DOING DIGITAL TOGETHER

Tech for Good

in a Human-Centred Economy

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Commissioned by:

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Introduction

The *Tech for Good in a Human Centred Economy* report examines the role of the "Tech for Good" ecosystem in achieving Manchester's vision of becoming a leading digital city within a **smarter economy**. This will be a city with inclusive and equitable ideals.

The report aims to provide recommendations that align city-wide and local authority approaches with this vision.

Recommendations in the report have been developed using a **Systems Map** connecting the Tech for Good ecosystem on to the systems and structures of a smarter economy, and a **S.C.O.R.E Analysis** highlighting Strengths, Challenges, Opportunities, Responses and Effectiveness.

Read the full report: TECH FOR GOOD IN A HUMAN-CENTERED ECONOMY REPORT

What is "Tech for Good?"

Tech for Good: Common Definition	The use of technology to effect deliberate, positive social benefit.
Tech for Good: Report Definition	Companies, organisations, projects and individuals that aim to create a positive impact on the world using technology, address one or more of the United National Sustainable Development Goals.

The definition used in this report expands the scope of Tech for Good to include the positive impact that technology can have across areas such as health, education, well-being, biodiversity, climate, equality, work, and ethics.

Part 1: Systems Map

Manchester's tech ecosystem consists of two independently acting ecosystems: for-profit and non-profit.

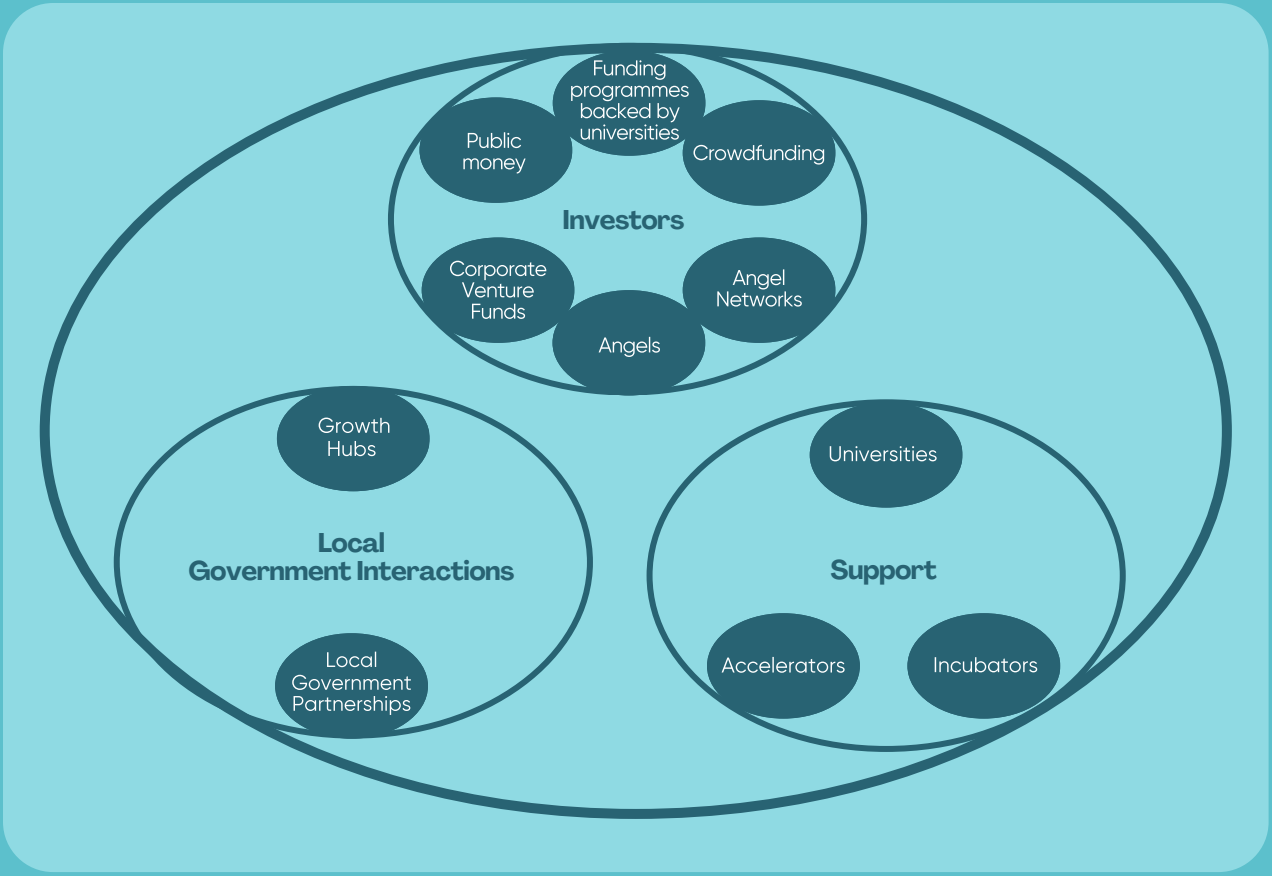
Tech for Good is created separately within these sectors and is not typically recognised as a distinct system within its own right.

