

MONOLITHS TO MICROSERVICES

Sam Newman

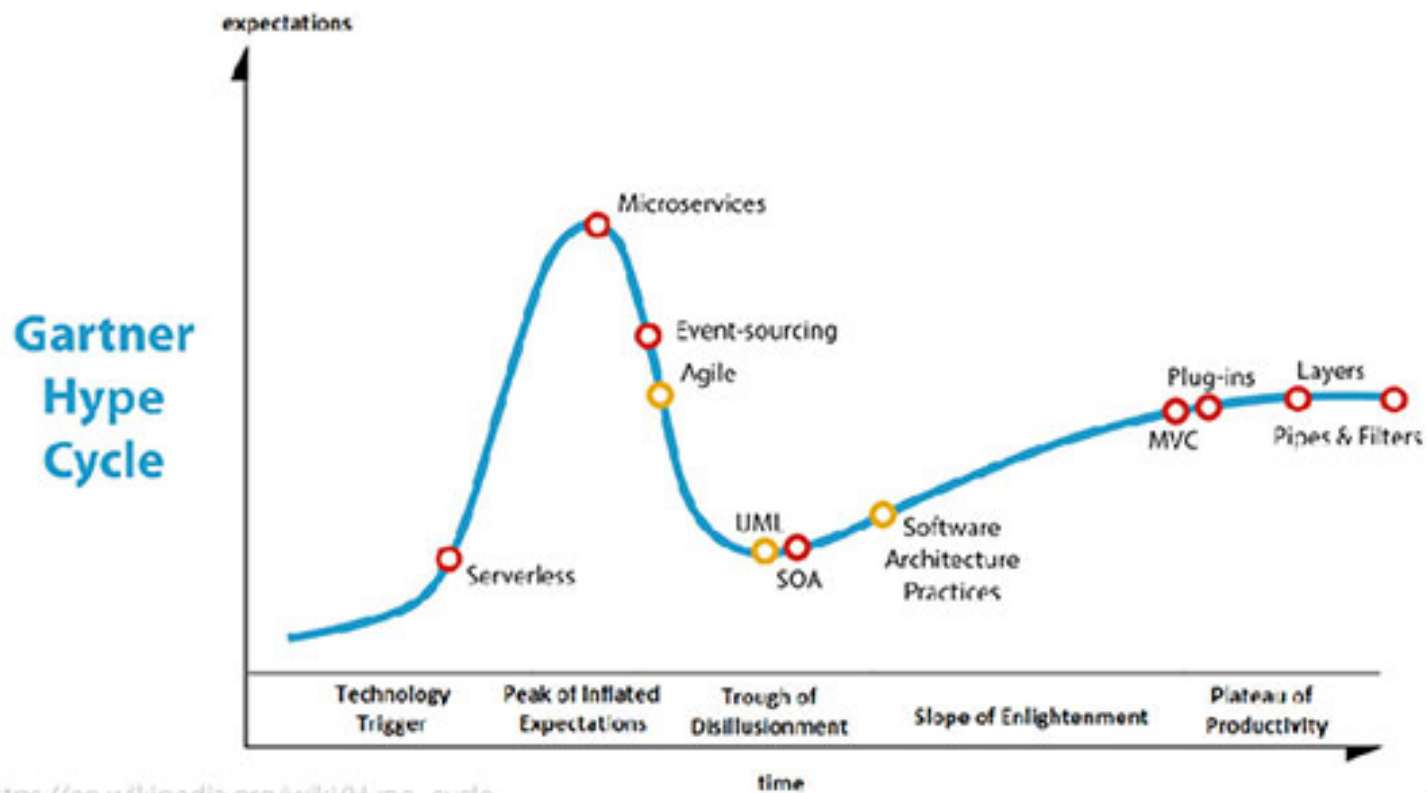
Planning a Transition

How

Why?

Because everyone else is!

HYPE!



Hat tip @robsmallshire <https://twitter.com/robsmallshire/status/787936059581693952>



<https://www.flickr.com/photos/imprint777/6329794960/>

Pros & Cons



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Can cannabis relieve pain and other ailments?

MPs have recommended medicinal marijuana for the relief of chronic pain and anxiety, but the law is against it



There is now good evidence for the medicinal use of cannabis. Photograph: Rick Wilking / Reuters/Reuters

Queen Victoria was prescribed cannabis for period pains, and 19th-century American doctors used it for everything from anorexia to sexual problems. And now the US is embracing medicinal cannabis again - [it's](#)

