



**Red Hat**

Global Transformation Office

# Devops 2020

## Re:Think!

John Willis and Jabe Bloom

Global Transformation Office

# Re:Think

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- Overview
- Organizational Conversations
- Organizational Design
- The Three Economies

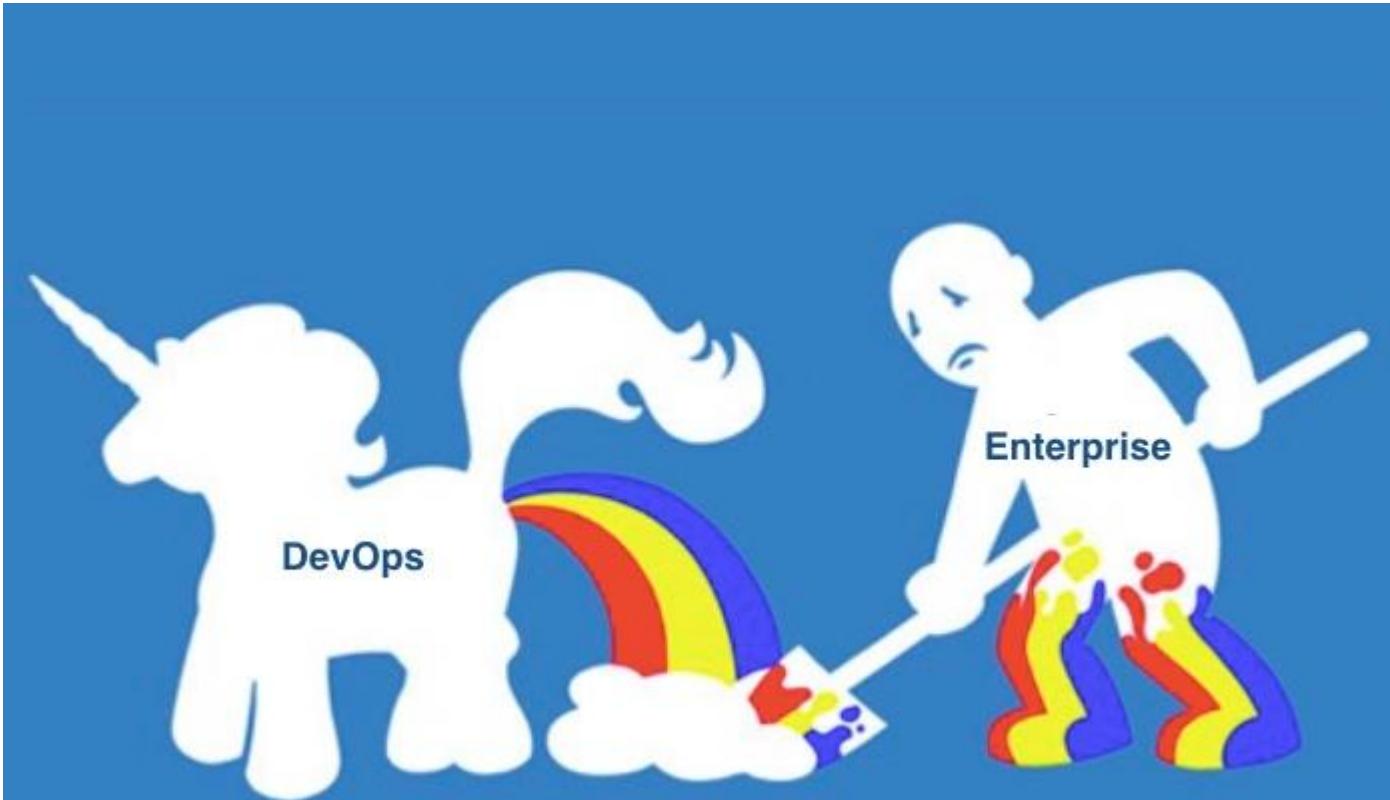
# Global Transformation Office



We wrote some books



# The Last 10 Years



# Digital Transformation

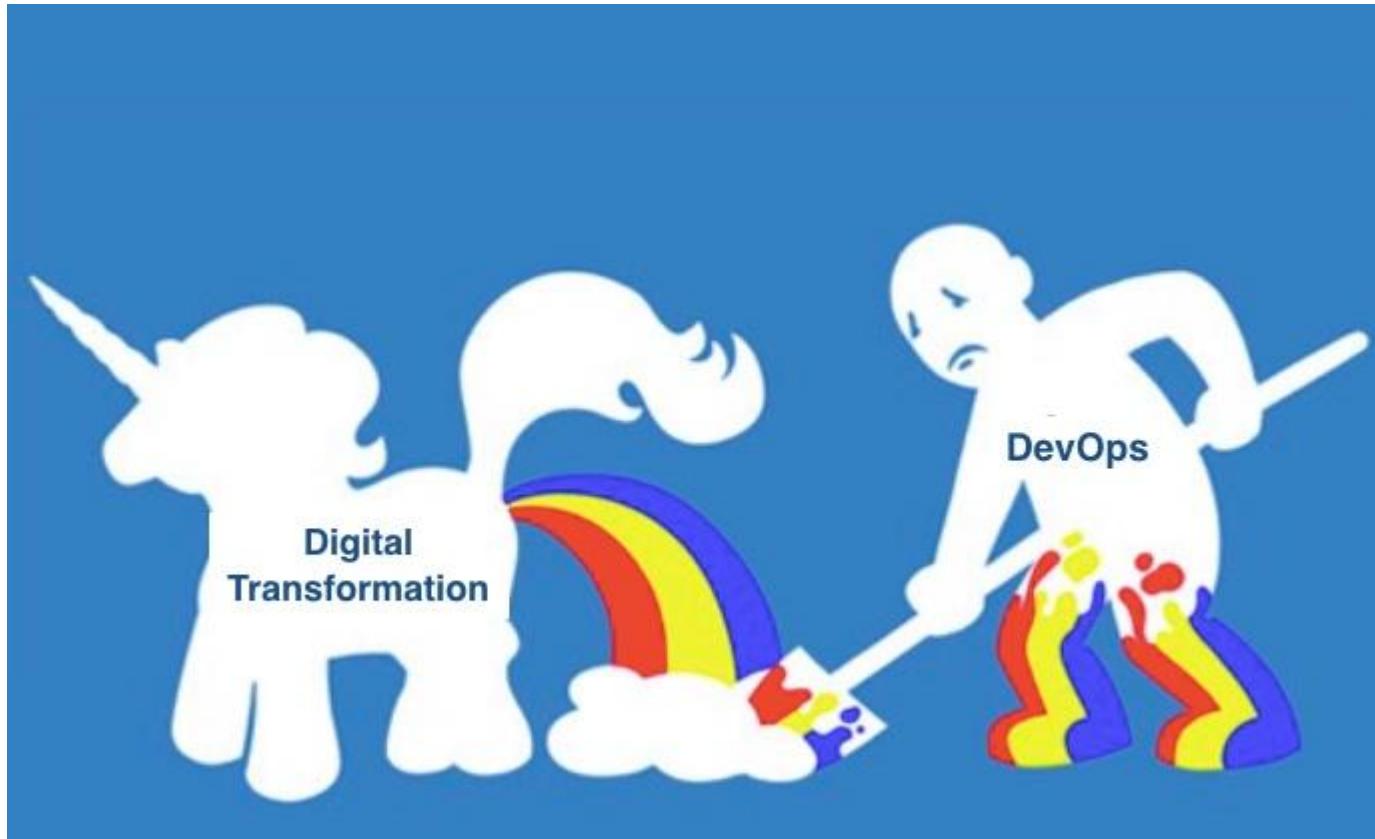
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“More than 70% of digital transformations fail”

