West Midlands Combined Authority

WMCA Office for Data Analytics

Support for Information Sharing

Enabling economic growth and prosperity in the West Midlands through insight-driven collaboration

Research was delivered in each three stages to capture the strengths of the region and to begin to build collaboration between the c.40 agencies

West Midlands Combined Authority

	1 Define Current state capabilities	2 Design Future state and vision	3 Prioritise Projects for change
	Defined the current state of information sharing, including case studies	Designed the vision for information sharing and the blueprint that will enable it	Compiled a long list of use cases and then prioritised based on clear criteria
Key components	People: stakeholders, organisations, skills, culture, ownership, leadership Process: data management, reporting, governance, controls, security Technology: architecture, platforms, tools Data: landscape, sources, quality, taxonomy	Operating model Governance framework Information and technology landscape Skills matrix and roles	Project roadmap Prioritisation method Prioritised short-list Facilitated partner agreement
Key activities and features	• Intensive three-week exercise to capture the current state capabilities across people, process, technology and data via individual interviews • Culminated in a workshop with key stakeholders to ensure that there is a shared understanding of current strengths and weaknesses • Included case study profiles	• Collaborative exercise with key stakeholders to formulate a high level vision and brand for the ODA • High level blueprint definition based on the vision that specifies the overall operating model, governance framework, data landscape and skillsets	• Based on the future state vision and blueprint, agreed a long-list of projects to enable the ODA, and use cases to pilot • Carried out a prioritisation exercise based on agreed-upon criteria

We have engaged with data leaders and operators from a broad spectrum of agencies providing local services to the West Midlands region

West Midlands Combined Authority

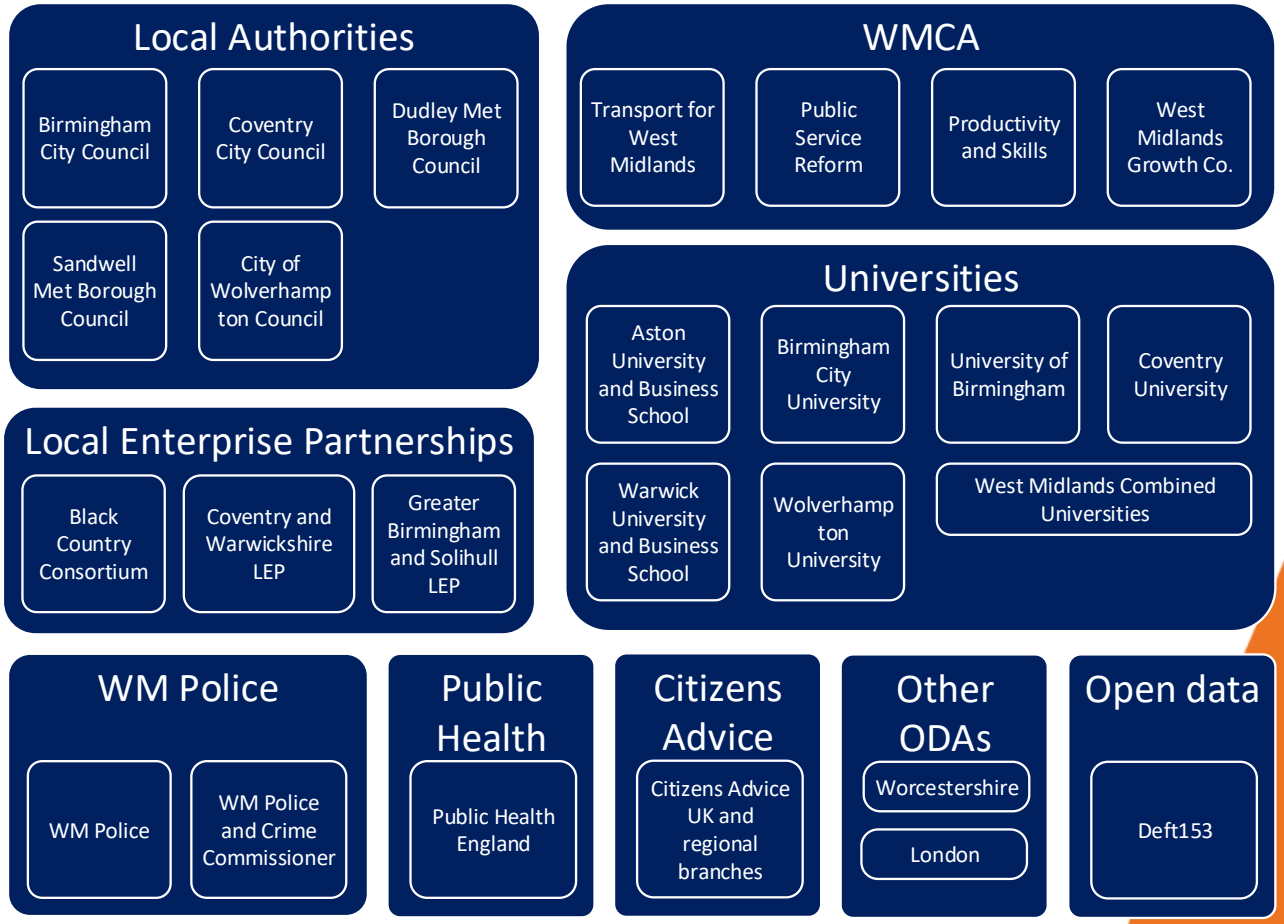
During the project we engaged with a total of 25 agencies through 29 in-person and telephone interviews, as well as three group workshops.