The below **Systems Map** offers an overview of Manchester's For Profit and Not for Profit tech ecosystems.

For Profit Ecosystem

Manchester's for-profit tech ecosystem follows a market based approach,[1] characterised by high levels of investment and competitiveness.

For Profit Tech Ecosystem Map



1 Barclays and Beauhurst (2021) - *Unlocking Growth: Creating Tech Ecosystems to Stimulate Local Economies*

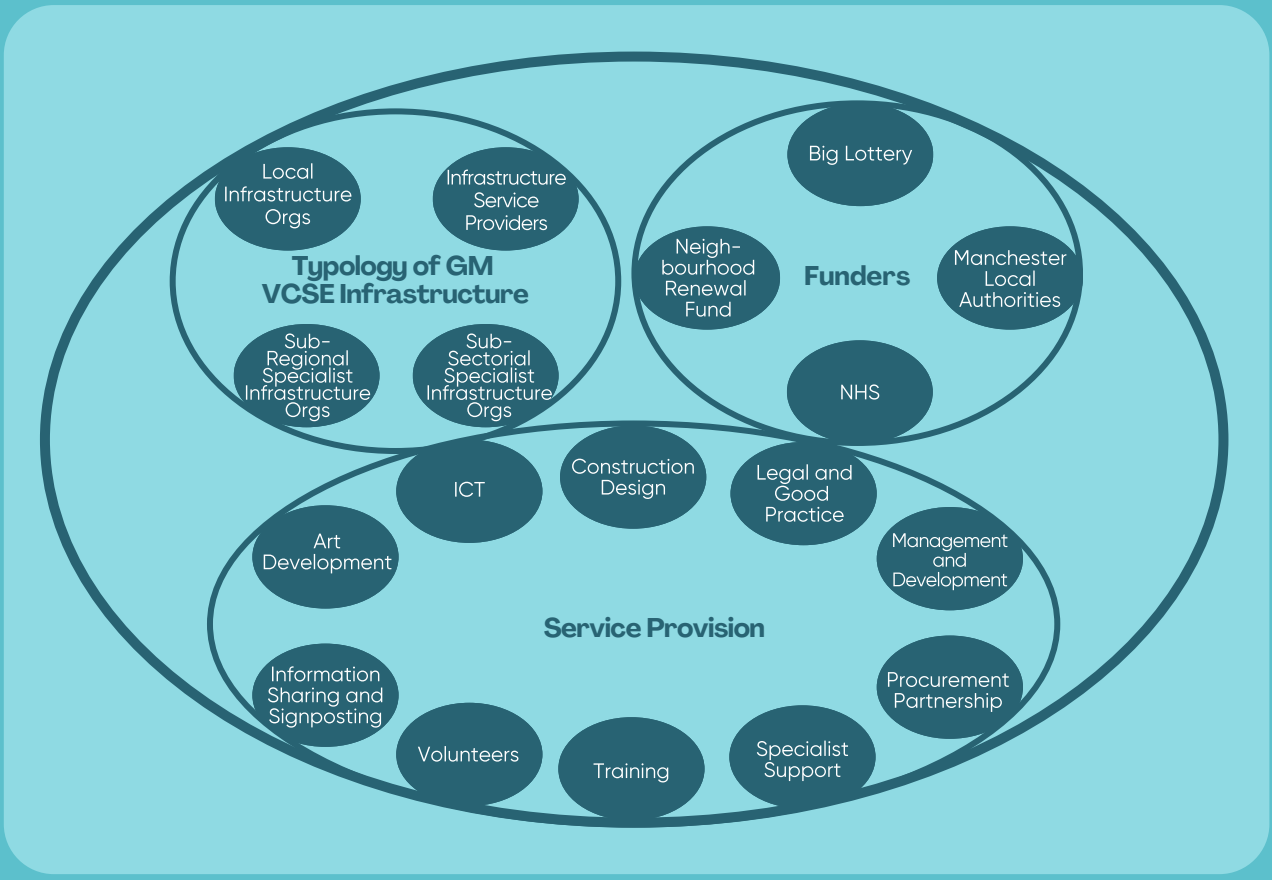
Non-Profit Ecosystem

The non-profit tech ecosystem is shaped by a more social approach and funder-based impact model.[2] This ecosystem remains highly competitive, with many voluntary sector organisations competing for a relatively small pool of funding - approximately £1 billion in social finance across all sectors including housing, health and poverty, compared to £5 billion in the tech for-profit sector alone.

