

# Implementing a people-centred Smart Cities strategy at local level.

**Sherelle Fairweather** - Digital Strategy Lead  
Manchester City Council

Presentation for UK Authority's Smart Places & Communities (July 2023)





# Fibre to the People (FttP)

## Stimulating Demand for Future Internet Enabled services in Smart Cities

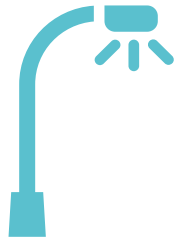


Dave Carter, Head, Manchester Digital Development Agency (MDDA),  
Manchester City Council, UK.

Chair, EU Smart Cities Portfolio Working Group



# Manchester's past relationship with Smart City projects



## **CITYVERVE**

Developing IoT infrastructure to support energy reduction, mobility and green transport, and transport efficiency with sensors embedded in the environment (lampposts) and wearable sensors - InnovateUK



## **TRIANGULUM**

Integrating energy, mobility and ICT systems around core infrastructure assets within the Oxford Road Corridor along with partner cities (Eindhoven, Stavenger) and follower cities (Leipzig, Prague, Sabadell) - European Commission



## **SYNCHRONICITY**

Scaling up IoT projects in urban areas by supporting SMEs to provide solutions – EU Horizon 2020



POWER COLLECTIVE

WE ARE POWER. NET

POWER UP Networking

VIADUX

DMIS

P Central (24hrs)

Parking for Manchester Central



DCMS confirms Barclays Eagle Labs will take over £12m Digital Growth Grant

Manchester tech companies raised a record £532 million of funding in 2022, a 50 per cent increase on 2021's figures and more than major European cities including Rome, Brussels, Warsaw and Lisbon.

(Source: Tech Nation, Adzuna, 2022)

Outside of London, **Manchester** leads the field for tech vacancies from May 2021 - May 2022 with nearly 80,000 roles opened by employers

Tech vacancies by city in the UK (excluding London)

# Manchester Holds on to the Top Spot in CBRE's UK Tech Cities Report

## Manchester named Top Large UK City of the Future, in International Investment Rankings

By [Maya Powell](#) on Feb. 28, 2023 🕒 2 min read



Getting Started ▾ Finance ▾ Technology ▾ Workplace & S

### Best City for Business Activity: Manchester

#### TOP 25 cities to start a business... Business Activity

1. Manchester	8. Liverpool	15. Hull	22. Portsmouth
2. Leeds	9. Sheffield	16. Cardiff	23. York
3. Brighton	10. Newcastle	17. Derby	24. Cambridge
4. Leicester	11. Bristol	18. Coventry	25. Oxford
5. Swansea	12. Edinburgh	19. Southampton	
6. Glasgow	13. Nottingham	20. Belfast	
7. Plymouth	14. Norwich	21. Birmingham	

Source: [www.startups.co.uk/analysis](http://www.startups.co.uk/analysis)

Startups.Cities 2022



$F_w = \frac{4m \cdot v \cdot K_h \cdot p \cdot m}{3(1 - \frac{v \cdot K}{m})}$

$\left\{ r_0 \frac{D_r}{z_0} \right\} \cdot R$

$S_2(\bar{u}, 1, y^t)_{NR} = \sum_{n=0}^{\infty} \frac{1}{4\sqrt{n+1} \Delta} \frac{1}{\sqrt{n+1} \Delta} \dots$

$\times \left\{ (-1 - \sqrt{n+1} \Delta + \sqrt{n+1} \Delta + \sqrt{(n+1)(n+1)} + \sqrt{(n+1) \Delta}) \sqrt{\Delta} \sqrt{(2n+1)(n+1) \Delta} \right\}$

$\frac{1}{(\sqrt{n+1} - \sqrt{n+1}) \sqrt{\Delta} + \sqrt{n+1}}$

$\Delta F = F(x_0 + \Delta x_0) - F(x_0)$

$\cos(\sqrt{n+1} \Delta) - \sqrt{n+1} \Delta + \sqrt{n+1} \Delta^2$

$\cos(\sqrt{n+1} \Delta) + \sqrt{n+1} \Delta^2$

$\frac{(\frac{3}{\sqrt{n+2}})^3 - (\frac{3}{\sqrt{n}})^2}{(\frac{3}{\sqrt{n+2}})^2 - (\frac{3}{\sqrt{n}})^2}$

$(\lambda_2, m_1)(\lambda_3, m_2) = (\lambda_2 \lambda_3, m_1 m_2)$

$(\lambda, m) + (\lambda_1, m_1) + (\lambda_2, m_2) = (\lambda + \lambda_1 + \lambda_2, m + m_1 + m_2)$

