Thanks for watching our

“Data Secrets You Need to Know” Webinar

In this toolkit we’ve pulled together the highlights of the presentation and included the “Start with the Why templates. We’ve also included links to useful resources and reference material to help you kick start your data journey.

“Numbers have an important story to tell. They rely on you to give them a clear and convincing voice”

- Stephen Few

Inspired to learn more? Smarter decisions start with smart data.
Get started on your data journey.

Email link to: **nick.kemp@wildbamboo.co.nz**

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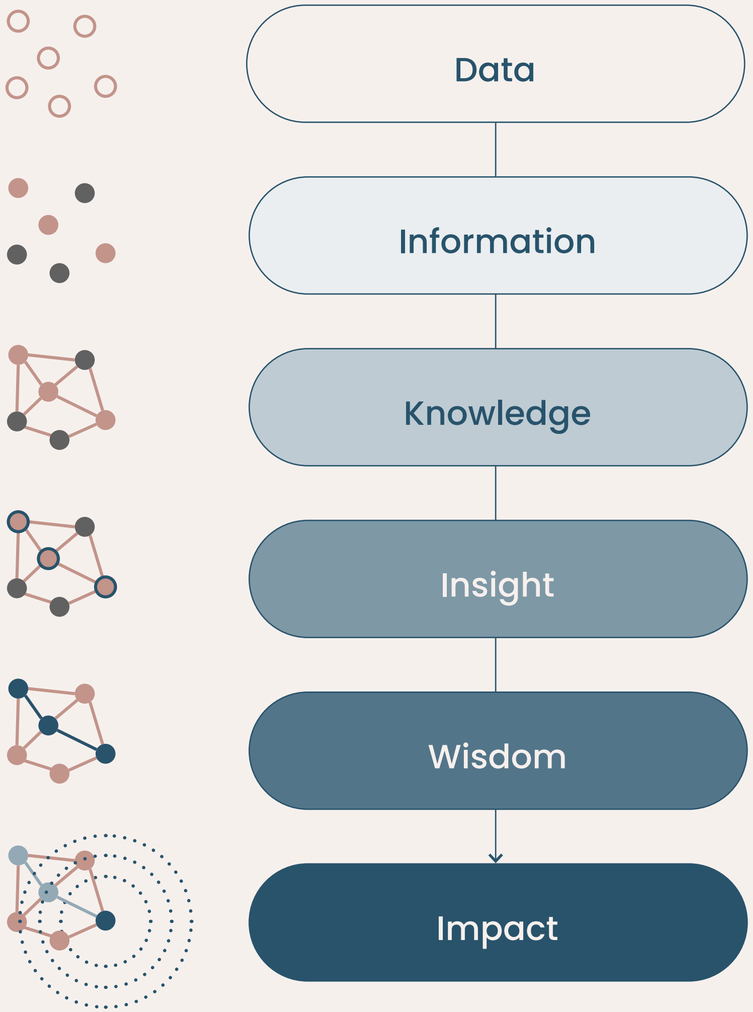
Joining the dots

