CDMC Adoption Series – Wrapping the Fabric around the Mesh at BT

A conversation with

Scott Beange
Head of Data Management
Projective Group

Ben Clinch
Head of Information Architecture
BT Group

Mose Tronci
Industry Solutions Architect
Google

ProjectiveGroup

BT Group

Google Cloud

EDMCouncil

Today's panel

Moderator

Jim Halcomb
Head of Product Management
EDM Council

Scott Beange
Head of Data Management
Projective Group

Ben Clinch
Head of Information Architecture
BT Group

Mose Tronci
Industry Solutions Architect
Google

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Poll #1

Are you considering doing a CDMC assessment?

a. In the next 6 months
b. In the next year
c. Not intending to conduct a CDMC assessment but already using the CDMC framework
d. Not intending to conduct a CDMC assessment but interested in learning more

Cloud Data Management Capabilities

CDMC Working Group

Cloud Challenges

- **Regulatory Mandate:** safeguard cloud computing services to protect customers' sensitive information
- **Inefficiency:** data, technology, regulatory and planning challenges on nearly every cloud implementation
- **Complexity:** 89% of firms use 2 or more cloud providers*

CDMC Group Objectives

1. **Best Practices** for a hybrid-cloud world
2. **Cloud Data Controls** to meet regulatory obligations for protecting Sensitive Data
3. **Accelerate Trusted Cloud Adoption** modeled after the DCAM data management industry framework

* Source: Flexera, 2022 State of the Cloud

Public

CDMC Industry Engagement

100+ leading firms – 300+ SME participants – 17 GSIB's

CDMC Working Group

LSEG, Morgan Stanley, J.P.Morgan, citi, Goldman Sachs, Standard Chartered, UBS, HSBC, Societe Generale, Wells Fargo, Deutsche Bank, Barclays, TP ICAP, Lloyds Bank, Northern Trust, DTCC, Tradeweb, PayPal, TD Bank, BNP Paribas, Nasdaq, Freddie Mac – We make home possible, KPMG, CAPCO, EY

Cloud & Technology Providers

Microsoft Azure, IBM Cloud, Google Cloud, aws, collibra, snowflake, Informatica, BigID, data.world, PRIVITAR, Solidatus, securiti

Regulatory Engagement

EDMCouncil

- **US:** Federal Reserve, SEC, CFTC, FDIC
- **Canada:** OSFI
- **UK:** BoE, FCA, ICO
- **EU:** ECB, ESMA (pending)
- **Germany:** BaFin
- **Switzerland:** FinMA
- **Australia:** APRA
- **Singapore:** MAS
- **Israel:** Bank of Israel
- **India:** RBI, SEBI (pending)
- **Africa/Middle East:** 20+ Regulators
- Others in process…

CDMC Adoption Support

EDMCouncil

- Training Courses
- Cloud Service Certification
- Open Source Tools
- CDMC Authorized Partner Program

2022

CDMC Framework Validated Cross Industry

CDMC EDMCouncil

- **Life Sciences**
- **Telecommunications**
- **Manufacturing**
- **Retail / Services / CPG**
- **Consumer Tech**
- **Government / Defense**

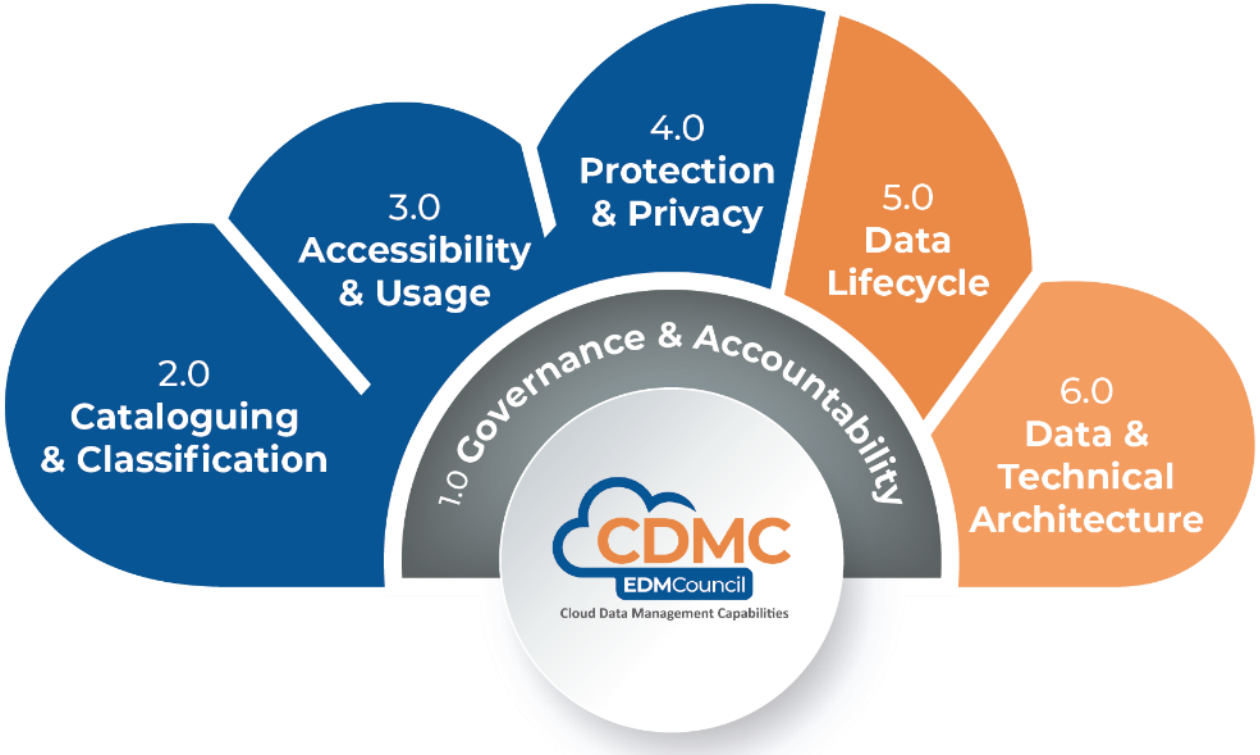
CDMC Working Group Delivered release v1.1

28 September 2021

Public

CDMC Framework

160+ Pages
6 Components
14 Capabilities
37 Sub-capabilities
14 Key Controls



Best practice framework for the migration, management, and enablement of sensitive data in cloud

