![DXC Technology]

Tackling technical debt:
How to get started

Why does tech debt need to be addressed now?

We are at an inflection point, where the rapid expansion of cloud and the explosion of new technologies and software are pushing organisations to modernise faster than ever.

To stave off disruption, organisations will often invest in technology to help their company innovate, become more efficient and reduce costs.

The reality for most executives is that they are locked in a perpetual cycle of meeting targets on a short-term basis. This means that they are motivated to maximise their assets or revenue and minimise their operational costs for immediate benefit.

The irony is that taking this approach and not developing an integrated business and IT roadmap to enable adaptation and keeping tech debt manageable, will end up costing organisations more in the long run.

The real threat is not tech debt itself, but when that tech debt becomes toxic. Toxic tech debt threatens a company's ability to operate in the short-term, which long-term becomes visible to external stakeholders.

While the tech debt accumulation is continuous and inevitable, you can minimise the amount of debt that you accumulate, create strategies to address your current tech debt and build an organisational process that limits the amount of future tech debt you create.

Tolerable vs Toxic tech debt

Tech debt is not an inherently bad thing. The longer you've been in business and the bigger your organisation is, the more tech debt you will have created along the way. Tech debt is simply a normal side effect of implementing and utilising technology within your organisation.

There are two types of tech debt, tolerable and toxic.

Tolerable tech debt is the debt you incur as you migrate your business from old to new systems. This tech debt is accounted for, understood and can be lived with, because it is the price of innovation. It allows resources to be freed up in the short-term.

Toxic tech debt is dangerous and comes at a cost. It is often caused by multiple small changes made outside of the organisational strategy or roadmap. It diverts funds, uses up resources, creates complexity, compromises security and impacts the ability for the organisation to innovate and improve. In worst case scenarios, it can hamper an organisation's ability to function on a day-to-day level.

The true cost of tech debt

According to IDC Future of Digital Infrastructure research, 35% of companies said they are spending more on infrastructure than the organisation requires and they believe tech debt is the number one reason spending is too high.

The cost of tech debt is often discussed in terms of the financial impact it incurs for an organisation. However, there are broader and more nuanced implications of not addressing tech debt and how it impacts; people, process, security and innovation opportunities also known as organisational debt.

The cost to our people

According to DXC Leading Edge Research, Embracing modernization: From technical debt to growth, 67% of business leaders said that improving employee satisfaction was a top priority.

It's a universally recognised truth that to retain the best talent you must give people meaningful work and create an environment where they can succeed.

However, if an organisation is limited by legacy technology, lack of integration and outdated organisational processes, it will hinder employees motivation to innovate and will likely drive key talent to competitors.

The accumulation of tech debt can also create dissonance among IT and the rest of the business, as other teams push accountability solely onto IT.

The cost to process

Legacy systems, incompatible software and technology that aren't fit for purpose are among the biggest killers of productivity in most organisations.

More time is spent navigating roadblocks from tech debt, creating process bloat and training requirements, that lead to bigger bottlenecks throughout the organisation.

The real challenge is when these work arounds become embedded in the company culture and inefficiencies become "just the way we do things here". This makes it more difficult to modernise.

A real world example of this, was when a major US airline spent $1 billion USD[1] on customer service improvements. However, it did not modernise its crew assignment app which had a small yet well-known weakness. When a major storm hit during the busiest travel season of the year, it created a surge in traffic that the app simply couldn't handle. The result left thousands of travellers stranded and triggered business losses of $800 million USD.

[1] Ashare, Matt. "3 technology lessons from Southwest's IT failure." CIO Dive, February 2023: https://www.ciodive.com/news/3-lessons-from-southwest-airlines-technology-failure/641803/

The cost to innovation

According to DXC Leading Edge, 46% of executives find tech debt inhibits their ability to transform and grow.

Tech debt stops organisations from leveraging new technology and trends, such as embracing AI or automation, which often become too hard or costly to take advantage of. Emerging leaders are using changing economic environments as catalysts for accelerating modernisation projects.

The cost to security

Security and compliance are almost impossible to navigate with outdated or siloed technology and solutions.

Fragmented systems and silos managed with ad hoc, purpose-built processes and tools, make it very difficult to consistently and proactively manage and protect data. This opens an organisation up to a huge amount of risk.

The cost of data breaches is significant, often creating reputational damage that can take years to recover from.

For example, if you do not install a security patch on time, not only have you accrued tech debt but you have exposed your organisation's ecosystems to a security risk.

Identifying the potential cost of security failures and the additional processes required for maintenance and analysis across a range of legacy technology, should be a key consideration for any organisation.

How to address tech debt

Organisations of all sizes and types struggle to address tech debt. Whether it is financial constraints to make the changes they need or inability to make significant changes due to their businesses' complexity and diverse needs.

Many organisational leaders dream about the technology magic bullet to solve their problems, but what we need to do is take a step back and consider the bigger picture.

The challenge that many organisations have is where to start and how to make sure that they do not make the situation worse while trying to pay off tech debt.