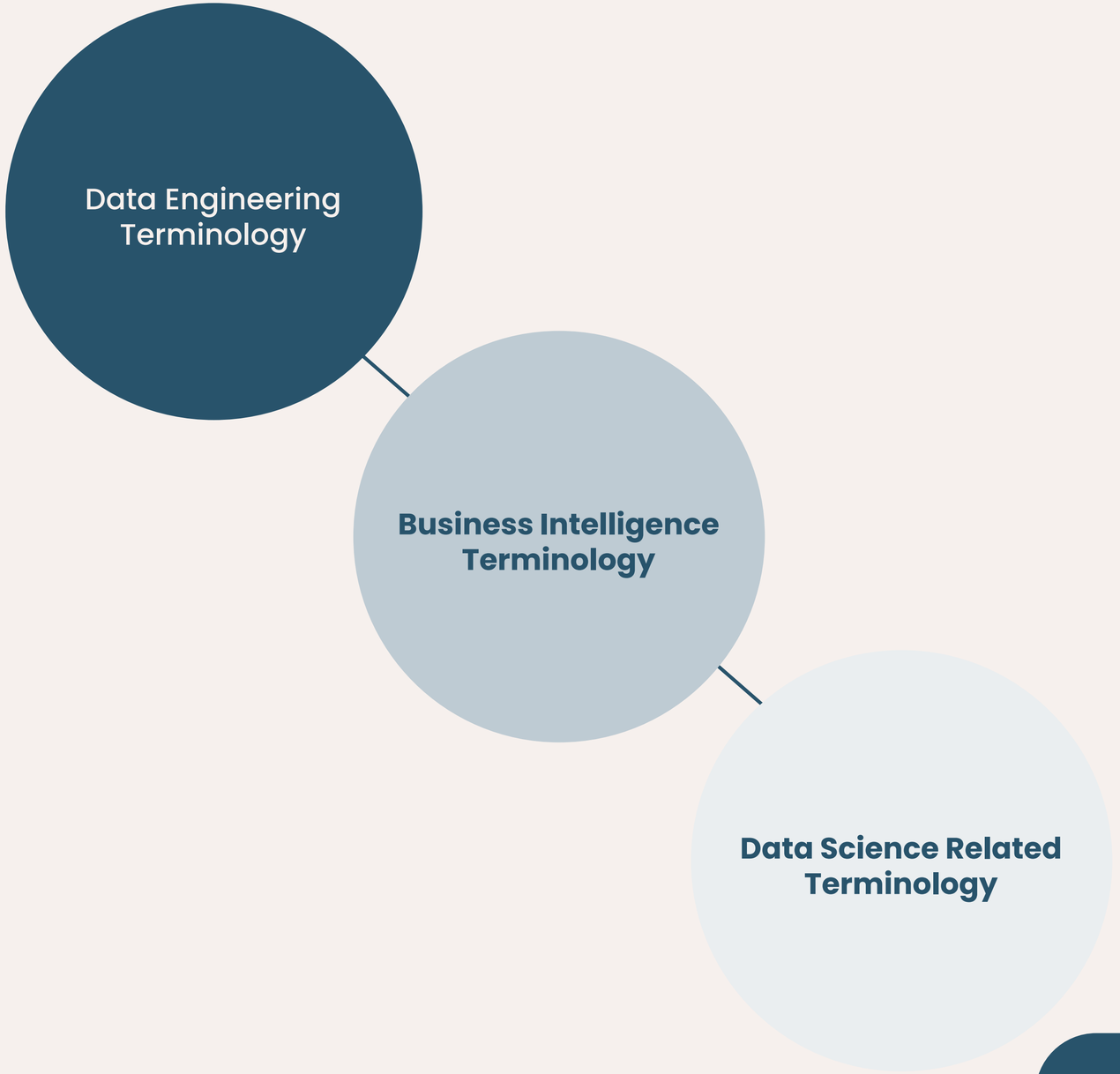
This diagram shows how understanding data can eventually lead to knowledge, insight and wisdom.



REF: https://sfadigital.blog.gov.uk/2020/08/24/joining-the-dots-people-data-and-impact/

Buzzword definitions

Like any profession, or discipline data analytics, data science and visualization has it’s own unique language.



Data Engineering Terminology

1. Data Engineering is a discipline that focuses on aspects such as the identification of data sources, collection, curation, and storage of the data. This is a precursor to all other disciplines that help get value from data.

2. Data Governance is a framework and a set of practices to help all stakeholders across an organization identify and meet their information needs. (Ref: Data Governance Institute)

3. Data Warehouse is a central repository of information that can be used to analyze and make more informed decisions. (Ref: Amazon)

4. Data Fabric is an architecture and set of data services that provide consistent capabilities, integrating data management across the cloud and on-premises to accelerate digital transformation. Gartner says that data fabric enables friction-less access and sharing of data in a distributed data environment. (Ref: NetApp, Gartner)

Business Intelligence Terminology

1. Business Intelligence is the discipline of analyzing and transforming data to extract valuable business insights to enable decision-making. Today, BI is typically used to refer to descriptive analysis and reporting.