Due to limited funding, typical sector sector demands - such as high research and developments costs and iterative trial-and-error process - are difficult to justify in a context where urgent social issues like poverty, health inequalities and homeless take precedence.

Therefore, despite the critical need for technology to address these challenges, investment in tech within the voluntary sector remains disproportionately low.

Non-Profit Tech Ecosystem Map



2 Martikke et al. (2005b) - *Spinning the Spider's Web: Mapping Greater Manchester voluntary and community sector infrastructure*

Drivers for Change

There are three main drivers for change that could inspire transformational change in the Tech for Good ecosystem. Each of these factors is analysed in terms of Key Issues, Market and Social Needs, and Key Systemic Insight.

Sustainable Development Goals

International goals aimed at improving the planet and communities in which we live.

Smarter City Technologies

Bringing in vast technological transformation to improve public services and the lives of citizens.

Manchester Strategy

Focusing on improving inclusivity, tackling inequality and creating equitable futures within the city.

A Collaborative Economy

Data / Digital Economic Transformation

A Fairer Economy

A Greener Economy

A Collaborative Economy

Sustainable Development Goals

International goals aimed at improving the planet and communities in which we live.

As the non-profit and for-profit tech ecosystems currently act independently, the Tech for Good landscape remains fragmented, lacking the policy, strategy and foundations needed for systemic innovation.[3] A more integrated Tech for Good ecosystem would be better equipped to combine complementary innovations, foster systems thinking, enable collaboration across innovation networks, and develop scalable policies and frameworks.

Key Issues Within System

Systemic challenges require system-wide responses

Systemic challenges, such as health inequality and poverty, affect all levels of the economy and society. These complex issues cannot be solved by a response from a single actor, but require a collaborative approach that brings together knowledge, skills and resources from across multiple sectors.

Key Market & Social Needs

Systemic innovation capabilities

Systemic innovation requires complex interactions of public policy, changes to business cultures and practice, reforms to legislation, and shifts in consumer attitudes and behaviour.

Key Systemic Insights

The current economic model is largely competitive, with features that favour individual approaches. For systemic innovation to take place, there must be a shift towards more **collaborative economic approaches**. This means embracing policies and frameworks that support shared learning and cross-sector collaboration to drive meaningful change.

A Greener Economy

Sustainable Development Goals

International goals aimed at improving the planet and communities in which we live.

United Nations Environment Programme (UNEP) [4] defines a green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. Put simply, a green economy is one that is low carbon, resource efficient and socially inclusive.

Manchester is committed to becoming a zero carbon city by 2038.

Key Issues Within System

Making the green economy inclusive

An inclusive green economy impacts every sector. It must deliver not only jobs and income, but also improvements in health, environment, and long-term sustainability. How communities and businesses engage with the green economy must be understood as part of a broader, system-wide transformation - one that requires coordinated change across sectors, practices, and priorities.

Key Market & Social Needs

Policy Mainstreaming

Supporting the mainstreaming of green economy, encompasingpolicy development, technical assessments and knowledge products, and policy toolkits and guidelines.

Economic Instruments

Supporting the development and promotion of Green Financial Sector Regulations through financing mechanisms and new business models.

Capacity Building

Developing capacity through initiatives and activities that address green economy knowledge gaps, and strengthening commitment to drive green economy policy development and implementation.

Key Systemic Insights

To support mainstreaming, the green economy must move beyond isolated innovations and become a systemic part of how organisations, communities, and individuals within the Tech for Good space operate. A **living systems approach** to a greener economy - which draws on nature-inspired design, regenerative practices, and holistic thinking - could strengthen the broader Tech for Good ecosystem, enabling key actors to take advantage of cradle-to-cradle designs, life cycle assessments, regenerative materials, and collaborative partnerships. In doing so, every level of the Tech for Good ecosystem can align with a greener, more sustainable economic model.

A Fairer Economy

Manchester Strategy

Focusing on improving inclusivity, tackling inequality and creating equitable futures within the city.

