Data by design

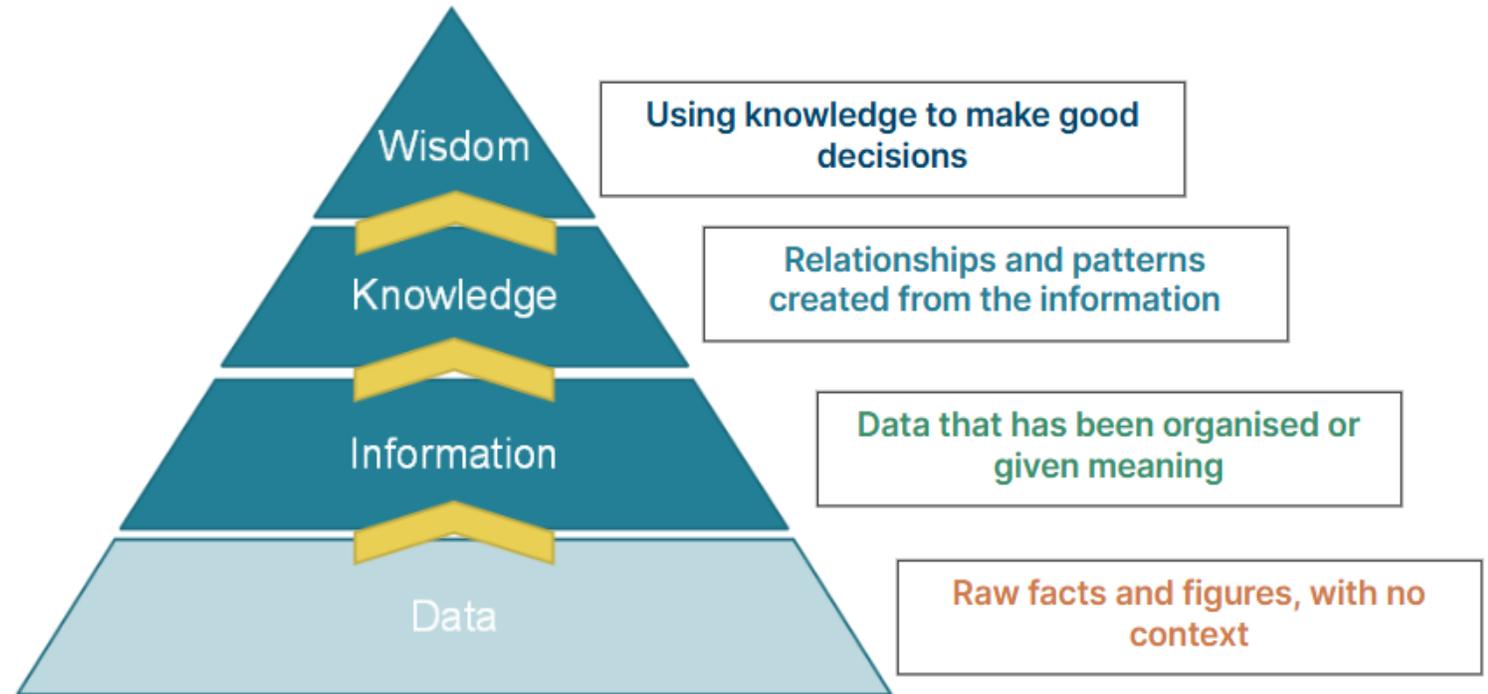## -a strategic roadmap for NICE

Version 1.0

March 2026

NICE National Institute for
Health and Care Excellence

How does 'data by design' support NICE's transition to a knowledge-led organisation?

Data by design defines how we create, store, manage and reuse **data** to realise efficiencies, automation and AI use cases in the **information** and **knowledge** NICE generates.

