

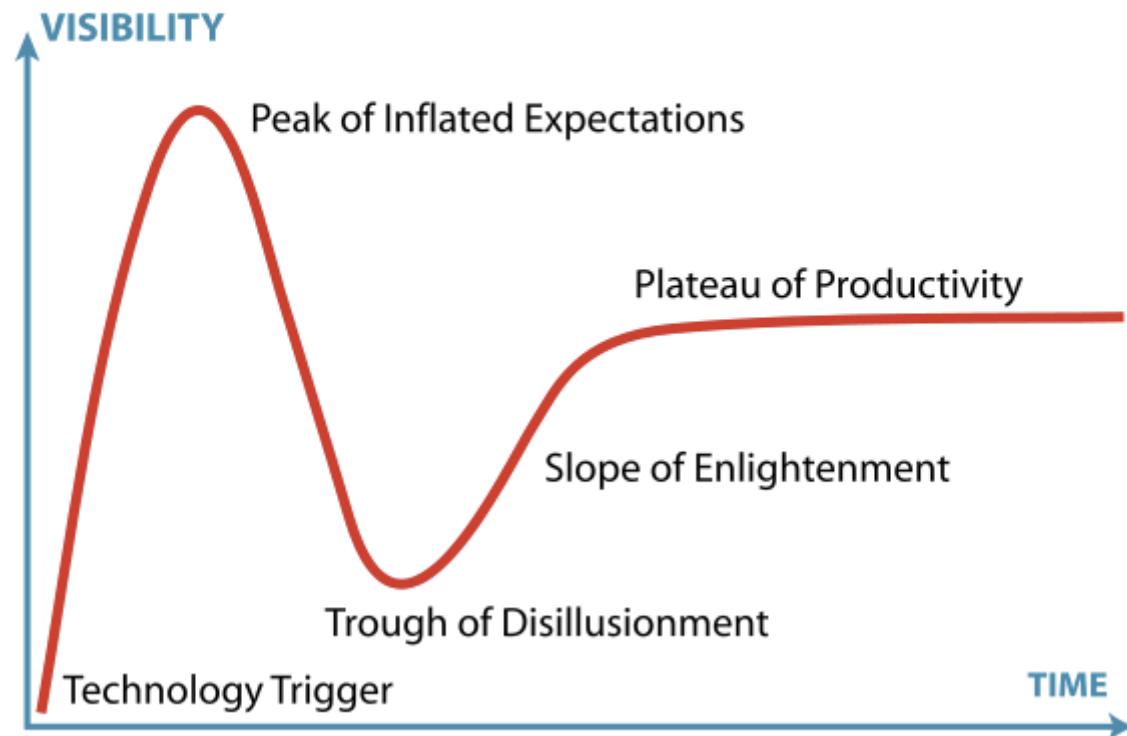
MICROSERVICES

3 March 2017

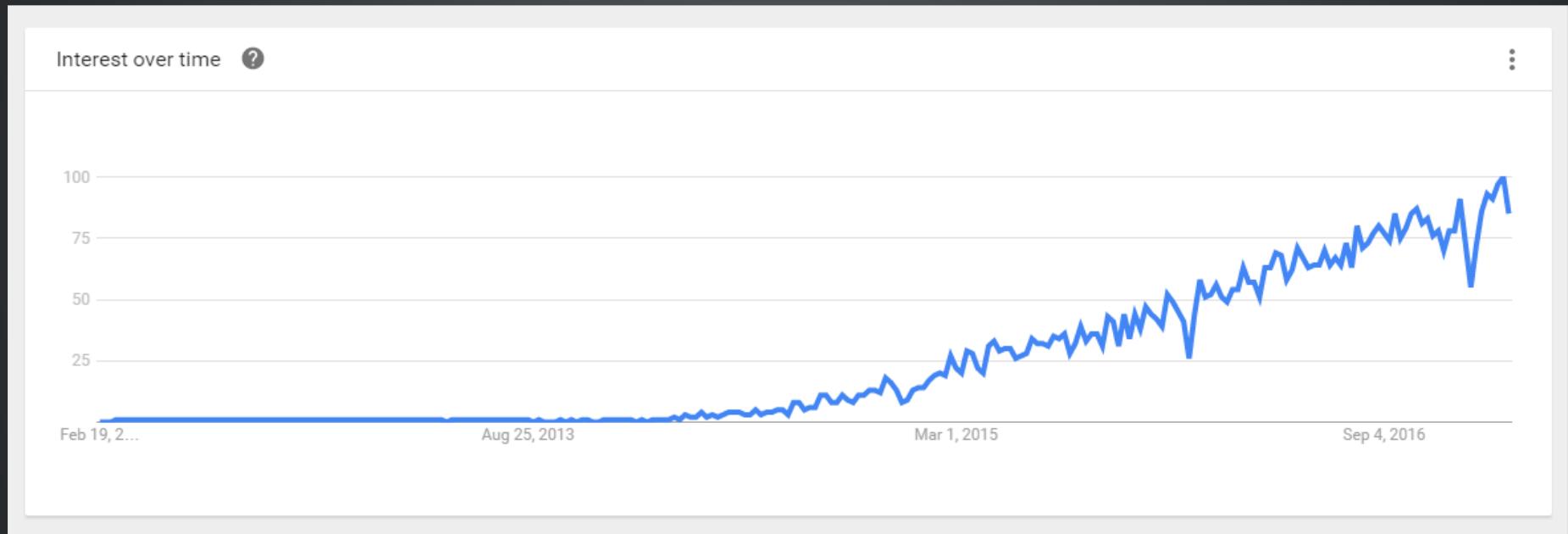
Dan Hersam

BUT FIRST, A SHORT INTERLUDE...

Gartner Hype Cycle



GOOGLE TRENDS OF MICROSERVICES





**THE HYPE IS
STRONG**

**WITH
MICROSERVICES**

WHAT ARE MICROSERVICES?

*An independently deployable component
of bounded scope that supports
interoperability through message-based
communication.*

-- Irakli Nadareishvili

*Loosely coupled service-oriented
architecture with bounded contexts.*

-- Adrian Cockcroft, Battery Ventures

*Small, autonomous services that work
together.*

-- Sam Newman, Thoughtworks

HOW TO RECOGNIZE ONE IN THE WILD



DOES ONE THING WELL

(Single Responsibility Principle)

AUTONOMOUS

ELASTIC

RESILIENT

DECENTRALIZED

MICROSERVICES



... VS A MONOLITH



BEST PRACTICES?

- Data Store for Each Microservice
- Keep Code at a Similar Level of Maturity
- Do a Separate Build for Each Microservice
- Deploy in Containers
- Treat Servers as Stateless

WHY USE MICROSERVICES?

COMMON PROBLEMS WITH MONOLITHS

- Technical debt
- Fear to change
- Tightly-coupled
- Lack of ownership
- Hard to scale out
- All or nothing deployment
- Code complexity and maintainability

KEY BENEFITS OF MICROSERVICES

- Scaling
- Resilience
- Composable
- Evolutionary
- Ease of Deployment
- Choose Your Technology
- Organizational Alignment
- Increased Development Speed

