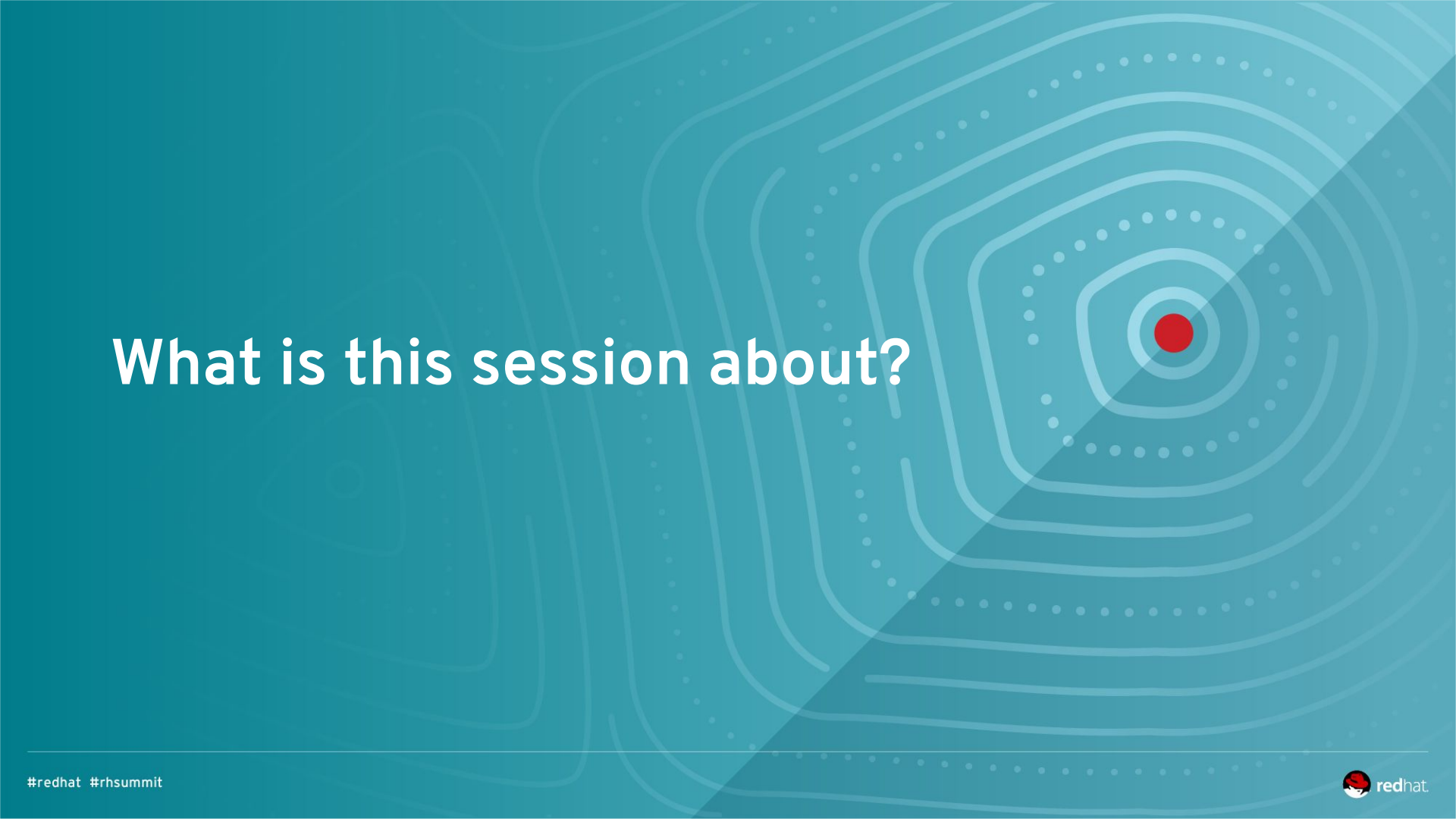
Love Containers, Love Devops, Love Openshift, Where's my business case?

Helping you build your business case for Openshift.

Graeme Colman, Keith Lynch, Daniel Oh
Red Hat
2nd May 2017

What is this session about?



Who is presenting?

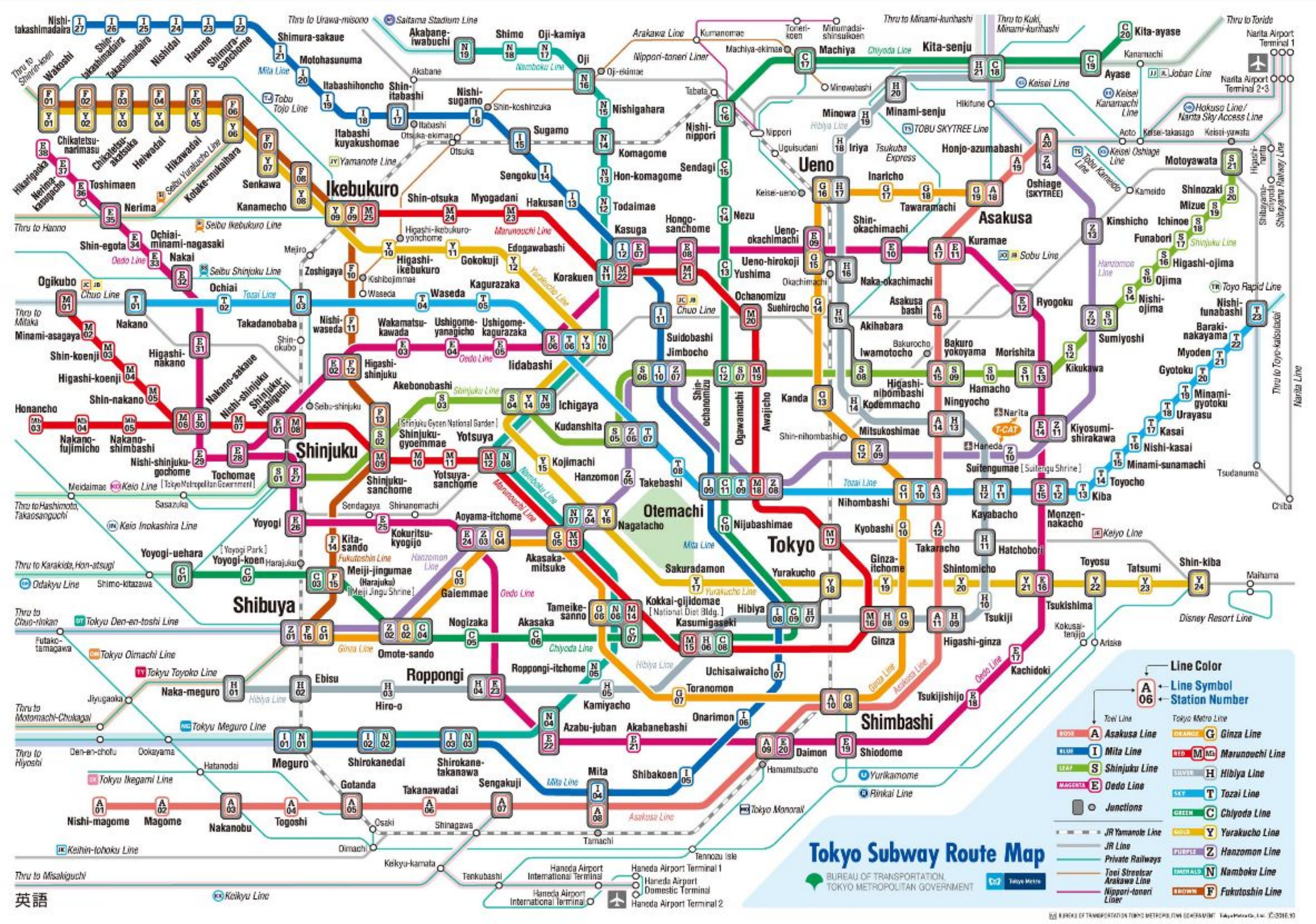
What will you hear?

Real customers stories and business cases.

