Department for Work & Pensions

Digital Group

Data and Analytics

Market Engagement Event

19 May 2023

Agenda

01

WELCOME, DOMESTICS OUTLINE AND PURPOSE OF TODAY'S EVENT *(5 MINS)*

**Chair &
Adrian Sage:** Commercial Lead for DWP Data and Analytics

02

OVERVIEW OF DWP AND DATA & ANALYTICS *(10 MINS)*

Paul Lodge: DWP Chief Data Officer, Director

03

DATA AND ANALYTICS HIGH LEVEL REQUIREMENTS *(15 MINS)*

Kate Bayley: Head of Data Portfolio & Data Orchestration, Deputy Director
Adrian Sage: Commercial Lead for DWP Data and Analytics **Tony Sudworth:** Digital Sustainability Lead

04

SUPPLIER Q&A (CLARIFICATIONS AND CLOSE) *(60 MINS)*

Panel Q&A

Housekeeping

DWP Digital

Welcome everyone, we are pleased to have you with us today. As it is a virtual event, I just want to remind everyone of the following:

- This event is being recorded

- Please keep your microphone muted unless speaking to reduce background noise

- Do not use the video or screen share functions during the event

We have a 60 minute 'Question & Answer' session planned at the end of the presentation. For this session you can either:

- Use the chat bar to raise questions; or

- Use the 'raise hand' function

You will then be invited to come off mute to ask your question.

Commercial Disclaimer

- This event is an informal market engagement exercise and is designed to inform our thinking around DWP Digital strategic challenges

- Suppliers participating in this event should be aware that whilst information and knowledge will be shared, no specific procurements or commercial arrangements will be guaranteed

- As with all government procurement, this process will align with the policy of fair and open competition

- The material does not necessarily reflect any specific DWP policy and where any discrepancy arises, official policy statements and publications take precedence

- Existing commercial arrangements with suppliers will not be discussed

- Whilst we will seek to engage openly and respond to questions, we reserve the right not to answer questions where we believe it is not in our interest to do so

Purpose of Event

DWP is hosting this market engagement event to give potential delivery partner(s) the opportunity to better understand DWP Data and Analytics high level requirements, and to gain insight from the market about potential ways forward.

We want to use this time today to engage with you as potential delivery partners to:

- Share information with suppliers about the Data and Analytics high level requirements

- To understand any issues, concerns and general feedback from suppliers on commercial options to meet these requirements

DWP Data delivers accessible, useable and governed data products & services that meet the needs of our users…
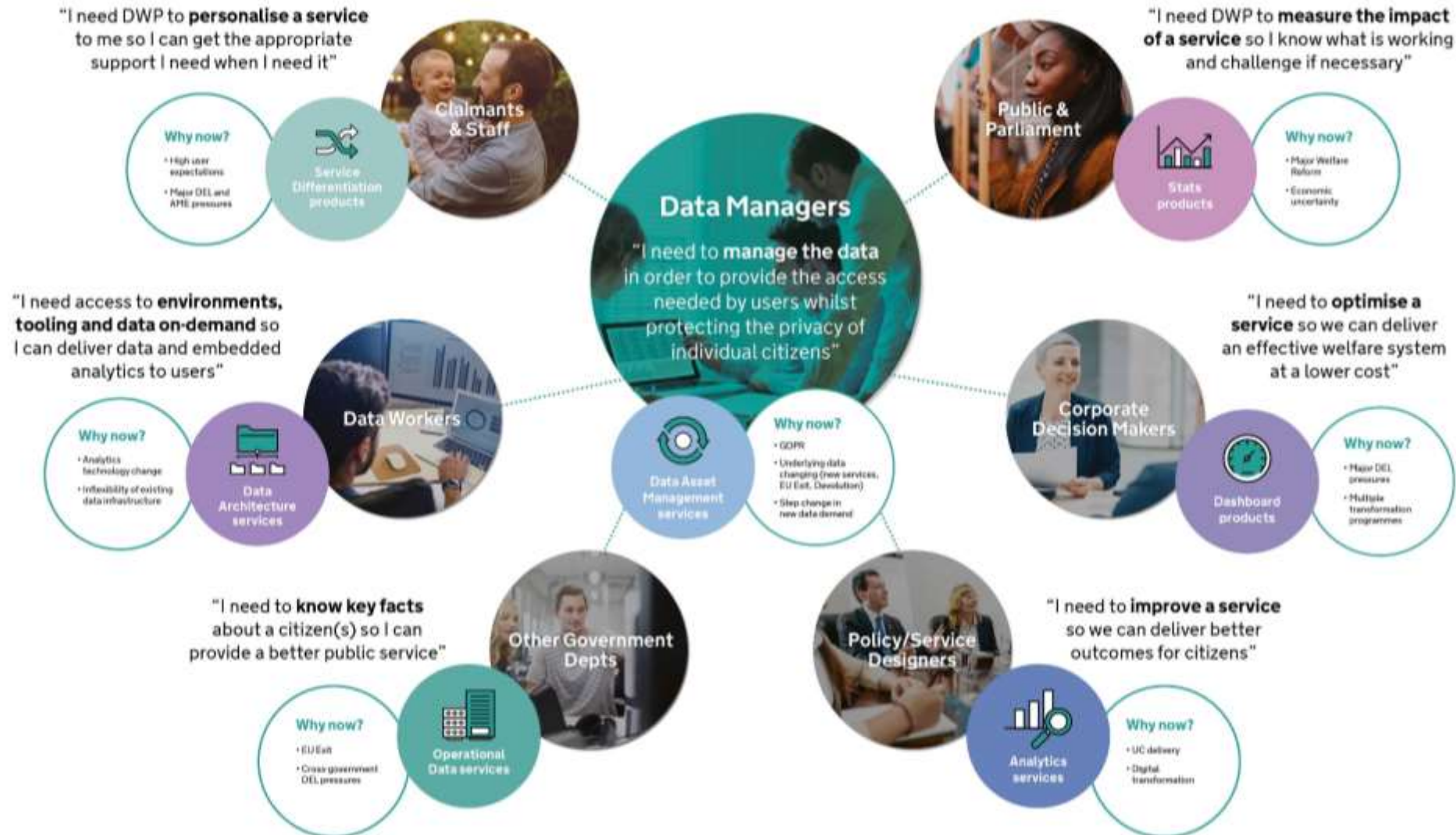
So that the right benefits reach the right people, in the right way, at the right time.

