

THE CIO'S

IT TRANSFORMATION

SURVIVAL GUIDE



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CHAPTER 1:

INTRODUCTION

A MESSAGE FROM RACKSPACE CIO RYAN NEADING

The CIO's role in the future of enterprise IT has never been more important – or difficult. Indeed, the scope and strategic focus of this job title has sometimes suggested to me that the “I” in CIO should now stand for “innovation” instead of “information”.

Over the course of my own career, I've seen the CIO role change dramatically – from chief of back-office IT to dynamic business enabler. Our renewed mission is to understand and leverage technology to engage customers and create solutions that fuel the strategic goals of the enterprise.

Within that work, the idea of IT Transformation is central. According to a recent 451 Research survey, nearly 80% of organizations reported that their IT environments required moderate or significant levels of transformation to meet digital business requirements in coming years.

Clearly, the IT industry as a whole agrees that transformation is needed in the enterprise space. But like a lot of catchphrases and watchwords in the tech world (e.g., “disruption”), “IT Transformation” has sometimes been over-buzzed and misunderstood.

So what exactly do we mean by IT Transformation?

At Rackspace, we think of it as bringing sense to the chaos of people, processes and technology. This complex process is much more than moving apps to the cloud or getting out of the data center. It's a holistic reconsideration of how IT engages with and serves the business. It can involve reengineering software architecture and changing the way hardware is procured and where it runs. It can involve taking a fresh look at how data is stored and processed.

Often, the ultimate goal of IT Transformation is to take IT from being reactive to proactive, from being a center of cost to a center of innovation, strategy and agility. IT-as-a-Service Broker (another catchphrase) really means putting the business and its stakeholders at the center of everything we do as IT professionals. We've always known that, of course, but now we have the technologies, tools and C-level mandate to make it a tangible reality.

It should go without saying that there is no one-size-fits-all approach when it comes to IT Transformation. The scope, duration and vision of this vital process will vary from

company to company, based on the specific working reality and technologies in place. The process will also vary based on the organizational appetite for change.

What we've laid out in this ebook is a discussion of the moving pieces of IT Transformation. After almost 20 years in the hosting business, Rackspace has learned a few things about complex technology projects – from massive migrations of data and applications for Fortune® 100 companies to the niche challenges that exist on major cloud platforms: AWS, Azure® and OpenStack®. To create a meaningful discussion about the challenges of IT Transformation, we've engaged some of our best technology minds across the business – from seasoned software architects to migration experts on our Professional Services team.

Throughout the ebook, we never pretend that IT Transformation is easy. In fact, we think it's complex and exceedingly difficult. That said, the transformation journey is a necessary inflection point in every large-scale IT operation over time.

With that in mind, we've tried to offer a useful framework for understanding what this evolution might look like in your business. We walk you through the steps within our framework (Plan, Assess, Design, Migrate, Manage, Optimize), show you how to avoid some of the pitfalls and wrong turns along the way, consider what the destination might look like, and offer a closer look at IT Transformation results in the trenches. We share real-world successes and challenges from within Rackspace and from companies who've been on this journey before. Finally, we offer a chapter on resources for further reading and exploration.

Please remember we're always here to help you along your IT Transformation path. Sometimes the first step of a long journey is the hardest part. If you're at the threshold, we're hoping this ebook will give you a nudge out the door.

Onward!

Ryan Neading
CIO, Rackspace

[Learn More](#) About Ryan's
IT Career



CHAPTER 2:

THE JOURNEY BEGINS

The goal of IT Transformation is to move IT from one state to another – from reactive and inflexible to proactive, agile and fundamentally aligned to the changing demands of the business. Increasingly, senior leadership expects the CIO to lead this transition. According to [Deloitte's 2016-2017 global CIO survey](#), the top expectations that the business has of CIOs are: improving processes, reducing costs and driving efficiencies.

But what's the driving motivation behind IT Transformation?

For many CIOs and CTOs, the status quo is simply no longer sustainable. The enterprise might be mired in spiraling costs, security vulnerabilities or incompatible technologies, or maybe IT processes are archaic and overly complex. If internal or external stakeholders have voiced their dissatisfaction, then a mandate from the CEO to "innovate or perish" is probably inevitable.

So, the motivation is clear. But what's the first step? And how do you know when transformation has had an impact?

While transformation is an evolving process, we believe you have to break it down into knowable, actionable steps. At Rackspace, we favor an approach with the following steps: **PLAN, ASSESS, DESIGN, MIGRATE, MANAGE, OPTIMIZE**.

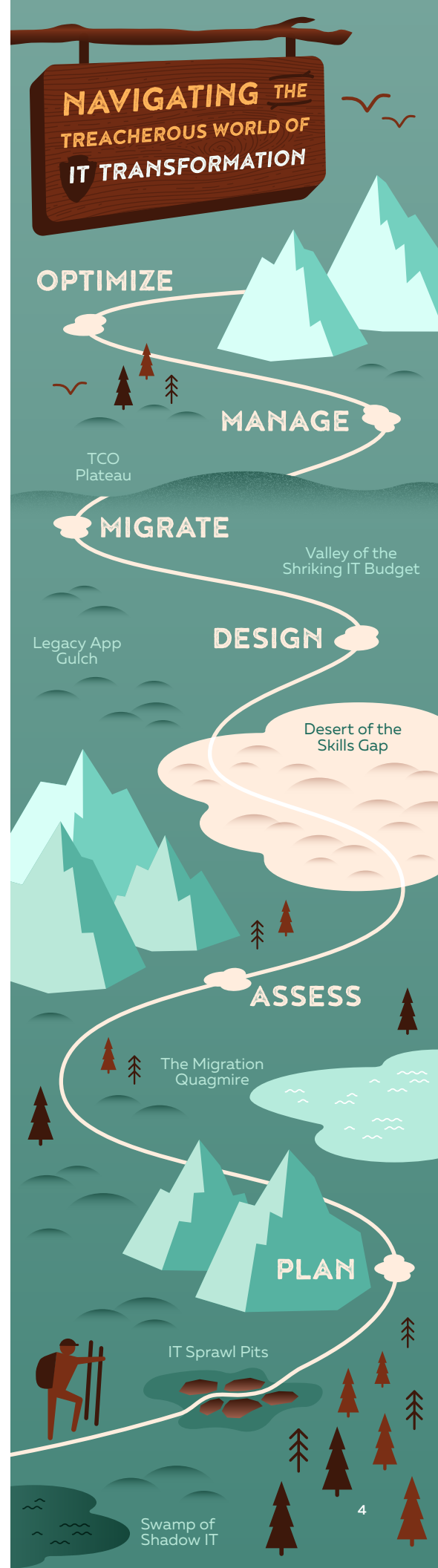
This approach can be used across both Agile and traditional "waterfall" development methods. As a framework, it can be used to push through one application bundle at a time and repeated as needed (for Agile) or it can be used to work across a broader, end-to-end process (waterfall).

1. PLAN

As with any other journey, you need to plan your trip. The primary goal in the planning phase of IT Transformation is to align IT with the business. Look closely at where IT can add strategic value. Which workloads and applications should be overhauled? Which can be outsourced? Get agreement and buy-in from the business on where to focus first. Most of this phase is centered on business strategy, desired outcomes, needs and goals.

Making the business more efficient is always easier said than done, but CIOs understand it's their job to get it done one way or the other. When asked by Deloitte which capabilities were most important for their success, an overwhelming majority of CIOs (nearly 75%) said "aligning IT activities to business strategy and performance goals."

