US FinTech Innovation Race
—What we can learn from Capital One

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2.Aug.2017

Executive Summary

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US FinTech industry has entered a new phase of competition. In this competition, how compelling the innovations can be a key differentiator. The case study below details how Capital One adopted a DevOps Model in an effort to drive effective innovation.

How to effectively innovate?

The FinTech boom shows no signs of slowing down. Every day you find stories about major financial institutions' investing in startups or developing new businesses through innovation labs. A closer look at the Fintech boom specifically in the US relevels some changes in its tone. For example, many startups who aimed to "disrupt" the industry with new technologies are now shifting to supporting financial institutions. The fact that the US regulators have more laissez-faire attitude towards startups compared to European ones seems to have contributed to this shift.

Financial institutions cannot afford to be complacent just because these innovators failed to trigger an industry shakeout. They still face a major threat of IT giants with huge customer accounts entering the financial services market. Another threat is intensification of added-value competition among financial institutions themselves. Some financial institutions have been running successive PoC (proof of concept) projects in collaboration with startups, mainly through innovation labs. In many cases, however, such projects are primarily intended to demonstrate innovation leadership for branding purposes. With added-value competition now expected to finally ramp up in financial institutions' core businesses, the issue of how to effectively innovate looms large for financial institutions.

Capital One's innovations

One US financial institution with a track record of effective innovation is Capital One, one of North America's top ten mid-tier banks by assets. Its biggest strength is its credit card business and digital banking with a well-designed mobile banking platform and user-friendly Wallet app. Capital One proactively develops next-generation financial services and was among the first banks to leverage social media platforms such as Facebook. What's even more unique is the behind-the-scenes program through which Capital One effectively innovates

and has revamped its entire process from service development to delivery and maintenance.

Capital One has adopted a DevOps model of service development. DevOps aims to swiftly upgrade services to better meet customer needs and shorten new service release cycles, particularly in IT systems departments, through collaboration between development and operations staff. Companies seeking to provide innovative services in markets with limited outlook need to gauge market reaction by developing in small-scale and releasing in phases. DevOps is similar to agile development[1] in that both involve rapid-fire service upgrades. Capital One initially experimented with agile development in the aim of bringing its developers into closer contact with customer needs. It, however, ended up migrating to DevOps by expanding its agile development program. The aim was to expedite and improve the quality of its entire development process from service release through maintenance.

DevOps has reportedly paid off for Capital One in the form of a twenty-fold increase in service release frequency relative to its pre-DevOps baseline.

With DevOps gaining favor across all industries in response to a growing imperative to develop mobile apps, many DevOps tools are starting to become available from cloud service providers. Some case studies show a drastic time saving during development process from six months to one, by reducing man-hours spent on testing or infrastructure set-up.

Continuous service improvement is a must

In addition to its Wallet and mobile banking apps, Capital One became the first financial institution to integrate with Amazon Echo, a smart home device, in spring 2017. The vision behind its digital banking strategy is to deeply embed its services in customers' daily lives. Instead of providing financial services in limited locations during limited hours, Capital One made the service conveniently accessible whenever needed. Integrating with Amazon Echo was a natural step for Capital One to reinforce its digital banking efforts.

With Amazon Echo, Capital One customers can check their account balances and transaction histories and even make mortgage payments using voice commands. Capital One is continuously upgrading the service in response to feedback from customers. For example, the voice input understandable by Alexa, Amazon

NOTE

1) Agile development is a method of expeditiously and adaptively developing software through iteration of small-scale, short-duration development stages.

Echo's virtual digital assistant, was initially limited largely to preset commands. Capital One has recently added natural language query functionality that enables Alexa to answer questions like, "How much did I spend at Starbucks last week?" Continuously improving services to better meet customer needs is a necessary condition to integrate the services into customers' daily lives à la Capital One. Without shortening the service release cycle, even services that appear insignificant will be impossible to upgrade to a sufficient level of functionality.

Capital One offers another service called Second Look that analyzes credit card activity and notifies cardholders of suspicious or otherwise questionable transactions, including duplicate payments due to customer error. While Second Look is merely an example of utilization of Big Data analytics, such services that feed the results of data analysis back to customers are expected to become increasingly common from the standpoint of enhancing the customer experience. With data analysis constantly yielding new insights, methods of incorporating such insights into apps must be flexible. The need for such flexibility makes shortening the service release cycle all the more important. If services are not updated to reflect analytical results in a timely enough manner, the analytical results themselves would diminish in value.

IT industry commentators often say DevOps is easier said than done because it requires major changes in culture and skillset of a development organization. Capital One's case study teaches us both the significance and difficulty of effective innovation in reality.

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