In response to the winter cold snap in January 2023, a trigger file from 29 weather station triggers, prompted a Cold Weather Payment to an estimated 982,000 qualifying claimants in England and Wales, equating to £24.5m (estimated) in additional support towards heating costs.

A new data product can now identify customers where a change of circumstance qualifies them for a Cost of Living payment. As a result, approximately 5,700 Pension Credit customers and 1,500 Universal Credit claims have received payments, amounting to £2.3m.

DWP winter cost of living boost as extra £421million put into Household Support Fund

COST OF LIVING: WE'RE HERE TO HELP

💬 5

Daily Express

State pensioners set to receive £300 cost of living payment

The £300 Pensioner Cost of Living Payment will be paid to all households in receipt of Winter Fuel Payments this year. ... Millions of families across the UK will...

The Telegraph News Sport Business Opinion Ukraine Money Life Style Travel Culture

Royals ▾ UK news ▾ Politics ▾ World ▾ Health Defence Science Education Environment

Ukrainians coming to Britain under 'rooms-for-refugees' scheme to get full welfare benefits

BirminghamLive NEWS ▾ IN YOUR AREA BLACK COUNTRY VILLA MORE ▾

DWP gets 500,000 Universal Credit claimants back to work as unemployment hits 50-year low

The Way to Work scheme was launched earlier this year in a bid...

A new vacancy area in the Way to Work Dashboard now provides insights on UK vacancies. All vacancies can be filtered by sector role and salary bands. This helps strategy planning and resourcing, while clarifying which vacancies Job Centres can focus on to help claimants into work.

To support Ukrainian citizens fleeing conflict to get the correct payments, the Data Science Team collaborated with Universal Credit development teams to swiftly produce an automated dashboard to monitor the number of Ukraine Scheme claimants on Universal Credit.

But, this is a challenging task due to the size, complexity and scale of data in DWP

DWP Digital

1PB[1]
OF DATA

750+
DATA ANALYSTS
SUPPORTED

120
STATISTICAL
RELEASES PER YEAR

300
FRAUD & ERROR
RISK RULES

30M
DIGITAL
EVENTS/DAY

9K
DWP MI
DASHBOARD USERS

£1.07Bn
OF AME SAVINGS
BY CFCD

915
DWP Data Shares
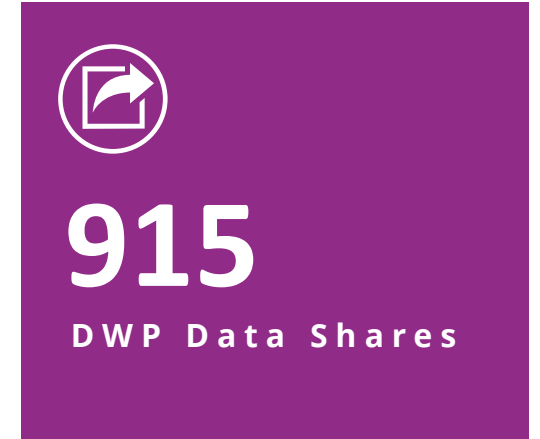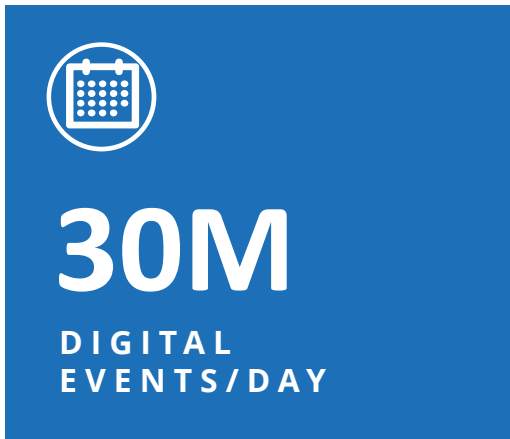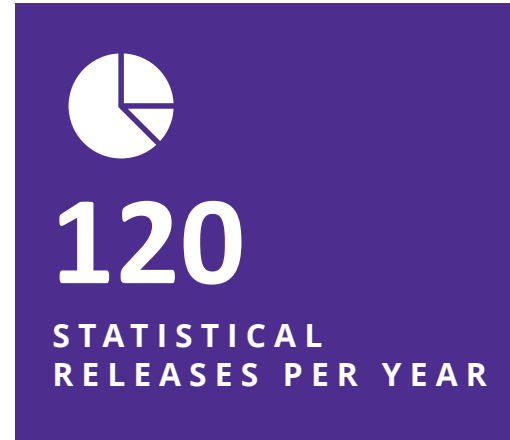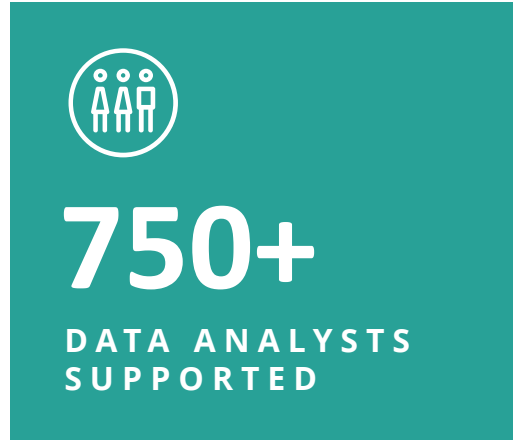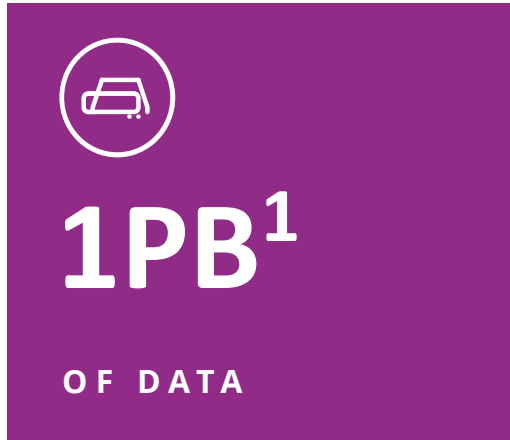
[1] PB (Petabyte) is equivalent to over 4,000 digital photos per day, over an average entire life

