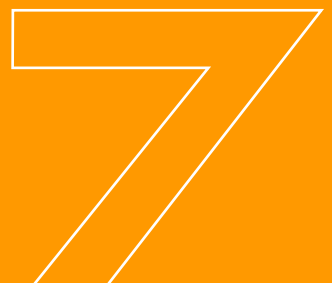# How to become
a data-driven
organisation

Introduction

Data is now fundamental to how organisations operate efficiently, compete effectively and navigate the future. If your teams are making decisions, creating products or servicing customers based on partial, aged or even incorrect data, you're at a disadvantage, especially when competing with disruptive, emerging businesses.

What's more, if you're taking action based on assumptions rather than actual data, the risk may be more existential.

Operations, customer engagement and innovation, have all changed. Data flow transforms the way organisations serve their customers, upsell and cross-sell products and services, and respond to regulatory or market demands for open data. You need to be able to access, leverage and master high volumes of high-velocity data.

Even if you don't act, your competitors probably will.

Making decisions or attempting to automate business processes based on partial or untimely data simply doesn't work.

In many organisations, data is collected and stored, perhaps used for reporting or strategic planning. Rather than being viewed after-the-fact, it should inform decisions and actions in real-time.

Whether you're monitoring your assets using IoT devices, proactively providing updates to customers or calculating risk on a real-time basis, data have to flow. Not only that, but if you want to capitalise on automation, machine learning or artificial intelligence, data need to flow in real-time, creating the feedback loops that form the basis of machine-driven operations. Making decisions or attempting to automate business processes based on partial or untimely data simply doesn't work.

Helping you deal with the unknown

The problem with legacy data is that it's usually collected, structured and stored in databases designed for a limited purpose or use case. This approach embeds a 1:1 relationship into the data. It makes it challenging to use it for other purposes, especially ones that are evolving or emerging. Enterprise data tends to reflect the organisational structure that created it. It is often silo-ed, internally focused and isn't customer-centric. It has usually been structured to report on what happened weeks or even months ago and doesn't help you influence what's happening right now. Emerging businesses don't have these legacy challenges.

The symptoms of a lack of data flow can include:

- large numbers of staff manually reconciling transactions,
- bottlenecks or blockers always prevent deploying or scaling automation,
- multiple departments working on the same customer value chain but being reluctant (or unable) to share data about it with other teams, or
- making decisions based on old, partial or inaccurate data, often as spreadsheets.

How data can be your differentiator

Being a data-driven organisation is key to thriving when the primary differentiator between competitors is the data they have and the decisions and actions they take as a result.

On an operational level, data needs to flow. It must be real-time (or near as it makes no difference) and available for analysis, cross-referencing, modelling and action. Data can no longer be something that is stored, static and structured as reports. It must support many-to-many relationships, be available for interrogation, analysis and cross-referencing with data from other teams, function and sources.

Data should be the foundation for providing your customers with a transformed experience. It should help you engage with customers as a single entity, just as your customers and your most disruptive competitors do. Investors are funding disruptors in almost every sector, and the critical pitch question is, 'how are you going to use your data?'.

Breaking down traditional silos

Today many organisations are a collection of related but disparate functions. Whether it's because of internal competition, risk management or legacy technology, they effectively work against each other. They're focused on optimising their process at the expense of overall business and customer value.

