Exeter100

Surviving and Thriving in the Age of AI

https://Dispatches.AlanBrown.net

Delivering AI-at-Scale

https://SurviveAIBook.com

It’s time to move on….
…from experimenting with AI…
…to delivering value with AI-at-Scale

What will it take to deliver AI-at-Scale?
How does it impact my role as a Digital Leader?

Surviving and Thriving in the Age of AI

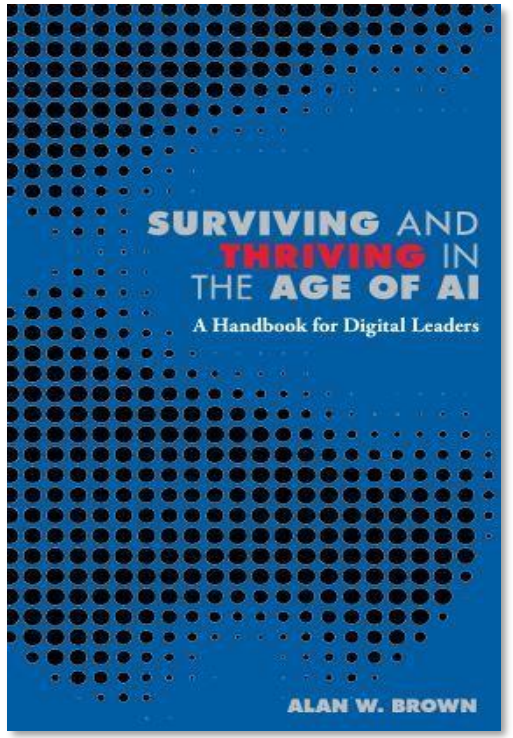
What key aspects of AI will impact on our lives?

What does AI mean for leaders and decision-makers as they accelerate digital transformation activities?

How can leaders redefine their organizations for the age of AI?

There are 3 areas at the core of how to be a digital leader in the age of AI:

- Separating the AI reality from the hype
- Assessing AI's impact on digital transformation
- Delivering AI-at-Scale