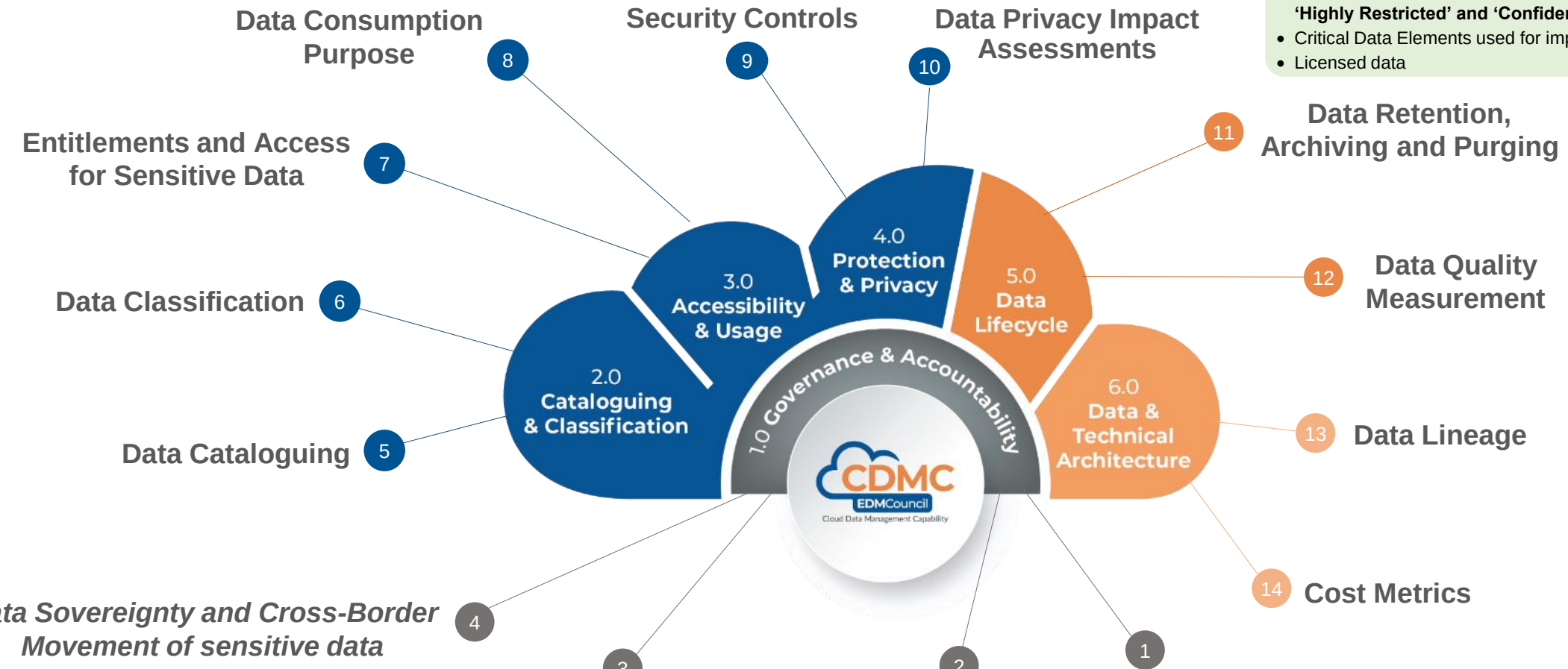
Free license – Download at:
EDMCouncil.org > Frameworks > CDMC

Cloud Data Management Capabilities

14 Key Controls for Managing Data Risk

Sensitive *Data* includes classifications such as:

- Personal Information **(PI)** / Sensitive Personal Data
- Personally Identifiable Information **(PII)**
- Personal Health Information **(PHI)**
- Company or Client Identifiable Information
- Material Non-Public Information **(MNPI)**
- Specific Information Sensitivity Classifications (such as **'Highly Restricted' and 'Confidential')**
- Critical Data Elements used for important business processes
- Licensed data



CDMC 14 Controls
Free Download License:
EDMCouncil.org > Frameworks

Public

CDMC: Accelerating Trusted Cloud Adoption

CDMC Industry Objective:

*Build **Trust, Confidence, and Dependability** for Cloud Adoption*

Companies

CDMC structured framework of auditable Cloud processes and controls – especially for sensitive data

Cloud Service Providers (CSP)

CDMC requirements and controls can be automated into CSP platforms which accelerates adoption and provides market confidence

Application, Technology & Data Providers

Incorporates certified CDMC capabilities and controls into services and solutions to ensure high degree of reliability and operational effectiveness

Consultants & Systems Integrators (SI)

CDMC enables training & assessments, gap analysis, strategy development, and execution services for end clients adopting cloud

Regulators

CDMC provides industry guidance for auditing and validating key cloud controls, especially for sensitive data

Public

The BT CDMC Assessment

BT Group

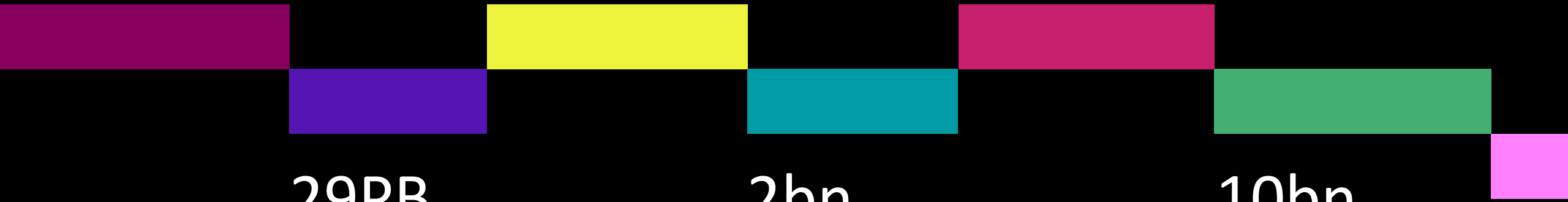
Who are we?

