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(np.dot(w, a)+b) ** weights):
        training_data[k:k+mini_batch_size]
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else:
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                               e(Z)

1f.weights[-l+1].transpose(), delta)
                        delta
    np.dot(delta, activations[-1-1].transpose())
    nabla w)
                                 (self.feedforward(x)), y)
(self.feedforward(x)), y)

(self.feedforward(x)), y)
```



Data: Thinking strategically, and making it real, and cake

26 March 2024











- We are a **specialist** information systems consultancy
- We only work with charities, associations, trusts and others in the not-for-profit sector
- We are completely supplier-independent
- Our consultants have held senior positions in a broad range of different organisations
- Our advice and guidance is based on practical experience gained over many years

Making Digital Real

Our Mission and Purpose

Our Mission

We **empower** organisations to deliver transformational impact through more effective use of technology and ways of working



From our minds...

Our Purpose

From our minds to your minds – our team of experienced, independent consultants work with you to transfer their knowledge, share their expertise, and develop your organisational capability



...to your minds

Our Purpose

From our minds to your minds – our team of experienced, independent consultants work with you to transfer their knowledge, share their expertise, and develop your organisational capability









Programme	14.00	Arrival and welcome Adapta Consulting Welcome to the event, introductions and overview of the agenda for the afternoon.
	14:10	Data Strategy - What is it exactly? This will talk to the value of undertaking such a strategy and offers a frame or model for what content such a strategy could contain.
	14:45	Audience Session – Data and Knowledge Maturity How "mature" is your organisation in respect of data and knowledge? (Participants will assess their organisations maturity using a simplified Adapta framework. Get a sense of how you compare to your peers!)
	15:15 15:30	TEA/COFFEE/CAKE – opportunity to share learning with peers Making Data Strategy Real A selection of thoughts and examples on the journey towards becoming a more data and knowledge rich organisation aimed at helping you develop your own toolkit of ideas to help you drive change in your own organisation.
	16:00	Audience Session – Round Table Activity, Discussion and Feedback
	16.30 - 17.00	Review and close





From Data to Knowledge Data Strategy

Mark Luckins



No Data Strategy? : Analogies and Tropes

- Data is the new oil...
- Organisations need to become data driven...
- Data is like water...
- Information is power...
- Data is the new currency of the digital age...
- You can only manage what you measure...

Why you need a data strategy.....

- Your organisation is a mission driven data processing machine!
- Looking ahead your organisation will capture, process and produce more data (at an almost exponential rate).
- Pressures to increase capabilities to manage data (staff, policy, money) will only grow over the coming years.

 Instead of allowing this to happen organically a data strategy can help control and better understand the business case for investment in data.

Why you need a data strategy...

- As your data volumes grow finding real value in your data becomes costly.
- Most UK third sector organisations cannot afford a "silicon valley data strategy" (collect as much information as you possibly can; mine the data for insight or AI).
- Organisations need to invest more time understanding what data it is you can capture and how that is relevant to each team or function.
- A data strategy can be understood as an opportunity to talk strategically about data across your organisation to find where the real value and utility can be found.

Why you need a data strategy...

- In many cases staff are are overwhelmed by content and information in their daily working lives.
- Becoming "data driven" is not always possible. Aspects of your operation will not be easy to represent or model with data.
- Ethics needs to be considered when data is used to drive automation or new forms of AI.

• Instead of suggesting that all staff should become "data driven" a data strategy can help prioritise strategic use of data and focus your energies in certain areas or teams to become "appropriately data centred".

Why you need a data strategy....

- In many cases staff are already overwhelmed by content and information in their daily working lives.
- Becoming "data driven" is not easy. Aspects of your operation may not be easy to represent or model with data.
- Leadership on data may be lacking.....KPIs can have unintended consequences....data accountabilities may be unclear....
- Ethics needs to be considered when data is used to drive automation or new forms of AI.
- Instead of hoping that staff somehow become "data driven" a data strategy determines how your "operating model for data" should evolve over the coming years (focusing on people, accountabilities and roles)

No Data Strategy?: How data "drives" staff behavior...

Goodhart's law:

"When a measure becomes a target, it ceases to be a good measure."

Example: KPIs

When unnecessary KPIs are forced upon employees, it either leads to resentment or results in teams focusing too much on making the numbers look good rather than on meaningful work. In the long run KPIs may improve but other things – efficiencies, agility, collaboration, etc. – may have deteriorated.