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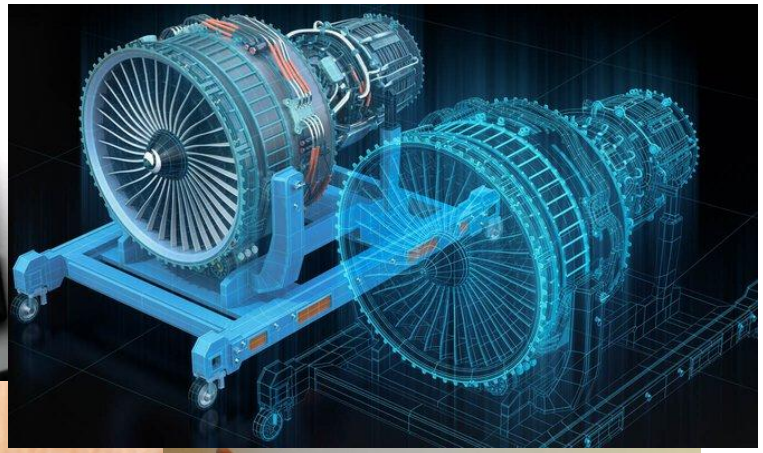
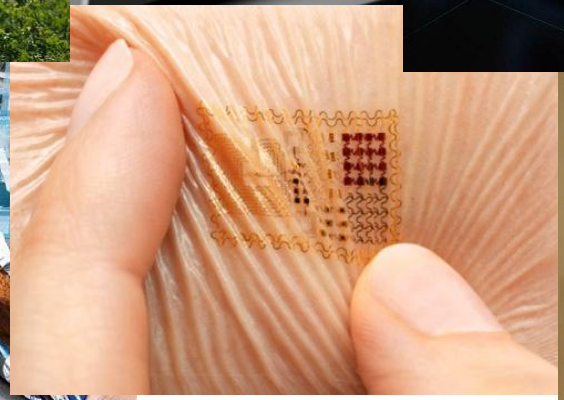
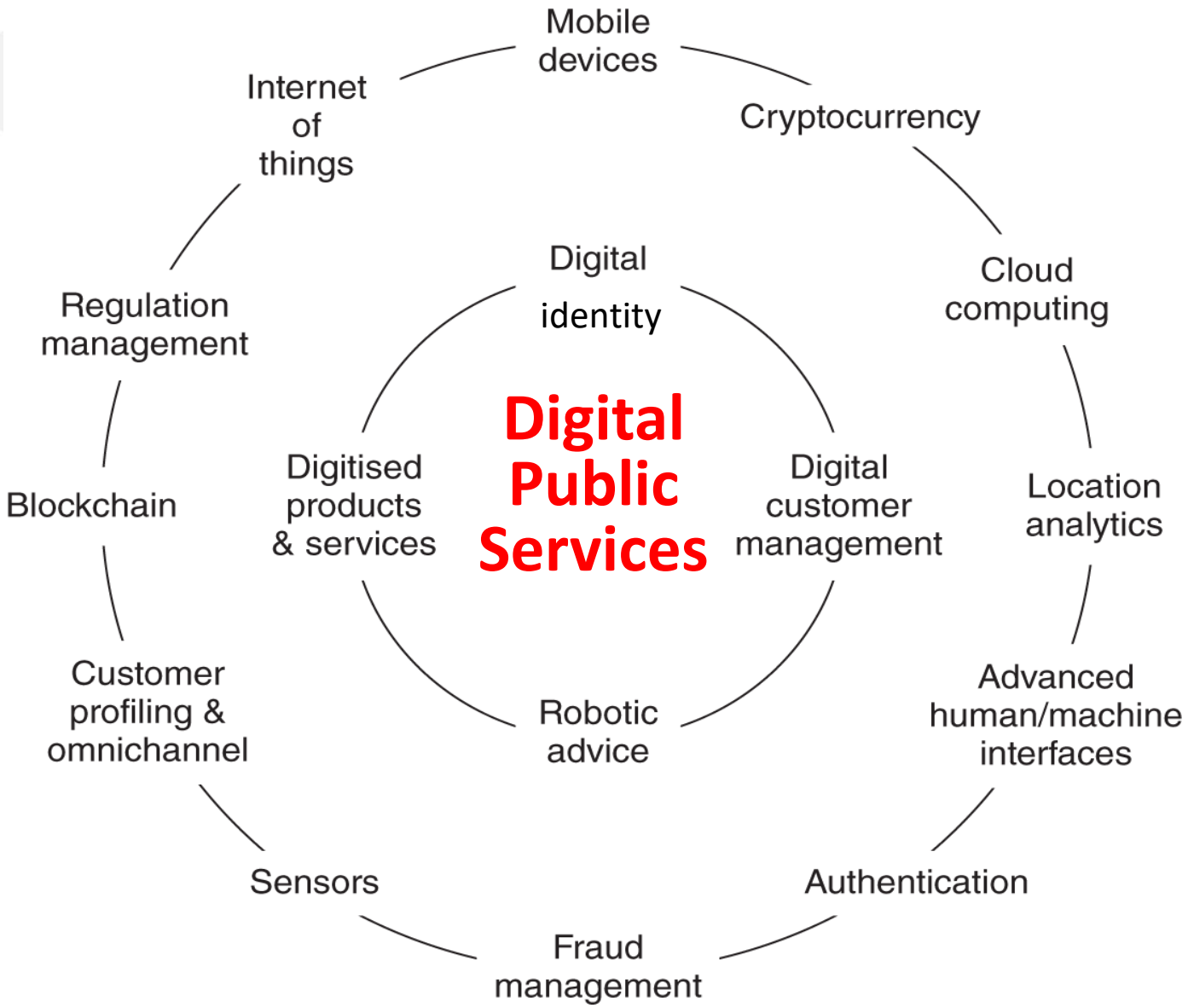
Welcome to the Future!

