

The road to Kubernetes... how far we've come and how we got here

BY PETER BELL

Kubernetes /koo-ber-nay'-tace/ or k(j)u:bə'nɛtɪs ([say what?](#)) : A project originally open-sourced by Google in 2014, the Kubernetes project is a 'portable, extensible, open-source platform for managing containerized workloads and services'.

But where did Kubernetes come from, and what difference can it really make to your tech landscape?

Let's look at the way technology has evolved over the past decade and, to make it less complicated, let's use the metaphor of a business, growing and becoming increasingly sophisticated to meet ever more demanding needs.

The Story/The Metaphor

In the beginning there was... The Startup.

Kate's Publishing House is a simple business. One person runs each core function, such as non-fiction, crime, marketing, finance, HR, IT, and the closely-knit team all work together in a single, open-plan office.

They talk to each other constantly, so the business runs perfectly while they are all performing well. But when Toby, the Print Coordinator, goes home sick, no one else can do his job.

They all start to run at half function while they compensate for his absence and are eventually forced to close the office completely until he has recovered.



The Tech Stuff

Like *Kate's Publishing*, not that long ago your business technology environment was probably close-coupled and fairly inflexible.

This monolithic set up held catalogue, basket, web content and customer data interdependently.

New application capability deployment planned maintenance or unexpected surges in traffic almost invariably resulted in an outage – either planned or unplanned.

The monolith was unwieldy, high risk, inflexible, and limited for scalability.

The Age of Extraction

Kate's Publishing Ltd has matured and now has dedicated talent pools, each focused on delivering excellence in their own field.

As demands on the business grow – more customers, more authors, and greater output – each department can be scaled to deliver more, and new departments can be added with ease.



The Tech Stuff

Microservices; the dawn of abstracted applications, running on dedicated servers, creating better flexibility and a greater opportunity to grow and scale services without impacting the wider user experience.

Microservices opened a world of possibilities including the ability to run services independently from each other, while presenting a cohesive and seamless user experience.

Journey to the Cloud

Kate's business has gone global, and now has locations across the world.

Each local office has its own set of departments, each responds to local customers needs, and is culturally, linguistically and physically aligned with the local market.

The Tech Stuff

The cloud has brought with it the flexibility and resilience of failover and almost infinite scalability. Now your servers can be wherever you need them, your apps can be replicated and distributed across multiple locations. Your content can be near your customers, your data can be protected.

Hosting your services in the cloud can deliver a more consistent and relevant user experience, with automatic failover and load balancing, and localised content and language offerings. And you don't have to be an international business to benefit.



The protection of Containers

It's Christmas and, this year, *GKP Plc* have published the world's number one selling non-fiction book 'Jamie Oliver and Nigella Do Christmas Lunch Together' and the number one fiction book 'Detective Bell And The Case Of The Missing Cat'.

To cope with demand Kate creates standalone departments for each publishing speciality 'Crime' 'Food and Drink' and 'Romance' etc.

She gives each specialist team their own HR, Finance and Marketing Departments – an operating base.

Using this model, as markets emerge in new territories Kate can deploy a complete, standalone business for each genre with little to no impact to the rest of the business.



The Tech Stuff

Cloud computing still carries a risk. Programmes can be sensitive and, without precisely met dependencies, they can break when released code fails in a new environment.

Containerisation addresses this issue by packaging services into 'lightweight' containers that are highly portable and, wherever you put it - because it has everything it needs with it - it can run, slightly more securely and often less resource intensively.

Scaling your services is also even easier with containerisation. Ramping up for volume can be as simple as rolling out appropriately packaged services to more cloud servers.

Welcome to The Kubernetes Way

GKP Plc is now large, complex and has become hard to manage. Operations across the business are not consistent, it's hard to get a clear single view of KPIs and almost impossible to spot opportunities to improve efficiency. There are lots of people doing the same job and company is in trouble.

CEO Kate Dickens and her board rollout a new operating model across their global business to standardise the way they work and schedule jobs across all the local offices, they set a companywide brand vision and create a common KPI reporting dashboard across all departments.

Efficiencies present themselves; roles get streamlined, everyone falls in line, *GKP Inc* thrives.



The Tech Stuff

Kubernetes provides a layer of abstraction, so you don't have to deal with all the complexities of dealing directly with all your microservices. It provides a framework to allow you to deal with all your distributed services in a consistent, resilient way.

Through a Kubernetes master node, you can manage scheduling, distribution, scaling and failover and deployment scheduling across your platform – however complex.

In short, Kubernetes is a head office overseeing and managing the macro behaviour across your application landscape with you, as CEO, providing the overall vision.

Kubernetes handles complexity for you, so you can focus on the bigger picture

Do you want to find out more about Kubernetes, The Cloud, or maybe want to talk about how we can help your burgeoning Publishing business?

If you want to chat, contact us at enquiries@amido.com