BT Group

£20bn+
business with 30m customers and operations in 180 countries

76%
of critical data in GCP, enabled for AI & analytics

30TB/s
Network peaks



29PB
of data under management

2bn
malicious events across our network each month

10bn
data points analysed daily to support anonymised location intelligence

Why was BT interested in CDMC, Data Fabric and Data Mesh

Massive digital transformation

Large scale cloud migration

Recognising data & AI are central to unlocking next level value at BT

Digital Principles:

- Build, Measure, Learn
- We win with technology

BT Group

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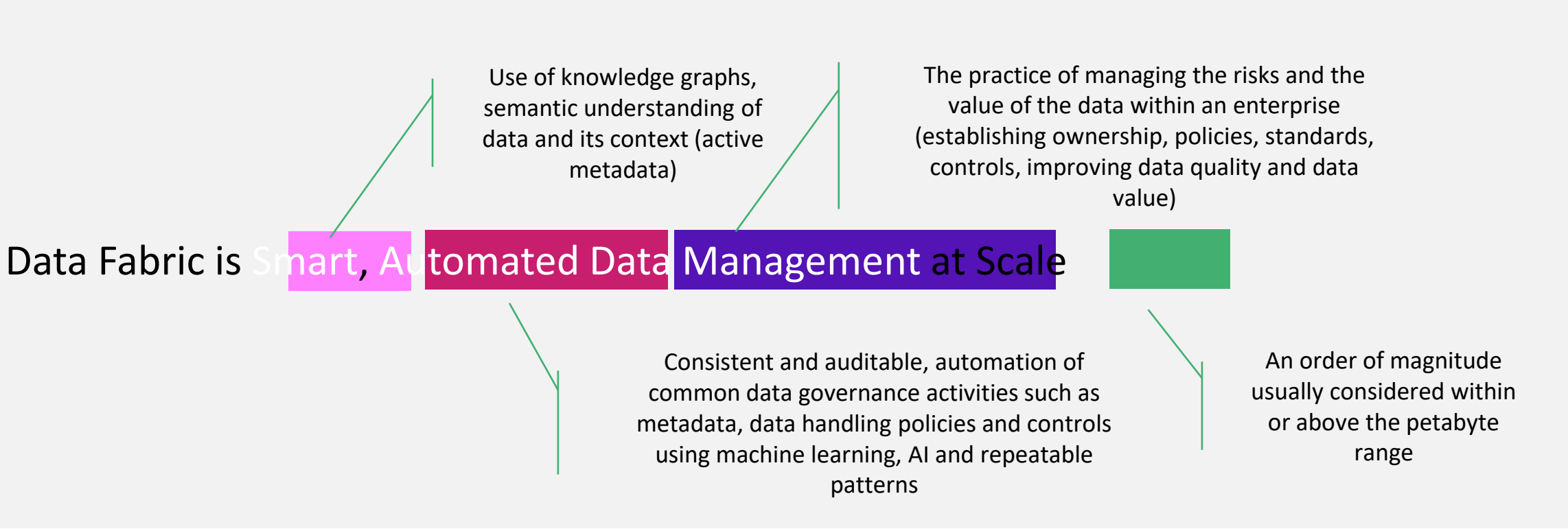
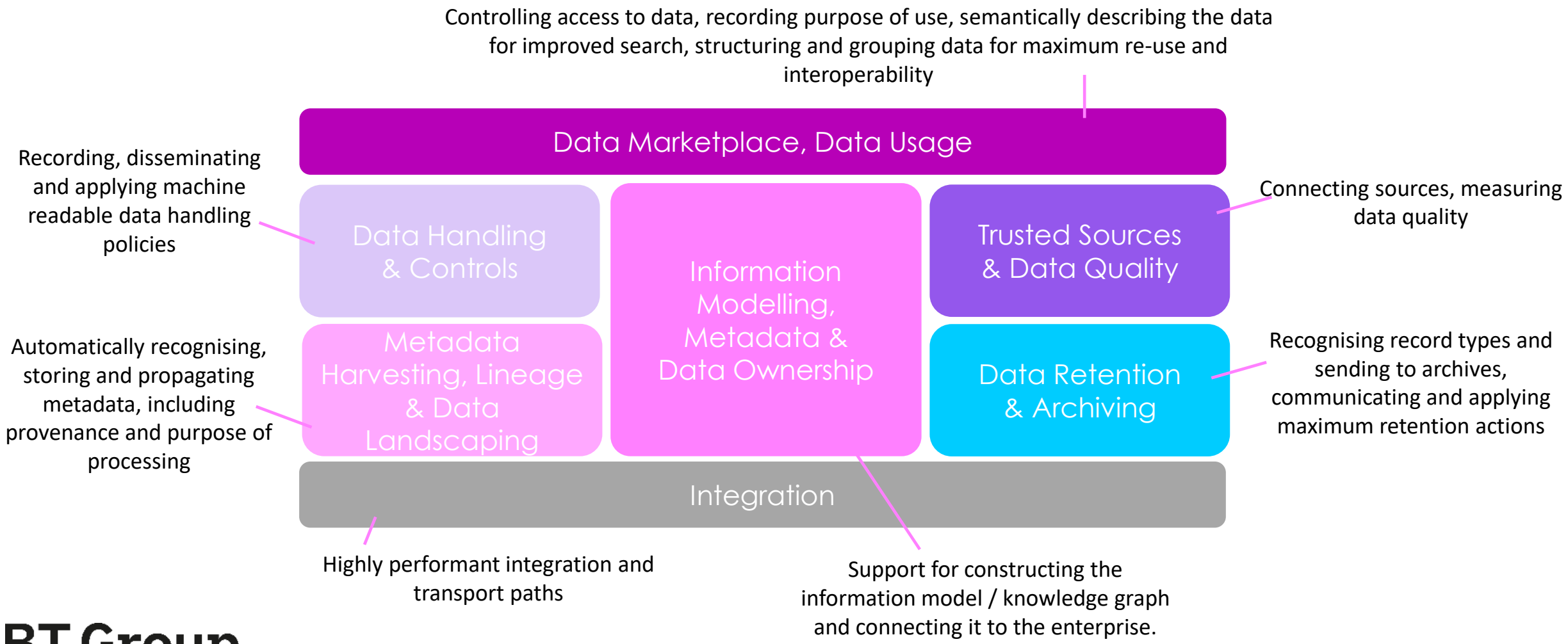
Data Fabric: A practical definition for BT



Point to Note: Data Fabric doesn't replace the need for data management; it automates it