2. Data mining is a process of extracting and discovering patterns in large data sets involving methods at the intersection of machine learning, statistics, and database systems. This term was coined around 1990 and quickly became a buzzword. (Ref: Wikipedia)

3. MIS Reporting (Management Information Systems) is the process of providing essential information to run the day-to-day business activities and monitor an organization's progress. This usually refers to descriptive and operational reporting.

Data Science Related Terminology

1. Data Science is the discipline of applying advanced analytics techniques to extract valuable information from data for business decision-making and strategic planning. It brings together fields such as data mining, statistics, mathematics, machine learning, data visualization, and software programming.

2. Artificial Intelligence (AI) refers to the ability of a machine to mimic the capabilities of the human mind, such as learning from examples and experience, recognizing objects, understanding and responding to language, making decisions, and solving problems. (Ref: IBM)

For more terminology visit:
Useful links to explore for more terms

bernardmarr.com/big-data-terminology-16-key-definitions-everyone-should-understand/

dataquest.io/blog/data-science-glossary/

Data Journey

From raw data to data-driven decision making

Every organization generates and gathers data, both internally and from external sources. The data takes many formats and covers all areas of the organization's business (sales, marketing, payroll, production, logistics, etc.) External data sources include partners, customers, potential leads, etc.

The term "Data Journey" refers to the various stages by which data moves from collection to use. First, data is collected and aggregated, and then stored. Later, the data can be used or even shared.

Most organisations struggle with how to take that data and use it to tell a story or make it meaningful to the audience.

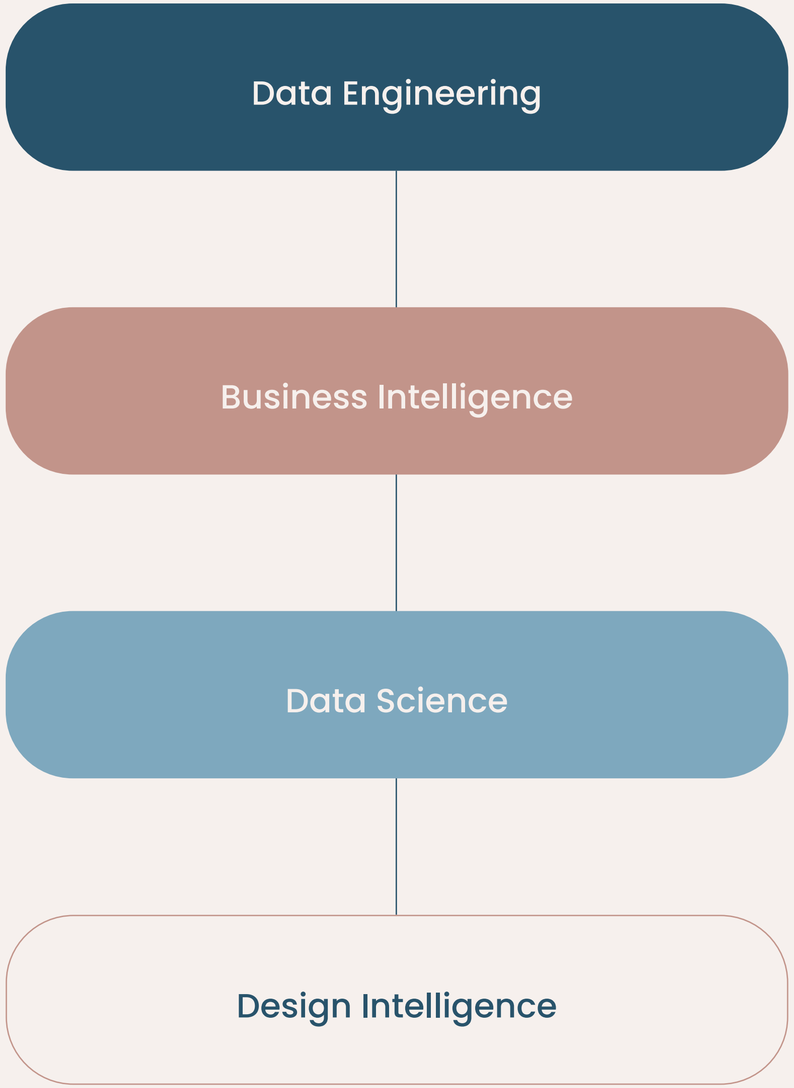
Here is a simple example of this raw data transformation in practice.

