KPMG

Tech debt

Identifying and addressing the challenging, often elusive costs of tech debt

Get a handle on the high cost of technical debt

Transforming for digital capabilities is essential for business success today. Accelerating speed to market, enabling new capabilities and innovations, bolstering differentiation and driving value — all are fundamental to competing and winning in the new business landscape. Companies held back by pre-digital operations, or those constrained by cumbersome and aging legacy technology, are finding themselves at distinct disadvantage. On the other hand, in the rush to gain advantage by adding or streamlining services, many companies may be sabotaging their progress by ignoring the high cost of technical debt.

Technical debt hinders your ability to respond efficiently to both business and market demands. It increases time and cost of doing business, syphons off resources and focus and can keep critical data inaccessible. It hampers cost efficiencies, lowers productivity and forestalls innovation. In short, technical debt obstructs nimble response to needs and opportunities. It might just be the most substantial impediment to realizing the gains you seek through digital transformation.

Business leaders are looking for demonstrable, value-driven outcomes; they don't want to hear about technical debt. What are technology leaders to do?

How did we get here?

As the saying goes, the road to perdition is paved with good intentions; no one sets out to intentionally increase technical debt without good reason. It often results from lack of awareness, disjointed strategy, inadequate resourcing, taking shortcuts that backfire in the long run – to sum it all up, from sorely scant governance.

Technology decisions made without strong governance or unified direction usually can't help but create technical debt. Embarking on business transformation initiatives without adequate guardrails in place can lead to duplication of systems performing the same function, technologies that cannot share business-critical information and an out-of-control proliferation of infrastructures, systems, and applications requiring time-intensive support. Without leading-practice policies in place, you may find that your organization is reinventing the wheel every time it seeks to add new capabilities. It's like starting a race with weights on your legs and without clear start or finish lines.

Sadly, the rush to the cloud, to SaaS applications, to agile development frameworks and the rise of ad hoc "citizen developer" initiatives are often cases in point. Done poorly, the technical debt they incur can cancel out the gains they promise.

Here are some common ways you can find yourself deep in technical debt:

Inheriting debt through acquisition/divestiture: Management might decide to acquire a company to jump start competitive advantage, with their focus on business opportunity. They might not be paying attention to the acquired technical debt that could come with the package — in other words, to inheriting someone else's previous poor decisions. Similarly, they might not be thinking about the future post-merger integration and rationalization required to achieve anticipated synergies and attendant benefits from the deal. Either way, the result can be interoperability nightmares and portfolio bloat — duplicated systems, applications, data centers and more. Total cost of ownership could be steep.

Kicking the can down the road: Short-sighted decisions or decisions based on incomplete information — prioritizing near-term benefits or improvements without considering downstream implications and future costs of integration, maintenance and support — are likely to cause problems, sooner or later. Consider, for example, the "COVID effect" where contextually correct decisions have created downstream problems. Many companies, particularly those in certain industries such as hospitality, food service and retail, had to either tighten their belts, reducing available resources, or rapidly deploy new capabilities — curb-side pickup, delivery or both. Pivoting, and rapidly addressing what was for many a life-or-death situation for their business, meant that speed of response took precedence over a fully articulated strategy about how to connect new functionality with their broader technology ecosystem. At the end of the day, however expedient a decision might be in the moment, opting for a short-term "band aid" fix or postponing major effort required to address underlying issues only add to the problem. Technical debt does not disappear if you ignore it; it just grows.

Organizational resistance: Let's face it. People are often just resistant to change. They may be comfortable with familiar technologies, spurred by job protection motivations or simply reluctant to adopt new policies and procedures. Your own staff can sabotage your efforts to reduce technical debt, hanging on to legacy systems and processes that only weigh you down. Add that technology debt to your tab.

Expect to live with technical debt — just make sure it's the right kind.

As you evolve and move forward to keep pace with requirements of new capabilities and services, you are likely to increase technical debt, at least for the short term. This is simply a fact of doing business today. But not all technical debt is created equal. There are two fundamental types: the tolerable and the toxic. The first is an acceptable by-product of business transformation — debt you incur as you migrate your business from the old to the new to meet emerging demands and capitalize on novel opportunities. Tolerable technical debt is a burden you can live with and address as resources permit, ideally in accordance with a defined plan.

The second kind of technical debt is toxic. Rather than being the "price of admission" to the modern business landscape, it is more often the product of accumulated changes made outside of a unified roadmap and strategy. It can add cost and complexity to enabling new features later on. It often diverts funding for new technologies and innovation to management of legacy systems, monopolizing the time of engineers who could otherwise do work that furthers business objectives. Other by-products of poorly governed transitions can introduce serious, albeit inadvertent, risk to the organization. Cyber-security may be compromised, making your software and hardware systems vulnerable to mundane data hacks or catastrophic ransomware attacks. Business continuity may also be jeopardized when aging or unstable systems supporting critical business operations fail. Beyond adding significantly to your technical debt load, any of these have the potential to seriously destabilize and undermine your business. Bottom line, toxic technical debt is dangerous. It can divert your attention into putting out fires and mire you in work that does not contribute to forward momentum and delivery of business value. It is best eliminated.

Differentiating between the two types of technical debt is critical and essential to a sensible (and feasible) mitigation strategy. It means identifying the balance that allows your business to operate effectively while addressing inhibitors to business transformation. Your goal is to work around the tolerable debt and get rid of the toxic. An ongoing technical debt management strategy allows your technology teams to more effectively size, value, and control tolerated technical debt while disposing of the toxic.

