

An aerial photograph of the Hong Kong skyline, featuring numerous skyscrapers and a harbor. The image is overlaid with several large, semi-transparent geometric shapes: a large light blue hexagon in the upper left, a white hexagon in the upper right, and a large light green hexagon in the lower right. The text is positioned within the white hexagon.

The path to a successful cloud strategy

a five-part story



Lenovo

Preface

The IT industry is currently in the largest, most challenging, most disruptive, and most important transition ever.

Today, IT departments everywhere are being tasked with moving away from the traditional cost center model and transforming into revenue-generating innovation centers. Many see transformation as a necessity for survival, but simply surviving will never be enough. There's a bigger opportunity here – by transforming IT, you can transform your business.

**But why now? And why is the shift so radical?
There are key factors driving the change:**

- The pressure to bring new business applications to market faster and drive positive revenue impact.
- The demand created by a consumerized expectation of “easy and instant” access to everything, from anywhere. Business units expect systems be constantly at their fingertips and expect new systems to be deployed with minimal impact to their day-to-day.
- To stay competitive, the business needs to adopt new technologies that enhance their business's core competencies or extend them into new business models.
- Established businesses are at risk of being overtaken by agile start-ups more focused on innovation and change.
- More and more, business units – not IT – control the application deployment budget. IT must be an agile service provider, or risk becoming outsourced or replaced.

Today, it's not uncommon to hear “We need to get out of the infrastructure business”. Business leaders do not see IT infrastructure and data center management as critical core competencies. This is partially due to the fact that IT managers commonly report 50-75% of their resources are still dedicated to routine maintenance tasks. In that context, the idea of IT having the skillset and capacity to lead digital transformation in their organization may seem like a bridge too far.

But now, of course, there's “the cloud.” It's a term freely touted around boardrooms as the answer to all technological ills for an organization. While some organizations are considering the move to the cloud for the first time, many rushed to adoption for some areas of their business and are now finding themselves with fragmented workstreams and data. The reality is that cloud transformation is by no means easy, much less a cure-all. Yes, there are big opportunities for cloud technology to revolutionize the way IT departments can deliver resources, applications and services to an increasingly demanding user base. But organizations can find themselves faced with numerous challenges and unintended consequences when they assume they can “just move to the cloud.”

Successful cloud transformations will start with generating a solid cloud strategy that factors in desired business outcomes, workloads, migration planning, team skills and budget.

It's a journey Lenovo, powered by Intel®, has helped many organizations successfully navigate, from designing their cloud strategy to implementing and managing their cloud hardware. In this eBook, we'll follow the development of an organization's cloud strategy during their transformation journey.

We hope you find some valuable insights to help guide you on your own journey to a robust and effective cloud strategy.

Chapter 1:

Rising to the challenge

Taylor left the meeting with every detail whizzing around her head. Every now and then, you realize you've been in a meeting that will change the future of your organization. The executive was very transparent about the challenges they were facing, and this gave Taylor the opportunity to outline the role her IT team might play in solving them.

In addition to the rising pressure from innovative competitors, the organizational infrastructure was being stretched to breaking in servicing more and more mobile and remote workers, plus an increasingly demanding user base. Worse yet, when users couldn't get the application or service they needed fast enough, they were turning to shadow IT¹ and unwittingly placing the organization's security and long-term operating margins in jeopardy. The executive was insistent that leveraging modern technologies to drive innovation and revenue-generation projects would be critical to the future success of the organization. This put the spotlight on IT. They would need to streamline processes, create operational efficiencies, and invest in the right technology, all the while staying within current IT budgets.

Basically, the ask was to do more, faster, with greater agility and with little to no additional resources. In other words: IT needed to become an "agile service provider to the business."



As the executive outlined the challenges, it hadn't taken long for the discussion to turn to cloud. In fact, before Taylor had said a single word on the subject, there already seemed to be a general acceptance that the answer to many of the challenges could lie in the development of a new cloud strategy that would transform the organization.

There had been some tough questions, and despite the general positive attitude to cloud, some of the traditional, conservative skepticism remained. But Taylor expected this and had all her answers ready:

- ✔ Yes, digital transformation could solve a great number of challenges facing the organization.
- ✔ Yes, the technology exists today to deliver both rapid application delivery via self-service and the agility to respond swiftly to changing business requirements.
- ✔ Yes, Taylor believed in the transformative potential of the right cloud strategy.
- ✘ No, the suggestion to "just move everything to a public cloud provider" won't work for all workloads and business requirements.
- ✔ Yes, there will be way to deploy a private cloud that doesn't mean overinvesting in infrastructure.

- ✘ No, getting the tech isn't the whole story, the transformation must run deeper than that.
- ✘ No, it's not a simple thing to do, there are a hundred different ways to do cloud.
- ✔ Yes, there's a lot we can learn from the experiences of similar organizations, but no two cloud journeys are the same.