Investing in Success, Manchester's inclusive economy strategy, aims to ensure that more people benefit equitably from economic growth. Underpinned by the wider Our Manchester Strategy, Investing in Success suggests including more people in economic opportunity as an outcome. It supports targeted interventions to reduce disadvantage, promote inclusion, and meet the needs of specific individuals and groups - including older people, disabled people, minoritised groups, and people living in poverty.

Key Issues Within System

Inequality of resources & assets

The for-profit tech sector has 5 times more in terms of assets and resources within its ecosystem.

Exclusion of diverse communities

Biases are replicated and amplified by technology, disproportionately affecting already marginalised groups.

Key Market & Social Needs

Underserved groups to be included in the innovation ecosystem

There is strong market need for underserved groups to be included within the innovation ecosystem. Economic benefits include business growth and competitiveness, and a broader range of challenges being addressed.

System-wide solutions to address D&I challenges

A combination of strategy, processes, policies, technology, culture and individual behaviours are needed to address individual and structural bias and ensure fair and respectful treatment.

Funding & investment in underserved communities

Many organisations with high representation from underserved groups are systematically excluded from funding due to structural barriers. Funders often demand collaboration, yet there is little supporting infrastructure.

Key Systemic Insights

A fairer economy requires both the for profit and non-profit tech ecosystems to align better with each other. The **Fourth Sector** [5] - a hidden ecosystem advancing market and social approaches with high levels of underserved community activity - is well-placed to address this divide, if recognised as a distinct ecosystem.

A Data / Digital Economy

Smarter City Technologies

Bringing in vast technological transformation to improve public services and the lives of citizens.

Smart cities use data and technology to improve efficiencies, sustainability, economic development, and overall quality of life for people living and working in the city.

Over the last 10 years, Manchester has collaborated with a wide range of European cities on digital projects that advance its vision of becoming a smart city.

Key Issues Within System

Exclusion of diverse communities

Smart city projects often fail to include the voices of all Manchester citizens.

Key Market & Social Needs

Human-centric smarter city and economic framework

There is a strong market and social need for a human centred smarter city model that tests smart city approaches as pathways to a fairer, greener, and more collaborative economy.

Key Systemic Insights

Data and digital are the assets and resources of the future. Emerging capabilities in **smarter city initiatives** - such as living systems data, ethical frameworks and the use of knowledge graphs - would be a key advantage to achieving system change across Manchester.

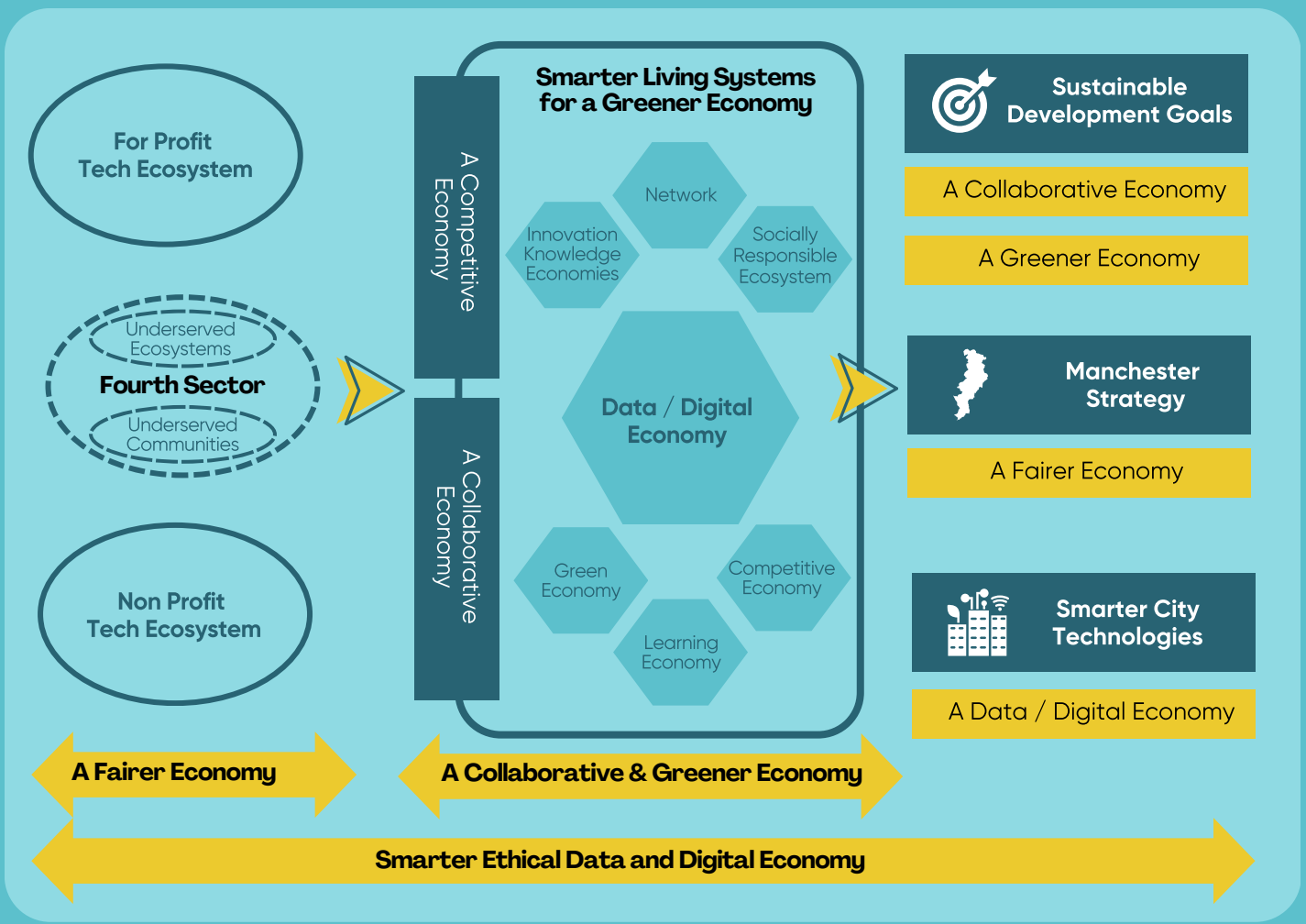
This has the added benefit of enabling underserved communities to build value by contributing to and benefiting from real-time feedback and responses to support the development of a new tier of evidence for all sectors.

