

CLOUD SERVICE BROKER: THE NEW ROLE OF IT

A Q&A WITH DROPBOX VP OF INFRASTRUCTURE AKHIL GUPTA

When it comes to cloud, Dropbox helped write the book. With the recent building of Dropbox's own unique storage infrastructure, we decided to catch up with VP of Infrastructure Akhil Gupta for "out of the box" insights on how the cloud space is evolving.

Q : Let's start with the big topic: digital transformation. We're all hearing this term a hundred times a day. But how exactly are IT decisions changing to support digital transformation and service agility?

A : Fundamentally, the role of IT leaders hasn't changed. They're still responsible for enabling their teams' productivity by providing them with access to the best technology. Practically, the consumerization of IT has given these leaders a wider range of options for achieving that goal. In that sense, IT's decisions are changing to fit their new role as a cloud service broker.

In the past, IT had to procure technology systems and then securely provision them to their workforce. Today, employees can bring their favorite applications to work with them. As a result, employees don't need to spend time learning new technology systems, and they don't need to modify their work habits around clunky legacy IT systems.

IT leaders are now responsible for figuring out which applications are driving the most value for their users, and finding ways to deploy those applications broadly across the organization.

Q : Migrating to cloud is high on every CIO's priority list. Why? Is it only a cost and scale issue? How do cloud services support digital transformation initiatives?

A : If you are only looking at migrating to the cloud for cost savings, you are missing a huge opportunity to do more. Cloud computing offers a number of benefits to users over traditional on-premises deployment models, including:

- **More options for deployment models:** CIOs who need more control over certain types of data, but who still want to take advantage of the benefits of cloud, can chose a hybrid-cloud deployment model, where some of their company's data is stored in a private cloud, while other data is stored in a public cloud.
- **Better utilization of resources:** A hybrid cloud strategy allows companies to scale up or scale down depending on demand. This means that CIOs only need to spend money on the IT resources that their teams are consuming—rather than purchasing hardware and software based on an estimate of future use.
- **Always up to date:** Public cloud vendors push updates constantly, versus hardware vendors that require complicated and expensive rip-and-replace updates.

- **Better user access to data:** Cloud computing removes the physical restraints that prevent users from accessing their data. With tools like Dropbox Paper, users can collaborate on documents in real time, regardless of geography, which allows teams to improve productivity.
- **Better security:** At Dropbox, for example, our security teams are always watching out for new threats to our users. We have dedicated security teams that work to protect our services and monitor for compromise, abuse, and suspicious activity. We've implemented a broad set of controls, including independent security audits and certifications, threat intelligence, and bug bounties for ethical hackers. In addition, we build open source tools such as zxcvbn, use bcrypt password hashing, and offer universal two-factor authentication to all users. This level of security just isn't present with most on-premises deployments.

Q : Settle the debate for us, if you can. Private cloud? Public cloud? Or hybrid cloud? Does each have its own best use cases? How do you choose the right cloud strategy (or mix) to accelerate digital transformation?

A : There isn't a one-size-fits-all approach to deploying cloud computing. Users with workloads that are subjected to more regulations will inevitably gravitate toward private cloud models—where their data is stored in a single-tenant environment on servers in third-party data centers—as a way to limit risk. For users looking to take advantage of the scalability, cost, and productivity benefits that cloud offers, public cloud services are probably the best solution. We built our cloud because we reached a scale where it made sense for us to do so. For our users, it allows them to automatically scale up on demand, and it also enables us to innovate in infrastructure for the benefit of our users.

Q : Dropbox serves millions of customers worldwide. How does it build infrastructure to support this scale?

A : When we launched in 2008, we were based on third-party cloud infrastructure, but we launched our own custom-built storage infrastructure in 2015 with a system that we called Magic Pocket, and have stored more than 90 percent of our user data on it since then.

There were a couple reasons behind this decision. First, one of our key product differentiators is performance. Bringing storage in-house allows us to customize the entire stack, end to end, and improve performance for our particular use case. Second, as one of the world's leading providers of cloud services, our use case for block storage is unique. We can leverage our scale and particular use case to customize both the hardware and the software, resulting in better unit economics.

With about 75 percent of our users located outside of the United States, moving onto our own custom-built data center was just the first step. We also continue to offer data storage for users in Europe via our relationship with AWS, and have built a global private network to allow us to reliably carry our user traffic to our data centers. In fact, in June we announced that we were launching five new facilities around the world, bringing our total to 25 facilities across four continents.

Q : As businesses seek out better ways to bring services to market quickly, you must have a wealth of information you can share. What are some key learnings?

A : We have a few values that guide our business and underpin everything we do at Dropbox. Those include:

- **Be worthy of trust:** This means being authentic, saying what you'll do and doing what you say, while also taking care of each other and our users, and keeping their best interests at heart.
- **Sweat the details:** This means deeply understanding and getting to the heart of problems while also obsessing over quality, and striving to master our craft.
- **Aim higher:** This includes setting audacious goals and having an irreverence for what's possible, while also thinking big and being open to disrupting ourselves.
- **Embracing "we" not "I":** We place a ton of value in people really knowing each other, and newer folks are

often awestruck by how warm and humble Dropboxers are. More than that, this is about people routinely placing the welfare of the company first.

- **And the happy cupcake,** which is about adding an authentic, human touch to everything we do. But more than that, it's about finding creative ways to make our users (and each other) smile.

Q : SaaS, IaaS, PaaS...it seems that everything IT does is moving to the cloud. How do you see the role of IT evolving over the next decade? And how should IT leaders prepare today?

A : The role of IT is shifting into a role of cloud service broker. IT managers and decision makers don't need to procure and provision legacy technology anymore; instead their role is shifting into one that is about enabling their workers to use the tools that they want.

IT leaders need to find ways to balance the needs of the business with the desires of their workforce. At Dropbox, we've grown to 500 million registered users, many of whom use our tools in both a personal and professional capacity. To help IT say yes to their workers, we've rolled out a number of administrative capabilities that give leaders visibility into and control over their teams' Dropbox usage. In doing so, we're trying to make it easier for IT decision makers to say yes to their employees while balancing the security and regulatory needs of the business.



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