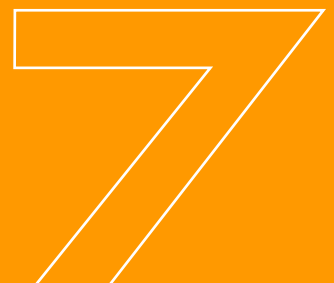


**What is a data ecosystem,
and how does it help you
deliver change across
connected organisations?**



Introduction

Data is fundamental to the effectiveness of most businesses today. It's also essential for those that oversee and coordinate groups of organisations. Whether you represent a regulator, government department or a commercial market, you need to be confident that you can implement policies and strategies that drive change. This is where a data ecosystem helps you to instigate, guide and monitor change.

Everything from tackling climate change to ensuring the liquidity of financial systems relies on encouraging collaboration with - and between - operators, partners and participants in a system. For those operating markets - utilities, financial services, insurance or healthcare, for example - continued success means having a clear view of reality and a sound basis for responding to it.

Both of these scenarios require accurate, timely and complete data to flow, so you can make decisions, measure progress and create shared understanding. We are even leveraging ecosystem data to create 'digital twins' or models that demonstrate the impact, encouraging organisations to work towards the common good.



Collaboration between organisations

It's challenging to deliver change or manage risk based on partial, flawed or aged data. However, many organisations are using historical assumptions and aged analysis to manage markets. If you continue this way, the risks will likely be more existential than just poor performance.

Data ecosystems support collaboration across and between organisations operating in the same space. Making data flow is essential for making collective decisions and taking effective action to reduce systemic inefficiencies. It helps all involved see the big picture and provides a clear, common basis for planning, delivering and measuring change.

Addressing overall challenges for regulators or commercial markets that oversee collaboration between organisations requires policy to be defined, implemented and monitored across the ecosystem of organisations, providers and policymakers.

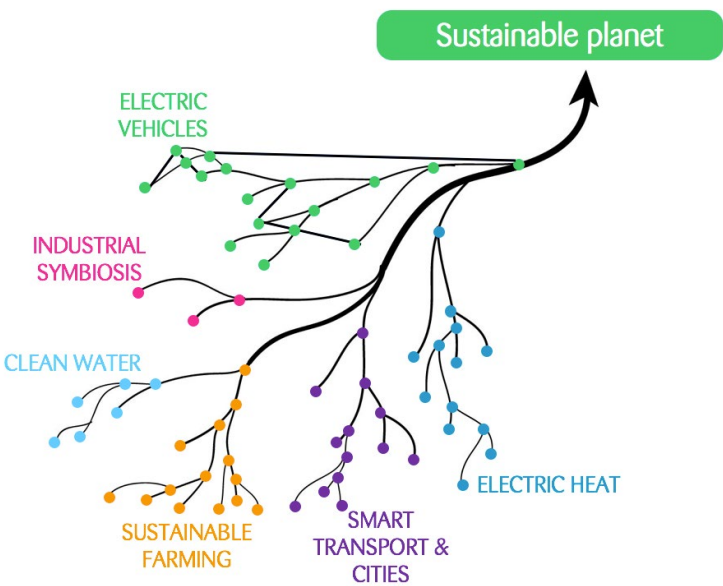
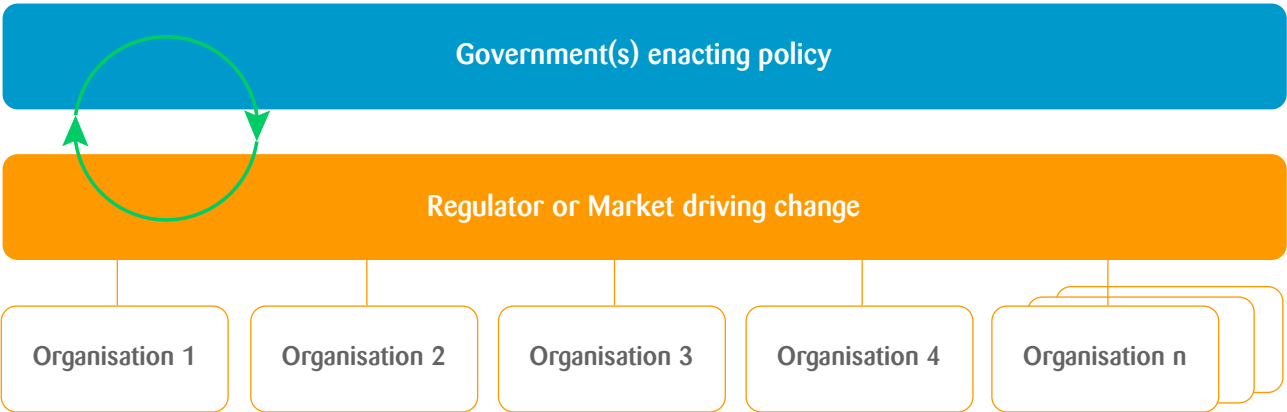


Fig 1: Data exchange between many organisations is a foundation for achieving ambitious policy goals by directing responses across many organisations with different objectives.