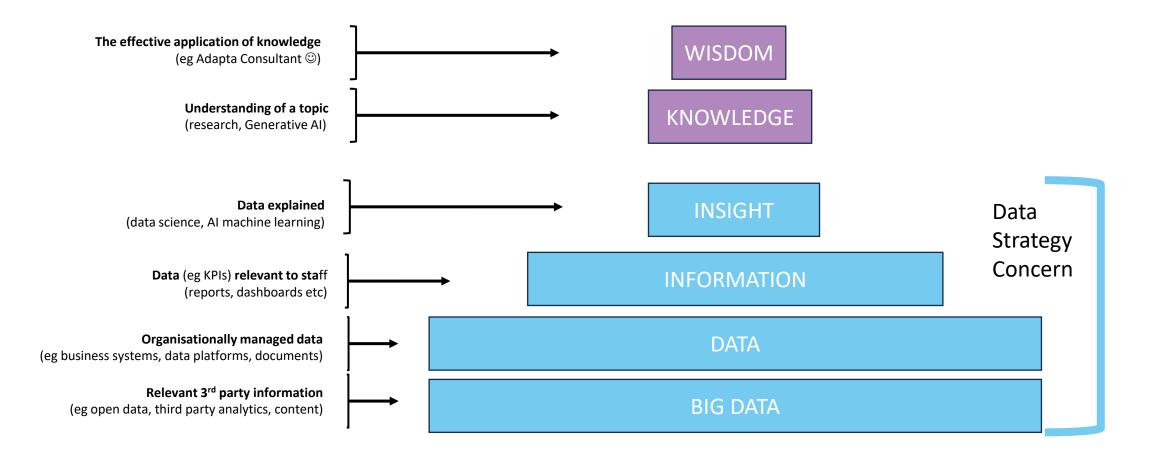
Hawthorne effect:

The Hawthorne effect is where individuals modify their behavior in response to being monitored.

Example: Services Delivery SLA:

To meet the SLA staff may game the data by for example logging the issue against a longer SLA, closing and re-opening a call or providing a low quality response to meet the time based objective. It can lead individuals comprising the quality of their work.

What is Data?



distributed through internet, social feeds, traditional media etc

MOSTLY NOISE, OCCASIONALLY KNOWLEDGE

What is Strategy?

Organisational Strategy

What an organisation should do [differently]....

....to achieve its mission.

What [impact] an organisation wishes to achieve...
....given its capabilities and resources

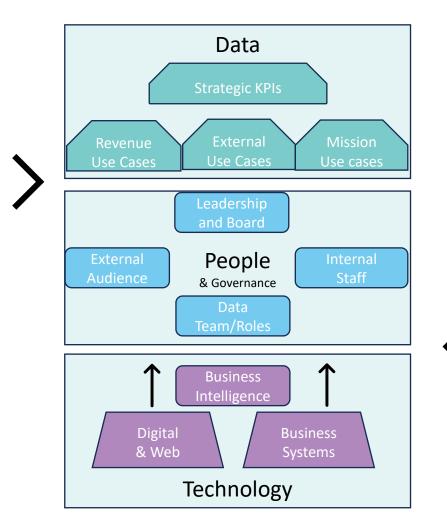
How should organisational strategy inform data strategy? How should a data strategy enable and underpin organisational strategy?

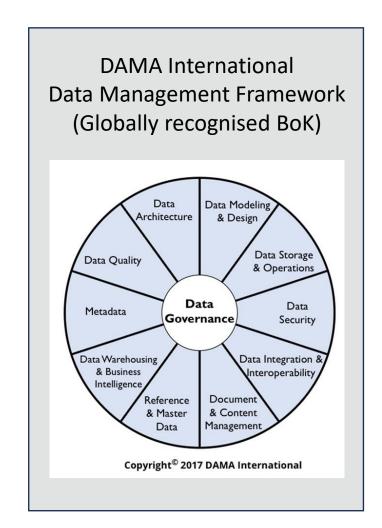
Often Seen Strategies in the Third Sector

Organisational Strategy	Data Strategy		
Public Policy Engagement and Systemic Change			
Research, public campaigns, and lobbying or advocacy. These activities aim to raise public awareness, shape public perceptions, and influence policy change.			
Service Provision and Direct Impact			
Supplied services and support of any kind (legal, health, social, environmental)	Strategic		
Financial Sustainability	KPIs		
Generating financial surpluses through fundraising and commercial activities			
People Recruitment and Retention			
attracting and retaining staff and/or volunteers, providing them with meaningful opportunities, and ensuring their efforts contribute to the organisation's goals	Strategic		
Accountability, Compliance and Transparency	AI and Data		
Charity Commission; ICO	Use		
Collaboration, Capacity Building and Partnership	Cases		
With government, local authorities, businesses, and other service providers can involve in participating in Local Strategic Partnerships and other collaborative frameworks			
Innovation, Digital and Data Transformation			
Use and exploitation of digital, data and technology to support any facet of an organisations operation or innovate digitally to provide new experiences or knowledge.			

