BIRMINGHAM DIGITAL CITY

Enabling Economic Development for Birmingham – Accelerating Digital Innovation Opportunities

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CATAPULT Connected Places

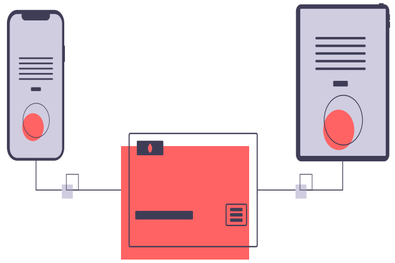
Birmingham City Council

Digital City Programme Objectives – Establishing Digital Birmingham

Birmingham as a preferred place of choice for digital innovation

Increased levels of digital investment

Birmingham as a recognised leading Digital City – “Digital Birmingham”



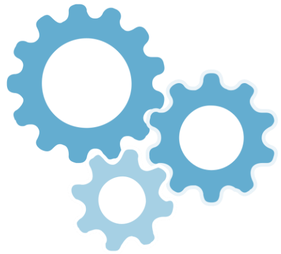
Council services are utilising new technologies and innovative solutions

Our Scope

August | September | October | November | December

Stakeholder Engagement:

We are conducting over 30 targeted interviews and issuing a city-wide questionnaire to capture the views of a wider range of stakeholder on the Digital City topic.



Digital City Roadmap & Business Cases:

We will identify 5 high-priority short-term projects and create business cases to attract funding and investment. We will also identify 5 longer-term projects to form a wider roadmap.

1

2

Maturity Assessment:

We are assessing Birmingham's maturity across 12 different 'Digital City' pillars including, digital infrastructure, data management, procurement and citizen engagement.

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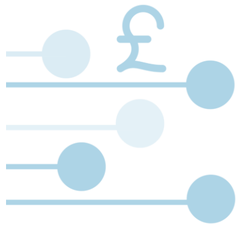

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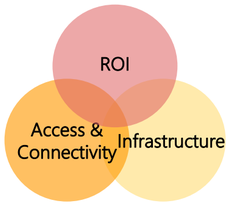
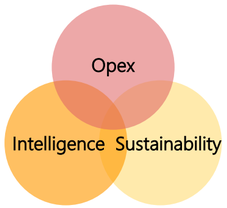
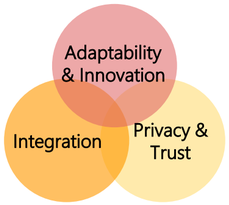
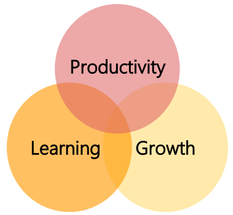
Digital City Governance Structure

We will propose an appropriate governance structure for the Digital City Programme, including recommendations around roles, responsibilities and contributors.

Outputs:

1. **Maturity Assessment Report** that benchmarks Birmingham's performance against 12 digital enablers and compares this against leading global and UK competitor cities. Report will include recommendations for future projects which would improve weaknesses and maximise strengths going forward.
2. A **Roadmap for Birmingham's Digital City Programme**, detailing 5 immediate projects and 5 longer-term projects that will deliver the key outcomes of the Programme. High-level business cases will be prepared for the immediate projects to facilitate the securing of funding.
3. A **Governance Structure and Terms of Reference** for a body to oversee the work of the Birmingham Digital City Programme

	1 Connectivity	2 Assets and Infrastructure	3 Data and APIs	4 End User Services	5 Enablement
Factors					
Examples – Capability	• *Converged Networks* • *Fixed broadband* • *Mobile end-user (4G / 5G)* • *IoT (LoRa, Sigfox, Zigbee)*	• *Smart utilities* • *Smart buildings* • *Smart energy* • *Smart traffic management*	• *Data governance strategy* • *Open data and APIs to enable adaptability of the environment* • *Enable development of innovative services*	• *Innovative urban services in food, retail, transportation, logistics / deliveries entertainment, leisure …*	• *Digital skills* • *Business development and incubation* • *Community initiative support* • *Innovation programme*
Examples – Benefits	• *Resident, business, employee and visitor access to digital services* • *Enablement of intelligent infrastructure and services*	• *Cost effective operations* • *Provision of connectivity infrastructure* • *Reduced congestion and environmental impact*	• *Enable 3rd party innovations* • *A resource to support modern businesses* • *Enable transparency of public services*	• *Create community events, interactions and engagement* • *Attract job-creating businesses*	• *Provide opportunities for local residents to develop new skills* • *Assist local businesses to grow and evolve* • *Attract new innovators*
Examples – Source of Investment	• *Developers* • *Connectivity providers* • *Operators*	• *Developers* • *Operators* • *Service providers*	• *Relatively modest investment required if included in initial plan* • *Leverages business, venture and social investments*	• *Developers* • *Operators* • *Service providers* • *Leverages business, venture and social investments*	• *Schools* • *Third Sector* • *Corporate schemes* • *Developers* • *Leverages business, venture and social investments*

