Manchester City Council
Report for Information

Report to:	Resources and Governance Scrutiny Committee – 7 September 2023
Subject:	Briefing on Automation & Artificial Intelligence
Report of:	Deputy Chief Executive and City Treasurer

Summary

There has been a huge amount of coverage of Artificial Intelligence (AI), and tools such as ChatGPT, in the press and from suppliers in the recent months and it was thought helpful to establish the Councils current position, plans and to define what the different terminologies are that often get grouped into this.

AI is a fast-emerging area of technology development, hype, and long-established solid technologies. Section 1 provides an introduction for this report written by ChatGPT.

Recommendations

The Committee is recommended to:

(1) Consider the content of this report and comment on the content which are relevant to the remit of this scrutiny committee.

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city
None directly arising from this report

Equality, Diversity and Inclusion - the impact of the issues addressed in this report in meeting our Public Sector Equality Duty and broader equality commitments
Artificial Intelligence or AI is a significant technological advancement that the Council needs to understand to see how it can support the delivery of our Public Sector Equality Duty and broader equality commitments.

Manchester Strategy outcomes	**Summary of how this report aligns to the OMS/Contribution to the Strategy**
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	Artificial Intelligence or AI is a significant technological advancement that the Council needs to understand to see how it can support the delivery of Our Manchester Strategy and Corporate Plan Objectives
A highly skilled city: world class and home grown talent sustaining the city's economic success	
A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	
A liveable and low carbon city: a destination of choice to live, visit, work	
A connected city: world class infrastructure and connectivity to drive growth	

Financial Consequences – Revenue

None directly arising from this report.

Financial Consequences – Capital

None directly arising from this report.

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Background documents (available for public inspection):

None

1. **AI Generated RAGOS Report**

Briefing on Automation & Artificial Intelligence

In an era driven by technological advancements, Manchester City Council faces both opportunities and challenges in embracing Artificial Intelligence (AI), integration, and automation to enhance its resources and governance processes. This paper provides a comprehensive understanding of AI, integration, and automation, explores their potential benefits for the Council, and proposes a set of safeguards to ensure their secure and ethical implementation.

1. Introduction:

As Manchester continues to evolve as a vibrant urban centre, the effective utilization of technological innovations becomes paramount. AI, integration, and automation present promising avenues to optimize resource allocation and enhance governance. However, their implementation requires a strategic approach that prioritizes security, ethics, and accountability.

2. Understanding AI, Integration, and Automation:

- **Artificial Intelligence (AI)** refers to the simulation of human intelligence in machines that can perform tasks requiring human cognitive functions such as learning, reasoning, problem-solving, and decision-making.
- **Integration** entails combining different systems or applications to function seamlessly as a unified whole, enabling data flow and process optimization.
- **Automation** involves the use of technology to perform tasks with minimal human intervention, thereby improving efficiency and reducing manual workload.

3. Potential Benefits for Manchester City Council:

- **Enhanced Decision-Making:** AI-driven analytics can provide data-driven insights, aiding informed decision-making for resource allocation and policy formulation.
- **Efficient Service Delivery:** Integration of systems can streamline services, enabling citizens to interact seamlessly with the Council, reducing response times and enhancing user satisfaction.
- **Cost Savings:** Automation of routine tasks can lead to resource optimization and cost savings, enabling the Council to allocate resources strategically.

4. **Safeguarding Measures:** To ensure the safe and responsible adoption of AI, integration, and automation, the following safeguards are recommended:

a. Data Privacy and Security:

- Implement robust data protection measures to safeguard citizens' personal information and maintain compliance with data protection regulations.
- Conduct regular security audits to identify vulnerabilities and address potential threats to data integrity.

b. Ethical AI:

- Establish clear guidelines for AI usage to prevent biased decision-making and ensure fairness, transparency, and accountability in AI-driven processes.
- Continuously monitor AI systems to detect and address any unintended discriminatory outcomes.

c. Stakeholder Engagement:

- Involve citizens, community representatives, and experts in the decision-making process to ensure technology adoption aligns with community needs and values.
- Foster transparency by providing clear communication about the adoption of AI, integration, and automation.

