cpt

7 Deadly Sins of Technology Modernization

Strategy errors, evils, and pitfalls on the mainframe and beyond

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Introduction

IT teams today are under pressure to modernize – especially those reliant on the mainframe. But while mainframe modernization may be pursued with good intentions, IT departments can be tempted down dark and winding paths that lead to steeper costs, poorer performance, and projects that rival Dante's Inferno.

In this whitepaper, we identify the 7 deadly sins of technology modernization. We explore the consequences when companies and IT teams are led astray. Finally, we offer some more sensible approaches to achieving modernization goals.

Pride

Looking down on distributed platforms

> *Pride whispers in the ears of mainframe teams. It tells them their platform has superior standards, processes, availability, reliability… so why bother with inferior systems? But as we all know, pride comes before the fall.*

Pride

Pride in practice

Pride deceives mainframe teams with a grain of truth. Even today, if you need a system that can run 24/7 without crashes or frequent restarts, the best performance for commercial transaction workloads, or the best security, mainframes win.

But pride can blind mainframe teams to the power of distributed platforms. Modern IT requires agility, flexibility, speed, and the ability to quickly draw insights from data – qualities the mainframe isn't always known for. Pride creates silos, deepening the divide between mainframes and modernizers, often leaving mainframe teams on the outside looking in.

The better approach

Understanding the mainframe's strengths in security, scalability, and reliability is good. But knowing when it's necessary to draw on the strengths of other technologies is equally important.

For all that it does well, additional tools and strategies may complement the mainframe and make it more powerful. To win over pride, IT teams must understand how their technologies can power capabilities that serve the whole organization.

Greed

Demanding systemic change without a clear goal

Some say greed is good, but grasping for modernization without an objective is not. As IT teams are asked to innovate without a clear strategy, chasing growth can quickly evolve into chasing one's tail.

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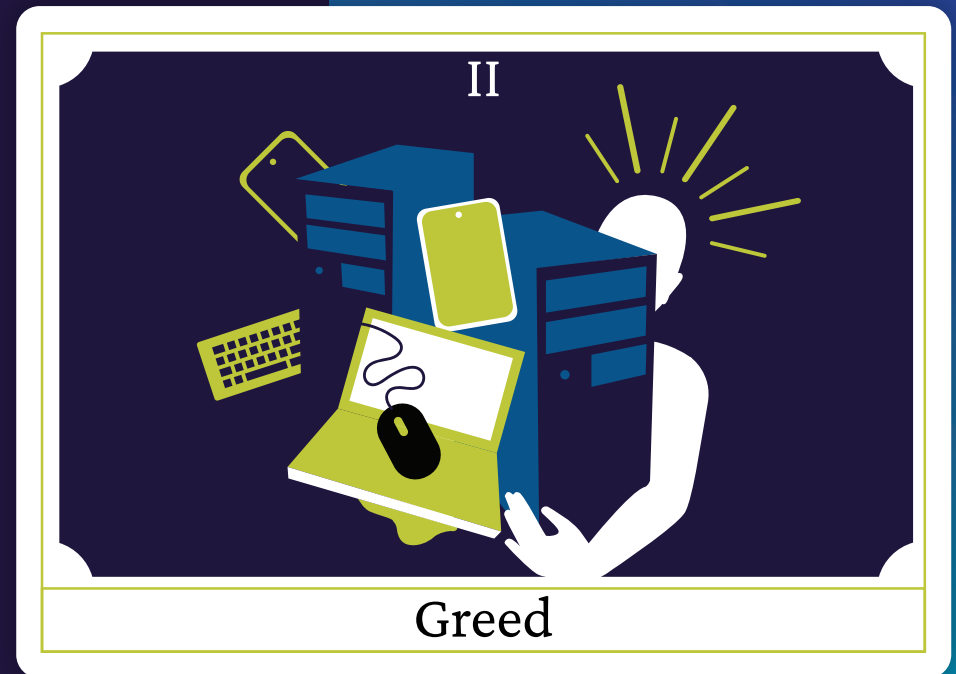
Greed

Greed in practice

Executives often feel – rightly – that something must be done to evolve IT capabilities. But overbroad mandates to modernize can spell trouble for companies without objectives that solve real IT problems.

When a big vision is pushed from boards and executives down to technology managers without a clear sense of how to execute, there's often a disconnect between the vision and what teams can actually pull off.