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Organisational Alignment

Many Choices to Make

Release Functionality Faster

Have A Lead Time

Independent Scaling

Testing Is Harder

Easier to focus on security concerns

Monitoring Is More Involved

Adopt Technology Faster

Operational Overhead

Embrace Uncertainty In Digital

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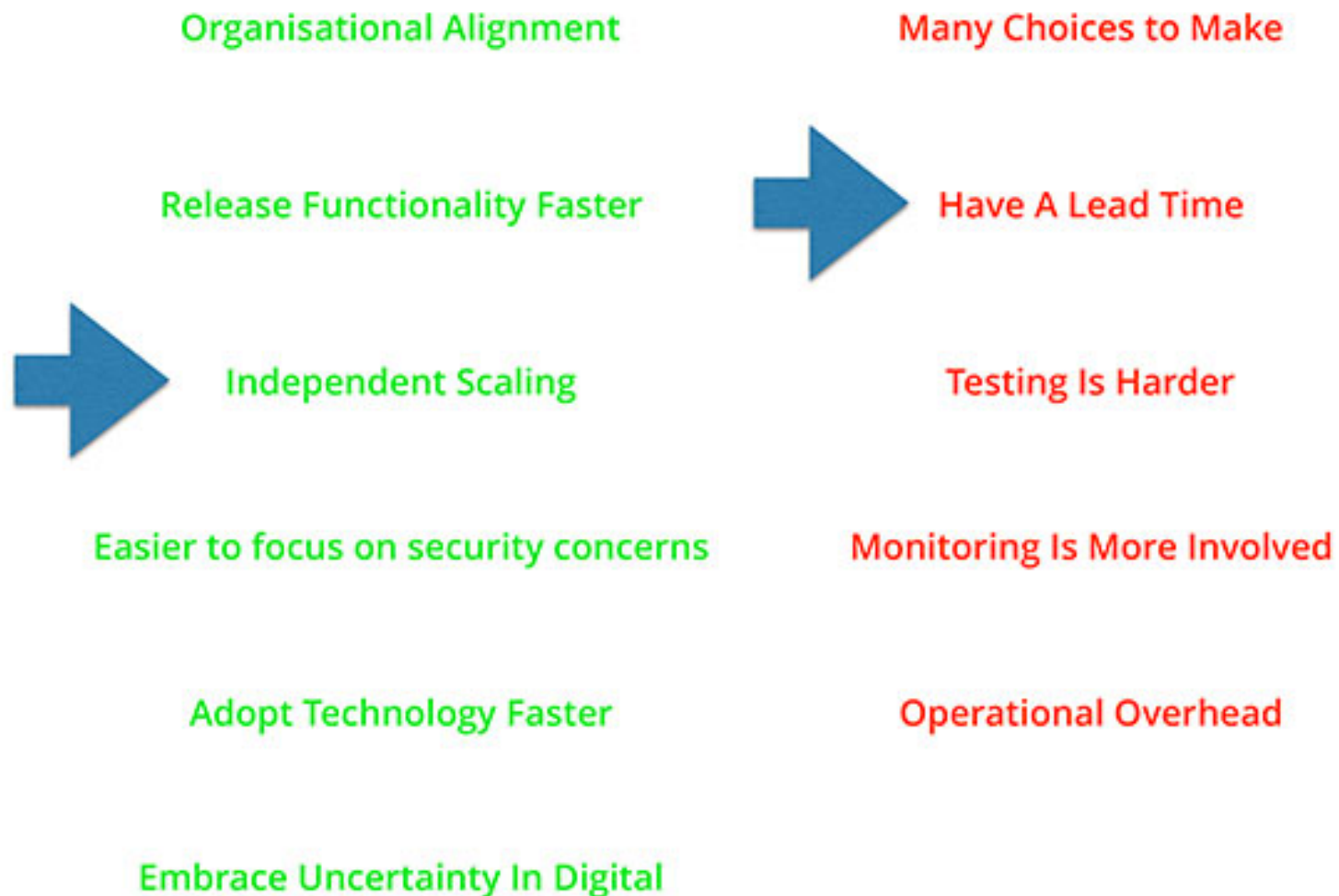
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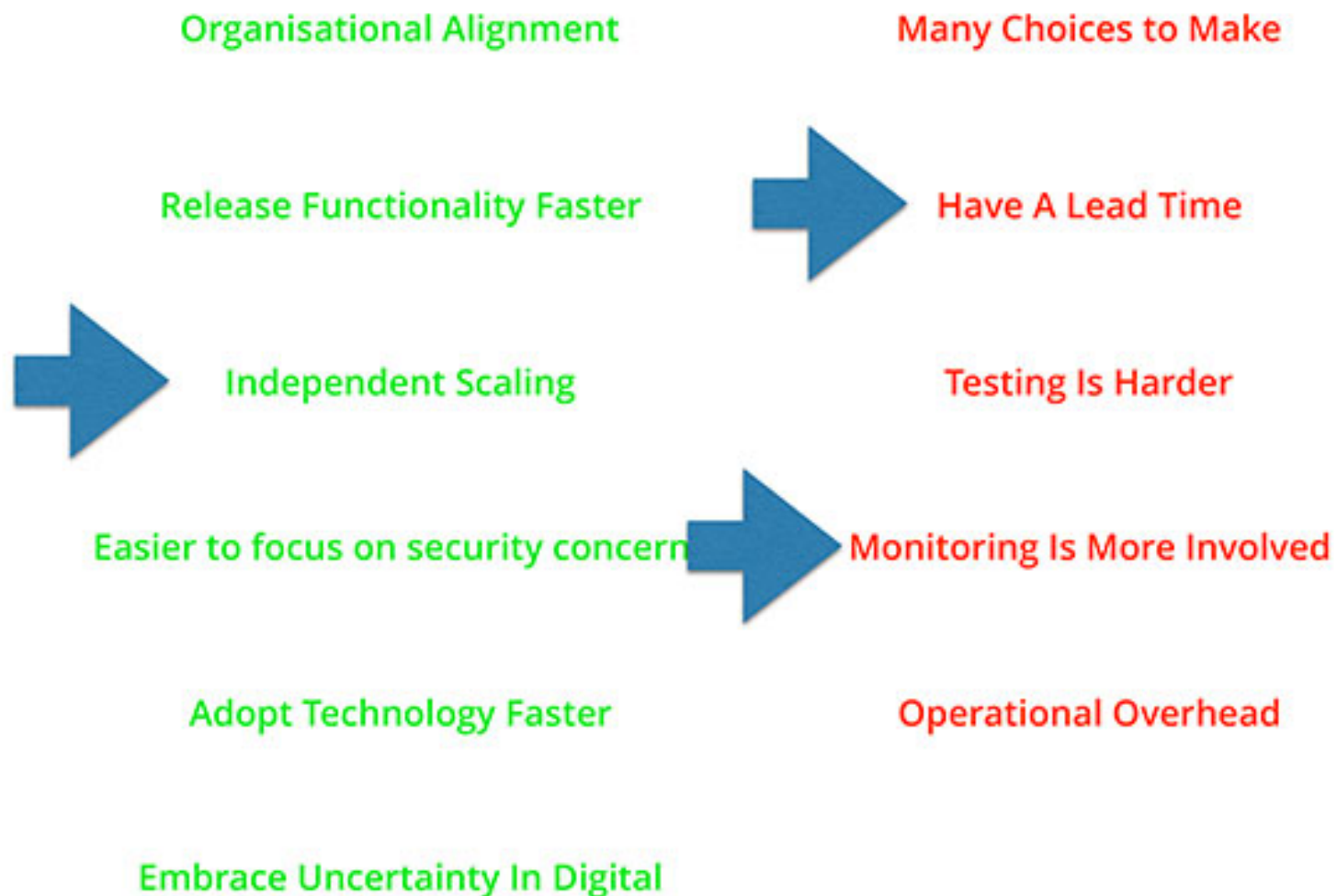
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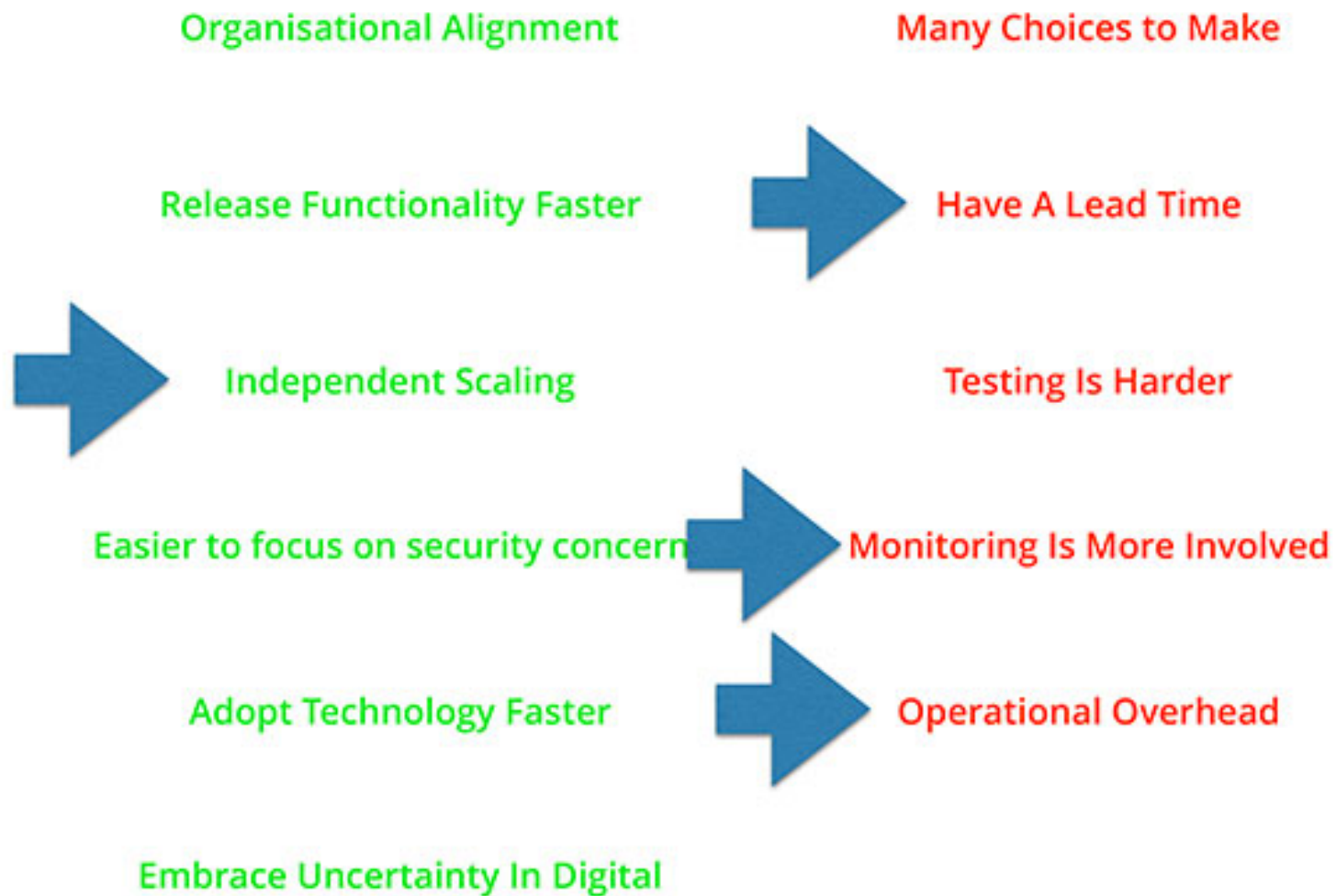
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Know What You're After