- Peter Bendor-Samuel, Everest Group

Organizations are making technology investments and getting poor results because they aren't prepared to really change.

# The Next 10 Years



# Five Failures



## Leadership

Prevents  
change



## Product

Builds things  
that don't matter



## Development

Builds wrong  
things



## Architecture

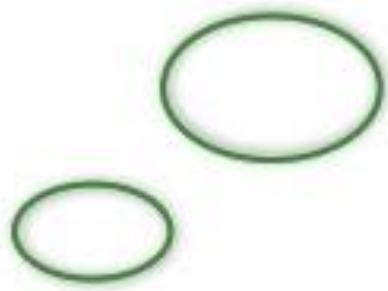
Builds things  
wrong



## Operations

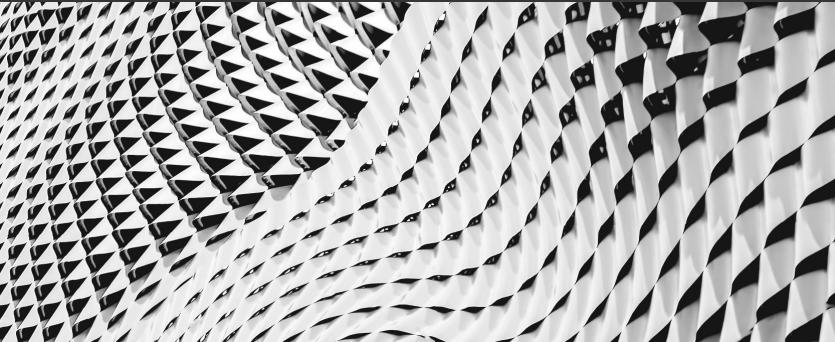
Incidents and  
outages

# RE:THiNK!



# Organizational Conversations

Exploring  
conversations in the  
enterprise.

