Platform Engineering for Developers, Architects, And the Rest of Us (AI Agents! 🤖)

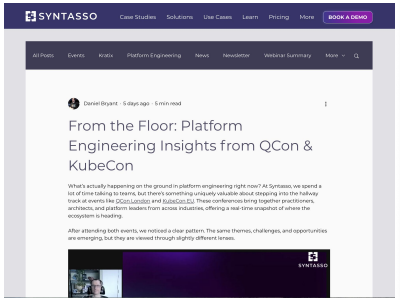
Daniel Bryant
Developer, Platform Engineer, and Product Marketer

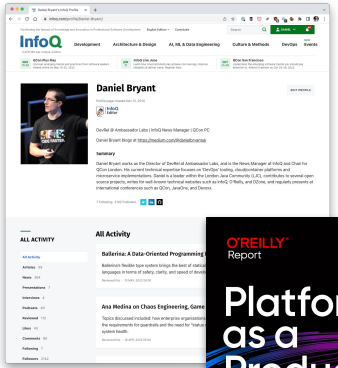
SYNTASSO

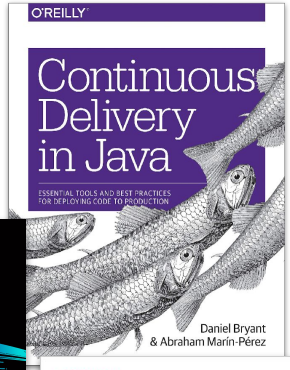
tl;dr

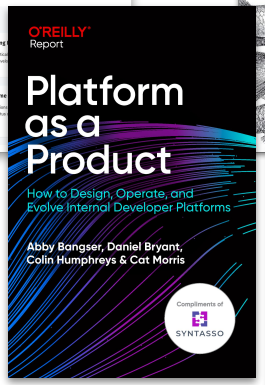
- AI increases the demand for platforms
- Platform architecture is as important as software architecture
- Think three layers: app, platform (capabilities), infra
- Measure platform impact: time to provision, upgrade, and offer
- Build platforms to maximise flow of value

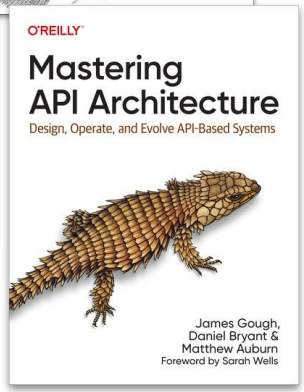
@danielbryantuk









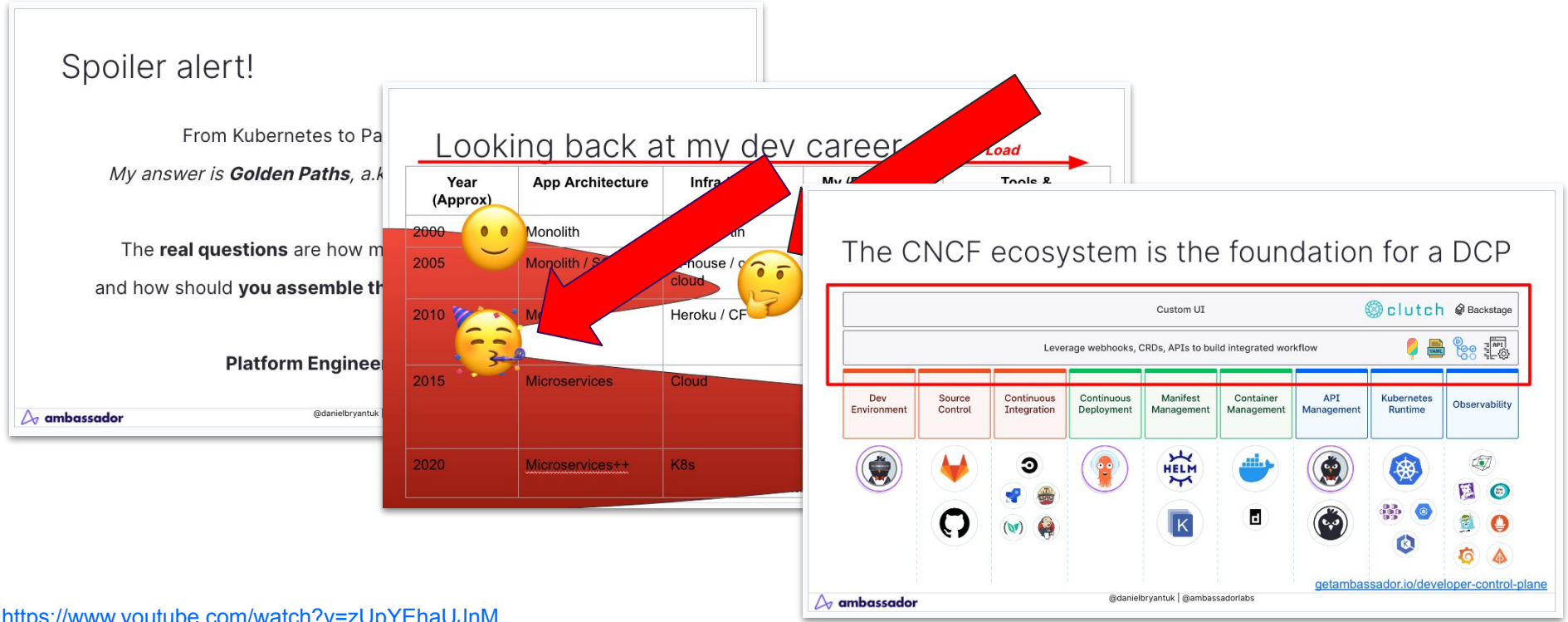


linktr.ee/danielbryantuk

Previously, at...

