Manage Technology Debt to Create Technology Wealth

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Initiatives: IT Cost Optimization, Finance, Risk and Value and 1 more

CIOs either need to recover from past or prevent future underinvestment, as new cost liabilities are continually added to the technology portfolio. Report cost liabilities to identify your technology debt position, then develop business plans that create net wealth, not just debt.

Overview

Key Challenges

- When executives cut the CIO’s budget they are not cutting the cost of IT. When costs outpace spending, unpaid technology debts accumulate.

- Financially challenged organizations that delay technology refresh and investment cannot postpone the risks and costs forever, only the resulting business benefits.

- CIOs who fail to report technology debts find business stakeholders and enterprise leaders less sympathetic when they later request emergency funding to service or settle these debts.

- Executives who approve the creation of unmanaged technology debt lay themselves open to criticism, and even allegations of misleading investors and financial malpractice.

Recommendations

CIOs who need to manage costs and risks to realize value should:

- Report technology debts, not only current liabilities, to decision makers and stakeholders internally, so they actively manage all technology costs when prioritizing spending across both project business cases and operating budgets.
- Prevent unsustainable debt build-up by assessing legacy technology risks and scheduling timely updates to evergreen the IT environment, eliminate expensive incidents and avoid remedial spending.

- Quantify technology debt to manage it by reporting asset life cycle costs and service liabilities. Plan scenarios to deliver the best possible value for money and schedule payments to match spending against business benefits.

- Share accountability for making cost and debt trade-offs by taking every opportunity to fully inform business stakeholders about life cycle risks and costs during budgeting and decision making.

**Introduction**

CIOs under financial pressure are becoming concerned about the amount of debt they must service in their IT budgets. Now more than ever, CIOs need to surface all the financial commitments they made to suppliers and to business units that they must honor. Like the iceberg in Figure 1, only the annual budget is visible. CIOs have to navigate closer to the hazard they can see, while the real danger lurks below the surface.
Technology debt is often increased in the name of cost reduction. Costs are not being cut when debts are no longer being repaid. The cost of debt compounds with interest. Spending can sometimes be delayed, but it cannot be postponed forever. CIOs urgently need to account for, and report on, technology debt levels to stop these hidden costs accumulating unsustainably. This research explains why it is no longer enough to submit a budgeted technology spending plan without also reporting on technology debt. Best practices in compiling and reporting technology debt are identified.

A successful industrial manufacturer ranked as second globally in their industry, until a routine compliance audit uncovered business-threatening levels of legacy technology debt. The board found no other option, but to sell to a smaller competitor, which restructured to become the current global industry leader.

Analysis
Manage Technology Costs While Prioritizing Spending for Business Cases and Operating Budgets

CIOs don’t have a problem with technology debt when their organization has enough income to comfortably pay them off. But as nonprofit and government organizations experience increasing demand for funding decreases, they find that servicing their debts takes up more and more of their budget. As commercial companies see falling investments, revenue and margins, enterprise leaders also need to manage their cost liabilities. Some industry sectors were struggling to cover costs even before the pandemic.¹ Cost reduction is more difficult for IT organizations that fail to track and report cost liabilities.

**Technology debt** is the outstanding amount of money an organization must spend on digital technology cost obligations to continue doing business. Technology debt includes **technical debt**, a term specific to software application design and development (see “Address Technical Debt With Gartner’s PAID Model and Avoid Bankrupting Your Application’s Future”). But development is only the tip of a much larger iceberg of technology debt that many CIOs struggle to quantify and reduce.

**Contractual liabilities** are the total outstanding under supplier contracts — payments owed to suppliers. Enterprises negotiating fixed-price contracts can easily quantify each payment. There might even be a payment schedule in the contract showing how much is due on each payment date. Some organizations have negotiated cloud and other variable-cost contracts, so their costs can be reduced. Many CIOs have no authority or control over the business consumption of resources, yet they are still held responsible for budgeting and paying the total amount due.

**Contingent liabilities** are the amount an organization needs to pay to continue doing business in future. They are more subtle, but also cannot be deferred indefinitely without negative consequences, which are not limited to lost business as a result of systems outages, lost data and regulatory fines and competitive threats. Take the simple example of a contract renewal. There may not be any legal obligation to continue paying a supplier, but the business and its customers expect continuity of service. A cost reduction is unlikely to happen unless someone plans and budgets to migrate to a lower-cost alternative. **Wealth** is an abundance of income and value over expenditure and debt. Wealth cannot be maintained or shared by managing, only by spending.