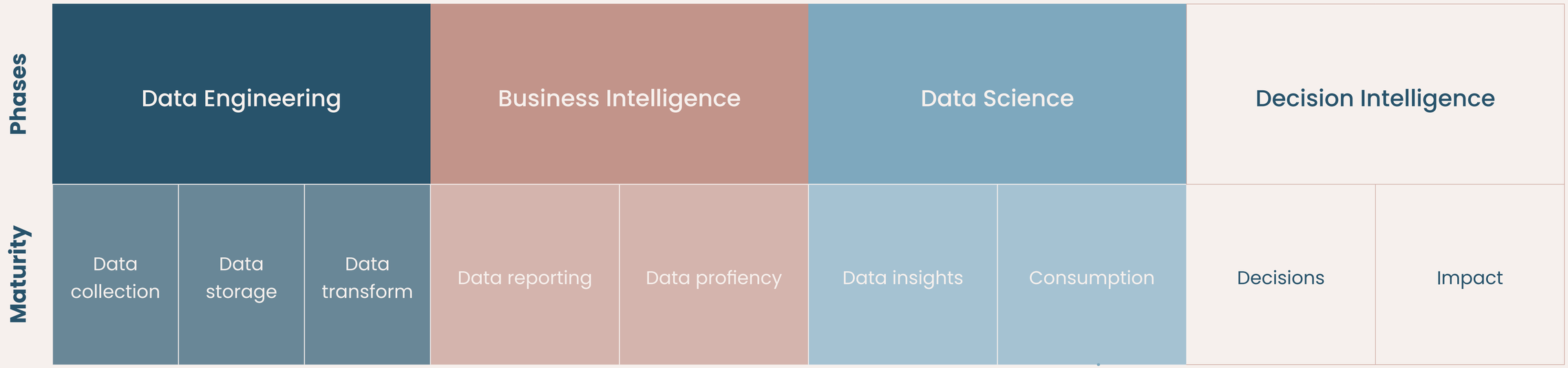
Given Meaning becomes Useful:	South facing traffic light on corner of Pitt and George streets has turned red
Given Context can be Synthesized:	The traffic light I am driving towards has turned red
Given **Insight** can be **Actioned:**	I'd better stop the car
Given **Purpose** can create **Impact:**	Traffic flows smoothly, accidents are avoided

Data lifecycle

How do we get from data to impact? And value from our data?

Data has a lifecycle...which can be broken up into four broad categories.





Ways to consume data

- Data visualisation
- Dashboard
- Narratives
- Data stories
- Infographic
- Videographic

Data engineering

Data Engineering is a discipline that focuses on aspects such as the identification of data sources, collection, curation, and storage of the data. This is a precursor to all other disciplines that help get value from data.

- Data collection
- Data storage
- Data transformation

Business Intelligence

Business Intelligence is the discipline of analysing and transforming data to extract valuable business insights to enable decision-making. Today, BI is typically used to refer to descriptive analysis and reporting.

- Data reporting
- Data proficiency

Data Science

Data Science is the discipline of applying advanced analytics techniques to extract valuable information from data for business decision-making and strategic planning. It brings together fields such as data mining, statistics, mathematics, machine learning, data visualization, and software programming.

- Insights
- Consumption

Decision Intelligence

Decision Intelligence is the discipline of turning information into organizational decisions at scale. Organizations and individuals can achieve it by applying data science within the context of a business problem by bringing together managerial science and social science disciplines.

- Decisions
- Impact

Data consumption methods

Data Consumption refers to the presentation of insights in a form that aids understanding and action. It is often achieved by adopting analytics techniques to identify insights and data visualization techniques to present the insights.