PLATFORM CON 22

From Kubernetes to PaaS to... err, what's next?



https://www.youtube.com/watch?v=zUpYEhaUJnM

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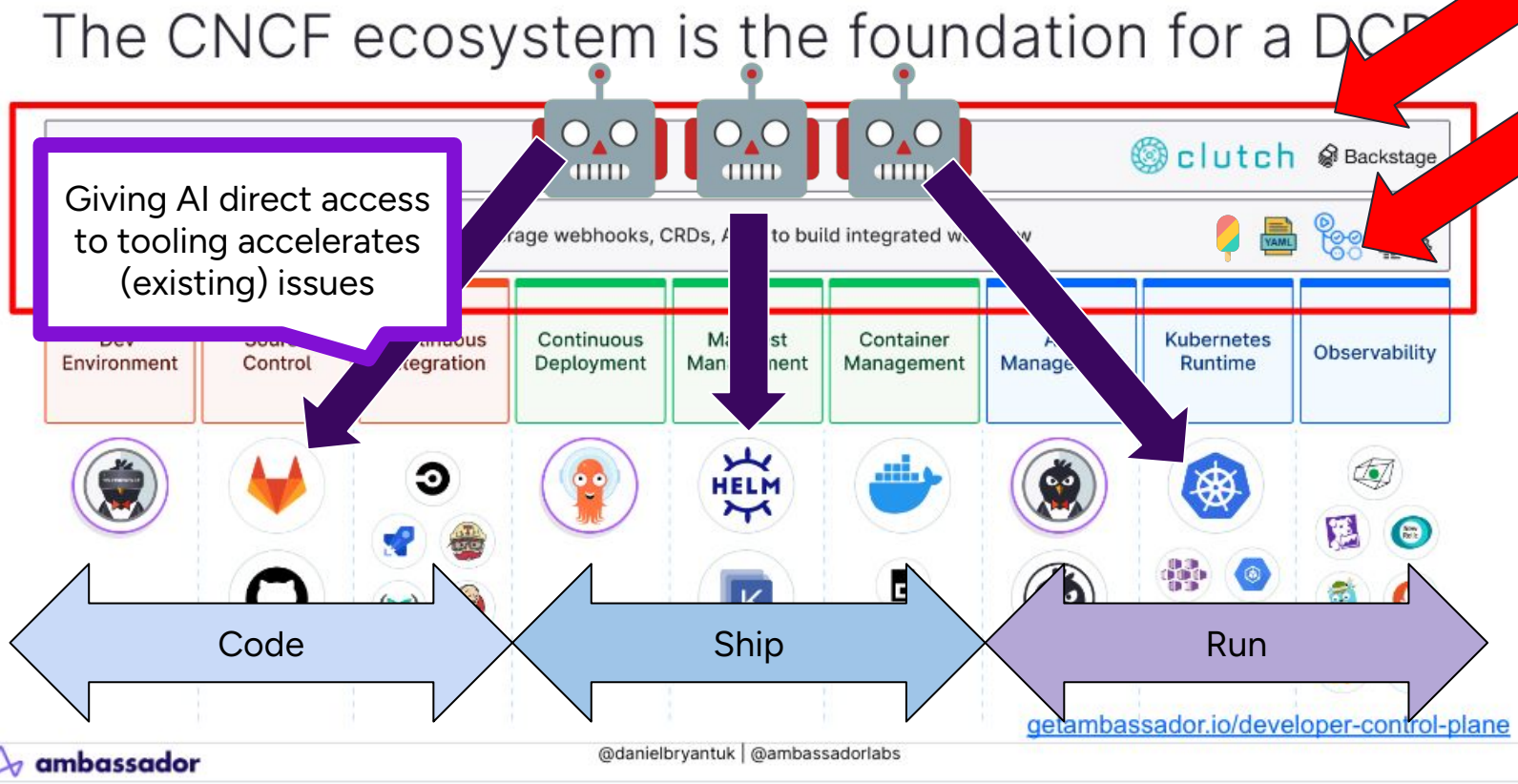
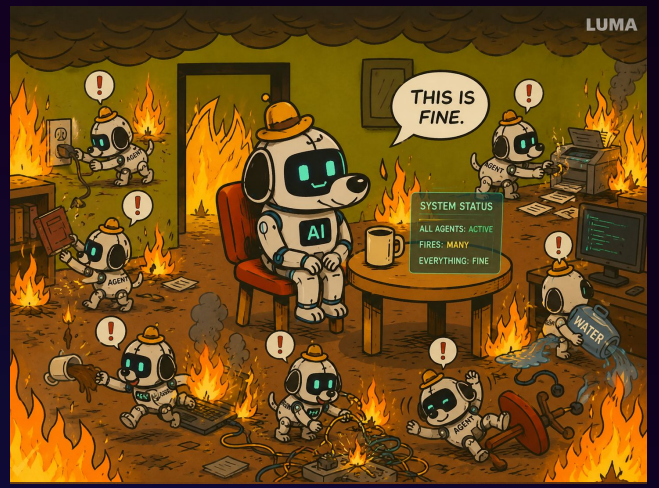