**Digital
With
Purpose**

To do this we collate data from across DWP frontline services and supporting systems - as well as many external data sources – for several purposes:

Policy Data	Official Statistics	Management Reporting	Advanced Analytics	Fraud & Error	Audit	External Data Shares
Provide Policy & Analyst teams with the data they need to impact proposed changes for a population to evidence policy decisions.	Deliver Public accountability and Parliamentary transparency on DWP outcomes.	Providing Operations and Finance teams with metrics to inform everyday management decisions. Digital Sustainability – emissions reduction.	Digital performance analytics and data science to support Operational and Digital Service teams make service improvements.	Generate referrals for Counter Fraud and Compliance teams or frontline teams to address as interventions.	Provide alerts for Security teams to address Internal security incidents.	Provide other Departments with the data they need to determine entitlement to public services or broader population research.

Digital With Purpose

The need to invest in DWP Data over the SR

Currently, our data is not accessible, usable, or governed—investment in DWP is required now, so we can achieve better outcomes for citizens, proactive intervention, and reduce cost and F&E

In 2021 ———————▶ **In 2025**

In 2021		In 2025
Our service delivery model is **outdated**, **inefficient, and** delivers a **poor customer service**, creating unnecessary customer contact and **unnecessary failure demand.**	**Better services and outcomes**	We deliver **better services** and **outcomes to citizens** through the **four tier model,** via the **joining up of data**, improving **data governance** and re-engineering our data platforms
Our data is not **accessible**, **usable** or **governed**, and we are **reactive to labour market shocks,** i.e. it was extremely difficult to deliver daily reporting at the start of the **COVID-19 pandemic.**	**Labour market**	We are a **proactive, insight-driven organisation** that **joins up data across government**, e.g. with a local labour market tool that enable agents to match up **supply and demand**
Our very **traditional service offering**, which consists mainly of **post** and **telephone**, results in a **high-cost to serve** and a high degree of **failure demand.**	**Reducing the cost to pre-COVID-19 baseline**	We now use **automation and self-service at scale** so that customers can **'tell DWP once'**; and use insight to **optimise our resources.**
We are **highly inefficient** and cause **under/over payments**, **errors** and are **susceptible to fraud**, all of which lead to **higher DEL and AME costs.**	**Reducing fraud and error**	The amount of **near real-time data** available has increased and we can **identify fraud** at scale **before** it happens; and this information is shared across government.

Digital With Purpose

Current vs. future vision
These outcomes will be enabled by the transformation of our data, our platforms, and our people by 2025—which will enable us to become an insight-driven organisation

In 2021 ➝ **In 2025**

DATA
Automate

In 2021
- Our datasets are provided to **600+ Analysts** on-demand for Policy, Service Delivery, F&E
- We've **started modernising** our services and data governance with new capabilities
- However, **our data quality and controls are not strong enough** to ensure that our data is accessible, useable, and governed to meet our service transformation goals

In 2025
- **Data is re-used** across the department as the norm, not the exception for a joined-up experience
- Our data will be **accessible, useable, and governed** for those who need it to self serve
- Data Analytics products provide the **right insights to the right people** at the right time to support an efficient, effective, and successful welfare state – *Better, Faster Decisions*

PLATFORMS
Scale

In 2021
- Much of our **data estate is legacy and using on premise infrastructure**, which has undergone increasing strain from the pandemic
- Our data is complex, and **data is stored in silos** so that it is difficult and time consuming to understand the citizen and our performance.
- We have started adopting cloud and a **cloud-first** discovery project to level-up our assets has commenced.