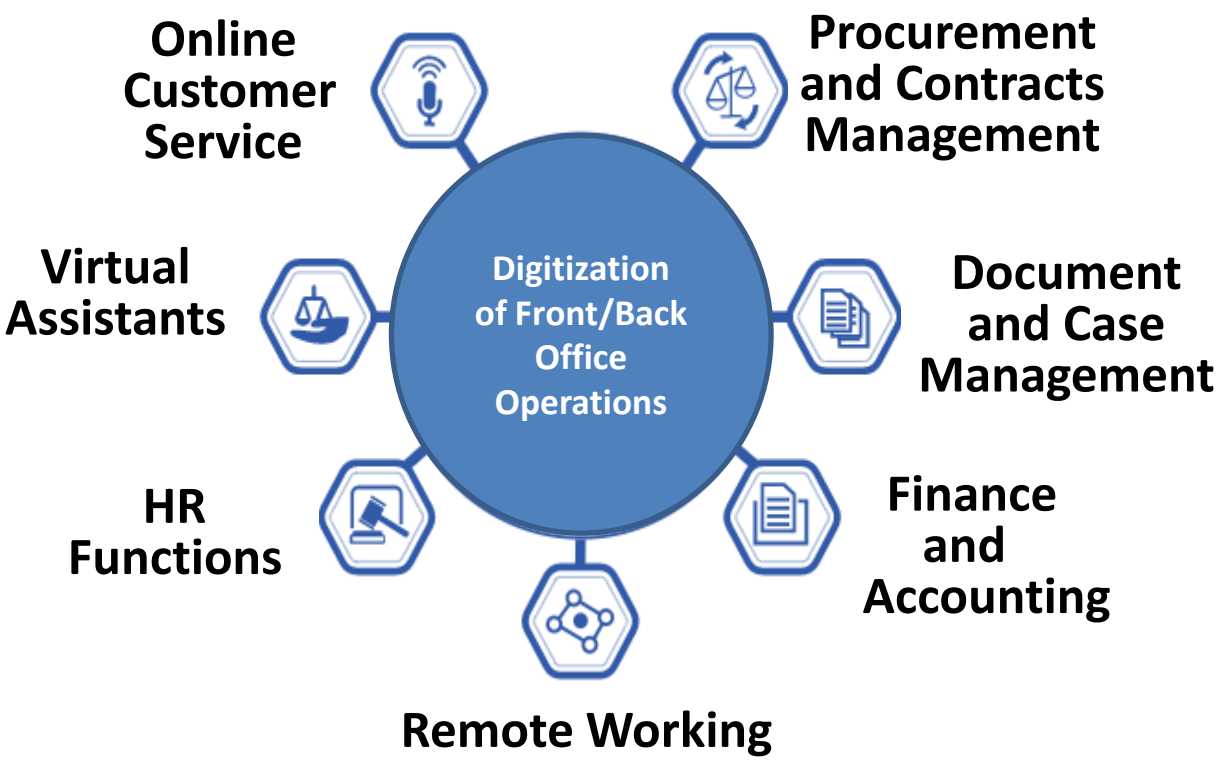




Digital Disruption in Public Services



Digitization vs Digital Transformation



Digitizing documents and document management processes

Redesigning digital services and websites

Streamlining client interactions

Moving to online delivery tools

Increasing automation of routine activities

Digitization vs Digital Transformation

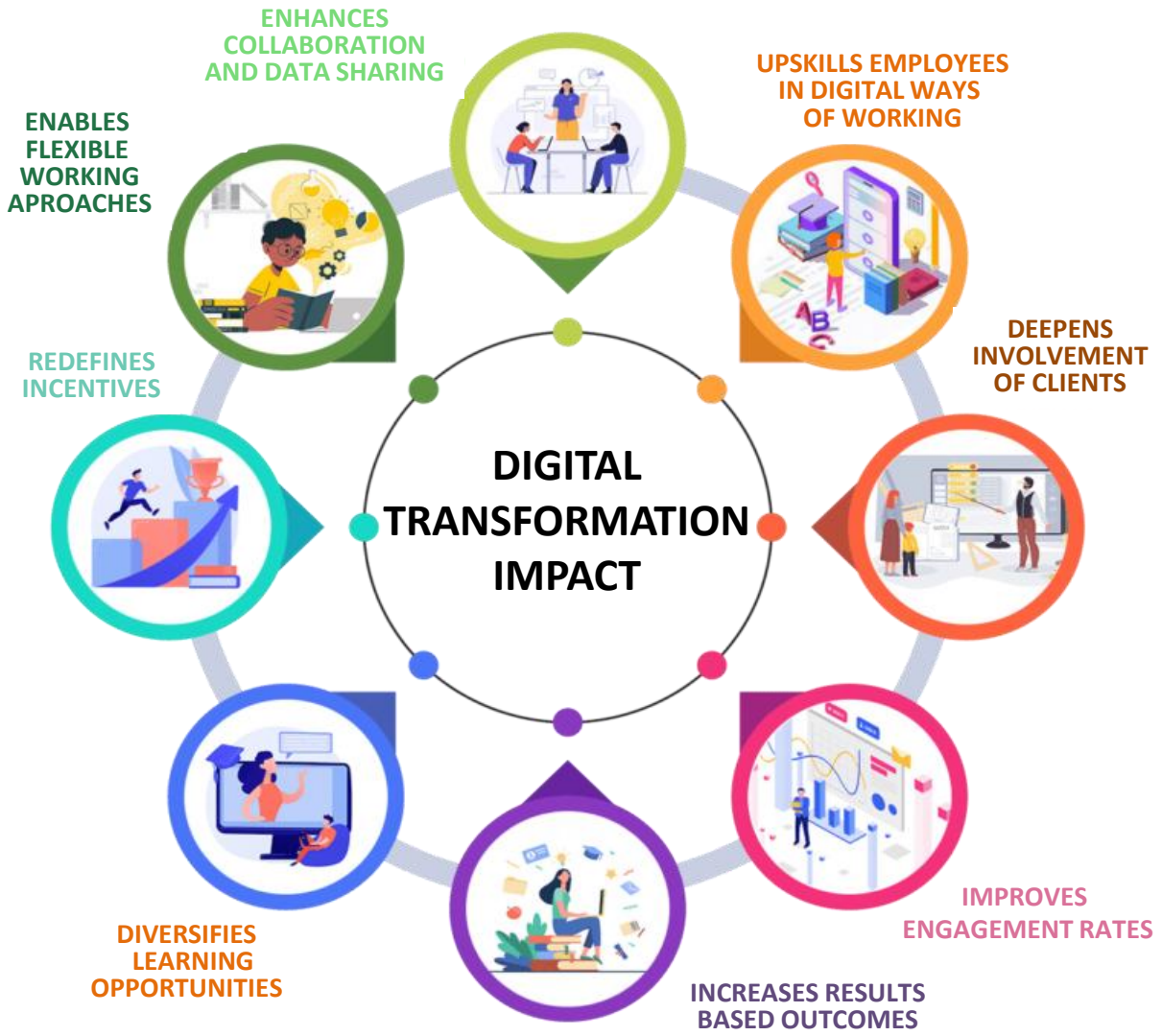
Redesigned business processes

Change of agency and authority

Redefinition of value and value sharing across parties

New business model opportunities delivered by new market entrants

Refocused incentives, progress and performance measures



The Digital Transformation of Government

Digital technologies are rapidly changing all aspects of government, including citizen service delivery

- Institution
  - The business and administration of government
- Civil Servants and Policy Makers
  - The process of government
- Citizens, Residents, and Businesses
  - The delivery of government services

Welcome to the Future!

Challenges Adopting Predictive AI

Accuracy and Reliability of Predictions:

- Ensuring high accuracy in AI predictions to maintain trust and reliability.
- Managing the risks associated with incorrect or misleading predictions.

Model Transparency and Explainability:

- Providing clear explanations for AI-driven decisions to stakeholders.