The CNCF ecosystem is the foundation for a DCP
Giving AI direct access to tooling accelerates (existing) issues
clutch
Backstage
Continuous Deployment
Container Management
Kubernetes Runtime
Observability
HELM
Code
Ship
Run
getambassador.io/developer-control-plane
ambassador
@danielbryantuk | @ambassadorlabs

AI increases the demand for platforms because it accelerates software creation faster than organizations can safely operationalize it.



h/t Andy Burgin

The “what” of platforms 

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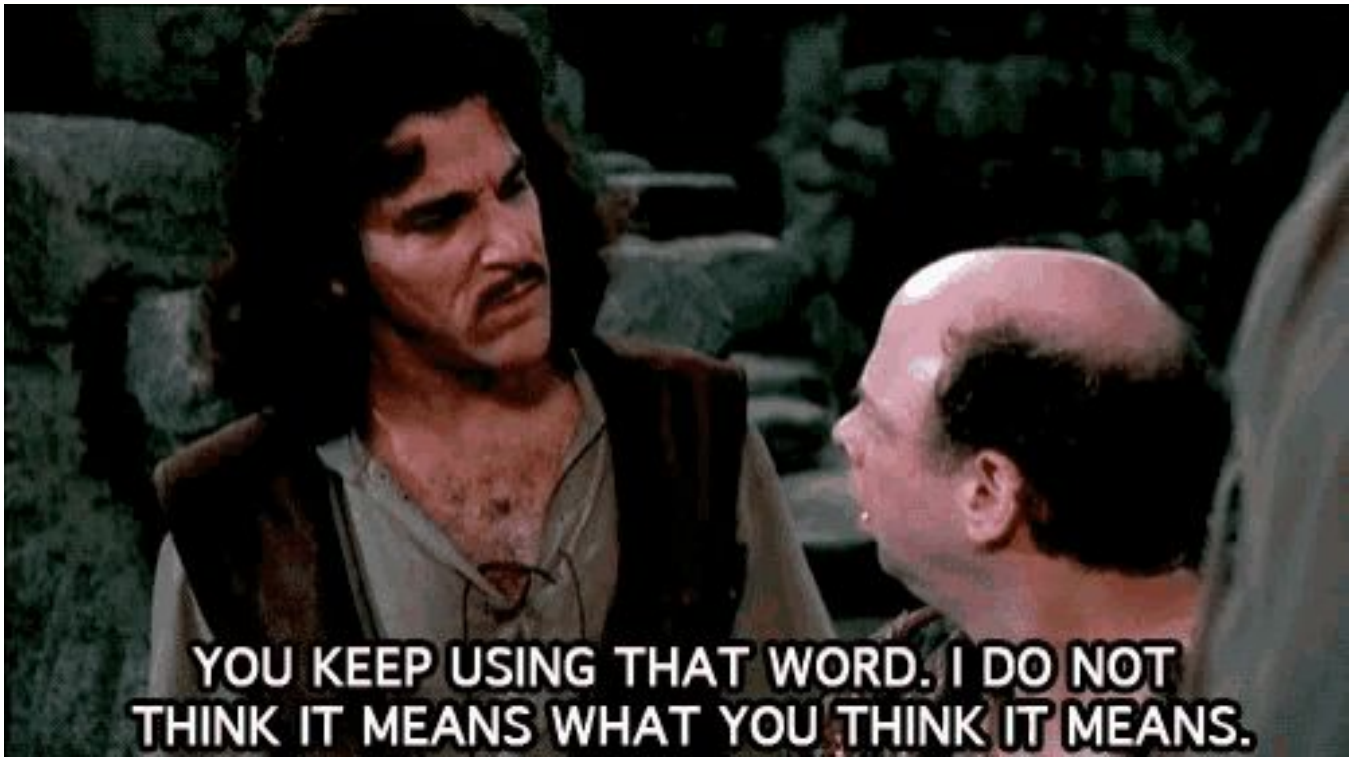
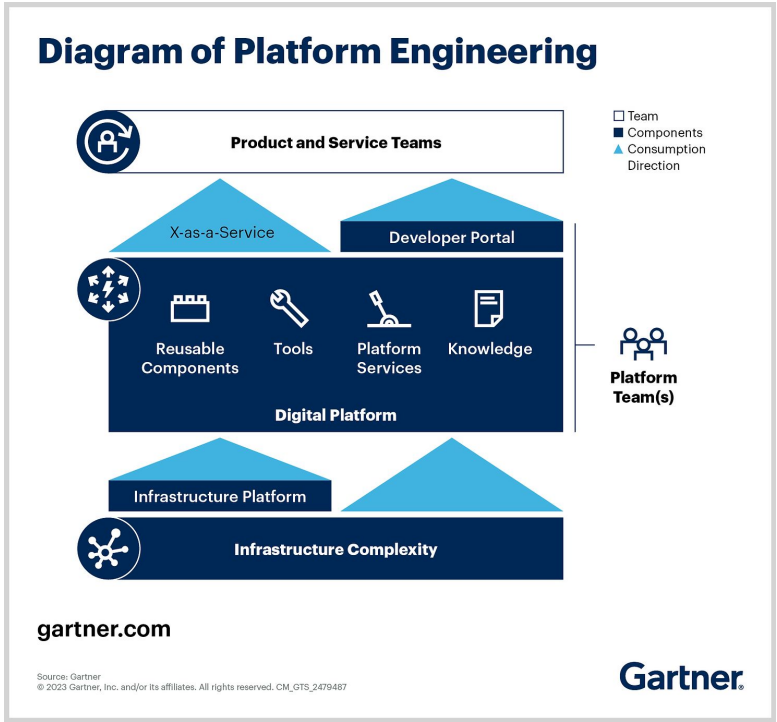
Platforms, platforms, platforms...