Taylor needed to convince her leadership to focus on the goals but not dictate how to get there. She had heard cautionary tales from her peers at other organizations that had gone "all in" on public cloud. While the operational impact of the public cloud services had been great, the cost had been hard to control. Not only were the monthly bills unpredictable and above allocated budget, the network connection costs to the public cloud was also a big reoccurring expense. The cost and time lag for data restores was a major pain point they had not anticipated. To top off the list, there had been security and data scares that had the compliance guys twitching. Taylor shared these learnings and made her point that an incomplete or ill-conceived cloud strategy had to be avoided.

By the time she walked out of the meeting, Taylor had a clear vision; she had to develop a well-defined and detailed roadmap to successful cloud transformation.

“Well, you’ve got your work cut out for you,” said Jeff, chuckling through his sandwich. Taylor was sitting in the cafeteria, enjoying a lunch break with her friend and colleague.

“I’m not saying it’ll be easy,” she said, “Which is why I need your help of course.”

“Oh, sure,” he said, “Let’s see what you’ve got then. What’s your approach?” Taylor took a breath and tapped the screen of her tablet a few times to get to her notes.

“Well,” she began, “I started with breaking down the business objectives into a more clearly defined list. Just so I can be sure that we develop the correct solution. Here’s what I came up with.” She pushed the tablet across the table towards him.

Business drivers for cloud:

- Transform IT to be an engine for innovation and revenue-generating projects
- Move IT from a cost center to a business profitability driver
- Help IT to become more efficient with spending and human resource allocation
- Satisfy user demand for more mobility and simplified consumption of IT
- Tackle Shadow IT and solve the poor response times to departments on application deployment support
- Move to a more modern infrastructure that can scale to help us compete against our more innovative competitors
- Stay on trend with technology to become more flexible and future-ready



“Wow, good stuff,” Jeff said thoughtfully. “So this list reflects the high-level wish list from the c-suite, right? Just don’t forget about us regular folks,” Jeff teased. “We’re the ones who will be working within this new world every day. This has to work from the top down and the bottom up.”

“You’re right,” she said, “The gap between executive and employee experiences of operational issues can be significant. I’ll get input from managers across departments, and, also get their buy-in to back my proposed solutions. Whatever we come up with has to match the individual needs and criteria of different departments, consider scale and the future demands of our users, meet the economic criteria and still deliver on the innovation factor for the executives. Thanks, Jeff.”

Chapter 2

Discovery

At her desk the following week, Taylor was taking the view from the bottom of the mountain she had to climb. While she desperately wanted to get moving, she knew that the only way to the top was one step at a time. In the intervening days, she already learned a great deal by meeting with colleagues across departments to discuss the impact of an IT transformation journey. The good news was that, while there was some divergence in the details, the executive's view on the challenges facing the organization were reflected in what she'd learned from her colleagues in operational roles.

Next, Taylor needed to take all the pieces, complete the puzzle and form a clear picture. She knew from long experience that determining the total cost of ownership was critical in assessing the economics of any new solution. Beyond the purchase, installation and deployment costs, she had to consider many other factors which all could add up over time to be quite significant, even when compared to any initial capital investments.

Data storage costs

Licensing costs

Ongoing system administration burden

Installation costs
(Plus, ongoing monthly charges for network connection when using a public cloud provider)

Service usage costs

Ongoing system maintenance

It would also be critical to understand how the technology would be used. Different workloads require different amounts of compute power, storage and network bandwidth. Some workloads needed their own environments, others could freely share resources.

Some data required absolute sovereignty, other data could live anywhere, even in the public cloud. Plus, mission-critical databases and applications had to meet specific performance benchmarks and reliability criteria in order for the organization to meet its SLAs with customers. In addition, the existing cost of current infrastructure couldn't be forgotten.

Looking back over her work, she began to map out the long list of complex dependencies. As she swam deep in all the detail, she kept reminding herself the goal was not just to replicate their current capability in a new infrastructure. She had to improve it, accelerate innovation potential and dramatically reduce the amount of resources consumed by basic management and maintenance tasks. The opportunity to transform the organization was incredible.





Cloud strategy: key criteria

- Human capital cost and management burden
 - How will we resource this?
 - Will it be resource intensive to maintain, or easy?
- Innovation capability
 - Which cloud model(s) will give us the innovation potential the executives demand? Private? Public? Hybrid? Multi-cloud?
- Assess current and future infrastructure costs
 - How will our current infrastructure costs compare with cloud infrastructure spend, both on premise and in public cloud spend?
- Workloads and platforms
 - Mapping all workloads to the appropriate cloud platforms
 - Assess metrics for workloads to ensure sufficiency of IT resources
 - Understand risk of lock-in to a specific platform
- Migration considerations
 - Assess and prioritize mission critical apps for refactoring
 - Data migration timelines
 - Determine extent of existing internal skills to execute the migration

Taylor knew she needed more help. That's why she had made time to meet with Bruce Vine, the principal cloud architect for a global technology company and an old college classmate, to ask a few questions about the hidden challenges of a cloud transformation journey.