- Addressing the "black box" nature of some predictive models to satisfy regulatory and customer demands.

Scalability and Performance:

- Ensuring AI models can scale effectively with growing data volumes.
- Maintaining performance and speed in real-time decision-making processes.

Change Management and Skills Gap:

- Managing organizational change and resistance to AI adoption.
- Addressing the need for skilled personnel to develop, manage, and interpret AI models.

See: A. Narayanan & S. Kapoor, “AI Snake Oil: What AI can do, what it can’t and how to tell the difference”, Princeton Press, 2024.

Challenges Adopting Generative AI

Data Privacy and Security:

- Ensuring sensitive financial data is protected from breaches.
- Complying with regulations like GDPR and CCPA.

Quality and Bias in Training Data:

- Generative AI models require vast amounts of high-quality data.
- Risk of embedding biases present in the training data into the AI models.

Regulatory Compliance:

- Navigating complex and evolving regulatory requirements for AI usage.
- Ensuring that generative AI outputs comply with existing laws and standards.

Integration with Existing Systems:

- Difficulty in integrating AI solutions with legacy systems.
- Ensuring seamless operation and interoperability with current infrastructure.

See: A. Narayanan & S. Kapoor, “AI Snake Oil: What AI can do, what it can’t and how to tell the difference”, Princeton Press, 2024.