Public
Public
Public
Public

A simplified architectural view



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Public

BT becomes the first telecommunications organization to complete CDMC assessment

BT Group

Video Whitepaper CDO Awards Event M

CDO TRENDS
Digital & Data Insights for Business Leaders

A.I. Digital Strategy Data Science Digital Security NextGenConnectivity D

DATA SCIENCE | DATA MANAGEMENT

This New Framework Slashes Data Management Redundancies

By CDOTrends editors on June 19, 2023

15 JUNE 2023

BT Group accelerates cloud transformation, passing key industry assessment

Public

Poll #2

What benefits do you think you would obtain from using the CDMC framework? (Multiple-choice)

a. Increased cloud data literacy

b. Support for regulatory compliance

c. A common language for your organisation for Cloud Data Management

d. Risk mitigation on your journey to the cloud

ProjectiveGroup

BT Group

CDMC assessment at BT what we did

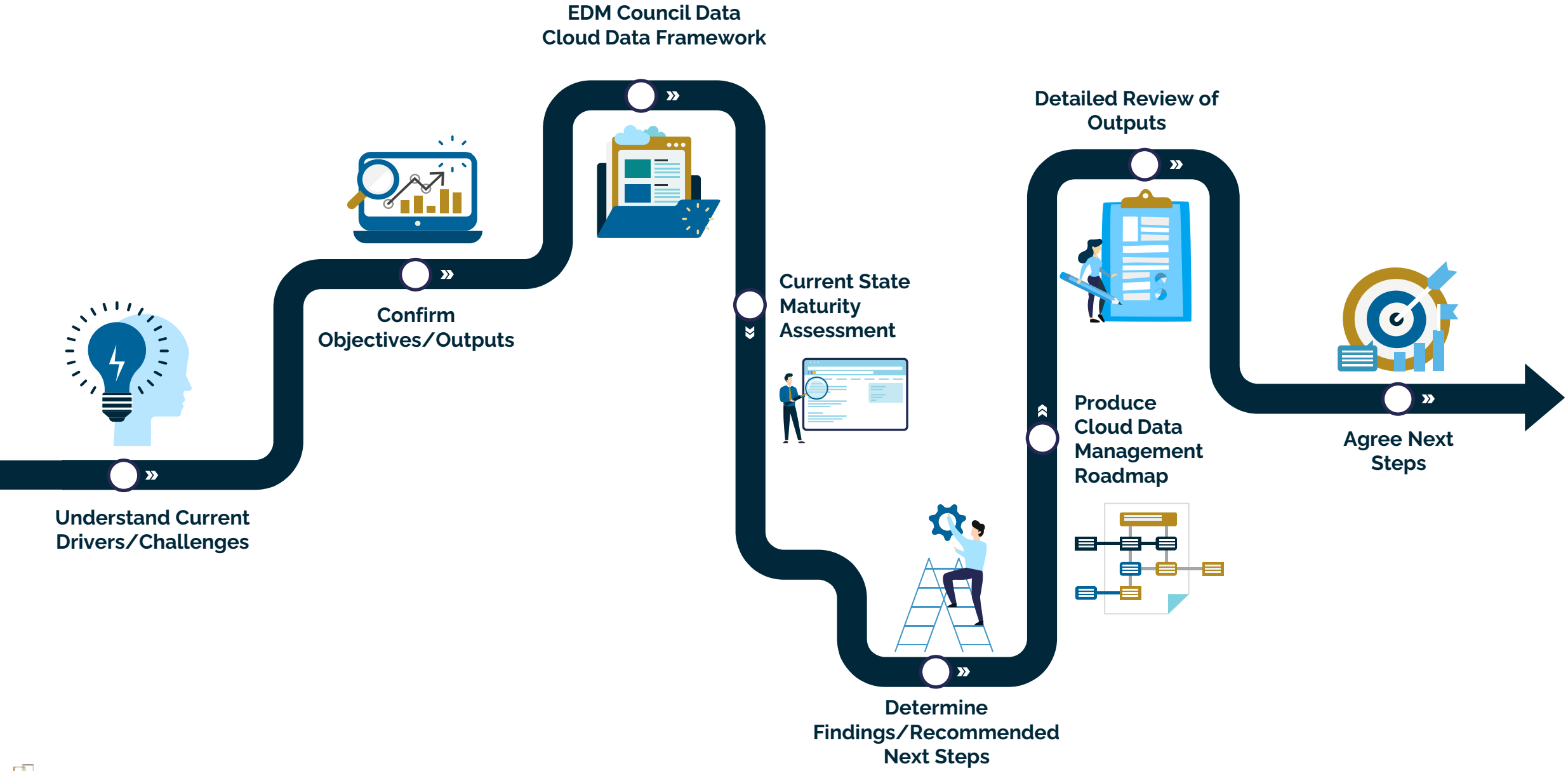
Setting the scope

CDMC Readiness Assessment
Google Cloud Platform Cloud Data Hub
Number of participants – 55
Number of departments – 12
Targeted workshops - 8

Compliance	Digital Leadership Team
Cloud Centre of Excellence	Enterprise Architecture
Cloud Engineering	Privacy
Customer Facing Units	Risk & COO
Data Management	Security
Data Stewards	Solution Architect

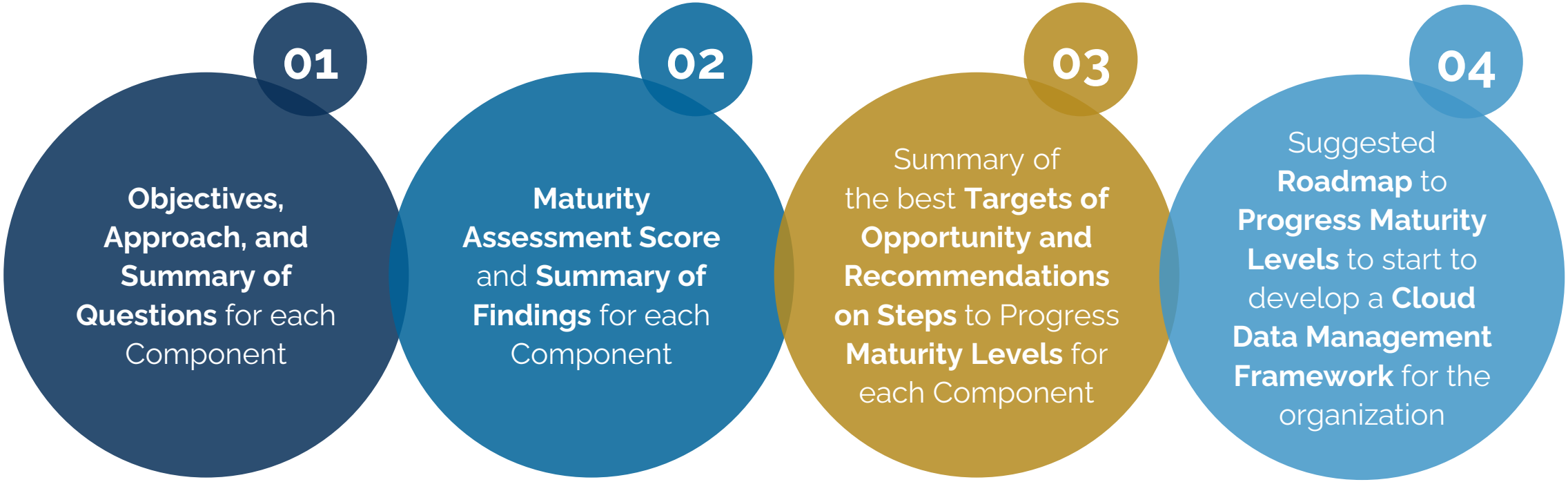
Our Cloud Data Management Engagement Approach