d. Skill Development:

- Invest in training and upskilling programs to equip Council employees with the necessary skills to effectively operate and manage new technologies.
- Promote a culture of continuous learning to keep up with evolving technological trends.

e. Redundancy and Fail-Safe Mechanisms:

- Implement fail-safe mechanisms and redundancy plans to mitigate the impact of system failures and ensure continuous service delivery.
- Develop contingency plans to revert to manual processes when necessary.

f. Regulatory Compliance:

- Stay updated with relevant laws and regulations pertaining to AI, data usage, and automation to ensure adherence to legal requirements.
- Collaborate with regulatory bodies to obtain necessary approvals and certifications.

5. Conclusion:

Manchester City Council stands at the precipice of technological transformation through AI, integration, and automation. By embracing these technologies with a focus on security, ethics, and accountability, the Council can enhance its resource allocation, governance processes, and citizen engagement, thereby contributing to a more efficient and responsive administration for the city's residents.

2. Introduction and Purpose

2.1. This report is to set out what Automation means for the Council as there are many different technologies associated with Automation, one of which is Artificial Intelligence.

2.2. Artificial Intelligence or AI is a significant technological advancement that the Council needs to understand to see how it can support the delivery Our Manchester Strategy and Corporate Plan objectives. The Internal Digital Strategy and the external Doing Digital Together strategy, set out an ambitious change agenda to make the Council easier for residents and organisations to interact with and to improve internal processes and ways of

working. A key aim is to harness the power of data and intelligence to inform decision making and how the Council operates.

2.3. To respond to changing demands and financial pressures there is a need to reform and release capacity away from repetitive tasks and data manipulating to areas of work that can really add value. This report sets out what AI is, the potential ways it can be used and the associated risks.

3. What is Automation?

3.1. Automation is a broad term that encompasses many different technologies that can be used for different purposes, all with a common aim to undertake tasks or processes in an automated way.

3.2. The benefits of automation for an organisation are significant and includes:

- **Increased Efficiency:** Automation streamlines repetitive tasks, reducing the need for manual intervention. This leads to faster and more consistent processes, allowing organisations to handle larger workloads efficiently.
- **Cost Savings:** By automating tasks, organisations can save money primarily by reducing errors which minimises the costs associated with rework and corrections.
- **Enhanced Accuracy:** Automation minimises human errors and ensures consistent performance, leading to improved data accuracy and higher quality outputs.
- **Scalability:** Automated processes can be easily scaled up or down to meet changing demands without significant overhead costs, making it easier for organisations to adapt to growth or fluctuations in operations.
- **Improved Compliance:** Automation helps ensure regulatory compliance by enforcing standardised processes and reducing the risk of non-compliance due to human errors.
- **Faster Processing:** Automated workflows can handle tasks at a much faster pace than manual processes, resulting in reduced turnaround times and faster service delivery to customers.
- **24/7 Operations:** With automation, certain tasks can be performed round-the-clock without human intervention, enabling continuous operations.
- **Data Insights:** Automation tools often generate valuable data and analytics, offering organisation insights into performance, customer behaviour, and process efficiency, which can inform decision-making and process optimisation.
- **Employee Empowerment:** Automation allows employees to focus on more strategic and creative tasks rather than repetitive, mundane activities, leading to increased job satisfaction and productivity.

4. Types of Automation

4.1. There are many different types of automation that use different technology tools to perform tasks. The tools range from simply using workflows within business applications instead of manual processes, to the use of Robotic Process Automation (RPA) where software bots automate tasks and

processes, all the way through to use of AI. A comprehensive list of the types of Automation is detailed in Appendix 1.

5. What is Artificial Intelligence (AI)?

5.1. AI can take many forms. As such, there is no agreed single definition of what it encompasses. In broad terms, it can be regarded as the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. This includes:

- extracting information from pictures (computer vision)
- transcribing or understanding spoken words (speech to text and natural language processing)
- pulling insights and patterns out of written text (natural language understanding)
- speaking what has been written (text to speech, natural language processing)
- autonomously moving through spaces based on its senses (robotics)
- generally looking for patterns in large amounts of data (machine learning)

5.2. AI is rapidly transforming the way in which we live and work. For example, in the NHS AI is being used to benefit people by analysing X-ray images to support radiologists in making assessments and helping clinicians read brain scans more quickly. AI is used to support people in ‘virtual wards’ by remotely monitoring technology such as apps and medical devices that assess patients’ health and care whilst at home.