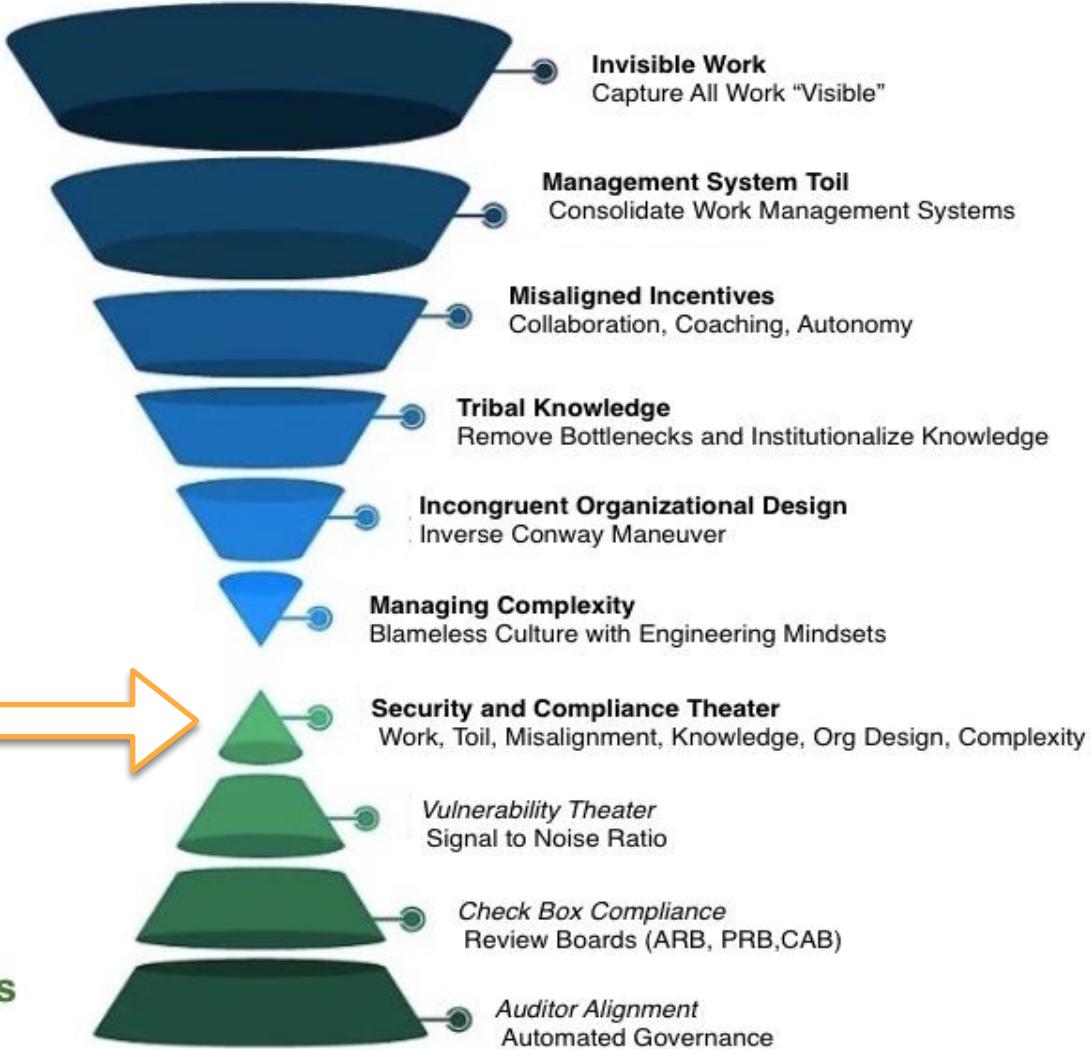


# Organizational Conversations

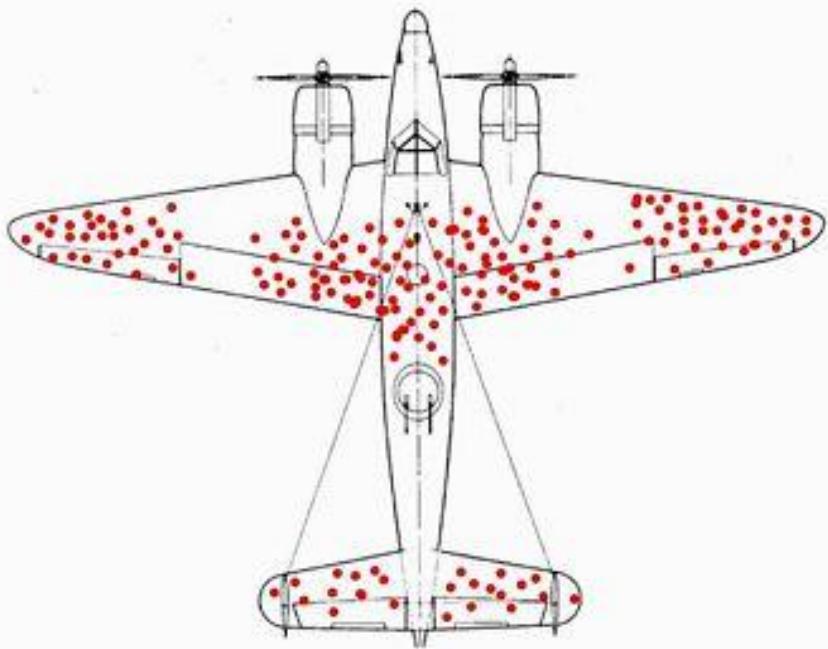


You can't Lean, Agile, SAFe, or  
even Devops your way around  
a bad organizational culture.

## DevOps



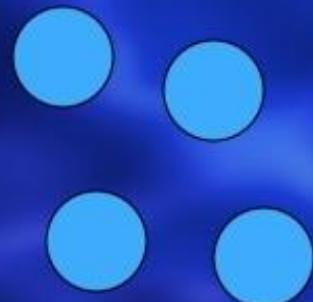
## DevSecOps



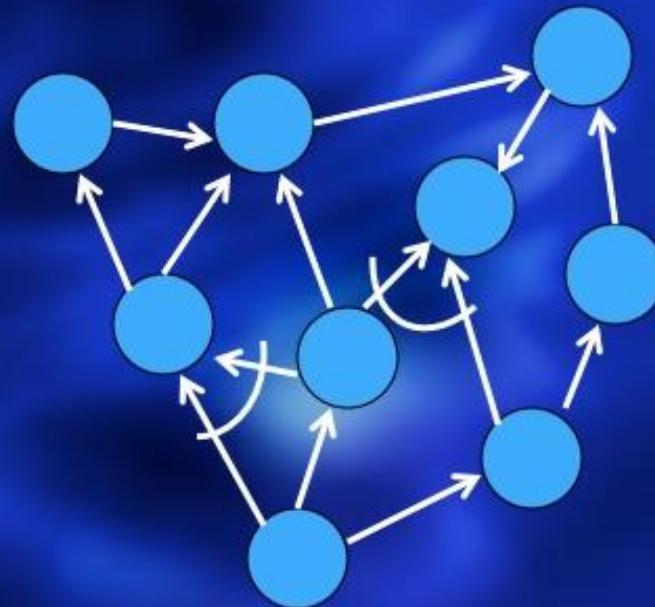
“What Abraham Wald found was a logical error known as Survival Bias”