Adapta Data Strategy Framework

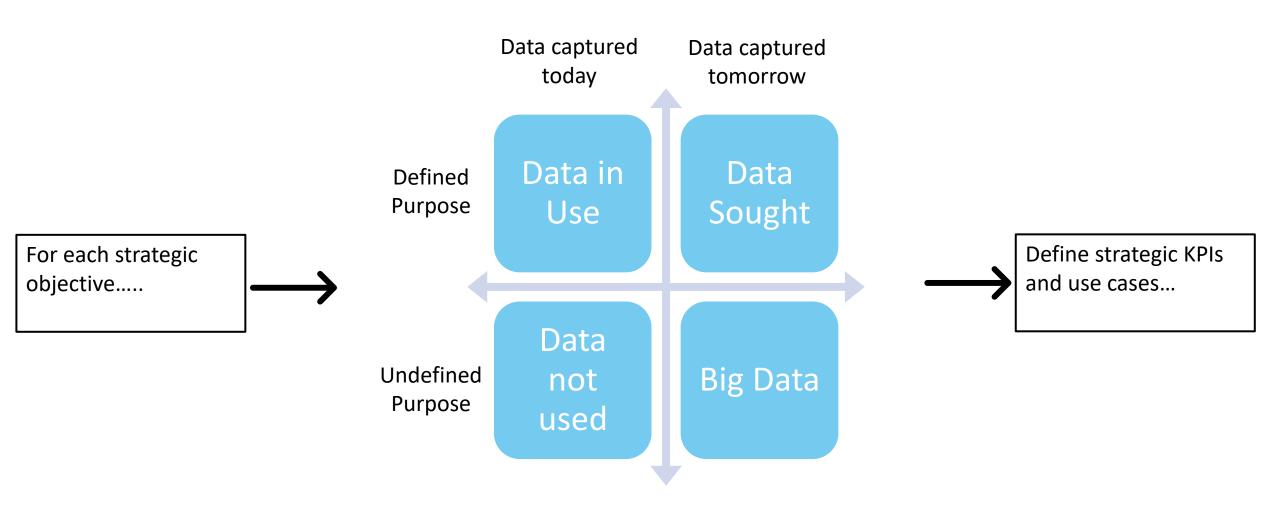
Data Orchard Data Maturity Framework (UK Third Sector) USES **DATA ANALYSIS LEADERSHIP CULTURE TOOLS SKILLS**





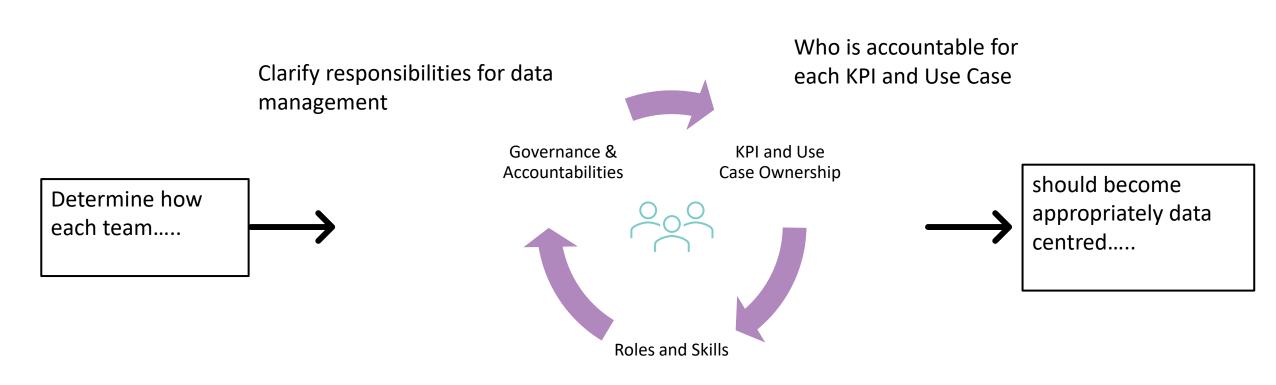
The Data Pillar

(or finding the value in your data)



The People Pillar

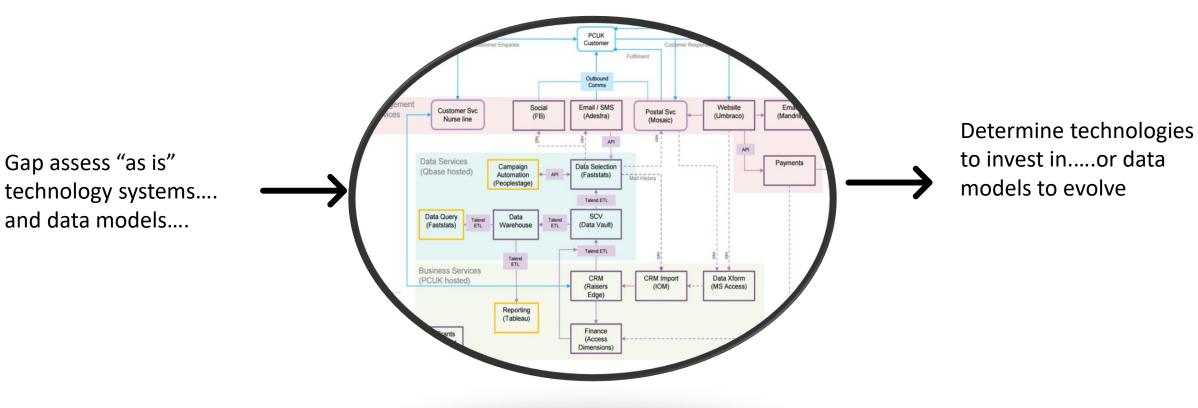
(or finding the people that will benefit from your data)

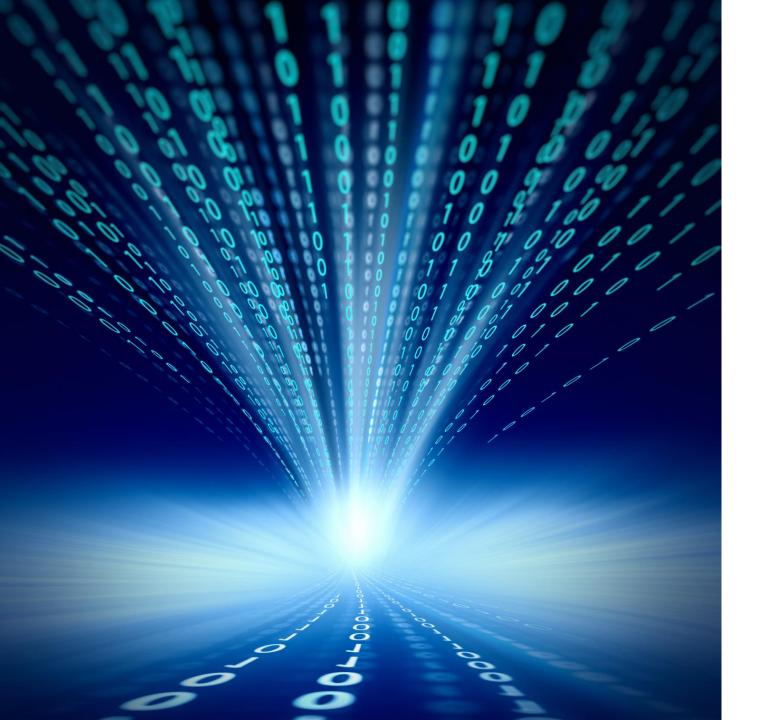


Leaders, specialist data staff, data literacy

The Architecture Pillar

(or how the data will be digitally captured, stored, cleaned and accessed)





Getting a handle on your Data Maturity

Group Session



Data – Trustworthiness and Data Management

Essentials - 1	Emerging -2	Learning - 3	Developing -4	Mastering - 5
Core financial and externally shared data is trustworthy. Otherwise all other data is "best endeavours". • Ad hoc updates (if ever). • The most accurate data comes from third parties. • You do not	Some teams beyond finance explicitly try and keep data fresh but data quality generally is "good enough" for the owning team. • Teams like HR and fundraising will explicitly manage data to avoid duplication, clean up "easy data" eg addresses and	Organisation now recognises that key data must be highly trustworthy and has instigated measures to realise this. Actual implementation and how best to do this is a work in progress. • Data governance established • Data policies now exist including policy statements on data quality • Some regular process to review manual data entry,	Organisation now has invested in the capabilities to achieve and comply with it's own polices on data trustworthiness and quality. Key business systems, all structured data and externally sourced data is largely under control – the challenge is nonstructured data, multi-media, the excel army and shadow IT. • Data quality is now defined for all master data and automated reports measure quality. • All exceptions are produced on a regular cadence and manual intervention to address • Data and information governance is now effective, and the organisation has a reasonable handle on data trustworthiness,	Organisation now has a reputation on sitting on some of the best, high quality data in it's chosen domain. Data can – confidentiality aside – is sufficiently trustworthy to be used internally and externally for automation or AI. All forms of data is now subject to appropriate governance. • Data collection is fully digitised and automated where possible eg direct data capture from voice; manual data entry is minimised and limited to exception handling. • Data quality reporting available across all data held in corporate data platforms or business systems. • Data is recognised as an intangible asset and may have or could have commercial value in principle. • Data could be published and shared with an open data licence if wanted.