In the real world, we often see enterprises coming to us with their plans already in the works or somewhat solidified. They may have even identified the key technology platforms that will help them get to a future optimized state. Often there's a tailwind behind them – the business, for one reason or another, has determined that the existing service levels within IT are not adequate to meet current and future business requirements.



2. ASSESS

Successful IT Transformation requires careful assessment at the outset. Start by inventorying and evaluating all areas of IT, including workloads, applications, workflows, systems and data centers. Look at utilization rates to identify which resources are strained, and which are underused. Take a close look at operational costs. Are energy costs killing your budget? Are administrative costs associated with management and maintenance out of line with industry norms?

This is also the ideal time to address shadow IT systems and solutions. Ask yourself, and your stakeholders, if there are solutions that offer easier management and better integration with the rest of your systems.

Looking ahead, are your development teams or business units clamoring for self-service infrastructure capabilities? Will you need to support [emerging use cases](#) such as the internet of things, machine learning and big data initiatives? Will you need to support massive growth due to a product launch or acquisition? Knowing what you think you'll need down the road will help you stay on track as you enter the design phase of IT Transformation.

In the real world, it's not uncommon for enterprises to lack a full and comprehensive understanding of their own environments. This may be the result of highly complex systems that have evolved over many years. If assessments don't account for the complex interdependencies between data and applications, they may fail to identify potential migration snags and obstacles.

These oversights will, in turn, affect the design phase.

3. DESIGN

Now that you've assessed where you are, it's time to design your approach to application, workflow and process transformation. Start by building your vision of the ideal IT department for your organization. What do you want to see long term? What would be best for IT and the business?

Take a close look at each piece of the business that will be impacted, and identify the decision-makers attached to those pieces. These are your stakeholders, and they will expect you to evangelize your vision at the outset, while remaining open to their input and respectful of their needs. Engage them early and work to build consensus on how IT can contribute to the overall business strategy.

Next, you'll need to build a sustainable business plan. Identify specific, actionable IT Transformation projects. Establish a budget and a timeline for each project. Build your plan with the intention of starting small and working toward larger projects by laying the groundwork for them along the way. Once you have a written plan, share it with your stakeholders, keep the lines of communication open, and establish regular update intervals. (Remember, a holistic view is useful regardless of whether you use Agile/iterative processes, still rely on traditional project management methodologies, or do some combination of the two.)

TRANSFORMATION TIP

It's essential during the assessment phase to identify all the applications that are candidates for replacing, re-hosting, refactoring and rewriting.

"75% OF CIOs SAY 'ALIGNING IT TO BUSINESS STRATEGY AND PERFORMANCE GOALS' IS THE TOP FACTOR FOR THEIR SUCCESS."

DELOITTE GLOBAL CIO SURVEY, 2016-17

TRANSFORMATION TIP

Measurable TCO and ROI should be baked into these design plans.

Many IT departments face a tangled web of security, hardware and network interdependencies. You'll need to identify and solve for these dependencies before you're mid-stream on a project. Now might be a good time to enlist some outside help if you aren't confident in your internal capabilities. Compile a list of potential service partners, and look at each with a critical eye. Request and compare proposals from a handful of potential partners. What matters is transformation results in the real world of enterprise IT.

4. MIGRATE AND MANAGE

The migration phase of IT Transformation is where the rubber meets the road. All of the planning, assessment and design work that's taken place in previous phases was in preparation for this moment. Complexity comes naturally with migration, so preparation puts you in good shape for whatever arises along the way.

Start by identifying what you plan to move. Are you moving applications? Databases? Data centers? Remember, it's important to start small, so moving out of the data center probably isn't the best place to start. But could you move your email system to the cloud? That might help you establish some sound migration practices while cost-effectively moving some administrative tasks off your plate.

Once you're clear on what you're moving, craft a continuity and contingency plan that will allow you to maintain operations during the migration. The dependencies you identified in the previous phase are a good starting point for identifying potential continuity challenges and scenarios. If you must move data, how will you avoid downtime? And if you cannot completely avoid downtime, how can you minimize it? How will you protect your data, and how will you ensure that none of it is lost in the move?

Finally, it's time to pressure-test your migration plan. If you're working with a migration service provider, they will lead you through this process and should deliver a proof-of-concept migration. But if you're working on your own, be thorough in your testing. Look for issues with your code – is it cloud-ready? Test your applications for compatibility with the cloud, and re-architect them if necessary.

OK, so you have your primary plan and your contingency plans. You've chosen and synced with your service provider. All indications are that your application and/or data is ready to move. It's time to take the plunge and conduct that first migration. Even with the best-laid plans, these can be sleepless nights for every CIO.

If you planned well, the next step after your migration is to iron out new management processes. At this point, you've either significantly streamlined administrative responsibilities associated with your migrated application, or you've handed that responsibility off to a service provider. Either way, time commitments around operations, monitoring and troubleshooting have been reduced or eliminated.

"THE DESIGN PHASE PAYS DIVIDENDS ON THE KNOWLEDGE GAINED DURING THE ASSESSMENT PHASE. NOW THAT THE ENTERPRISE HAS A COMPLETE PICTURE OF WHAT THEY HAVE, THEY CAN FOCUS ON REMEDIATION STRATEGIES AND PLATFORM CHOICES. MEASURABLE TCO AND ROI SHOULD BE BAKED INTO THESE DESIGN PLANS."

SANDY THORSEN :: ENTERPRISE ARCHITECT,
GLOBAL SOLUTIONS AND SERVICES, RACKSPACE

TRANSFORMATION TIP

The CIO needs to know how to integrate their own service delivery model with the deliverables from service providers outside their own firewall.

5. OPTIMIZE

The process of IT Transformation doesn't have a specific endpoint. But as you transform your IT department from a cost center into a proactive participant in steering your business, you'll see significant operational improvements. The focus of IT shifts to continual optimization. Processes become faster. Infrastructure performance increases. Automation becomes more the norm than the exception. Silos are reduced or eliminated. And communication is vastly improved.

According to [a recent Gartner study](#), many CIOs identified "culture/structure of organization" as a top barrier to their success – behind only expertise and budget limitations. The processes we've outlined for IT Transformation go a long way toward eliminating this barrier to success. Here are some telltale signs that you're succeeding:

- IT is aligned with business goals
- IT is focused on application performance
- Workload optimization is ongoing
- IT strategy is relevant, measurable and outcome-focused
- New customer, cost and revenue KPIs are in place
- IT culture engages employees
- IT can attract, recruit and retain top talent

"I'VE ALWAYS THOUGHT THAT THE END GOAL OF IT TRANSFORMATION IS TO MAKE IT THE SERVICE PROVIDER OF CHOICE TO THE BUSINESS. THIS DOESN'T MEAN CENTRAL IT IS THE ONLY GAME IN TOWN. IT MEANS IT IS THE WINDOW INTO LEVERAGING MULTIPLE SYSTEMS AND TOOLS THAT DELIVER THE BEST OUTCOME TO THE END USERS IN TERMS OF PERFORMANCE AND VALUE."

SANDY THORSEN :: ENTERPRISE ARCHITECT,
GLOBAL SOLUTIONS AND SERVICES, RACKSPACE

CHAPTER 3:

AVOIDING PITFALLS AND WRONG TURNS

It's important to be realistic about the many obstacles and risks that come with IT Transformation. Vendors and managed service providers may present these transformation projects as a quick jaunt to some ideal cloud-based state that improves IT efficiency and flexibility. In reality, however, IT Transformation is a long and often winding road, and there's never a single roadmap. You'll have to chart a course through the treacherous terrain of technological complexity, organizational challenges, stakeholder buy-in, legacy app issues and other hazards, both known and unknown – and all unique to your particular organization.