Legacy systems, tools and attitudes, and partial data can leave policymakers with a limited understanding of the impact of their decisions and policies. The consequences include wasted time and money, and opportunity cost. Depending on the scenario, the costs may be even more fundamental.

The consequences of assumptions and incomplete data

If governments cannot define, encourage and measure actions to decarbonise the economy, the results will be felt in terms of environmental impact.

If a regulator cannot create a consolidated, timely picture of liquidity across the financial system, there is a clear and present risk of economic turmoil when unexpected events occur. Currently, the sector has systemic inefficiencies in providing this data to the regulator.

The healthcare sector won't realise the potential benefits of proactive monitoring technology and AI if we don't join-up data about patients and the organisations that look after them.



Events like the COVID-19 pandemic, climate change and the subprime mortgage crisis illustrate just much potential exists for disruptive change. It highlights the need for monitoring, planning and implanting change across disparate organisations. In all cases, operating with partial or historical data or even assumptions limits your ability to prioritise the right actions, monitor their impact and react effectively.

Changing relationships with data

When your organisation's success depends on collaborating with other organisations, you have to become adept at ingesting, processing and working with high volumes of real-time data. Guiding, encouraging and, at times, demanding participants in your ecosystem contribute data that you can curate, analyse and share is crucial.

Too often, data is something that primarily reports on the past. When you need to drive change or manage risk across a complex ecosystem, data needs to inform and direct action. You also need to start informing your ecosystem with a 'digital twin' that can be interrogated and modelled to inform policy and action.

Building a data ecosystem

So how do you set about creating a data ecosystem? The answer is fundamentally not to build a data platform or define data formats and expect organisations to supply data to your specification.

It's usually challenging to change how data is managed within your own organisation. Expecting separate organisations to change will be slow and unlikely to succeed. A pragmatic approach to working with what is available is essential. Build on collaboration and cooperation and, in your role as ecosystem orchestrator, find alignment in data flows between organisations. Make progress quickly and make a case for investment and change based on delivered results and within the boundaries of any competition or anti-trust regulations.

Nine principles for creating a data ecosystem

To deliver data-led change, you have to direct technical delivery with a clear vision and an understanding of the value, behaviour and outcomes you wish to achieve. These principles will help to guide your journey to a data ecosystem.

- 1 Define and communicate the rules of engagement between organisations in the ecosystem. Your aim is for transparency, encouraging data collaboration (within the context of any competition or anti-trust regulations),
- 2 Data needs to flow, be available where and when it's needed, not stored and static. Timeliness is crucial, and having data available in real-time means that it can influence decisions and actions, rather than just report on them long after the fact,
- 3 Data should be available in its raw, unstructured form so that it doesn't become partial or misleading,
- 4 Your organisation needs to reduce time-to-value by working with all kinds of data, in all sorts of formats, rather than seeking to make it 'perfect',
- 5 Participants should be strongly encouraged to work on a 'presumed open' basis for data sharing. By doing so, data is shared by default and restricted only on an exception-by-exception basis – rather than vice versa. This is essential for accelerating collaboration,
- 6 Look for opportunities to benefit the participating organisations by allowing (non-sensitive) data to flow back to them,
- 7 Allow participants to see the whole picture (the Digital Twin) and the 'working out' so that you build a shared understanding and benefit from the peer review of observations and decisions,
- 8 Create shared tools and techniques for working with data across the ecosystem – with curated datasets, feeds, APIs, methods and algorithms, and
- 9 Define the governance for who is trusted and the scope of that trust.

When you need to drive change or manage risk across a complex ecosystem, data needs to inform and direct action.

Outcomes over technology

Above all, it's essential to focus on the outcomes required rather than the technology. Just defining data formats and the technical aspects doesn't deliver any understanding or value needed to support change. It is more likely to increase time-to-value and the likelihood of failure.