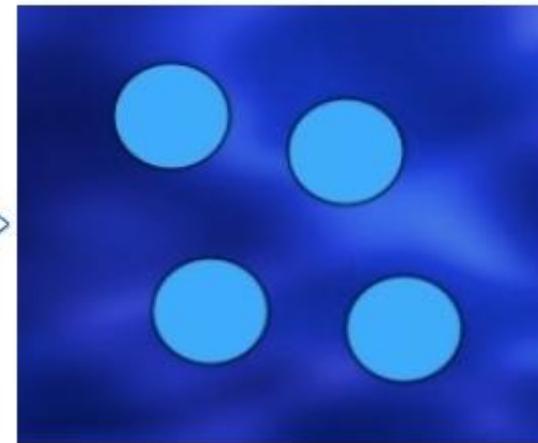
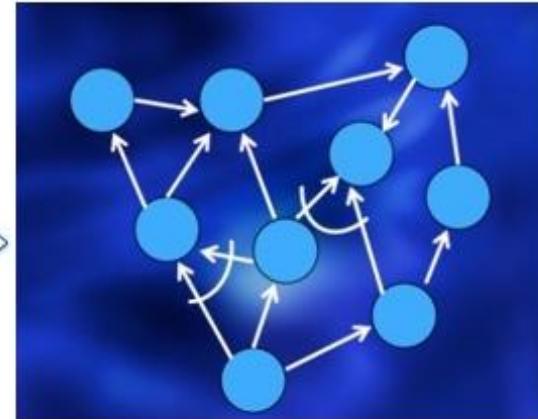
# Complexity

system A



system B





## HTTP Request with curl containing Content-T

```
curl http://127.0.0.1:8900/struts2-showcase/  
%{(#_='multipart/form-  
data').(#dm=@ognl.OgnlContext@DEFAULT_MEMBER_  
ntainer=#context['com.opensymphony.xwork2.Ac  
nstance(@com.opensymphony.xwork2.ognl.OgnlUt  
er()).(#ognlUtil_getExcludedClasses() clear  
er.toString()) (#cmds={'/bin/echo', 'eps}))  
java.lang.ProcessBuilder(#cmds), (#p.redirect  
rg.apache.struts2.ServletActionContext@getRe  
o.IOUtils@copy(#process.getInputStream(), #rc  
  
com.opensymphony.xwork2.inject.ContainerImpl
```