In 2025
- Our **data foundations** will be scalable, reliable, extensible, secure, and cost-effective.
- We are **resilient to cyber-attacks** and able to **rapidly scale** in response to labour market shocks
- Our modernised data platforms will enable **automation, artificial intelligence, and customer self-service** that can be continuously improved as we learn

PEOPLE
Empower

In 2021
- **Over 70 feature teams now have embedded data expert support** consisting of permanent headcount and partner resource in UC, Digital and Health to better iterate our digital services based on understanding usage
- We're **struggling to recruit talent** at scale and pace, which we require to undertake our high-impact projects with partner resource (as scarce data resource is in high-demand across government and industry).

In 2025
- **Data Products will assist our agents** in how best to serve individual customers based on knowing more context
- We will be able to **attract scarce data specialists** through an effective recruitment and development strategy, e.g. apprentices
- Improved **data literacy** will help DWP be less reliant on finite data experts, as non-data specialists are more confident working with their data

DWP Digital

Digital With Purpose

The Vision

To support the most vulnerable in our society we must organise social welfare information and make it universally accessible and useful.

DWP Digital

LABOUR MARKET	STANDARD OF LIVING	HEALTH & DISABILITY	LATER LIFE

Know our Society
Know our Impact

SOCIO-ECONOMIC AWARENESS
Deep analytics and trusted statistics to understand both the root causes and the effect/impact of Welfare Spend
Right Societal Impact

Business Data Domains
Bearing down on AME

Know our Business

BENEFITS ADMINISTRATION *Targeted Welfare Delivery* e.g., Automated Enrolments, Smart Scheduling & Prioritisation, Digital Twins & Simulations, Decision Support, A/B Testing, Segmentation	**CUSTOMER SERVICE** *Experience & Ease of Use* e.g., VoC & CX, Web Analytics, Journey Optimisation & Personalisation, Augmented Contact & Recommendations, In-Contact Coaching, Failure Demand Prediction	**OPERATIONS OPTIMISATION** *Productivity & Performance* e.g., Cost to Serve, Resource Planning & Utilisation, Intelligent Automation, Resilience, ESG Analytics, Demand Prediction, Digital Twins & Simulation	**ACCURACY & QUALITY** *Prevention of Loss* e.g., KYC, Transaction Risking, Network Analytics, Behavioural Nudges, Graph, Alerting & Anomaly Detection

Better, Faster Decisions
Bearing down on DEL

Know our Customers

IDENTITY Mastered Identity *Right Person*	**LOCATION** Validated Location *Right Household*	**ENTITLEMENT** Accurate Circumstances *Right Payment*	**OUTCOMES** Financial Resilience *Right Impact*

Mastered Data
Accessible, Useable, Governed

Knowhow

DATA ANALYTICS ENABLEMENT
Core Data Analytics capabilities to support a Data Enabled Enterprise

Advanced Analytics
Segmentation, Personalisation, Predictive & Prescriptive Analytics, Alerting & Anomaly Detection

Trusted MI
Modern Data Pipelines, Data Visualisation, User Experience, Performance Analytics, A/B Testing

Enterprise Data Governance
Data Standards, Data Governance, Modelling, Acquisition, Management & Security

Enterprise Data Strategy
Data as a Strategic Asset, Value Realisation, Horizon Scanning, Innovation & Open Data

Modern Capabilities
Democratisation of Data

Know our Data

DATA ENABLEMENT
Addressing data liabilities and bearing down on the Cost to Serve of DWP Data

Master Data
Accurate Data that is shared about People, Places & Things

Events Data
Data that records Events between People, Places & Things

Reference Data
Standardised Data to support integration and interoperability, and facilitate the sharing and reporting of information

Meta Data
Technical, Business and Audit Meta Data to label, describe or characterise other data and make it easier to retrieve, interpret or use information

Data as a Strategic Asset
Creating the Connective Tissue

Digital With Purpose

The Overview

The UK Welfare System's demands of data analytics:

(1) **Volume and variety of User Demand from:**
- Economic Recovery
- Cost of Living (and other crises)
- Fraud & Error levels
- External requests (e.g. NHS, ONS, Devolution)
- Operational cost pressures

(2) **Faster Access to better Quality, Governed Data** (via Data Modernisation) - our ability to meet the demand faster and protect users from change