Without a strategy to implement, teams spend precious budget on expensive consultants tasked with defining the road ahead – and hope the consultants come back with something resembling an actionable plan.

The better approach

Modernization should put you on a path to achieve goals or overcome problems. If you don't first identify challenges – and build sensible objectives around them – you can't create a project plan that's likely to succeed.

Suppose you believe that your mainframe is impeding your ability to innovate. This problem may help define an objective: make mainframe applications and data available to new applications off mainframe. To do that, you need to make the applications available from modern APIs, integrating legacy applications with modern distributed applications – giving you the beginnings of a plan of action.

This approach isn't flashy, but it beats greedily demanding a modernized mainframe environment and leaving someone else to figure out what that means.

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Lust

Going after the 'new shiny toy'

> *Lust has lured many companies away from their core objectives as they pursue fancy technologies and shiny software that promise a better future. Sadly, they often end up led astray by their desire for the latest and greatest.*

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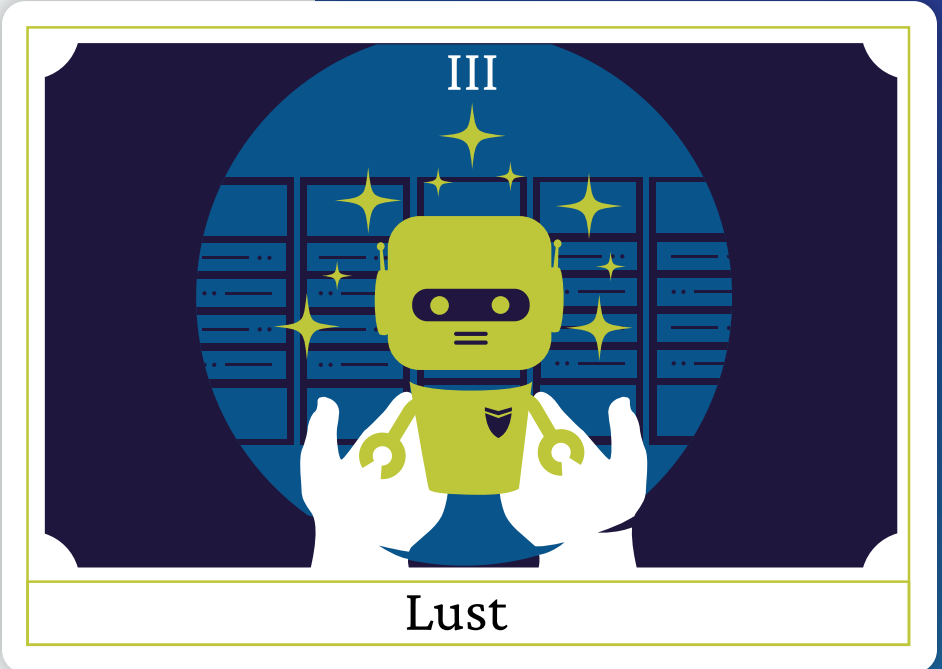
Lust

Lust in practice

Remember service-oriented architecture (SOA) and SOAP? Maybe you felt the allure of sharing data services, but instead ran into scripting problems and performance strains. There's always a new must-have, or some new magic bullet software solution, and today the introduction of microservices and JSON to the mainframe environment is proving just as tricky.

Fact is: the implementation of any new technology comes with risks – from performance and security unknowns to sneaky bugs and hidden expenses. And if you're pioneering a completely new technology, no one may even know what the gremlins are until you find them.

This isn't to say new technologies have no value. But given the time, cost, and complexity, the next big thing isn't always a wise pursuit.

The better approach

Fit, opportunity, need. Focus on the criteria that matter to protect budget (and sanity). If the tech checks these boxes, adding it to existing processes or toolsets could make sense.

Even if new technology makes it to the top of the priority list, starting small and scaling up as the benefits become evident, is typically the best approach (see: Greed and Anger). Otherwise, it may be competitors who learn the most from your example.

CASE STUDY
Not rushing in

A Fortune 500 financial institution engaged CPT Global to implement Parallel Sysplex. This technology had great potential benefits, but also challenges and risks. Before proceeding, our team carefully analyzed the company's systems and applications to identify potential negative impacts.

CPT walked through the implementation with the customer, confirming success and identifying new issues in advance, at each stage. Today, this organization benefits from Parallel Sysplex and associated technologies with zero performance loss and negligible production issues.