publish data externally except for annual report or under contractual obligations • No data or information governance •Essential polices eg GDPR only exist	maintain currency. Other teams like services may keep essential data current but "more optional data entry" ad-hoc. Need for data and information governance recognised. Data polices eg retention may exist	check record quality and reconcile data for consistency across all business systems exist. This may not work well but is at least attempted. • Data quality and overall trustworthiness is starting to be understood – especially the gaps. • More likely data cleaning and enrichment is happening at least ad-hoc • Ingestion and aggregation of	compliance and access. Investment has been made in dedicated tools, external services and staff to support data lifecycle management. Integration between key systems reduces duplication, inefficiency and error; data is otherwise consistent. Data accountabilities are defined between data team and business staff. Data is now trusted to the degree that external sharing and publishing is now possible	 Data can be used directly for research or to support advocacy. The organisation can stand by it's data which itself and withstand scrutiny. Other organisations perceive the data credible enough to benchmark against. Organisation is now capable to act as a lead actor in any local or sector relevant data sharing initiative.

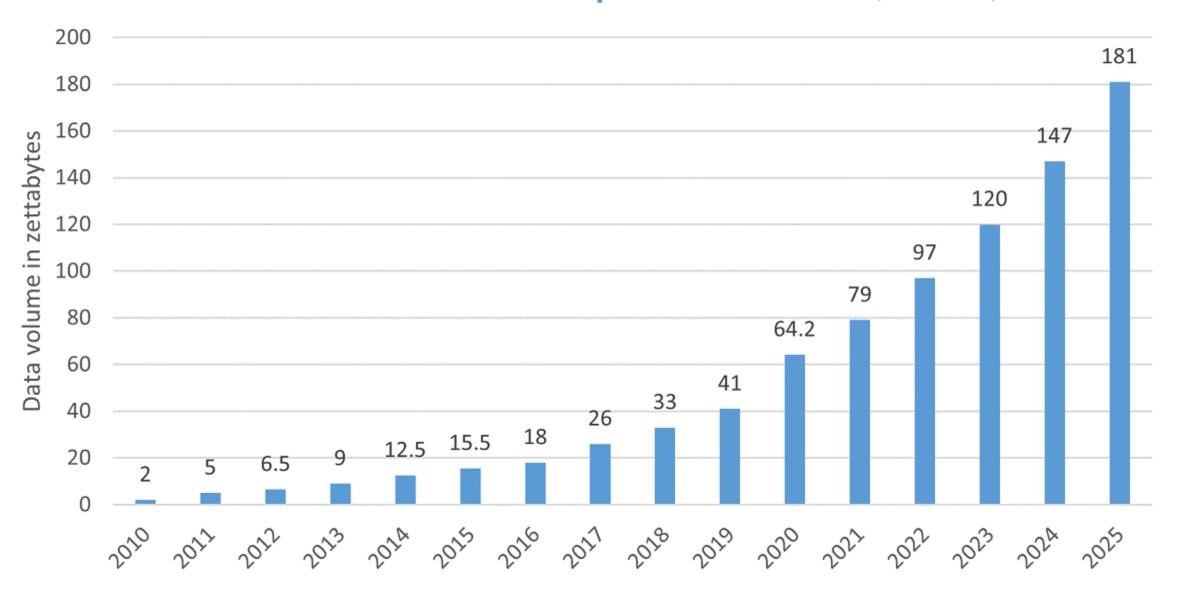
Information (Use of data)

Essentials - 1	Emerging -2	Learning - 3	Developing -4	Mastering - 5
Collect and use data for mandatory purposes e.g. financial management and legal, funder or contractually obligated reporting.	Data collection and analysis relates to capturing operational activities, measuring outputs, and basic financial analysis and forecasts. • Use of reports and information will vary across managers, heads and Directors contingent on their preference to utlise data in their work • Data capture is largely opportunistic, determined by individual teams and largely disconnected from strategy or other team needs.	Data is used more widely across the organisation and will include 3 rd party analytics. Some persistent strategic KPIs will exist. • Marketing and Communications will be analytically driven to some degree. • Some teams learning to measure outcomes consistently. • Starting to consciously think about data capture and subsequent use. • Monitoring and evaluation data may be in play • Data models and forecasting starting to emerge (especially for income) • Data skills starting to develop in certain people or teams. • Strategic and business planning – in some areas – becoming data informed.	of the organisation appropriate to their function. Strategic KPIs exist. • Each team has the information or is in process of defining the information it needs • The organisation explicitly captures data required to support strategic KPI reporting and data capture generally is better co-ordinated within the organisation. • Some managers are comfortable asking questions of the data, talking through what it means and occasionally performing or further analysis and deriving insight. • Teams are comfortable to discuss the data and decisions that are driven by data are conducted in a transparent way. • Organisation starting to exploring and learn how to measure complex capabilities, outcomes and impact. • Will use data in front of funders and publish data externally to some degree. A level of credibility is starting to be associated with your organisation due to your ability to	Data is now being used robustly to also support automation and Al. Strategic KPIs measure impact and will be referenced (or copied) as a data point (or metric) by other organisations or actors. • Each team has the information they need and some teams now automate basic activities eg event driven marketing. • Some teams have Al use cases that are in pilot or early deployment. • Data coverage and use has expanding to incorporate internal use cases (eg automation for efficiency) and external use cases (eg automation to improve or scale outputs. • Data will be collected to supporting monitoring and evaluation • Data and knowledge in your chosen domain of activity is established as a differentiator, impact data is published and typically cited. • Data capture and overage includes all forms of relevant data including text and video. • The organisation is embedded in networks of knowledge and research in the context of its work. • Partnerships and networks are strengthened through collaborative data sharing. • Robust evidence ensures credibility and is used to influence external policy and