Gartner: What is platform engineering?

"Platform engineering **improves developer experience** and productivity by providing **self-service capabilities** with **automated infrastructure operations** .

It is trending because of its promise to optimise the developer experience and accelerate product teams' delivery of customer value."



https://www.gartner.com/en/articles/what-is-platform-engineering

What is a platform, anyway?

“A digital platform is a foundation of self-service APIs, tools, services, knowledge and support which are arranged as a compelling internal product. Autonomous delivery teams can make use of the platform to deliver product features at a higher pace, with reduced coordination.”

Evan Bottcher

martinfowler.com/articles/talk-about-platforms.html

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Evan Bottcher

martinfowler.com/articles/talk-about-platforms.html

The “why” of platforms 🏗️

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What are the goals of your platform?

- **Go faster:** Platform teams need to provide “everything as a service” to help rapidly and sustainably deliver value to end-users
- **Decrease risk:** Teams need to automate manual processes in reusable components
- **Increase efficiency:** You need to manage and scale your digital platform and resources as a fleet

The platinum (platform) metrics

Time to design, create and offer a new platform capability

Time to get (provision) an instance of a platform capability

Time to (controlled) upgrade all instances of a platform capability

Platform architecture 🏢

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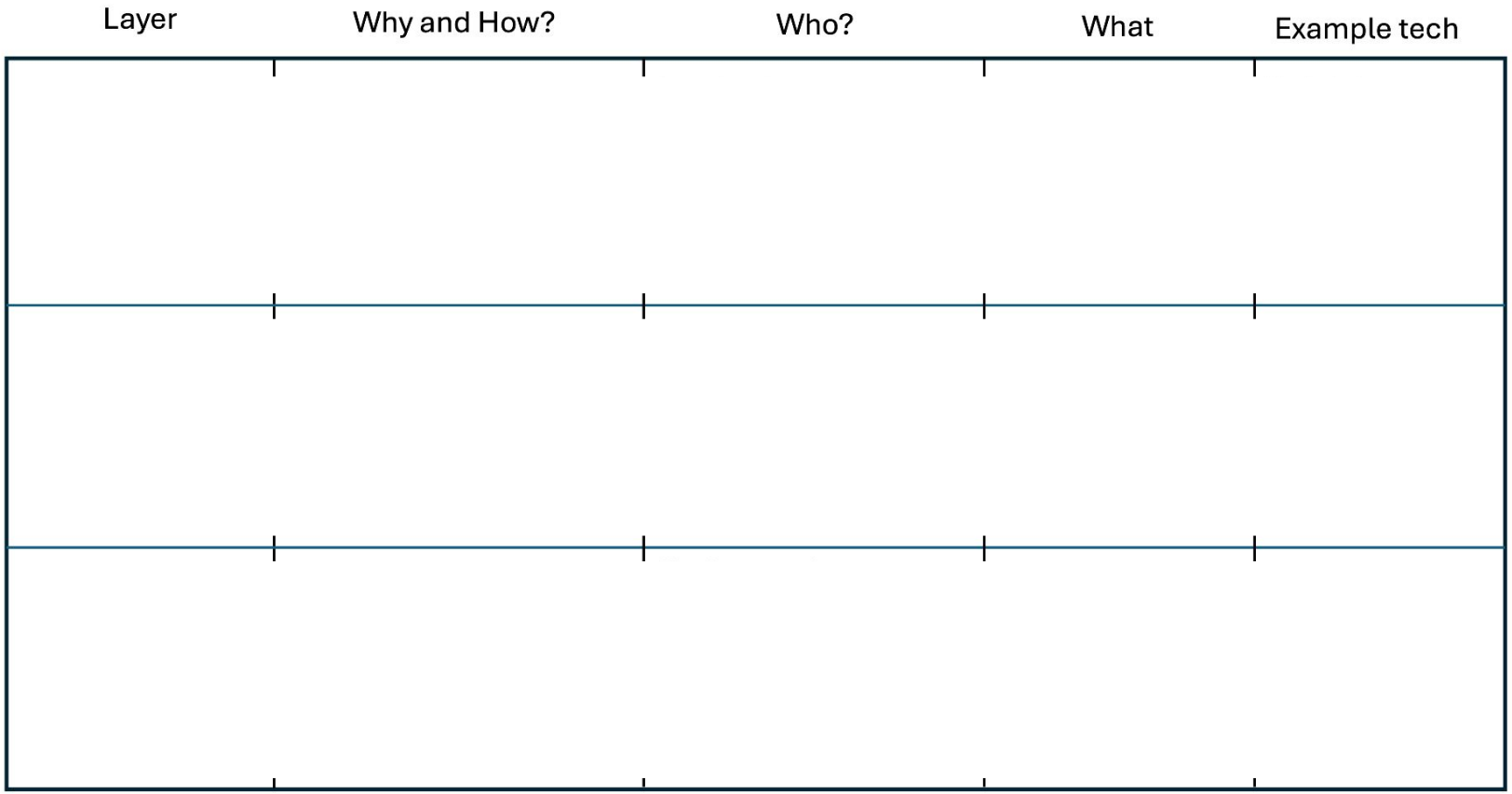