In contrast, 46% of respondents anticipate their modernisation efforts across the organisation will mostly be complete in the next three years.

What these leaders are missing however, is that tech debt cannot be 'fixed'. It takes a continuous effort and iterative management to ensure that the tech debt within an organisation remains tolerable.

Aligning the technology roadmap to business challenges and goals, with an eye to managing the accumulation of tech debt is critical. Here is an audit your organisation can take to address tech debt now and into the future.

The Tech Debt Audit

1. What is the extent of your organisation's tech debt?

2. Who is accountable for your organisation's tech debt?

3. Have you engaged your decision makers?

4. How do you stop creating unnecessary tech debt?

5. Do you have a plan to reduce tech debt?

What is the extent of your organisation's tech debt?

Completing an honest inventory of your tech estate is the first step. Organisations have to be honest and open about how tech debt is being created, where there are challenge areas and what organisational structures or processes that are hampering efforts to address it.

Determining toxicity levels is about examining and scoring the risks of your tech debt. It is essential that you are as consistent as possible with your evaluating criteria. Then, the key is to prioritise the impact within your business operations, the cost to the organisation and the time required to fix in relation to your other projects.

Examples of types of organisational debt

UX debt:
Where customers or teams have difficulty navigating products or services because of legacy systems.

Data debt:
Where data is stored or managed inconsistently and is hard to access.

Process debt:
Where bottlenecks form due to multiple different processes across different teams using different platforms, apps and technologies.

Knowledge debt:
Where personnel hold key knowledge that is not accessible to other teams or the organisation as a whole, which creates a risk if they were to leave or change roles.

Infrastructure:
Where physical infrastructure like servers, power systems and cooling equipment becomes outdated and inefficient, requiring a higher cost to maintain.

Application:
Where applications are outdated, need constant patches or are no longer fit for purpose.

Quality debt:
Where a series of small, seemingly unimportant trade-offs can lead to a situation where a product (or a family of products) starts losing quality and market share.

Customer debt:
Where customers want to stick to an old version of a product or service to avoid the migration cost themselves.

Supply chain debt:
Where it is hard to track, monitor or procure suppliers because they are managed across multiple different platforms or legacy systems.

Architecture debt:
Where inflexibility in the tech stack can inhibit the ability to modernise your systems or apps.

Who is accountable for your organisation's tech debt?

Tech debt is a misleading name that can lead to organisational inaction and allow people to pass the buck or relegate it to an IT team problem.

In fact, tech debt encompasses infrastructure, applications, UX, data, and process debt as well as knowledge debt. When organisations acknowledge these various forms of debt, they gain a clearer understanding of the challenges they face.

One of the best kept secrets in addressing tech debt is creating accountability across the organisation, empowering business leaders to understand how it impacts their team and provide the support to address it.

One way to do this is to define your 'tech debt ceiling' or include 'tech debt budgets' for all projects. This gives business leaders and IT teams guidelines to work within for the most balanced outcome and holds everyone accountable to deliver.

Have you engaged your decision makers?

The alignment of vision and expectations across business and IT leaders is fundamental to whether an organisation can address tech debt.

While the CIO and CTO will lead modernisation, the entire executive team is responsible for its success. It is a collaboration and when tech debt is addressed properly, the benefits can be felt across the entire organisation. From cost savings to carbon reduction, to making employees lives smoother there is a business case to be made across every area of an organisation.

The challenge is that IT teams and line-of-business teams are often looking at different success metrics. Line-of-business teams may not actually understand the business impact of out of date systems or hard to integrate workflows, but they see a big budget line item that will hit their bottom line.

Educating business division leaders is the first step, but they need to be part of the whole journey. Helping them understand the ways it can be addressed, the requirements and giving them the opportunity to have some control over the issue is crucial to ensure they buy into the solution.

Sometimes the spread of tech debt across the organisation makes it hard for leaders to step outside of their team view, this is where a neutral third party can provide a holistic view that lets leaders consider a new perspective.

How do you stop creating unnecessary tech debt?

Managing tech debt is an ongoing and iterative process with no fixed end date. So, addressing the amount of tech debt that is being created is essential. This is achieved through regular planning, measurement and prioritising flexible architecture that enables you to innovate and respond to market forces.

When you have a system for identifying tech debt, it becomes easier to set objectives, plan and execute project sprints to address it, without losing momentum. Smart leaders can then understand where value accrues and highlight key areas that benefit from adaptation or require flexibility

Many organisations look at ways to dedicate a percentage of their time to addressing tech debt.

Consider the best sprint make up for your organisation to address tech debt before it becomes toxic; perhaps it's 1 in 4 sprints, time splitting the week or rotating teams' focus from projects to optimisation.

Do you have a plan to reduce tech debt?

Tech debt never goes away, it is an ongoing, multifaceted challenge that organisations will always have to plan for. This is why a cross-organisational roadmap is important to set out how business processes and ways of working can be addressed including training requirements, system needs and data management.

The cross organisational roadmap must include:

- A technical plan that creates a robust architectural runway.