Even the largest, most well-resourced enterprises encounter problems and obstacles along the way.

In this chapter, we review some of the most common risks, challenges and roadblocks that threaten to derail a sweeping IT Transformation project.

These include:

- Poorly established project goals and lack of buy-in
- Inadequate access to expertise and resources
- Poor technology selection decisions

Some of these hazards you can avoid. Others you will simply have to survive. The key is having access to experienced specialists who can help you plan intelligently, minimize risk and help ensure that the benefits of your project will ultimately outweigh the costs.

1. POORLY ESTABLISHED PROJECT GOALS AND LACK OF BUY-IN

For most businesses, the overarching goal of IT Transformation is to reduce costs and drive efficiencies. However, as mentioned in Chapter 2, every case is unique. Defining, prioritizing and aligning stakeholders around clear, systematic goals is the critical first phase of any successful IT Transformation journey. Unfortunately, because there are so many variables and moving parts, many companies fail in this critical planning stage, which can stall the project before it even begins. Without the right level of buy-in among executives and across business units, IT Transformation will encounter roadblocks in the areas of decision-making, approvals and resource allocation.

Here are some wrong turns to look out for:

PRIORITIZING THE WRONG GOALS

The mandate to transform IT into a proactive, flexible part of the business is only growing in its urgency. We hear it every day from customers and prospects.

TRANSFORMATION TIP

Survey your key stakeholders before IT Transformation begins to identify their pain points and areas where change is most needed.



For a healthcare or financial services organization, achieving a specific compliance goal may be the top objective. A tech company may be more focused on investing in new tools that empower teams to innovate and get to market faster.

The problem of goal prioritization is among the most important and difficult to solve. It extends from these high-level strategic objectives down to more tactical goals such as improving website load times or enabling self-service IT options.

As an IT leader, you'll need to answer a number of essential questions:

- Will you need to support emerging use cases such as the internet of things, machine learning and big data initiatives?
- Will you eventually need to support massive growth and scalability due to a product launch or acquisition? Does an impending event affect your projects and priorities?
- Would cloud-based communications and productivity tools (e.g., an email service like Office 365) be cheaper and easier to administer than your current solution?
- Are there certain applications that wouldn't benefit from cloud computing? Do you need to invest in their long-term viability?
- How will you balance these competing strategic and tactical priorities? What is the five-year strategic plan?

Companies that don't have a thorough, comprehensive understanding of their own business requirements risk steering their entire IT organization down the wrong path. IT Transformation, as we've suggested, is both process and evolution. A wrong turn can take a long time to recover from.

SETTING GOALS TOO MODESTLY

Generally speaking, IT Transformation projects should aim high. If you're making major investments and disrupting existing systems and processes, it's imperative that you demonstrate dramatic value to the business. Achieving incremental cost reductions alone might not be enough to justify the investment in the project and may reflect major missed opportunities.

TRANSFORMATION TIP

Set goals and make key decisions with an eye toward the future, not just the present.

"Every IT leader wants to move the needle in ways that provide demonstrable value to the business," says Sean Wedige, Enterprise CTO at Rackspace. "But we still see a lot of customers going into IT Transformation projects thinking too conservatively. Set goals and make key decisions with an eye towards the future, not just the present."

Big initiatives such as refactoring apps for public cloud, building your own private cloud, or adopting newer technologies (NoSQL data stores, containers, etc.) might seem daunting from a cost and risk perspective. But when it comes to overhauling IT, companies that think big tend to have more success, even if they only meet a much smaller fraction of their goals.

INADEQUATE GOAL DEFINITION

At every level, goals must be clearly defined and documented. Your goals should be measurable whenever possible (e.g., "Improve ecommerce site load time by X milliseconds" or "Reduce overall compute costs by Y% over a five-year period").

We often see customers start the planning process with specific, measurable goals, but as the process plays out, these goals become watered down or made increasingly generalized in order to reconcile differences between stakeholders. And when goals are too ambiguous, it can be difficult to quantify or demonstrate success. Likewise, leaving goals open to interpretation can lead to various IT leaders pulling teams in opposite directions.

INABILITY TO SECURE ALIGNMENT

While it is important to develop ambitious, specific and clearly defined goals, it's also necessary to make sure that all the key leaders and teams in your organization understand and agree on the priorities you establish. Lack of executive and business unit buy-in is a top reason that IT Transformation projects fail.

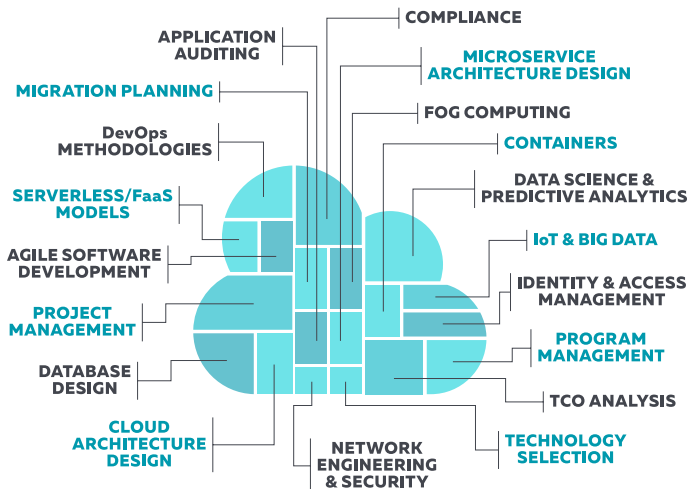
It's also critical to develop and institute a comprehensive organizational change plan to maintain this alignment, including the necessary executive updates, scheduled check-ins and reporting to keep key stakeholders looped in about progress and roadblocks.

2. INADEQUATE ACCESS TO EXPERTISE AND RESOURCES

Regardless of which technologies and deployment methods you select, ensure that you have adequate expertise (in-house or outsourced) to architect, migrate, operate, secure and optimize your apps. Failure to do so is perhaps the most common pitfall of all, and potentially the most costly.

According to [a recent Gartner study](#), "Talent has now been recognized globally as the single biggest issue standing in the way of CIOs achieving their objectives." Similarly, RightScale's "2016 State of the Cloud Report" revealed that, for the first time, lack of expertise has surpassed the perennial bugbears of security and compliance issues as the leading cloud computing concern.

A typical IT Transformation project calls for expertise across many different areas:



For example, consider the process of architecture and migration. Bad architecture decisions can have a detrimental impact on performance and availability that may not be identified for years, after costly damage has already been done.

Similarly, migrations always involve significant risk. Mistakes can result in lost data, hidden cybersecurity vulnerabilities or unacceptable disruption of day-to-day business operations. Unexpected technical roadblocks can grind the project to a sudden halt, disrupting the implementation plan, delaying deliverables and adding significant costs. Companies often approach us after attempting to execute migrations on their own and running into serious problems halfway through what was expected to be a straightforward project.

Lacking skilled resources is also a major problem after the implementation phase. Most companies do have access

to highly skilled internal resources across a number of key areas; however, handling ongoing day-to-day infrastructure operations is usually not the best use of their time. In addition, because major transformation efforts involve shifts to new technologies, companies often discover that some portion of their existing internal IT staff or partners no longer have the skills and experience required.