The Role of Data in AI

	Purpose	Value	Focus	Barriers
Data Based	Record keeping, reporting, and auditing	Compliance, consistency, and reporting	Data capture, management and governance	Lack of data quality, data silos, out of date information

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Data Centric	Situational analysis, behavioural assessment, and anomaly detection	Trend detection, strategy and decision making	Data aggregation, visualization and forecasting	Inconsistent data sources, lack of metadata, and poor data ownership

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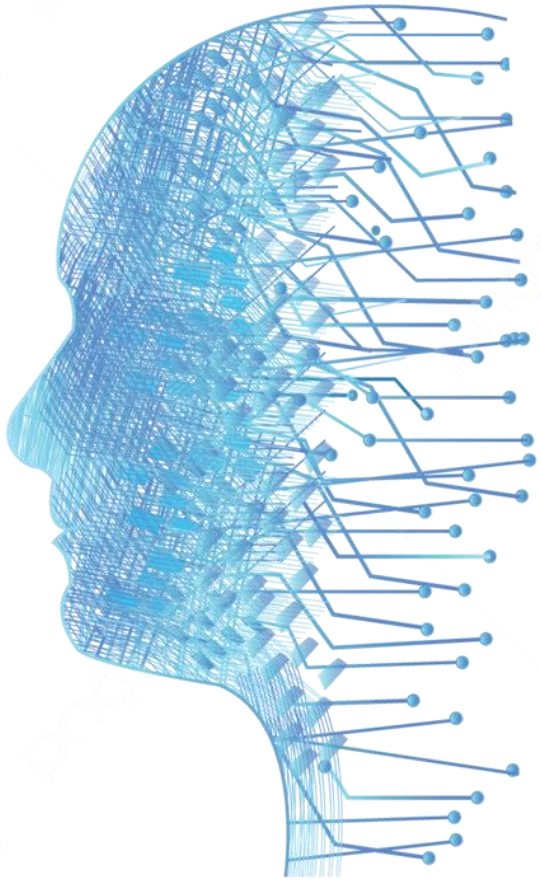
Data Driven	Predictive analysis, evidence-based decision making, and automation	Predictive insight, reduced errors, and efficient service delivery	Data correctness, ethical sourcing, and actionability	Technology churn, weak data ethics, and limited data science skills

10 Questions to Ask of Any Use of AI

1. What specific task will AI improve?
2. What accuracy level do we need?
3. Can we explain how the AI makes decisions?
4. Do we have the right data, and rights to use it?
5. How will we measure if AI performs better?
6. What biases might affect results?
7. How will we handle AI errors?
8. What's the right AI-human balance?
9. Who needs to know they're interacting with AI?
10. How will we monitor and maintain the system?



NAO AI in Government Study

Conducted in March 2023 to March 2024

Survey of 89 Government Bodies

Several Interviews

4 in-depth case studies

Focus on “value for money”

Report to PAC pending

https://www.nao.org.uk/reports/use-of-artificial-intelligence-in-government/

Examples of AI in Government

HMRC: AI-powered Digital Assistant

Automatically helps customers complete tasks or find the information they are looking for and links customers to an adviser through webchat if it is unable to help

(Not generative AI)

HM Land Registry: AI Document Comparison

Tool to support case workers by automatically identifying differences between application forms and other registration documents

Natural England: 'Living England' Project

Uses machine learning and satellite images, field data records and other geospatial data to predict habitats aligned to a UK habitat classification system, without the need to survey the whole country