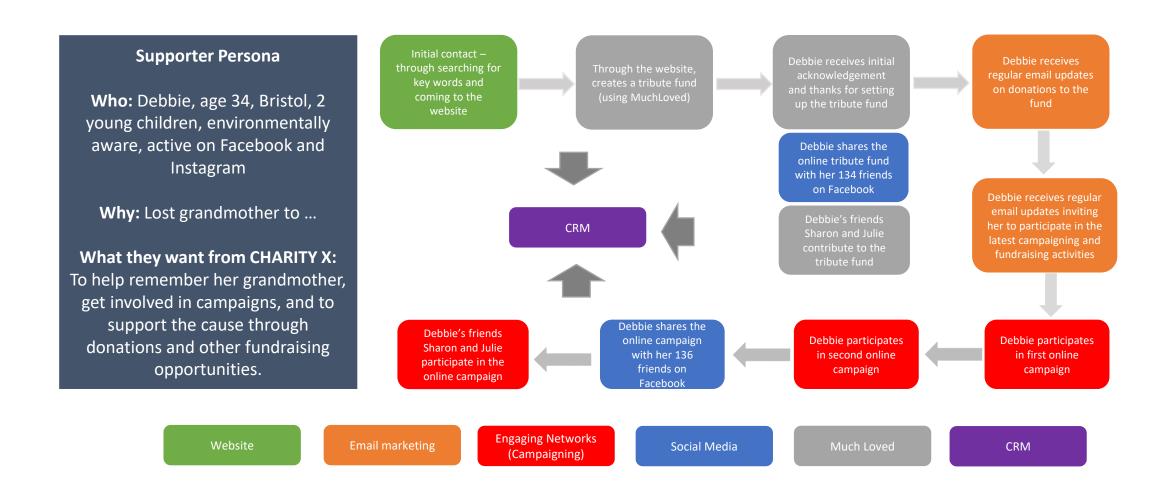
Knowledge (Skills and People and Culture)

Essentials - 1	Emerging -2	Learning - 3	Developing -4	Mastering - 5
No defined data roles exist in your organisation Any staff with data skills is more by luck than design. Data literacy across most staff is low.	At least one data role exists somewhere in your organisation. Interest in data exists in some other teams but overall insufficient capacity and/or skills limit any real progress.	Data is a recognised-albeit small - organisation capability and a budget line for data exists. Accountabilities around data is starting to appear in job profiles. Some staff are highly data literate (but gained through prior employment)	Data capabilities within the organisation are now seen as important as finance, HR, marketing etc. Investment in staff and more specialist data roles has occurred. • Dedicated skilled analytics roles established with several people responsible for data in different roles/ teams.	Data is now just part of everyday working life for all staff. Capabilities exist to professionally manage all data and – equally – support staff use of data. Data skills have been distributed across the organisation. Within your chosen sector your data helps fuel external perceptions of credibly. • High levels of staff commitment at senior, specialist, technical, and
 Minimal staff commitment to data beyond basic administrative level and finance roles. Little or no internal skills, training, or expertise. No access to external knowledge or expertise around data. 	 Data literacy is patchy, mostly low, amongst staff. Basic training in using data exists Patchy awareness of data protection/overreliance on a single person (and not certified DPO) Business beginning to understand needs around data skills and capabilities. 	 A data team exists in some form. In house or externally provided training for using data systems. All staff have basic data protection and security training. External suppliers help with technology, analytics and perhaps data science. 	 Possibly a senior person/team bringing organisation-wide data together. Increased data literacy/responsibility across the organisation, possibly dedicated data roles in larger functions Individuals responsible for data help catalyse and energise staff awareness and skills in respect of data. Staff know how to respond to subject access requests, changes in preferences on personal data or report a [potential] data breach 	 administrative levels. Senior data strategist embedded at heart of leadership decision making. Able to independently manage/drive and maximise data analytics to an advanced level. All staff trained with ongoing investment in developing data skills with high levels of data literacy across the organisation. Internal openness and data sharing is fundamental to the culture, subject to
expertise around data or analytics. No real understanding in the business of the skills required for building data capabilities. Data not really on the SLT agenda	 Dedicated person/team in charge of central data systems or key business system An SLT Director (possibly informally) act as "data champion" 	 Teams starting to get used to discussing data and information relevant to their team. Data accountabilities clarified at SLT level including accountability for corporate data team. Some SLT co-ordinate on matters of data roles and staff 	 Regular use of advanced external expertise and specialist suppliers. Data now an understood function at SLT who also have endorsed policy and material investments in capabilities 	 data protection/security. Specialist staff regularly present at external conferences. Awareness about ethics, openness and protection of data are embedded throughout the organisation. Ongoing relationships with a range of trusted suppliers providing advanced support and specialist expertise including AI.

