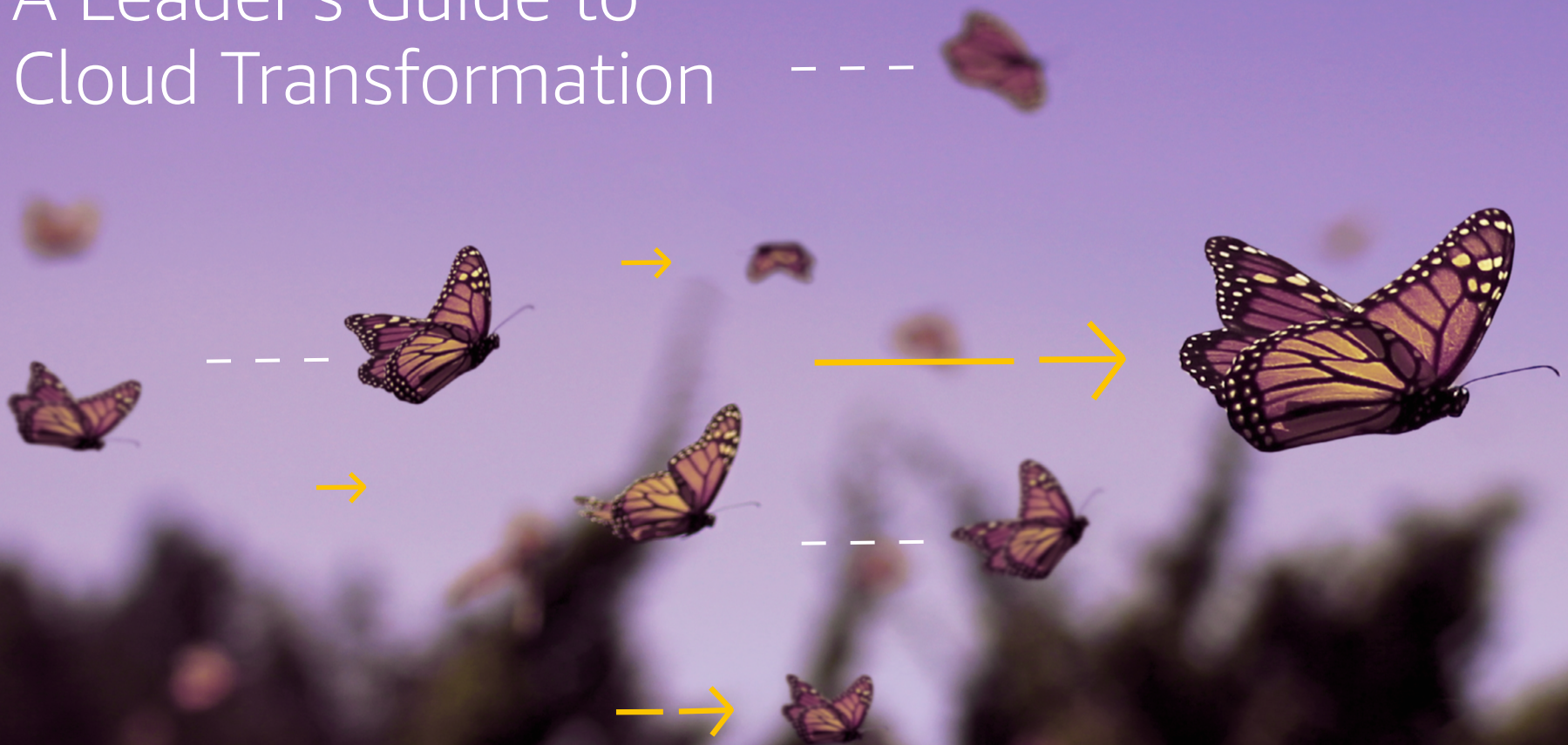# A Leader's Guide to Cloud Transformation

Two leading enterprise cloud practitioners reveal the leadership tips and tricks that will set your organization soaring ahead.

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Let your people find the path to success

Mark Schwartz is an Enterprise Strategist at Amazon Web Services and the author of *The Art of Business Value and A Seat at the Table: IT Leadership in the Age of Agility.*

When Mark Schwartz became CIO of US Citizenship and Immigration Services (USCIS) at the Department of Homeland Security in 2010 – taking charge of 2,000 people and a $600 million annual budget – he wondered how on earth he was going to make such a vast organization move.

"The IT department was releasing to production on an 18-month cycle, the transformation program had spent about $1 billion on a software effort that had so far yielded no results, and there was another project where, for the previous four years, 21 people had done nothing but assemble a bunch of documents. It would be fair to say it was a low-frequency organization – one where change happens very slowly," Schwartz told an audience of executives at the AWS Summit in London in May.

That just wasn't good enough for an organization which is often required to respond at breakneck speed to hastily-announced policy changes by its political masters.