In adopting a **data** by design approach, NICE maximises the impact of the **information** and **knowledge** it creates to enable NICE and its users (health & care practitioners, commissioners and providers to make decisions (**wisdom**)

Wisdom — Using knowledge to make good decisions

Knowledge — Relationships and patterns created from the information

Information — Data that has been organised or given meaning

Data — Raw facts and figures, with no context

Strategic drivers for change

NICE:

Digital transformation enables organisational agility
- AI, data models and platforms will transform the way our users interact with NICE knowledge services and how our core business processes are enabled.

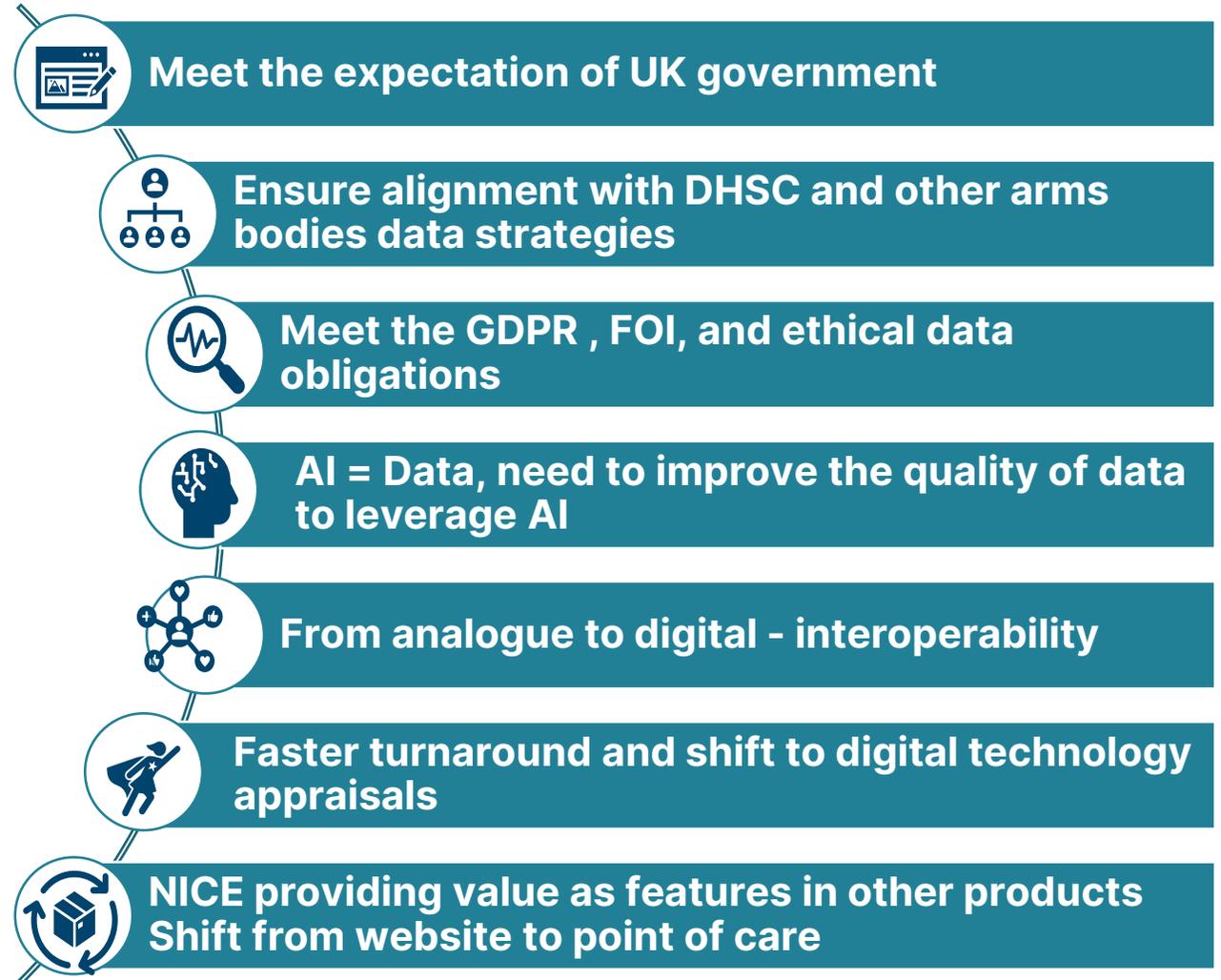**The shift to NICE knowledge as the product**
- Enable users to find and collate the content they need to make decisions, where and when they need it.
- Expand reuse of machine-readable NICE content to improve interoperability and amplify the reach of NICE knowledge