5.3. A Council used AI technology for the ‘Ask Teddi’ project to co-produce a free, accessible interactive app to support the health, wellbeing and development of families with a child aged 0-5. Collaborating with healthcare experts, users and technologists the app was built to support on infant feeding, immunisations, sleep, play and socialisation, mental wellbeing, food, activity and oral health. Using AI, the app tailors information to individual needs, offering parents and carers a responsive toolkit of expert and evidence-based advice as well as giving them access to reliable resources and information 24/7. Evaluation observed that parents and professionals found the app to be a valuable tool which was accessible, interactive, and provided an additional layer of localised support. The app was understood to have helped increase knowledge, confidence and positive behaviours in key areas. Overall half of participants were also from Black, Asian and other minority ethnic groups in the UK, this is a positive finding which suggests that the app is accessible and inclusive across demographic groups. The next steps for the project include maintaining and updating the advice and information held within the app.

5.4. AI systems rely upon large datasets from which they can decipher patterns and correlations, that enables the system to ‘learn’ how to anticipate future events. It does this by relying upon and/or creating algorithms based on the dataset which it can use to interpret new data. This data can be structured,

such as bank transactions, or unstructured, such as enabling a driverless car to respond to the environment around it.

5.5. There are also skills required to use these tools, some rely on structured language where you must be very specific in your query, such as ChatGPT, or others require much more technical skills where you are creating integration between systems.

5.6. The different forms that AI can take range from so-called ‘narrow’ AI designed to perform specific tasks to what is known as ‘strong’ or ‘general’ AI with the capacity to learn and reason. The range of AI includes:

- Narrow AI is designed to perform a specific task (such as speech recognition), using information from specific datasets and cannot adapt to perform another task. These are often tools that aim to assist, rather than replace, the work of humans.
- Machine learning is a method that can be used to achieve narrow AI; it allows a system to learn and improve from examples, without all its instructions being explicitly programmed. It does this by finding patterns in large amounts of data, which it can then use to make predictions (for example what film or TV programme you might like to watch next on a streaming platform). The AI can then independently amend its algorithm based on the accuracy of its predictions.
- Deep learning is a type of machine learning whose design has been informed by the structure and function of the human brain and the way it transmits information e.g., ChatGPT has been fine-tuned to allow users to ask it a question, or make a request, and for it to generate “human-like text” in response.
- Artificial general intelligence (AGI) is an AI system that can undertake any intellectual task/problem that a human can. AGI is a system that can reason, analyse and achieve a level of understanding that is on a par with humans; something that has yet to be achieved by AI.

6. Opportunities and Risks from Ongoing development of AI

6.1. As noted by the UK government in its ‘National AI strategy’, AI is the fastest growing deep technology in the world, with “huge potential to rewrite the rules of entire industries, drive substantial economic growth and transform all areas of life”. Such transformative technology brings both risks and benefits, as explored below.

6.2. Section 5 of this report details some specific benefits of Automation and AI for the Council. The potential benefits of AI at a societal level are as follows:

- AI used in public services can reduce costs and offer new possibilities in public transport, education, energy and waste management and could also improve the sustainability of products.
- Democracy could be made stronger by using data-based scrutiny, preventing disinformation and cyber-attacks and ensuring access to quality information.

- AI could help people with improved health care, safer cars, and other transport systems, tailored, cheaper and longer-lasting products and services. It can also facilitate access to information, education, and training.
- AI can also make workplace safer as robots can be used for dangerous parts of jobs, and open new job positions as AI-driven industries grow and change.
- For organisations, AI can enable the development of a new generation of products and services, and it can boost sales, improve machine maintenance, increase production output and quality, improve customer service, as well as save energy.
- AI is predicted to be used more in crime prevention and the criminal justice system, as massive datasets could be processed faster, prisoner flight risks assessed more accurately, crime or even terrorist attacks predicted and prevented. In military matters, AI could be used for defence and attack strategies in hacking and phishing or to target key systems in cyberwarfare.

