Migrating to the Public Cloud

Patterns & Strategies

Siddharth Ram
Chief Architect, Small Business Division
Intuit

@_siddharth_ram

Our mission: Powering prosperity around the world

Consumers

Small Businesses

Self-Employed

intuit®

turbotax quickbooks proconnect mint

1983	1993	7,900	24	$4.7B	42M
Founded	IPO	Employees	Locations	Revenue	Customers

MOST ADMIRED: SOFTWARE INDUSTRY

14 Years in a Row

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

FORTUNE WORLD'S MOST ADMIRED COMPANIES — Ranked #4

MOST INNOVATIVE COMPANIES

intuit.

Forbes | 2013 WORLD'S MOST INNOVATIVE COMPANIES

FORTUNE 100 BEST COMPANIES TO WORK FOR - 16 Years in a Row

About QuickBooks

- **Quickbooks** is the No.1 business management solution for small businesses & accountants worldwide
- More than 5M paid subscribers
- Available via Web, native tablets/mobile apps
- Available in 140 countries
- Translated into 12 languages

Yes, we’re hiring


We should
move to
the cloud

Common Questions about Public Cloud

Security

will our system be secure?

Will I meet PCI? GDPR?

Compliance

Product Infrastructure

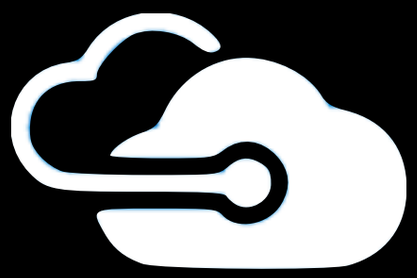
will it improve availability?

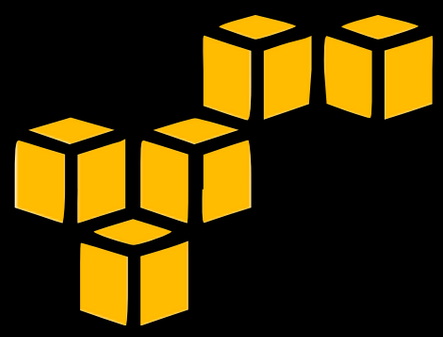
Finance

Will it save money?

Customer Care

Can we serve customers better?





Key Decisions

IaaS vs Paas

Cross Region DR

Lift & Shift vs Decompose

Security

Common belief: “Since it is a shared environment, it is much less secure”

FALSE

Perimeter security is one of many considerations

Cloud done right forces us to think deeper about boundaries and openness

Recommendation:
Use Threat modeling as a first class citizen of your architecture

Cloud is Cheaper

"*It will save me a lot of $$$*"

Beware of the double bubble

Recommendation:
Be aware of higher initial costs and factor that into budgets.

Improved Velocity

“I can move much faster due to its elastic nature”

Public cloud allows speed

This, not cost, should be the primary reason for moving to public cloud.

Recommendation:
Improve your competency on speed quickly
Know your capacity trends

Improved Reaction time

Set up, tear down

This, not cost, should be the primary reason to moving to public cloud.

Recommendation:
Construct demand curves and spin up and down servers accordingly.
Plan for unexpected events - Netflix saw east coast traffic go up 150% because of Hurricane Sandy

* for mature organizations

Higher Availability

“I get higher availability out of the box”

A single region will likely offer higher availability than multiple private data centers

Making a decision on cross region DR is tricky and is covered separately

Recommendation:
Use services like RDS that offer synchronous writes to multiple AZ’s. Be aware of 1-2 minutes for AZ switchover
Take lack of geographic diversity of a region into account

* for most organizations

Compliance

Common belief:“it is much harder to be compliant compared to private data centers”

Cloud done right can help with compliance

Recommendation:
Use swimlaning and sharding to do multi region scaling and compliance
Replicate data to one other data center, not a fully meshed network

Simpler Design

“My designs become simpler”

Simplify by using PaaS
Do not oversolve for Vendor Lock in
Think very carefully about Cross Region DR needs

These 3 are tricky decisions are covered in more detail

Recommendation:
Evaluate PaaS capabilities and usage
Determine ‘lift and shift’ vs service decomposition tradeoffs
Determine the cost/complexity of abstraction vs vendor lock in

Simplify using PaaS

PaaS can significantly improve your velocity, design and availability

Recommendation:
Evaluate PaaS capabilities and usage
Evaluate 3rd parties on AWS who may offer better capabilities that AWS
Determine the cost/complexity of abstraction vs vendor lock in
Be aware of limitations of PaaS (e.g. RDS storage limits)

Vendor Lock In

Abstraction layers add cost & complexity

Recommendation:
Determine the cost/complexity of abstraction vs vendor lock in

Cross Region DR?

Cross Region DR

What are you solving for? Availability or DR ?

Recommendation:
Cross Region DR can be expensive
If you are doing it, solve for DR, not availability

Cross Region DR

One region = 2-3 data centers (“Availability Zones”) clustered closely together

Pros	Cons
Ability to recover from a disaster event (earthquake, nuclear incident etc)	Potential to increase cost significantly.
Reduce your RTO	Questionable value. A region is likely to recover faster than you can ‘rehydrate’ in a new region
Split your swimlanes across regions. So you have a presence closer to your customer and can rehydrate quicker. Safe harbor, GDPR requires this.	Adds cost and complexity. Regulation/compliance probably the most important reason to consider this

Fork Lift vs Decomposition

This is driven by business needs. The quickest path to AWS is fork lift and just use AWS as infrastructure.

Recommendation:
In most cases, lift and shift is a better path than decomposition and then moving.
Use IaaS and shift to using PaaS as your organizational understanding matures

Should you be cloud agnostic?

NO

Q&A