- Graeme - A business case process.
- Keith - A global investment bank.
- Daniel - A large Asian services provider

Graeme - A Business Case Process

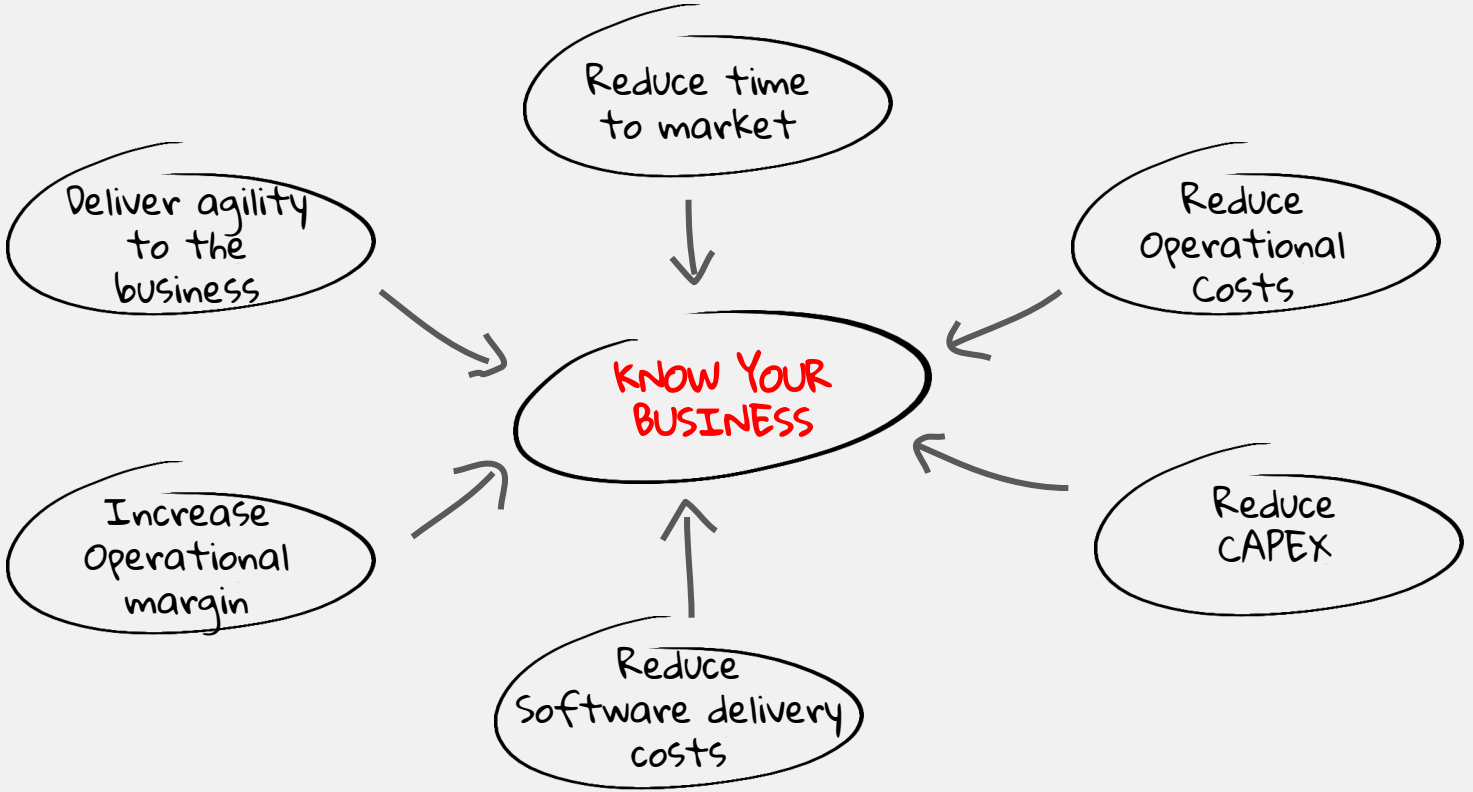

Yu-Gi-Oh
CRAPBOO


Tokyo Subway Route Map
BUREAU OF TRANSPORTATION, TOKYO METROPOLITAN GOVERNMENT
Line Color
Line Symbol
Station Number
Toei Line
Tokyo Metro Line
Asakusa Line
Mita Line
Shinjuku Line
Oedo Line
Junctions
JR Yamanote Line
JR Line
Private Railways
Toei Streetcar Arakawa Line
Nippori-toneri Liner
Ginza Line
Marunouchi Line
Hibiya Line
Tozai Line
Chiyoda Line
Yurakucho Line
Hanzomon Line
Namboku Line
Fukutoshin Line
Ikebukuro
Ueno
Asakusa
Shinjuku
Otemachi
Tokyo
Shibuya
Roppongi
Shimbashi
英語

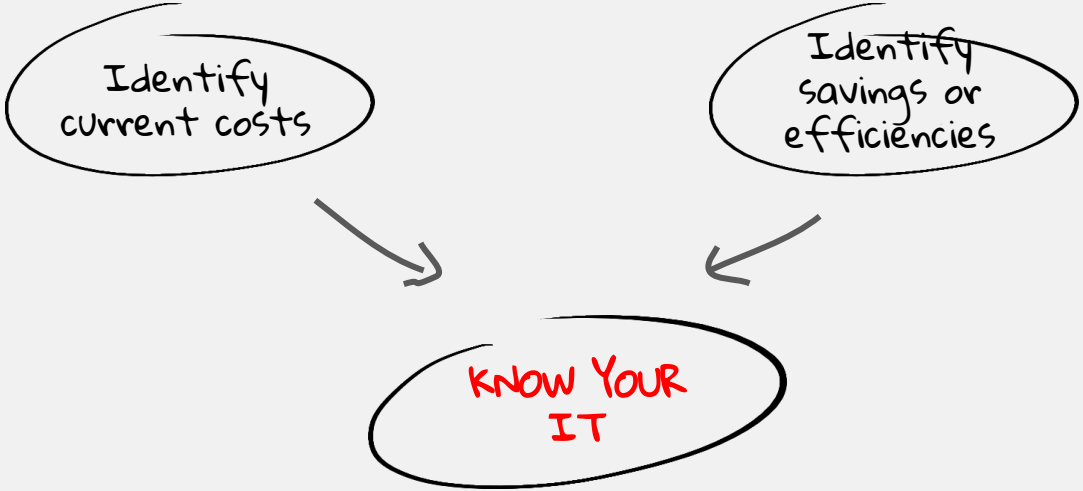
What are the difficulties in defining a Business Case?

- Moving to container workloads is still relatively new to customers
- Understanding where the platform adds tangible business value

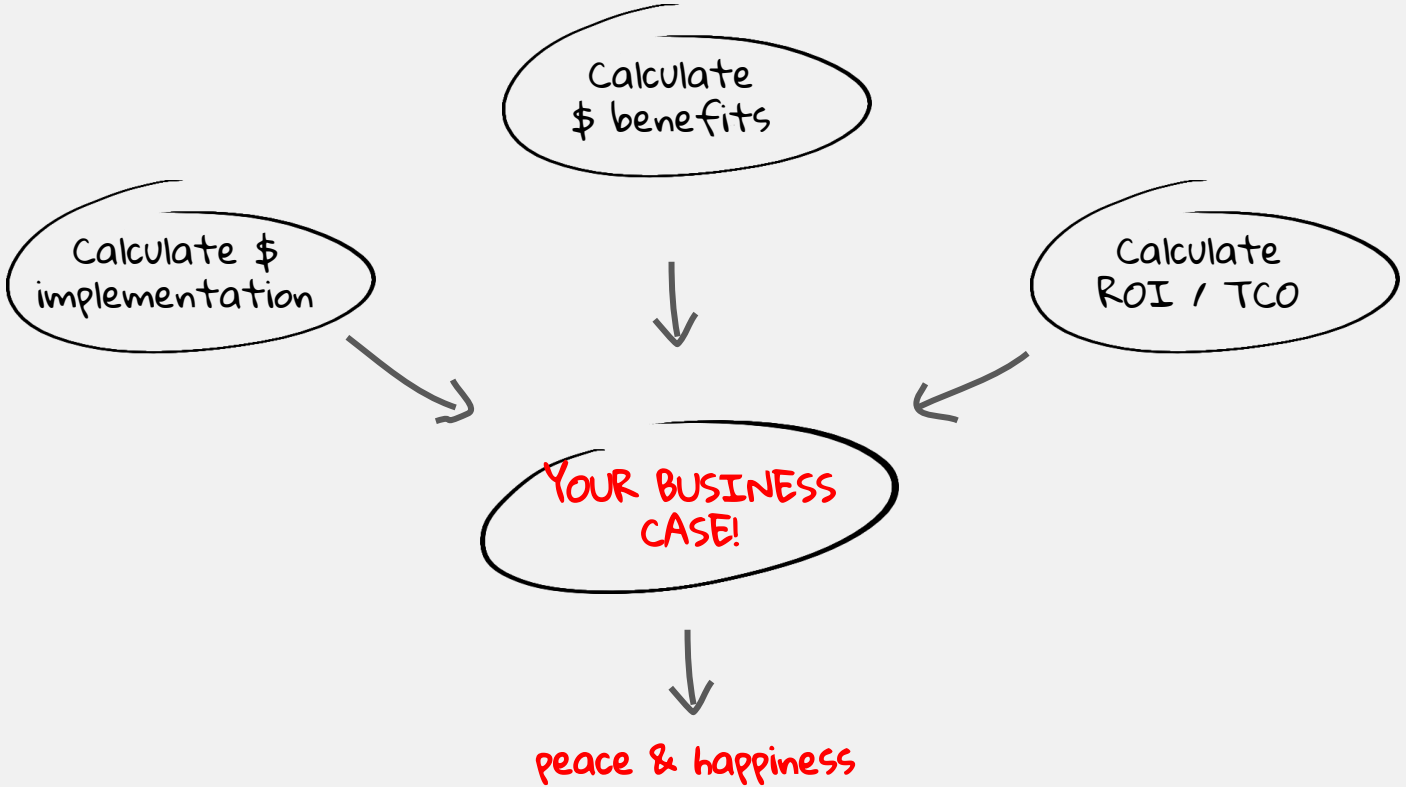
Why?