While individual organisations will have their own priorities and concerns, ecosystems have common objectives. Data ecosystems are designed to support the delivery of those objectives, helping the respective organisations see their priorities and operations in context. They act as information brokers, contributing data to the overall value chain and benefiting from data coming back to them. Ecosystem orchestrators have to put this symbiosis at the heart of their planning and action.

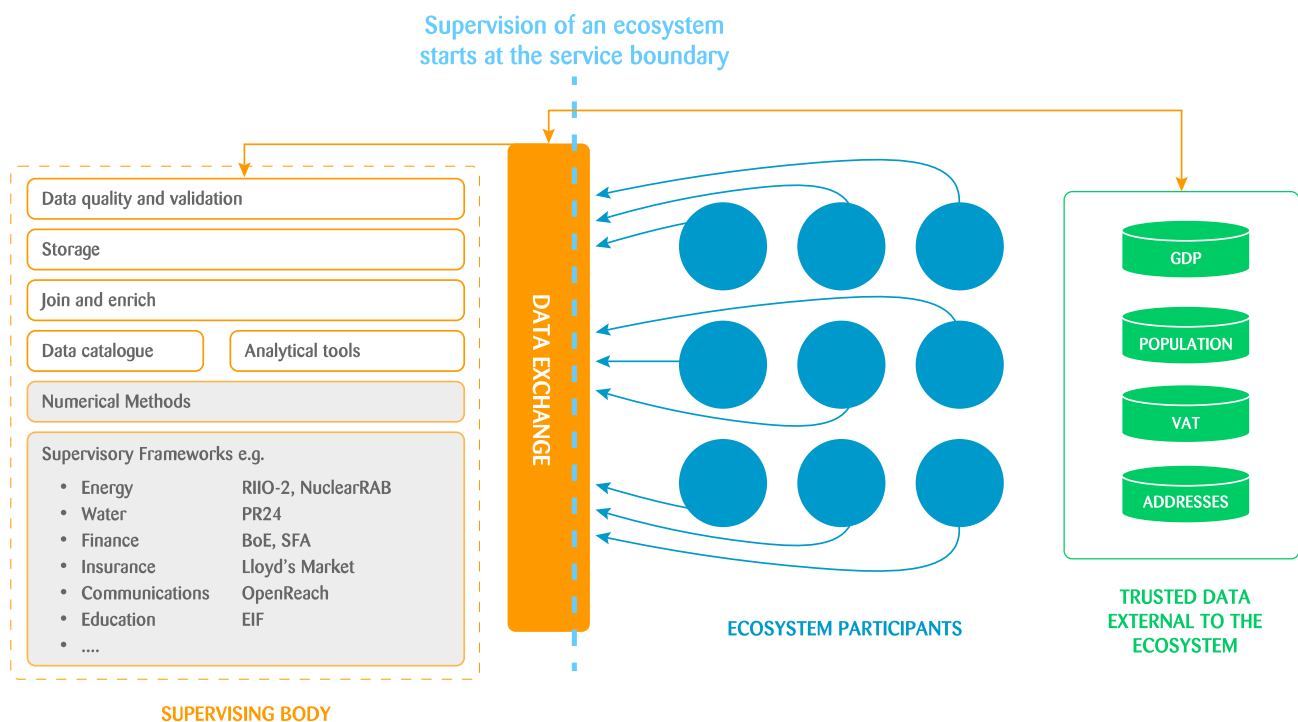


Fig 2: Data needs to be made useful in the context of supervisory frameworks that govern the wider system

The key is to move quickly
and seek, wherever possible,
to work pragmatically with
what already exists.

As a regulator or market, you need to start with the following:

1

**Work on the basis that
all data available within
the market is
'presumed open'.
Making progress quickly
is dependent on getting
data to flow.**

2

**Implement a triage
process to allow you to
restrict only specific data
attributes based on their
sensitivity (based on critical
national infrastructure or
commercial advantage,
for example).**

3

**Create a real-time
exchange of data
between the ecosystem
orchestrator and
the participating
organisations so that
participants can see value
in their Digital Twins.**

Zühlke: helping you create your data ecosystem

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
engineering



Data
science



Data
exploration



Artificial
Intelligence/Machine
learning

If you would like to learn more about data ecosystems, 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.



Dan Klein

Director, Data Solution Centre

Tel: +44 207 113 5306

Email: daniel.klein@zuhlke.com