THE BATTLE AGAINST TECHNICAL DEBT ON THE JOURNEY TO IT TRANSFORMATION

Reducing technical debt demands a shift in IT processes and skill sets, introducing challenges and opportunities. Intel offers a solution to this universal challenge with a unique approach that will drive major business value.
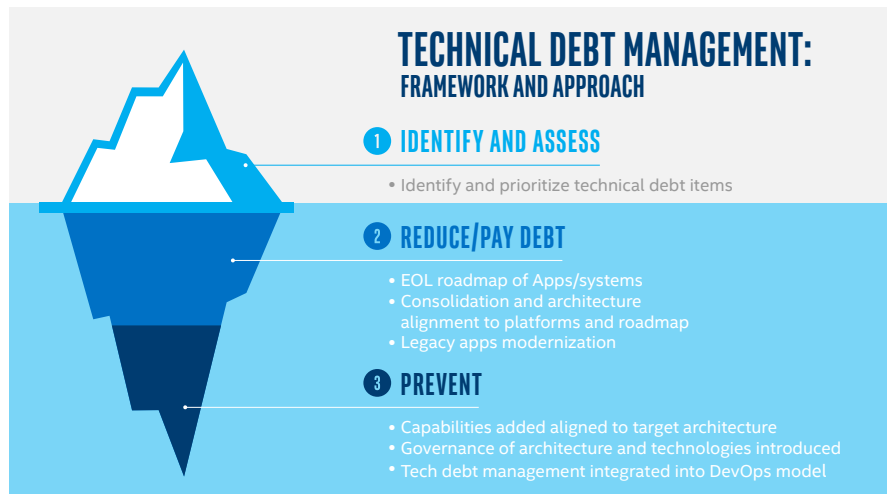
intel

> ## "IF YOU'RE ASKING THE QUESTION OF HOW BUSINESS CAN ACCOMPLISH TECHNICAL DEBT REDUCTION, THE ANSWER IS BUSINESS PROCESS ARCHITECTURE."
>
> —Brent Conran
> Vice President,
> Information Technology and
> Chief Information Security Officer

Every IT organization must grapple with technical debt—a natural process of outdated applications, architectures, and business processes that typically absorb the majority of IT resources. What is new today can quickly transform into technical debt tomorrow, and this can interfere with driving new business value and enabling innovation. When properly addressed, the upside can be enormous. A study by IDC recently found that after enterprises undertake IT modernization with an eye on reducing technical debt, they see a 35 percent boost in efficiency from their IT staff[1]. Yet it can be difficult to formulate a plan for tackling technical debt, and many organizations lack the resources to begin the process.

As one of the largest companies in the world with over 103,000 employees worldwide and 50 years of history, Intel understands how technical debt accumulation happens naturally as business grows. As Intel pivots from being a PC-centric company to a data-centric company, Intel IT has developed a framework for technical debt reduction. Its goal: reduce run costs—the IT budget allocated to licenses, labor, etc.—freeing budget to focus on areas of innovation that drive Intel's digital transformation. In practice that means reducing run from the typical 90 percent down to 60 percent of total budget, which increases the amount devoted to enhancements and new investment in competitive and business growth strategies.

"Technical debt is really about systems that have grown organically over time, are still in existence today, and haven't necessarily had the proper care that is required to run a modern-day application. There are significant costs of keeping them going, from hardware to support staff," says Brent Conran, Intel IT's chief information security officer. "But the real cost is our inability to be agile and the inability to invest in the modern systems that are necessary as Intel pivots into new markets."

TECHNICAL DEBT MANAGEMENT: FRAMEWORK AND APPROACH

1 IDENTIFY AND ASSESS
- Identify and prioritize technical debt items

2 REDUCE/PAY DEBT
- EOL roadmap of Apps/systems
- Consolidation and architecture alignment to platforms and roadmap
- Legacy apps modernization

3 PREVENT
- Capabilities added aligned to target architecture
- Governance of architecture and technologies introduced
- Tech debt management integrated into DevOps model

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Blueprint for minimization

To get ahead of the issue, Conran and team built a strategy divided into three areas: assessment of current resources and identification of technical debt, prioritized according to cost and urgency; the reduction or "payment" of debt, including end-of-life roadmaps for applications and systems, application consolidation and architecture alignment, and legacy application modernization; and the prevention of future debt accumulation, which requires the close collaboration of architects and software developers working with a well-defined governance model.

Throughout this process, the common thread is to transform a debt scenario into an opportunity. Take the typical example of software redundancy and code duplication, or where the same capability may be delivered across multiple applications. One goal is to provide a roadmap, such as Intel's IT 2020 plan, plus standards that help consolidate and eliminate redundancy. Even more ambitiously, there is also a chance to abstract core capabilities and use tools to detect duplicate code moving forward.

If a capability isn't aligned to the IT 2020 roadmap, or isn't relevant or required for Intel's future state direction, then it will be marked for end-of-life.

Bad architecture choices are another common form of technical debt that needs to be taken seriously, arising from both intentional and unintentional decisions that the company has made over time. Intel works backwards from the vision provided by its IT 2020 roadmap to define architecture and technology standards. When applications or capabilities are built on legacy technology, integration and support issues will arise. Here, the task is to modernize, with the opportunity for aligning to a target state architecture. An IDC study revealed that when businesses succeed in decreasing technical debt from legacy infrastructure, they see an average of 32 percent savings in their IT budget[1].

Making time for reform

Many problems arise from the fact that minimizing technical debt simply isn't built into project schedules. The long time frames needed to introduce new capabilities can also be a driver of technical debt, leading to a reduction in both the speed of change and longevity of new resources.

Intel IT is finding success through a discipline of adding technical debt to product backlogs. Despite occasionally daunting time requirements, Intel IT seeks to tackle the problem by aligning to architecture standards and identifying common building blocks for reuse. Manual testing can often be automated with core activities in a DevOps model using the toolchain, improving the quality and velocity of new deployments.

Vital for the bottom line and employee growth

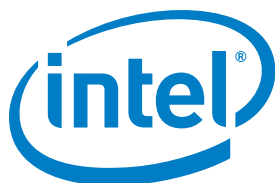Debt reduction has more than a monetary benefit—it helps retain essential talent at the organization.

"IT practitioners want to work on the next thing," says Conran. "That's why you go into IT. So if the business is stuck in an old language, or stuck on an old platform, it can be hard to keep talented IT professionals who want to keep their skills sharp on new technology."

Conran stresses that as businesses rely more and more on IT support, a culture of diligence around technical debt is critical for business success. This means a firm commitment to standardization, rigorous life cycle management, and evolving new business process architectures.

"In some enterprises, there's a culture that celebrates building a system and using it for 20 years," he said. "In IT, that's a situation best avoided."

Interested in learning more?
Click here to read the "Framework for Technical Debt Reduction" eguide. ⟩