One of the largest foodservice distributors is gearing up for growth after significant tightening of the belt due to COVID. They are eyeing a future which is significantly different from their past – one with omnichannel fulfillment for customers, with an increasing shift towards ecommerce, and in which they become the prominent digital foodservice provider and partner to their customers. Unfortunately, they have a problem. Their business is handicapped by a core technology platform built for their past — a past with simple customer relationships, little automation in their distribution centers, and optimized for "batch driven" business processes. Making this shift will require a significant investment in resources and capital and will assuredly result in the addition of at least short-term technical debt. It was clear that such an initiative needed executive leadership buy-in. The CIO spent several months building a vision and case for change, developing a justification rooted in business benefits, and selling that through the C-suite and board of directors. A path has now been set to shift away from custom-built mainframe solutions to cloud-first, leading-capability solutions that can deliver the contemporary capabilities that their future will need. The acquired, fully-rationalized technical debt is the price of admission into that envisioned future.

Where do we go from here?

Managing technical debt — both current and anticipated — requires an enterprise strategy bolstered by governance. Any decisions about business migration, evolving your operating model or building new capabilities are best made in the context of their impact on technical debt and how it will be addressed. Building a business case, linking it to your transformational agenda and dedicating resources and investments appropriately are key. Done correctly, your IT team can accelerate business transformation and help realize your organization's goals while minimizing technical debt.

How can you best enable business transformation while responsibly managing technical debt? Following are a few recommendations:

1 Develop a product-centric IT operating model

Shifting from a project-centric (in which the focus is on outputs based on tradeoffs in time, cost and scope) to a product-centric IT operating model can better align IT with business objectives. The modern model shifts the focus to the value that is delivered to internal and external customers through digital transformation and IT engagement, based on aligned vision, enterprise objectives, agreed governance structure, and defined process map. It provides a framework in which the increasing technical debt can be evaluated against business gains, within a strategic decision-making forum.

2 Adopt a cloud-first IT strategy

The cloud is at the core of the modern architecture runway and is the foundation of a product-centric organization. Getting there is not a "lift and shift" exercise where business as usual simply migrates to a new venue. Rather, it entails a cultural shift in the way business operates. A cloud-first IT strategy will increase technical debt at least for the short term. Done right, it requires excising toxic technical debt related to legacy IT staffing, systems and applications with surgical precision, and calibrating newly acquired transition-associated technical debt against governance-enabled gains. Taking a strategic approach to managing technical debt as your organization shifts to the cloud will help ensure a high return on investment.

3 Shift to modern software innovation and delivery practices

You can help your company innovate more quickly and with less risk by adopting agile development frameworks and building and deploying IT systems using modern development, security and operations (DevSecOps) practices. Continuous integration and continuous delivery, with embedded security and governance, can produce high-quality software at the lowest possible cost in the shortest possible time, that meets stakeholder need. You will speed time to market, reduce failed deployments, mitigate risk and support continuous improvements. Yes, the shift to new development paradigms will surely add to your tolerable technical debt at the outset, but such costs can be offset over the longer range by new process efficiencies and companion business advantage.

For more ideas, read how successful CIOs are navigating the ever-evolving digital landscape [Our thinking: Becoming a CIO of the future].

Get out from under technical debt

Understand that technical debt is often a business, not technology, issue. Getting a handle on it is mission-critical and essential for success in the modern technology-enabled business environment. There are four concrete actions that you can take today to better manage technical debt:

1 Assess it

First, you need to identify where you have accumulations of technical debt and understand its causes and costs to your organization. Then you will want to distinguish the tolerable from the toxic. You can consider the complexities of fixing certain pockets of debt along with the implications of leaving them alone, assessing application rationalization, your modernization program, cybersecurity, risk management and business operation resilience as you develop your plan.

2 Justify it

Make the business case for your technical debt management plan. Once you have scoped your debt position, formalized a remediation strategy for your toxic debt and articulated your approach to tolerable debt acquired in pursuit of modernization, you must sell it to the business and secure the buy-in of all stakeholders. Speak their language. You can do so by tying your plan to business goals and by mapping achievements to tangible outcomes.

3 Execute it

Follow the plan to move forward confidently into digital transformation. Assess progress at defined internals; consider adjustments and optimization of efforts. Hold to performance metrics and incentive strategies that support delivery of desired results. Finally, socialize plan progress among all stakeholders. Remember, this isn't just a problem for your IT team; it's a business issue.

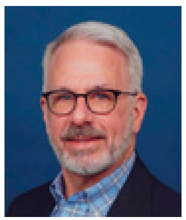
4 Institutionalize it

Build broad-based awareness of the implications of technical debt and its impact on the success of the business. Get key stakeholders on board with a share in the ownership of the problem and the solution. Apply enterprise-wide governance, guidance, policies and procedures to avoid problems in the future. Going forward, continue to regularly measure, assess and address your technical debt position. You will be well on the way to removing a significant obstacle to achieving your business goals and realizing the advantages of digital transformation.

KPMG is here to help

At KPMG, we have the digital transformation talent, technology experience and advanced tools to help you execute on your technical debt management and modernization initiatives. Our business process and operating model acumen can help you map the right path to take your enterprise into the future. Count on us.

Contact



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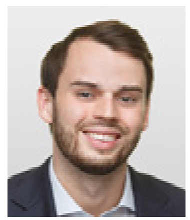

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