Market Failure and Gaps

GLOBAL SCALE

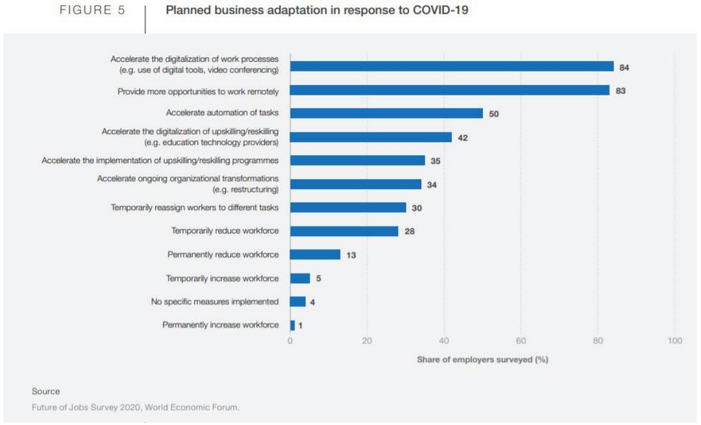
ECONOMIC

7 tech companies are worth **10%** of global GDP

	2005	2010	2015	2020
1	**General Electric £382bn**	Exxon Mobil £369bn	**Apple Inc. £598bn**	**Apple Inc. £2,254bn**
2	Exxon Mobile £381bn	PetroChina £303bn	**Alphabet £534bn**	**Microsoft £1,682bn**
3	**Microsoft £263bn**	**Apple Inc £296bn**	**Microsoft £450bn**	**Amazon.com £1,634bn**
4	Citigroup £234bn	BHP Biliton £244bn	Berkshire Hathaway £324bn	**Alphabet Inc. £1,185bn**
5	BP £221bn	**Microsoft £239bn**	Exxon Mobile £325bn	**Facebook £746bn**
6	Wal-Mart £212bn	ICBC £233bn	**Amazon £323bn**	**Tencent £683bn**
7	Royal Dutch Shell £211bn	Petrobras £229bn	General Electric £314bn	**Tesla £668bn**
8	Johnson & Johnson £200bn	China Construction Bank £222bn	Johnson & Johnson £287bn	Alibaba Group £628bn
9	Pfizer £196bn	Royal Dutch Shell £209bn	Wells Fargo £282bn	TSMC £565bn
10	Bank of America £179bn	Nestle £204bn	JPMorgan Chase £245bn	Berkshire Hathaway £545bn

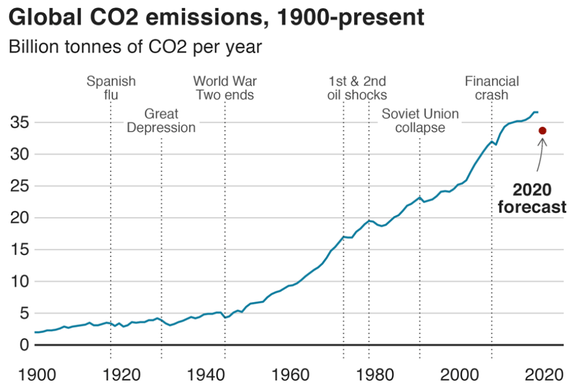
SOCIAL

By 2025, **44%** of employees skills will need to change due to automation (WEF 2020)



ENVIRONMENTAL

We need to repeat the reduction in carbon emissions in 2020 caused by COVID-19 **EVERY YEAR** until 2050