1. Data visualization - the graphical representation of information using visual elements such as charts, graphs, and maps. Aim to enable decision-making with the best representation of insights.
2. Dashboards and descriptive analytics - the examination of data or content to answer the question “What happened?”, typically traditional business intelligence (BI) and data visualization.
3. Narratives and storytelling - building a narrative around data and its accompanying visualizations to help convey context and the meaning of data in a powerful and compelling fashion.
4. Infographic or Videographic

Other terms

- Data project
- Data science maturity
- Data science value chain

The data lifecycle can be explored in more detail here.

https://blog.gramener.com/data-maturity-model-stages/

https://online.hbs.edu/blog/post/data-life-cycle

Data Science – the people

What is data science and what skills does it take to do it well?

“Hacking skills”

- Data Engineers
- Data Analysts
- Hackers

“Statistics”

- Statisticians
- Researchers

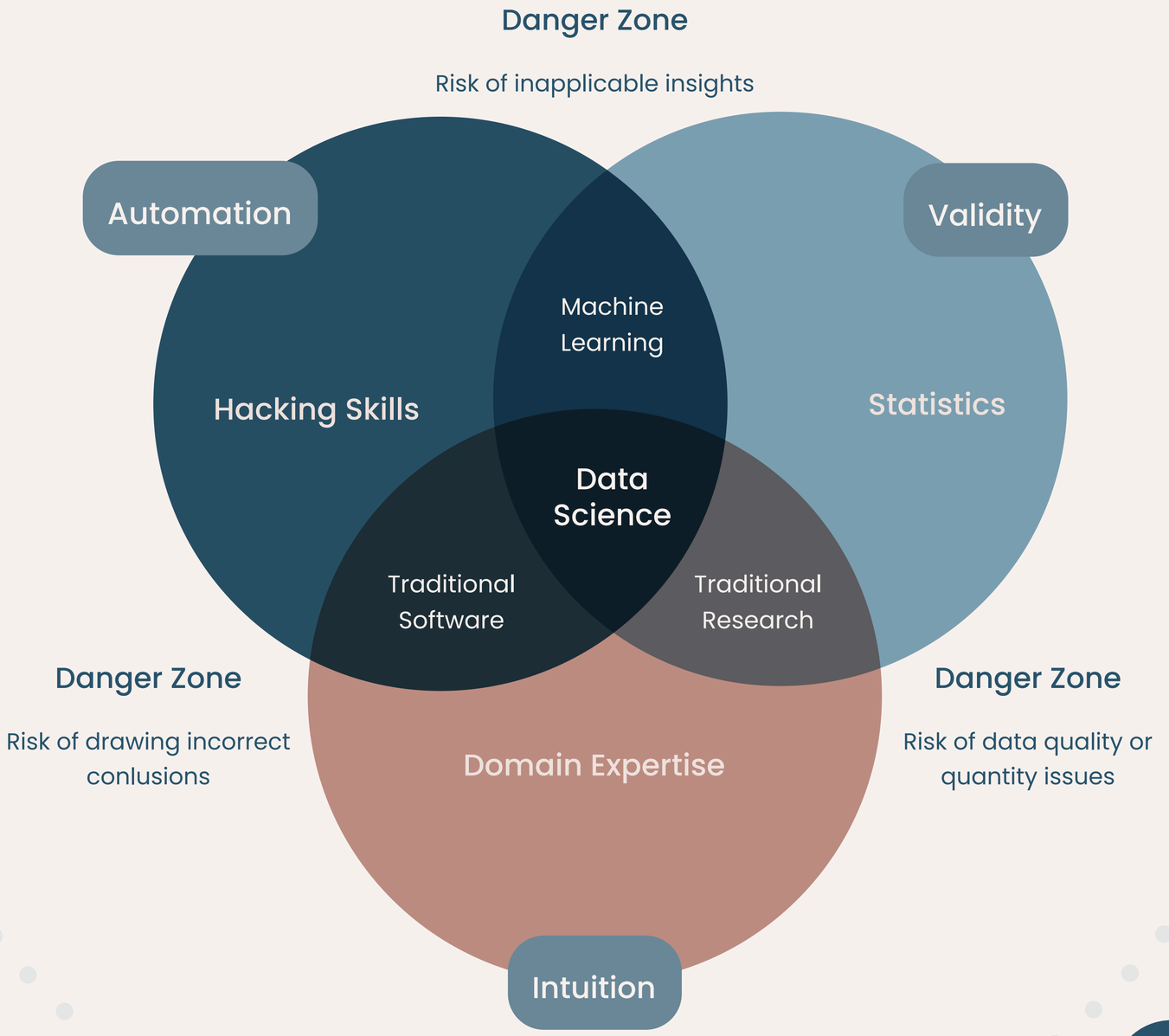
“Domain Expertise”