ProjectiveGroup



The Key CDMC Maturity Assessment Outputs

ProjectiveGroup



CDMC Assessment at BT

Get the right buy in and get the right folk involved

- Great sponsorship from:
  - Josie Smith, the Chief Architect
  - Simon Harris, the Data Architecture Director

- Great stakeholder engagement
- Leveraging internal communications, videos, relevant committees

Setting expectations and how we get maximum utility from the exercise

Selecting and curating the correct people from the correct departments – CDMC even has a stakeholder matrix to get you started

How we did it

Top tips

Great to have an independent assessor to make sure that the assessment is objective.

Great to have CDMC trained architect / data management professional working alongside the consultancy

CDMC Assessment at BT

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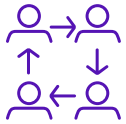
The headline benefits

Cataloguing and grouping data assets around a common data model enabled a vast reduction in duplication of effort, storage and compute



Alignment of multi-disciplinary teams around a common narrative; a north star

Consolidated our requirements internally and helped communicate them externally

Validated the architectural approach

Consolidated all activities into a comprehensive roadmap

Identified any areas needing extra attention

Creation of a digital twin of the metadata leveraging the CDMC Information Model - digital twin and CDMC

Progressing to CDMC certification

Poll #3

Have you done any of the EDM Council trainings? (Multiple-choice)

a. DCAM

b. CDMC

c. Ethics

d. Knowledge Graph

2023-2024 Open, Virtual Classes

EDMCouncil DCAM CERTIFIED v2

APAC	EMEA/INDIA	AMER
14-15 Nov.	12-13 Dec.	16-17 Jan.

EDMCouncil CDMC™ EDMCouncil CERTIFIED v1

AMER / EMEA	AMER / EMEA
24-25 Oct.	29-30 Nov.

Also available: eLearning & dedicated classes for your company

Register:
EDMCouncil.org > Training

EDMCouncil

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June 2023: Google Cloud becomes a CDMC Cloud Certified Solution

Google Cloud

Google Cloud Blog

Contact sales | Get started for free

Security & Identity

How to migrate sensitive data with confidence using Google Cloud's CDMC-certified architecture

June 26, 2023

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ANNOUNCEMENTS

EDM Council Designates Google Cloud as a Certified Cloud Solution

Mon, Jun 26, 2023

Google Cloud clients migrating sensitive data to the cloud can do so with greater confidence now that Google Cloud has been certified against EDMC's CDMC control framework

New York, NY – June 26, 2023 – EDM Council, the leading global non-profit trade association for advocating data management and analytics, has today announced that Google Cloud's new solution architecture, which combines Google Cloud's BigQuery and Dataplex, has been independently assessed by KPMG and certified by EDM Council as a CDMC (Cloud Data Management Capabilities)

Recent Announcements See all

Aldefi becomes the newest member to join the EDM Council

NEW MEMBERS

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CDMC Assessment types

Assessment Type	Target	Use For	Basis	Uses CDMC Capability Framework?	Uses CDMC Key Controls Framework?	Uses CDMC Key Controls Test Procedures?	Assessed By
CDMC Certification	Individual	Personal skills, Planning	Training Attendance	Yes	No	No	Online Exam
CDMC Readiness Assessment	Consumer	Planning and Progress Tracking	Sentiment or Evidence-based	Yes	Optional	Optional	Self- or CDMC Authorized partner
CDMC Certification Assessment	Consumer	Formal Audit, Regulatory Preparation	Evidence-based	Yes	Yes	Yes	CDMC Authorized partner
CDMC Certification Assessment	Cloud Providers	Planning and Independent Evidence	Evidence-based	No	Yes	Yes	Independent CDMC Authorized partner

BT Today

BT Ambition

Google Focus

Key Differences

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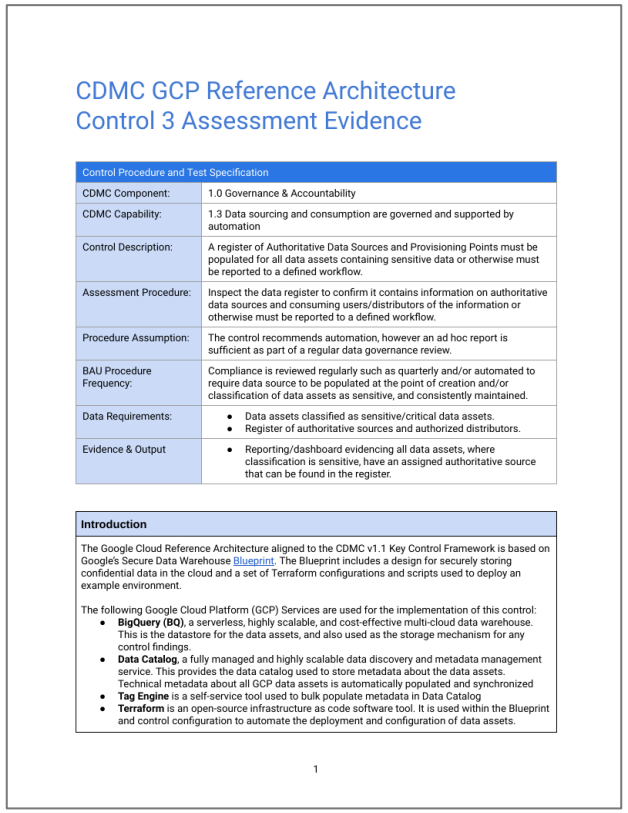
Documentation & Publication: Our primary technical deliverables