BIRMINGHAM

Birmingham has limited equity investment **– lowest deals per 10,000 SMEs** of any English region (BCC Statistic)

Birmingham has the **highest number of non-internet users in the UK** (1 out of 5 people). A further 1 in 5 residents consider themselves limited users. (BCC Statistic)

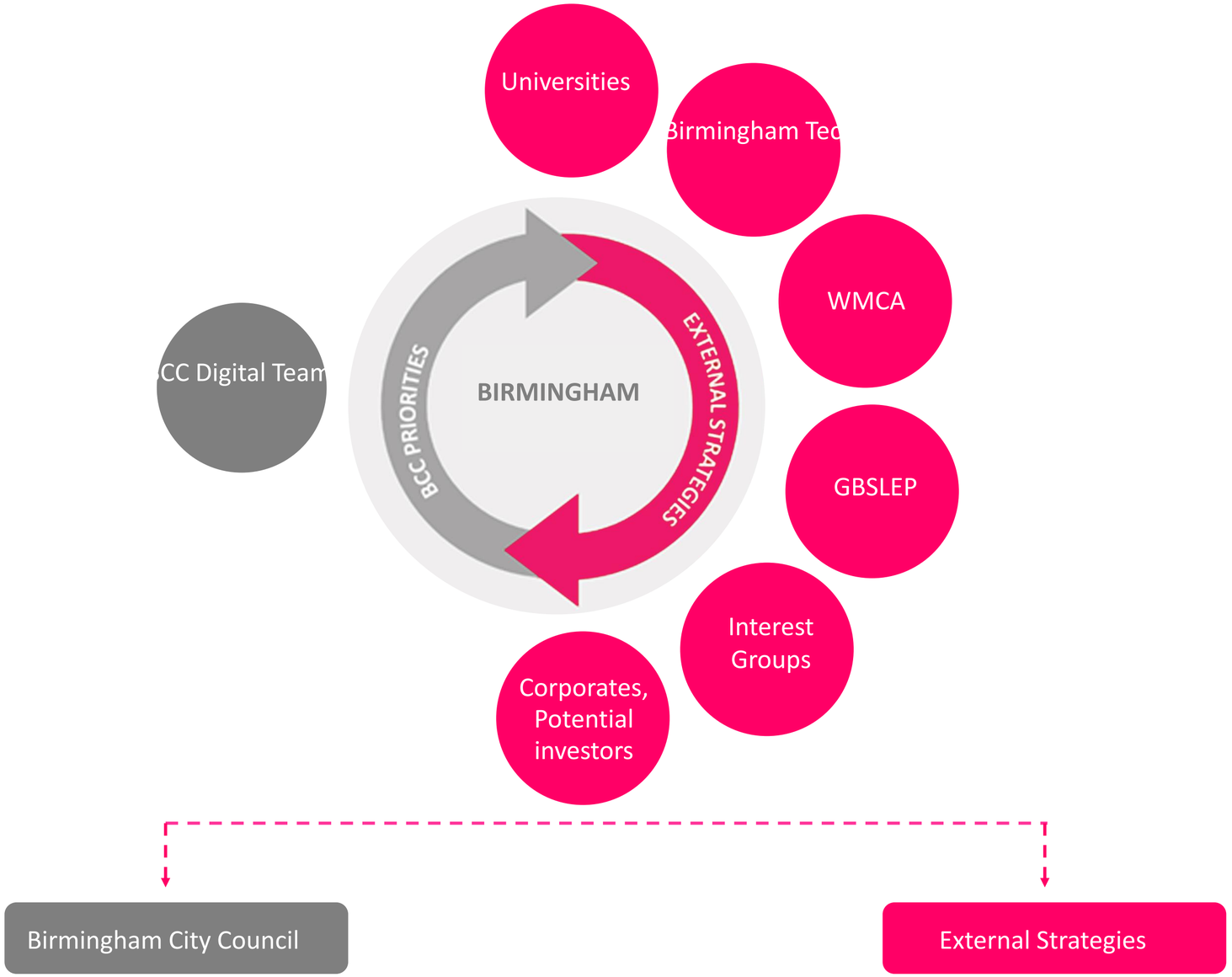
Air pollution is estimated to cause **1,460 excess deaths a year** in Birmingham and the surrounding area. (BBC, 2021)