We obtained input from five out of the seven constituent Local Authorities, each of the Local Enterprise Partnerships and six universities in the region.

The broad range of agencies constituted a wide range of demands, constraints and requirements.

Within the Local Authorities we interviewed Data and Analytics leaders who provided their view of the analytical capabilities within their organisation.

The detailed list of the stakeholder contacts engaged with can be found in Appendix A.



West Midlands Combined Authority

The agencies share a number of common concerns and challenges across people, process, data and technology

The key issues and challenges which exist around data and analytics in the region are common to many of the agencies. The majority stated that both accessing quality data from other agencies and having the resources to carry out the desired advanced analytics was currently a challenge.

Data: Data access, and fitness for purpose

- **Availability of data** at sufficient level of detail, quality
- Lack of **up-to-date data** due to frequency of updates resulting in out of date reporting
- Lack of **consistency** in definitions of data and analysis (spatial areas, metrics (e.g. GVA), taxonomies)
- Challenge of **matching datasets** together due to data consistency and resource required to do so
- Data formats are not fit for purpose (SIC codes)

People: Skills, resources and culture

- Not enough people with the **skills to do more advanced analytics** and visualisations
- Lack of skills to convert data into **narrative and actionable insights**
- Mixed levels of **data and technology literacy at senior levels**
- Data should be used more to **drive decisions**
- Lack of information about data, skills, services and **capabilities across WM region**

Process: Data sharing and collaboration

- Challenging to **access data from other organisations**
- There should be **more collaborative working** to address cross-organisational and regional problems
- **GDPR is both a real and sometimes perceived barrier** to sharing data

Technology: Tools and common platforms

- Lack of **common platforms** across the organisations in the region
- Challenge of getting suppliers to make systems interoperable
- Data security concerns
- Cost and time implications of technology implementations

Governance should be robust but not cumbersome; the benefits should be transparent to all

West Midlands Combined Authority

Other important observations were raised during the interviews. These related to the current challenges that the ODA should address and the way in which it should operate to achieve that.

Strategic Vision

There is a need for a strategic vision which articulates how data sharing and data-driven decision making can solve issues to improve the lives of people in the region. Senior stakeholders from across the agencies in the region need to buy-in to this vision and champion it in order for the region to realise the potential of data.

Shared Benefits

The benefits of collaboration should be shared throughout the organisations which contribute to it. Equitable distribution of the benefits will make it easier for organisations to justify their engagement in data sharing and will make it more likely for projects to be successful.

Appropriate Governance

Governance structures should enable collaboration but shouldn't be overly onerous. They should make the process of data sharing as straightforward as possible whilst still maintaining the appropriate level of scrutiny and accountability.

Ethical Use of Data

Clear ethical principles must be applied when using data and analysis to drive decisions. Leadership and guidance is required to ensure consistency of approach which will develop the public trust that data and analysis is being used appropriately.

Lessons should be learnt from previous initiatives and existing assets should be harnessed

West Midlands Combined Authority

Other important observations were raised during the interviews. These related to the current challenges that the ODA should address and the way in which it should operate to achieve that.

Citizen Engagement

Engagement with citizens in the region should be both to make them aware of the use of their data as well as to understand their views, and needs. A better understanding of the needs of citizen's in the region will enable the delivery of projects and services which are most effective.