Address internal inefficiencies to release capacity
- Reduce manual data management to create process efficiency and improve timeliness.
- Standardised data by design will enable effective scale and leverage of technology.

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The wider environment:

- Meet the expectation of UK government
- Ensure alignment with DHSC and other arms bodies data strategies
- Meet the GDPR , FOI, and ethical data obligations
- AI = Data, need to improve the quality of data to leverage AI
- From analogue to digital - interoperability
- Faster turnaround and shift to digital technology appraisals
- NICE providing value as features in other products Shift from website to point of care

The scope of the strategy

In scope	
Types of data:	Data management processes:
• NICE guidance content (e.g./ recommendations).	• Data creation.
• Internal evidence summaries.	• Data governance.
• Stakeholder intelligence.	• Data security.
• Operational data in planning and scheduling and guidance production processes.	• Metadata, taxonomies and ontologies management.
• Employee, recruitment and financial data held in externally managed NHS systems	• Data Lifecycle controls.
	• Data Platform Enablement.
• Internal taxonomies and ontologies.	• Enterprise Target Operating Model

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The scope of the strategy

Out of scope	Dependencies
• Clinical and healthcare datasets governed externally.	• Knowledge transformation programme, including NICE Usable Product Strategy • Planning and scheduling management programme, including internal transformation of business processes • AI Statement of Intent • Commercial income strategy • Regulatory and compliance related risk management

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Our vision of data by design

We will create structured and organised data to enable optimal information management and efficiency, where data will be re-used and transmitted efficiently between information systems.

This will enable the delivery of integrated knowledge products that meet our growing users needs, whilst internally facilitating effective business processes, analysis, and organisational decision-making.

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Principles to achieve our vision

Purpose

- **Outcome focused** – data by design enables business outcomes, not processes
- **Delivers value through knowledge** –adopts FAIR principles (findable, accessible, interoperable, reusable), with a single source of truth, reproducibility and traceability
- **Supports the whole knowledge lifecycle** - enables management from creation through to archiving to optimise analytical capability
- Data, information and knowledge is **stored and shared through digital solutions** which improve efficiency.

People

- Effective data, information and knowledge management is enabled by a **trained and skilled workforce**.
- **NICE colleagues** believe they are enablers but also beneficiaries of these new systems and ways of working
- The importance of **data management & accountability** is understood and undertaken by all NICE colleagues.
- A **single source** of data, information and knowledge enables wisdom and decision making for internal and external users.

Practice

- **Data visibility** - data is catalogued and made available across NICE
- **Security** – data is stored securely but has appropriate access rights
- **Data reuse** – technology enables data reuse for internal and external users
- **Atomic storage** – all data and information is stored in its component parts, underpinned by data models.
- **Traceability** – appropriate data governance enables source data verification, data quality assurance and reporting.
- **5 'Safe principles' used:** data, projects, people, settings & outputs

How do we achieve these principles?

1. **Develop an end-state vision and target operating model** underpinned by enterprise architecture, digital/data first standards and standard operating procedures.

2. **Implement and ensure data best practice and foundations - i**mplement common standards, master data management, and metadata controls to strengthen data foundations.

3. **Implement common data governance and accountability -** establish effective data ownership, governance and accountability to ensure delivery and progress against the data by design vision

4. **Build a Skilled Workforce -** effective data, information and knowledge literacy and management is enabled by a trained and skilled workforce, with specific long-term people development plans in place.