Birmingham has a **large productivity gap** – particularly in the Digital and Creative sector (-£7,157 GVA per employee compared to UK average) (BCC Statistic)

Birmingham has the highest proportion of employers saying they **find it difficult to find applicants with the required digital skills** out of any UK region. (BCC Statistic)

In 2019, Birmingham City Council unanimously voted to declare a climate emergency with a commitment to achieve **carbon neutrality by 2030.** (Birmingham Transport Plan, 2020)

Collaborative and Partnership Approach - Building on a Successful Ecosystem



GENERAL THEMES

Inclusive growth

7th most deprived city out of 200 in the UK.

- Highest rates of child mortality in the UK.
- 10-year life expectancy gap between the richest and poorest residents.
- Huge contrast between growth of city centre and poverty 1 mile away.

Leadership

Stakeholder highlighted the importance of having strong leadership under one strategic vision.

- Birmingham currently has individual groups or areas focusing on small digital agendas, rather than gaining from a collective focus, leading to a lack of coordination across multiple overlapping initiatives.

Coordination

Across all of the focus areas identified, stakeholder listed a huge number of existing initiatives taking place.

- There is clearly a lot going on across the city but much of it is uncoordinated, overlapping and hard to navigate for end users.

Attitude To Failure

90% of innovation fails therefore a degree of failure must be accepted. Stakeholders stated that the city needs to look at success and failure across a portfolio rather than on a per-project basis.

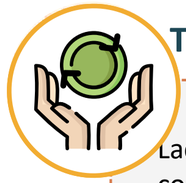
Identity And Reputation

Birmingham fails to live up to its billing as the UK's second city.

- Liverpool, Manchester, Bristol all have a clear identity, what is Birmingham's?
- Birmingham also struggles to sufficiently promote its reputation and achievements nationally and internationally.

Localised Delivery

- Large-scale generic programmes are rarely successful. There is a need for a large number of hyper-localised, targeted initiatives.
- 'Massive small' principle – a seamless combination of top-down governance with distributed bottom-up delivery.



Trust

Lack of trust between the council/other city institutions and disenfranchised and marginalised communities.

- This lack of trust has the potential to undermine and reduce the effectiveness of projects delivered under this programme.

Focus on Prevention

Many public sector stakeholders signalled that they were transitioning towards a preventative approach.

- The ultimate aim is to move from support people who are in crisis to preventing the crisis happening. Digital and data were seen as key enablers to this transition.

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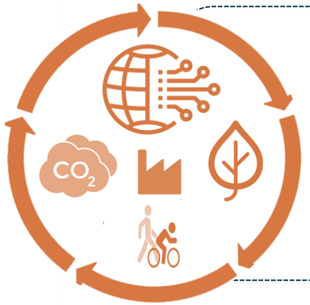
What's distinctive about Smart Birmingham

Smart Birmingham – the Best Place in the UK to be Young

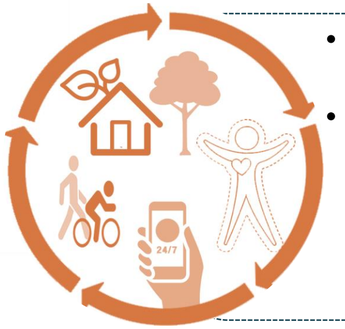
- A multi-faceted aspiration statement that incorporates aspects of education, social mobility, employment opportunities and affordability.
- A leader in innovation in early years development, setting the aspirations of the young high and placing them on a positive life-course.
- Following up aspirational early years development with a high quality education offering, a comprehensive skills and training support system and plentiful job opportunities.
- Lastly, supporting daily life with targeted citizen services and affordable housing.

Smart Birmingham – Home of the Green Industrial Revolution



- Drawing on Birmingham's history at the heart of the previous industrial revolution.
- A programme that focuses on the net zero agenda, decarbonising housing and transport and leading the way in food ecosystem innovation.
- A place that supports SMEs to secure investment, transition to sustainable ways of working and develop new green products and services.

Smart Birmingham – The UK's Most Liveable City



- Building on Birmingham's high levels of greenery, open space and blue infrastructure, as well as the clean air zone.
- A strong health and wellbeing offering, focused on prevention rather than response, by enabling the adoption of healthy diets and active modes of travel, the provision of energy-efficient homes, and by equipping communities with the knowledge of how to effectively navigate the health system.

