Enterprise to Cloud:
A DevOps Journey

Marshall Lamb
IBM Distinguished Engineer and CTO, IBM Watson Supply Chain

In 2013, the IBM Connections Cloud technical leadership team was tasked with transforming a traditional enterprise software business to be "cloud first."

We have been on that journey ever since, and are still. Here is some of what we learned.

DevOps or OpsDev?

Need to treat operational requirements as first class engineering tasks.

Elevate the status of the Operations Engineer in the organization.

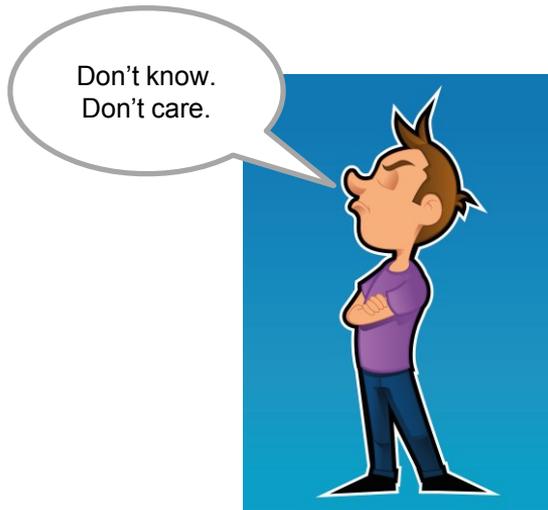# There should be no DevOps Team. Everyone is DevOps!

Creating a "DevOps Team" says someone else is responsible for DevOps, and perpetuates the habit of over-the-wall throwing.

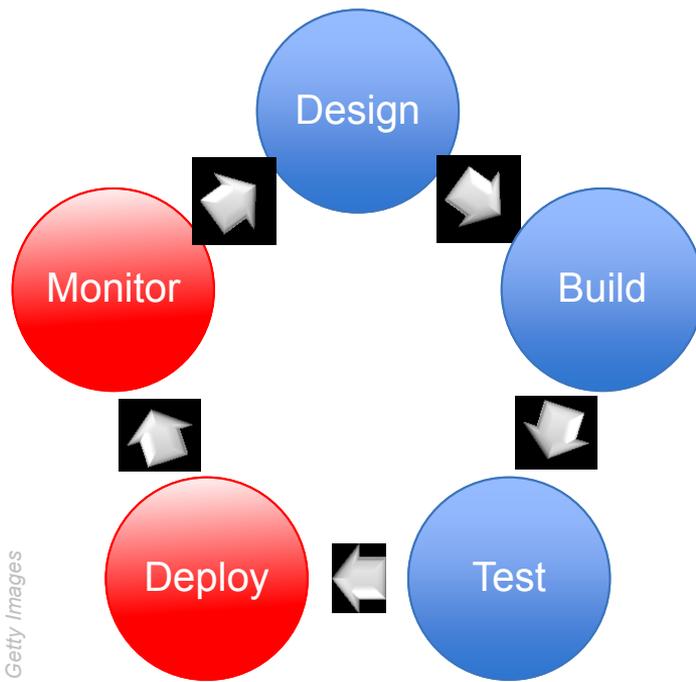*13,018 job listings for "DevOps Engineer" on Indeed.com.*

Development owns operations. Period.

- Alignment with business priorities
- Development Executives own their solution's full lifecycle, including operational specialty
- Development must have a central operations leadership team
- Contract out the skills you don't have, but NOT the leadership

Getty Images

Our biggest technical problem isn't technology, it's people. We needed a new culture.

If culture is what someone does when no one is looking, how do you make that happen?

- Buy in
- Realized value
- Align the "generative actors"

Resiliency starts with the developer

When your code fails, how will it fail, how will we know, and then what do we do about it?

Getty Images

Cost is king

In the cloud, cost can best measured in terms of how many **humans**[1] touch how many **servers**[2] how many **times**[3].

The degree to which you can reduce any of those 3 aspects will determine how well you manage costs…

…and earn a profit.

So, it isn't just about the number of servers at all.

Operator to server ratios

Major global cloud-based services: 1 to 20k+

Cloud platform and service providers: 1 to 2k+

Average Enterprise: 1 to 100s

How do you measure cloud quality?

Reliability?

…well, yes, of course, but more importantly…

Resiliency!

Quality is not only measured by how well code survives during a long test run, but how quickly normal operations can be returned after an error.

The most important production issue metric is not "root cause" but "time to recovery."

Dark launch

- Separate feature deployment from feature availability
- Single code stream for support and development
- Turn it on when ready
- Control who sees it when
- Turn it off if it causes problems

"Don't crash the car if the radio doesn't work. Just turn off the radio." – John Allspaw, etsy.com

Thank You

IBM

"Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Networking and Information Technology Research and Development Program."

The Networking and Information Technology Research and Development (NITRD) Program

Mailing Address: NCO/NITRD, 2415 Eisenhower Avenue, Alexandria, VA 22314

Physical Address: 490 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024, USA Tel: 202-459-9674, Fax: 202-459-9673, Email: nco@nitrd.gov, Website: https://www.nitrd.gov