Final Systems Map

Smarter economies are not just about the features of the economy, but how the economy aims to behave. In a smarter economy, systems and structures operate equitably and collaboratively - ensuring that opportunities, resources and assets are accessible to all citizens. If Tech for Good is analysed through this lens:

A Collaborative Economy	A Greener Economy	A Fairer Economy	Data / Digital Economic Transformation
Must run alongside a competitive economy with suitable policies and structures.	Mainstreams green policies by underpinning all aspects of the economy with a living systems approach.	Focuses on the 4th Sector, a hidden part of the Tech for Good ecosystem that includes underserved communities.	Advantages residents through enhanced capabilities and methods that account for the complex adaptive features of a city.

Manchester's Tech Ecosystem Mapped onto a Smarter Economy



Part 2: S.C.O.R.E Analysis

S.C.O.R.E (Strengths, Challenges, Opportunities, Responses & Effectiveness) is a strategy-assessment framework, used as a more versatile alternative to the commonly used S.W.O.T (Strengths, Weaknesses, Opportunities & Threats).

In this report, S.C.O.R.E is used to analyse gaps in the systems maps to offer a roadmap to change.

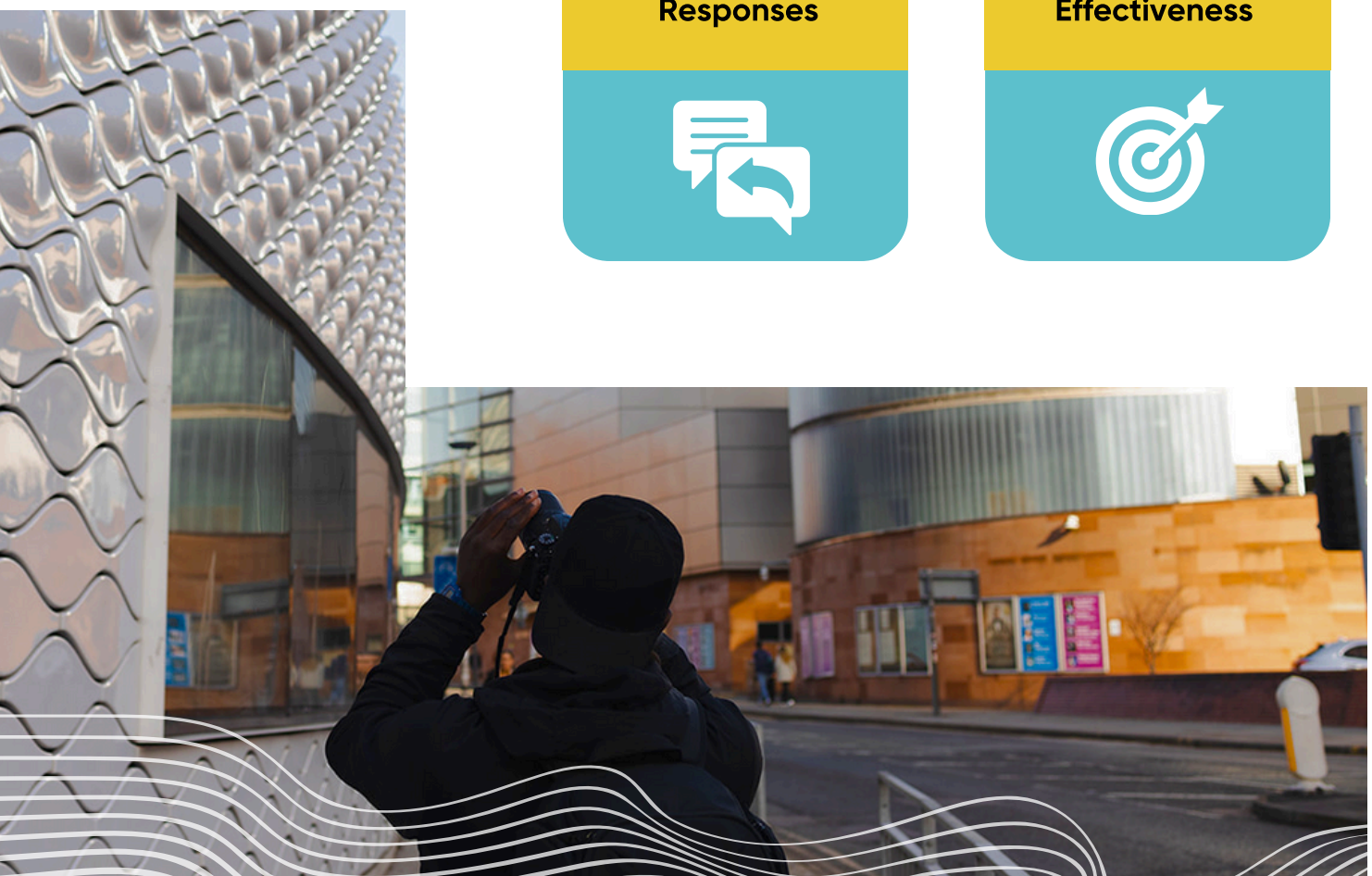
Strengths

Challenges

Opportunities

Responses

Effectiveness



S - Strengths

Boasting a thriving £5 billion digital ecosystem and more than 10,000 digital and tech businesses, Manchester has one of the strongest for-profit tech ecosystems in the UK.

