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Engines of change:
Modern Trends in APIs

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Let's talk about APIs

The value of APIs, where APIs are heading, and how organisations across the world are using them

- What's the value of APIs?
- How are organisations using them?
- What trends do we see in and around APIs?
- How can you start to use them to drive positive change in your organisation?



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Why are people talking about APIs?

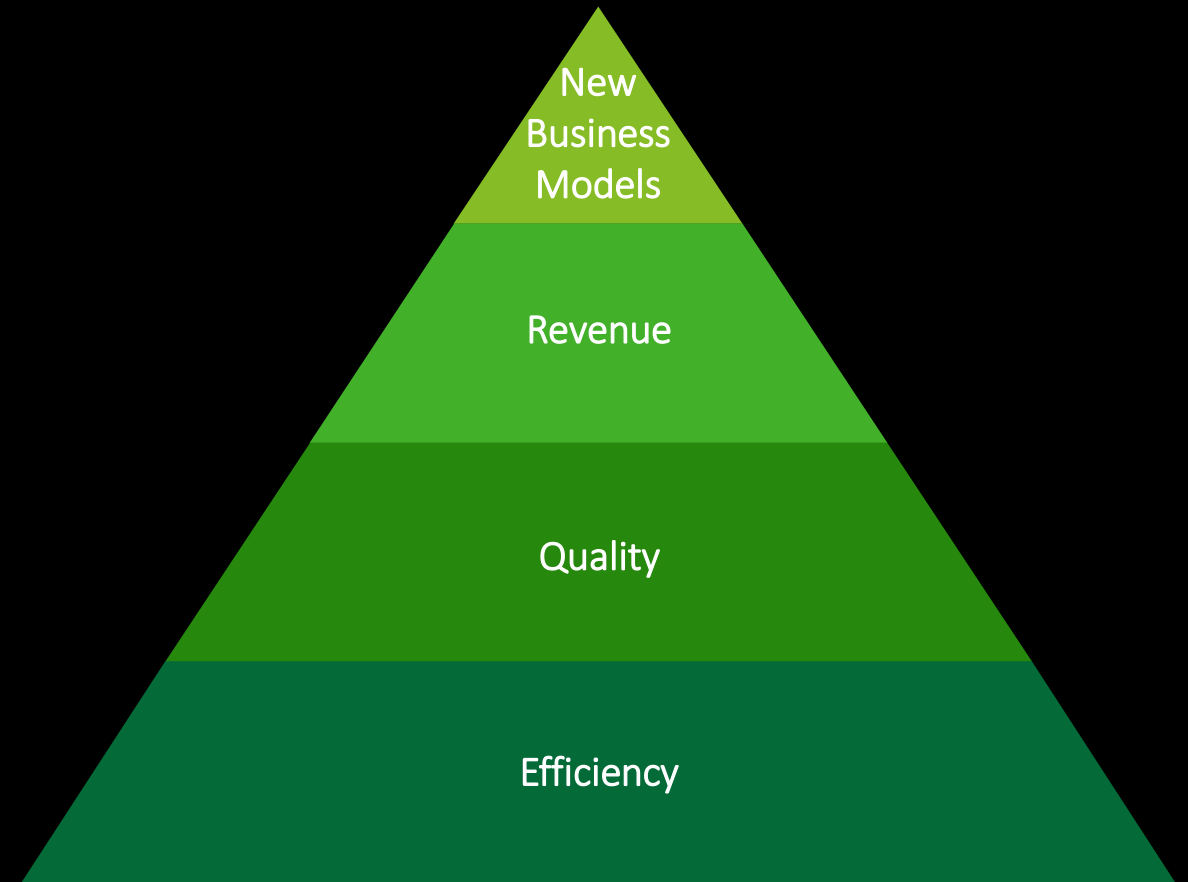
An API on its own is just a mechanism for defining how different systems share data; the value is created when you embed APIs in your organisation's mindset.



How do APIs create value for the organisation?

The more APIs pervade the organisation's DNA, the more disruptive opportunity and potential is created.

- In some cases, **whole new business models** are made possible through the use of APIs.
- **Revenue** can be generated by **extending reach** to new markets/segments or even creating brand **new revenue streams**
- **Quality** is improved by surfacing data from across the organisation, making it available where needed, to ensure **decisions** are based on the **best information** available.
- **Efficiency** can be gained through API-enabled **automation, self-service** and by designing APIs for reuse.



How are organisations using APIs to impact the world around us?