Reduce time to market
Deliver agility to the business
Reduce Operational Costs
KNOW YOUR BUSINESS
Increase Operational margin
Reduce CAPEX
Reduce Software delivery costs

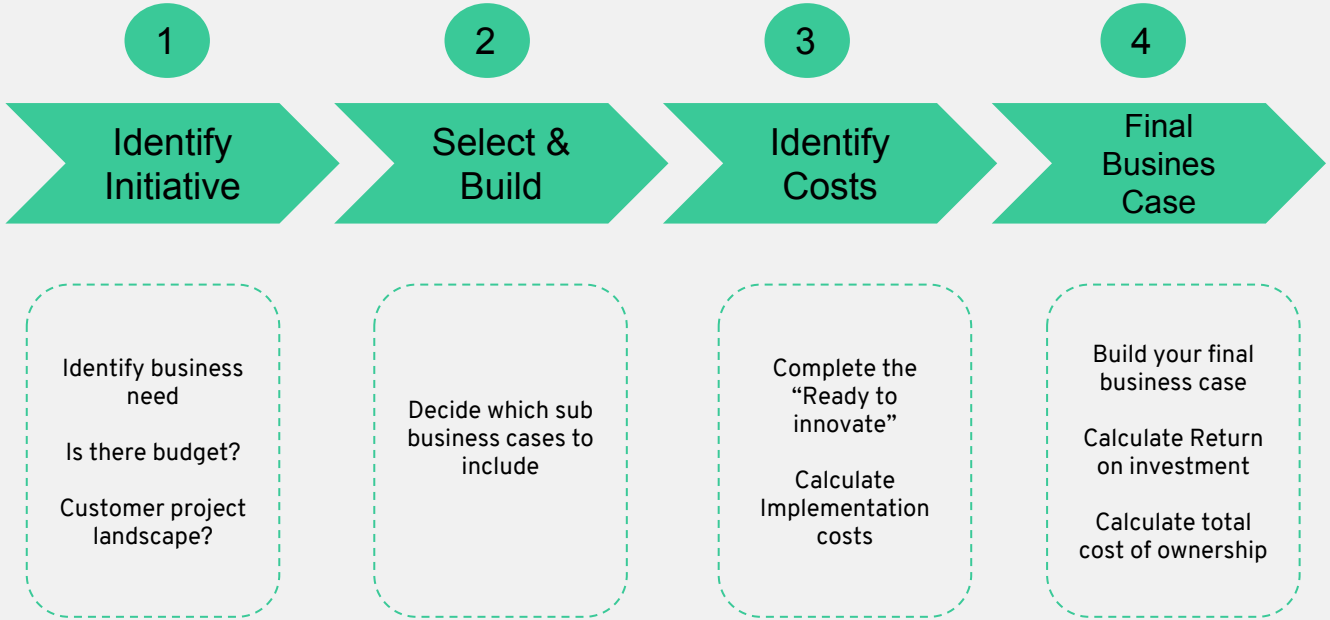
What?


Identify current costs
Identify savings or efficiencies
KNOW YOUR IT

How?


Calculate $ benefits
Calculate $ implementation
Calculate ROI / TCO
YOUR BUSINESS CASE!
peace & happiness

Finding peace and happiness



Step 1 - What are you trying to achieve?

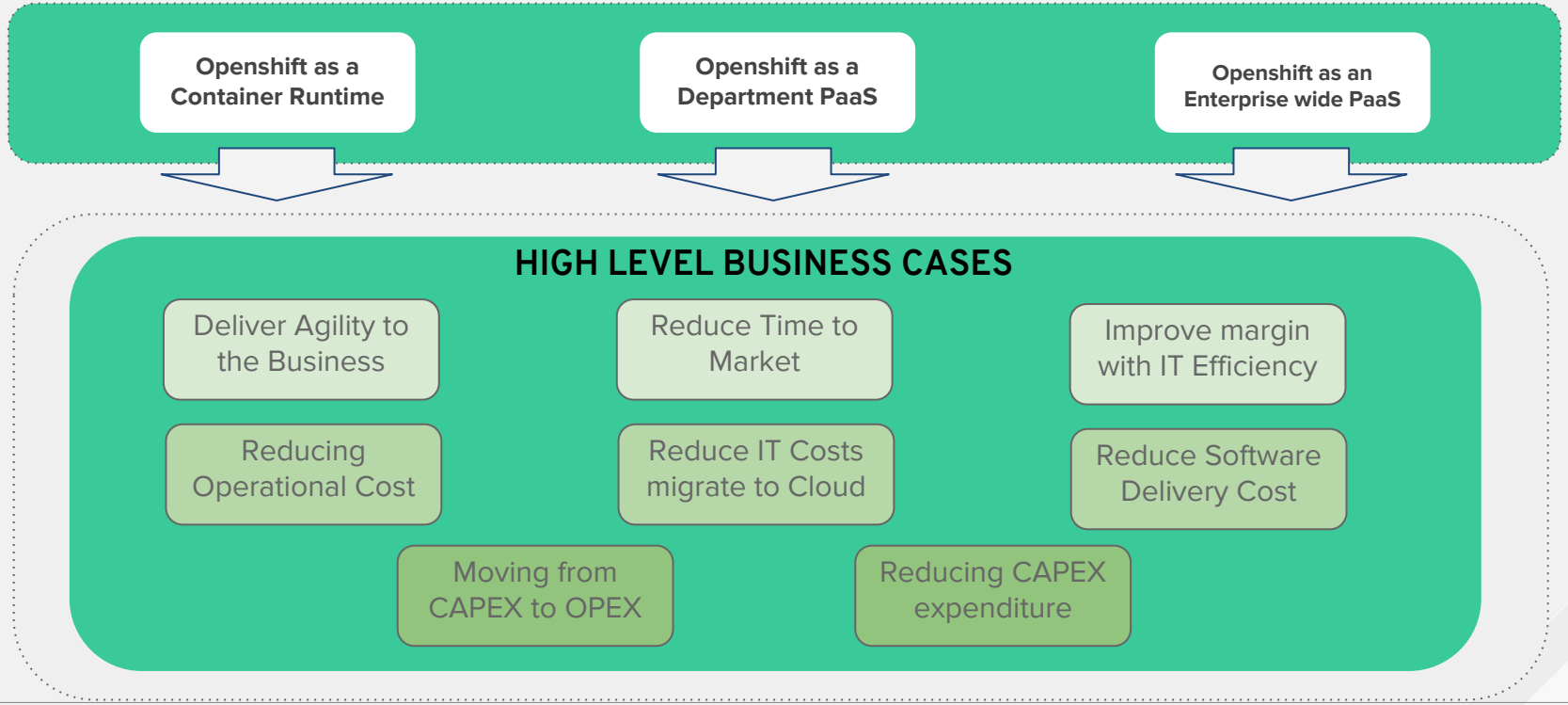
Container Runtime Platform?