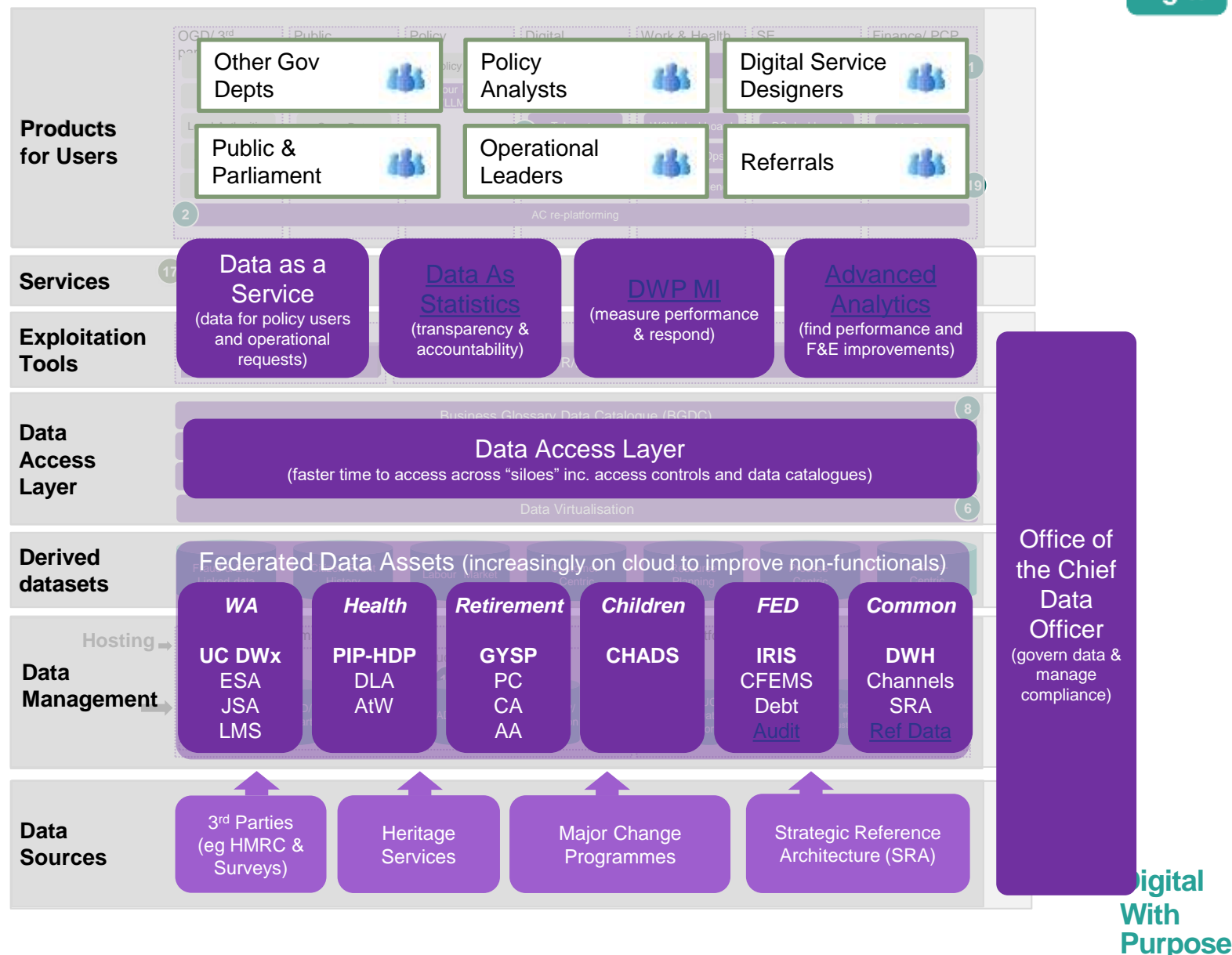**(3)** **End of Life infrastructure** (leading to Route to Cloud for DSP and DWH hosted data to help with cost, scalability and security)

(4) **Volume and variety of Changing Data**
- Universal Credit
- Health Transformation
- Fraud Error and Debt
- Service Modernisation
inc Strategic Reference Architecture (SRA)

Products for Users
- Other Gov Depts
- Policy Analysts
- Digital Service Designers
- Public & Parliament
- Operational Leaders
- Referrals

Services / Exploitation Tools
- Data as a Service (data for policy users and operational requests)
- Data As Statistics (transparency & accountability)
- DWP MI (measure performance & respond)
- Advanced Analytics (find performance and F&E improvements)

Data Access Layer
- Business Glossary Data Catalogue (BGDC)
- Data Access Layer (faster time to access across "siloes" inc. access controls and data catalogues)
- Data Virtualisation

Derived datasets / Data Management
- Federated Data Assets (increasingly on cloud to improve non-functionals)
- Hosting

WA	Health	Retirement	Children	FED	Common
UC DWx	PIP-HDP	GYSP	CHADS	IRIS	DWH
ESA	DLA	PC		CFEMS	Channels
JSA	AtW	CA		Debt	SRA
LMS		AA		Audit	Ref Data

Data Sources
- 3rd Parties (eg HMRC & Surveys)
- Heritage Services
- Major Change Programmes
- Strategic Reference Architecture (SRA)

Office of the Chief Data Officer (govern data & manage compliance)

Digital With Purpose

The Ecosystem

Six Shifts

Left vertical flow (bottom to top arrows):
- USE DATA
- PRESENT DATA
- MANAGE DATA
- CURATE & CONVERGE DATA
- OPERATE THE BUSINESS

Data Domain Products

OGD/ 3rd parties	Public	Policy	Digital	Work & Health	SE	Finance/ PCP
Data sharing	Stats Publications	Policy Analysis	Performance	MI Dashboards		
Devolution	Surveys / FRS	Labour Market		Analytics & Data Science		
Local Authorities	Open Data			F&E prevention/ detection (IRIS)		
Winter Fuel				Audit (ADaaS)		
Warm Homes				Reference Data Service		

Data Services

Data as a Service	Statistics	Enterprise Reporting	Advanced Analytics

Exploitation Tools

Visualisation
- QlikView
- Power BI

Analytics
- SAS
- R/Python
- SageMaker
- Google Analytics

Data Access

- **Data Virtualisation** – Creating virtual datasets
- **Business Glossary & Data Catalogue (BGDC)** – Making data discoverable
- **Privacy & Security** – Keeping data safe & compliant
- **Data Control Service (DCS)** – Data usage traceability
- **Reference Data Service (RDS)** – A single source of data for drop-down lists