Envy

Jealously trying to imitate trends and competitors

Insecure by nature, envy persuades companies they can achieve more, "if only we had what they have". Yet it leaves them clinging to some future ideal state that never seems to arrive.

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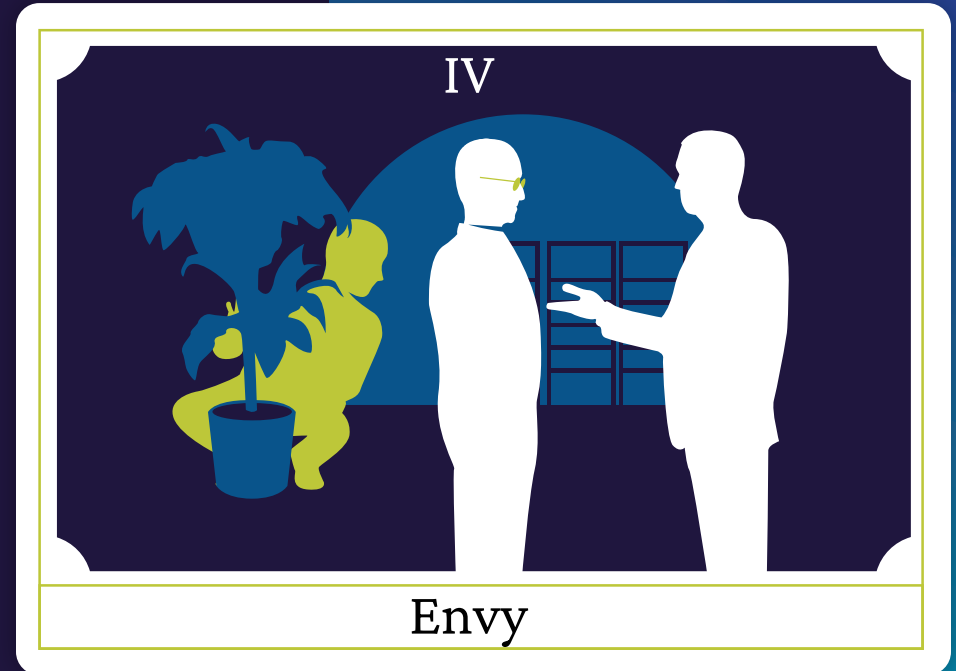
Envy

Envy in practice

Seeing peers and startups rise through innovation can make any business jealous. But a 'keeping up with the Joneses' approach to modernization can result in bad decisions.

When a business looks through the lens of envy, it's hard to see the dangers that come from imitation. Change is expensive. Your ideal, perfect-world technology stack might not involve a mainframe (for example): that doesn't mean the pain of getting off the mainframe is worth it.

The better approach

There's nothing wrong with competition – it can inspire a business to innovate. But in the end, staying competitive means running your own race. Every organization is on its own unique path, and today's trends may not be around tomorrow (see: Lust).

Adding technology that expands or enhances the mainframe may be more practical than jealously following a cloud-first start-up that doesn't have an existing code base, client roster, or data to worry about. Simply put: never let an idealized state drive real world decision-making.

Gluttony

Chewing through too much mainframe capacity

The mainframe has a reputation for being a hungry beast, so it's only natural to be tempted by the all-you-can-eat-deal. But beware of the perils of overindulgence.
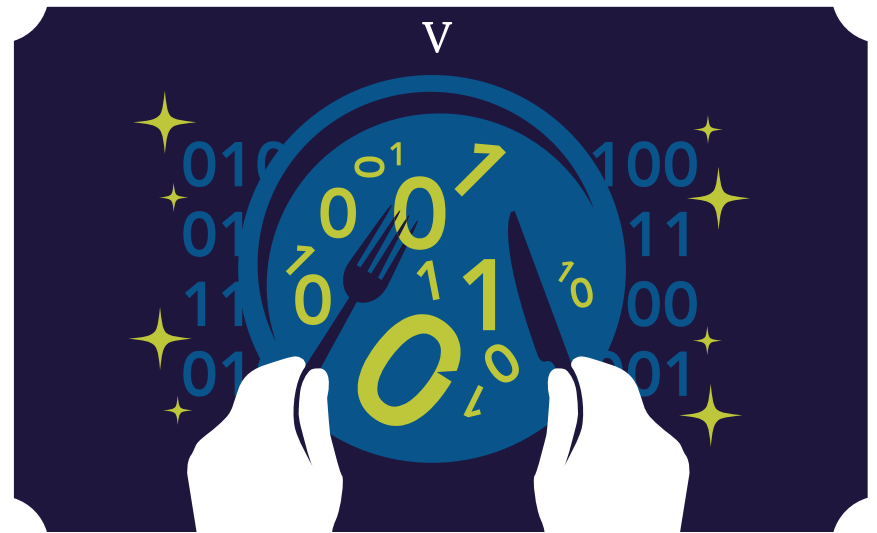
Gluttony