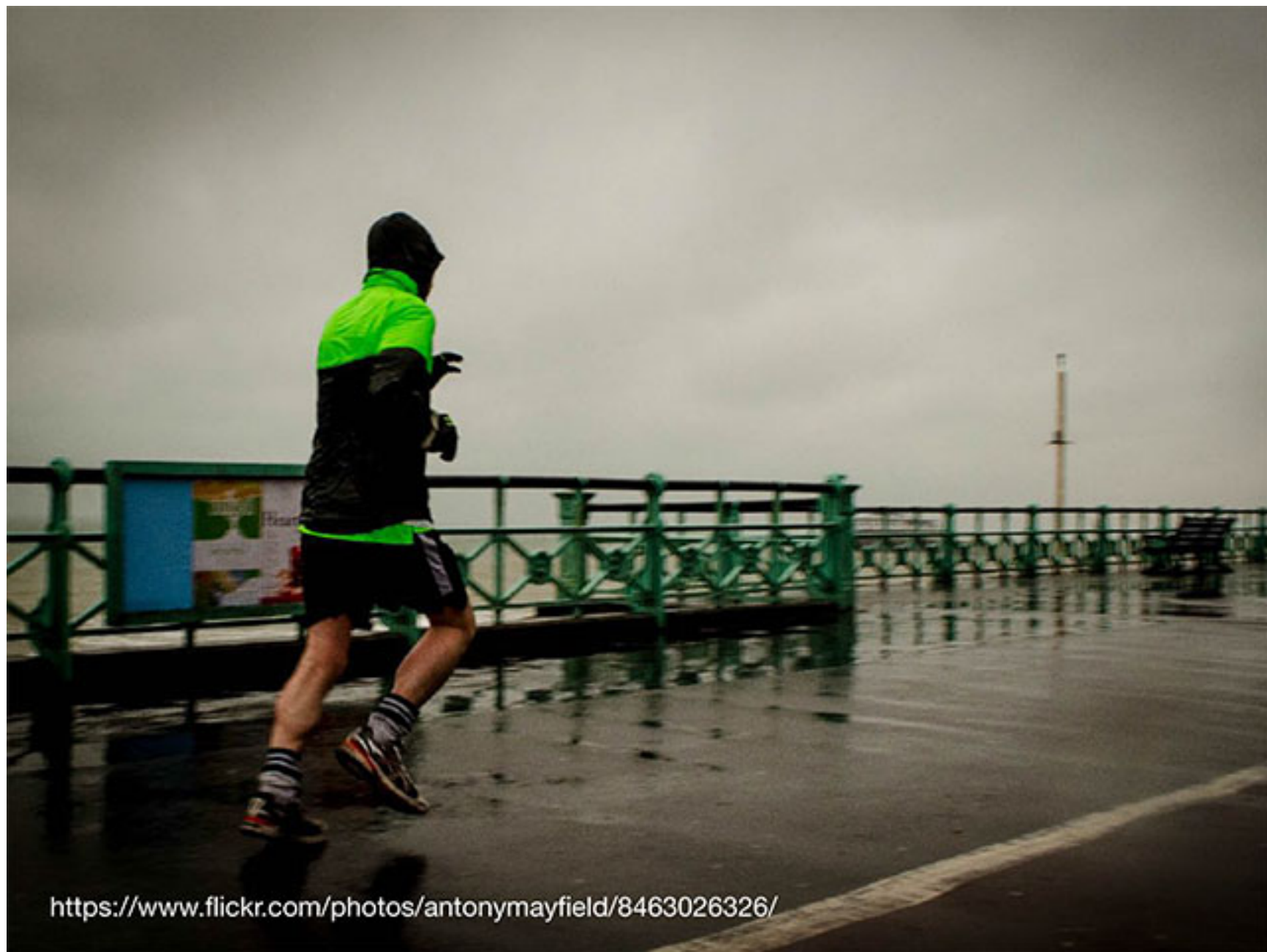
Know What You're After

Know When To Stop

Know What You're After

Know When To Stop

And Know If There Is A
Better Way



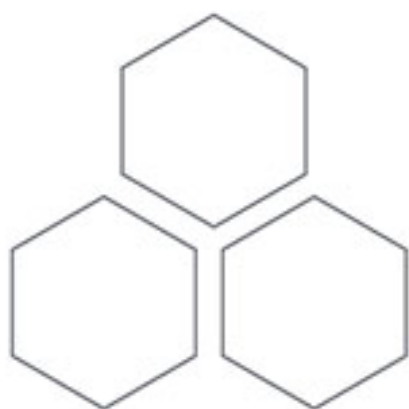
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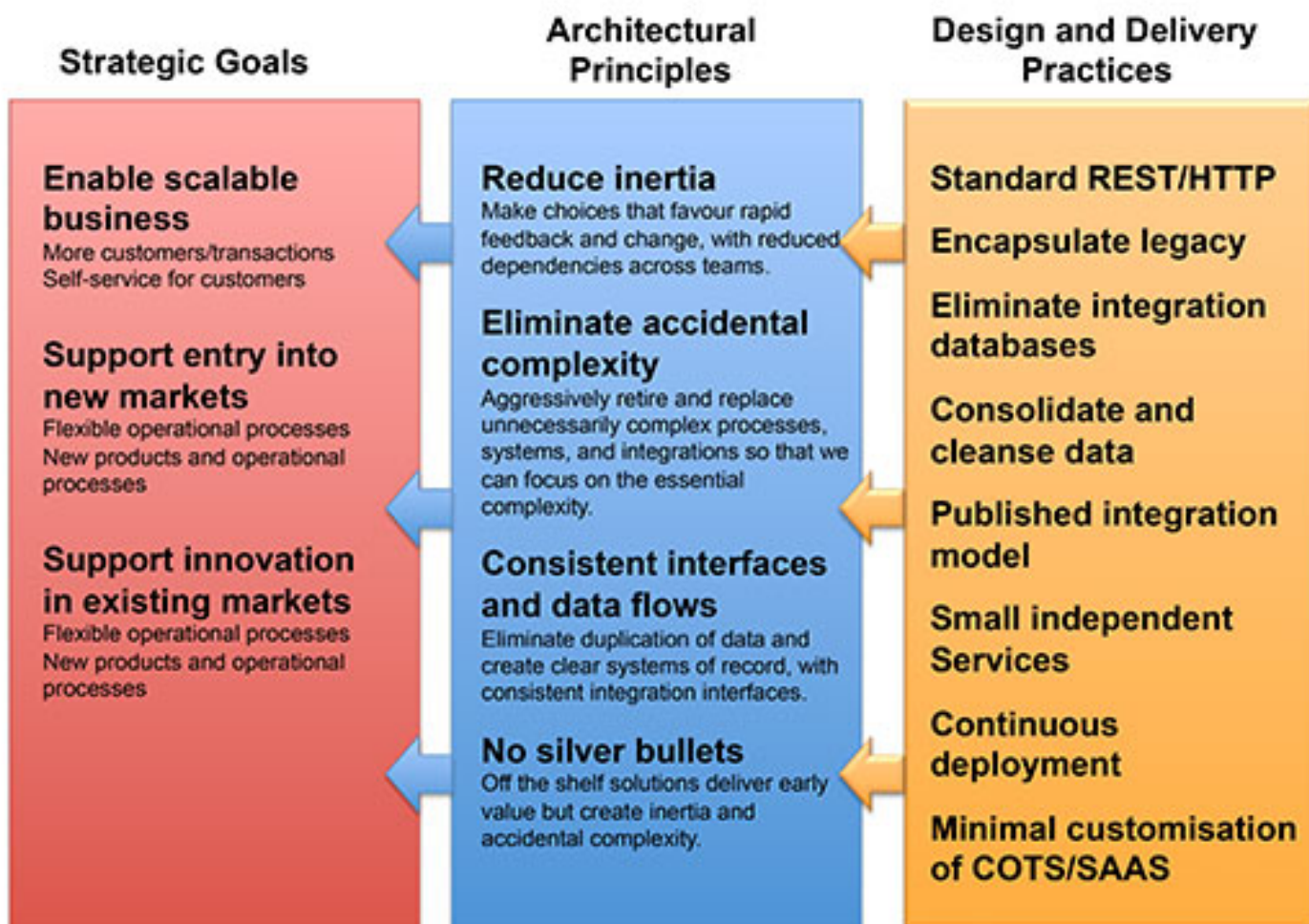