Lessons Learned

Lessons should be learned from organisations both past and present which looked at similar challenges and carried out similar functions as those being considered by the WMCA Office for Data Analytics. The previous West Midlands Regional Observatory and the existing ODAs currently running across the UK would provide useful lessons and best practice.

Existing Capabilities

Expertise in data and analytics exists across the agencies in the region and should be drawn on as far as practicable to ensure that the existing capability is utilised to it's fullest. In particular, subject matter experts must be involved in the development of use cases to ensure that they are targeted at the most important issues in the region.

Inclusive Growth

Ensuring that data and analysis is used to deliver on this key priority such that the regional economy is one which shares the values of its citizens and where public services and private enterprise pull in the same direction.

There are a broad range of analytics capabilities in the region, with aspirations to progress to more sophisticated levels

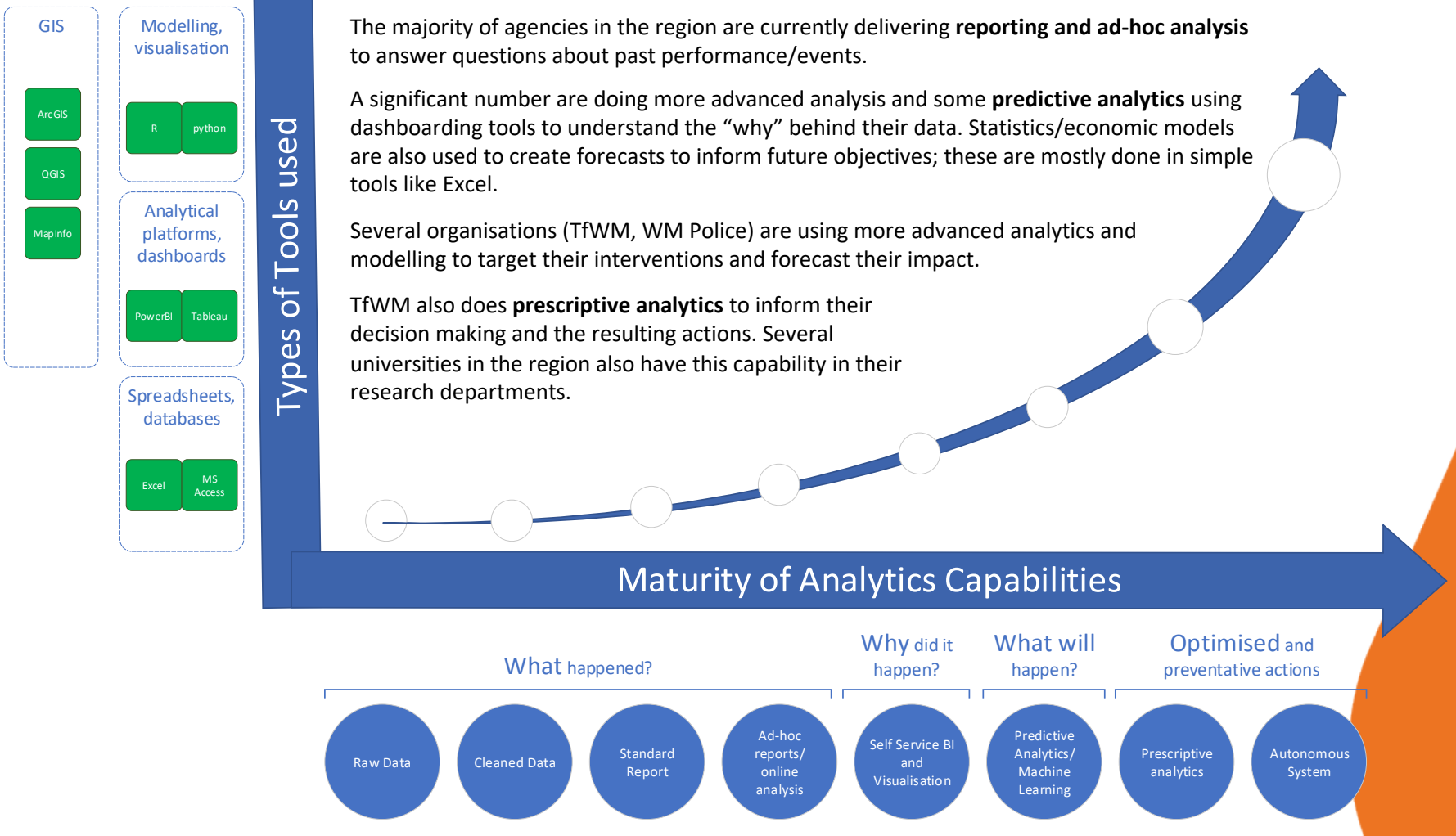
The analytical maturity of the organisations in the region dictates the types of questions they can answer with their data. The types of tools they use tends to be a consequence of the complexity of the analytics they do.