Some important questions to ask:

- Do you have access to the people you need to best support your technology choices? Are you ready to plan and execute the requisite migrations?
- What about architecting and securing solutions on cloud platforms like AWS, Azure or OpenStack?
- How about the specialized application-level expertise needed to optimize your web content management or ecommerce platforms?
- Do you have the in-house security skills and resources to ensure the secure operations of your IT organization during all phases of IT Transformation?
- Do you have the skilled specialists required to handle ongoing operational challenges such as maintenance and database tuning?

Based on these needs, where does it make sense to hire or train additional internal resources? Where might it be more cost-effective to engage a partner with a deep bench of certified specialists?

Failing to adequately answer these questions can sink an otherwise well-planned and well-executed IT Transformation initiative.

3. POOR TECHNOLOGY SELECTION DECISIONS

Because IT Transformation is, by definition, a sweeping reassessment of your entire IT organization, you'll eventually have to make a whole lot of high-stakes decisions about which existing technologies you keep, which you don't, and which new technologies you adopt. Making bad decisions can have a devastating impact down the line.

One of the most common missteps comes even before the vendor selection phase: choosing the wrong deployment method for critical apps. Some companies, following the rush to the cloud, invest enormous amounts of time and resources in migrating legacy applications that might have seen better ROI if they had remained in a corporate data center. Others are too hesitant about offloading workloads that would benefit significantly from the economics and

flexibility of the cloud. Others still are gun-shy about making the necessary investment to build a private cloud for their on-premises applications.

IT Transformation isn't just about moving applications to the cloud. It's critical that you understand the benefits and tradeoffs of each deployment model, and develop a plan to ensure that each workload is run on the optimal infrastructure for its own unique requirements (cost, performance, security, etc.).

EXAMPLE PLATFORM CONSIDERATIONS:

PRIVATE CLOUD BENEFITS vs. PUBLIC CLOUD	PRIVATE CLOUD TRADEOFFS vs. PUBLIC CLOUD
<ul style="list-style-type: none"> • More control • Segregation • Better visibility into performance • Compliance/security • More cost-effective (at a certain scale) 	<ul style="list-style-type: none"> • Have to think more about capacity • Requires more upfront planning • Slower time to market • Requires more internal skills and resources • Must give up the ability to leverage certain public cloud services

Although there are lots of resources to help you when it's time to select particular vendors, there are still a number of pitfalls. Many companies find themselves having to make difficult choices after realizing that a vendor they chose was a poor cultural fit, or that they lacked the technology-specific expertise they were looking for.

When you're selecting a key vendor or service provider, look for these benefits:

- A proven track record with certified expertise
- Contract and term flexibility
- An ecosystem of tools and services that add value
- Strategic partnerships that matter for your technology stack
- Global, end-to-end support (including for critical applications)

When you're selecting a key vendor or service provider, keep in mind risks such as:

- Vendor lock-in
- Integration issues
- Migration implications
- Legacy application challenges
- Keeping up with features and capabilities
- Security and compliance concerns
- Increased architectural complexity (e.g., multi-cloud)

These are just some of the hazards we see customers encountering on their IT Transformation journeys. As we mentioned at the beginning of this chapter, there will always be more, and you can't always predict them. However, if you follow best practices, plan your project carefully, conduct a thorough cost-benefit analysis, and choose your partners and providers against rigorous criteria, you can be confident that the payoff will be worth the risks.

When it comes to avoiding these pitfalls, the thing to keep in mind is that expertise is key. Having access to skilled people who know the technologies you're dealing with and have experience negotiating similar projects in the past will reduce risk for any IT Transformation project. It's also important to understand that the skills needed for, say, migrations, and the skills required for day-to-day management, are not usually the same. Understand your in-house strengths and gaps before you talk to vendors and partners.

Even though there isn't a single IT Transformation map that every company can consult, there are skilled guides out there who have seen it all. Think of them as sherpas who know the terrain up ahead. Remember, the climb is full of hazards, but you never have to go it alone.

CHAPTER 4:

HOW DO YOU KNOW WHEN YOU'VE ARRIVED?

You've set out on an ambitious journey to improve your IT organization's ability to satisfy the needs of the business. You've taken the lay of the land. You've mapped out the route of your ascent. And you've navigated the various pitfalls and hazards along the way. In concrete terms, you've progressed through each stage of the IT Transformation journey, which involved these steps: **Plan, Assess, Design, Migrate, Manage** and **Optimize**.

Now it's time to ask yourself: Have you arrived? How can you know? It's not as simple as reaching a summit, planting a flag and turning for home. As we've emphasized throughout this ebook, the process of IT Transformation doesn't simply end after you've migrated a few workloads to new platforms. That being said, once you're well into the process of ongoing optimization and reassessment, it is hugely beneficial to take a step back and assess your progress:

Have you achieved the primary strategic goals you documented during the planning and design phases? Are you on track to achieve the expected long-term ROI? How are your KPIs stacking up? Are your service level agreements with your stakeholders improving? Have you become the service provider of choice to the business, responsively brokering the internal and third-party cloud services end users are demanding?

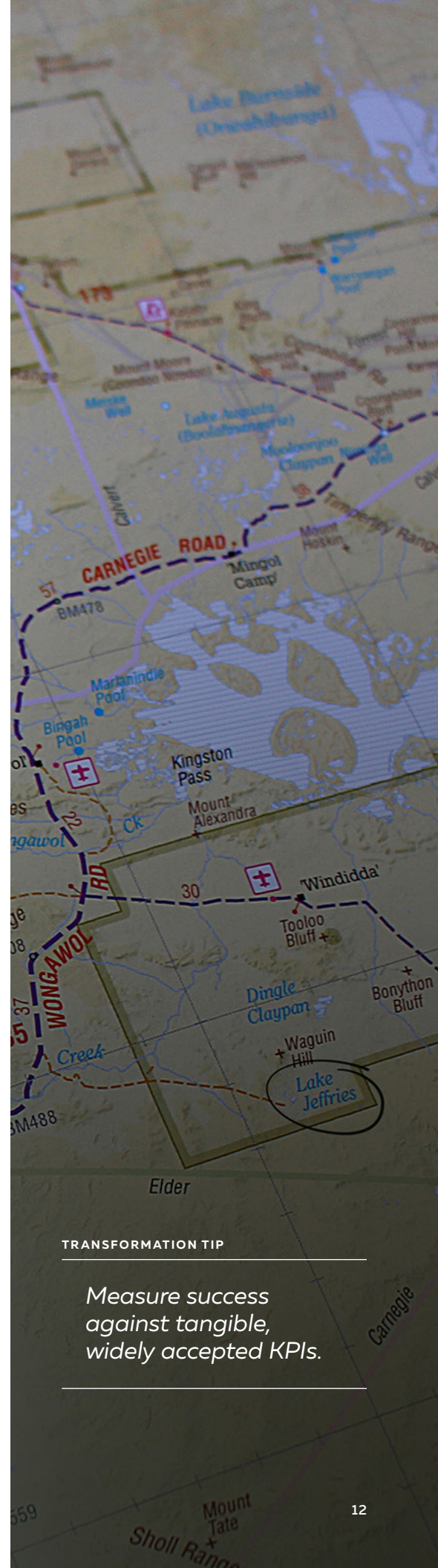
Answering these questions allows you to reflect on lessons learned, identify opportunities for future improvement and – if your project was successful – demonstrate to the business that the results have justified the investment in IT.

Here are some high-level indicators we outlined in Chapter 2 that indicate your project has succeeded:

- IT is aligned with business goals
- IT is focused on application performance
- Workload optimization is ongoing
- IT strategy is relevant, measurable and outcome-focused
- New customer, cost and revenue KPIs are in place
- IT culture engages employees
- IT can attract, recruit and retain top talent

But how is the success of IT Transformation really measured?