6.3. However, the risks of AI include:

- A lack of transparency, particularly regarding the development of deep learning models (including the so-called "Black Box' issue where AI generates unexpected outputs and human scientists and developers are not clear why it has done so).
- Bias and discrimination, particularly where AI systems inadvertently perpetuate or amplify societal bias. Manchester is one of most diverse cities in terms of ethnicity and language and we would want to guard against any inherent bias – risk is that if we were to use AI in service design, those biases would be perpetuated.
- Privacy concerns, particularly given the capacity of AI to analyse large amounts of personal data.
- Tools such as ChatGPT and Google Bard have sometimes been found to have an issue with "hallucinating" inaccurate information and providing it in response to a user prompt. It is important to note that the quality of the outputs of such models is intrinsically related to the quality of the data used to train them.
- Ethical concerns, especially concerning the challenges inherent to instilling moral and ethical values in AI systems.
- Security risks associated with inadvertently using MCC data.
- Concentration of power, given the risk of AI development being dominated by a small number of corporations.
- Dependence on AI, including the risk that an overreliance on AI leads to a loss of creativity, critical thinking skills and human intuition.
- Job displacement, the potential for AI to abolish the need for some jobs (whilst potentially generating the need for others).
- Economic inequality, and the risk that AI will disproportionally benefit wealthy individuals and corporations.
- Legal and regulatory challenges, and the need for regulation to keep pace with the rapid development of innovation.

- Loss of human connection, and the fear that a reliance on AI-driven communication and interactions could lead to diminished empathy, social skills and human connections.
- Misinformation and manipulation, and the risk that AI-generated content drives the spread of false information and the manipulation of public opinion.
- Unintended consequences, particularly around the complexity of AI systems and a lack of human oversight leading to undesirable outcomes.
- Existential risks, including the rise of artificial general intelligence (AGI) that surpasses human intelligence and raises long term risks for the future of humanity.

6.4. A number of these risks can be addressed by rigorous organisational governance and by using tools that are designed to work in large organisations and the data and intellectual property remains with the organisation.

7. The Council's Position on Automation and AI

7.1. The Council are embracing the use of technology and AI and this will be a consideration in all parts of the Future Shape change programme. However, it is important that this is done in a way that ensures the work that adds value and that this is done safely. Learning from the Cabinet Office and those of the National Cyber team is being actively used to ensure that approaches are innovative and robust.

7.2. There are also implications for the skills required by our workforce. AI will have a role to play in automating data sharing between systems reducing the reliance on the digital skills of a form user. The digital inclusion part of Future Shape will be key to supporting our workforce to use and maximise the benefits of the new technologies.

7.3. However, to expand the use and embrace the benefits and use of Automation including AI to improve service delivery and to achieve the Council's objectives, it must be managed in a safe way to avoid the associated risks.

7.4. There are questions over how personal data is used, stored and managed. To ensure we remain compliant from a data-governance perspective, we have recently communicated council-wide that you must not use your Council corporate email address to sign up/log in to AI tools like ChatGPT or attempt to bypass this for any work-related purposes.

7.5. We are actively pursuing the implementation of technical 'guard rails' to ensure that any development of automation using the free Microsoft 365 tools available can be done in a secure way to safeguard systems and data.

7.6. We are also in the process of developing policy and guidance for the use of AI in the workplace and this will be progressed through Corporate Information Assurance and Risk Group (CIARG) in the first instance in November 23 to address considerations around data security and standards.

7.7. Any new projects are subject to the ICT & Digital demand process that were received by this committee in 2022, and AI considerations will form part of this process. Whilst there is no wish to discourage innovation it does need to be carefully managed. All projects involving personal data go through the usual information governance processes before being approved and commissioned. This rigorous organisational governance means that we can ensure we address the risks of AI whilst ensuring new initiatives align with Council objectives.