Volume of data created and replicated worldwide (source: IDC)





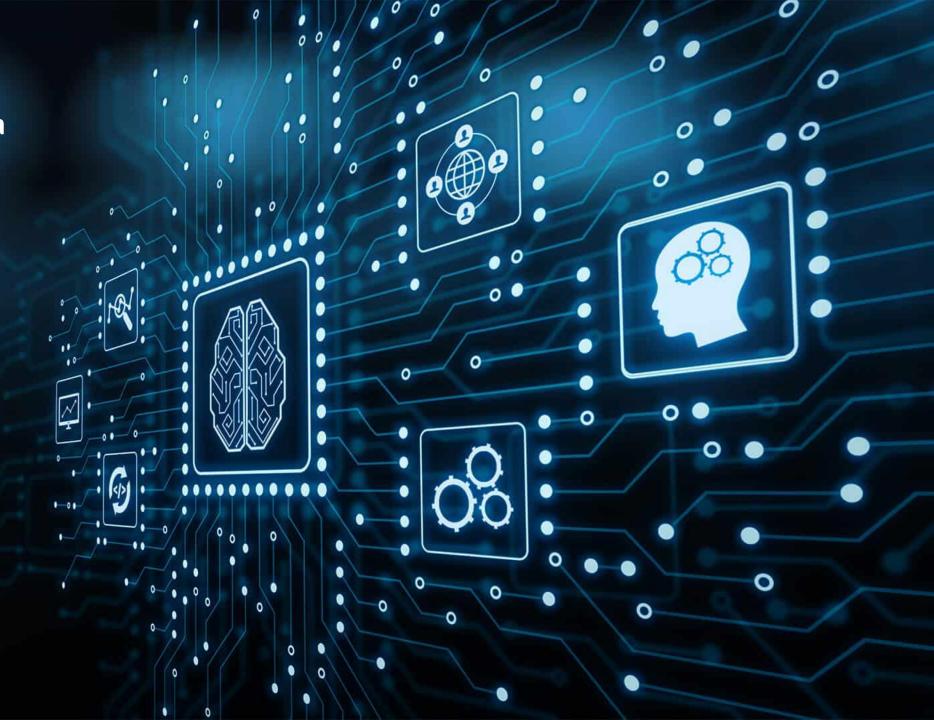


A typical charity 'customer journey'

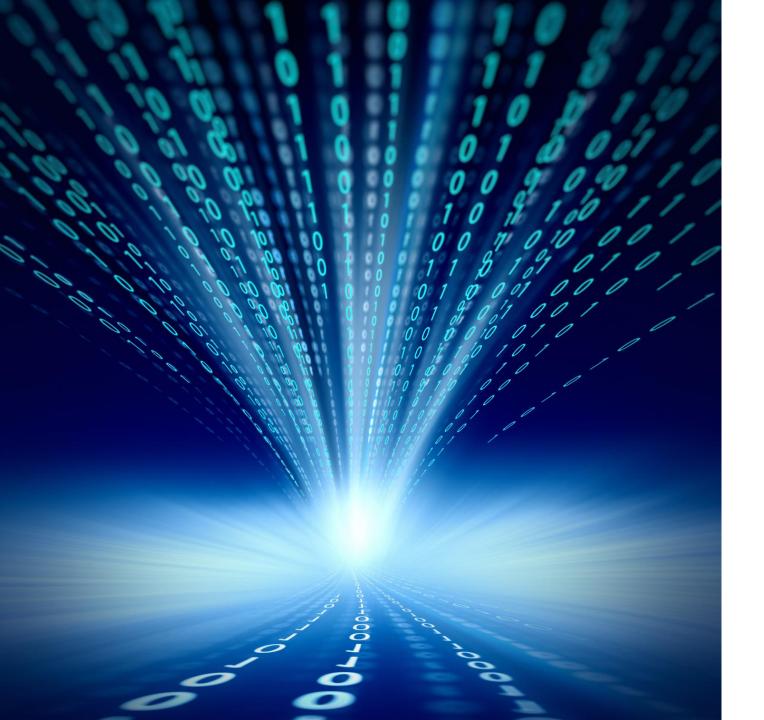


But the better our data is, the more we can realise the benefits in areas such as automation, personalization...and even Al









Making Data Strategy *Real*

Keith Collins

Emma Robinson



Implementing your data strategy

The building blocks of data strategy success

Data use cases

Implementing a data strategy



DATA STRATEGY

What was cases do we need to defi

What use cases do we need to define?