CDMC GCP Reference Architecture
Control 3 Assessment Evidence

Control Procedure and Test Specification	
CDMC Component:	1.0 Governance & Accountability
CDMC Capability:	1.3 Data sourcing and consumption are governed and supported by automation
Control Description:	A register of Authoritative Data Sources and Provisioning Points must be populated for all data assets containing sensitive data or otherwise must be reported to a defined workflow.
Assessment Procedure:	Inspect the data register to confirm it contains information on authoritative data sources and consuming users/distributors of the information or otherwise must be reported to a defined workflow.
Procedure Assumption:	The control recommends automation, however an ad hoc report is sufficient as part of a regular data governance review.
BAU Procedure Frequency:	Compliance is reviewed regularly such as quarterly and/or automated to require data source to be populated at the point of creation and/or classification of data assets as sensitive, and consistently maintained.
Data Requirements:	• Data assets classified as sensitive/critical data assets. • Register of authoritative sources and authorized distributors.
Evidence & Output	• Reporting/dashboard evidencing all data assets, where classification is sensitive, have an assigned authoritative source that can be found in the register.

Introduction

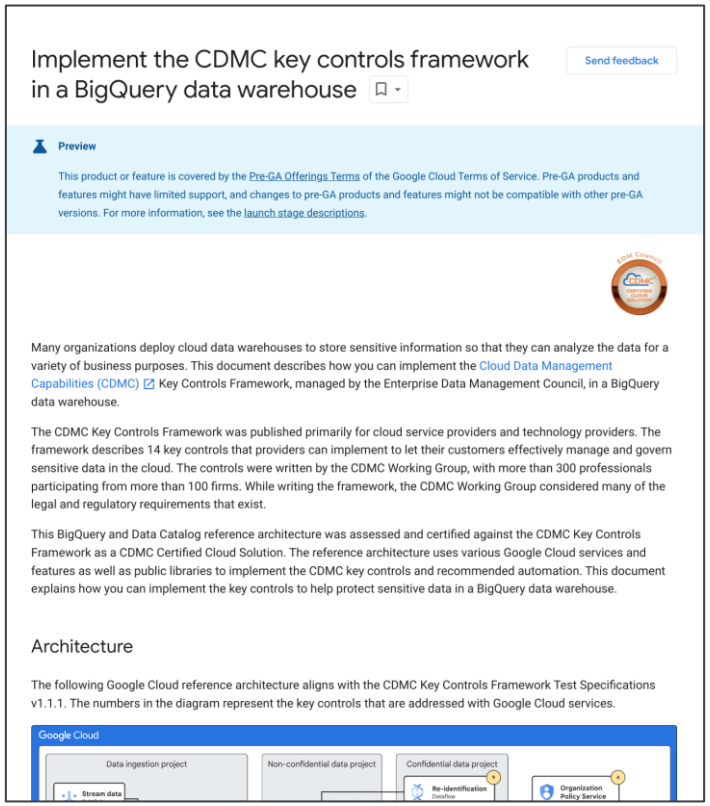
The Google Cloud Reference Architecture aligned to the CDMC v1.1 Key Control Framework is based on Google's Secure Data Warehouse Blueprint. The Blueprint includes a design for securely storing confidential data in the cloud and a set of Terraform configurations and scripts used to deploy an example environment.

The following Google Cloud Platform (GCP) Services are used for the implementation of this control:

- **BigQuery (BQ)**, a serverless, highly scalable, and cost-effective multi-cloud data warehouse. This is the datastore for the data assets, and also used as the storage mechanism for any control findings.
- **Data Catalog**, a fully managed and highly scalable data discovery and metadata management service. This provides the data catalog used to store metadata about the data assets. Technical metadata about all GCP data assets is automatically populated and synchronized
- **Tag Engine** is a self-service tool used to bulk populate metadata in Data Catalog
- **Terraform** is an open-source infrastructure as code software tool. It is used within the Blueprint and control configuration to automate the deployment and configuration of data assets.

1

GCP CDMC Evidence Docs (300+ pages)
Evidence documents for each Control validating alignment to criteria in test specification



Implement the CDMC key controls framework in a BigQuery data warehouse

Send feedback

Preview

This product or feature is covered by the Pre-GA Offerings Terms of the Google Cloud Terms of Service. Pre-GA products and features might have limited support, and changes to pre-GA products and features might not be compatible with other pre-GA versions. For more information, see the launch stage descriptions.

Many organizations deploy cloud data warehouses to store sensitive information so that they can analyze the data for a variety of business purposes. This document describes how you can implement the Cloud Data Management Capabilities (CDMC) Key Controls Framework, managed by the Enterprise Data Management Council, in a BigQuery data warehouse.

The CDMC Key Controls Framework was published primarily for cloud service providers and technology providers. The framework describes 14 key controls that providers can implement to let their customers effectively manage and govern sensitive data in the cloud. The controls were written by the CDMC Working Group, with more than 300 professionals participating from more than 100 firms. While writing the framework, the CDMC Working Group considered many of the legal and regulatory requirements that exist.