But move it did. By the time of his departure in 2017 to become Enterprise Strategist at AWS and an acclaimed business strategy author, Schwartz and his team had overseen a remarkable transformation at USCIS. "Some of our systems were deploying to production three or four times a day rather than once every year and a half. We'd created rapid response teams we could field around the country and we were running hackathons that produced new applications every time. And if we can do it at Homeland Security, you can too," he said.

According to Schwartz, deploying cloud technology is the easy part – but beware of 'analysis paralysis.' "It's simple to take out your credit card and spin up some virtual machines in the cloud," said Schwartz. But when you're selecting development technologies, passionate people advocating different – but essentially similar – software development platforms can bog you down with 'analysis paralysis.' That's a huge drain on time and resources. The answer? "Don't allow it. Flip a coin and move on. You have more important things to do."

It's on the process side where things start to get really tricky. USCIS, for example, had long-winded, overly bureaucratic processes in almost every area - seemingly endless gates, checks, and demands for documentation. But Schwartz found even those teams with the most laborious processes could be transformed from blockers to enablers of agility. The trick is to set the right goals, and then give teams the creative freedom to suggest how to reach them. "For example, we had a quality assurance (QA) organization that saw themselves as upholding quality by preventing systems going into production. The head of QA even called himself the Grinch."

Clearly, this was going to be a problem. The QA team was passionate about quality, but to them that meant requiring reams of documentation

filled in with as much detail as possible, followed by extensive testing. This meant it would be impossible to achieve ever faster times to delivery. So Schwartz changed QA's goals and parameters. First, he said documentation should now be as short as possible to convey the necessary information. "Then I told them their job was not to stop systems of low-quality going into production, but to ensure everything was built to a high level of quality to start with," he said.

But there was one caveat – developers could hit the deploy button at any time, they didn't have to wait for QA's say-so. "And with that one constraint, I asked them to go away and figure it out."

After brainstorming, the QA team came back to Schwartz and said: "Developers write their own automated tests, so to ensure quality we have to make sure they're writing good tests. So how about we take a sample of tests periodically and review them to check the tests are effective? And how about if we get involved with the conversations between developers and users to make sure they're listening properly to those users and providing what they need?"

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The key was setting up the right incentive and engaging people in finding the solution."

Schwartz agreed, and after a few months of operating in this way they came back to him and suggested that, having thought about it some more, they now believed they should take charge of training the developers. That way, quality could be effectively built in to products rather than assessed after the fact. "I was so happy. The QA team had started to think creatively about how to further the transformation rather than being an obstacle," he said.

Schwartz took a similar approach to transforming other areas of the organization. "Again, I told the security team that developers could deploy systems whenever they wanted. How were they going to make them secure? So they came up with what now seems to be the standard set of solutions – they put automated security tests in the pipeline, built reusable code that automatically implemented some of their best practices, and a bunch of other stuff that left them satisfied we had an even better security posture than before."

In procurement, meanwhile, it was taking up to three years to put a contract in place.

Incumbent suppliers often became complacent and delivered poor service safe in the knowledge they couldn't easily be ousted. So Schwartz posed the procurement team with the challenge of reducing the process from three years to 30 days. "They did a value-stream map of the process and started attacking it piece by piece. And whenever they had a good idea that was outside their jurisdiction I could step in and support them. Again, the key was setting up the right incentive and engaging people in finding the solution," said Schwartz.

Once that was nailed down, Schwartz's team started to tackle the biggest obstacle to agility – the organization's bloated investment oversight and governance process. "We were in a vicious cycle where most projects were these vast, multibillion-dollar things that had to have a really overbearing governance process because they were so risky," he said. "So we asked how we could change that process so that it mitigated risk like it was supposed to, but was radically shortened."

First, they shrunk the size of projects to de-risk the investment decision. Then they reduced the size of business cases from multiple pages of documentation to a small set of concrete business objectives. For example: "We want to be able to handle a much higher number of cases every day – that's the business benefit. The cost is, let's say, $100,000 a month for six months but every month you can decide whether to invest next month. And because we're using cloud and DevOps we can deploy quickly so you should see that number of cases start changing tomorrow."

Finally, Schwartz told the cross-functional team responsible for the process: "We're doing 70 cases a day now. What's going to make that number go up? You have technical people, business people, and the authority to implement things in the right way, change business processes, whatever you want – and every two weeks we'll have a talk about what's working and what's not and pass that on to the overseers."

The pattern is clear. "It's about setting objectives and leaving people free to accomplish those objectives. Because you can't transform an organization by yourself – you need everybody's help," said Schwartz.

And once transformation takes hold, there's no stopping people. After joining AWS, Schwartz bumped into the Grinch – the head of QA at his former organization who was originally a blocker to agility: "He was at a conference, giving a speech about agile QA, talking about a mathematical modeling technique his team was developing to spot potential quality issues before they even occur."

Schwartz's top tips

Start with a very aggressive vision but work incrementally in small steps to get there.

Engage employees by setting goals and letting people tackle them creatively.

Maintain a relentless focus on becoming ever leaner, with ever shorter lead times.

Use lots of automation to enable stability and speed at the same time.

Have extreme clarity on business objectives, and simpler business cases as a result.