Derived Datasets

- Fraud & Error Linked data
- Citizen Event History
- Labour Market
- Customer-Centric
- Resource Planning
- Process-Centric
- Finance-Centric

Curated Data Assets

Data Warehouse: PIP, CIS, OGD/ 3rd party, HMRC, + 250 other datasets

Audit: ADaaS

DSP: ChADS, GYSP/ Pension, IRIS (F&E)

Health (Azure), UC Data Works, NGCC, Google Analytics (GCP), Voice of the Customer, ERS sources, Ref data

Data Producers

- LEGACY SERVICES
- CHANGE PROGRAMMES
- OGD
- SRA

Six Shifts

1. From pre-integrated commercial solutions to modular, best-of-breed platforms
2. From enterprise warehouse to domain based architecture
3. From on-prem to cloud based data platforms
4. From rigid data models to flexible, extensible data schemas
5. From batch to real-time data processing
6. From point-to-point to decoupled data access

Digital With Purpose

The Triggers

- It is important to recognise that the Data Strategy and Data Modernisation is a response to DWP ambitions.

- The Data Strategy is a logical decomposition of the Data Needs implied by in-flight change.
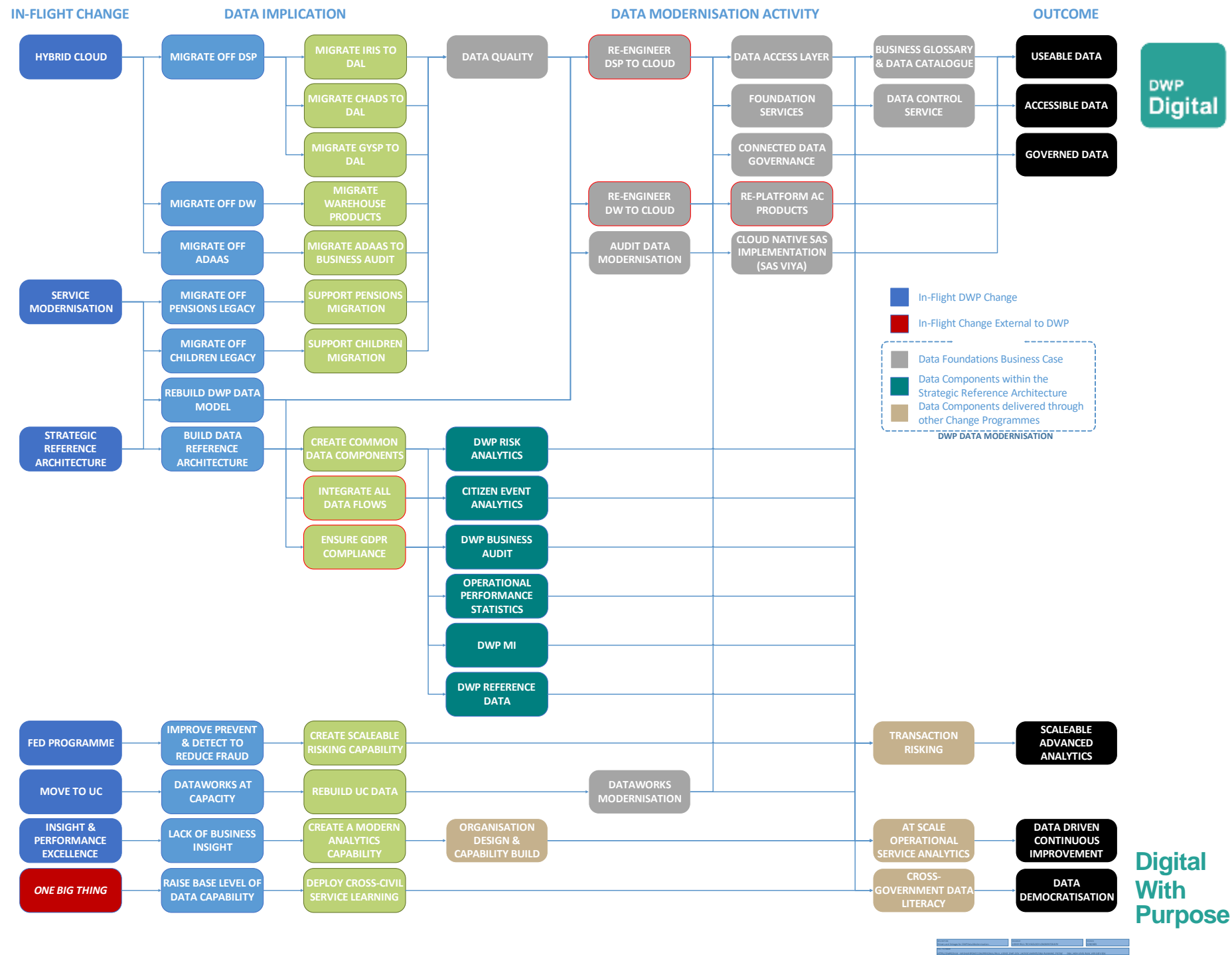
D&A External Resource Requirements 2023 to 2025

Role	Estimate
Lead Data Engineer	1
Senior Data Engineer	3
Data Engineer	13
Business Relationship Manager	1
Change and Release Manager	2
Problem Manager	1
Business Analyst	22
Service Owner	16
Senior Delivery Manager	20
Delivery Manager	1
Associate Delivery Manager	4
Head Product Manager	1
Lead Product Manager	15
Senior Product Manager	2
Product Manager	6
Lead QAT Tester	15
Test Engineer	1
Tester	1
Principal Security Architect	1
Lead Security Architect	3
Senior Technical Architect	2
Lead Technical Architect	20
Senior Digital Engagement Manager	3
Dev Ops Engineer	27
Digital Project Manager	5
Architect Integration & Strategy	2
Infrastructure Engineers	6
Senior Infrastructure Engineer	5
Lead Product Owner	1
User Researcher	3
Data Analyst	1
Supplier Manager	1
32 ROLES	205

We are anticipating a procurement for higher value strategic roles, and one or more procurements for carrying out delivery.