syntasso.io/post/platform-engineering-orchestrating-applications-platforms-and-infrastructure

Layer	Why and How?	Who?	What	Example tech
Application Choreography	"Code, ship, run" Sustainably deliver observable business value to customers (end users) Developer Control Plane	App developers, Full stack engineers, DevOps, SREs	UI (Portals), CLI, Declarative config  *Software dev lifecycle*	Backstage, Heroku CLI & Netflix Newt, Score, Radius & KubeVela (OAM)
Platform Orchestration	"Design, enable, optimize" Provide x-as-a-service, process automation, and fleet management to developers Platform Orchestrator	Platform engineers, Engineering enablement, DevEx engineers, SREs	Platform API *Platform lifecycle* 	Kratix Promise, Humanitec Resource Definition, Crossplane Compositions, Argo/Flux CRDs
Infrastructure Orchestration/ Composition	"Plan, build, maintain" Provide infrastructure building blocks for consumption and composition to platform team Infrastructure Control Plane	Platform engineers, DevOps, Operators, Sysadmins, Infrastructure engineers	IaC, CRDs, Bash scripts  *Infrastructure lifecycle*	Terraform, Crossplane, Ansible, Bash

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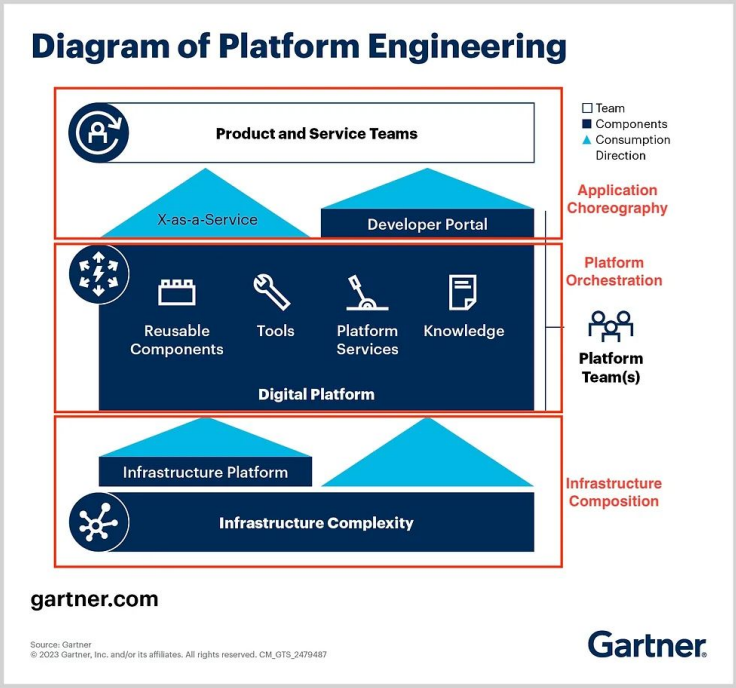
This three tier thing could catch on...



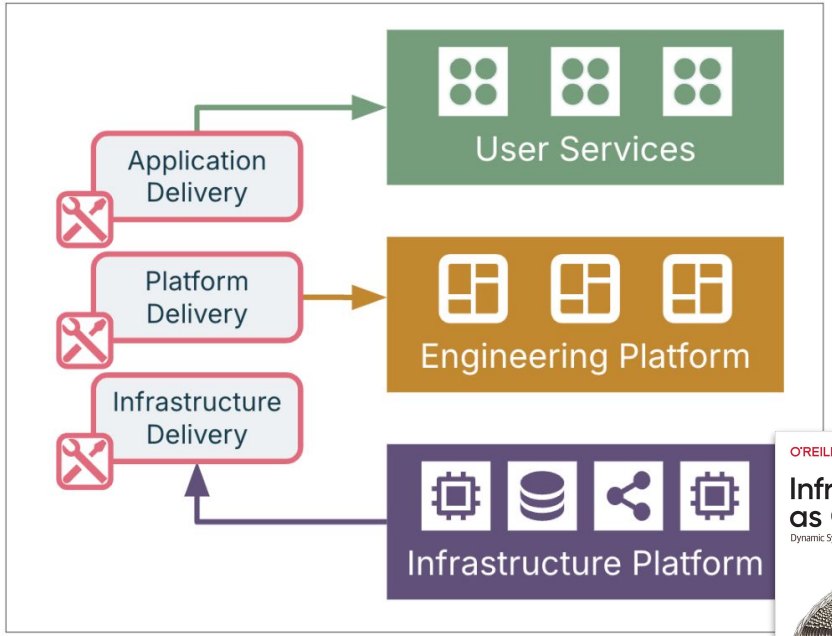
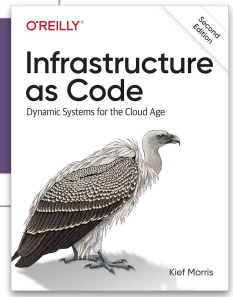