Departmental PaaS?

Enterprise PaaS?

OPENSHIFT® by Red Hat®

Step 2 - Select & Build



Example: Reduce Operational Costs

Behind each business case are a set of sub business cases with calculators

Technical Business Case	What will it deliver?	How will it deliver?
001-Developer Productivity	Enables IT project teams to deliver software quicker and more frequently therefore delivering business change quicker and more frequently.	Self service dev/test environments Reduce operations process delays Reduce infrastructure process delays Tooling to deliver Devops.
002-Deployment Efficiency	Improved efficiency in the way that you deploy applications, from operational support to project delivery to operational runtime.	Reduce infrastructure provisioning delays Automate deployment Reduce environment defects Reduce risk of deployment
001-Infrastructure Cost Reduction	Reduce the cost of your application infrastructure by improving the utilisation of servers.	Deploying containersed applications through Openshift will enable full utilisation of your infrastructure, achieving better application/server density and also reducing HA infrastructure.

Example: Infrastructure Cost Reduction

Each sub business case provides the technical details for your business case

Server & VMs	No.
How many VM's do you have deployed to support your application estate?	300
How many physical servers do you have to support your application estate?	80

Application Categories	Total number of applications	H a ap
How many large applications do you have that are clustered for performance or throughput?	5	
How many large applications do you have that are clustered for High Availability reasons (redundancy through clustering)?	5	
How many Medium applications do you have that are clustered for performance or throughput?	7	
How many Medium applications do you have that are clustered for High Availability reasons (redundancy through clustering)?	11	
How many Small clustered applications do you have?	12	
How many Small non clustered applications do you have?	10	

Application Migration Effort	%
What percentage of applications will be a simple "lift & shift"	50
What percentage of applications will require minor code refactor	30
What percentage of applications will require medium code refactor	15
What percentage of applications will require complex code refactor	5

Application Delivery Costs	
Average all inclusive cost for application delivery per day	£1,000.00
Percentage to add as a error factor in calculating the project delivery costs	40

OUTPUTS

Calculated annual Opex cost of running your CURRENT IT infrastructure	**£1,017,514.67**
Calculated annual Opex costs of running your OPENSHIFT IT infrastructure	**£333,499.38**
Calculated cost of implementation and migration of applications to the OPENSHIFT infrastructure	£2,940,000.00

Example: Infrastructure Cost Reduction

Each sub business case provides the technical details for your business case

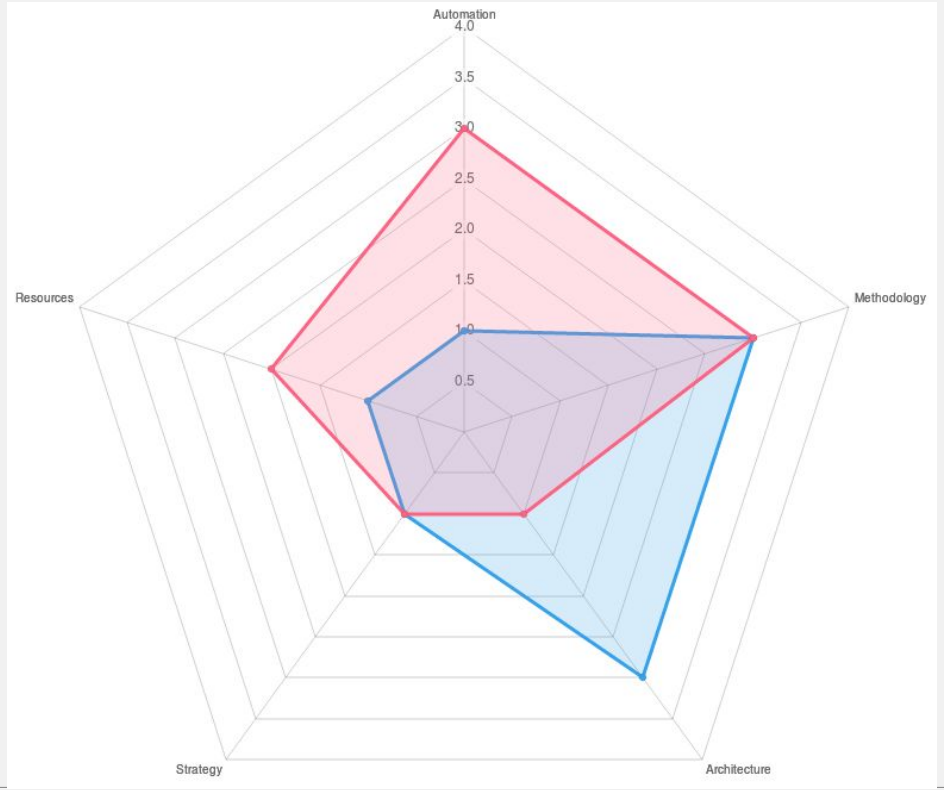
Application Release Overview	Current	Openshift
Applications with LOW release cadence	24	
Applications with MEDIUM release cadence	18	
Applications with HIGH release cadence	7	
LOW release cadence (no of days between releases)	365	
MEDIUM release cadence (no of days between releases)	90	
HIGH release cadence (no of days between releases)	30	
Average time taken to perform a release (elapsed time in days)	1	0
Average time taken to perform a release (manpower time in hours)	4	1

Application release cost savings		
	Current	Openshift
LOW Releases /year	24	24
MEDIUM Releases /year	73	73
HIGH Releases /year	85	85
Elapsed total days	182	182
Man hours	729	182
Cost	**£72,866.67**	**£18,216.67**
Cost saving / Year		**£54,650.00**

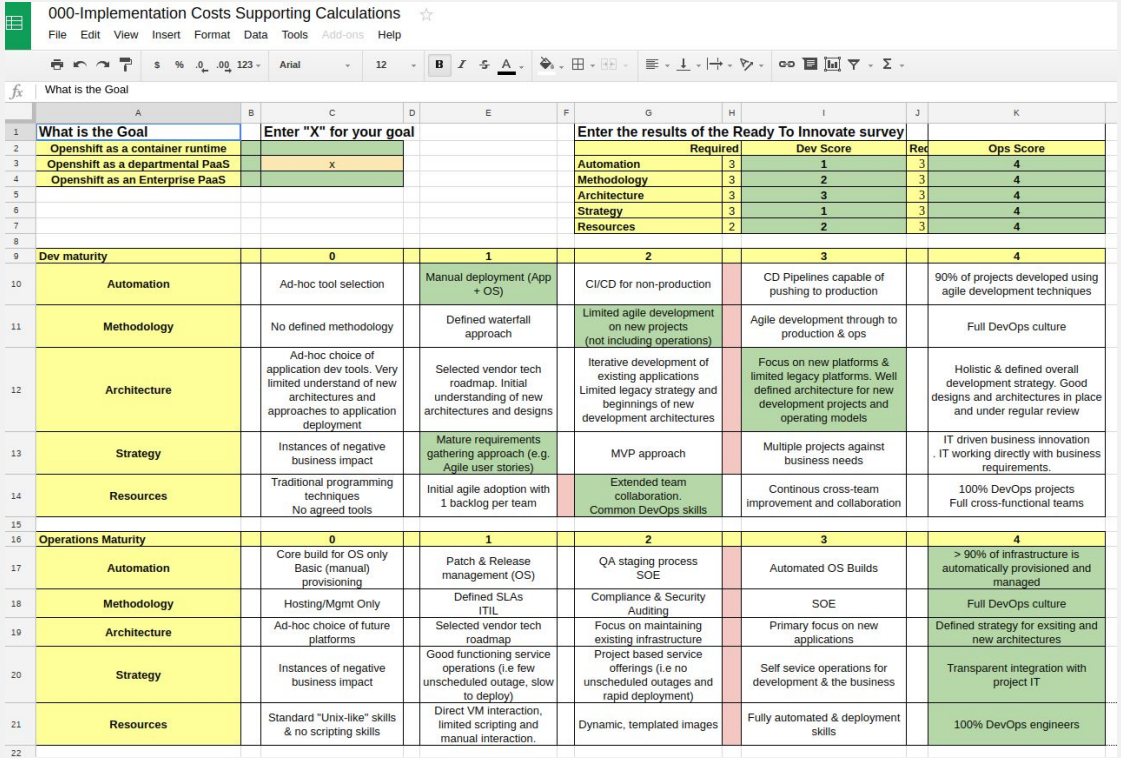
Environments Overview	Current	Openshift
How many non production environments per application are built	1	1
How many production environments per application are built	2	2
How many new application envs are built each year	15	15
How many days (elapsed) does it take to build an environment	30	1
How many days (manpower) does it take to build an environment	5	1
How much effort (manpower) does it take to design env changes (days)	0.5	0.5
How much effort (manpower) does it take to script env changes (days)	0.5	0.5
How much effort (manpower) does it take to test env changes (days)	0.25	0.5
How much effort (manpower) does it take to deploy env changes (days)	0.25	0.25