These estimates are based on current planning; however, the procurement is likely to detail all DDaT roles to allow flexibility and speed to market.

Please note if a supplier is not able to provide resource for all DDaT roles this does not exclude them.

DWP Digital

Digital With Purpose

D&A Service Requirements 2023 to 2025

Data Foundations Modernisation Programme

1. **Data Service Platform Children Analytics Data Service Modernisation:** Re-engineering of the ChADS Data Service Platform data products to Data Access Layer standards and patterns, and a re-engineering of how the data is extracted/presented to meet the needs of the consumer products.

2. **Modernisation of our Data Warehouse Data products from On-Premise Hosting to cloud**. This would consist of: re-engineering ~30 data assets and products to our Data Access Layer standards and patterns, refactoring ~60 products, and archiving ~50 products to agreed patterns, thus leveraging the benefits of cloud native products and hosting.

3. **Analytical Community Re-platforming:** Business analysis and re-engineering 265 existing models and simulations on cloud platforms such as SAS Viya 4, R and Python. Due to modernised data feeds (data provider products) and new SRA data feeds, the metadata and base code needs updating to ensure that existing Analytical/Statistical products can continue to be produced.

Strategic Reference Architecture (SRA)

4. **Application Reference Architecture Data Integration:** Supports SRA projects by providing the patterns and principles for SRA components to send their data for analysis. This includes, how schema evolution is handled, optimising performance of the SRA technology stacks for data, how legacy and SRA data co-exists in our data products.

5. **GDPR Microservices:** Develop SRA component microservice(s) and ensure that GDPR Principles and GDPR Subject Rights are supportable by SRA solutions.

Digital
With
Purpose

Social Value – DWP Priority Themes

Social Value inclusion is now embedded into sourcing processes

- Buyer and market understanding is maturing

- Minimum 10% of overall evaluation criteria

- DWPs new approach will prioritise 2 themes;
    - Tackling Economic Inequality
    - Equal Opportunity

- Closer alignment with DWPs organisational objectives

- Prioritising Themes will support a consistent and focussed approach

- Meaningful and measurable deliverables

DWP Digital

Digital
With
Purpose

Social Value – Policy Outcomes

Theme	Policy Outcomes	Examples
Tackling economic inequality	Create new businesses, new jobs and new skills	Provision FTEs, Training, Learning, Apprenticeships, In-work Progression
	Increase supply chain resilience and capacity	Cyber security, Green technologies, Diverse Supply Chains
Equal opportunity	Reduce the disability employment gap	Supporting the disabled workforce - FTEs, Training, Learning, Apprenticeships, In-work Progression
	Tackle workforce inequality	Tackling the risk of Modern Slavery

Digital Group road to net zero – Goals and Objectives

The six goals of DWP Digital approach are shown below. These seek to address the sustainability deficiencies identified in Digital to meet the direction set out in the Greening Government ICT and digital services strategy.

Embedding sustainability into DWP Digital governance

Ensure that sustainability is embedded in project approvals and across the projects lifecycle.

Sustainable procurement

Identify and trace the resources and production, delivery of digital capabilities to ensure the reliability of our sustainability in areas of human rights, Labour and the environment.

Sustainable tech practices

Embed circular economy in digital technology and use data to bring insights to sustainability decision making.