As we established in the previous chapter, it's critical to measure success against tangible, widely accepted KPIs. The relative importance of any given KPI depends on how you prioritized your goals and metrics during the planning stage. But here are a few examples of common short-term and long-term KPIs.



TRANSFORMATION TIP

Measure success against tangible, widely accepted KPIs.

SHORT-TERM IMPLEMENTATION KPIS

While the smoothness of project implementation is not necessarily the most important measure of IT Transformation success, it is among the most immediate and visible. Going over budget or causing significant disruption to daily business operations can do outsized damage to stakeholders' perception of the project. Worse, unexpected implementation costs can undermine the overall ROI calculation.

Key questions to ask about implementation success include:

HAVE THE TRANSFORMATION ACTIVITIES MET THE BUSINESS DEADLINE REQUIREMENTS?

Many companies will run transformation as a series of sprints, but the result should be an overall trend toward optimizing IT processes and performance. When taken as a whole, have the projects complied with timelines set by the business and IT?

If not, why? Did you underestimate the complex interdependencies between, say, data and underlying applications? It's impossible to predict and prevent every snag in the transformation process. What matters is that you develop methods and processes for learning on the fly, and then apply those lessons for the benefit of other projects.

If your project did deliver on schedule, it's helpful to identify which teams and processes kept the gears turning. Did a particular service provider go above and beyond to facilitate the project? How can you leverage what worked in other challenging areas of transformation?

DID THE PROJECT GO OVER OR UNDER BUDGET?

Why or why not? Delays such as a failed migration are often a source of unanticipated costs. Unexpected skills gaps are another. For example, your project plan might assume your existing solutions architects can handle the bulk of the design challenges, but you eventually realize you need access to more experts in architecting for ecommerce platforms or getting the most out of a specific cloud technology like AWS or OpenStack.

As discussed previously, poor technology decisions are another major source of unanticipated costs – although the financial impact of these missteps is usually only apparent years down the line.

HOW DID THE PROJECT IMPACT DAY-TO-DAY BUSINESS?

Every IT Transformation project disrupts day-to-day business in a range of different ways – from pulling internal resources into hours of requirements-gathering interviews to causing application downtime during migrations. The key question is to what extent was business disrupted, and did the disruption fall within acceptable parameters established during the planning phase. This is especially important for projects that stretch over a long period of time.

Was your IT organization able to maintain their promised service levels throughout the implementation process? Were application performance or availability unacceptably impacted? Did migrations proceed smoothly? These are all critical questions when looking back on the process of IT Transformation.

LONG-TERM STRATEGIC KPIS

Unfortunately, it's not as easy to measure long-term IT cost reductions and improved innovation as it is to see whether a project was delivered on time and on budget. But these are nevertheless the most important, tangible indicators of IT Transformation success:

LOWER INFRASTRUCTURE TCO

As mentioned in the previous chapter, reducing costs and driving efficiencies is the most common expectation the business has of IT. As such, demonstrating that your IT Transformation has lowered IT costs should be a high priority. For example, maybe you resized your existing infrastructure based on a utilization matrix during the migration process; maybe you moved workloads with spiky usage to public cloud to reduce unnecessary spend; or maybe you built out an OpenStack private cloud which will yield a lower TCO in the long run.

So, once you're well into the optimization phase of your initiative, conduct a thorough TCO analysis to understand what you're spending on infrastructure, IT labor, third-party services and extraneous costs. Are you on target to realize the long-term cost savings you projected during the planning phase? Or are the savings smaller than anticipated? What can you do to improve as you continue to optimize?

BETTER ABILITY TO INNOVATE

A successful IT Transformation initiative must also relieve the workload on in-house IT, whether through leveraging cloud automation templates, implementing DevOps practices like CI/CD or outsourcing routine maintenance to managed cloud providers. Your IT staff should therefore be spending less

time on day-to-day operations and more time on activities that further strategic business goals, including:

- Building and delivering new features faster
- Automating routine tasks
- Refining security processes
- Optimizing infrastructure to create new efficiencies

One way to clearly assess the extent to which you've succeeded in this area is to survey your IT teams and ask which activities they spend the most time on now, as opposed to before the project.

You should also be able to demonstrate that your modernized infrastructure and processes can better support new use cases and strategic business initiatives. Can you more easily facilitate big data and predictive analytics? Can you replace legacy apps with newer applications and their data? If the answers are yes, you're moving in the right direction.

CHAPTER 5:

IT TRANSFORMATION CHALLENGES AND SUCCESSES IN THE REAL WORLD

As we've noted, IT Transformation isn't a one-size-fits-all process, and the following stories of real-world transformation reflect diverse priorities and approaches. A central issue for General Motors, for example, was data consolidation – GM had vast amounts of valuable data but no central repository for storing and analyzing it. AstraZeneca and Novartis prioritized shoring up and modernizing the foundations of their IT performance, while Capital One and General Electric focused on moving their IT departments toward software innovation.

But there's a clear commonality here: In each case, the CIO successfully leveraged transformation to push IT beyond the reactive grind of maintenance and support. Instead of simply scrambling to keep the lights on, IT began proactively looking ahead and thinking creatively about how to add business value.

When IT adopts a forward-looking mindset, it can unlock powerful business opportunities. Leveraging big data and data lakes enables new application paradigms such as predictive analytics, while DevOps methodologies can break down organizational silos and reduce time to market.

As AstraZeneca CIO Dave Smoley recently told Forbes, IT gets into trouble when it remains "an order taker, a chaser and a fixer, as opposed to an engaged strategic partner. Once you get beyond things breaking, you can get into the conversation around where can we do innovative things and where can we try for a competitive advantage through the application of technology."

That's the ultimate goal of IT Transformation.

"ONCE YOU GET BEYOND THINGS BREAKING, YOU CAN GET INTO THE CONVERSATION AROUND WHERE CAN WE DO INNOVATIVE THINGS AND WHERE CAN WE TRY FOR A COMPETITIVE ADVANTAGE THROUGH THE APPLICATION OF TECHNOLOGY."

DAVE SMOLEY :: CIO, ASTRAZENECA

"IT'S THE REAL WORLD – THINGS WERE DIVIDED BY BRANDS, THINGS WERE DIVIDED BY DIFFERENT VEHICLE MODELS INSIDE THOSE BRANDS. AND GETTING THAT INFORMATION IN A COMPREHENSIVE WAY IS NOT EASY FOR ANYBODY."

RANDY MOTT :: CIO, GENERAL MOTORS

AstraZeneca: Transformation Through Simplification

COMPANY SNAPSHOT

Industry: Pharmaceuticals/Biotechnology

Revenue: \$25 billion

Number of employees: 50,000

Year founded/acquired: 1999

CIO: Dave Smoley

Transformation time frame: 2013–2017

THE TRANSFORMATION CHALLENGE

When Dave Smoley took over as CIO of AstraZeneca in March 2013, the company was in “turnaround mode” — several multibillion-dollar drugs were coming to the end of their patent-protected lifecycle, and the company was bracing for a steep revenue decline. The IT department wasn’t helping matters. A tangle of legacy applications, outmoded processes and third-party provider contracts meant that “to build or do anything in IT required between three and eight different services providers,” Smoley told Forbes reporter Peter High. “We had multiple handoffs so you had to get 10 people in a room to make a change.” Essential functions like application development, maintenance, infrastructure, security and the help desk operated in isolation.