The Citizen Data Scientists:

Sometimes also referred to as an “armchair data scientist”. One of the increasing number of people who although not academically trained or professionally employed primarily as data scientists, are able to use data science tools and techniques to improve the use of information in their own field of study or work.

To find more about the data science “people” more information is available here.

http://drewconway.com/zia/2013/3/26/the-data-science-venn-diagram



Data Science - Maturity

The organisation

Bringing it all together at an organisational level...

Data “maturity” is a measure of how well a company can collect, analyse, consume and adopt data for decision-making across the organisation.

The organisation can reach high levels of data maturity when data has woven its way deep into the fabric of an organization.

Gartner says that most organizations evolve through five levels of maturity in their journey with data.

Here are the key characteristics of each of the levels:

1 **Level 1 –** Data & analytics capabilities are ad hoc and unplanned. The efforts are primarily siloed across the organization, often leading to multiple versions of the truth. There are pockets of transactional efforts and experimentations to extract business value from data.

e.g. financial reports, HR tools, project management tools, Excel spreadsheets

2 **Level 2 –** After tasting initial success with data science, individual business units pursue their initiatives. There are some attempts to formalize parts of the process, but the efforts are not standardized and are still restricted to siloes.

e.g. easy access to necessary business information (Recordbase, budget/ leave/fleet dashboards), dashboards via PowerBI, Tableau, Qlick et al,

3 **Level 3 –** This is the stage where a clear vision for data science emerges, with strong backing from business executives. Standardization starts setting into the teams with a combination of centralized and shared services offered across the organization.

e.g. forecasting costs, future staffing requirements or client volumes

4 **Level 4 –** Data science gets a boost with the addition of data leadership roles such as the CDO (Chief Data Officer) or CAO (Chief Analytics Officer). Teams are performance-oriented and operate with a clear business-innovation framework.

e.g. predict which services clients are most likely to use, and perhaps when or where

5 **Level 5 –** This is the stage where you embed data science in business strategy and it seamlessly translates into tactical and operational decisions. Your data science teams integrate with the business functions. Data-driven decision-making thrives as a culture within the organization.

e.g. predict the likely outcome of people using certain services, and perhaps by the person providing that service, predict where/what future need will arise

A Gartner report says that ***87% of organisations*** *were in levels 1 & 2 of data science maturity.*

Garner Maturity Model for Data and Analytics (D&A)

Level 1 Basic	Level 2 Opportunistic	Level 3 Systematic	Level 4 Differentiating	Level 5 Transformational
• D&A is ad hoc and unplanned. • Managed in silos. • Multiple versions of the truth. • Pockets of transactional efforts and expirementing.	• Intial success, new initiatives within business units. • Attempts to formalise. • D&A strategy is not business relevant or standardised. • Lacks leadership support; organisational barriers.	• Clear vision for ddata science emerges. • Leadership teams are D&A champions. • Standardisationstarts setting in. • Combination of centralised and shared services across the organisation.	• Addition of data leadership roles (CDO/CAO). • Performance orientated teams working to measurable outcomes • Clear innovation framework based around D&A.	• D&A is central to business strategy. • Semless translation into tactical and operationa; decisions. • Data science teams integrated with other teams/functions. • Data-driven decision-making thrives as a culture.

https://www.gartner.com/en/newsroom/press-releases/2018-12-06-gartner-data-shows-87-percent-of-organizations-have-low-bi-and-analytics-maturity