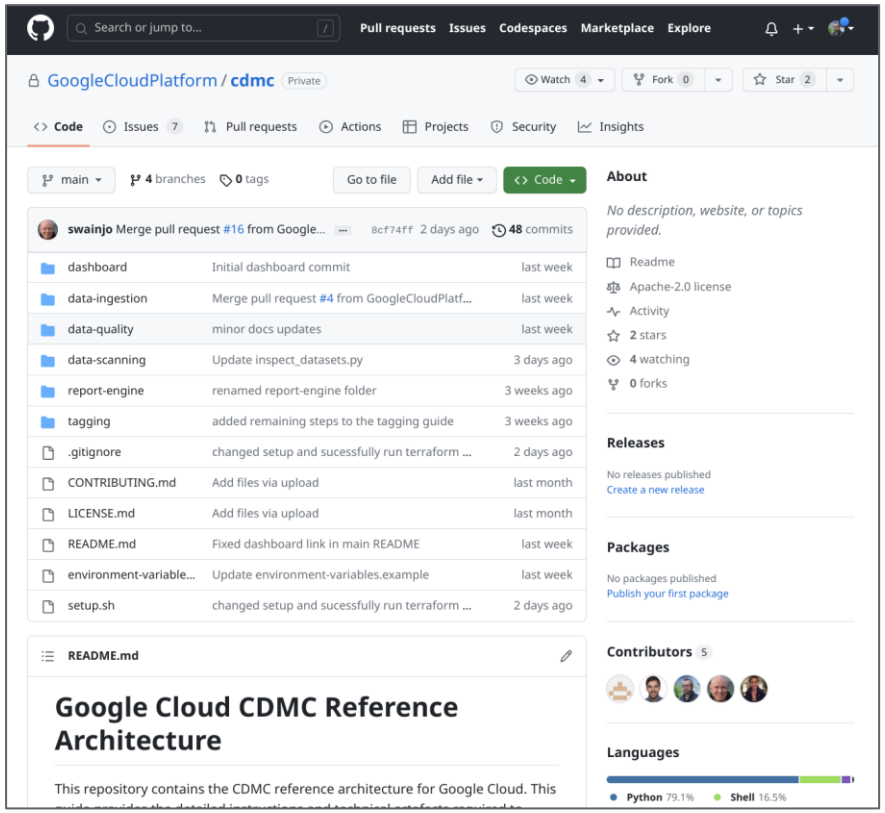
This BigQuery and Data Catalog reference architecture was assessed and certified against the CDMC Key Controls Framework as a CDMC Certified Cloud Solution. The reference architecture uses various Google Cloud services and features as well as public libraries to implement the CDMC key controls and recommended automation. This document explains how you can implement the key controls to help protect sensitive data in a BigQuery data warehouse.

Architecture

The following Google Cloud reference architecture aligns with the CDMC Key Controls Framework Test Specifications v1.1.1. The numbers in the diagram represent the key controls that are addressed with Google Cloud services.

Google Cloud | Data ingestion project | Non-confidential data project | Confidential data project | Stream data | Re-identification | Organization Policy Service

GCP CDMC Whitepaper (40+ pgs)
Overview of the reference architecture and controls



Search or jump to... | Pull requests | Issues | Codespaces | Marketplace | Explore

GoogleCloudPlatform / cdmc Private

Watch 4 | Fork 0 | Star 2

Code | Issues 7 | Pull requests | Actions | Projects | Security | Insights

main | 4 branches | 0 tags | Go to file | Add file | Code

swainjo Merge pull request #16 from Google... 8cf74ff 2 days ago 48 commits

dashboard	Initial dashboard commit	last week
data-ingestion	Merge pull request #4 from GoogleCloudPlatf...	last week
data-quality	minor docs updates	last week
data-scanning	Update inspect_datasets.py	3 days ago
report-engine	renamed report-engine folder	3 weeks ago
tagging	added remaining steps to the tagging guide	3 weeks ago
.gitignore	changed setup and sucessfully run terraform ...	2 days ago
CONTRIBUTING.md	Add files via upload	last month
LICENSE.md	Add files via upload	last month
README.md	Fixed dashboard link in main README	last week
environment-variable...	Update environment-variables.example	last week
setup.sh	changed setup and sucessfully run terraform ...	2 days ago

README.md

Google Cloud CDMC Reference Architecture

This repository contains the CDMC reference architecture for Google Cloud. This

About
No description, website, or topics provided.
Readme
Apache-2.0 license
Activity
2 stars
4 watching
0 forks

Releases
No releases published
Create a new release

Packages
No packages published
Publish your first package

Contributors 5

Languages
Python 79.1% Shell 16.5%

GitHub Repo
Publication of example assets (scripts, detectors, setup guide) into new standalone repo.

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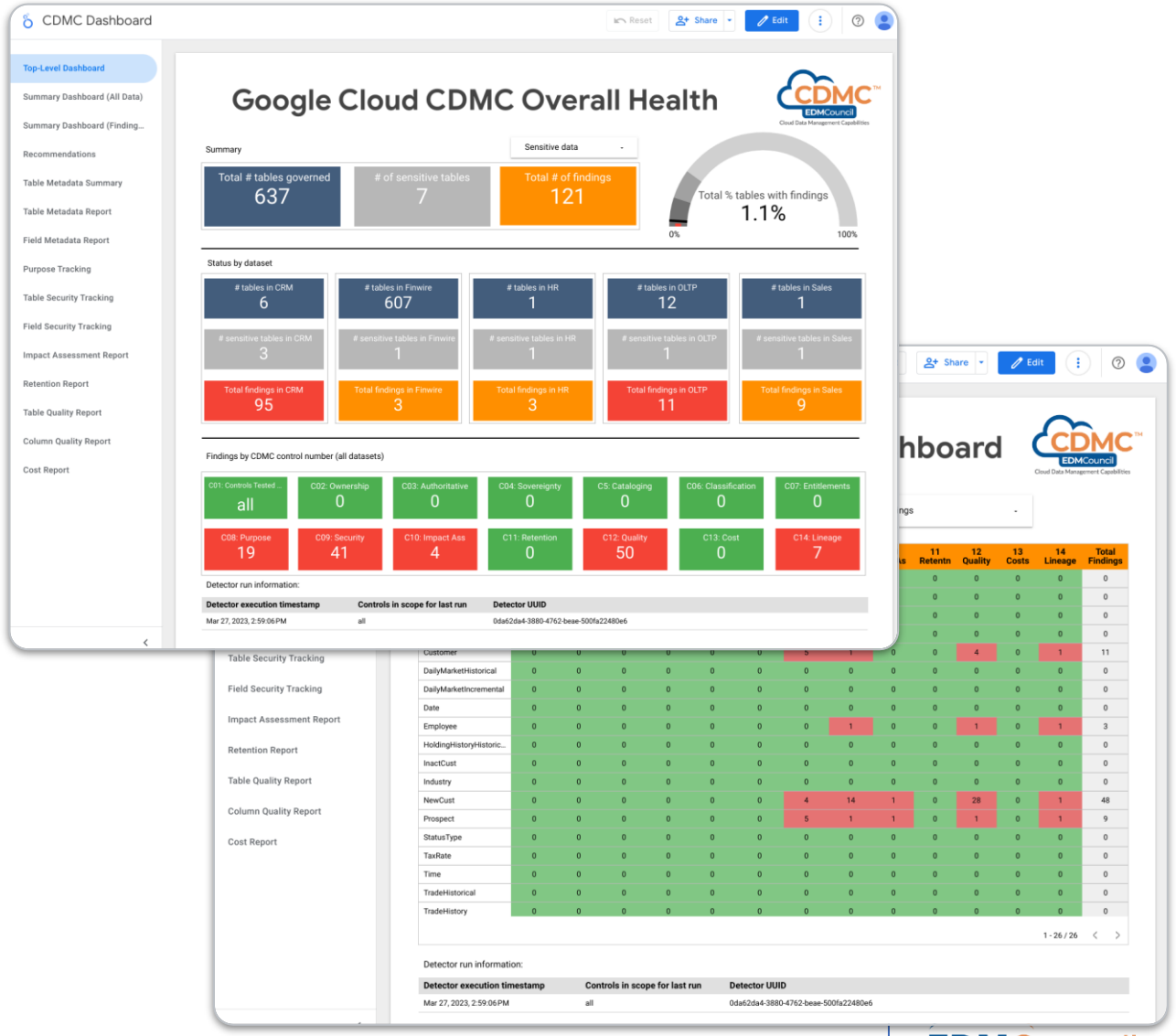
Brief overview of our certification lessons