- An organisational debt reduction plan that can be incorporated into every technology initiative.

- An offset plan, where there is a commitment made to remove existing tech debt and, where possible, limit the creation of it.

- Short-term and long-term initiatives. The short-term ones will help to unlock funding that can be reinvested in longer term initiatives.

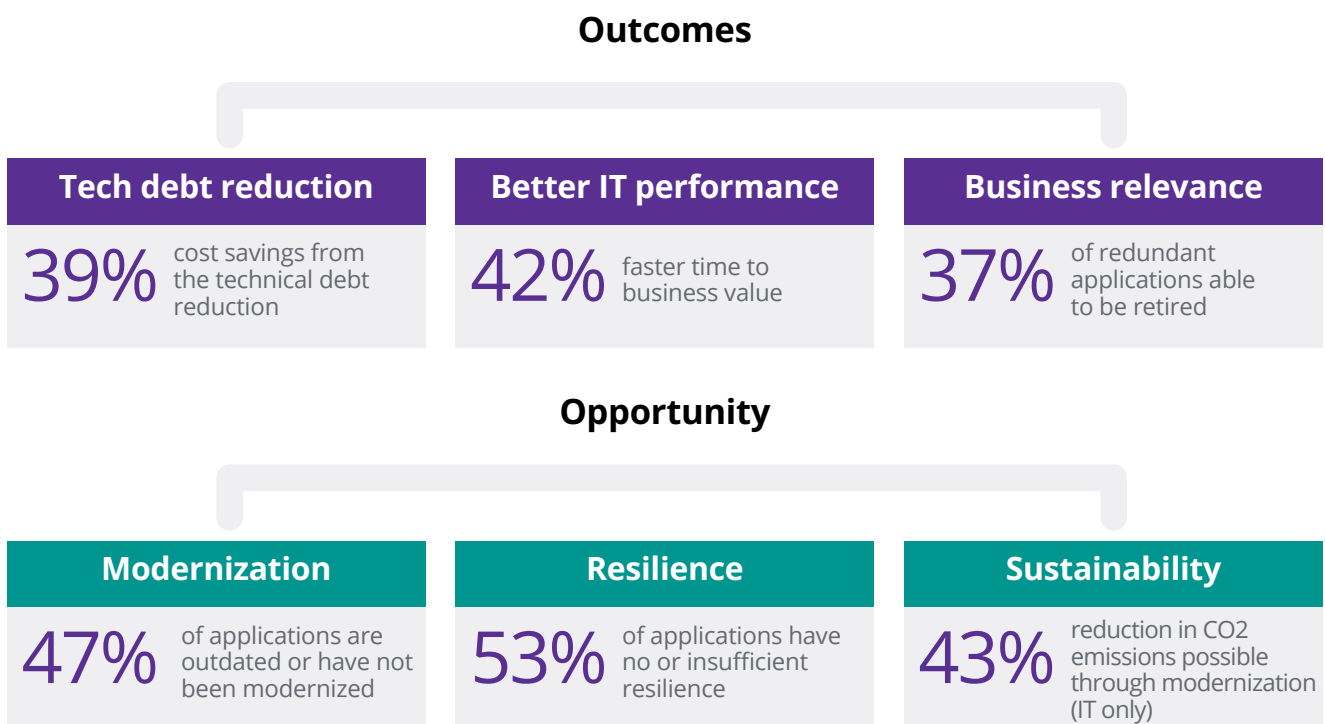- This coordinated approach can then be supported by the CEO and C-suite.

How can DXC support

Tech debt is challenging to solve by yourself. This is why we work with customers as a dedicated and neutral third party to understand the challenges and help implement solutions.

DXC is an expert in using digital transformation as a vehicle to flatten and reduce tech debt and achieve returns on technology investment.

Backed by our global experience, DXC has a variety of offerings and services that enable us to examine and address our customers' unique situations with their tech debt.

We help our customers understand their tech debt, prioritise and roadmap their digital transformation. In DXC's experience, we have seen 39% cost savings from technical debt reduction for customers, while being able to retire 37% of redundant applications.

Outcomes

Tech debt reduction	Better IT performance	Business relevance
39% cost savings from the technical debt reduction	**42%** faster time to business value	**37%** of redundant applications able to be retired

Opportunity

Modernization	Resilience	Sustainability
47% of applications are outdated or have not been modernized	**53%** of applications have no or insufficient resilience	**43%** reduction in CO2 emissions possible through modernization (IT only)

Source: DXC Applications Intelligence Engine. Percentages shown are averages.

If you want to find out how you can address tech debt in your organisation, please visit dxc.com/au/techdebt

About DXC

DXC Technology (NYSE: DXC) helps global companies run their mission-critical systems and operations while modernising IT, optimising data architectures, and ensuring security and scalability across public, private and hybrid clouds. The world's largest companies and public sector organisations trust DXC to deploy services to drive new levels of performance, competitiveness, and customer experience across their IT estates. Learn more about how we deliver excellence for our customers and colleagues at **dxc.com**