Figure 3-8. The platform delivery services for each system layer



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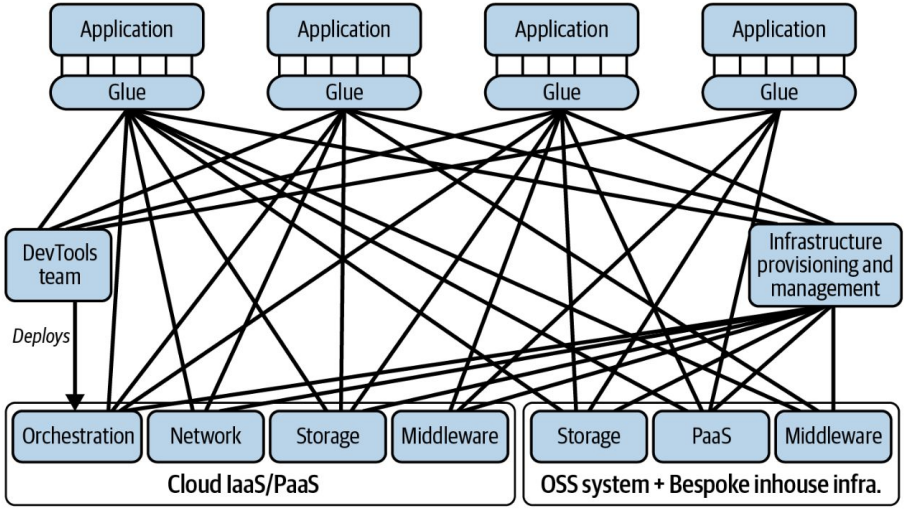


Figure 1-1. The over-general swamp, held together by glue

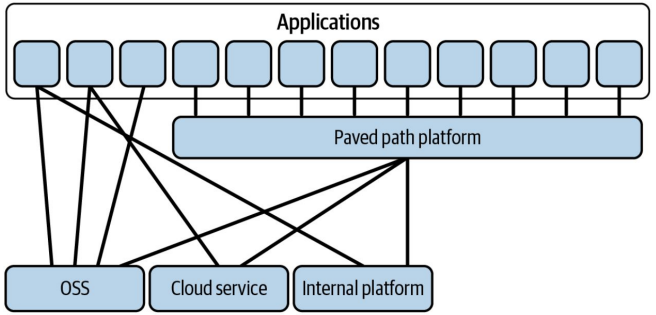
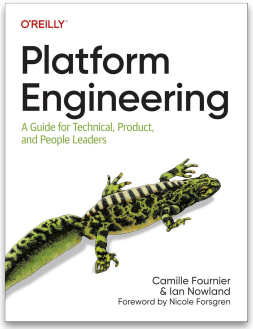
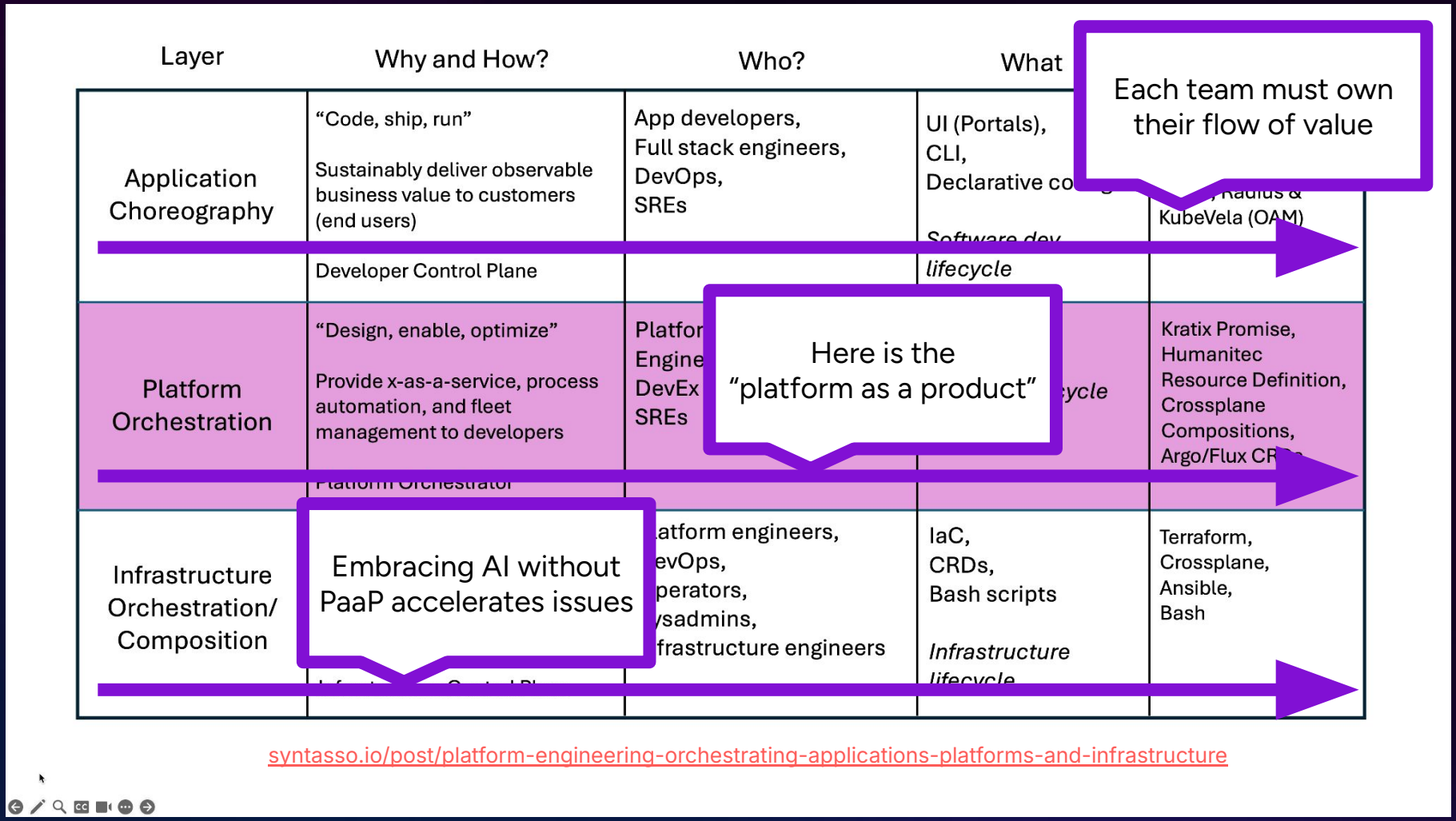