Some organisations may have built – or started to build – a data management platform. They deliver limited value, becoming a 'sink' for all data and only delivering reports and charts (business intelligence analytics). They don't power timely decision-making. What's more, they are usually the catalyst of internal debates about data quality.
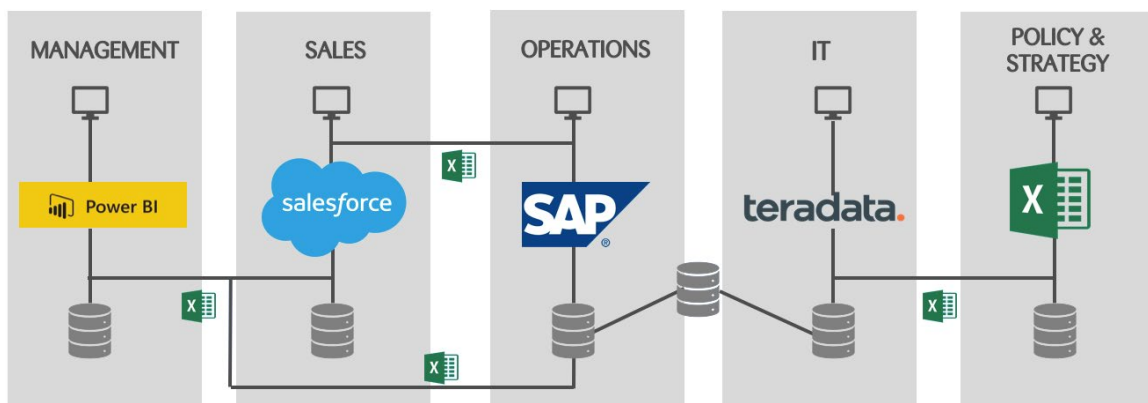

Fig 1: In most organisations, data is static and difficult to extract from applications that were never designed to share data across the enterprise. Data management platforms often make the problem worse.

In a data-driven organisation, information is accessible to all and open by default. The organisation can operate as a single system in real-time. There is a constant, high-velocity flow of real-time data from internal processes, IoT and other devices. Data is available in its raw, unstructured format, rather than structured or processed, rendering it partial or incomplete when other teams use it. The geospatial aspects of data can be elaborated to unlock new value.

Individuals, teams and departments will have the tools, skills and understanding to deal with data. Teams are aligned around creating value for the whole organisation, whether this means their incentivisation or how business cases are evaluated and approved. A data-driven organisation can see the value when investing in a particular team or department also delivers benefits elsewhere in the business. The teams themselves will understand this too, and it will inform their thinking.

When data flows, assets' status and performance can be monitored in real-time, leading to risk management based on data rather than assumptions or probability. Likewise, customer communication becomes responsive and even pre-emptive. Underpinning this change are the feedback loops and multi-directional flows of information that form the basis of automation, AI and machine learning. Without such feedback loops and data flows, such initiatives risk scaling-up inefficiency and error.

A data-driven organisation can be monitored, modelled and optimised as a whole system. It powers product development and innovation at a significantly reduced time-to- action and time-to-value.

Our approach is to create new capabilities that focus on customer value so your organisation can quickly start to see the value.

The journey to becoming data-driven

So how do you set about becoming a data-driven organisation? The answer is certainly not to define a target operating model (TOM) and create a multi-year strategic plan to deliver it.

Such data warehouse programmes are a standard response to the need for better engagement with data. They tend to mandate that teams and departments supply their data, in a specified format, to a central database.

However, this approach does not deliver the capability or timeliness required. It is, effectively, a strategic exercise that collates the data you already have. However, the process typically takes 2-3 years to complete. Our approach is to create new capabilities that focus on customer value so your organisation can quickly start to see the value. The goal is to understand, analyse, take action, and evaluate impact.

Focus on business and customer value

It's important to remember that, above all, you need to be focused on value. The TOM approach puts the focus solely on technology and attempting to build a data utopia. The reality is that you need to move more quickly, focus on the business drivers and create a culture that can change and change again.

A data-driven organisation doesn't have all the answers or a blueprint for success, but it does have the vision, the tools, information and data literacy to find them.

Leaders must nurture cultural change when it comes to data and investing in data initiatives

1. Data should flow, being available where and when needed, rather than being stored and static.

2. Timeliness is crucial. Having data available in real-time means that it can inform decisions and actions rather than just report on them after the fact.

3. Data should be available in its raw, unstructured form to prevent it from becoming partial or misleading. Your organisation needs to learn to work with all kinds of data in all sorts of formats, not waiting for 'perfect' data. This also provides traceability of manual corrections and derived data over time.

