The Impact of Emerging Technology

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Our values make us who we are:

Customer-focused   Respectful   Efficient   Supportive   Trustworthy
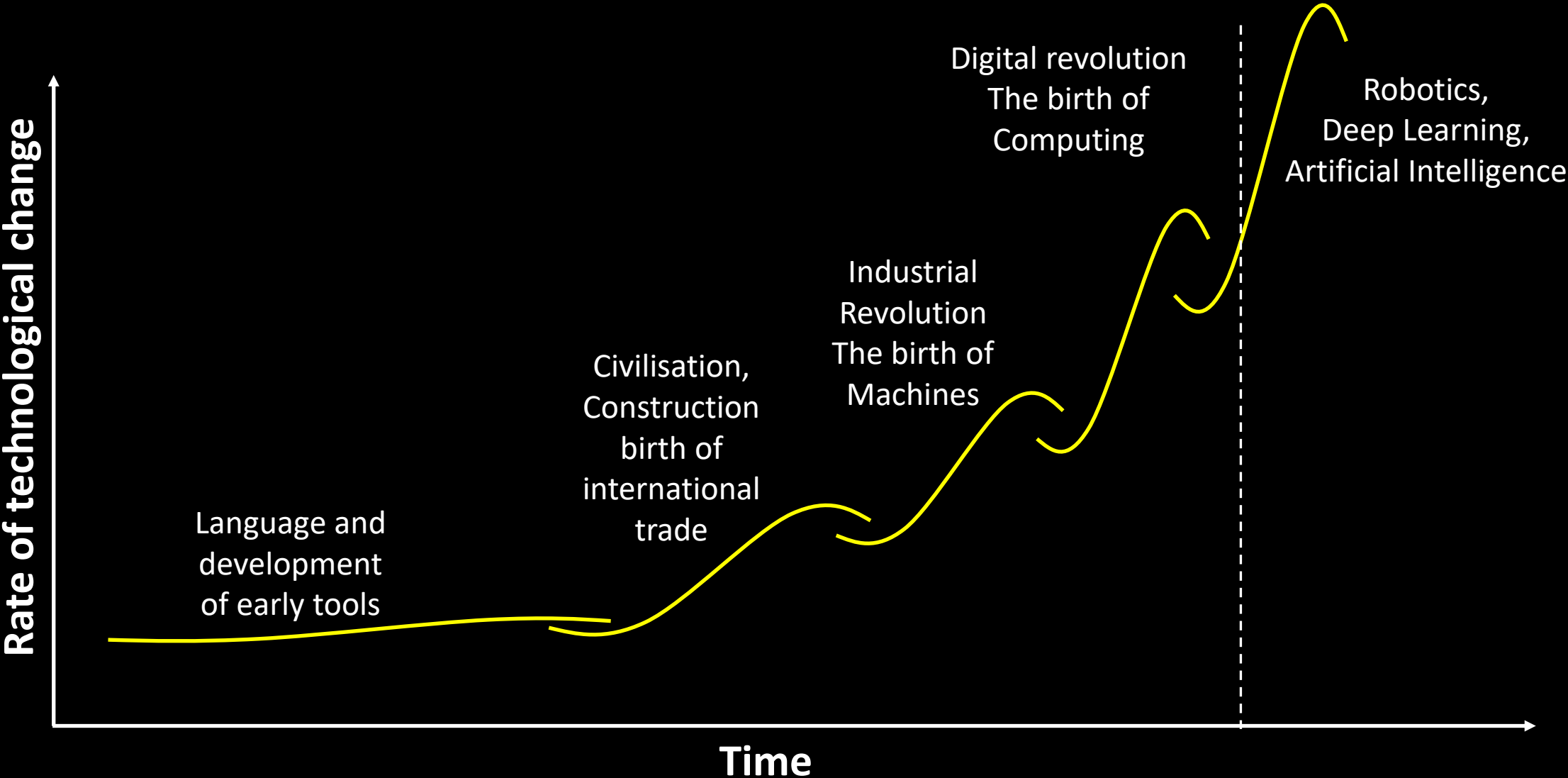
Overview

- Context - Introduction

- Key emerging technologies

- Potential opportunities for the council   - Use cases
                                             - Examples