DATA USE CASES

What questions do we want data to answer?



DATA MANAGEMENT

How well are we capturing, storing, cleaning and accessing our data?



DATA TOOLS & STANDARDS

Do we have and use the right tools to support data management and analysis?



DATA ANALYSIS

How do we use our data to deliver meaningful insights?

DATA SKILLS & CULTURE

How do we develop internal skills and work together to make the most of our data?

Data Use Cases

- Defining 4 to 6 data use cases is a realistic aim.
- What to include -
- **Objective**: Linked to your organisation's strategic objectives.
 - What questions do you need answers for?
- Owner: Who is responsible for the overall success of this use case?
- Success Measures: How will you gauge your progress?
 - KPIs, ROI, increased digital engagement, etc.
- Required data: What data is needed to support the use case?
 - Existing, new; structured, unstructured; internal, external.
- Data analysis: Number-crunching, text analysis, image analysis, predictive analysis.
- Technology: What is needed to collect, store, and analyse the data and communicate the results.
- Skills and capacity: In-house or outsourced; any required training.
- Implementation and change management: Identifying key activities, changes, responsibilities.

Data Use Cases

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 - Structured and unstructured, external.
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- Technology: What is needed to collect, store, and analyse the data and communicate the results.
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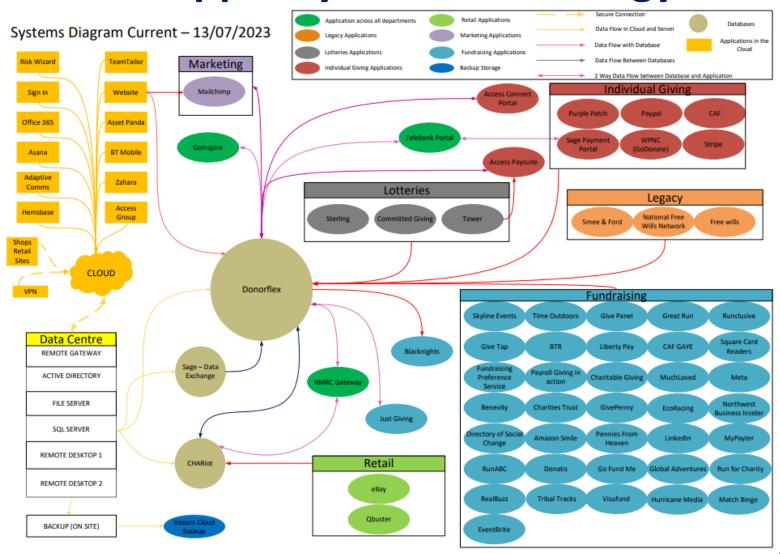
Key Lesson – don't just assume that your existing technology will support your data strategy....



Assess gaps with your existing technology architecture and business systems – will it support your data strategy?

Do you aggregate data flows directly into business systems like CRM?

Are my business systems able to hold the data I need to collect?



Create a Data Use Case on your tables

- What to include -
- **Objective**: What questions do you need answers for?
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- Implementation and change management: Identifying key activities, changes, responsibilities.

- FEEDBACK -



Event feedback

Please use the QR code to view and complete the online feedback form.







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020 4558 8070



Marketing Technology – a briefing for non-profits 25 April 2024, 2pm-3.15pm

Virtual Zoom event.
www.adaptaconsulting.co.uk/adaptaevents

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