Range of Pilots for AI in Government


Information retrieval


Image classification


Coding assistance


Fraud & error


Virtual Assistant


Research & monitoring


Text generation


Managing operations

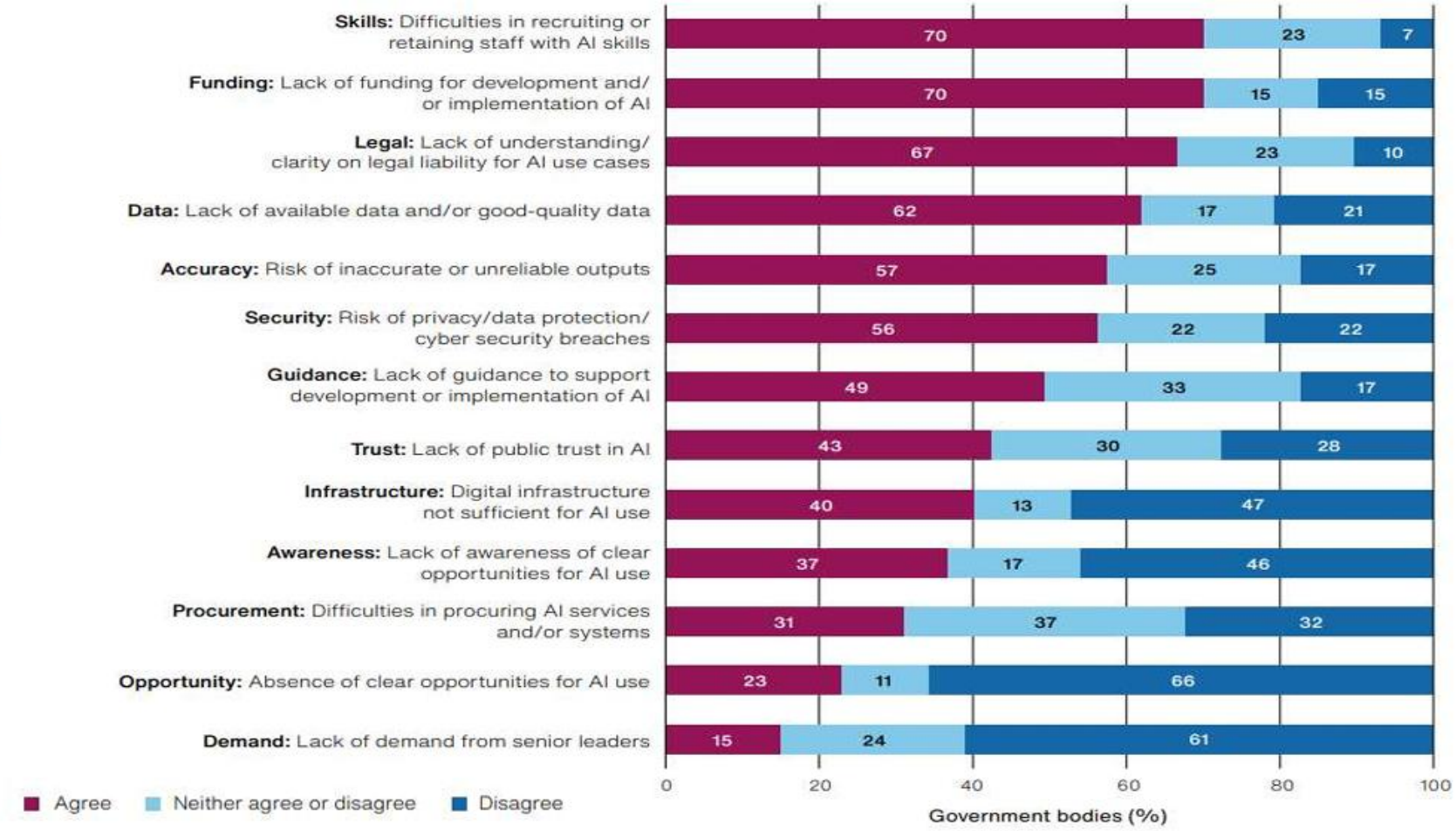
What's Holding Back AI Adoption?

New technology adoption requires many organizational changes.

Example: AI Adoption in Government Study in March 2024.

https://www.nao.org.uk/reports/use-of-artificial-intelligence-in-government/

"To what extent do you agree or disagree that the following are barriers to implementing AI use cases in your organisation?"



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Summary of NAO AI in Government Study

Widespread AI adoption in UK government is in its early stages and faces challenges in internal practices, governance, and workforce capabilities.

Meeting AI adoption goals requires not just technological investment but also significant changes in internal practices and governance.

Key barriers include legal risks, privacy concerns, and cybersecurity threats.

Internal structures and governance mechanisms play a crucial role in determining the pace of AI adoption.

Sustaining broad AI adoption requires clear ownership of AI strategy, aligned funding efforts, and integration with broader digital transformation efforts.