Ensure there is a constant sense of urgency around the transformation to avoid needless debate and delay.

Change your culture to fit cloud and you'll fly

Paul Hannan is the UK Enterprise Technology Lead at Amazon Web Services, coaching many big businesses through cloud adoption and transformation journeys.

Paul Hannan, UK Enterprise Technology Lead at AWS, speaks to many IT and business leaders about how to accelerate and de-risk their adoption of cloud technology. Prior to joining AWS, he oversaw a major transformation to the cloud as CTO at a large UK utility. At the AWS Summit Executive Forum, Hannan examined some of the common traps he's seen organizations fall into when they're trying to transform – and how to avoid them.

"Enterprises typically focus on two key areas within their strategy, delivering new opportunities (via new products, services or geographies) and reducing risk and cost," he said.

Those that are more focused on delivering new opportunities for the business are embracing technologies like analytics, machine learning/AI, Internet of Things, and other digital products and services to improve the customer experience and operational efficiency of their business. "These projects are typically led by the business rather than traditional IT which can cause challenges when they try to scale an initiative across the enterprise," said Hannan.

On the other side there are those considering large-scale cloud adoption predominantly to reduce the risk and cost of managing their traditional IT estate. "These organizations often fall into the trap of asking their very traditional IT department – that's used to managing risk via rigid processes and on-premise technology – to deliver a transformation in the way their technology is managed and operated, without realizing the scale of organizational change that needs to be in place to make this happen quickly and efficiently," said Hannan.

"As leaders, our challenge is to bring the best of both of those approaches together – the ability to innovate at scale, but in a secure and reliable manner that protects the assets of our organizations."

And that isn't just about technology – it's fundamentally about people, process, and culture. "There's no single silver bullet. Every organization has its own culture, and everything has to be worked through," said Hannan.

Hannan stated that he often refers to Conway's Law—which essentially says that any organization developing systems will do so in a way that mirrors the structure of the organization—and believes it is as true today as it was when Computer Scientist Melvin Conway conceived it more than half a century ago.

"What that means in practice is if you're asking an organization to adopt new technology and development methodologies, that is very process-driven, with lots of gates and stages blocking transitions to production, you'll end up with a technology deployment that mirrors that – which is never going to give you the ability to innovate at scale within your organization. You have to address the organizational structure and culture in your organization to help facilitate success." said Hannan.

So what are the organizational bad habits – or 'anti-patterns' – you need to watch out for and change if you're going to run a successful transformation? According to Hannan, one is the idea that technology change is more significant than organizational or business change. "That's the trap I initially fell into when planning my previous organization's migration to AWS in 2015," said Hannan. "In the early stages, the architects were leading the transformation but we quickly realized that we were hitting buffers of resistance and fear of changing the status quo." Hannan continued, "We were operating in an 'on-premise' environment where commercial purchases were essentially irreversible (you purchased a server you were then stuck with it) and risk was mitigated via process, to one in the cloud world where technology acquisition is driven by consumption and commercial risk and transparency is vastly more controllable, down to the penny and/or second."

Another is the belief you can change the technology first and figure out the people stuff later. "This unfortunately can be seen as setting yourself up for failure, frustration, cost, and delay. The earlier you think about the organization and the culture you want in how your organization utilizes technology, and work to bring it about, the smoother your transformation will be," said Hannan.

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> You have to address organizational structure and culture to facilitate success."

Similarly, cloud teams are often set up as part-time roles, or as a sub-team of people still following the same reporting lines, accountable to the same people as before. "Traditional Enterprise IT often acts like antibodies – they're wonderful at crushing new ways of doing things," said Hannan. To overcome this, you need to give your cloud team the autonomy and trust to make decisions that will deliver the business outcomes you want - invest in their success and bring your very best people into teams to deliver change.

Organizations also frequently fail to recognize and address the fact that there are blockers of change beyond the technology and the IT department. "You must also engage other corporate areas in the transformation – audit, accounts payable, legal, procurement and so on. Otherwise everything runs the risk of slowing down," said Hannan.

Finally, any organization undergoing a large-scale transformation will encounter 'anchors.' They're the people who slow down the transformation not because they're trying to protect the business and its customers, but simply because they're uncomfortable with change. A lot of organizations tolerate their demands to slow the pace of the transformation and keep their beloved processes in place, but that's often a mistake. A concerned 'citizen' will be open to taking on the challenge of resolving the issue; 'anchors' often hide behind a legacy process and back away when tasked with resolving the challenge.

Hannan's top tips

Identify key business and technology outcomes and make the people who are accountable for those outcomes also be accountable for the delivery of the technology.

Don't build new technology to fit a legacy process that was designed to manage risk in a very different technological landscape - modernize, optimize, and create new processes that maximize value from the technology.

Engage the broader organization and turn potential blockers into advocates.

As leaders of organizations, it's our role to facilitate the smooth adoption of change – in a world where a constant state of change is becoming the norm, we have to create cultures and organizations that can embrace change and adapt quickly.

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