Run sustainable services

Innovate and develop digital services that deliver sustainability benefits.
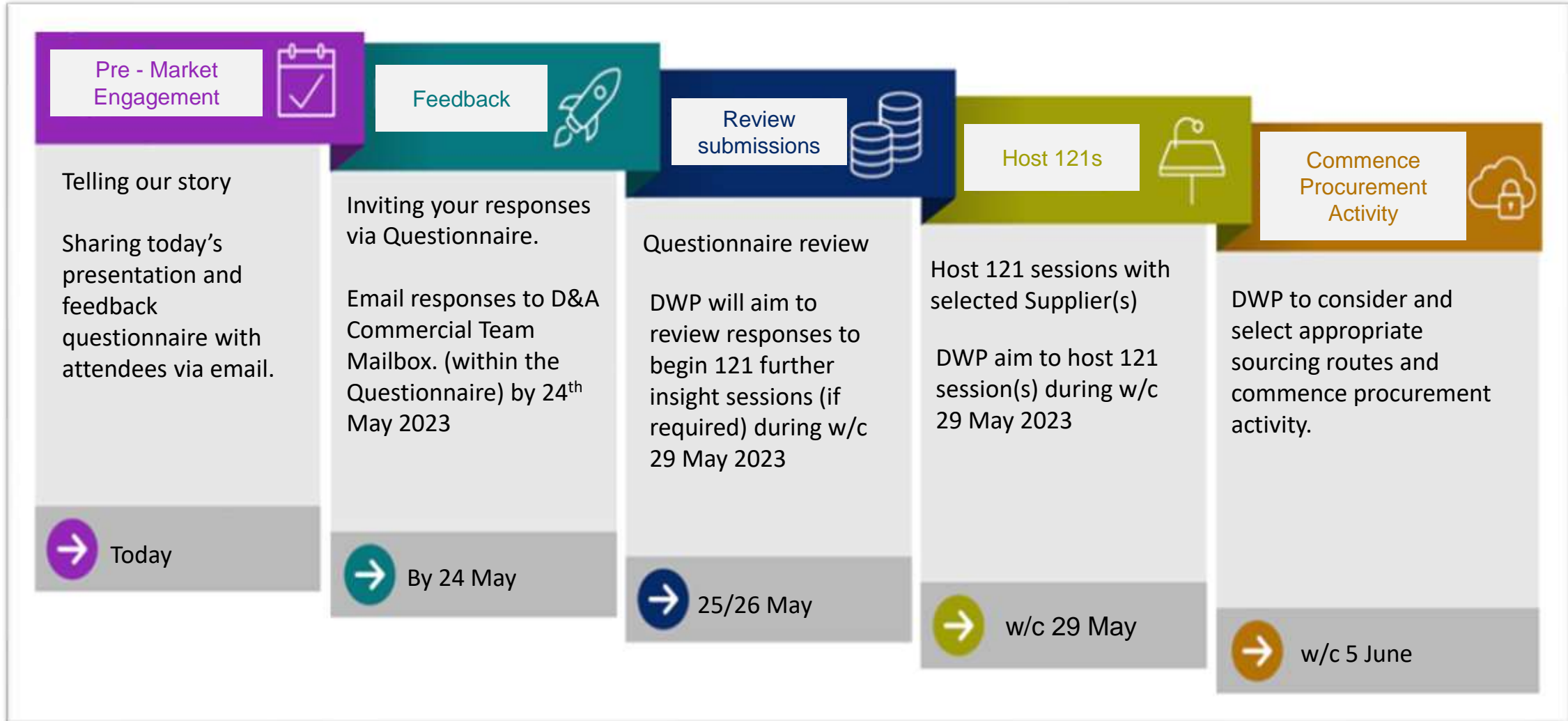
Build a sustainability culture

Through education and training, raise awareness of the importance of sustainability within ICT and encourage employees to be responsible digital citizens.

Coordinate across government for better impact

Archive sustainability goals through partnership and collaboration with our main and SME suppliers and teams across government.

Digital With Purpose

Next Steps

DWP Digital

Pre - Market Engagement

Telling our story

Sharing today's presentation and feedback questionnaire with attendees via email.

→ Today

Feedback

Inviting your responses via Questionnaire.

Email responses to D&A Commercial Team Mailbox. (within the Questionnaire) by 24th May 2023

→ By 24 May

Review submissions

Questionnaire review

DWP will aim to review responses to begin 121 further insight sessions (if required) during w/c 29 May 2023

→ 25/26 May

Host 121s

Host 121 sessions with selected Supplier(s)

DWP aim to host 121 session(s) during w/c 29 May 2023

→ w/c 29 May

Commence Procurement Activity

DWP to consider and select appropriate sourcing routes and commence procurement activity.

→ w/c 5 June

Digital With Purpose

Questionnaire and Panel Q&A

Questionnaire

Please note this is not and RFI and is not being scored

Resource Contracts

1. As a supplier, can you meet all the DDaT roles listed and maximum 4 week timescales for onboarding?
2. Have you any other suggestions how we could shape this contract in relation to the DDaT Roles?
3. Are there any DDaT roles you will find it difficult to fill? We are likely to include KPIs in the contract, for example, supplier will deliver x number of suitable resources within y days.
4. We are keen to encourage SME bids or participation as a sub-contractor. Would you be happy for DWP to share your contact details with other suppliers?
5. How do you manage fluctuating demand and un-forecasted resource requirements at short notice?
6. The contracts are likely to be managed through Statements of Works against the contract. Do you have any thoughts on this approach?
7. Are you interested in bidding for one or more of these resource contracts and if not, please can you explain why not?

Service Contracts

1. Do you have the capability and capacity to meet the requirements?
2. This is likely to be managed through Statements of Works against the contract. Do you have any thoughts on this approach?
3. What do you think needs to be true to make these service contracts successful?
4. Are you interested in bidding for one or more of these service contracts, and if not, why not?

Do you have any general comments or observations (positive or negative)?

Panel Q&A

DWP Digital

Paul Lodge

DWP Chief Data Officer,
Director Data & Analytics

Kate Bayley

DWP Head of Data Portfolio & Data Orchestration,
Deputy Director Data & Analytics

Mark Darby

Data Products & Services, Lead Delivery
Manager

Charlie Boundy

DWP Head of Advanced Analytics,
Deputy Director Data & Analytics

Steve Ellerd-Elliott

DWP Head of Data as Statistics,
Deputy Director Data & Analytics

Tony Sudworth

Digital Sustainability Lead

Adrian Sage

Commercial Lead for DWP Data and
Analytics

Digital With Purpose

Thank you for attending the event and for your engagement and participation today.

After the event, DWP will publish a questionnaire.
The responses will be reviewed and where appropriate, suppliers may be invited to a 1-2-1 virtual session on week commencing 29th May with DWP to explore ideas and discuss further.