$\frac{df}{dx} = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$

$f(x) = 5x(x)(3x) = 15x^3$

$y = (3+7)2g = 20g$

$\frac{x+1}{x+2} = y \sin(\pi^2)$

$x = (4+3i)(2+5i)$

$= 4(2+5i) + 3i(2+5i)$

$= 8 + 20i + 6i + 15i^2$

$= 8 + 26i + 15(-1)$

$= 8 + 26i - 15$

$= -7 + 26i$

$\sum_{j=1}^n (A_j, f_j(x))$

$\sum_{n=1}^{\infty} \left( \frac{1 - w_n}{\sinh(z_n - z_{2n})} - \coth(z_n - z_{2n}) \right)$

$\frac{1 - w_n}{\sinh(z_n - z_{2n})} - \coth(z_n - z_{2n})$

$\frac{1 - w_n}{\sinh(z_n - z_{2n})} - \coth(z_n - z_{2n})$

$\frac{1}{2} x^{1+\omega} (a)^{(-1)} + K \frac{1}{2} x^{(-1)} (a)^{(-1)}$

$2 \log(\sqrt{x}) - \log(3x) = 0$

$2 \log(\sqrt{x}) - \log(3x) = 0$

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$3ax^2 + 3ax + a = (x+2)^2$

$\sum_{n=0}^{\infty} \int_0^1 c_n e^{x^n}$

$2x^2 + 7x = 0$

$3x^2 + 4 = 0$

$5x^2 - 4 = 0$

$x^2 - 4x + 1 = 0$

$(1+y) dx - (y - \sqrt{1+y}) dy = 0$

$x^2 + y^2 = 3x^2 y dx$

$xy + 1 = y \log x$

$yy + \frac{1}{2} y^2 = \sin x$

$(x^2 + x^2 + x^2 + 1) y + (x^2 - x^2)^3 x^2 y - xy + 1 = y = 0$

$3y^2 + y = x - 1$

$y(\log x - \log y) - y \cdot x dx = 0$

$4y(x^2) - \log y$

$ab \begin{bmatrix} a & b \\ c & d \end{bmatrix} \sqrt{xz}$

$\sum_{n=0}^{\infty} \int_0^1 c_n e^{x^n}$



**Societal challenges are digital challenges.**

Changes in demographics

Increased pressures on service delivery alongside budget constraints

Rise of automation across a range of sectors