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DIGITAL CITY PROGRAMME – INITIAL PROJECT OVERVIEW – following extensive stakeholder engagement

Digital Connectivity Foundations

This project consists of two elements which are intended to maximise Birmingham's ability to benefit from private-sector investment in becoming a leading-edge hyperconnected city:

- Birmingham Hyperconnectivity Strategy, including an internal digital connectivity policy transformation.
- Digital Specification for Property and Infrastructure

Potential Economic Impact*

£760m
In the form of increased productivity across business and consumer sectors

£41m
In the form of residential social value / wellbeing benefits

£19m
In the form of increase residential property values

Data Sharing

This project consists of three elements, which combine practical first steps with clearly defined benefits, with the ambitious aspiration for Birmingham to take be a leading-edge city driving the creation of a city-wide digital twin:

- Data Charter
- Data Working Group
- Federated Network of Digital Twins for Birmingham

It should be noted that these projects are not focused on creating additional data platforms.

Potential Economic Impact*

£145- £436m
In the form of GDP Impacts due to open access data

£5.2m
In the form of Employment Impacts of open access and move to higher value jobs

£18.1m
In the form of potential use case, savings - Not in Education, Employment or Training (NEETS)

Route to Zero Transition

This project consists of two elements that will deliver high-profile smart city infrastructure to tackle one of Birmingham's primary Route to Zero challenges and alleviate fuel poverty in one of the more deprived areas of the city, whilst also enabling cost savings in the maintenance of Council property:

- Digital Sustainability Pilot Area
- Monitoring and Proactive Maintenance of Council Property Assets

Potential Economic Impact*

£11.7m
In the form of uplift in council property values.

£1.5-1.8m
for the pilot phase areas for the following:

- Reduced carbon emissions
- Reduced utility bills for residents
- Improved health and wellbeing outcomes and cost reductions for the NHS

Community-Led Innovation

This project consists of three projects exploiting digital technology to better connect Birmingham's communities to Council- and third-party services and resources of benefit to them, helping the city in tackling it's inequality and exclusion challenges:

- Community Engagement Characterisation
- Corporate Social Responsibility (CSR) Funding Matchmaking Platform
- Youth Engagement Platform

Potential Economic Impact*

£45.84m
per annum in the form of benefits relating from:

- Access to a wider set of funding opportunities for third sector organisations
- Increased direct outputs (donations, in-kind contributions, and beneficiaries)
- Reduced numbers of people not in education, employment, or training (NEETs)
- Reduced levels of general unemployment and fewer residents in poor / very poor health.

Urban Food Systems

This project will create a vertical farm as a prominent smart city flagship facility for Birmingham, making a significant contribution to the city's Route to Zero contribution by providing a more sustainable source of food.

The farm will focus on growing vegetables and herbs that the UK typically imports from far away places, such as the Indian subcontinent and East Asia, which will result in a significant reduction in food miles and carbon emissions. It will also run community engagement events to promote healthy diets.

Potential Economic Impact*

£1.7m
Per annum from the creation of operational stage high value jobs in the Tyseley area.

£447k
per annum across the following impact areas:

- Water bill savings
- CO2 emissions
- Reduced food miles.

Building the Foundational layers and Early Interventions to accelerate the Digital City

In addition to the 5 business cases, the Council is already developing a number of foundational projects

	Outcome	Project Activity
	Creating the enabling Infrastructure	Soft market tender to attract market investment for full fibre capacity across the City
	Building Digital Skills and Capabilities	Launch and implementation of an action orientated Digital inclusion strategy co-designed by community organisations
	Levelling up areas social deprivation	Attracting private sector investment to provide broadband connectivity for our social tenants
	A testbed for Innovation and ideation	Working with cross city partners to develop the Birmingham Knowledge Quarter to stimulate SME growth and accelerate digital investment