Figure 2-1. Architecture of a paved path platform





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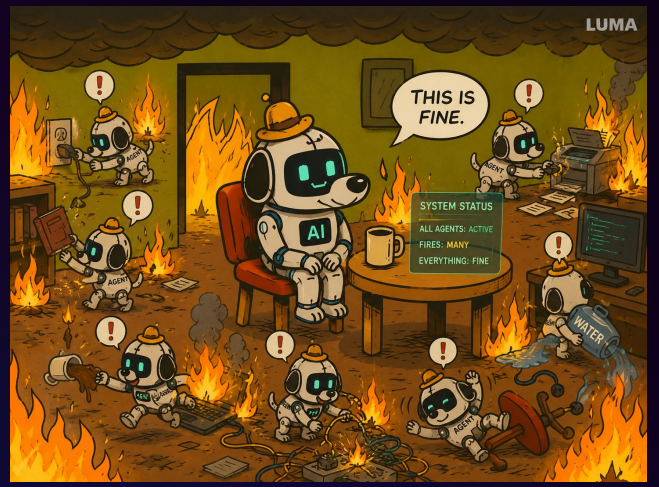
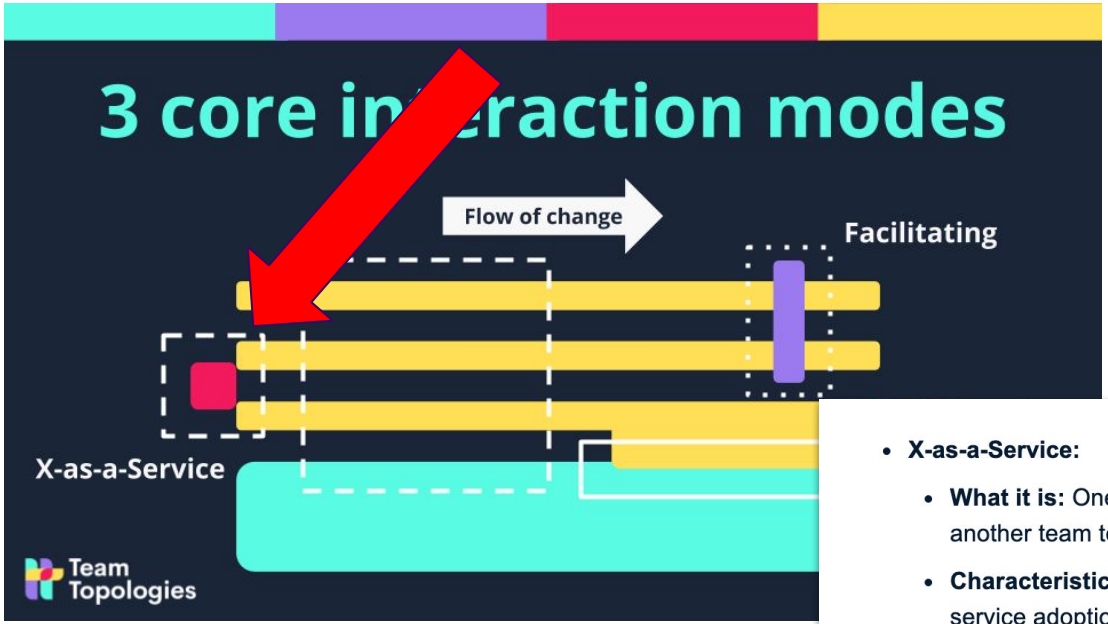