Report Technology Cost Liabilities to Prevent Unsustainable Debt Buildup
Accounting principles require organizations to disclose all debts — both current and noncurrent liabilities — in their financial reports. ² Corporate officers are responsible for IT finances, so they are primarily responsible for tracking all technology cost liabilities. Some CIOs have been asked by corporate finance for budget estimates over the next five, or even ten years, in an attempt to surface technology debt and reduce nasty surprises.

In large or multinational organizations, a global IT function is often run within a separate corporation from the business units. IT liabilities carried on behalf of the whole group will be a higher proportion of group costs with a more visible impact on the balance sheet. The debt position that the parent or holding company takes is critical to the fortunes of all the subsidiaries they finance. This makes it even more important for the CIO to report technology liabilities when budgeting for spending.

An Asian enterprise had been capitalizing two-thirds of their IT budget for many years to meet unrealistically low operating budget targets, which excluded amortization and depreciation. Auditors found that IT staff without financial training were capitalizing costs in reckless obedience to CFO edicts.

It is even more important that technology debt is managed when organizations are looking to restructure their operating model and its finances. Business units want more technology to boost their business performance. These demands become unlimited when income managers aren’t held accountable for their debts. Technology teams want to innovate and deliver the best technology services to the business, without obtaining business commitment to pay off the technology debts being created on their behalf.

CIOs risk becoming the scapegoat for past business demands creating current technology debts, now due for payment at a time the business can least afford it. CIOs can also inherit debts created by shadow IT. Gartner defines shadow IT as unsanctioned digital technology spending without CIO knowledge or approval (see "Definitions Required to Guide Business Unit IT Strategies").

For all these reasons, the CIO must ensure that technology debt is tracked and reported to all executives and business leaders. Ensuring that liabilities are known shares responsibility and removes deniability to drive the sustainable management of debt. ROI calculations and business cases aren’t enough. As shown in the following example, CIOs may be able to spend more on growth and innovation after making cost savings by reducing technology debt.

Quantify Technology Debt to Manage It
Technology debt cannot be estimated accurately with rules of thumb. The ice in an iceberg has a constant density of about 90% that of liquid water, so it floats about 90% below the waterline. Technology debt is a far more unpredictable threat because it has no standard density. Unmanaged, debt accumulates over time and compounds into a largely unnoticed obstruction that can sink an enterprise. A new CIO had a simple message for their technology team who were unable to provide a figure for cost IT liabilities:

“Stop guessing, start accounting for technology debt.”

Spot the Signs

Spending below the industry averages for sustained periods is a typical indicator of technology debt growing below the surface. Use the Gartner IT Budget Tool to benchmark your spending and determine where you are in the debt cycle (see “IT Key Metrics Data 2020: Working With Gartner IT Budget and Comparison Tools”). Act now before the IT budget gets swallowed up by operating costs in run mode, with nothing left for growth or transformation. Without money for transformation, costs cannot be restructured. Without changes, the IT budget will sink further and further into debt. Many organizations mistake inaction for cost savings. But the cost of debt is still accumulating. Gartner experts can detect warning signs when clients submit their IT Budget Tool reports for review.

A retail organization had budgeted to spend less than half the industry average in total and in capital over several years, which hid rising operating costs. They contacted Gartner because they needed an annual budget that was many times the industry average to urgently replace most of their technology.

Use Scenario Planning to Surface Risks and Costs

Technology debt is often treated as an absolute, with clients naively asking for a typical ratio between future cost liabilities and initial expenditure. The reality involves making critical decisions in an increasingly risky, unpredictable and disruptive future. A responsible and productive enterprise culture delivers realistic cost estimates and risk assessments through teamwork across business and IT. Organizations must plan to take control of their future by planning for different scenarios (see “How to Budget for Trade War, Brexit and Economic Uncertainty”). Pinpoint accuracy isn’t as important as thinking through the risks and options ahead of time.
Organizations budgeting for technology debt in a Brexit scenario found themselves far better prepared for the changes required by a pandemic response.