Smoley systematically surveyed the IT landscape, identifying and assessing existing procedures and problems. He advises CIOs at this early stage of IT Transformation to “sweat the details,” and he and his team spent a year inventorying AstraZeneca’s technology portfolio. As Smoley told CIO magazine, “Our first move was to ask each of our business-facing IT leaders, ‘Do you know what you’re running? If you don’t, take a clipboard and start talking to the people you’re supporting and ask them what’s running on their computer.’” He also analyzed IT’s cost structure and evaluated the workforce, identifying skills gaps that might complicate the transformation effort.

TRANSFORMATION OBJECTIVES

- Modernize and consolidate the application ecosystem by broadly leveraging SaaS
- Consolidate data center infrastructure and deliver IT resources more efficiently and effectively by employing IaaS solutions

SOLUTIONS

When Smoley encountered institutional resistance, he prevailed in part by emphasizing the business benefits of transformation: He would make IT twice as good at half the cost. And he didn’t deploy cloud-based solutions “just to implement cloud,” he told Forbes. “Each addressed a business problem.” He leveraged ServiceNow, for example, because it could unify service management efforts scattered across the global organization.

One of Smoley’s criteria as he evaluated potential providers was capacity for innovation. Given the current rate of technological change, he wanted partners that would push the envelope.

He also started small. His first move was to transition email to O365 and HR technologies to Workday. These were “experiments,” allowing him to gauge the effectiveness of the new tools and the viability of the migration process. Later he broadened and accelerated the consolidation, replacing numerous legacy apps with solutions from providers like Box and Workforce.

Finally, he leveraged AWS cloud infrastructure, creating an environment of self-provisioning across the new ecosystem of tools that enabled AstraZeneca scientists and researchers to access compute and storage resources on demand.

RESULTS

- Streamlined app ecosystem enabled change in both IT and business
- Infrastructure consolidation reduced capital expenditures
- Cloud technologies accelerated work implementation and boosted scalability
- Automation reduced IT support costs

LONG-TERM OUTLOOK

AstraZeneca continues to see organization-wide benefits from its IT Transformation. Cloud tools are reducing costs and accelerating the pace of work. Most importantly, IT has become a strategic business asset. “We built a solid foundation for performance,” Smoley told Forbes. “Now we’re getting into strategic discussions with the business.”

“WHEN WE STARTED THREE YEARS AGO, WE SAID WE WANT TO BE TWICE AS GOOD FOR HALF THE COST. AT THE TIME, PEOPLE SAID THAT IS CRAZY, HOW DO YOU LITERALLY CUT YOUR COSTS BY 50% AND PERFORM BETTER AND DO MORE?”

DAVE SMOLEY :: CIO, ASTRAZENECA

General Motors: Transparency and Data Access Deliver Value

COMPANY SNAPSHOT

Industry: Automotive

Revenue: \$166 billion

Number of employees: 215,000

Year founded/acquired: 1908

CIO: Randy Mott

Transformation time frame: 2012–2016

THE TRANSFORMATION CHALLENGE

In 2012, General Motors CIO Randy Mott set out to reengineer his company's sprawling IT infrastructure and convoluted processes. It's safe to say that few IT Transformations occur on such a massive scale. The issues facing GM, however, were representative of the IT Transformation challenges that all legacy industrial organizations must face sooner or later:

Data sprawl. GM lacked a single, consolidated enterprise data warehouse. Vast amounts of data were held by third parties and dispersed in GM facilities across the world. GM was failing to take advantage of a huge analytics opportunity.

Shadow IT. Over decades, applications and services had grown up semi-independently in various business units, yielding thousands of shadow IT apps and 70 poorly performing brand websites.

Data center and application sprawl. GM maintained 23 legacy data centers and employed 4,000 enterprise applications.

Poor innovation-to-maintenance ratio. GM spent billions of dollars on IT, but 80% of its IT efforts went toward basic maintenance and support; only 20% went toward development and innovation.

TRANSFORMATION OBJECTIVES

- Create a centralized data source accessible to all business units
- Rigorously identify shadow IT and integrate it, partly by boosting the credibility of GM's IT department
- Consolidate data centers and applications, taking advantage of cloud technologies
- Invert the 80/20 IT ratio so IT efforts primarily drive innovation and business results

SOLUTIONS

Given GM's sheer size, these were daunting objectives. But as Forbes magazine reported, CIO Randy Mott favored comprehensive, ambitious solutions:

EDW. GM built an organization-wide enterprise data warehouse (EDW), consolidating most of the company's data. The EDW now holds 1 petabyte of structured and unstructured data and is staffed by 400 people.

IT transparency and management. Mott and his team created an IT management program requiring cost-benefit analysis for all new projects. They enhanced the IT department's reputation by delivering modern IT tools quickly – before employees decided to take matters into their own hands.

Application and infrastructure consolidation. By leveraging private cloud infrastructure, GM was able to collapse 23 legacy data centers into just two. It also retired nearly 400 legacy and mainframe applications, with an ultimate goal of 1,500 total apps globally.

New development staff and culture. Mott significantly increased IT staff and promoted a culture of innovation and development in four new "innovation centers."

RESULTS

- Multiple business breakthroughs enabled by the EDW, including the ability to instantly analyze profitability factors for any vehicle in any market, anywhere in the world
- Thousands of shadow IT apps and nearly 100 websites identified, redesigned and relaunched
- Major cost savings and efficiency gains from app and data center consolidations
- Ratio of routine to strategic work by IT staff improved from 20/80 to 74/26, with progress ongoing

LONG-TERM OUTLOOK

GM's IT Transformation turned IT into a proactive participant in steering the business. IT now champions aggressive process improvement and continual optimization. According to Information Week magazine, Mott's team has leveraged high-performance computing capabilities to improve crash simulations, simplified modeling systems so engineers could spend more time designing vehicles, and developed apps that streamline the sales process for franchisees. As Mott recently told the magazine, "We're really trying to figure out how do we change the game, how do we get ahead – not just how do we stay in business."

Capital One: Empowering IT to Drive UX Innovation

COMPANY SNAPSHOT

Industry: Financial Services

Revenue: \$25 billion

Number of employees: 45,400

Year founded/acquired: 1988

CIO: Rob Alexander

Transformation time frame: 2011–2016

THE TRANSFORMATION CHALLENGE

When Rob Alexander became CIO of Capital One in 2011, he took a hard look at the company's IT department and thought about the mobile, digital future of banking. As he explained to Information Week, success would depend on creating innovative, rich digital experiences for customers: "The whole customer experience, the product, is manifested in software, either online or mobile. So if you are not good at delivering great software-driven customer experiences, you're going to be challenged."

But Capital One didn't have enough firepower. It was still using off-the-shelf software for its web, mobile and tablet apps. To make the company into a digital innovator, Alexander would have to clear several hurdles: insufficient technical expertise, lack of a digital innovation culture, and a sprawling infrastructure incapable of supporting leading-edge development.

TRANSFORMATION OBJECTIVES

- Re-skill the IT department, adding engineering expertise and creating a culture of innovation
- Consolidate data centers and leverage cloud capabilities to support rapid software innovation, development and deployment

SOLUTIONS

To meet Capital One's IT challenges, Alexander implemented aggressive solutions that ultimately revolutionized the company's IT workforce and application and infrastructure landscape:

Talent and culture overhaul. Capital One made a major push to hire software engineers, including acquisitions of startups like BankOn and Level Money to add development talent. Simultaneously, Alexander promoted forward-looking development methodologies.

Cloud infrastructure. Capital One partnered with AWS to leverage rapid on-demand infrastructure provisioning, high availability and elasticity. Like Dave Smoley of AstraZeneca, Alexander prized innovativeness in potential partners, and he chose AWS partly for its "pace of innovation."