SCALING



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RESILIENCE

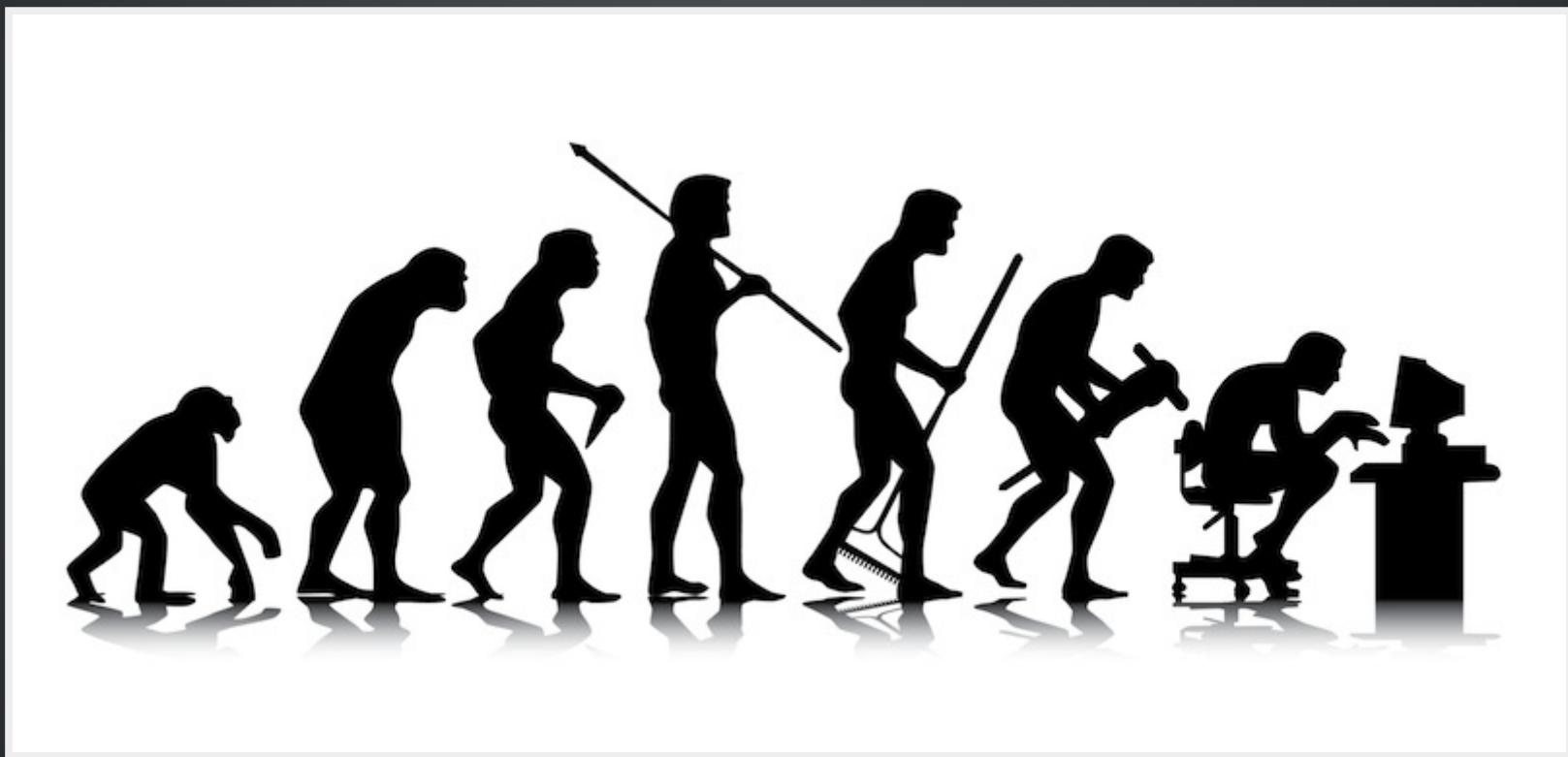


COMPOSABLE



Seems Legot

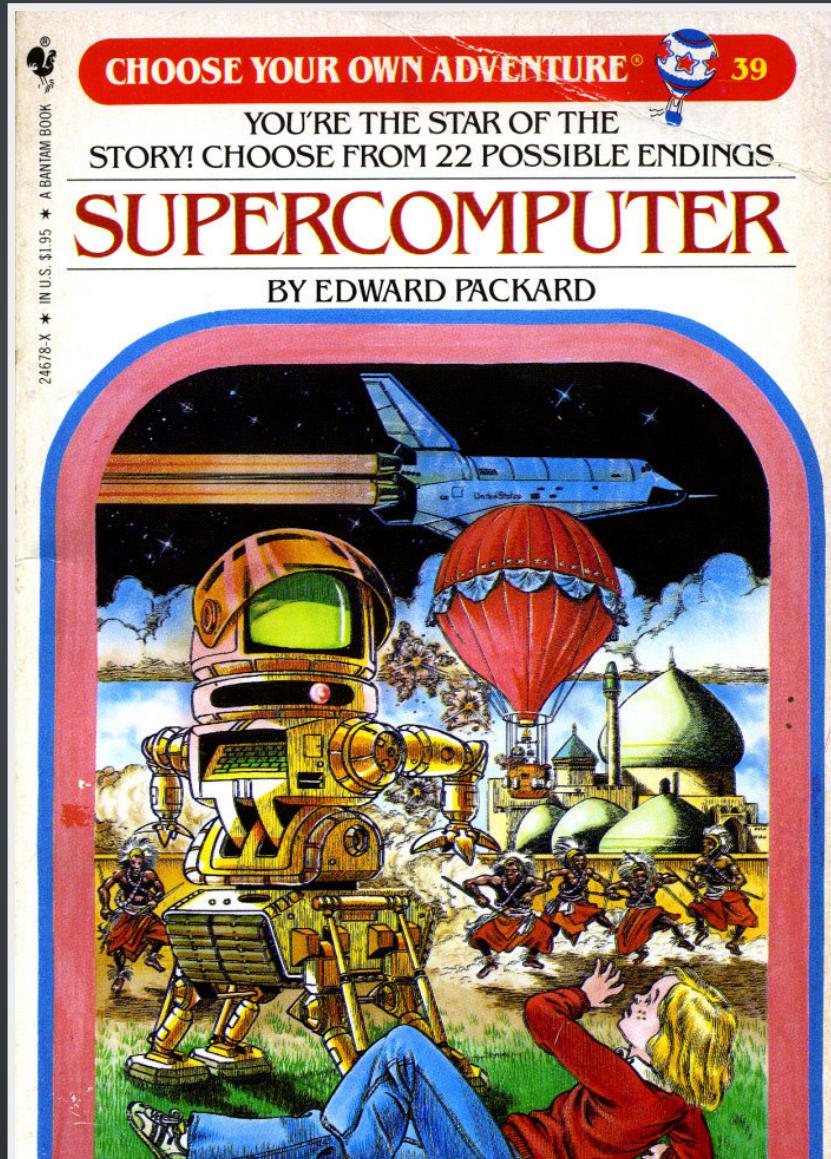
