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Reflections on AWS re:Invent 2016

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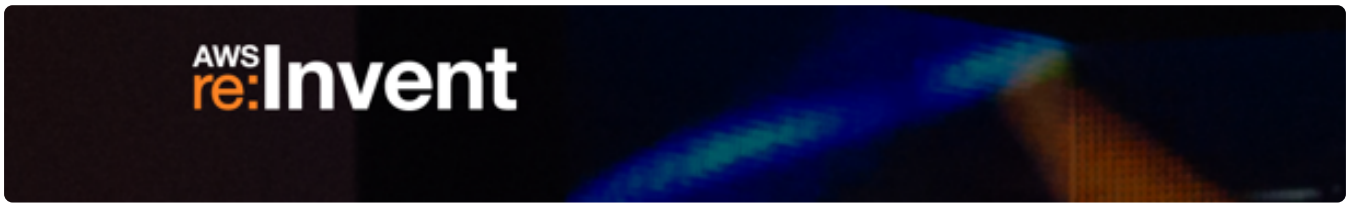

(re:Invent logo from Amazon's web site)

I had the privilege of attending for the first time a conference for Amazon Web Services (AWS) users this year in Las Vegas.

For those of you who do not know what AWS is, the company provides its users (mostly tech industry companies) computer infrastructure and services 'for rent'. For example, if you need just 4 hours of time to use some resources on a really fancy computer, you rent it for just the hours you need. As another example, if you need to make a simple web site or service, you can pay only for the requests made to that service without having to bother even setting up and maintaining an entire computer (or worse set of computers) for this task.

AWS services are a win-win for both AWS users and AWS since AWS can optimize and reuse its compute infrastructure across many users and industries for profit, and those industries can better spend their time focusing on product features and innovation rather than creating and

maintaining compute infrastructure. Using the AWS infrastructure itself often costs less for a user than building data centers due to AWS operating and optimizing at scale (Netflix is perhaps the most famous example of an 'all-in' AWS user). AWS is currently Amazon's most profitable business and it is growing fast.

AWS re:Invent exposes its users to their offering in great breadth. There are various sessions presented at different depths on how the services work and what the best practices are for using them. Importantly, the conference announces new features and services for its users so they can figure out how to use them best for their business.

I knew and expected all of this going in.

What I have come to appreciate much more is:

- The degree to which this kind of compute infrastructure service will define and interact with innovation in software development and its business practices.

AWS is targeted to developers of services above all else (e.g. to Netflix developers, not to an end user of a product like Netflix, for example). Therefore, AWS provides tools for developers to make it easy to build their services without having to worry about compute infrastructure. Importantly, AWS has developed a marketplace for using these tools. And inevitably, developers will become 'locked in' to this infrastructure and its services. Perhaps a more mild expression of this sentiment is "sticky but not stuck": AWS users like the features so much that they'd

rather stick with them because it's just so convenient and efficient.

This "sticky but not stuck" property makes me think of an admittedly imperfect analogy. AWS may be for compute infrastructure what Microsoft Office is for productivity applications: there are certainly other good options used by a reasonable fraction of the market, but AWS, like Microsoft Office clearly is a dominant force because of the stickiness effect. The analogy is obviously imperfect because, amongst other possible criticisms of it, AWS is providing tools for developers where Microsoft Office is clearly a product for end-users, not developers. And this is an important distinction.

The fact that AWS has effectively made services and compute infrastructure 'programmable' like software could likely lead to transformations in software and service development where a marketplace for very granular 'micro' services could better flourish (simple e.g.: identify all faces in this image). For more on this, check out this nice post.

- diversity of AWS users

Not all companies are 'all-in' on AWS. From many conversations I had throughout the sessions with different customers, I realized there is a great breadth of customers on their platform. Some are indeed 'all-in', but some are migrating to the cloud from onsite HPCs, and may become 'all-in'. Some prefer to maintain an on-premise datacenter and cloud infrastructure for either redundancy or security purposes, and some operate on multiple clouds. I think this diversity of users is important as it suggests that AWS will have to cope and work with this kind of diver-

sity of users for the near future if not throughout its lifetime.

- The sheer size and interest in this conference

This is definitely the biggest conference I have attended. At approximately 30,000 people, you really get a feel of the magnitude of AWS. And this is not a traditional tech conference like CES that has multiple vendors showing off potentially completely different products. Here, AWS is the glue and all of the companies that use and partner with AWS are there to learn and interact. I have to mention also that AWS threw possibly the awesomest party for ~30k people that one could imagine.

I'm really glad I attended and hope to attend more of them in the future. I also think that this conference provided a lot of food for thought on how to best use AWS services in the context of a transforming software service marketplace.

I am interested (since you happened to get this far): what are your thoughts on AWS re:Invent this year if you attended? And for those who didn't, what are your thoughts are on AWS in general and the trends I hinted at above?