RESULTS

- Development of trailblazing banking apps – including Spark Pay, Purchase Eraser and SureSwipe – with every development team either currently cloud-focused or transitioning to the cloud
- Customer-facing apps treated as dynamic, continually evolving products
- On track to reduce data center footprint from eight to three by 2018 while retiring numerous legacy applications

LONG-TERM OUTLOOK

Rob Alexander thinks IT Transformation will fundamentally change Capital One as an organization – and transform the IT department from cost center to innovation engine. "I think we're looking at a pretty dramatic shift for our company," he told Sharon Gaudin of Computerworld magazine. "When you think about the makeup of our organization, it'll have the feel of a technology company. It will show up in the pace of innovation, which we see really picking up, and the quality of experiences we can deliver. It'll show up with us winning in the marketplace, ultimately."

"I THINK THERE'S A POWER IN A STRATEGIC DECLARATION SAYING, 'WE ARE GOING TO BE CLOUD-FIRST.' IT CHANGES HOW YOU BUILD YOUR APPS. IT CHANGES THE DIRECTION OF YOUR INVESTMENTS. YOU'RE NOT INVESTING IN BUILDING YOUR OWN INFRASTRUCTURE ... IT'S A DIFFERENT WAY OF OPERATING."

ROB ALEXANDER :: CIO, CAPITAL ONE

General Electric: IT Leads the “Digital Industrial” Revolution

COMPANY SNAPSHOT

Industry: Industrial Conglomerate

Revenue: \$124 billion

Number of employees: 333,000

Year founded/acquired: 1892

CIO: Jim Fowler

Transformation time frame: 2011–2016

THE TRANSFORMATION CHALLENGE

Five years ago, GE embarked on a quest to fundamentally transform its IT organization. It wasn't just looking for increased efficiency and effectiveness; it wanted IT to deliver value in core areas of the business. This was fully in keeping with CIO Jim Fowler's belief that modern industrial firms must also be digital firms, or “digital industrials,” as he told Forbes. One of GE's most important initiatives involved using its own world-class data and analytics capabilities to create universal software for optimizing industrial processes.

To realize these ambitions, GE would have to overcome significant hurdles, including a lack of internal development talent; a sprawling, siloed organization poorly equipped for efficient data sharing; a glut of legacy applications; and inefficient IT systems and processes.

TRANSFORMATION OBJECTIVES

- Create an internal pool of world-class development talent
- Enable organization-wide data sharing by breaking down internal barriers between units and divisions
- Consolidate workloads and data centers by leveraging cloud capabilities

SOLUTIONS

At AWS re:Invent 2015, Fowler said of GE's transformation: “Self-service and automation had to be the mantra for everything we did.” Ultimately, he took the following actions:

- Hired 2,000 IT staff and created a \$1 billion “software center of excellence”
- Formed a new unit, GE Digital, to spearhead the transformation
- Created the “Digital Thread” initiative to break through organizational silos
- Partnered with Amazon (AWS) and Microsoft (Azure) to reduce GE's data center footprint and leverage cloud capabilities

RESULTS

- In mid-2015, introduced the Predix cloud platform for industrial data and analytics and hit its revenue goal for 2016 (\$6 billion)
- Currently on track to consolidate its 34 data centers into four by 2018 and move 9,000 apps to the cloud, including 300 disparate ERP systems

LONG-TERM OUTLOOK

GE plans to continue its journey into the cloud: “Going forward, this is where we're going,” Fowler said at AWS re:Invent. “We intend to move over 60% of our global workload to AWS. For us, this is no longer an experiment, it's no longer a test. It's inevitable.” And GE's IT department now appears to be a full strategic partner in the business, positioned to deliver value and innovation well into the future. By 2020, Fowler says, GE will be one of the top ten software companies in the world.

Novelis: A Strong IT Foundation Enables Innovation

COMPANY SNAPSHOT

Industry: Manufacturing

Revenue: \$11 billion

Number of employees: 11,000

Year founded/acquired: 2005 (from Alcan, Inc.)

CIO: Karen Renner

Transformation time frame: 2010–2016

THE TRANSFORMATION CHALLENGE

Karen Renner became the first-ever CIO of Novelis in 2010. “The demand for new systems, processes and tools was incredible,” she later told CIO Insight magazine. She faced deep, fundamental problems: subpar IT processes with insufficient standardization, lack of virtualization, data center and application sprawl, and a lack of modern mobility and collaboration technologies. Novelis’ information infrastructure looked incapable of keeping up with the ever-increasing data demands of the automotive market — a critical issue for the company.

TRANSFORMATION OBJECTIVES

- Eliminate data center duplication and increase virtualization
- Implement process improvements through automation and simplification
- Leverage SaaS solutions to consolidate legacy applications
- Deploy modern technology tools to promote collaboration and workforce mobility

SOLUTIONS

As Renner strategized to meet these objectives, she took care to harmonize business and IT priorities. She told CIO Insight that she needed to ensure IT’s “prioritization strategy was completely aligned to the overall Novelis strategy.” She also initiated a “cultural shift,” encouraging her team to think big and consider “how technology [could exert] influence outside of a local requirement to our regions or globally.” And as she was designing the transformation, she paid attention to interdependency: “As many of the programs were interconnected, we built a high-level, integrated plan that enabled us to understand the dependencies.”

Ultimately, Renner and her team took the following actions:

- Closed 21 of 25 data centers by consolidating workloads in private cloud data centers and leveraging a disaster recovery site
- Aggressively deployed virtualization technology, taking the company from 20% virtualized to 92% virtualized
- Implemented a global IT plan and assessment system to increase automation and enhance workforce mobility and collaboration
- Deployed SaaS solutions to eliminate legacy and mainframe apps and improve service delivery

RESULTS

- Saved \$14 million through data center consolidation
- Reduced time IT team spent building infrastructure by 40%
- Improved ability of BUs to predict service availability and increased transparency into service fees (data storage, backup, etc.)
- Implemented real-time analytics that enhanced organizational ability to anticipate infrastructure problems
- Simplified compliance by upgrading to a more flexible storage platform

LONG-TERM OUTLOOK

The IT Transformation Renner led didn’t just fix problems and streamline processes — it also generated business value, as IT became a source of actionable insight and innovation. Going forward, Renner sees broad strategic benefits for Novelis. Data analytics in particular, she told CIO Insight, has great potential: “Novelis collects enormous volumes of data from our machine centers on the shop floor. We believe we can combine data from these systems with historical and ERP system data to provide exceptional insight to help us improve operational efficiencies and develop more robust preventative maintenance programs.”

“[IN 2010], NO IT PROCESSES, PROCEDURES OR POLICIES WERE IN PLACE GLOBALLY. WE WERE VERY DECENTRALIZED AND LEGACY-FOCUSED. WE BEGAN OUR TRANSFORMATION WITH THE BASIC FOUNDATIONAL CHANGES REQUIRED AND HAVE BEEN BUILDING ON THESE TO ACHIEVE OUR STRATEGIC OBJECTIVES.”

KAREN RENNER :: CIO, NOVELIS

CONCLUSION

As Rackspace CIO Ryan Nearing observed in the introduction, the scope of the CIO role has significantly broadened in recent years – so much so that the “I” could stand for “innovation” instead of “information.” Whatever their individual challenges and goals, the CIOs profiled here all succeeded in transforming IT from an “order taker” into a source of insight, innovation and business value. Whether they were revolutionizing UX, delivering new engineering tools or pioneering a software platform, they pushed past process optimization to redefine how IT engaged with the business. We hope you’ll leverage the framework we’ve offered not just to drive operational excellence, but also to reevaluate and expand the role of IT in your organization.