EVOLUTIONARY

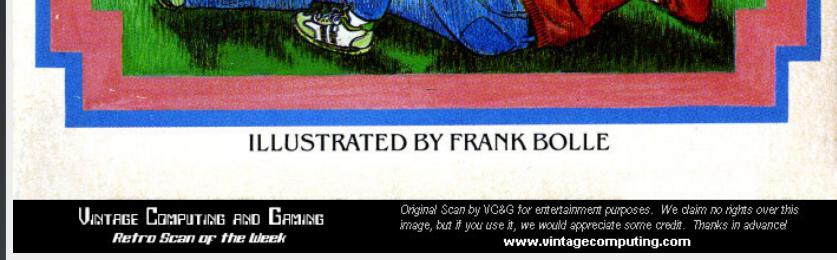


EASE OF DEPLOYMENT



CHOOSE YOUR TECHNOLOGY





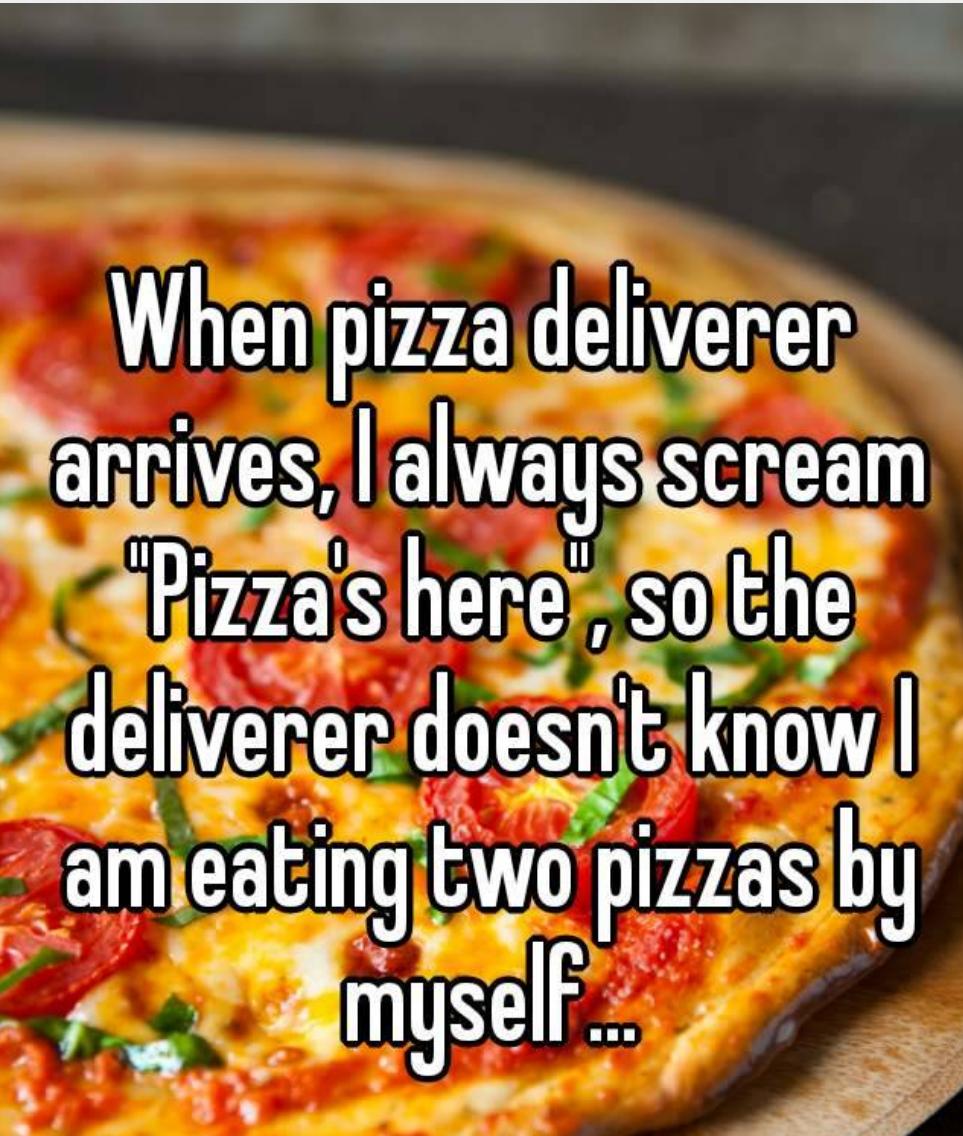
VINTAGE COMPUTING AND GAMING
Retro Scan of the Week