4. Your ability to use data should be multidimensional and geospatial, supporting many-to-many relationships and myriad data producers and consumers, rather than being structured only for specific, pre-defined purposes.

5. Leaders must nurture cultural change when it comes to data and investing in data initiatives. Individuals, teams and departments need to build their business cases based on cutting across internal silos, focusing on overall business value rather than optimising each department in isolation.

What are data pipelines, and how do they help?

Data pipelines are streams of continuous data - like the water in a tap - comprised of real-time data created by data producers and used by data consumers.

You have data pipelines when data is available to any (authorised) individual, team or department within your organisation that wants or needs to use it.

In data-driven organisations, information is no longer held in silos, reflecting a rigid and adversarial departmental structure. Instead, we use data to power whole system change, 'working backwards' from the customer. Data from one function can be accessed, interrogated and combined with data from other processes or even external sources.

Data pipelines are streams of continuous data – like the water in a tap – comprised of real-time data created by data producers and used by data consumers. They drive the feedback loops that help to operationalise automation, machine learning and AI. Such innovations will make your organisation more effective, competitive and smart but only with the right data flow. Partial, aged or inaccurate data will only serve to scale up inefficiency.
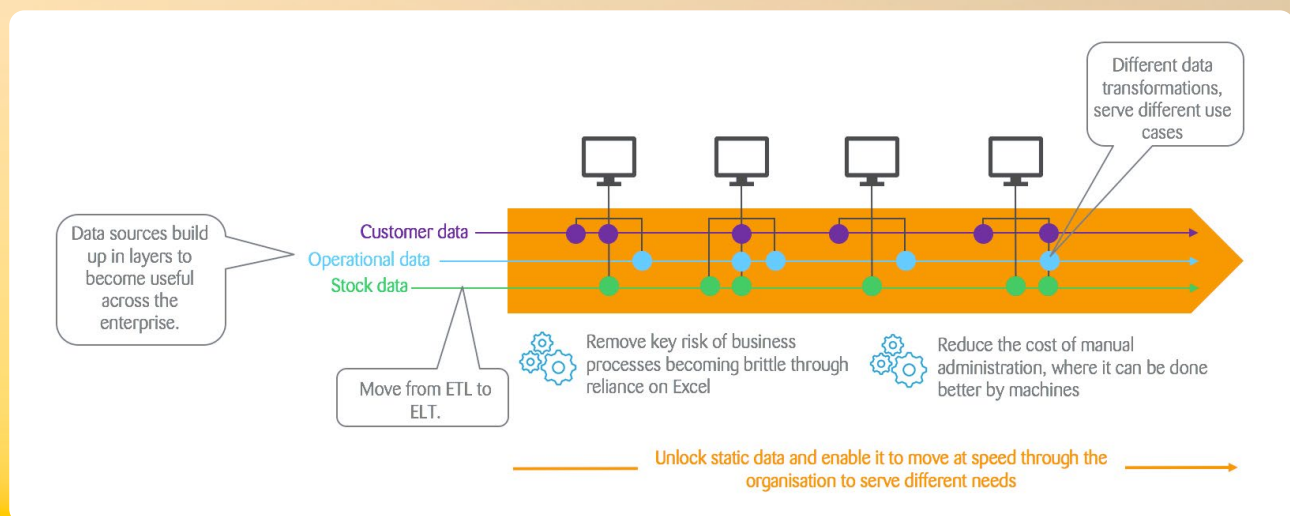

Fig 2: Data pipelines make enterprise data useful across the whole organisation to underpin better customer-facing digital services and aid faster, superior decision making within internal business processes

Delivering data-driven organisations

The key to making your organisation data-driven is to focus on action and progress. You should build capabilities and encourage teams to think in the same way as an emerging business that doesn't have legacy technology. Prioritise the delivery of value in specific scenarios that cut-across business functions and relate to customer value. Identifying these 'thin slices' allows you to focus on realising the value and showing results in months rather than years.

Once you have data pipelines established, you can ingest large volumes of raw, real-time data from the systems, devices, partners, and even customers related to business value areas that offer the most potential upside. This allows you to start processing, matching and linking the data to create value and feedback loops to drive action.