Climate and environment

Long-term impacts of the COVID-19 pandemic

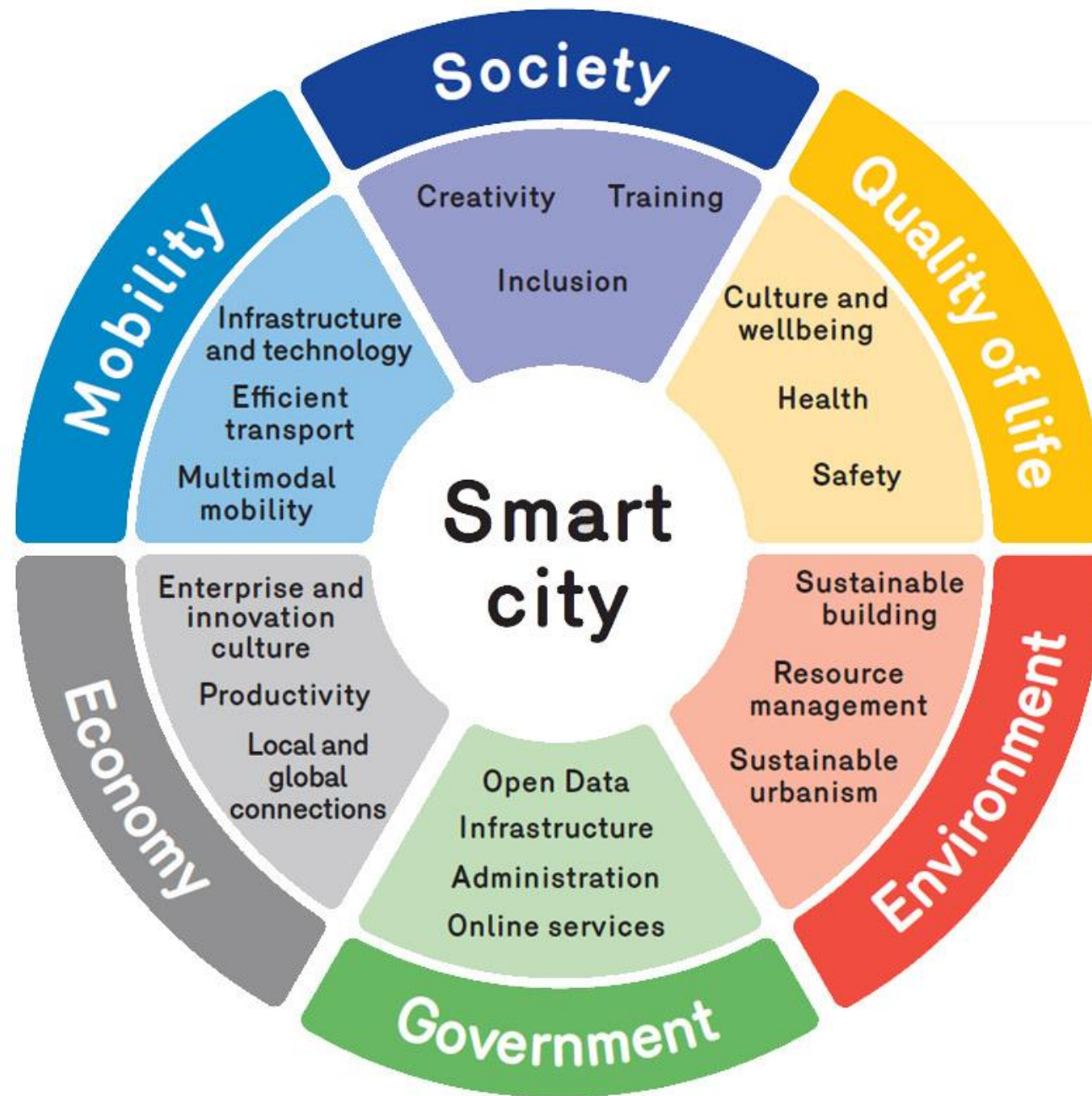
Inequality and high levels of poverty

Having the right physical infrastructure to support both business and people who live in the city

Continuing to attract investment and grow as a global influencer

Future proofing and diversifying our business communities and talent pipeline





**"Smart cities enable citizens to have the capacity and confidence to use state-of-the-art future internet technologies to transform the way they live and work and their quality of life."**

*Manchester Digital Strategy 2021-2026*



DOING  
DIGITAL  
TOGETHER

MANCHESTER'S  
DIGITAL STRATEGY

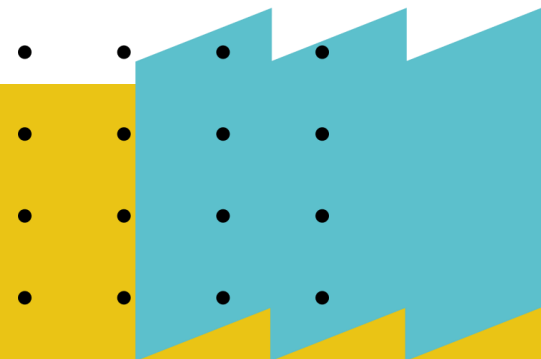


# Manchester Digital Strategy: Doing Together

- 5-year strategy (2021-2026)
- 34 priorities across **4 thematic areas**

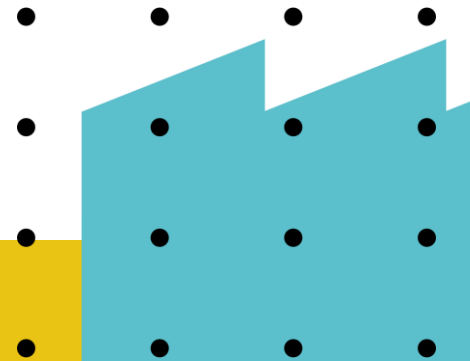
Focus on what Manchester needs to do city-wide to ensure:

- **Remarkable People, Extraordinary Opportunities:** Residents are digitally skilled, living healthy, well-balanced digital lives
- **Connecting Places, Enhancing Lives:** Infrastructure ready for future use and reaching everyone, affordably
- **Pioneering the Future, Prosperity for All:** Digital economy is thriving
- **Rising to Challenges, Future Proofing our city:** Digital technologies enable a transition to zero-carbon and futureproofed approaches