1. Ensure **sufficient time** and investment is available
2. Check your team has the **right composition of skills**
3. **Seek clarification** in areas of ambiguity
4. Anticipate and budget for the **evolution of the platform**
5. Consider **bespoke vs. reusable** implementation
6. Consider starting with **limited automation** and iterate
7. **Common capability groupings** regardless of implementation
8. **Test data selection** critical
9. **Identify sponsoring clients early** and engage throughout
10. Validate the **minimum evidence** required to satisfy the assessor
11. Consider **tactical metamodel** vs. CDMC information model



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EDM Webinar

For more information on our certification journey, please sign up for our future EDM Council Webinar:

Google Cloud: Automating Cloud Data Governance

Tuesday 28 November

Google Cloud

EDM Council

CDMC
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Cloud Data Management Capabilities

BT Group

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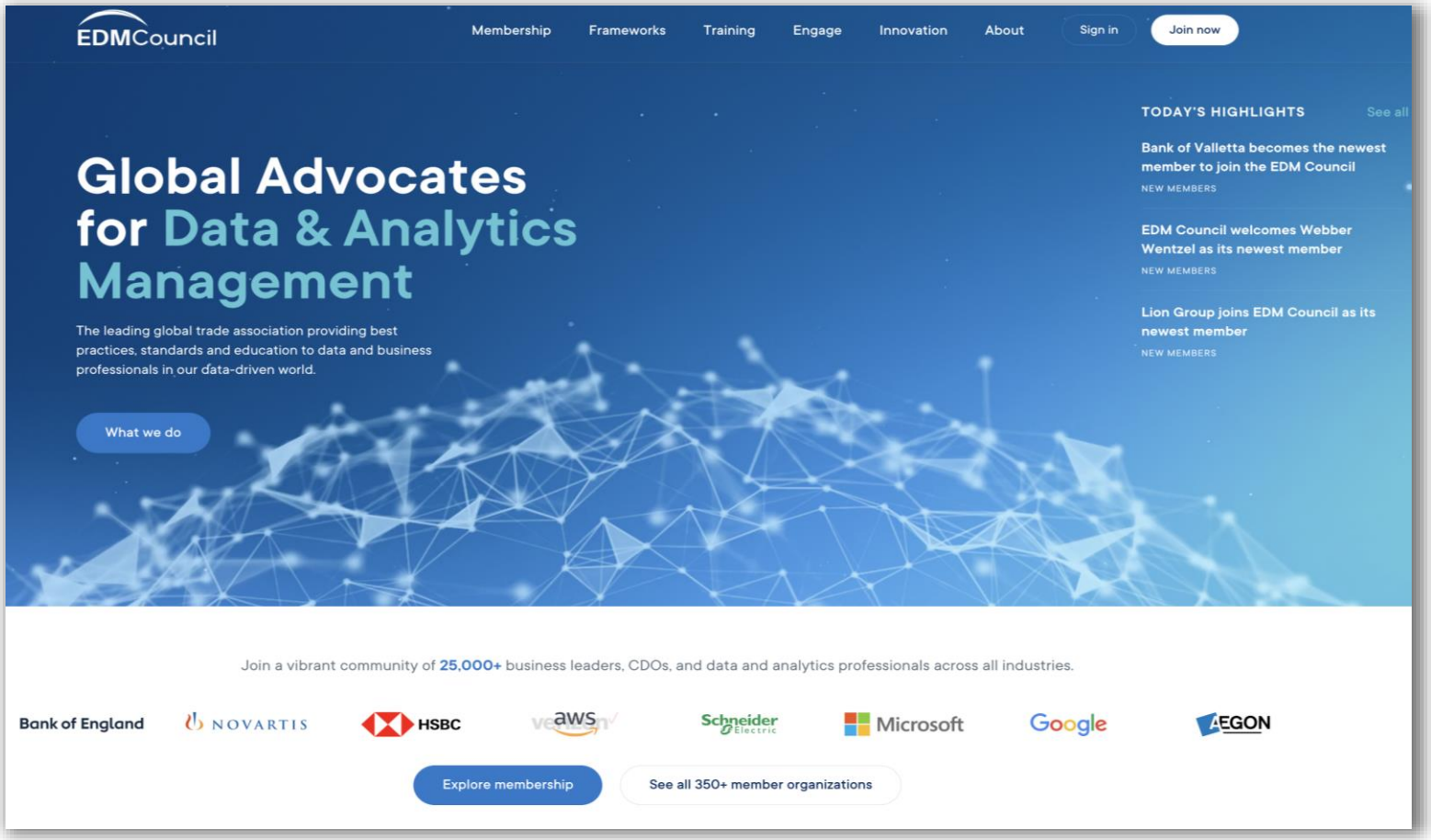
If you want to learn more:

- CDMC Training
- CDMC Assessments
- CDMC Industry Benchmark
- CDMC Information Model
- CDMC Special Interest Groups

Thank You!

Cloud Data Management Capabilities

Join EDM Council and our membership community of companies…



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350+ Member Firms
Cross-industry,
including Regulators

25,000+
Professionals

Worldwide
Americas, Europe,
Africa, Asia, Australia

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DCAM CDMC EDMCouncil Data ROI EDMCouncil ESG EDMCouncil Open Knowledge Graph INNOVATION LAB elc eLearningCurve