The majority of agencies in the region are currently delivering **reporting and ad-hoc analysis** to answer questions about past performance/events.

A significant number are doing more advanced analysis and some **predictive analytics** using dashboarding tools to understand the "why" behind their data. Statistics/economic models are also used to create forecasts to inform future objectives; these are mostly done in simple tools like Excel.

Several organisations (TfWM, WM Police) are using more advanced analytics and modelling to target their interventions and forecast their impact.

TfWM also does **prescriptive analytics** to inform their decision making and the resulting actions. Several universities in the region also have this capability in their research departments.



Breakdown of analytical capabilities across the agencies

West Midlands Combined Authority

The types of analytics carried out by each agency can be seen in the table below. Some of the agencies, particularly the local authorities, are large and the information gathered may not represent the full extent of the capabilities within those agencies.

		What happened?		Why did it happen?	What will happen?	Optimised and preventative actions	
Group	**Name**	**Standard reports**	**Ad-hoc reporting/ bespoke analysis**	**Self service BI and visualisation**	**Predictive analysis/ machine learning**	**Prescriptive analytics**	**Autonomous systems**
Local Authority	Birmingham City Council	✓	✓	✓			
	Coventry City Council	✓	✓	✓			
	Sandwell Metropolitan Borough Council	✓	✓	✓	✓		
	Dudley Metropolitan Borough Council	✓	✓	✓			
	Wolverhampton City Council	✓	✓	✓			
LEP	Black Country Consortium	✓	✓	✓			
	Greater Birmingham and Solihull	✓	✓	✓			
	Coventry and Warwickshire	✓	✓				
PHE	Public Health England	✓	✓	✓	✓	✓	
CAB	CAB	✓	✓	✓			
University	Birmingham City	✓	✓	✓	✓		
	Aston	✓	✓	✓			
	Birmingham	✓	✓	✓	✓	✓	
	Coventry	✓	✓	✓			
	Warwick Business School	✓					
	Warwick	✓	✓	✓	✓	✓	
	Wolverhampton	✓	✓				
	West Midlands Combined Universities	✓					
WM Police	WM Police	✓	✓	✓	✓	✓	
WMCA	Digital						
	Skills	✓	✓				
	TfWM	✓	✓	✓	✓	✓	
WMGC	West Midlands Growth Company	✓	✓	✓			

Breakdown of tool types used across the agencies

The types of tools that each agency uses can be seen below. A detailed list of tools used by each agency can be found in Appendix B. Agencies informed us whether they were confident (3), still improving (2), or initially exploring (1) the tools listed below.

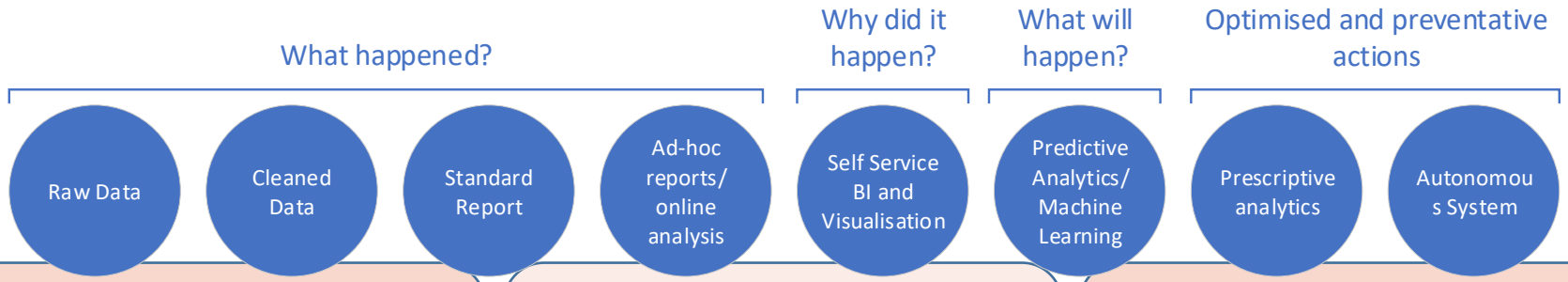
Initially exploring tool use	Competent but looking to improve	Confident user