Environment build cost savings	Current	Openshift
Total Envs / app	3	3
Env build Elapsed time / app	90	3
Env Build Effort / app	15	3
Total Env build effort	735	0
Total env build effort / year (new apps)	225	45
Total releases / year	182	182
Env effort in release changes / app	2	2
Totoal Env effort in release changes	273	319
Total Env resource effort	498	364
Total cost	**£249,125.00**	**£181,895.83**
Cost Saving / Year		**£67,229.17**

Step 3 - Are you Ready to innovate?



Ready to Innovate = Cost of implementation!



000-Implementation Costs Supporting Calculations

File Edit View Insert Format Data Tools Add-ons Help

What is the Goal

What is the Goal	Enter "X" for your goal
Openshift as a container runtime	
Openshift as a departmental PaaS	x
Openshift as an Enterprise PaaS	

Enter the results of the Ready To Innovate survey	Required	Dev Score	Required	Ops Score
Automation	3	1	3	4
Methodology	3	2	3	4
Architecture	3	3	3	4
Strategy	3	1	3	4
Resources	2	2	3	4

Dev maturity	0	1	2	3	4
Automation	Ad-hoc tool selection	Manual deployment (App + OS)	CI/CD for non-production	CD Pipelines capable of pushing to production	90% of projects developed using agile development techniques
Methodology	No defined methodology	Defined waterfall approach	Limited agile development on new projects (not including operations)	Agile development through to production & ops	Full DevOps culture
Architecture	Ad-hoc choice of application dev tools. Very limited understand of new architectures and approaches to application deployment	Selected vendor tech roadmap. Initial understanding of new architectures and designs	Iterative development of existing applications Limited legacy strategy and beginnings of new development architectures	Focus on new platforms & limited legacy platforms. Well defined architecture for new development projects and operating models	Holistic & defined overall development strategy. Good designs and architectures in place and under regular review
Strategy	Instances of negative business impact	Mature requirements gathering approach (e.g. Agile user stories)	MVP approach	Multiple projects against business needs	IT driven business innovation . IT working directly with business requirements.
Resources	Traditional programming techniques No agreed tools	Initial agile adoption with 1 backlog per team	Extended team collaboration. Common DevOps skills	Continous cross-team improvement and collaboration	100% DevOps projects Full cross-functional teams

Operations Maturity	0	1	2	3	4
Automation	Core build for OS only Basic (manual) provisioning	Patch & Release management (OS)	QA staging process SOE	Automated OS Builds	> 90% of infrastructure is automatically provisioned and managed
Methodology	Hosting/Mgmt Only	Defined SLAs ITIL	Compliance & Security Auditing	SOE	Full DevOps culture
Architecture	Ad-hoc choice of future platforms	Selected vendor tech roadmap	Focus on maintaining existing infrastructure	Primary focus on new applications	Defined strategy for exsiting and new architectures
Strategy	Instances of negative business impact	Good functioning service operations (i.e few unscheduled outage, slow to deploy)	Project based service offerings (i.e no unscheduled outages and rapid deployment)	Self sevice operations for development & the business	Transparent integration with project IT
Resources	Standard "Unix-like" skills & no scripting skills	Direct VM interaction, limited scripting and manual interaction.	Dynamic, templated images	Fully automated & deployment skills	100% DevOps engineers

Step 4 - Build the final business case

KEY OBJECTIVES	BUSINESS OUTCOMES / SUCCESS METRICS
• Consolidate our application runtime infrastructure • Remove the datacenter costs of running 300 virtual machines on 80 physical servers • Migrate 50 applications to container runtimes in AWS	• Reduction in infrastructure costs from £xx to £xx over an 18 month timeframe • Reduce forward looking Infrastructure budget by 30%

FINANCIAL FACTORS

Total costs of current solution:
- **Opex costs over 1 year** **£1,192,000**
- **Opex costs over 3 years** **£3,576,000**

Total cost of implementation:
- **Cost of implementation** **£3,654,600**

Total costs of future solution:
- **Opex costs over 1 year** **£415,476**
- **Opex costs over 3 years** **£1,246,430**

Total Cost saving-
- **Savings 1 year** **£776,923**
- **Savings 3 years** **£2,330769**

PROJECT CLASSIFICATION (STRATEGY & CAPABILITIES)

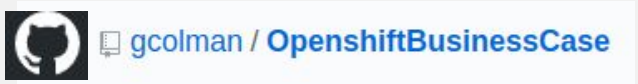
Strategy Alignment:
- Cloud First Strategy
- Infrastructure modernization

Business Capabilities:
- Optimize the time to market of products to customers
- Reduce the cost of line of business IT

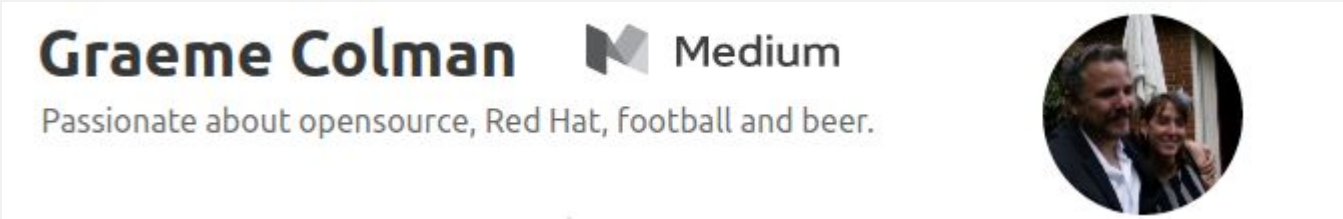
Call to action...