His insights right from the front line of cloud technology had highlighted one crucial point she hadn't yet properly considered: migration. How long would it take to refactor and test mission-critical applications so they were proven in the new environment? Exactly which applications could they just "lift and shift?" How would the organization prioritize which apps were refactored as cloud native first? And where would the resources come from to carry out this highly specialized work? How long would that take?

Back at home that night, she opened up a note on her PC and began typing.

And that was it. The blueprint for her next few weeks was right there on her screen. The cursor blinked patiently at the end of the last word, "migration," as if to remind her that she couldn't afford to take any detail for granted.

Chapter 3:

Due diligence

With all the internal assessments and consultation with departments and business units complete, the next step was to validate her plans against what was going on out there in the world. There would be nothing worse than to launch a bold, new strategic vision for the organization, only to realize that in comparison to the market, it was already out of date or hadn't made use of some breakthrough new technology.

At their morning meeting, Taylor briefed her team on what she'd need from them. Each team member would be tasked with researching their specialist area and bringing in the data and proof points to back up their conclusions. She shared notes and talked the team through what she needed from them:

Tom— **Security & compliance**

There's a lot of talk about security in the cloud, we'll need the facts. What are the real dangers? What is forecast to be the big challenge in the future? What do we need to do to ensure we meet all of our essential compliance requirements? What are the advantages of housing data on-premises?

Katy— **Performance & reliability**

The organization always looked at its performance, and reliability requirements based on current business needs and the viable options at the time. But what are the new possibilities out there? The goal is to accelerate the business capability, so find out what's possible!

Jared— **Scalability and "future-proofing"**

Any technology investment needs to support the growth of the organization. Let's look around in the market at what flexibility really means. We're looking for options that can grow or shrink with the organization and be adaptable enough to incorporate new technologies that may come in and change the game.

Taylor— **Service Level Agreements**

It's critical the new technology stack will reliably support our existing Service Level Agreements. We'll need to be certain it's possible to achieve them. Let's take a fresh look at the best way to meet, or improve, recovery objectives for each workload.



With the team empowered to help, Taylor focused back on her own list. She had plenty more to do beyond the research she was sharing with her team. As the gaps in their market knowledge were being filled in, and the view of both the current market and the horizon began to look clearer, she would need to start having a view of what technology and vendors she might choose to deliver on her strategy. She had already written her notes on the critical factors this would include:

Vendor credibility / stability

There was a lot of choice out there, and with choice comes more questions that need to be answered. Can new players in the cloud market be trusted? Will the big players be flexible enough? Would her choice of vendor lock the organization in to a certain technology or environment and reduce the flexibility of their options going forward?

Infrastructure scalability

Taylor's organization sometimes experienced peaks in demand for IT resources. While traditional infrastructure usually meant these demands couldn't be met and the organization slowed down, cloud technology could enable flexible resource deployment that would flex to meet demand and scale back when not required. Of course, if they were looking at a long-term increase, then could they easily add to their infrastructure and grow?



Post-deployment costs

Of course, cost is always the big factor. It would be a few steps further into the process before they knew how much they would need to spend. But for now, the task was to establish the key things to look out for. In addition to the initial spend on infrastructure, migration and deployment, additional post-deployment costs could take this project in the wrong direction. In addition, she needed to engage the CFO: Was a CapEx or OpEx model preferred? If the answer was OpEx, her next task would be to understand the monthly billing model in exhaustive detail, to ensure that unforeseen usage spikes could be contained within the planned budget.

Taylor picked up the phone and started dialing. It seemed she would be on the phone all day, lining up meetings with hardware vendors, virtualization vendors, implementation specialists, and cloud consultants as she tried to whittle down the list of suppliers that she'd need to roll out her strategy.

Chapter 4:

Down to detail

It had been another in a series of busy days and the information overload from her team's research tasks had been incredible.

Taylor reviewed all of her research from both inside and outside of her organization. The result was a document that outlined their approach to crucial pieces of the cloud transformation puzzle:

Workload migration and prioritization

She detailed which workloads to move, as well as the most logical order to move them that would be the least disruptive and bring the biggest benefit to the organization, in the least amount of time.

Applications to refactor

This step involved analyzing which of the organization's applications could be refactored-and what the benefits would be. It also considered the time and resource costs of refactoring, and whether there were any risks intrinsic to the process with mission-critical applications.

Support and self service

Taylor presented an analysis of where they could offer cloud IT resources as self-service to individual departments and balanced this where they might still continue with service tickets and IT reviews, albeit with the capacity to deliver much faster than before.