Shifting Gears with AI
From Experimenting to Enterprise-wide Delivery

Characteristic	Phase 1: Experimental	Phase 2: Enterprise-wide
Leadership	Technologists and Data Scientists	Business Leaders, C-suite
Scope	Small-scale, isolated use cases	Large-scale, integrated systems
Data Architecture	Limited data access and quality, project-specific datasets	Robust, centralized data architecture and standards
Focus	Technology-centric, proof of concept, feasibility experiments	Business-centric, strategic implementation, competitive advantage
Success Criteria	Technical performance	Business outcomes and ROI
Funding	Project-based, incremental	Strategic, continuous
Integration	Limited, isolated projects	Deep integration across business functions and systems
Skillset Requirements	Specialized technical skills	Cross-functional collaboration skills
Maturity	Emerging tech, R&D	Established tech, IT service delivery

AI-at-Scale

- The seamless integration and deployment of AI solutions across an organization's entire infrastructure, enabling widespread utilization and impact.
- Using AI technologies such as machine learning, natural language processing, and computer vision to enhance processes, services, and decision-making at every level of the organization.
- Efficiently exploiting the potential of data, automate tasks, and drive innovation on a large scale, leading to significant competitive advantages and transformative outcomes.

Adopting AI-at-Scale Raises Many New Questions

As AI-systems are enabled and powered by data, what are the privacy implications instance, in terms of government surveillance or corporate influence over customers?

As AI-based systems are now involved in making decisions affecting life-and-death, how much human control is necessary or required? Who bears responsibility for the AI-based decisions?

Particularly where AI-based systems drive physical machines, how do we define and validate safety thresholds, for instance, through standard-setting and certification?

How can AI systems be implemented to reflect human values such as, fairness, accountability, and transparency, avoiding (new) inequalities and biases?.

To what extent will AI-based machines replace jobs previously performed by humans, or at least transform what labour means? What are the effects of AI on public finances if robots don't pay taxes?

AI-at-Scale Maturity

Mature organizations in AI demonstrate at least the following key characteristics:

- **Strategic Focus:** AI initiatives are tightly aligned with overall business goals, driven by clear objectives and robust ROI assessments.
- **Data Foundation:** Strong data governance and a robust, scalable data infrastructure ensure high-quality data is readily available for AI model development.
- **Talent and Skills:** A skilled workforce is cultivated through continuous learning and upskilling programs, with a focus on attracting and retaining top AI talent.
- **Operational Excellence:** Efficient processes, automation, and robust MLOps practices enable seamless AI model development, deployment, and maintenance.
- **Value Delivery:** AI initiatives are measured by their impact on business outcomes, such as revenue growth, customer satisfaction, and cost reduction.

What Can I do Now?

You do not need to be an expert in AI tech to take advantage of AI.

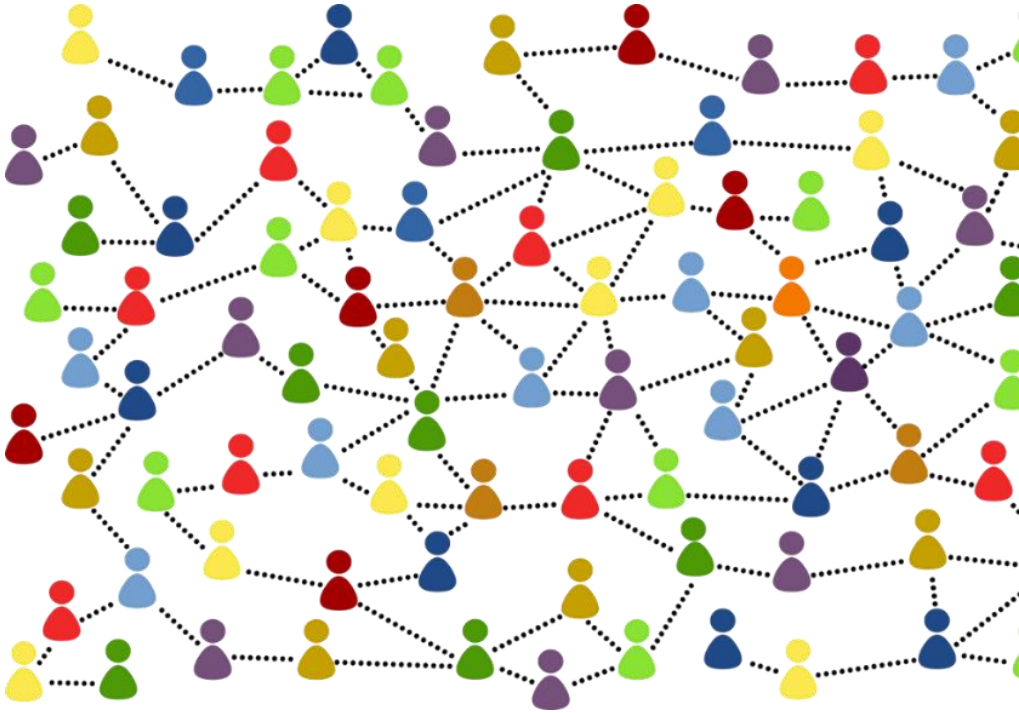
However, you must become an “intelligent user” of AI.