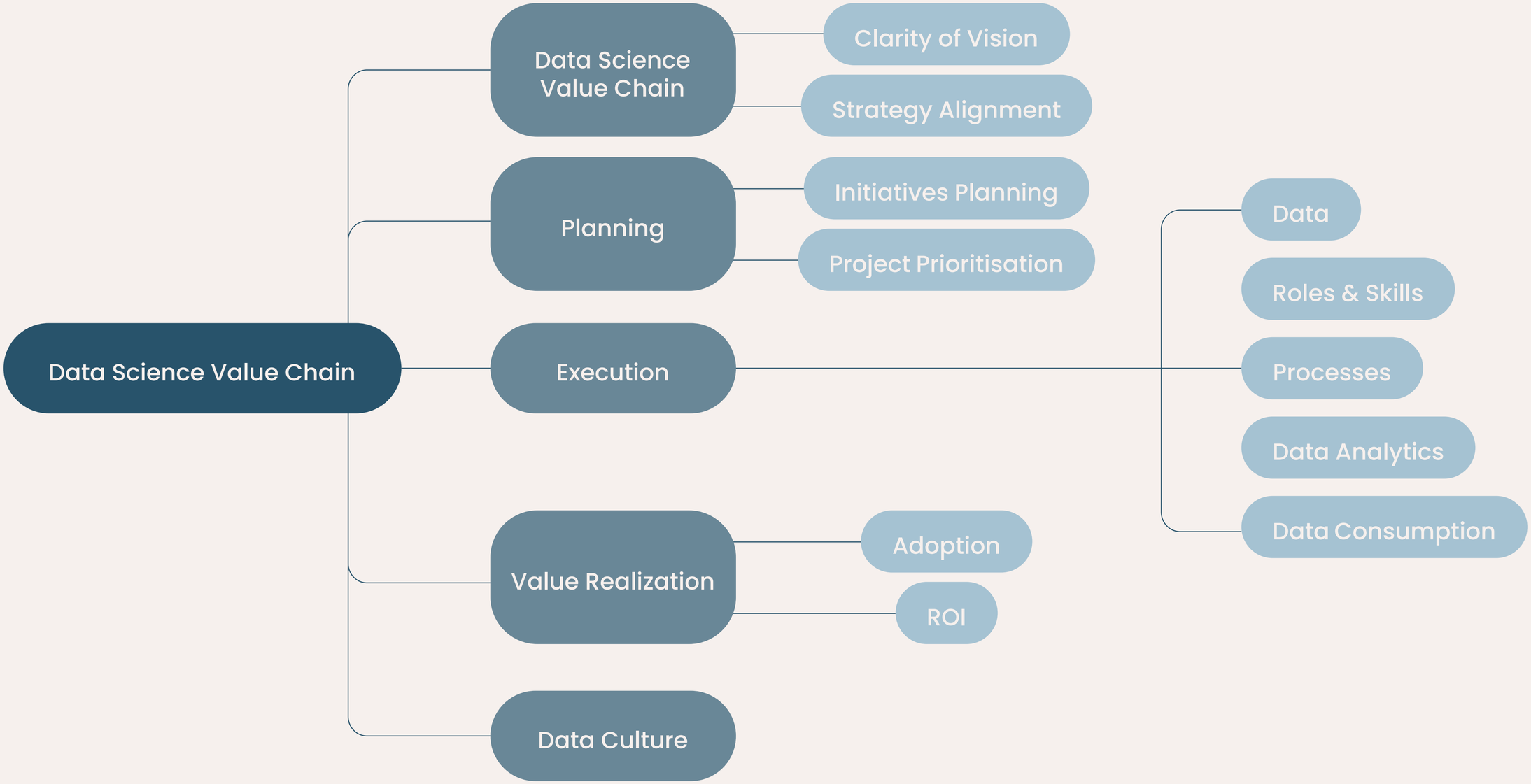
Data Science – Value chain

What do we need to do to create a valuable data resource?

Defining our data science value chain will help us do data science well and mature our data capabilities.

This starts with framing our vision for data science through to the evolution of a data culture, and perhaps beyond to the creation of data products.