Various industries are leveraging APIs in numerous different ways to improve how they interact with customers, citizens and other organisations, meet regulatory requirements and invent new businesses



Powering the proliferation of consumer devices;
e.g. enabling omni-channel retail



Partnering with other organisations; ride-sharing/mapping apps, ticket bookings, airports



Brand new products/services built on APIs or leveraging others; e.g. consumer credit



Sharing public information; from police to transport and food safety



Creating competition in industry; “Open Banking” (EU PSD2)

Trends in APIs: Microservices & Service Mesh

Dismantling the monolith

What is it?

Designing software applications as a suite of small, composable services, each as granular as (reasonably) possible and designed to fulfil a single function.

What does it mean?

- Particularly useful in large organisations, allowing different teams to own services independently
- Services need to interact with others to be useful, and therefore allow others to interact with them. They need an interface. APIs are a great way to address this need – providing an **interface** for the Microservice **implementation**.



Trends in APIs: Multicloud

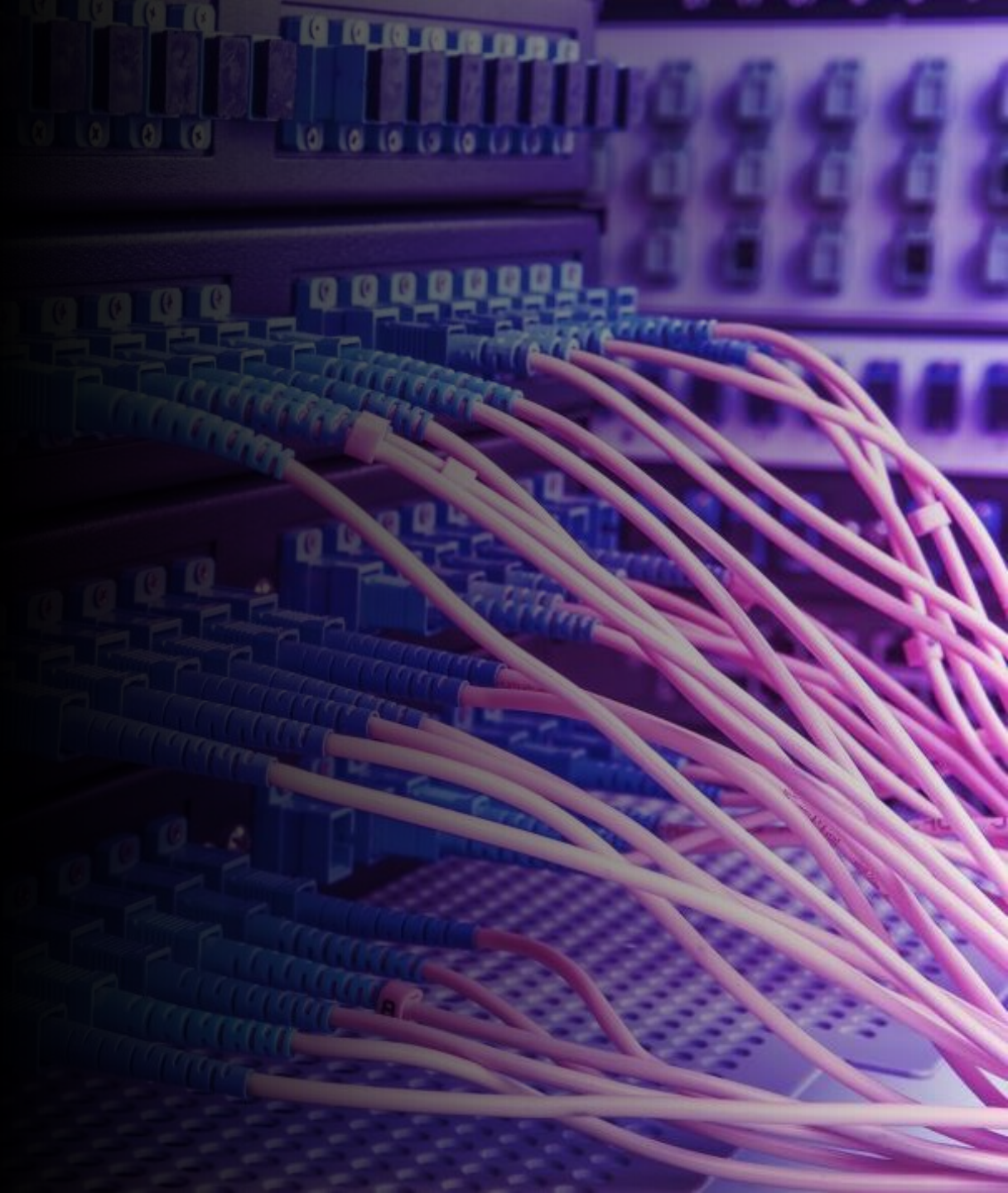
One-size doesn't always fit all

What is it?