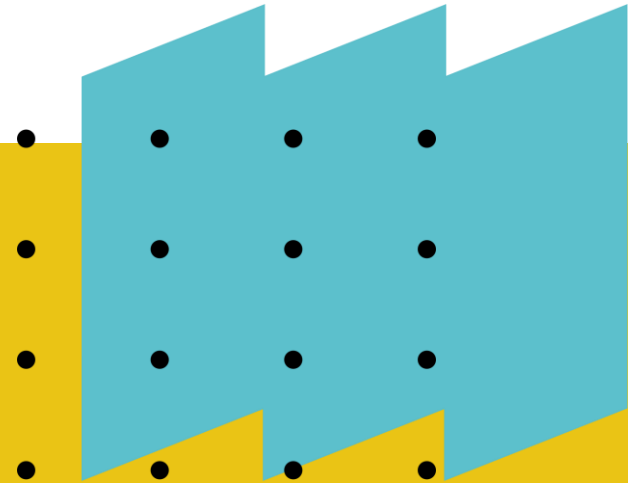
~~What are the technologies we want?~~

**What is the society we want?**





- We have a Manchester Digital Strategy Delivery Plan (2022-2023). Across the 4 thematic areas there are 26 priorities and 24 projects.
- Alignment with regional and local strategies.
- Governance via a Digital Advisory Board, an Internal Coordination Group and key project working groups.



# Remarkable People, Extraordinary Opportunities

<b>DATA LITERACY AND CITIZEN EMPOWERMENT</b>	Embedding public participation, co-design/co-creation, and engagement across the digital strategy project portfolio.
<b>DIGITAL INCLUSION</b>	Working with the Digital Inclusion Team to refresh the Digital Inclusion Action Plan and support innovative research on inclusion.
<b>MINIMISING THE IMPACT OF STRUCTURAL INEQUALITIES IN DIGITAL CAREERS</b>	Research on structural inequalities affecting pathways and opportunities for adult digital skills and careers trajectories in tech.
<b>DIGITAL SKILLS</b>	Working with the MCC Work & Skills Team to align W&S action plan with digital strategy.



# Connecting Places, Enhancing Lives

<b>DIGITAL INFRASTRUCTURE DESIGN GUIDE</b>	Co-creating a Digital Infrastructure Planning Design Guide to embed transformational digital infrastructure guidance into planning and development.
<b>DIGITAL INFRASTRUCTURE CONNECTIVITY ASSET MAPPING</b>	Commissioning and co-delivering a project which collects, standardises, and analyses connectivity infrastructure data (including the location and technical specifications of existing digital infrastructure) and visualises the infrastructure data in geospatial maps.
<b>DIGITAL EXCLUSION INDEX</b>	Refreshing the DERI and finding ways to use and embed it across the whole digital ecosystem.
<b>MCC DATA POLICY AND PRINCIPLES</b>	Influencing and supporting the visioning of the council's ambition around data, as well as the direction of the implementation of the new Data Policy/Strategy and data principles that can apply both internally within the Council and city-wide.

# Pioneering the Future, Prosperity for All

<b>ALGORITHMIC TRANSPARENCY STANDARD</b>	Implement the Algorithmic Transparency Standard aligned with the delivery of Priority 2.4 within the Manchester City Council-led Anti-Poverty Strategy.
<b>MCC KNOWLEDGE EXCHANGE WORKSHOPS</b>	Hosting a series of internal knowledge exchange workshops, covering relevant digital strategy themes, and inviting key guests, both internal and external to the council.
<b>DIGITAL STRATEGY RESEARCH NETWORK</b>	Research is a core part of the economy, so we aim to convene a network of researchers, promote and engage in research, and celebrate the achievements of the research community.
<b>WORLD CAFÉ SERIES</b>	Convene a series of world café style problem solving conversations with key stakeholders across sector and industry.

# Rising to Challenges, Future Proofing our city

<b>DIGITAL INFRASTRUCTURE</b>	Incorporating sustainable build practices into the digital infrastructure design guide.
<b>UNDERSTANDING THE RELATIONSHIP BETWEEN THE CITY'S TECH AND CLIMATE AMBITIONS</b>	Commission some additional resource to convene and facilitate a delivery team with experts across tech and climate. The group will identify 2-3 projects / initiatives for delivery under the 'Sustainable Resilience' thematic area of the Digital Strategy, in year 2.
<b>GREEN DATA CENTRE PILOT</b>	Explore the possibility of developing a local 'green' data centre in Manchester based on models under development in Lancaster and Blackpool.

**Innovation does not have to be new,  
radical, expensive or disruptive.**

# Manchester's Smart City Approach



- **People:** collaborate in new and dynamic ways, co-owning new ways of planning and delivering services and co-producing services both for themselves and for those that they live with, care for and work with.
- **Economy:** adopt new economic and social opportunities for new ways of working and living.
- **Environment:** harness digital solutions for making environments greener, cleaner and healthier, as well as more open and inclusive.
- **Society:** foster democratic, resilient and attractive spaces, using future internet-enabled services to generate and celebrate creativity, innovation and diversity, especially accessing, shaping and participating in arts and cultural experiences.

**Say hello!**



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