Original Scan by VCBG for entertainment purposes. We claim no rights over this
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www.vintagecomputing.com

ORGANIZATIONAL ALIGNMENT



...THE TWO PIZZA RULE

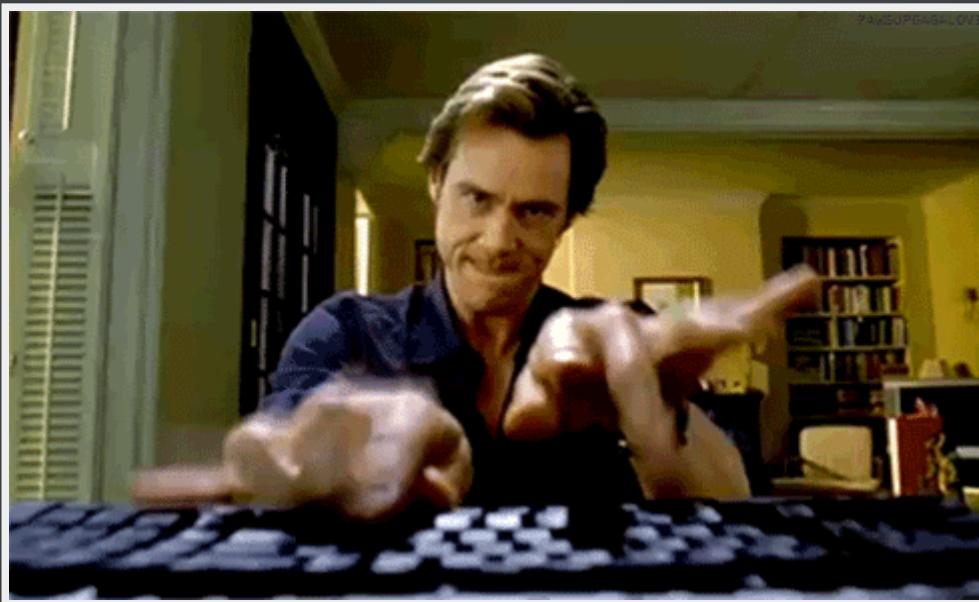


When pizza deliverer arrives, I always scream "Pizza's here", so the deliverer doesn't know I am eating two pizzas by myself...



whisper

INCREASED DEVELOPMENT SPEED



PRODUCTION READY?

- Uber
- Amazon
- Netflix
- Spotify
- SoundCloud

BUT...

NOT A SILVER BULLET

NEW COMMON PROBLEMS

- Traceability
- Network Latency
- Message Routing
- Service Discovery
- Operations Overhead
- Eventual Consistency

WHAT ABOUT SOA?

WHAT ABOUT DECOMPOSITION?

- Requires Same Technology
- Lose Scaling Independently
- Lose Independent Deployment
- Less Resiliency

**SHOULD YOU START USING
MICROSERVICES?**

CONWAY'S LAW

*Any organization that designs a system
will produce a design whose structure is a
copy of the organization's
communication structure.*

-- Mel Conway

QUESTIONS TO ASK

- How big are the teams?
- What skills do they have?
- How are development and operations divided?
- How are responsibilities divided between teams?

OTHER CONSIDERATIONS...

SUFFICIENTLY LARGE PROJECT

FOCUSSED ON REPLACEABILITY

**DEEP UNDERSTANDING OF PROBLEM
DOMAIN**

SECOND VERSION OF EXISTING SYSTEM

HOW TO INTRODUCE CHANGE?

*Find small changes that can unfold in a
way that creates large effects*

-- Gareth Morgan

THIS PRESENTATION

microservices.snapmagic.com

REFERENCES

1. *Microservice Architecture* by Irakli Nadareishvili
2. *Building Microservices* by Sam Newman
3. *Microservices from Day One* by Cloves Carneiro Jr.
4. *Production-Ready Microservices* by Susan J. Fowler
5. *Microservices on AWS* by Matthias Jung

QUESTIONS?