Microservices are not an
end in and of themselves

Need to know why you are
using them

Need to know why you are
using them

If they are working



So what reasons
might you pick?

3 Examples

3 Examples

Improved Autonomy

3 Examples

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Scale Your Application

3 Examples

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Scale Your Application

Use New Technology

Improved Autonomy

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Improve the freedom we give people to do the job at hand, reducing the amount of sign off and co-ordination needed with others...

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...so that we can come up with new ideas and ship them to our customers faster

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What Could We Track?

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What Could We Track?

Of team-actioned deployments

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What Could We Track?

Of team-actioned deployments

Failure Rate

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Failure Rate

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How Else Could We Do It?

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Failure Rate

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How Else Could We Do It?

Team-provisioned Infrastructure

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Failure Rate

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Team-provisioned Infrastructure

More clear lines of ownership

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Of team-actioned deployments

Failure Rate

Meetings!

How Else Could We Do It?

Team-provisioned Infrastructure

More clear lines of ownership

Better testing

Scale Your Application

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Functionally decompose your monolith to allow latency/load sensitive parts of your application to be scaled independently

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What Could We Track?

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Latency

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What Could We Track?

Latency

Load

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Vertical Scaling

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Vertical Scaling

Horizontal scaling

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Latency

Load

Failure Rate

How Else Could We Do It?

Vertical Scaling

Horizontal scaling

Data Partitioning

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What Could We Track?

Latency

Load

Failure Rate

How Else Could We Do It?

Vertical Scaling

Horizontal scaling

Data Partitioning

Reverse Proxies...



THE ART OF SCALABILITY

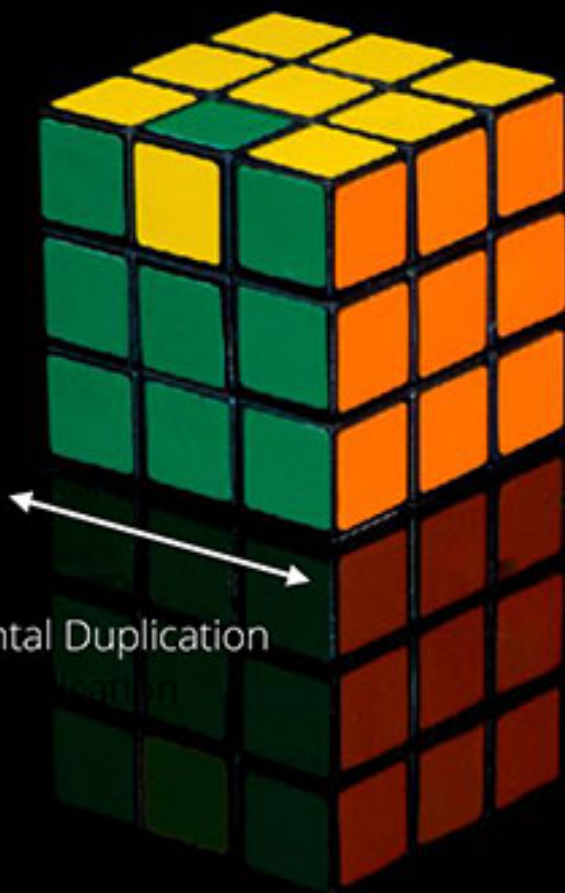
Scalable Web Architecture, Processes and Organizations
for the Modern Enterprise

MARTIN L. ABBOTT

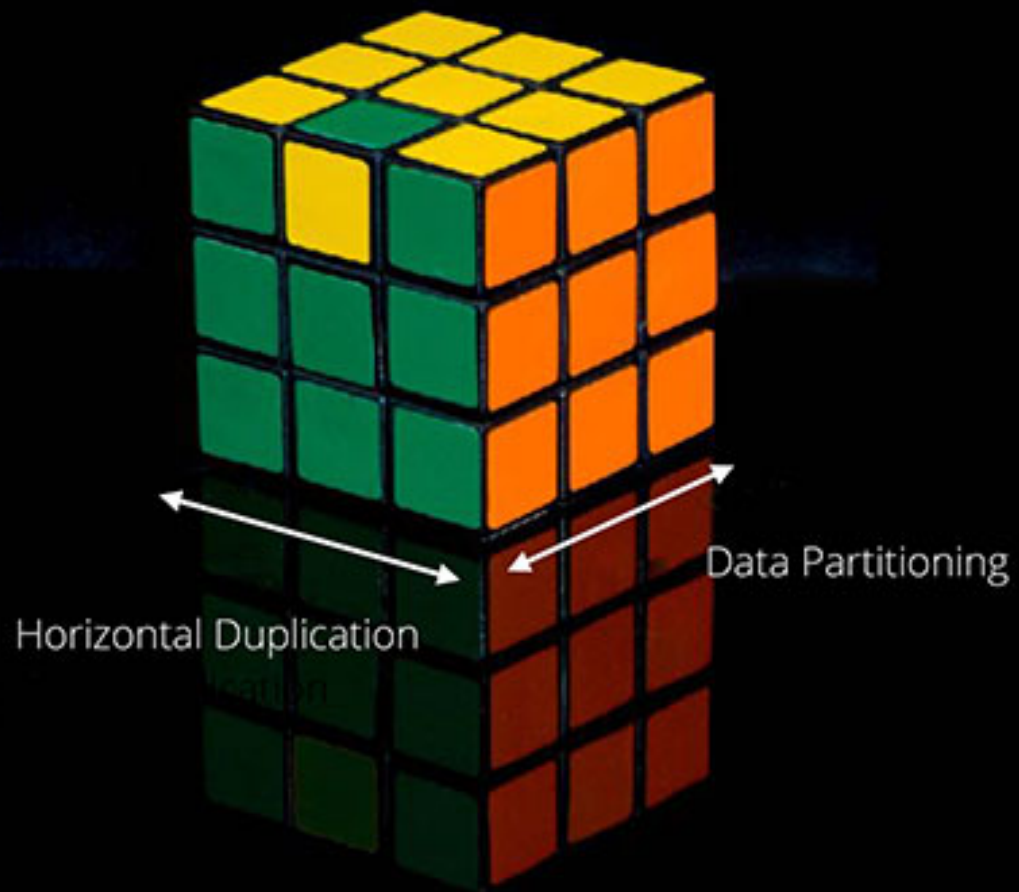
MICHAEL T. FISHER



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Horizontal Duplication



Functional Decomposition

Horizontal Duplication

Data Partitioning

Use New Technology

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Adopt some new tool, language or tech stack to allow us to solve a problem more easily

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What Could We Track?

