Deployment and Operations for Software Engineers 2nd Ed

Chapter 16—Thoughts on the future

Outline

Transitioning to DevOps

The evolution of DevOps

Keeping up

Developing a pilot project

- Some ideas to help if you are asked to develop a plan for your organization to adopt DevOps practices.
- The four DORA metrics of lead time for changes, change failure rate, deployment frequency, and mean time to recovery will be useful
  - Determine the current values of these metrics
  - Devise targets you would like the organization to achieve.

Cost estimates

- Cost estimates for the adoption of DevOps practices together with the improvements in the metrics will enable your management to determine whether they wish to invest in adopting DevOps.
- To estimate costs, organize a pilot project.
- You will need a budget for the pilot project.
- Put together a pitch for your management that includes
  - activities from other organizations in your field,
  - potential benefits,
  - potential pilot project,
  - what you expect to learn from the pilot,
  - the time and cost for the pilot.

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Evolution of DevOps

- There are two trends that will shape the immediate future of DevOps.
  - The evolution of markets, tools and vendors
  - the application of DevOps to domain specific problem areas.

Evolution of markets, tools and vendors

- There are currently too many vendors
- Vendors will consolidate and tools will disappear.
- An associated trend is the growth of multi-vendor cloud environments.

Vendor agnostic tools

- Some tools are cloud provider agnostic.
  - Cloud agnostic tools have the virtue of being usable on different cloud providers.
  - They have the disadvantage of not being able to take advantage of cloud provider specific features.

End-to-end deployment pipeline tools

- Expect is the growth of end-to-end deployment pipeline tools.
  - Currently, specialized tools exist for different portions of the DevOps process cycle
- Tool chains from a single vendor that are integrated and that cover all or much of the cycle will become common.
- Expect to see the emergence of tool language translators that translate from one vendor's tool chain to another.

Use open-source tools

- Successful open-source tools tend to have a longer lifetime than proprietary tools.
- These tools, typically, are supported by one or more companies that provide their employees to support the tool.
- Using open-source tools will help your organization avoid vendor lock in.

Domain specific problem areas

- Another trend that will gain prominence in the future is the growth of domain specific problem areas.
- Three such domain specific problem areas already exist.
  - DevOps for Machine Learning.
  - DevOps for government or other organizations that contract their software development to external organizations
  - Database DevOps.

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Changes in the fiel

- Every decade or so, the computer industry undergoes a radical transformation.
  - The 1970s saw the introduction of networks,
  - the 1980s the introduction of personal computers,
  - the 1990s were when the world wide web was introduced,
  - the 2000s saw the cloud,
  - the 2010s, DevOps.
  - In the 2020s, quantum computing is a possible transformative technology.

Keeping up with emerging technologies

- You will need to keep up with emerging technologies.
- You need to become conversant with neew technologies and put some thought into how it might impact your career.

Gartner hype cycle

- Choose portion of the curve that reflects your desired career path.
- Pay attention to a new technology that gets to your chosen portion of the curve.