Gluttony in practice

Working through billions of transactions per second, a mainframe that isn't properly optimized can chew through resources. But there's good consumption and there's bad consumption.

Implementing a new solution that customers love, driving demand for mainframe resources: good consumption. Designing that solution without regard for the mainframe transactions required, straining capacity to breaking point: bad consumption.

Worse, many organizations like to lock up mainframe capacity in multiyear deals, with hefty costs upfront and a generous growth factor. But finance departments don't love to see these big, fixed costs year after year, and abundant excess capacity can breed wastefulness.

The better approach

Performance and capacity planning must be an integral component of any modernization strategy. The road to modernization is littered with companies that have implemented new technologies, then watched those technologies drive resource consumption and costs to new heights.

Avoiding gluttony means thinking ahead of time about how technologies will eat through mainframe resources, and being disciplined around how those resources are planned for and purchased.

Anger

Quitting change initiatives in a rage

When money is spent but goals remain unfulfilled, anger comes easily. But sometimes after an infuriating project, it's tempting to ignore critical lessons and blame the technology instead.

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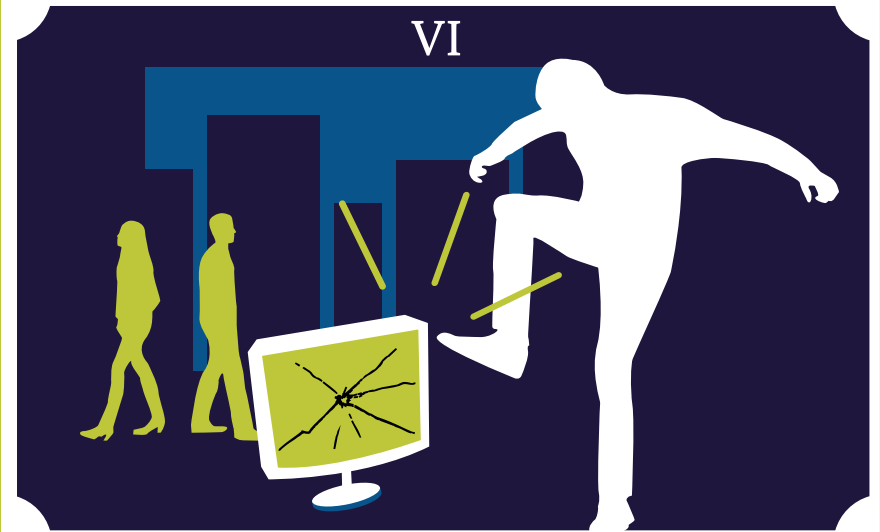
Anger

Anger in practice

A statistic to raise any IT leader's blood pressure: 74 percent of businesses have started a legacy modernization project, but failed to complete it. Failed transformation initiatives cost millions and leave much gnashing of teeth in their wake.

Boil-the-ocean tasks – like lifting and shifting from the mainframe to the cloud, or large-scale refactoring of mainframe applications – are especially frustration-prone, as the sunk cost fallacy drags teams further and further into budget hell.

Worse, undertaking a budget-busting project with few benefits can turn management against viable modernization projects. Getting mad about

unsuccessful efforts is human, but going sour on strategically important change can harm an organization for a long time to come.

The better approach

Prevention is the best form of anger management. Clear project objectives, a phased approach, a focus on delivering value, and a healthy suspicion of mega-projects help avoid fury in the first place.

When past initiatives have disappointed, getting executive and project leader buy-in is especially important – and it's much easier to get this buy-in if a team has a plan with a strong business case and achievable ROI, and a clear understanding of potential project risks.

Overcoming anger

A Fortune 500 financial institution engaged CPT to help make their core mainframe systems more resilient. We found that the project would require additional technology, substantial code and systems changes, and careful planning around limited change windows.