Productivity

Deploys...

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How Else Could We Do It?

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Productivity

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Sidecars

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Productivity

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Shared Libraries

Use New Technology

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What Could We Track?

Productivity

Deploys...

How Else Could We Do It?

Sidecars

Shared Libraries

Use new language for admin app,
testing...



astrid atkinson

@shinynew_oz



Follow

@bridgetkromhout software is made of feelings.

RETWEETS

3

LIKES

3



9:45 PM - 20 Feb 2015



3



3



https://twitter.com/shinynew_oz/status/568889104273838080

Data isn't more important
than feelings

Have Periodic Checkpoints

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- Restate the goal you're trying to achieve

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- Restate the goal you're trying to achieve
- Reflect on what the data is showing you...
- And how the team thinks about it
- Decide what, if anything, to change

How often should you have checkpoints?

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- Depends on scale of company/change

How often should you have checkpoints?

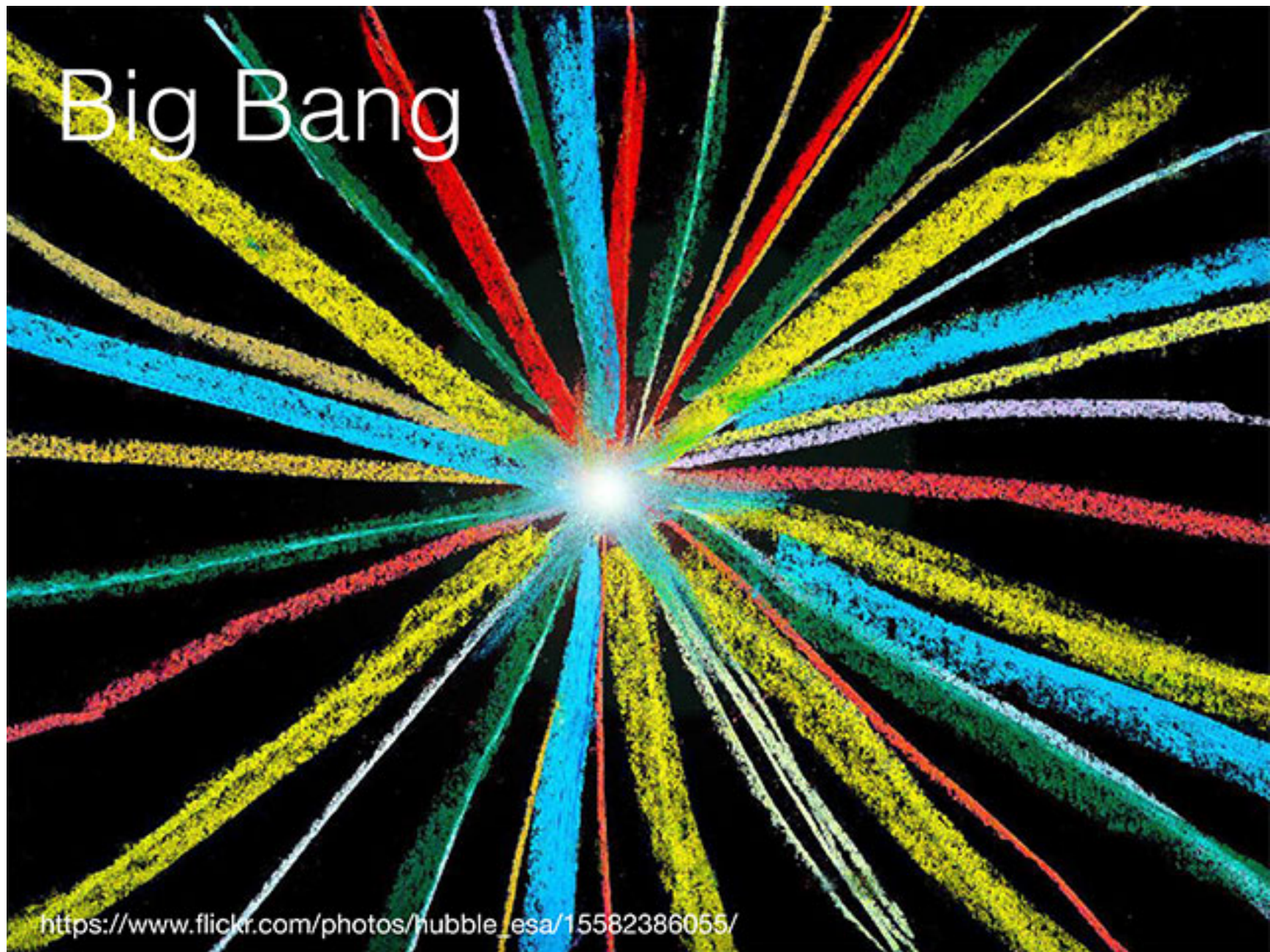
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How often should you have checkpoints?

- Depends on scale of company/change
 - For a single team, perhaps reflecting informally every week is good enough
 - For larger change programs, you might want local review followed by some overall governance process

What about your
customers?