5. **Deliver the ambition of the NICE DDAT strategy-** ensure the continued implementation of interoperable, data led digital systems to enable workflow automation, process efficiency & redesign and elimination of technical debt.

Data by design- the strategic roadmap

2026-2027 Foundations

Focus on governance, standards, master data management, and platform development to build a solid foundation.

Strategic Programmes (planning and scheduling management & knowledge transformation) use a data by design approach and implement a Target Operating Model and Standard Operating Processes.

Enhanced collaboration with DHSC, NHS England, ALBs and others to support NICE's digital health leadership.

Support AI statement of Intent by providing tools and sandbox – ongoing

Develop and begin implementation of data capability and a workforce development plan for NICE

Embed a 'data first' culture across NICE, exemplified in the corporate strategic programmes.

Through the DDAT strategy, progress the continued implementation of interoperable, data led digital systems to enable workflow automation, process efficiency & redesign and elimination of technical debt.
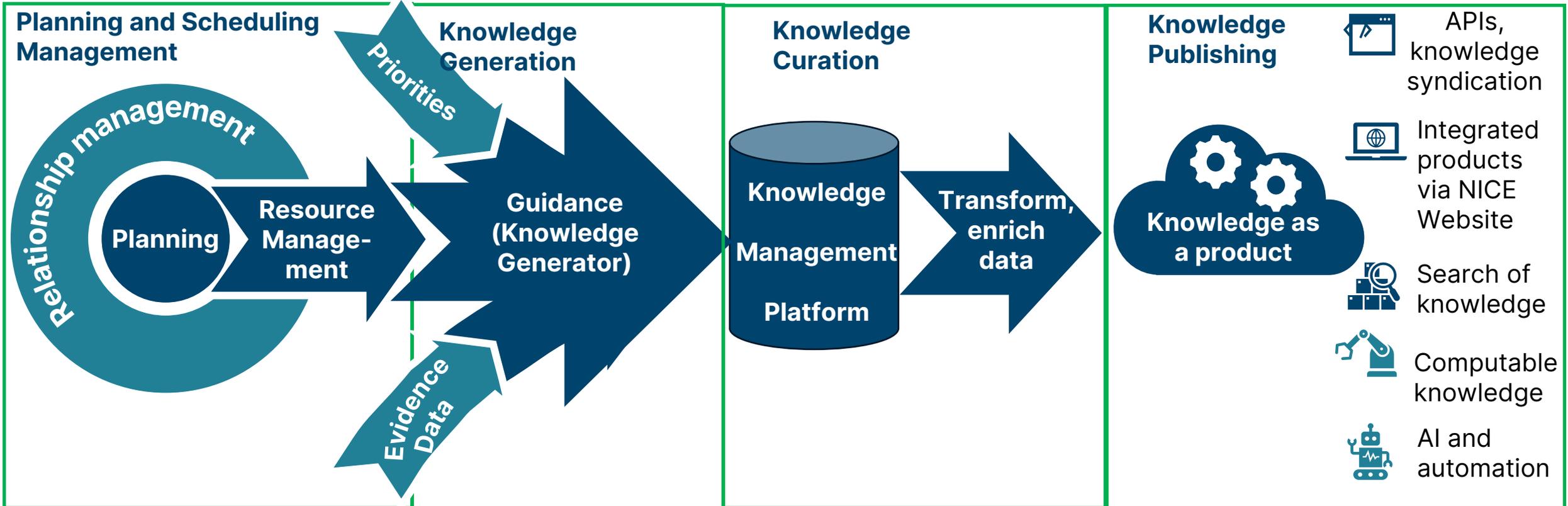
2027-2028 Scaling

Revise and publish a new DDAT/Data Strategy that underpins the new enterprise operational vision, Target Operating Model capitalising on AI and interoperable technology

Embed data management lifecycle controls, mature data ownership, automation, and improved data literacy across processes.

Maximise opportunities to translate NICE knowledge into products that amplify the reach of NICE guidance.