Some clients might have given up in frustration. Ours persevered. We implemented a resilient application, and the client now has testing environments that detect problems before they reach production, and has significantly reduced its code base as obsolete programs were retired. Staff are now more confident maintaining the application.

Sloth

Doing nothing at all to modernize

> *Sloth is a stealthy opponent: all too often it looks like business as usual. But as days become weeks, months, and years, sloth saps agility, turning dynamic technologies into antiquated systems.*

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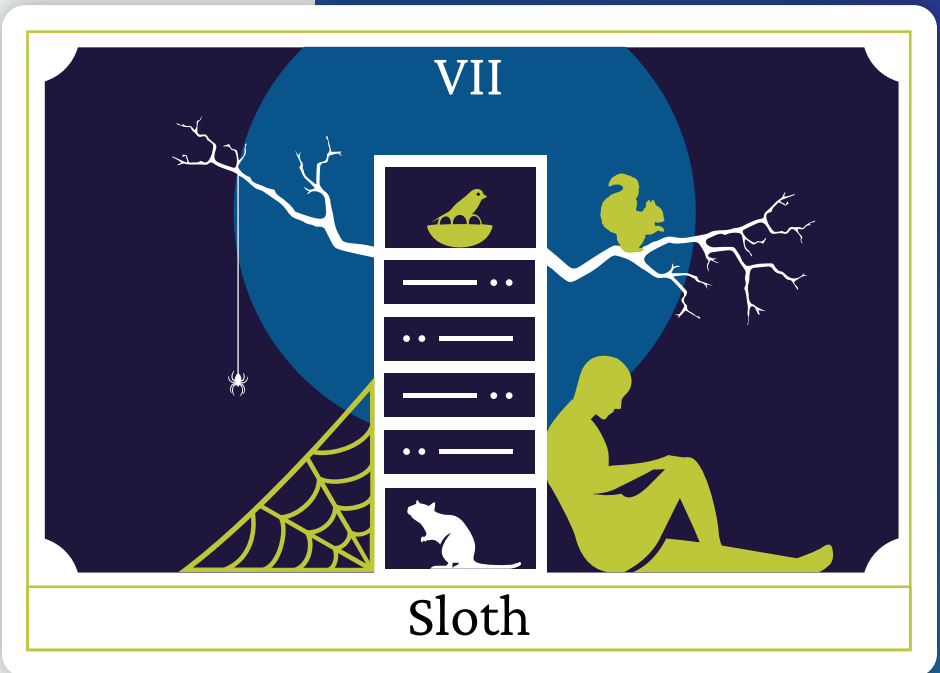
Sloth

Sloth in practice

So-called legacy hardware is especially vulnerable to sloth: it's old, so why invest in it? Slothful organizations see the mainframe in particular as something necessary to keep the lights on, and not what it can be – part of an open, modern ecosystem.

As mainframe teams sink deeper into apathy, innovation becomes something that happens elsewhere. Anything that can be moved off the mainframe will be – making what's left costlier and less appealing to run. And as **we've argued before**, it's tough to address the mainframe skills gap if you have nothing worthwhile for talented and ambitious grads to do.

The better approach

Understanding the mainframe's full modernization capabilities is the first step to stamping out sloth. Once a business sees how the mainframe can interact with the cloud, support DevOps and enable AI, it's impossible to deny the mainframe's strengths.

As IT leadership sees the mainframe's potential, pushing for optimization and enhancement follows, enabling an organization to enjoy the many benefits offered by the mainframe, and making the mainframe team an innovation leader, not a laggard.

CASE STUDY
Solving sloth

A Fortune 500 financial institution had many legacy applications critical to its core processing, yet it prioritized funding other platforms. Upon analysis, CPT Global discovered the company wasn't harnessing many of their new application tools, like Integrated Development Environments (IDEs) and testing tools – in fact, many tools in service were underused.

As part of this effort, our team helped identify strategic tools to fill technology gaps, helping the company make use of its IDEs and testing tools to improve application and testing efficiency.

Conclusion

In our experience, organizations and IT teams commit these 7 deadly sins when they lose focus on what matters or try to do too much too soon. But with the right strategic approach, modernization can – and should – be effective and fulfilling as the IT pieces come together. Sometimes all it takes is clear thinking and realistic goal-setting – plus a little unbiased advice – to keep you away from temptation.