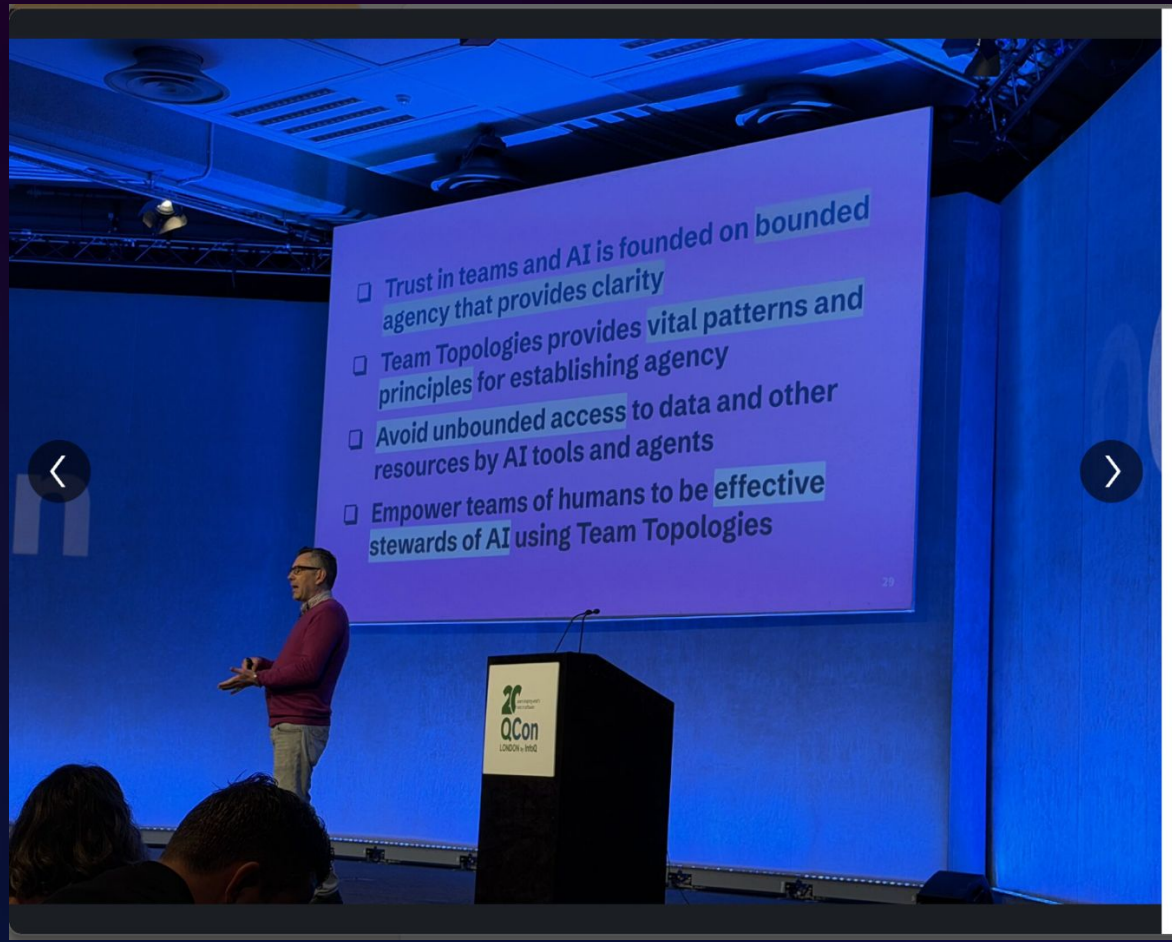
Operationalization

Team Topologies



- **X-as-a-Service:**
  - **What it is:** One team provides a resource (like an API, a tool, or a platform) for another team to consume with minimal fuss or interaction.
  - **Characteristics:** Low cost, clear boundaries, and focuses on the provider's service adoption and the consumer's satisfaction.
  - **Goal:** To enable predictable delivery and speed up development by allowing teams to consume ready-made capabilities without complex conversations or setup.

teamtopologies.com/key-concepts



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Helping you build better platforms | InfoQ ...
1mo ·

"Avoid unbounded access to data and other resources by AI tools and agents" 💯

Matthew Skelton at #QConLondon

I've been musing on these ideas in relation to platform building, largely inspired by Ed Sim's newsletter regularly arguing for increased security within agent-based enterprise systems...

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Wrapping up 🎉

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Conclusion

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Thank you!

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docs.kratix.io/main/quick-start

Kratix docs

speakerdeck.com/syntasso