Big Bang



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Happy Coders



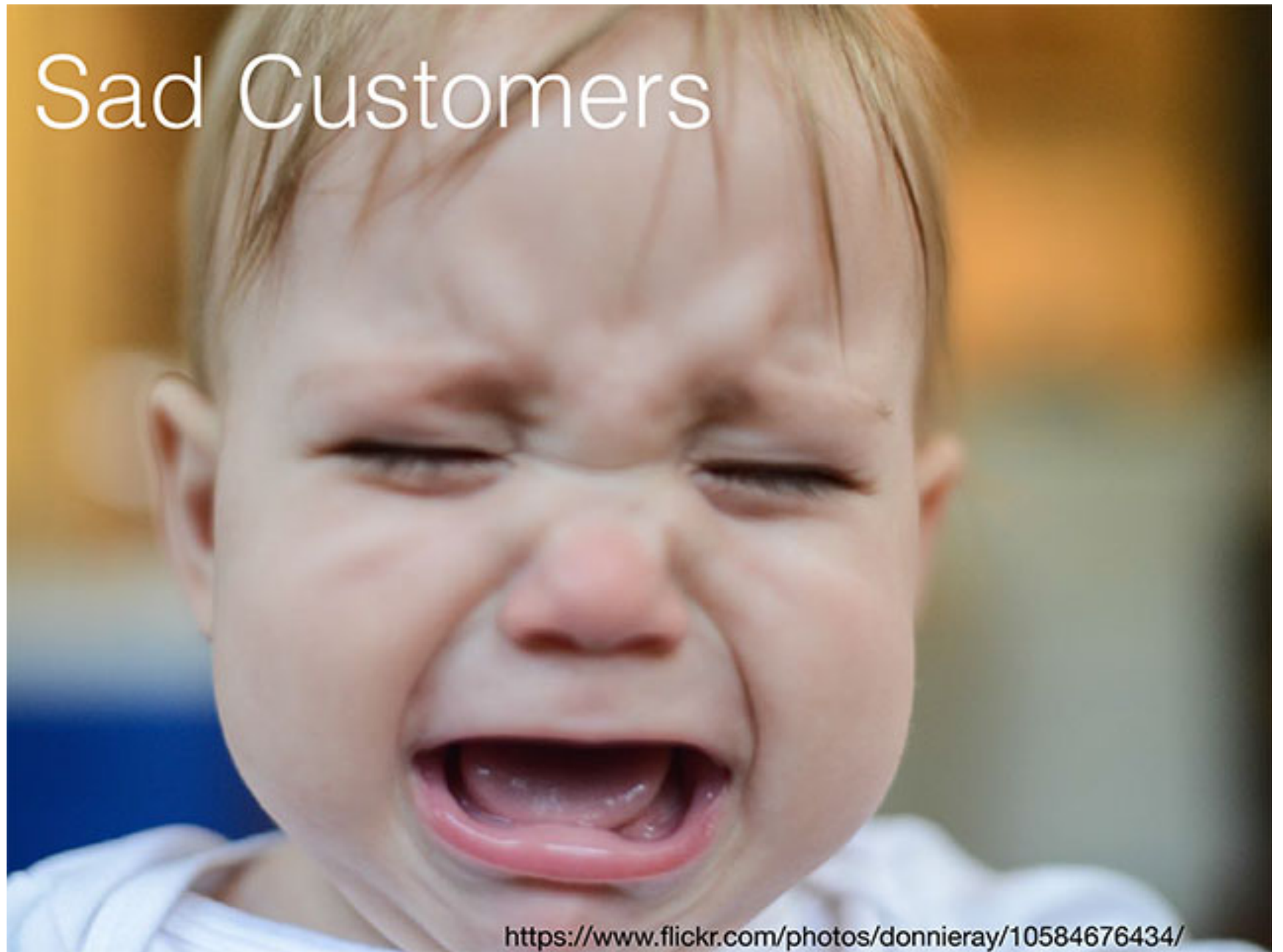
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No constraints!

No constraints!

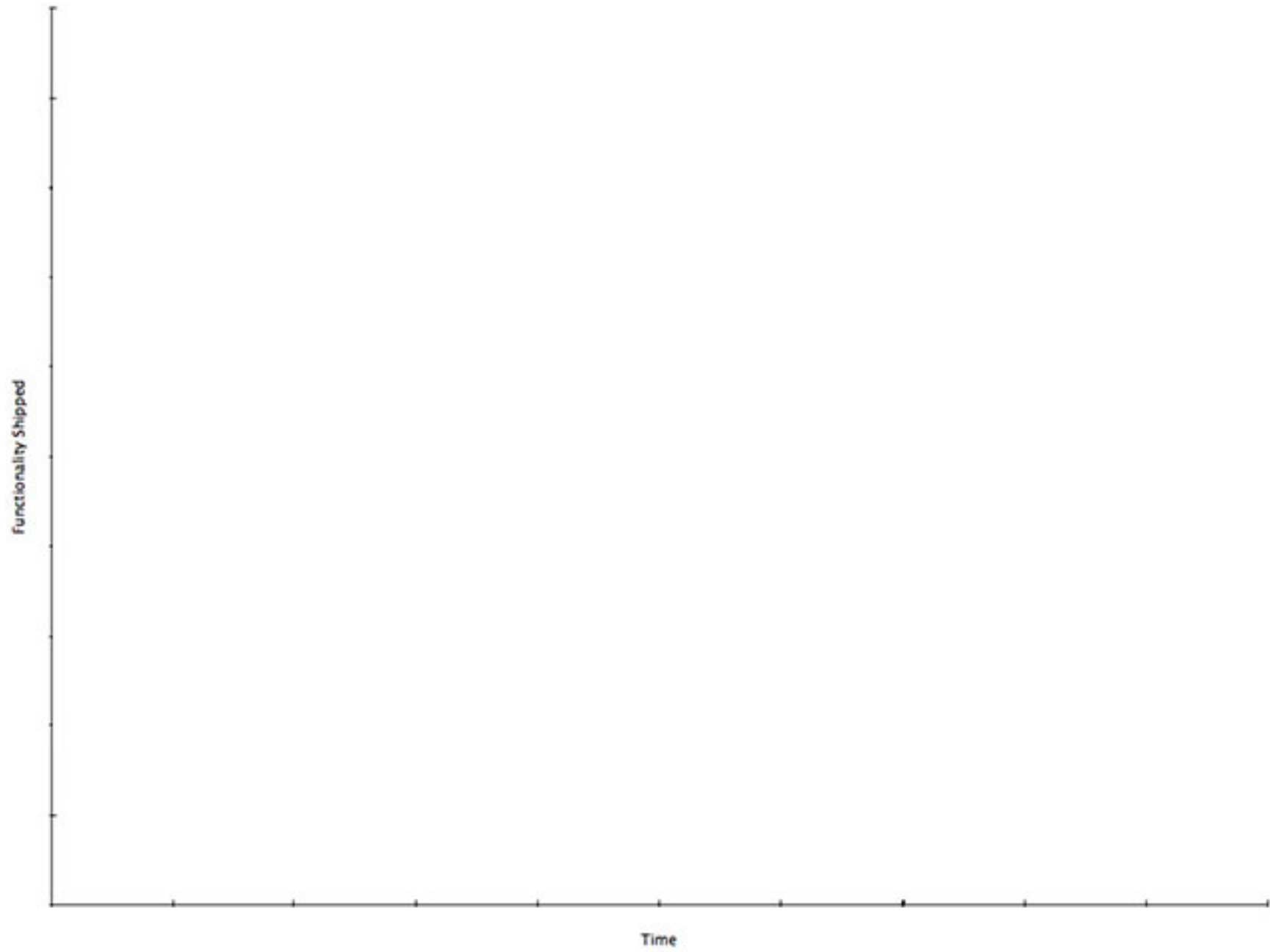
No new features!