- Make use of the collatoral
- Contribute your use cases
- graeme@redhat.com

https://github.com/gcolman/OpenshiftBusinessCase

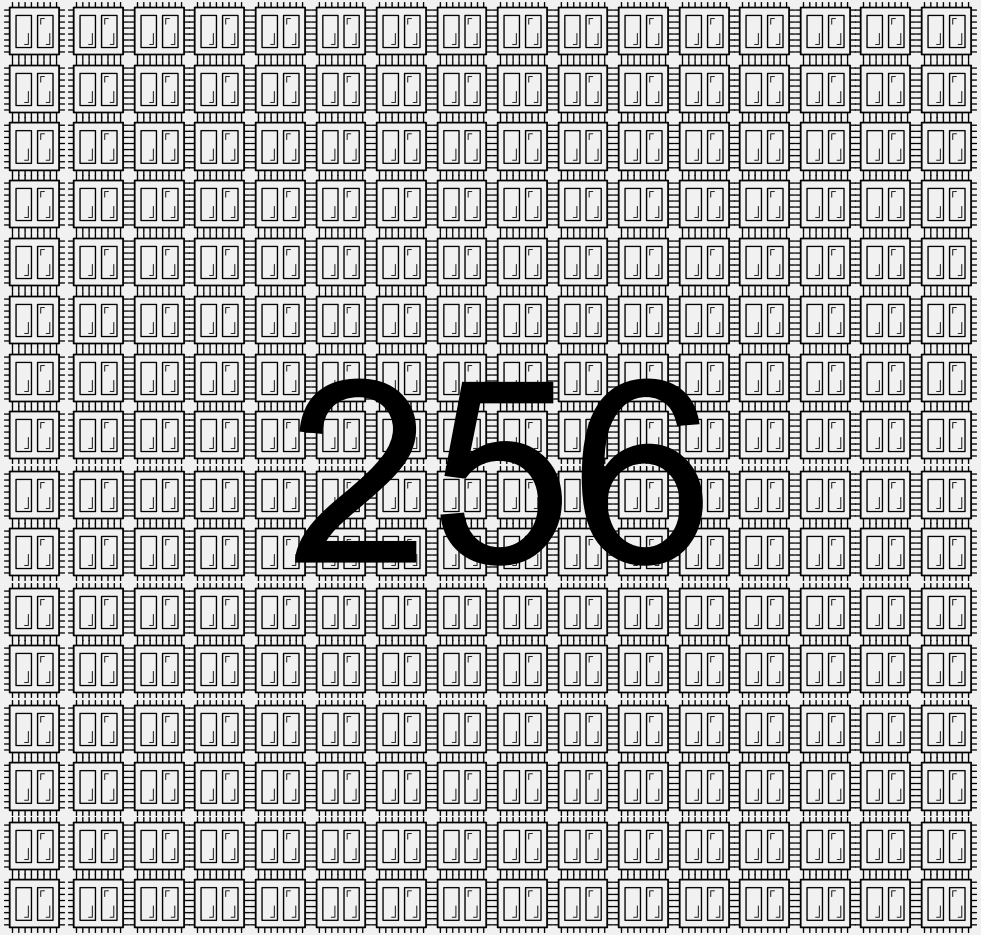


https://medium.com/@graemecolman

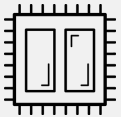


Infrastructure Business Case

Keith Lynch

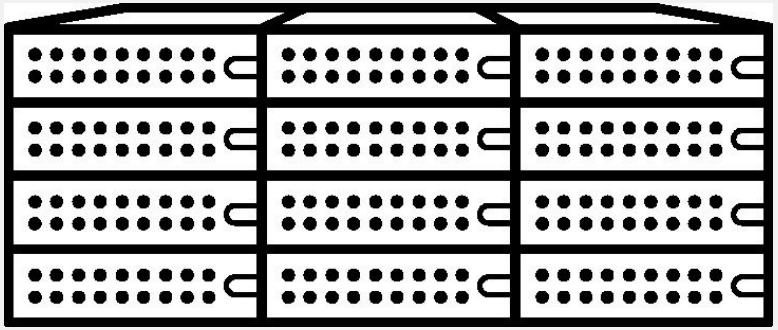


A Core



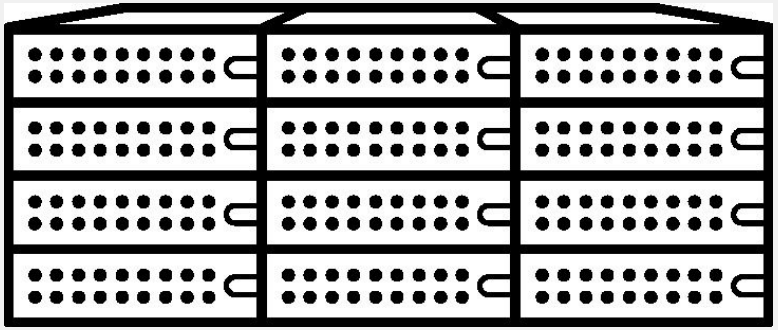
= $1,000 / year

Your Datacentres / IaaS

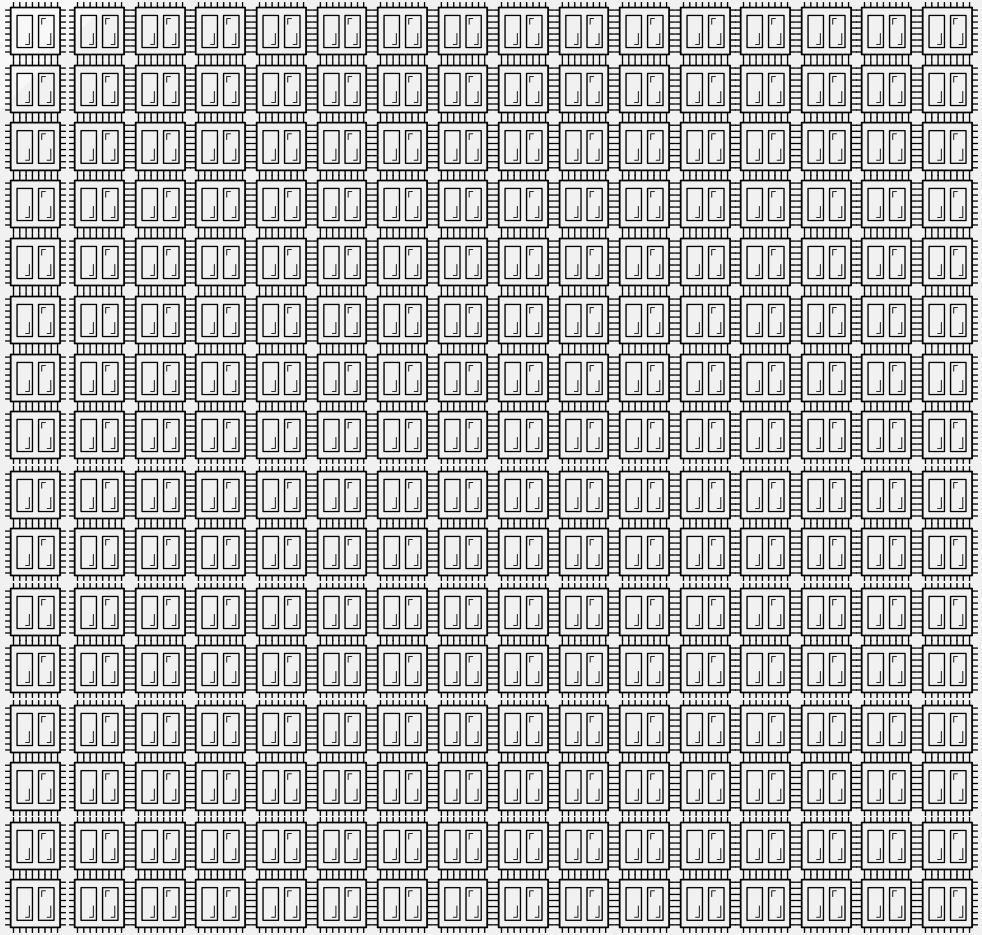


= 256,000 cores