Group	Name	Spreadsheet Tools	Data visualisation	Modelling and programming
Local Authority	Birmingham City Council			
	Coventry City Council			
	Sandwell Metropolitan Borough Council			
	Dudley Metropolitan Borough Council			
	Wolverhampton City Council			
LEP	Black Country Consortium			
	Greater Birmingham and Solihull			
	Coventry and Warwickshire			
PHE	Public Health England			
CAB	CAB			
University	Birmingham City			
	Aston			
	Birmingham			
	Coventry			
	Warwick Business School			
	Warwick			
	Wolverhampton			
	West Midlands Combined Universities			
WM Police	WM Police			
WMCA	Digital			
	Skills			
	TfWM			
WMGC	West Midlands Growth Company			

Analytics is being used mainly to describe what has happened, with a few leaders carrying out predictive modelling

There is a wide spectrum of analytics work across the agencies in the region. The majority of agencies carry out reporting of data using Excel or internal reporting systems. A significant number of agencies discussed carrying out more bespoke analysis which combined data together and visualised it to gain insight but the majority said more was required and it should be done more consistently to drive decision making. Three agencies (PHE, TfWM, WMP) confidently discussed their predictive modelling capabilities although some of this is still in relatively early stages and not done consistently.

To maximise the potential of the available data and deliver the greatest benefit, the region would benefit from an increased analytical capability and consistent use of analysis to drive decision making. There is also an opportunity to apply more advanced analysis techniques to tackle complex problems which could deliver to more targeted and efficient decision making.



Reporting and ad-hoc analysis:

- Local authorities/other agencies reporting data to Central Government
- Standard performance reports for local boards/committees
- Simple tools such as MS Excel or internal systems

Deeper analysis and visualisation:

- Deeper analysis of specific issues by intel teams within LA's and other agencies
- Economic analysis by LEPs (e.g. BCC) to support policy development
- Visualising using GIS or dashboard software such as Tableau or Power BI

Predictive models, targeted actions:

- WM Police predictive modelling e.g. predicting risk of re-offending
- TfWM transport modelling of optimal transport scheme
- PHE population health modelling

Analytical maturity

West Midlands Combined Authority

Six use cases were identified via the prioritisation exercise as potential proofs of concept to take forward

Using the outputs from the prioritisation workshop, the six use cases below were identified as the highest priority for the ODA to pursue in the short term. The next step for each of the below would be to bring together the agencies involved in each use case to obtain more information and develop a detailed scope and set out the benefits that will be achieved.

1. Engagement with business data

Better engagement with and link to business data. A single comprehensive, reliable business database linked to a growth hub CRM, if feasible, but ensuring that individuals don't have to pay for FAME separately etc. A database that shows GVA contribution in the region.

2. Economic analysis of the WMCA

Building the profile and availability of land/skills/education to support the future economy. A single system that links together the existing LA planning system so there is a real time directory of sites and you can identify those that are coming to the market naturally and also the pipeline. Use data on land planning and new investments.

3. Vulnerable adults and children

Better targeting of intervention in terms of support for vulnerable/at-risk adults and children

4. Skills needs of the region

Understanding the needs of the region: if industry in Birmingham needs specific skills, regional education institutions should be delivering it via the course curriculum. The ODA can communicate the needs of the region re skills gap. Need to know if a course will succeed and is viable. Is it contributing to the needs of the region?