- **Vision –** The clarity and focus needed to set goals for data science initiatives in the long term. The extent to which these goals align with larger organizational business strategies.
  - e.g., why does certain data and insights exist, along with principals and bigger ticket goals.
- **Planning –** Translation of data science goals into execution plans and a robust short and long-term roadmap. How to carefully pick the individual initiatives for impact and plan them out with milestones.
  - e.g., the combination of the governance and working groups and how they work together to identify priorities, and plan work.
- **Execution –** Implementation of the planned data science initiatives by assembling the right data science teams, tools, and processes. Access to pertinent, good quality data that is sourced, transformed and stored effectively. Ability to identify actionable insights by applying the right level of analytics. Enabling consumption of insights through data storytelling.
  - e.g., the ability for the data team to drive initiatives, and access to the right people, resources, and tools to deliver.
- **Value Realization –** Adoption of data science initiatives across the organization. Planning for actionability across milestones with robust measurement of ROI.
  - e.g., data projects realise their various goals, past successes become future wins, the organisation starts to share stories about data projects.
- **Data Culture –** Scaling of data initiatives across the organization. Promoting data literacy across all teams to enable users to make decisions using data.
  - e.g., the beast can’t be contained, everyone in the organisation becomes a data champion or activator…


Data Science Value Chain
Data Science Value Chain
Clarity of Vision
Strategy Alignment
Planning
Initiatives Planning
Project Prioritisation
Execution
Data
Roles & Skills
Processes
Data Analytics
Data Consumption
Value Realization
Adoption
ROI
Data Culture

Start with the Why

How to you get started on your data journey and start using the data your organisation holds to create change? How do you start creating “data visualisation” that make an impact and communicate your why?

It’s simple – you start with the why?

Our templates are a great way to sit down and really define your why.

A little about Wild Bamboo

We are a specialist charitable organisation with a passion for technology that makes a difference for people, now and in the future.

We understand that it is more than just data our customers work with, it is people's lives.

We believe in the power of data to create positive change.

We first developed Recordbase (our flag ship client data management system) in 2008 because we could see how social sector organisations needed to manage a lot of sensitive client data and report regularly on service delivery and outcomes; both internally and to funders.

Since then, we've also seen how that data can be used to accurately and effectively tell the stories of organisations and their clients, breathing life and detail into their reporting.

Together with our customers we harness the possibilities of the information they hold, so they can make more informed and timely decisions to provide the best possible support to your clients.

Tūtohi

Tūtohi is an online data platform intended to improve the translation, dissemination and uptake of health research. We facilitate connections and conversations between the intersecting realms of health research, policy, service delivery and the public.

We will improve outcomes and combat health inequity for tāngata whai ora across Aotearoa by making data accessible to the people who can effect change.

High quality data brought to life in the right way can help you and others see the world in a new light. This in turn helps you help those that need it most.

We partner with leading organisations and specialists in each area of interest to ensure our data stories are rigorous, engaging, and will contribute to meaningful change.

Wild Bamboo is the power behind Tūtohi and Recordbase Aotearoa's number one choice for client data management system for the social sector. We're a specialist charitable organisation with a passion for technology that makes a difference for people, now and in the future.

Recordbase

Wild Bamboo grew from the recognition that mental health NGOs in New Zealand needed to deliver on new reporting requirements in 2008. The team developed Recordbase, taking a by the sector, for the sector approach.

Since then Recordbase has developed a reputation as a secure, easy to use, reliable and efficient way for community organisations to manage their client data.

It's now being used in the mental health and addictions, supported employment, child and youth, refuge, justice, wellbeing, and disability sectors in New Zealand, Australia and the United Kingdom.

The team at Wild Bamboo constantly work with our customers to continually develop Recordbase, providing a world-class product with unbeatable service to match.

We can help you transform your data to help create change.

Talk to us today!

Data Secrets You Need to Know

Why am I making this data visualization?

What is the business objective?

- ◯ Inform an action
- ◯ Communicate a message
- ◯ Facilitate discovery and exploration
- ◯ Something else?

Who is my audience?

What do they know?

- ◯ Business
- ◯ Clinical or service delivery
- ◯ Data/analytics
- ◯ Something else?

What do they need?

Where will this viz end up?

- ◯ Screen
- ◯ Public
- ◯ Paper
- ◯ Internal

What action do I want to inform?

What is the key message I want to communicate?