The city region innovates across a variety of sectors, including AI and data, cyber security, eCommerce and IoT.

Key Strengths

AI

In 2020, a world first AI study found that Manchester outperforms all other major UK cities in fields including AI and data, cyber security, eCommerce and IoT.

Fintech

Manchester is home to the UK's largest regional Fintech ecosystem.

Healthtech

Manchester has solidified itself as one of the main MedTech hubs outside London alongside Cambridge, Oxford and Leeds.

Incubators & Accelerators

Manchester is home to several incubators and accelerator programmes offering world-class facilities and business support, including Bruntwood SciTech and Enterprise City's Exchange scheme.

Universities

Manchester's many universities offers extensive support to start-ups and scaleups in the region.

Investment

Investment is another significant driver of Manchester's burgeoning tech landscape, with investors including Manchester-based angel network GC Angels and the Northern Powerhouse Investment Fund.

C - Challenges

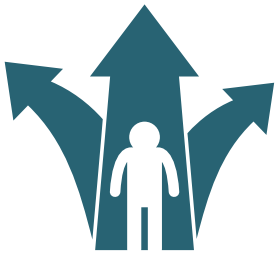
Manchester's key strengths are rooted in the for profit ecosystem. The non-profit sector operates with fundamentally different structures - resulting in limited investment in technology, scaling, and Research & Development.

The current ecosystem is not viable for the future needs of Manchester. Our **Systems Map** and analysis show that while significant drivers of change are underway, existing systems are insufficient to respond effectively. To address this gap, new capabilities must be developed that support these emerging drivers of change.