## Former Equif person who f

*The company is still invest*

By Russell Brandom | Oct 3, 2017, 1:03p

ngle

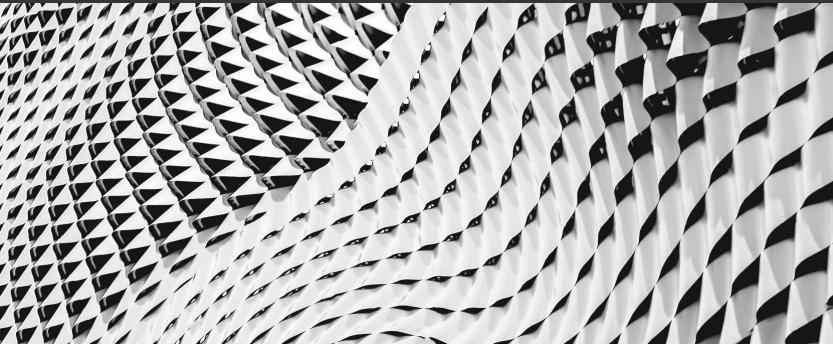
## The Equifax Data Breach

Majority Staff Report  
115th Congress

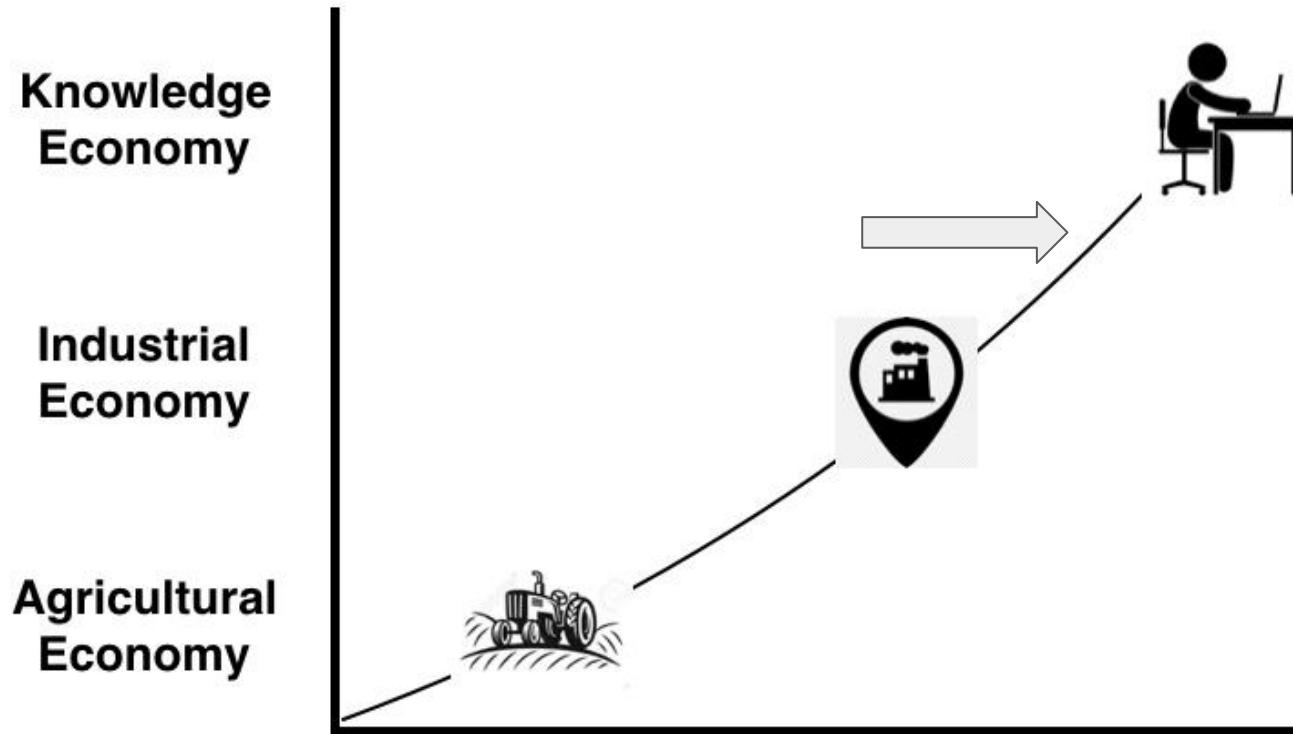
December 2018

# Organizational Design

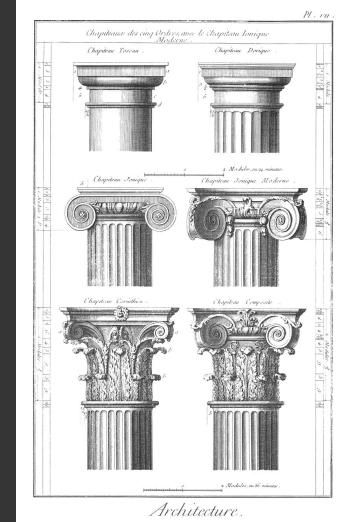
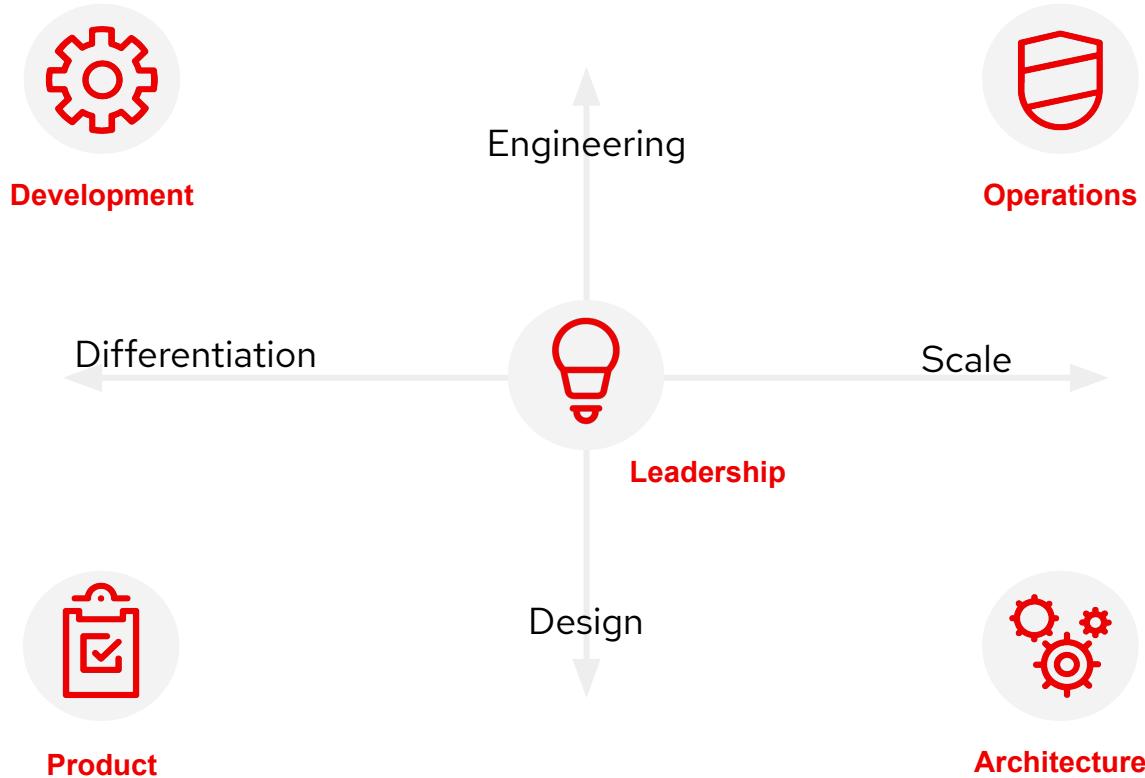
Exploring design in the  
enterprise.



# Evolution



# Five Elements



# Toyota Supply Chain

When we talk about agile, lean or devops all roads always lead back to Toyota. The four V's of Learning.. Toyota's used the 4VL as a tool for understanding "economic value" and balance theory..



## Variety

Balance market demands and operational efficiency.



## Variability

Manage inconsistencies to reduce cost and improve quality.



## Velocity

Steady flow throughout the system..



## Visibility

Transparency to enable continuous learning and improvement.

# The Opportunities

Five Elements of Learning (5EL) and the Four V's of Learning (4VL) have different motivations.

# Motivations and Conflicts

The following is a mashup of the conflicts and motivations between the Five Elements and the Toyota Supply Chain Four V's of Learning

Developers and Product want speed and differentiation. While Operations and Architecture want resilience.

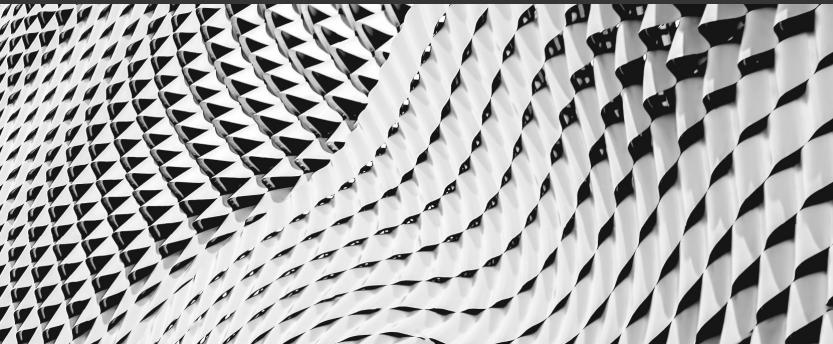


Developers	Product	Leadership	Operations	Architecture
Increase	Increase	Increase	Decrease	Decrease
Increase	Increase	Increase	Decrease	Decrease
Increase	Increase	Increase	Decrease	Decrease
Decrease	Decrease	Increase	Increase	Increase

# Variety

Balance market demands and operational efficiency

Exploring theory around the economics balance of choices.



# Constraints Enable Freedom

By curtailing the potential variation in component behavior... context-dependent constraints paradoxically also create new freedoms for the overall system



*Alicia Juarrero*

**Certain types of governance of a system enables freedom for the system.**

.