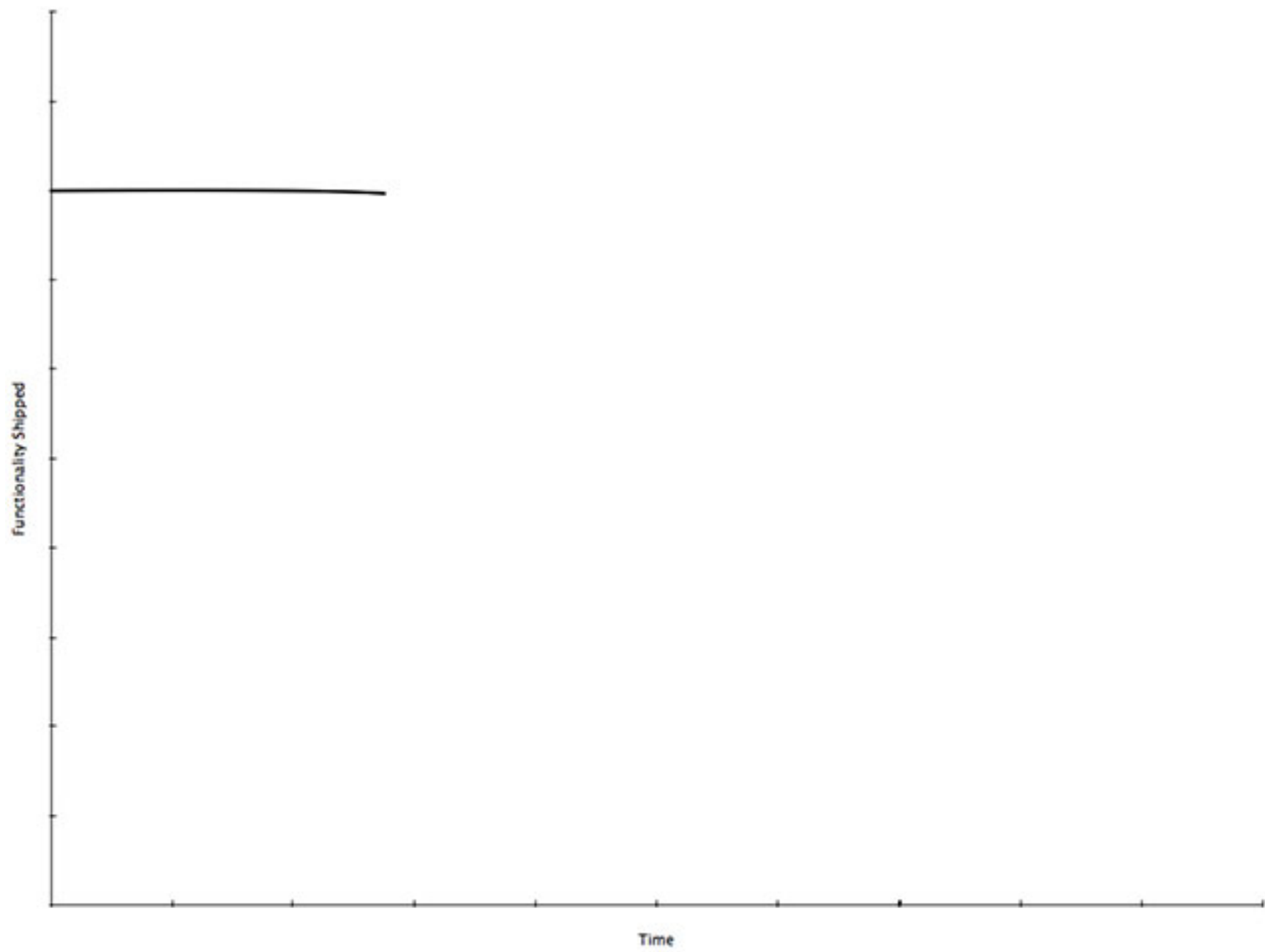
Sad Customers

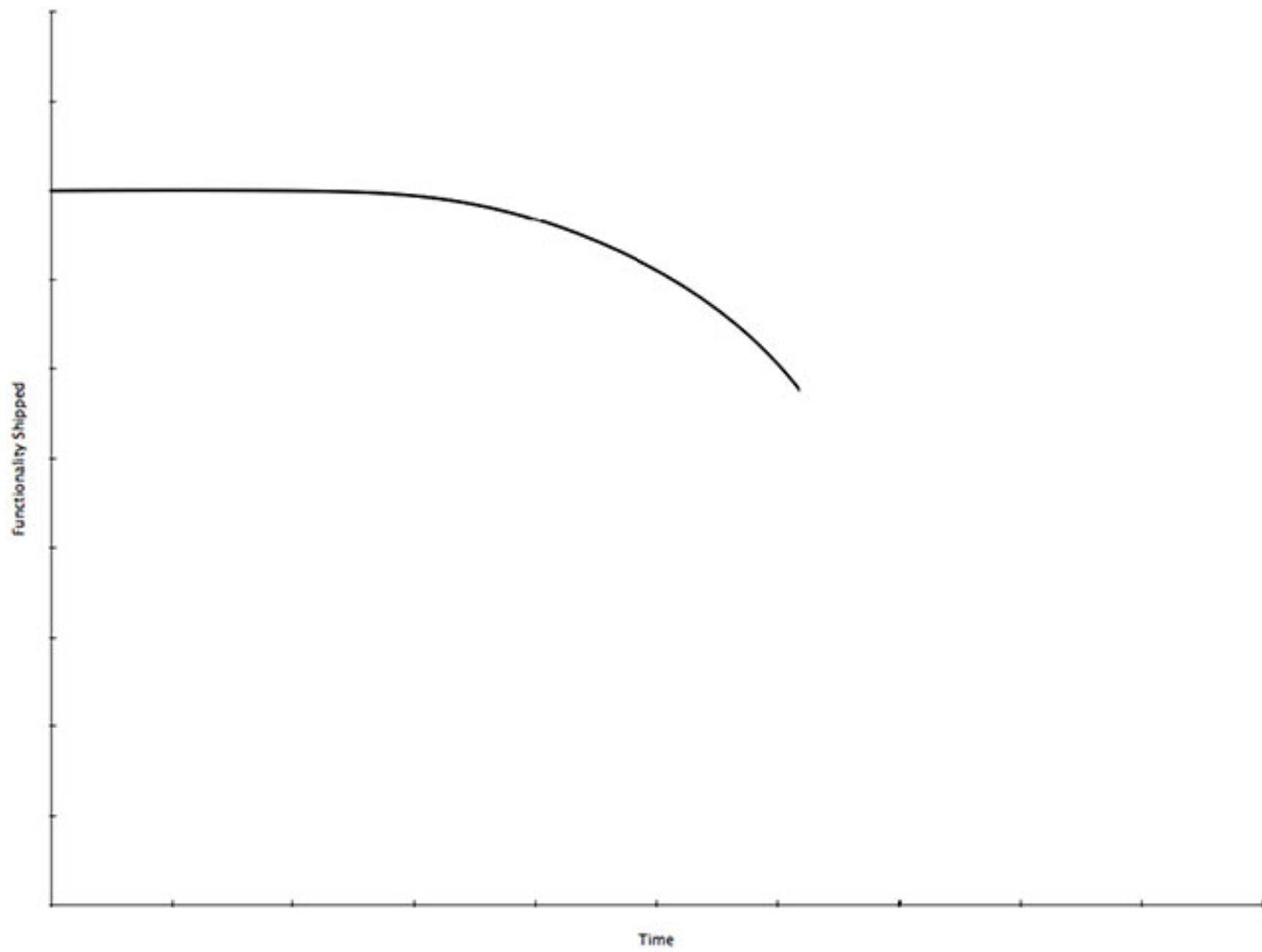


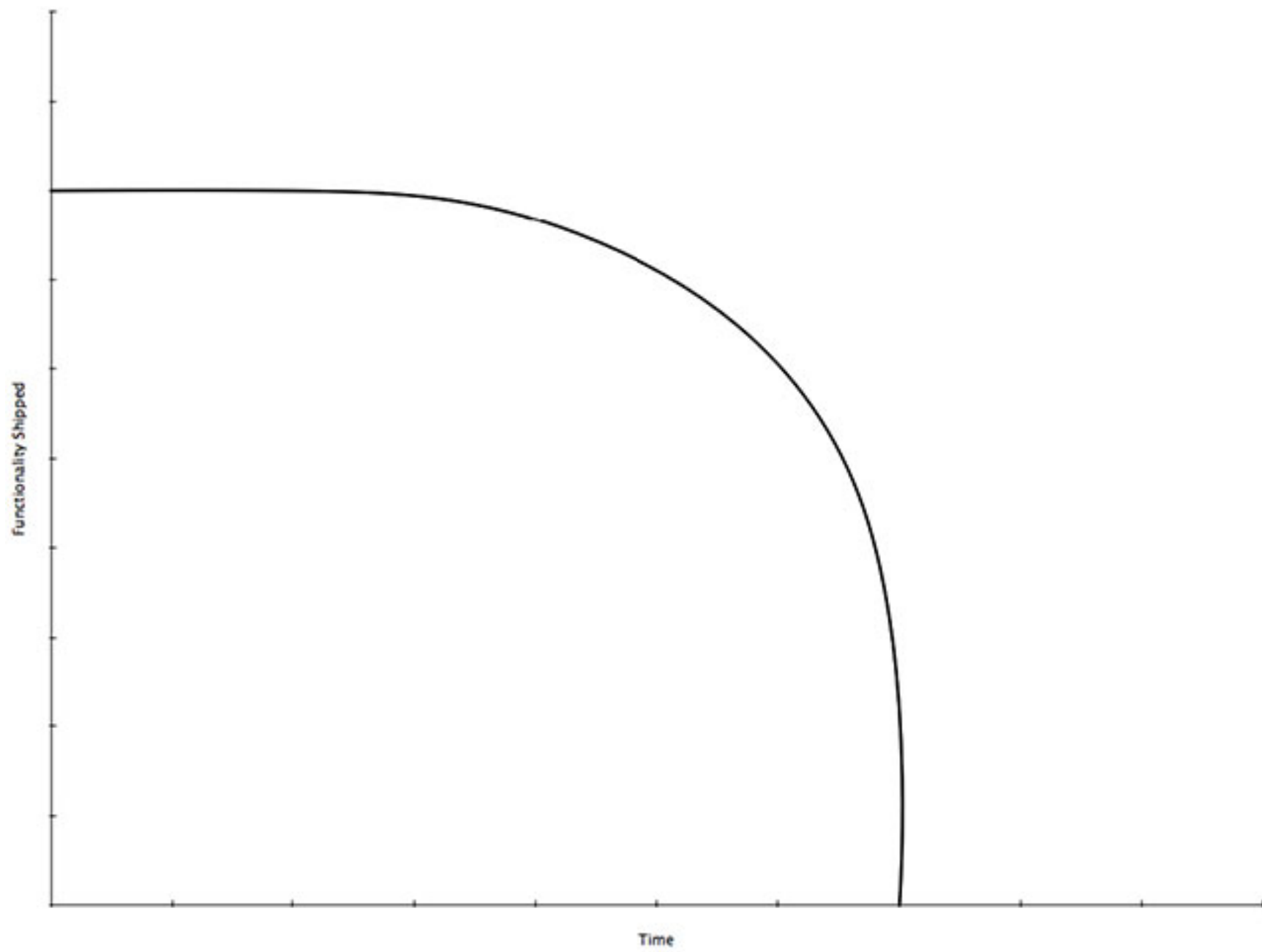
<https://www.flickr.com/photos/donnieray/10584676434/>

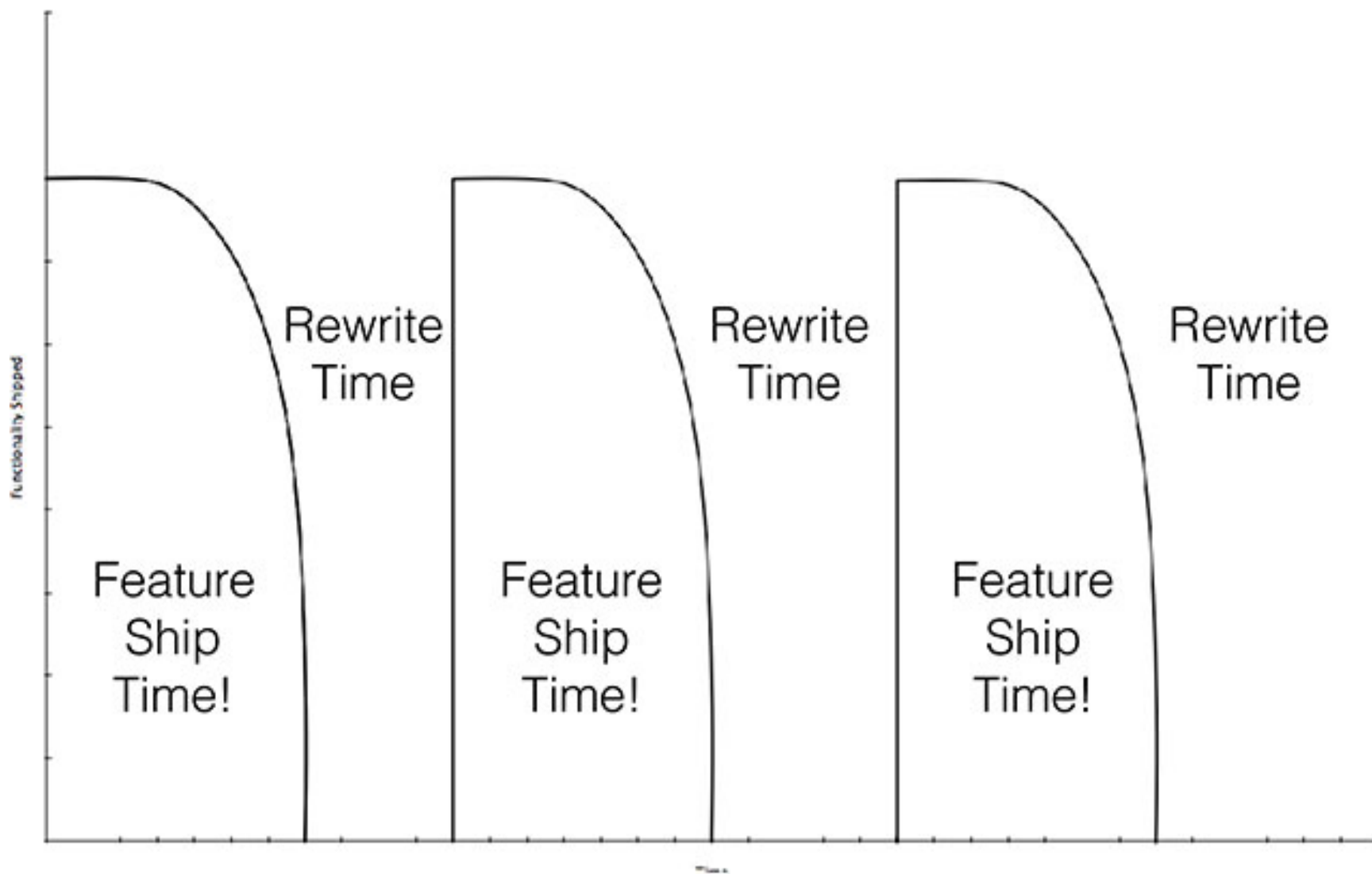
Change is inevitable











Features For Today

Platform For Tomorrow

You Need To Get Good At Incremental
Changes To Your Architecture

Your Homework!

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- Write down why you want to use microservices

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- Brainstorm with your teams other ways you could achieve the same goals

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- Brainstorm with your teams other ways you could achieve the same goals
- Think about what you can track to see if it is working
- Think about how often you should have a review

We want to use microservices because:

My customers will care because:

We could also consider these things to achieve the same goal:

We'll track these things to see how we're going:

We'll have a checkpoint every:

Know why you're doing it

Know why you're doing it

Decide what to measure

Know why you're doing it

Decide what to measure

Track & adapt

Know why you're doing it

Decide what to measure

Track & adapt

Do this while shipping features