Your Datacentres / IaaS

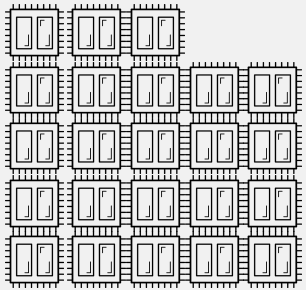


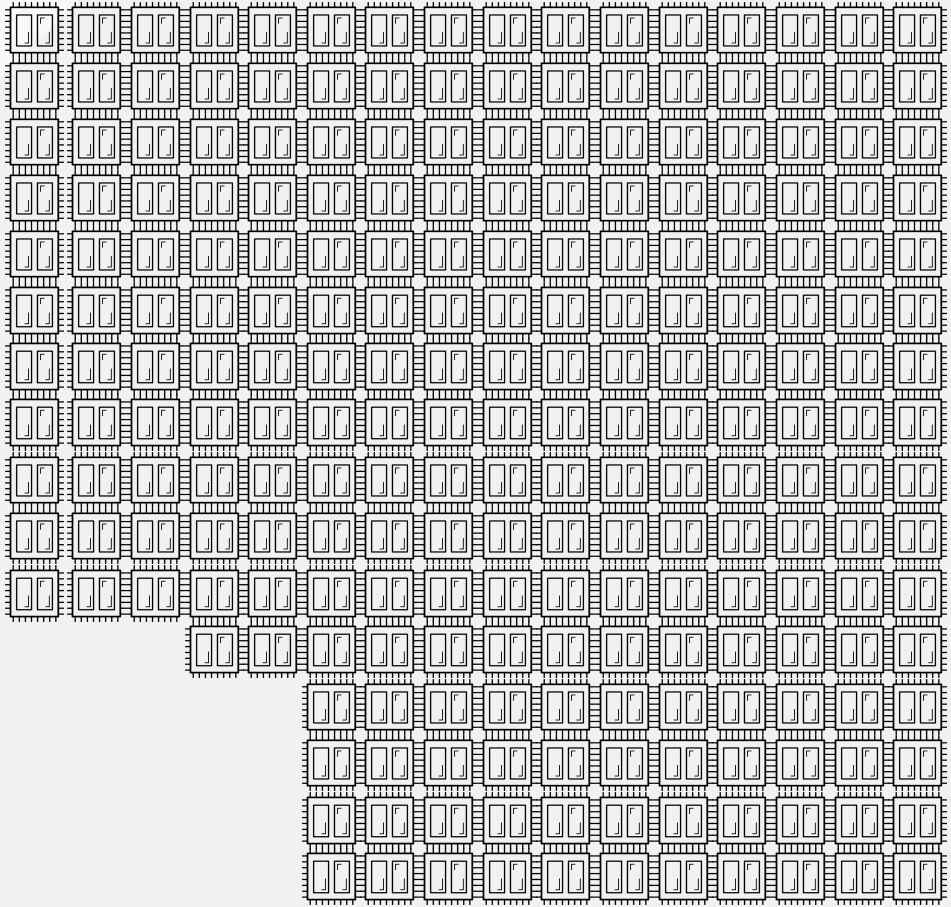
= $256,000,000 / year



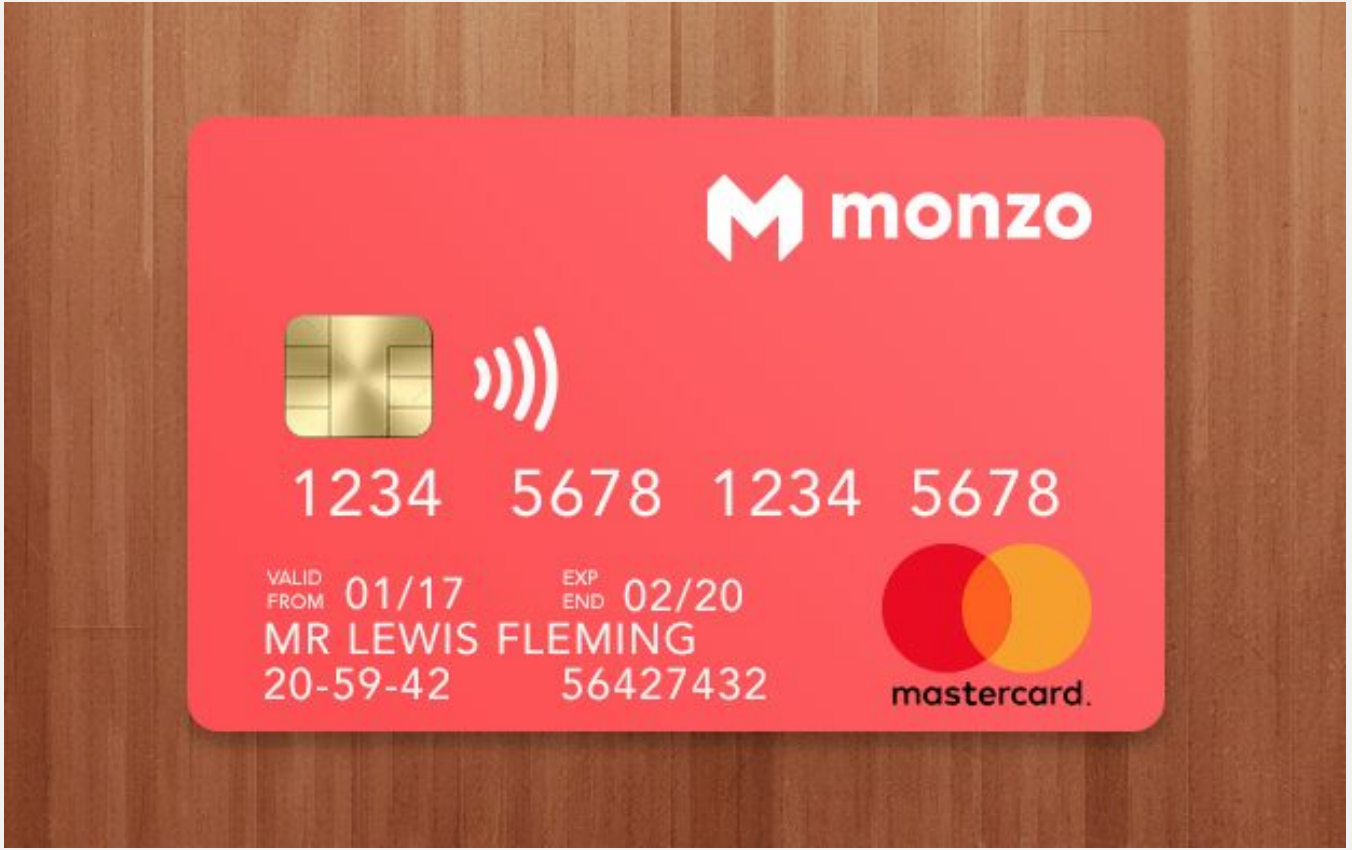
= $256,000,000

= $23,040,000





= $232,960,000


monzo
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VALID FROM 01/17
EXP END 02/20
MR LEWIS FLEMING
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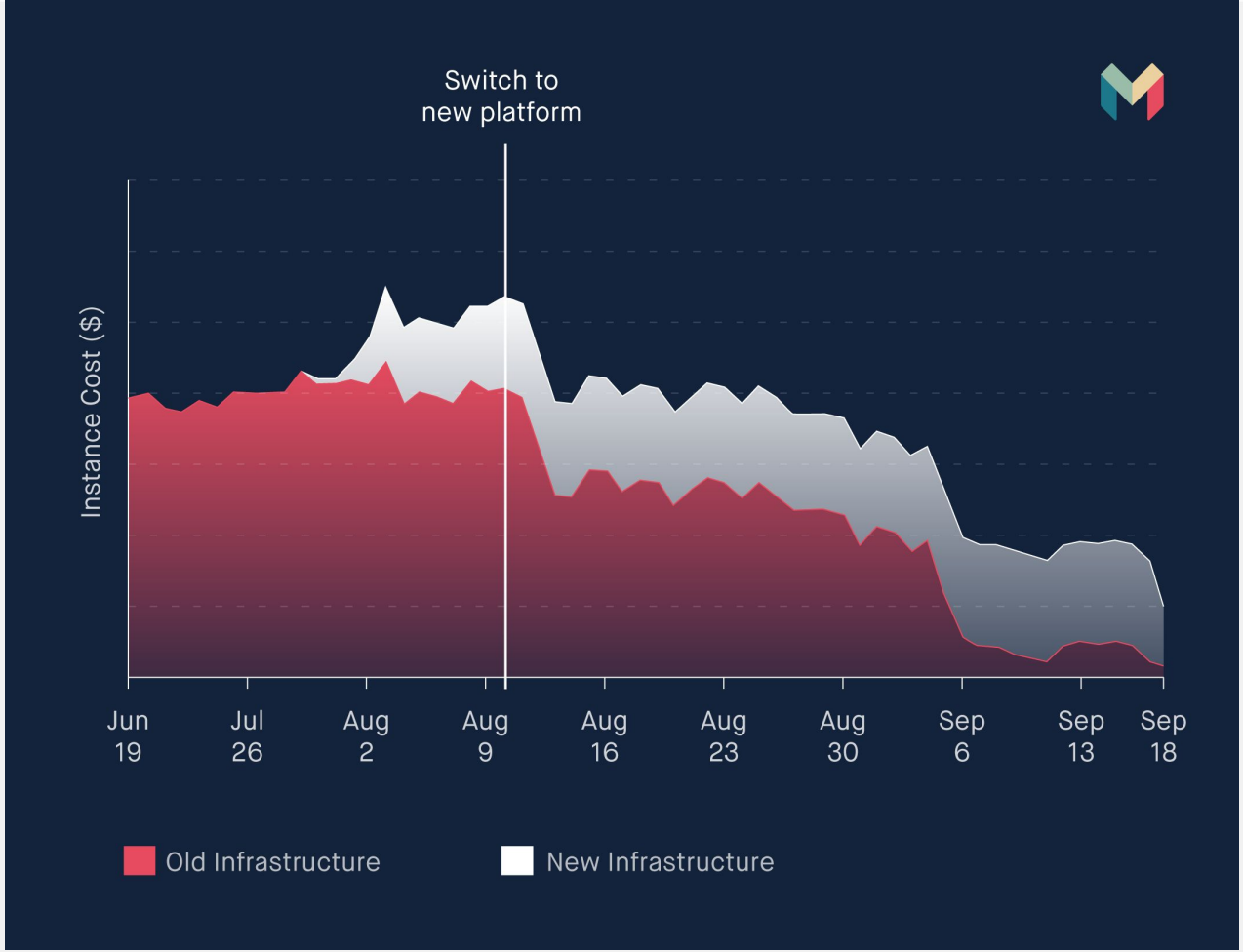
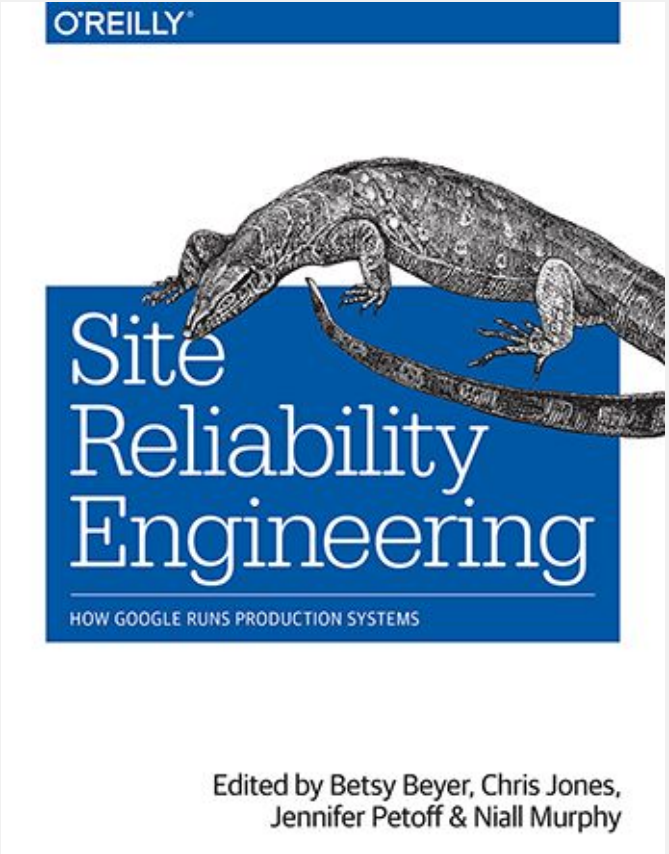
mastercard.