# Tragedy of the Commons

Self-interest, behave contrary to the common good of all users by depleting or spoiling the shared resource through their collective action.



*Garrett Hardin*

**Consumables must be managed to  
preserve the system. Too many cows,  
consume all of the grass, and the field  
collapses.**

.

# Ashby's Law

If a system is to be stable the number of states of its control mechanism must be greater than or equal to the number of states in the system being controlled



*Ross Ashby*

**Stable systems controls must be ( $>=$ )  
then the controlled systems**

- 
-

# Cost of Delay

The problem with any prioritization decision is [it is a] decision to service one job and delay another.



*Don Reinertsen*

# Focus on High Value High Probability Items in your Backlog.

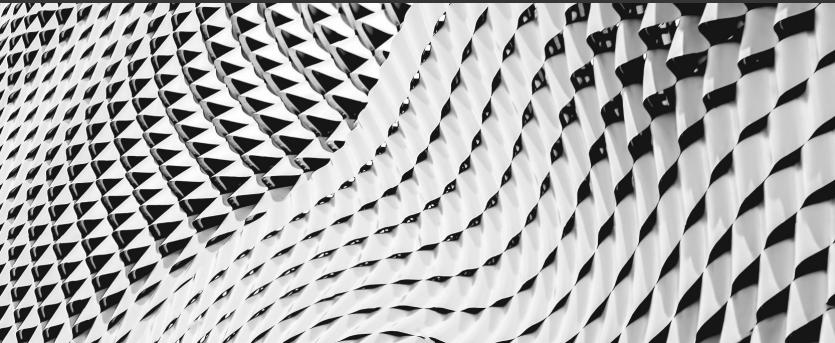
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# Variety

Variety is a decision making parameter used to balance market demands and operational efficiency. Another way to describe it would be “Optionality”..



# Variability (Variation)



Using Economic  
Model for Decision  
Making

Misunderstanding variation is the root cause of knee-jerk reactions, over control, micromanagement, and tampering.

*Unknown*

# Operations Research

The importance of operational definitions in collecting data. Without them the data is suspect. Change the definition and the data changes. And when you don't have a written definition the different opinions of those collecting data result in muddled data.



*Dr Edwards Deming*

We quote the hell out of Deming.  
Maybe we should start listening to  
him.

•

•

# Taguchi Loss Function

Cost is more important than quality but quality is the best way to reduce cost.



*Genichi Taguchi*

**Find the edges of your variability. It's  
not how tight your tolerance levels  
are it's how far you can stretch them.**

# Red Queen Effect



# Variability

Variability is a decision making parameter used to balance the economics of quality versus cost. Another way to describe it would be “Variation”.

## Statistical Process

Understanding the different types of variation  
Shewhart and Deming.



## Tolerance

Finding the edges of your variability  
Genichi Taguchi



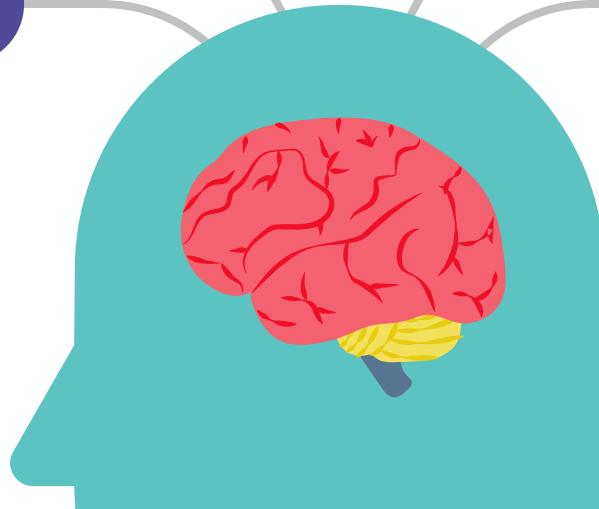
## Hidden Value

Focus on Novel Unknown Unknowns - Differentiation  
Inverse Taguchi Curve



## Red Queen

Running in the same place is losing  
Red Queen Effect



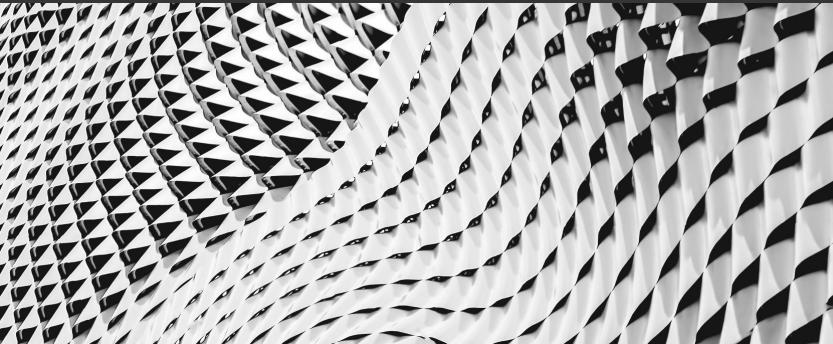
# 4VL - Summary

- **Using Math, Engineering, and Statistics.**
- **Instead of Knee-Jerk Fingers in the wind.**
- **If Nuclear Power Plants trust this stuff you should too.**
- **Over 100 Years of Engineering.**
- **Why wait 20 more years...**