Challenge Areas	New Capabilities Needed
A Collaborative Economy	Systemic challenges require collaborative solutions. However, power imbalances, funding gaps and competitive economic structures can stifle collaboration. New systems and structures are needed that balance the needs of both for-profit and for-purpose organisations.
A Greener Economy	Adopting a Living Systems approach to underpin Tech for Good initiatives and broader organisational structures could help drive the transition to a greener economy.
A Fairer Economy	A well-structured Fourth Sector ecosystem is needed to support organisations driving Tech for Good. This ecosystem should enable both market-driven and socially focused approaches, helping to inspire new solutions to complex challenges.
Data / Digital Economic Transformation	An ethical framework for a new application of Living Systems data is needed to build a smarter, more ethical and more resilient economy. This would include systems to improve governance, decision-making, and data sharing, while respecting different values.

O - Opportunities

Manchester has participated in many smart city demonstrators, both regionally and across Europe. These demonstrators have for the most part focused on technical design. There is now an opportunity to focus on a **Smarter Economy Demonstrator** - one that integrates technology with social systems and structures to harness a better way for features of the economy to be run.



Key Opportunities

Smarter Economy Demonstrator

A Smarter Economy Demonstrator would offer a fresh approach to designing, implementing, and testing how Tech for Good can operate more effectively within the economy. The Smarter Economy Demonstrator would include:

Economy Workstream: Demonstration of New Capabilities

+ Developing Fourth Sector ecosystem
+ Implementing a Living Systems model
+ Embedding collective impact digital & data tools
+ Creating a human centric smarter city framework

Tech for Good Workstream: Demonstration of Collective Impact Tech

+ Exploring multiple Tech for Good developments
+ Building case studies and profiles
+ Researching the impact of new capabilities on cross sector participants

Social Value Workstream: Demonstration of Expanded Economic Value

+ Expanding the value of the economy through collaboration, living systems and data-driven approaches
+ Creating new business models to address current barriers, build new partnerships and expand investment

Continuous Improvement of Data and Digital Policies and Strategy

A Smarter Economy Demonstrator could be developed to assess key attributes and features of the economic system. Its purpose would be to strengthen data and digital policies and strategies, enabling local authorities to easily identify gaps and areas where action may be needed.

A Smarter Model of the 21st Century Economy

The greatest opportunity lies in developing policies and capabilities that support system-wide change, offering a new model for how the economy can operate. This affords Manchester both status and branding as a beacon for a Smarter Model of the Economy in the 21st Century.

R - Responses

This section highlights the responses from possible stakeholders in the Tech for Good Ecosystem, including the Fourth Sector, private sector, government, academia, and underserved communities.

Stakeholders	Responses
The Fourth Sector	Investment Balancing Profit & Public Benefit Goals; Creation of Enabling Policy Environments; Expansion of Education & Training Infrastructure; Professional Support
Private Sector	New Business Opportunities; Enhanced Stakeholder Engagement; Investment, Merger & Acquisition Opportunities; Embedded Social Impact
Public Sector	Job Creation & Economic Growth; Reduced Social & Environmental Challenges; New Revenues; Mission-Aligned Contracting & Procurement; Policy Initiatives Linked to Fourth Sector
Academia	New Research and Development; Knowledge Development and Transfer; Education and Training
Underserved Communities	Contracting & Partnership Opportunities; Increase in Philanthropic Resource; Tackle Social & Environmental Challenges; Self-Sustaining Scalable Solutions; Future Markets Aligned with Diaspora

E - Effectiveness

The proposed solution advocates for building systems and structures that support new capabilities in the economy. This will help move the Tech for Good ecosystem beyond isolated solutions toward addressing systemic challenges around a Collaborative Economy, a Greener Economy, a Fairer Economy, and a Data / Digitally Enabled Economy.

A Smarter Economy demonstrator could support practical action and research, helping to shape better policies and strategies that work for everyone.

Key Strengths

Efficiency

The solution develops the capabilities of organisations within the Tech for Good landscape to enable cities to meet Sustainable Development Goals and grow their own data and knowledge bases.

Reliability

The solution proposes a Smarter Economy Demonstrator that enables iterative design and testing to develop the most reliable and effective outcomes.

Elegance

The solution self-adjusts to accommodate human factors. At the heart of the Tech for Good ecosystem is a commitment to reducing inequality. The capabilities, policies and strategies proposed align with this goal.