Leadership has a vital role to play in breaking down silos and encouraging collaboration.

1

Create a culture of open data and sharing between departments, with transparent and agreed meta-data, permitting your people to look at the broader value outside traditional silos.

2

Open up data flow between departments using real-time APIs and geolocation.

3

Update the legacy estate to enable flow to happen at scale and build the business case to deploy data-driven change even further.

WHY
Guiding Coalition
Vision

WHAT
Analytics Portfolio
AI & Data Strategy

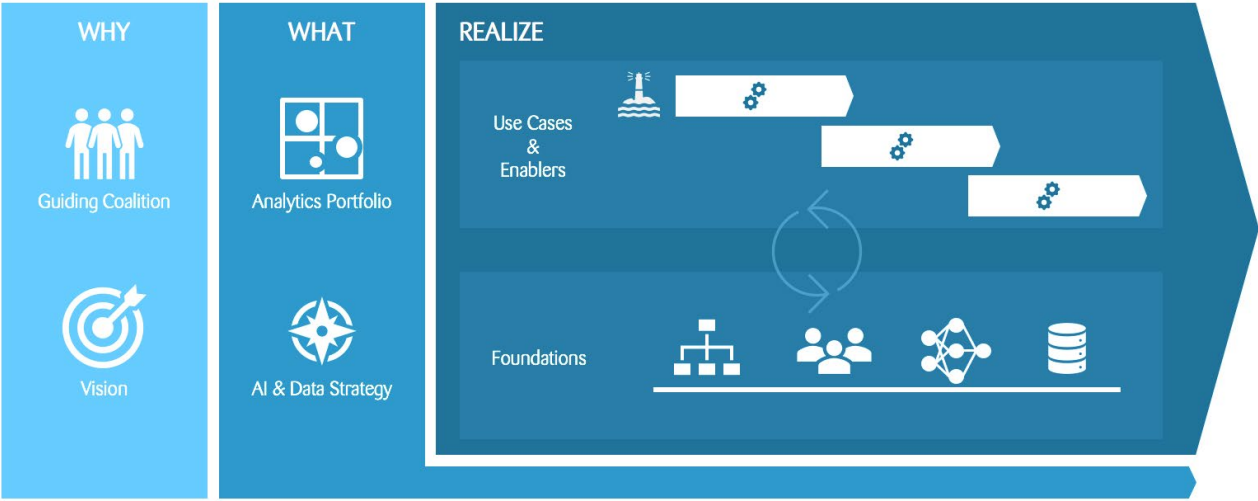REALIZE
Use Cases & Enablers
Foundations

Fig 3: Evolve a data-driven business one 'thin slice' at a time, where each slice serves specific customer needs and delivers return on investment in its own right

Zühlke: helping to create data-driven organisations

Zühlke is a global innovation service provider, delivering new business models, through engineering change at scale. We develop services and products, from initial vision through to deployment, production and operation.

We deliver benefit by driving increased profit through innovation, saving you money through automation or moving you to the cloud. We offer a range of services and approaches that address your challenges, including delivery, data engineering and data science. Our teams are focused on outcomes before technology, prioritising action and delivery over strategising. Successful data transformation is founded on moving quickly, delivering value early, and taking the view that shows the same disrespect for the status quo as your customers and most disruptive competitors.

Data pipeline

Data platform
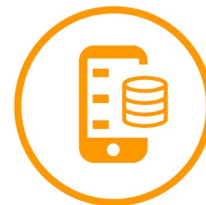
Data-driven mobile apps

Data-driven companies

If you would like to learn more about becoming a data-driven organisation, let's talk.

Further information

To learn more about data ecosystems, please contact Dan Klein at Zühlke.

Dan is a highly skilled and respected senior director with board-level experience, an energetic, pragmatic people manager – focused on results. An experienced project manager with a demonstrated focus and ability to deliver major products to market on schedule and on budget. Skilled at restructuring organisations to meet market demands and stakeholder expectations.

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