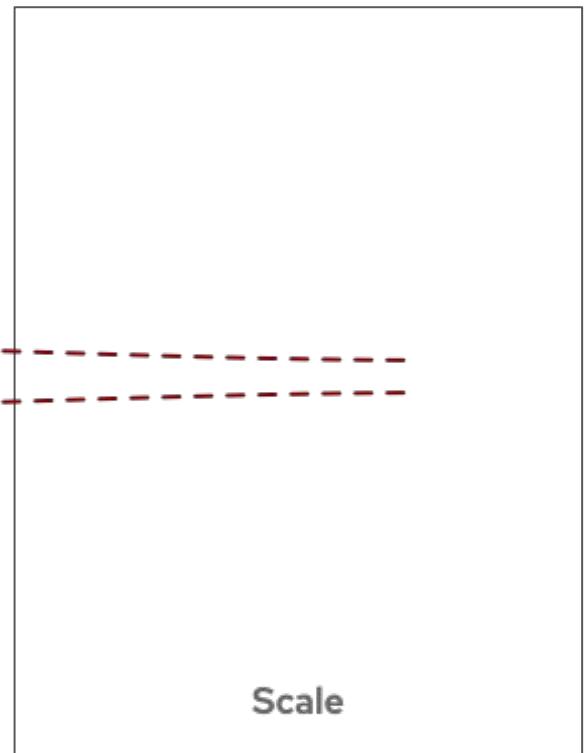
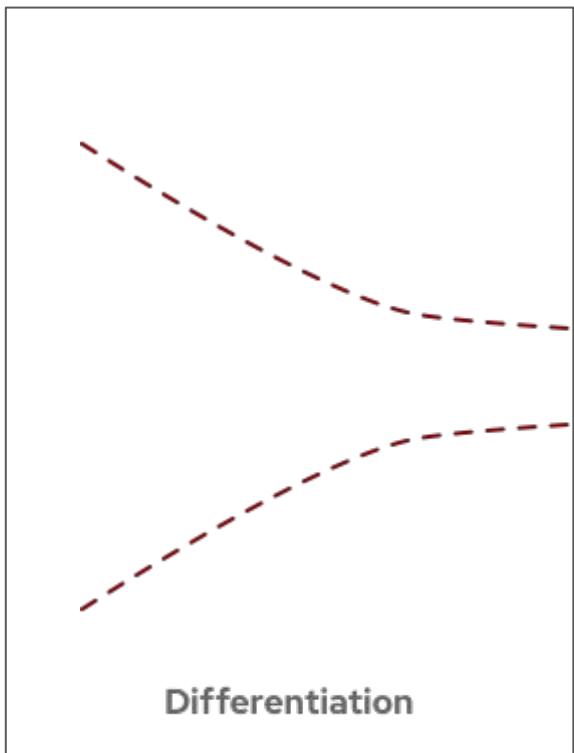
# Three Economies

## Transition Design for Platforms

Understanding the three economic frameworks that exist in organizations.



# Two Economies (Bi-Model Economy)



# Differentiation Economy

Where organizations look for market advantages.



-  **Velocity**  
Speed and direction. Getting fast feedback from customers.
-  **Novel**  
Create opportunities for disruptive innovation.
-  **Niche**  
Fast feedback to get product fit.
-  **Experimentation**  
Fail fast continuous experimentation.
-  **Incubation**  
Invest in disruptive solutions with significant potential impact.

# Scale Economy

Where organizations optimize for residence and scale.

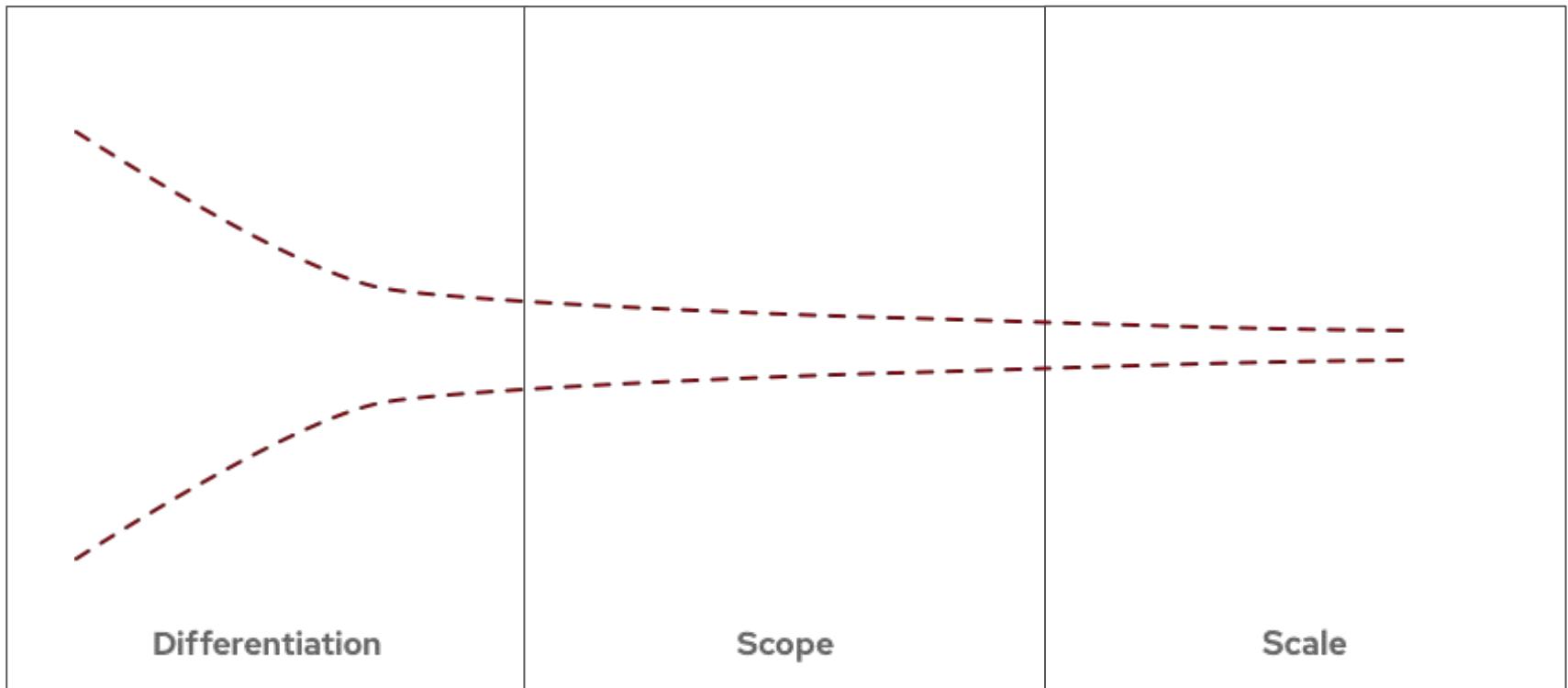


What Google did was make a  
non-deterministic infrastructure look  
deterministic to their developers.