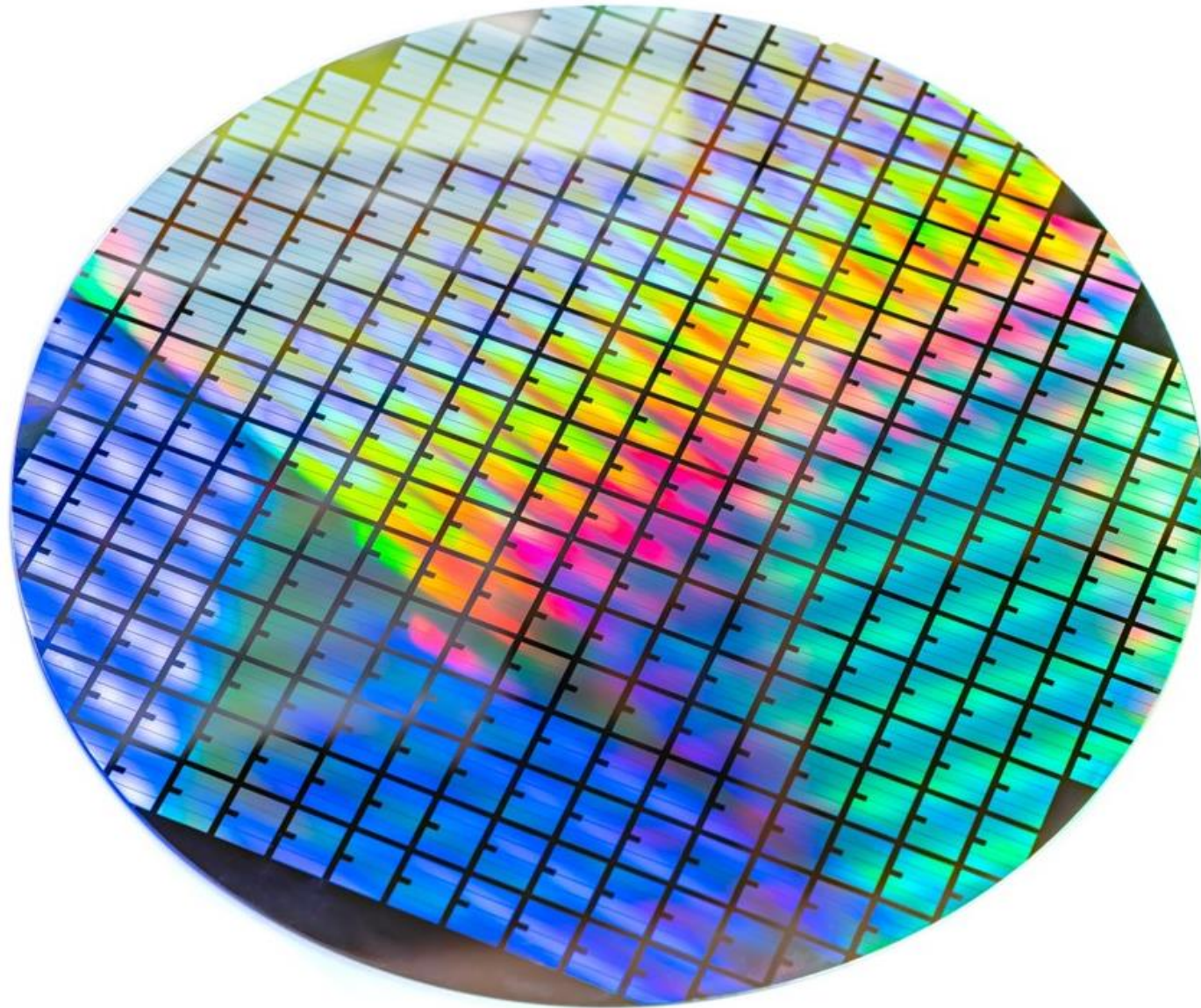- Barriers to change

- Next Steps

- Question & Discussion

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Technological Progress

Rate of technological change

Time

Language and development of early tools

Civilisation, Construction birth of international trade

Industrial Revolution The birth of Machines

Digital revolution The birth of Computing

Robotics, Deep Learning, Artificial Intelligence

Examples of Recent Disruptive Technology

The transistor

The Silicone Chip

The World Wide Web

Examples of Recent Step Change in industry

- **Computing** – Driven efficiency and productivity across the board

- **Email** - Speed and volume of communication

- **World Wide Web** – Provision of information and payments 24/7

- **National Address Gazetteer** – Coordinating property related data/transactions

- **Optical Character Recognition** – Helping with the batch entry of data

- **Robotic Process Control** – Helping to automate repetive tasks

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RPA

Augmented Reality

5G

Artificial Intelligence

Moore's Law

Quantum Computing

Open AI

Self-driving vehicles

Machine Learning

Blockchain

Virtual Reality

IoT

Neural engine

GPS

4NM Process

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Deep Learning

RPA

Artificial Intelligence

AI

Machine Learning

Neural Networks

Deep Learning

(Artificial) Neural Networks

Algorithms driven:

- Inputs
- Weights ⎤
- Bias ⎬ **Depth**
- Thresholds ⎦
- Outputs

Potential Opportunities

Potential opportunities for councils to consider:

- Traffic management
- Road maintenance
- Efficiency of waste collection
- Effectiveness of customer service
- Improved post and email management
- Improved information for decision-making
- Automation of repetitive tasks (where appropriate)
- Improving healthcare and resident safety

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Considerations

Some key issues to consider with Artificial Intelligence:

- Ethical considerations
- Governance
- Information limitations, bias and inaccuracy
- Data ownership and data protection
- Cyber security

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Considerations for full exploitation

Our current state:
- Diverse ICT estate
- Developing ICT strategy

Corporate approach:
- Digital culture
- Upskilling and reskilling to enable AI
- Emergent versus structured approaches

Resources:
- Skills and capacity
- Investment and savings
- Priority, risk and choices

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Next Steps – Assumptions

- Continuous growth of Artificial Intelligence

- More use cases in daily life will develop

- This can be good for council and residents as market matures

- This may take significant time as suppliers invest, learn and fail

- Early adoption likely be risky

Next Steps – Our approach

- Build understanding and skills

- Structured approach to evaluation

- Consider approach to innovation

- Business cases

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Discussion

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