Continue NICE thought leadership in AI research and evidence generation aligned to our statement of intent.
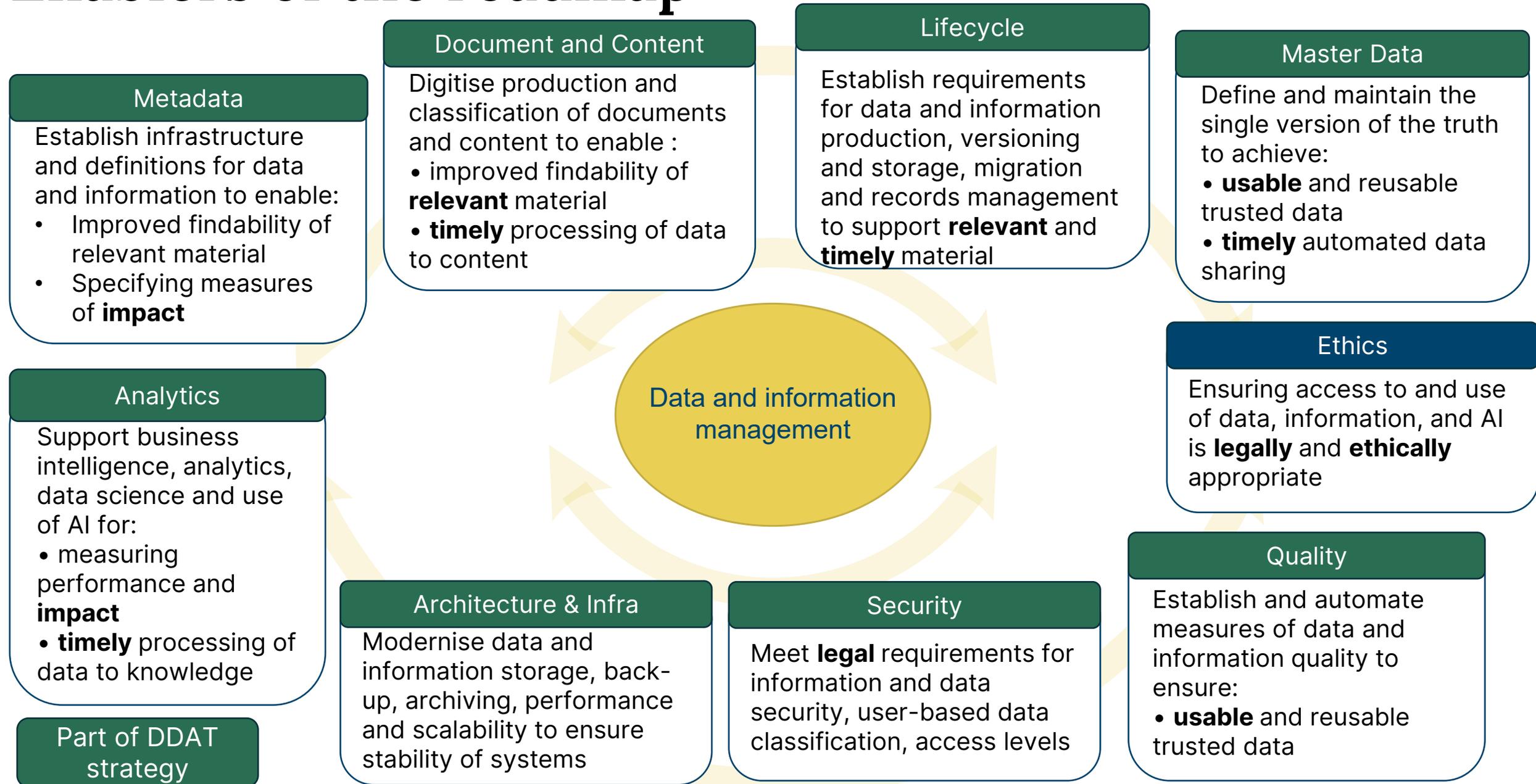
Business Change Underpinned by Data and Digital