About CPT Global

Consulting in all areas of mainframe optimization and modernization, CPT Global draws on a pool of 150+ global experts, many with over 20 years of experience. Our role is to help you achieve peak performance in any way we can.

We're passionate about finding undiscovered savings, risks, and opportunities in technology, and we're a truly independent partner committed to succeeding on your terms. Whether you're looking to get the most out of the mainframe or evolve towards new technologies, we offer clear-headed strategy informed by nearly three decades of experience.

CPT Global brings its expertise to global enterprises. We solve complex business problems for many Fortune 500 companies and 80 percent of the world's largest banks, making them more resilient, reliable, and connected. To see what we can do for you, don't hesitate to reach out.
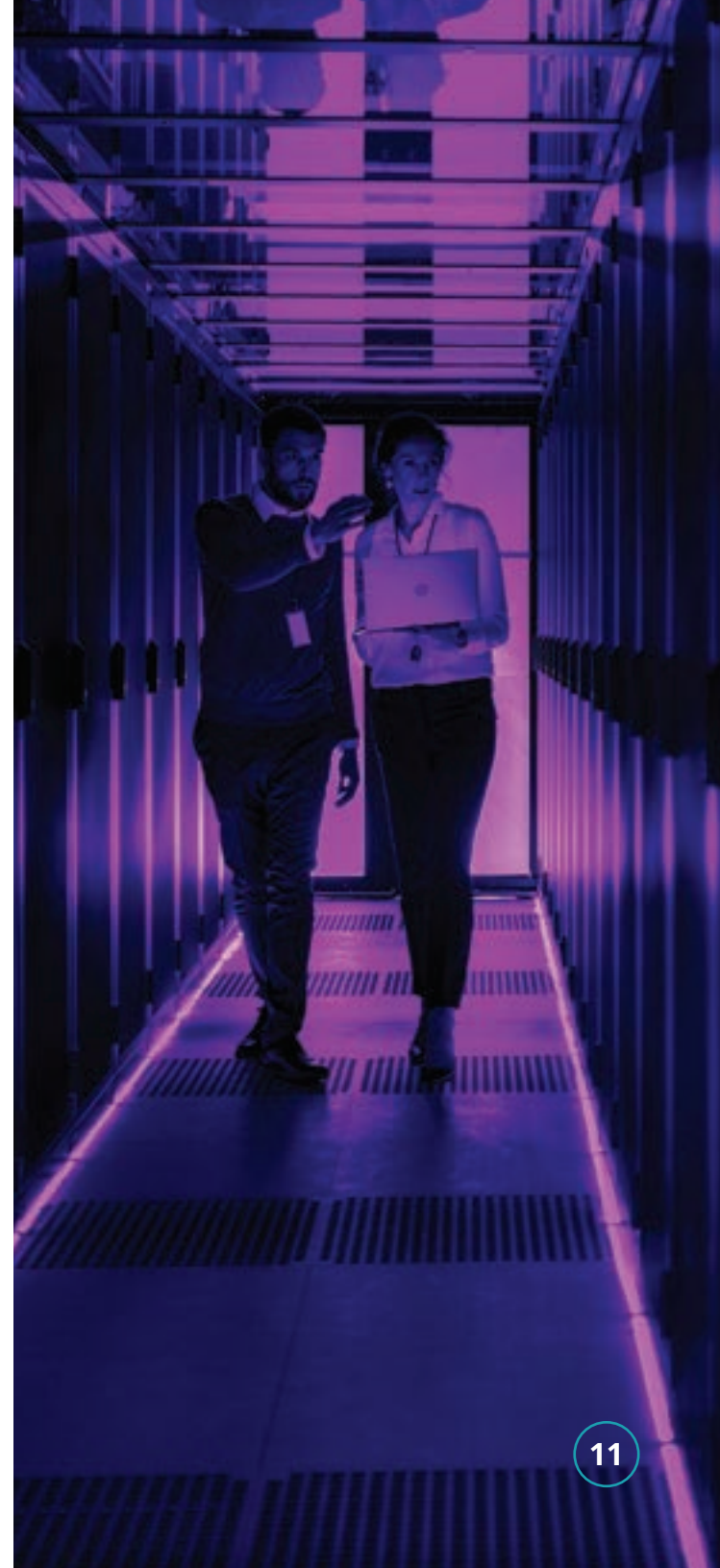
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