Appropriate

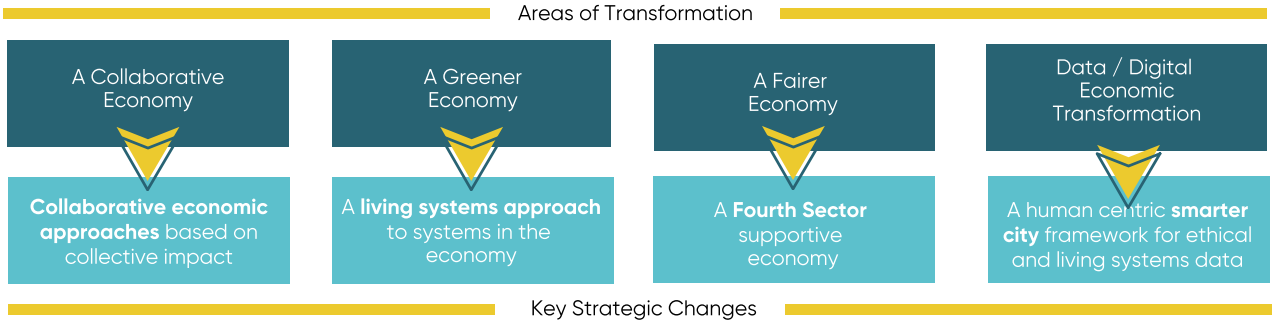
The solution aims to connect the two sides of Manchester's tech economy - profit and non-profit -in ways that help make the city a more ethical, resilient digital city with a smarter economy.

Integration

The development of Living Systems data and ethical frameworks ensures that solutions optimise synergy and reflect the complexity of systems in operation.

Conclusion

This report completes a **Systems Map** and **S.C.O.R.E Analysis** on the Tech for Good ecosystem in Manchester. It highlights four key areas for transformation, proposing strategic changes that could deliver significant benefits for citizens, organisations and the public sector:



Recommendations

1 Develop a Smarter Economy Demonstrator to design, test and implement new capabilities within the economy.

Proposal: *Pilot and evaluate a Smarter Economy Demonstrator to identify effective strategies and processes that enable Tech for Good to operate more effectively within the wider economy, helping to embed approaches that support inclusive and ethical innovation in local authority policy.*

2 Develop applications to assist funding and financing for a Smarter Economy demonstrator.

Proposal: *Advance the Smarter Economy Demonstrator through targeted development and prototyping, cross-sector collaboration, and strategic partnerships with academic institutions and ethical business networks. This includes creating funding applications, engaging aligned investors, and designing a Digital Public Goods Infrastructure, all aimed at strengthening systemic innovation.*

> Appendum: Next Steps

The report outlines two broad recommendations to strengthen Manchester's Tech for Good community, encompassing a range of ideas to inform future action. This appendum presents practical objectives, collated by Manchester City Council, to guide delivery of the recommendations.

1 Develop a Smarter Economy Demonstrator

Action: *Design and implement a Smarter Economy test new capabilities across data, digital, and social transformation.*

Purpose: *To embed inclusive, ethical innovation into Manchester's digital and economic strategies.*

Includes:

- *A Fourth Sector supportive economy*
- *Collaborative economy infrastructure*
- *Human centric smart city models*
- *Greener economy systems*
- *Living systems data & ethical frameworks*

2 Strengthen the Fourth Sector Ecosystem

Action: *Recognise and invest in the Fourth Sector as a distinct part of Manchester's tech economy.*

Purpose: *To support underserved communities and organisations using market and social approaches.*

Includes:

- *Tailored funding mechanisms*
- *Legal & policy reform*
- *Education & training infrastructure*
- *Representation & networking platforms*

3 Embed a Living Systems Approach to Greening the Economy

Action: *Integrate regenerative design principles and nature-inspired systems thinking into tech and economic development.*

Purpose: *To mainstream sustainability across all sectors*

Includes:

- *Life cycle assessments*
- *Green financial instruments & policy toolkits*
- *Regenerative materials & partnerships*

4 Build Infrastructure for a Collaborative Economy

Action: *Develop systems and structures that enable cross-sector collaboration and systemic innovation.*

Purpose: *To address complex social challenges through collective impact.*

Includes:

- *Digital business ecosystems*
- *Collective impact tools & frameworks*
- *Value network analysis*

5 Advance Data and Digital Capabilities with Ethical Frameworks

Action: *Create a human-centric smart city framework that leverages ethical data and digital infrastructure.*

Purpose: *To ensure equitable access to digital resources and real-time feedback systems.*

Includes:

- *Knowledge graphs and data arbitrage systems*
- *Open data governance models*
- *Inclusive digital public goods infrastructure*

6 Mobilise Funding and Parnerships

Action: *Develop applications and partnerships to secure funding for the Smarter Economy Demonstrator.*

Purpose: *To scale innovation and embed systemic change.*

Includes:

- *Collaboration with universities & ethical business networks*
- *Modular demonstrator development for targeted funding bids*
- *Engagement with aligned investors*

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