Enablers of the roadmap

Metadata

Establish infrastructure and definitions for data and information to enable:
- Improved findability of relevant material
- Specifying measures of **impact**

Document and Content

Digitise production and classification of documents and content to enable :
- improved findability of **relevant** material
- **timely** processing of data to content

Lifecycle

Establish requirements for data and information production, versioning and storage, migration and records management to support **relevant** and **timely** material

Master Data

Define and maintain the single version of the truth to achieve:
- **usable** and reusable trusted data
- **timely** automated data sharing

Ethics

Ensuring access to and use of data, information, and AI is **legally** and **ethically** appropriate

Analytics

Support business intelligence, analytics, data science and use of AI for:
- measuring performance and **impact**
- **timely** processing of data to knowledge

Data and information management

Architecture & Infra

Modernise data and information storage, back-up, archiving, performance and scalability to ensure stability of systems

Security

Meet **legal** requirements for information and data security, user-based data classification, access levels

Quality

Establish and automate measures of data and information quality to ensure:
- **usable** and reusable trusted data

Part of DDAT strategy

Proposed Performance Indicators

Measuring progress towards delivery of our Vision and addressing the strategic drivers for change will be essential to ensure this roadmap is successful. Proposed indicators therefore reflect:

Business process efficiency, agility and speed

- Percentage reduction in guidance production time
- Percentage decrease of staff time on process tasks (due to automation & AI)

Workforce up-skilling

- Percentage of staff who have completed appropriate training in data and AI, that enables them to do their job well
- Increase in staff satisfaction metrics from survey ("My innovation is valued", "I have enough training and info to do my job well")

User feedback

- Increase in our primary users reporting they 'find it easy to find the information and advice I need from NICE'
- Increase in satisfaction and number of active users of the NICE content subscription service.

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How will we know if Data by Design is working?

While it is important to be able measure progress, it's also essential that we define how delivery of a successful strategy will look and feel different for NICE users and staff over the next 2 years. In working together, we will achieve:

Componentised evidence and recommendations stored once and reused.

Content with **good metadata and sematic models** to enable search, integration and reuse

Process logic encoded as metadata making information available and enabling automation and traceability

Componentised and machine-readable knowledge expanding opportunity to amplify the reach of NICE guidance with knowledge as a product

Business process efficiency by effectively managed, high quality, available data through interoperable, automated digital systems.

A workforce with the skills and capability to maximise the opportunity afforded by data by design, process automation and AI

Componentised knowledge enabling **agility to produce and update recommendations** and guidance content in a more timely and efficient way.

Improvements in performance which demonstrate process efficiency, agility and speed; a workforce with skills to deliver the vision; and user feedback

Developing the plan, governance and reporting progress

- We have set a timeframe of 2 years to deliver this strategic roadmap

- Year 1 Foundations will inform development of a new NICE DDAT/Data Strategy that underpins the new enterprise architecture (digital and Operating Model), which addresses internal and external user need, and capitalises on advancements in AI, automation and interoperable technology

- Following the Board discussion, we will develop a more detailed 2-year implementation and risk management plan for how we will introduce and embed data by design, to achieve our vision by 2027.

- Progress against the implementation plan will be through the executive led governance model, enabled by the CIO steering group. Key performance indicators which reflect the expected improvements will be reported regularly to ensure we are on track, meeting our milestones and ensuring our strategic roadmap is implemented at pace.

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Data by design – a collective responsibility

- Our success will be dependent upon everyone understanding their part in delivering this strategic roadmap.

- We will set annual targets for each performance indicator, which reflect the scale of ambition and transformation in the foundational phase of implementing data by design.

- To this end, we must ensure that all colleagues understand the strategic direction for data, digital and process efficiency at NICE and is clear how their role, responsibilities, behaviours and development needs support our collective vision.

- Delivering a strategic roadmap for data by design is ambitious and will require collective commitment, leadership and role modelling by the Board, executive team, senior leaders and across all strategic programmes.

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