Switch to
new platform
Instance Cost ($)
Jun 19
Jul 26
Aug 2
Aug 9
Aug 16
Aug 23
Aug 30
Sep 6
Sep 13
Sep 18
Old Infrastructure
New Infrastructure

Online TCO

161M hours x t2.small on AWS (8.6¢/hr) is $13.8 Million

13M minutes x m4.large on AWS (18¢/hr) is $39,640.


O'REILLY
Site Reliability Engineering
HOW GOOGLE RUNS PRODUCTION SYSTEMS
Edited by Betsy Beyer, Chris Jones, Jennifer Petoff & Niall Murphy

Daniel

What did they need?

Platform Infrastructure

- IaaS Cloud Service Provider
- More Agile Platform Infrastructure
- Hybrid Cloud with “As a Service”
- Accelerate Business Innovation

What was problem?

Business & IT Point of View

- Infrastructure silos
- High maintenance cost
- Slow application delivery
- No standard framework & platform
- No business service, model with Cloud

Agile Infrastructure Platform

Shift from physical, virtual to scale-out cloud infrastructure

Distributed Systems

Expose physical resources but software defined and distributed

Application Containers

Consume resources, software defined and distributed as PaaS

Unified Cloud Management

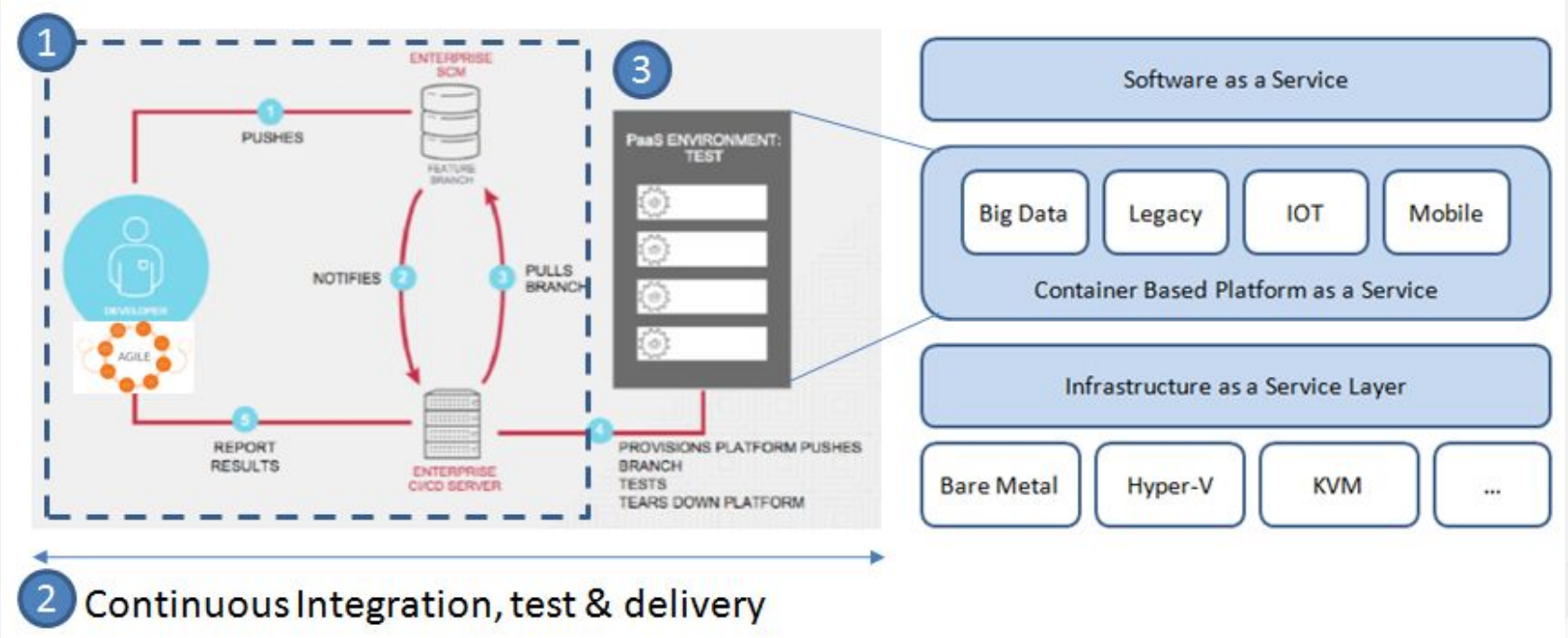
Manage Iaas, PaaS Infrastructure and monitoring platform

Scalable Storage

A distributed object store and file system designed for performance

Evolving Development Process

Open Source & CI/CD are accelerators to increase collaboration



Automation, Automation, Automation!

Modernize existing and build new cloud-based infrastructure

- Infrastructure Automation

  The process of provisioning virtual machines with operating system images, network, disk and basic compute resources **via OpenStack, Ceph**

- Middleware Platform Automation

  The process of provisioning middleware platforms and frameworks that host applications and business processes without worrying about underlying infrastructure. Configuring clustering, caching, security and other such functions can be automated **with JBoss, OpenShift**

- Application Lifecycle Automation

  The process of automating every aspect of the software release process **via CI/CD tool like S2I, Jenkins, etc.**

Higher DevOps Maturity

	1 (Initial)	2	3 Improved	4	5 (Optimizing)
Culture & Organization	△ →	○			
Test & Verification	△ →		○		
Information & Reporting	△ →		○		
Build & Deploy		△ →	○		
Data Management	△ →		○		
Release		△ →	○		

The Business Benefits

Increase Business
Revenue for 5 years

$5M

Annual Saving
OPEX Costs

20%

Annual Decrease IT
Infrastructure Costs

50%

CONTAINER-DRIVEN CONTINUOUS DELIVERY

Raffaele Spazzoli, Architect - Paas and DevOps Practice

Wednesday, May 3, 11:30 AM - 12:15 PM

Located at the Consulting Discovery Zone at the Services Showcase in the Partner Pavilion

To learn more, **visit red.ht/discoveryzone**

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