Deployment methodology and timeline

A detailed plan to manage the deployment was critical. Woven into this was the crucial assessment of risk factors, timelines and dependencies, so the organization would remain protected from major disruption should something not go exactly to plan.

Procurement costs

Since money was a big factor, and this part of her approach outlined the expected total costs, including all the extras like maintenance over time, management resources. It was essential to detail which costs were CapEx or OpEx, so that finance could effectively manage budgets and calculate long term cost scenarios. She had also included valuable information about the positive impact of having IT staff freed from routine infrastructure management and maintenance tasks, so this could be taken into consideration in the calculations.

Taylor was pleased. Her team did a good job of helping her establish what she needed to know, and her own work completed the picture. She was now fairly confident she had identified the solutions she needed to meet the organization's needs, be on trend with the market and be able to adapt for whatever the future held. But how could she be sure?



“Regardless of how much research you’ve done,” said Jeff the following day, “There are people who have done and seen more than you, because it’s what they do all the time. We always find consulting with another organization that has special expertise can help you be sure you’ve got your thinking straight. They will have seen things go well, and not-so-well in real-life scenarios, so they’re armed with something that you can’t replicate: experience.”

“Sure,” said Taylor,” But how do you find an opinion you can trust? Someone who’s not just going to sell you their version of whatever you’re looking for and favor their current suppliers?”

“If you look at the best in the industry across all the specialist areas you need, find a team who has relationships with all those vendors. They should have good knowledge about the latest trends but won’t have to steer you in a direction that’s not right for you, because they’re not tied in to one solution. In your case, that’s probably someone who has the end-to-end experience, from the hardware through to understanding end-users.”

“Thanks, Jeff,” said Taylor, “I think I already have someone in mind.”

Chapter 5:

Cloud Formation

Taylor reviewed the new report in front of her, checking back intermittently against her strategy document. She had recently decided to move forward with a complimentary half-day cloud assessment workshop from one of the leading vendors on her shortlist of cloud infrastructure and service providers, to assess the integrity of her approach. Beginning with a complete discovery of her organization's challenges, priorities and limiting constraints, they reviewed the options and architectures they would recommend for her organization's specific circumstances. Their perspective on digital transformation and unbiased expertise had been invaluable. It also gave her the opportunity to float many of her ideas in front of highly experienced and knowledgeable cloud experts.

The good news? While there had been a few revelations, and she had made minor adjustments to some of her choices, her strategy held up under the expert scrutiny. Plus, she now trusted she had someone to contact if she needed guidance on deployment, migration or infrastructure choices when the time came to execute the organizational transformation. Overall, having her methodology validated by a third-party expert confirmed she was making the right choices to for her organization's strategic direction.



Over the next few days, Taylor gave her strategy a final, rigorous review. This was the last phase of her strategy development: review, review, and review again. She found she had a clearly defined picture of success and a good idea of the short- and long-term results. She looked down at the control questions with which she'd been challenging her strategy:

Cloud strategy: Key Control

Me

- Will application server deployment be achievable in minutes vs. hours or days?
- Is the solution rigid or agile?
- Does it free technical staff from sustaining tasks, to focus on innovation?

Executive team

- How much additional revenue/profit can be driven by delivering apps faster?
- Will business be positioned to pace, if not outrun, the competition?
- How does the new strategy align with the organization's future plans, and measures of success?

Answering the questions on the left showed her if she was on track to achieve her technology goals. Answering the questions on the right told her if her strategy was aligned with the organization's high-level goals. This would be crucial for guaranteeing the organization's buy-in, which would in turn give her the authority and support she would need to effectively execute the transformation.

Again, her answers validated that her strategy was ready. Now, all the organization had to do was to say "yes" to transformation, and she would take them to the cloud without sacrificing security for speed.

Afterword

Thanks for reading our cloud strategy eBook. We hope it's helped you to understand some of the scale and complexity of developing a cloud strategy and that you can take some of the guiding principles laid out in Taylor's journey and apply them to your own organization's strategy. Perhaps it even offered you some useful tips on how you might approach your own transformation journey.

Because every organization's cloud journey is different – with its own balance of security, scalability, and agility requirements. And in the world of private, public, and hosted clouds, things move fast. What's smart today is outdated tomorrow. That's why we're here, to help you find the smarter approach. Lenovo's experience with cloud transformation is comprised of helping customers develop a robust cloud strategy, selecting the right technology powered by Intel®, choosing vendors, and assisting with the deployment of infrastructure and ongoing management of resources. With our complete portfolio of cloud infrastructure and services, we will thoughtfully guide you to the right solution for each workload, and for your business. If you are looking for guidance on how to quickly and efficiently move towards a cloud-transformed future, please don't hesitate to contact us and speak with a cloud expert about how to stay on the right path on your cloud journey.