Organisations are increasingly seeking to leverage hybrid-cloud topologies and/or multiple cloud platforms simultaneously; to leverage best-of-breed solutions or to ensure avoid over-reliance on a single vendor.

What does it mean?

- Traditional API Management has assumed a single API Gateway, but this assumption is being increasingly challenged.
- It can be difficult to apply consistent API policies to govern and protect APIs (e.g. rate limiting, authentication etc.) across multiple vendors.
- API Catalogue must aggregate multiple sources/gateways
- It is essential that organisations align their integration & API strategy to their Cloud strategy.



Trends in APIs: REST vs GraphQL vs gRPC

“Standards”, standards everywhere

What is it?

REST, a spiritual successor to SOAP web services, has become something of a de facto standard approach to implementing web APIs. Recently competing approaches have emerged, including GraphQL, gRPC and others.

What does it mean?

- Your API Strategy must consider the optimum approach for your use cases.
- **REST** is robust, proven, highly-scalable and with good adoption, but difficult to fully implement.
- **GraphQL** is well suited to returning exactly the information the consumer would like, including ‘related’ information, in a single request but tightly binding providers and consumers as well forcing re-invention of caching, authentication etc.
- **gRPC** is performant under load and well suited to IoT devices due to low power consumption, but has limited adoption and relies on language-specific implementations.



What sort of impact can APIs make?

Let's look at some case studies across different industries that illustrate the impact of APIs on organisations



Environment

- Community group in Australia using Raspberry Pis to monitor over 500km of rabbit-proof fence for breaks and open gates and alerts rangers through an API.
- Multiple parties involved in a case can co-ordinate and update details using APIs.



Leisure

- Excursion operator embraced APIs to make it easier for third-parties (e.g. online travel agents) to sell tickets on their behalf.
- Increased revenue by capturing 'no-shows' as sales.