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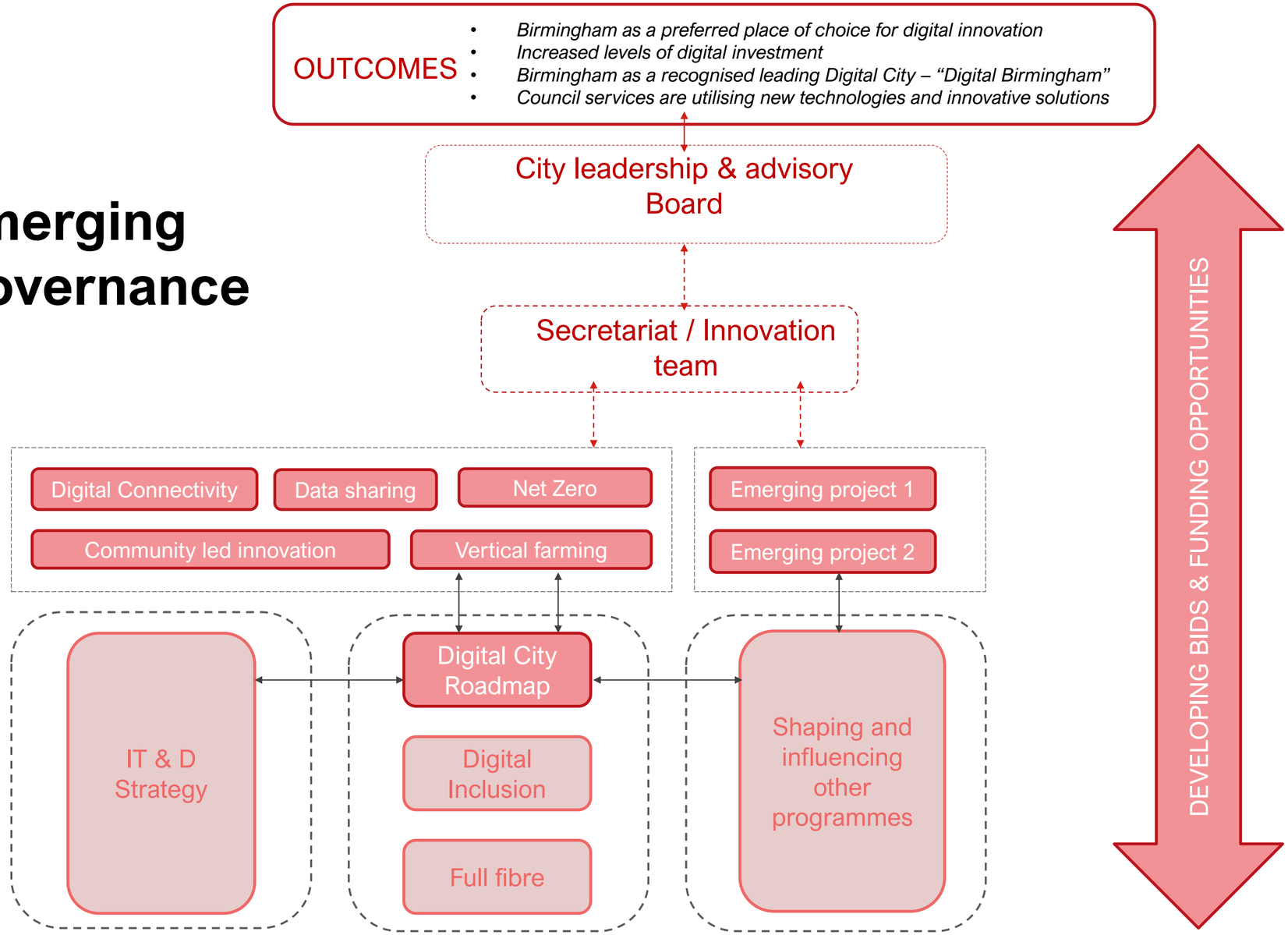
Emerging Governance



What will the Council need to do?

Work in Progress

Establish a digital programme for the city as a key deliverer of social, economic and environmental outcomes within the Inclusive Growth and Route to Zero programmes:

1) Agree 5 initial business cases and a medium to long term roadmap aligned to the City Board's major challenges to establish a Digital Birmingham

2) Agree a form of collective governance reporting to the City Board to oversee delivery of the portfolio

3) Appoint a cabinet portfolio holder responsible for the digital city programme, supported by a small digital city team to support ongoing innovation and administration of programme delivery