- Get to know & experiment with the tools, e.g. ChatGPT, Claude, Gemini, Copilot
- Learn to differentiate between fact and hype
- Be wary of exaggerated AI vendor claims
- Understand the probabilistic nature of AI – it is *always* making predictions!
- Responsible AI use means facing up to its practical and ethical implications

Surviving and Thriving in the Age of AI

At least 5 critical dilemmas that must be faced:

1. The Productivity Dilemma
2. The Value Dilemma
3. The Ethical Dilemma
4. The Leadership Dilemma
5. The Human Dilemma



Where to Find More

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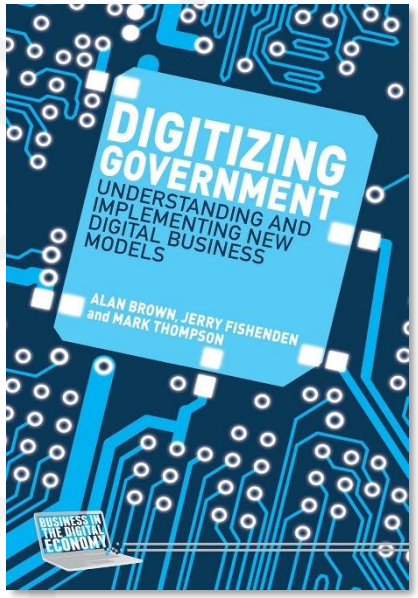

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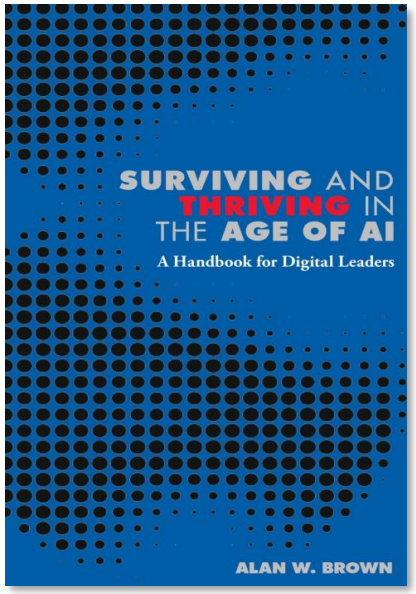

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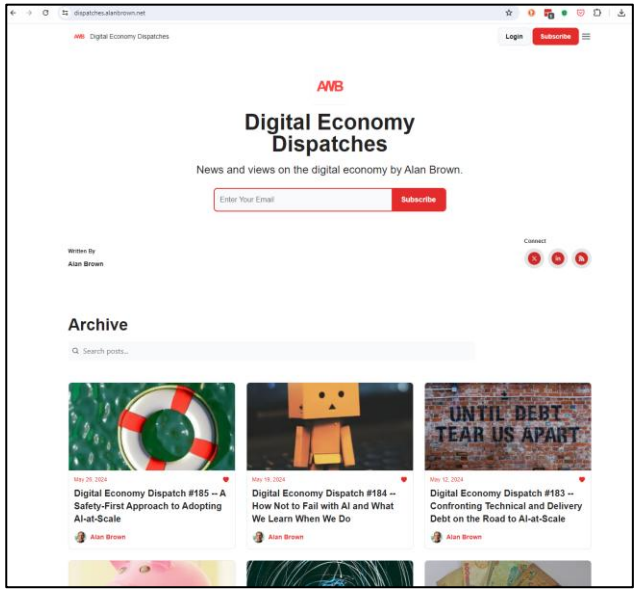

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Questions?