7.8. This governance also supports the Three-way Push by holding the work to account in line with Our Manchester which means we can, keep the basics on track, prevent problems down the line and tackle complex problems together. At a high-level AI and automation has a demonstrable part to play in this in that there are applications to be explored for its adoption in improving and sustaining good universal services, then using the collected data from them to analyse and predict trends to enable continual improvement and inform the resolution of complex problems across the Council.

8. Future Ambition

8.1. The use of Automation is being adopted in many ways, including the introduction of systems and workflow to replace manual operational processes. Through the Future Shape programme, there have been two RPA pilots to test the implementation and operational effectiveness of bots to automate processes. The detail of the learnings and findings of those pilots will be sought over the next few months, but indications so far are that the organisation has positively learnt from the experience, and it will be a priority to build on this learning.

8.2. A new platform has been introduced that will automate the integration and pass data between systems that is integral to the success of the RBDxP programme and the new FI&HRODT system as well as other line of business systems that need to integrate and pass data to other systems. Alongside this ICT will be introducing new low code development capability to quickly develop small systems and automate key manual processes across the Council.

8.3. The external Doing Digital Together strategy adopts the Smart City concept. AI has an important role to play in helping us monitor and measure the impact of changes in our city and, along with the Digital Strategy Team we will be strengthening our engagement with residents. This will also mean being much more transparent with our data to build trust and understanding on where and why AI is being used. The Digital Strategy Team are already engaging with CDEI (Centre for Data Ethics and Innovation) who are looking for industry partners to pilot incorporating an Algorithmic Impact Assessment (AIA) process, which offers a set of standards that would be used by those looking at AI systems in their work. The Manchester City Council-led Anti-Poverty Strategy has been identified as a potential case study.

8.4. The Digital Strategy team will also continue to work across key sectors, to share good models of practise, to keep internal colleagues up to pace with new technologies and research opportunities.

8.5. The Future Shape of the Council Programme will explore the use of AI and how it can support the delivery of its activities. An update on the work of Future Shape will be coming back to Resources and Governance Scrutiny committee. The example below shows how this work is already being used in the Resident and Business Digital Experience Workstream:

Automation of standard processes

As our new CRM platform is rolled out (via Resident and Business Digital Experience Programme, RBDxP), not only will our forms be better designed and accessible, but users will only be asked for the relevant information that they need to provide, and not for information that is not already accessible from another integrated system.

This will allow some operational tasks that have processes with a lot of manual stages to be automated, such as sending out for multiple requests or checking that photographs meet required criteria. This in turn removes staff intensive work and improves the experience for our residents when interacting with the Council.

8.6. AI is a very useful tool for assisting with research and policy formation, and as this doesn't involve the processing of personal data, officers engaged in this work have found it very useful to support the undertaking of their work in such areas as:

- Generating and refining ideas
- Developing content including text and images
- Analysing non-personal or non-sensitive data

8.7. Certain systems used by the Council do have in built AI capabilities supplied by the vendor as part of the service, for example, Microsoft 365. A number of our upcoming systems implementation will or are likely to have elements of automation, integration and workflow. Using the RBDxP principles, we know that the digital offer for those that can access it means a better and faster service, and it also allows us to develop better systems for those that need other forms of access too. How these functions are enhanced and safely implemented will be an area of focus in the delivery of the ICT Digital Strategy.

9. Next Steps

- Specific guidance will be produced for officers on the use of AI technologies that will be approved by CIARG (November 2023).
- The ICT and Digital Design Authority will review all new ICT & Digital Business Cases for any investment in new and emerging technologies ensuring risks can be addressed by rigorous organisational governance to

ensure AI technology isn't inadvertently introduced through the introduction of new systems. (Ongoing).

- Member sessions on examples of the technology being arranged for the Autumn by the Director of ICT
- Establish a group with other GM Local Authorities and others to work collaboratively on the roll out of new technologies (October 2023)
- Digital Strategy Team to work with networks such as Connected Places Catapult, Eurocities Digital Forum, Smart Cities UK Council and TechUK to look for best practise, both nationally and internationally.