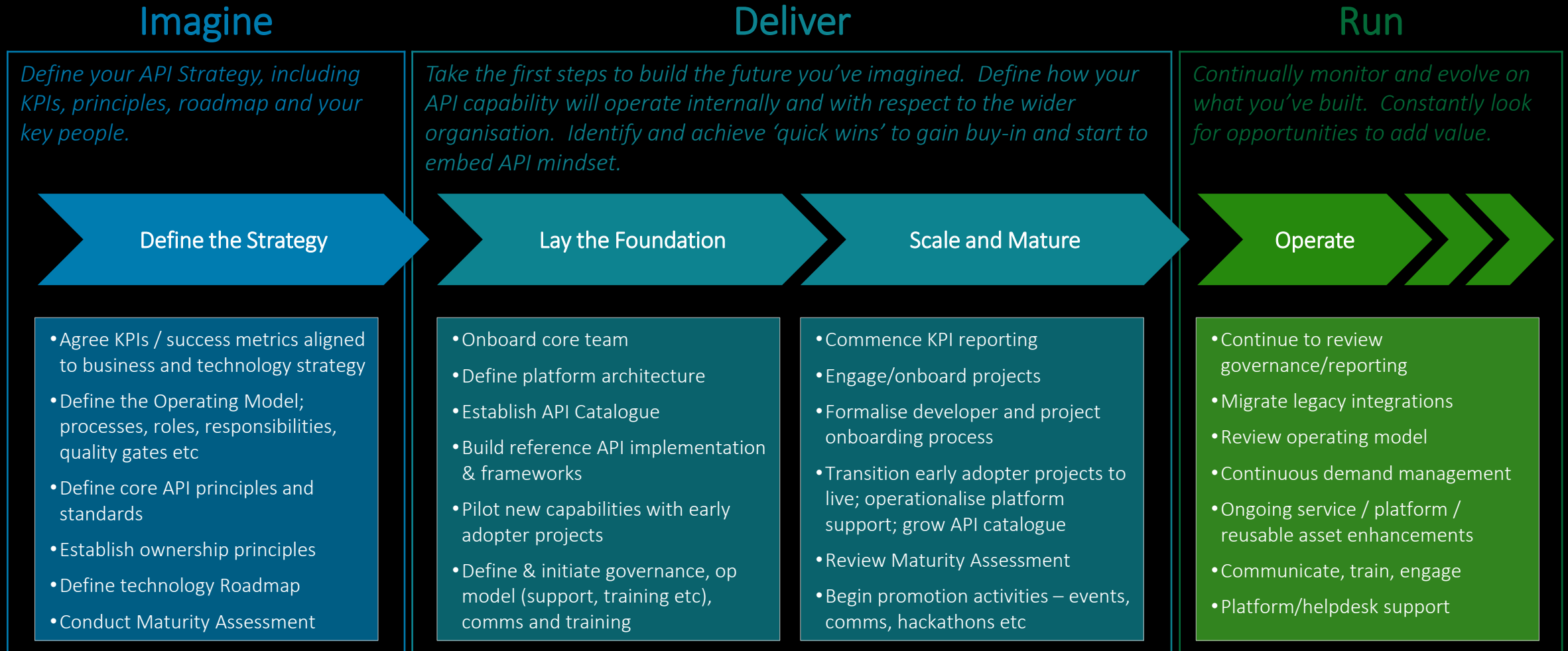


Banking

- Create a 'virtual' bank around a core of APIs
- Put the customer at the centre: Link core systems with cloud infrastructure, social media and CRM.
- Reuse the platform across multiple products, tailored to customer needs.

How can you achieve success with APIs?

An API Strategy Implementation Framework ensures you identify where you want to be as an organisation and how your API Capability supports this, then focuses on steps to help you reach that state.



What are the first steps and why are they so important?

The value returned to an organisation from an API Strategy is determined by the focus they put into it

Understand now

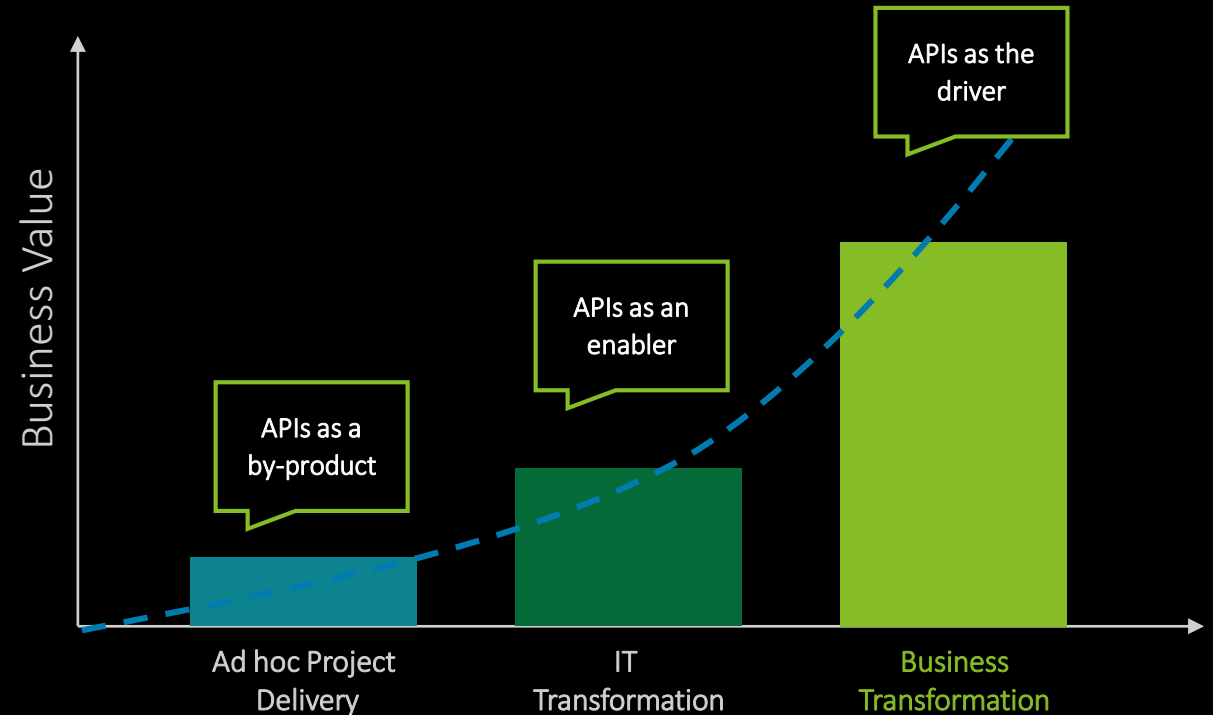
In order to figure out how to get to where you want to be, you need to understand where you are starting from. An honest maturity assessment reveals what capability exists already.

Create a vision for the future

It is critical to understand and articulate what benefits an API-first strategy to unlock data can bring to **your** organisation and how it aligns to the wider organisation's strategy and goals. This will demonstrate whether and why an investment in API capability is worth making.

Engage the right stakeholders

Active support from board-level stakeholders is vital to any successful strategic change.



Thank you!

Any questions?



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