*Mark Burgess*

# The Three Economies

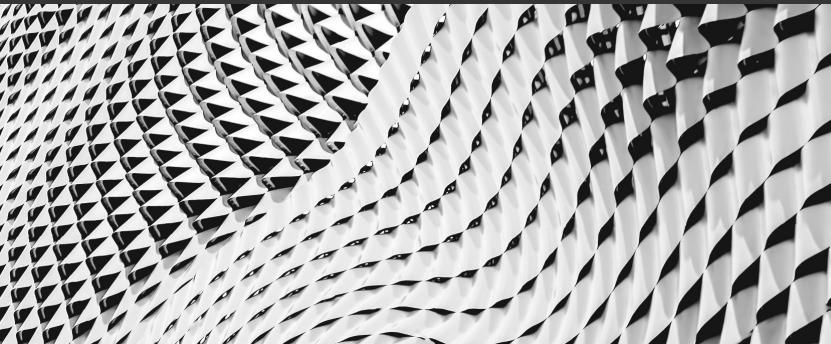


# Scope Economy

The Scope economy acts as a clutch. It's a way of translating efficiency between the difference and scale economies by accelerating adoption..



# Platforms are the New Kingmakers

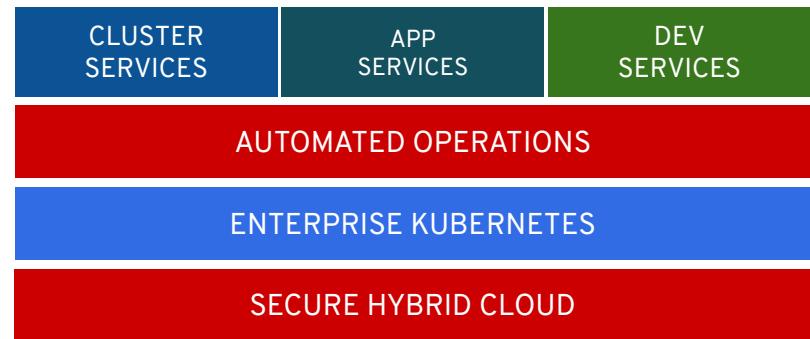
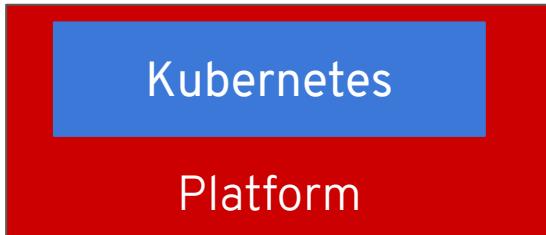


# Platform by Design

**Differentiation Economy**  
(Container Experience)  
**Platform as a Service**



**Scope Economy**  
(Service Experience)  
**Platform as an Interface**



# Resources

## Introducing the Red Hat Global Transformation Office

<https://www.redhat.com/en/blog/introducing-red-hat-global-transformation-office>

## DevOps' Seven Deadly Diseases

<https://www.youtube.com/watch?v=H0Xkv3tBzms>

## Introduction to DevSecOps

<https://www.openshift.com/blog/introduction-to-devsecops-by-john-willis-red-hat-openshift-commons-briefing>

## Abraham Wald

[https://en.wikipedia.org/wiki/Abraham\\_Wald](https://en.wikipedia.org/wiki/Abraham_Wald)

## Safety Anarchist – Sydney Dekker - Abraham Wald - Pages 192-193

<https://www.amazon.com/Safety-Anarchist-innovation-bureaucracy-compliance-ebook/dp/B076KD7DW6>

## U.S. House of Representatives Committee on Oversight and Government Reform

<https://republicans-oversight.house.gov/wp-content/uploads/2018/12/Equifax-Report.pdf>

# Resources

**Red Hat Open Transformation: Principle and Practice - Andrew Clay Shafer and the Five Elements**

<https://techfieldday.com/video/red-hat-open-transformation-principle-and-practice/>

**Toyota Supply Chain Management: A Strategic Approach to Toyota's Renowned System**

<https://www.amazon.com/Toyota-Supply-Chain-Management-Strategic/dp/0071615490>

**Alicia Juarrero**

<https://aliciajuarrerodotcom1.wordpress.com/about/>

**Tragedy of the commons**

[https://en.wikipedia.org/wiki/Tragedy\\_of\\_the\\_commons](https://en.wikipedia.org/wiki/Tragedy_of_the_commons)

**Ashby's Law of Requisite Variety**

<https://www.edge.org/response-detail/27150>

**Cost of Delay**

<https://blackswanfarming.com/cost-of-delay/>

# Resources

**Deming Operational Definition quote - pages 104-105 of The New Economics**

<https://www.amazon.com/New-Economics-Industry-Government-Education/dp/0262541165>

**Taguchi loss function**

[https://en.wikipedia.org/wiki/Taguchi\\_loss\\_function](https://en.wikipedia.org/wiki/Taguchi_loss_function)

**Red Queen hypothesis**

[https://en.wikipedia.org/wiki/Red\\_Queen\\_hypothesis](https://en.wikipedia.org/wiki/Red_Queen_hypothesis)

**The Three Economies an Introduction**

<http://blog.jabeblom.com/2020/03/04/the-three-economies-an-introduction/>

**Understanding Three Economies**

<https://community.wardleymaps.com/t/understanding-three-economies/612>

# Thank you

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