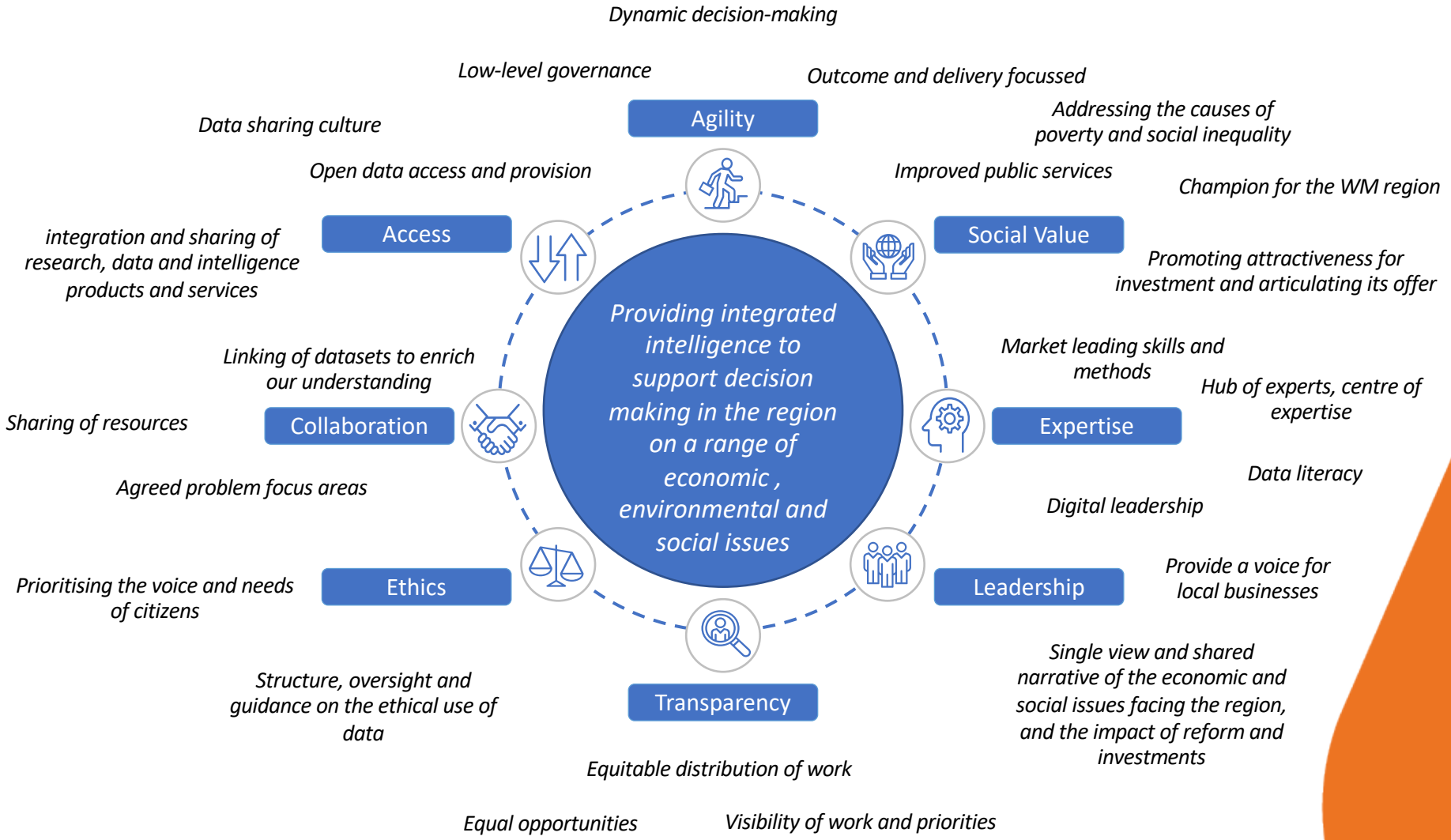
5. Inequality

Clarity on economy and social proficiency of locations, e.g. city regions are viewed as a whole but there's a geographic/community split within them. Existing analysis on fuel poverty shows divisions. Challenge for the WMCA is understanding the nature of geography.

6. Integrated offender management

Further developing the WMP predictive model of re-offending by bringing in additional partner data, developing a holistic picture of the factors affecting re-offending, and coordinating partners and targeting of actions to reduce crime levels of re-offending.

It is important to have a Vision for the Office for Data Analytics that resonates with the agencies and their aspirations



West Midlands Combined Authority

West Midlands Regional Economic Development Institute

- Dec 2019 won a Research England funding project to expand on the ODA work
- Currently putting in place a collaboration agreement and data sharing agreement across partners
- Programme of research – data, evaluation, strategic across the themes of local economic and social development
- Investment in training, secondments and strategic leadership in the region
- Aim to expand this through CSR

University of Birmingham Birmingham Business School
Aston University Birmingham UK
Birmingham City Council
Birmingham City University
Black Country LEP
WM REDI CITY REDI
BPS Birmingham
CWLEP Coventry & Warwickshire Local Enterprise Partnership
Greater Birmingham Chambers of Commerce
Greater Birmingham & Solihull Local Enterprise Partnership
Midlands Engine
UKRI Research England
West Midlands Growth Company
West Midlands Combined Authority