NOTES

16: Dave Smoley quotations and details of AstraZeneca IT Transformation from:

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[CIO Insight, “How to Implement an IT Overhaul,” Sept. 8, 2016](#)

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CHAPTER 6:

THE IT TRANSFORMATION JOURNEY CONTINUES

As we've seen, IT Transformation is more than just another tech catchphrase. It's a necessary response to a clear mandate from the business to drive efficiencies. But it's also about more than just reducing costs or moving apps to the cloud. It's about challenging old assumptions and evolving the traditional role of IT. It's about finding a way to deliver the rapid, dead-simple access to critical services that end users have increasingly come to expect after spending years using SaaS products like Gmail, Dropbox and Salesforce.

IT Transformation will mean different things to different businesses. For some, it might include the refactoring of applications for a public cloud service like AWS or Azure; for others, it might include building out an on-premises private cloud into an existing corporate data center.

But wherever your own IT Transformation journey leads, it's guaranteed to be a highly involved, high-stakes process of **Planning, Assessment, Design, Migration, Management** and **Optimization**. It will entail very real technical challenges and involve many impactful technology decisions. And despite what some vendors might tell you, it will entail significant risk. You'll encounter hazards and pitfalls — from legacy app issues to organizational challenges to migration failures and beyond.

But as the real-world stories in Chapter 5 illustrate, a well-planned, well-executed IT Transformation journey can deliver massive cost savings, better agility and happier stakeholders. And if companies like General Electric can do it — with their sprawling, siloed teams and incredibly complex legacy application challenges — you should be confident that your organization can too.

Here are the single two most important points to keep in mind along the way:

- **Mapping out your route is crucial.** Every stage of IT Transformation is important, but the goals, priorities and project roadmaps you establish during the planning phase will have an outsized impact on the ultimate success of your project.
- **You need skilled guides who've been there and back again.** As we've established throughout this ebook, having access to the right expertise is the single most important thing you can do to successfully navigate the key stages of IT Transformation and avoid costly wrong turns. You need people who have undertaken similar projects in the past, who know your chosen technologies inside and out, and who have the trophies (and certifications) on the wall to prove it.

As noted in previous chapters, IT Transformation doesn't have a single, definite endpoint. Once you reach the summit, the next peak in the range looms in the distance. When you come to the mature stages of your current project, it's time to look ahead to the next one.

RACKSPACE PROFESSIONAL SERVICES

Looking for a partner with the depth and breadth of expertise you need to guide you throughout your IT Transformation journey? With Rackspace Professional Services, our experts will listen to your pain points, help you prioritize your goals, get to know your current architecture, and provide guidance as to which clouds to use for which workloads. Then we'll guide you through each stage of the transformation framework, helping you architect, migrate, manage, secure and optimize your cloud resources across AWS, Azure, vCloud® Air™, OpenStack, and private and hybrid cloud platforms.

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www.rackspace.com/professional-services

The journey to the cloud can be confusing, with perils and problems along the way. Wherever your journey starts, chances are we've already navigated that territory. Rackspace has expertise and experience in all the major cloud platforms and technologies. As your trusted partner, we guide you on the right path and ensure you stay on course.

To see how we deploy our transformation framework (Plan, Assess, Design, Migrate, Manage, Optimize), please see our infographic, [Navigating the Journey to the Cloud](#).



APPENDIX:

IT TRANSFORMATION RESOURCES AND FURTHER READING

As you've seen, the path to IT Transformation isn't perfectly linear. There are many routes, and, unfortunately, none of them are simple. Yet to remain innovative and competitive, you need to incorporate IT Transformation into your overall business strategy. Here are some additional resources to help you further understand what's involved and what to expect.

TOTAL COST OF OWNERSHIP CALCULATOR

Rackspace

Have you ever considered how much managed hosting could save you and improve your bottom line? Our TCO calculator offers a quick and easy way to find out.

[TRY IT](#)

WHO OWNS DIGITAL TRANSFORMATION? ACCORDING TO A NEW SURVEY, IT'S NOT THE CIO

Forbes

Business units that previously operated autonomously will have to collaborate to lead organized, purposeful enterprise-wide transformation. That takes leadership, empowerment and accountability.

[READ MORE](#)

THE FOUR STAGES OF CLOUD COMPETENCE

Cloud Technology Partners

If you are leading a cloud adoption program, it is important to understand the learning model associated with the introduction of new skills into your work environment.

[READ MORE](#)

THREE HARD QUESTIONS EVERY CIO NEEDS TO ASK

Cloud Technology Partners

The two most important reasons for building a cloud strategy should be to increase revenue and lower costs. Answering these three questions will help ensure that your cloud transition enables both outcomes.

[READ MORE](#)

THE CLOUD ADOPTION BLUEPRINT: 10 BEST PRACTICES FOR SUCCESS

Cloud Technology Partners

Your cloud program is the single most significant technology shift your company will face over the next decade. Follow these 10 best practices to ensure a successful transition.

[READ MORE](#)

IS YOUR WORKLOAD CLOUD-READY? ASK THESE THREE QUESTIONS

Cloud Technology Partners

Only rarely can applications and data go straight to the cloud. To take advantage of the cloud-native features that can help deliver the most ROI, you first need to modify or refactor your apps and data.

[READ MORE](#)

WHAT DO WE MEAN WHEN WE SAY "BUSINESS-IT ALIGNMENT"?

CIO

You hear lots of talk about business-IT alignment, but what does that really mean? CIO.com takes a look at the strategic plans for business and IT, and how to align them for maximum value.

[READ MORE](#)

THE RIGHT WAY TO MIGRATE TO THE CLOUD

Cloud Technology Partners

Migration involves many details and decisions, along with many paths through which to move applications to the cloud. Find the best paths for database-intensive, compute-intensive and user interface-intensive workloads.

[READ MORE](#)

SAVINGS ARE ONLY THE START OF THE CLOUD'S VALUE

Cloud Technology Partners

The lower costs of cloud computing versus on-premises systems seem to be the focus of enterprises. But many enterprises find there is much more value in the cloud than cost savings alone.

[READ MORE](#)

NAVIGATING THE COMPLEXITY OF BIG DATA TRANSFORMATION

A Forrester Consulting Research Study

As enterprises look to better leverage big data, most are moving data management off-premises. But that transition can be complex. Learn about common obstacles you may face, and how to overcome them.

[READ MORE](#)

TAKE BUSINESS CONTINUITY TO THE CLOUD

CIO

Planning for business continuity and disaster recovery is a big part of IT Transformation. The cloud allows you to quickly back up data, applications and operating systems.

[READ MORE](#)

20 WAYS TO MEASURE THE SUCCESS OF YOUR GROWING CLOUD INVESTMENT

CIO

While the cloud helps you do more with less, it's important to know how much more you're doing – and for how much less. This means IT has to objectively quantify the value of the cloud.

[READ MORE](#)

CULTURE AND ENGAGEMENT: THE NAKED ORGANIZATION

Deloitte

In an era of heightened corporate transparency, greater workforce mobility and severe skills shortages, culture, engagement, and retention have emerged as top issues for business leaders. These issues are not simply an HR problem.

[READ MORE](#)

HOW CIOs NEED TO THINK ABOUT TOP TALENT

Gartner

Top talent has new power and new expectations. Those who view the hiring process as a transaction have to understand that it's just one of many stages of engagement expected by an employee.

[READ MORE](#)

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