Table 1 shows a scenario plan for a food and beverage multinational headquartered in EMEA, with figures adjusted to preserve anonymity. In the previous year, they reduced both technology spending and technology debt. They planned three scenarios for the next year: The pessimistic Scenario A delivered a reduction in budgeted spending by increasing technology debt. An optimistic Scenario B made major growth investments that increased both budgeted spending and debt to rapidly scale up new Business Unit 3. But reality had other ideas. Changing business decisions allowed the CIO to make an 11% cost savings in technology debt. This enabled the technology budget to be increased by 9% to fund wealth creation by growing Business Unit 3, while continuing to cut costs in adaptive Scenario C.

**Table 1: Annual Technology Debt and Budget Planning Example**

<table>
<thead>
<tr>
<th>Technology Budget (Annual)</th>
<th>Previous Year Actuals</th>
<th>Scenario A “Pessimistic”</th>
<th>Scenario B “Optimistic”</th>
<th>Scenario C “Adaptive”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit 1</td>
<td>12,150,175</td>
<td>10,350,200</td>
<td>14,275,490</td>
<td>11,016,070</td>
</tr>
<tr>
<td>Business Unit 2</td>
<td>6,853,855</td>
<td>6,905,675</td>
<td>7,535,760</td>
<td>7,130,040</td>
</tr>
<tr>
<td>Business Unit 3</td>
<td>1,066,333</td>
<td>202,285</td>
<td>4,234,730</td>
<td>3,129,190</td>
</tr>
<tr>
<td>Enterprise Total Budget</td>
<td>20,070,363</td>
<td>17,458,160</td>
<td>26,045,980</td>
<td>21,875,300</td>
</tr>
</tbody>
</table>

**Budget Change**

-3.7%  
-13.0%  
29.8%  
9.0%

**Technology Debt (5 Years)**

<table>
<thead>
<tr>
<th>Technology Budget (Annual)</th>
<th>Previous Year Actuals</th>
<th>Scenario A “Pessimistic”</th>
<th>Scenario B “Optimistic”</th>
<th>Scenario C “Adaptive”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit 1</td>
<td>60,750,875</td>
<td>70,054,891</td>
<td>73,054,891</td>
<td>55,054,891</td>
</tr>
<tr>
<td>Business Unit 2</td>
<td>47,976,987</td>
<td>54,965,870</td>
<td>67,965,870</td>
<td>43,965,870</td>
</tr>
<tr>
<td>Business Unit 3</td>
<td>11,729,663</td>
<td>16,516,831</td>
<td>25,285,910</td>
<td>8,186,436</td>
</tr>
</tbody>
</table>
Share Accountability for Making Cost and Debt Trade-Offs

Detailed budget planning over future years is rarely feasible and far less important than ensuring that all potential cost liabilities are identified and brought to the surface over a typical investment or depreciation period. Table 2 summarizes common practices, described in more detail below.

Table 2: Common Best Practices in Summarizing Technology Debt

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report on fixed-cost commitments to target their reduction</td>
<td>Convert fixed to variable</td>
</tr>
<tr>
<td>Include mandatory platform and component version upgrades</td>
<td>Roadmap alternate routes</td>
</tr>
<tr>
<td>Report life cycle plans including the cost of asset refresh</td>
<td>Reduce nasty surprises</td>
</tr>
<tr>
<td>Add asset decommissioning and disposal costs</td>
<td>Provide budget for change</td>
</tr>
<tr>
<td>Refinance when past credit arrangements cease to be optimal</td>
<td>Lower the cost of money</td>
</tr>
<tr>
<td>Map dependencies to manage all costs in each technology stack</td>
<td>Improve architecture efficiency</td>
</tr>
<tr>
<td>Write down or write off assets that are no longer delivering value</td>
<td>Cut asset liabilities</td>
</tr>
<tr>
<td>Add migration costs as part of an exit strategy.</td>
<td>Budget to make changes</td>
</tr>
</tbody>
</table>
Plan and report data archiving and retention costs upfront  |  Align costs with value
--- | ---
Plan for foreign currencies rate fluctuations  |  Avoid budget devaluation
Taxes and other costs in response to regulatory environments  |  Reduce tax audit overhead

Source: Gartner (August 2020)

**Plan to the Horizon**

A five-year depreciation period implies a five-year refresh period. Therefore, the replacement asset price is five times the annual depreciation expense. But this lazy formula doesn't even start to budget for testing, implementing and migrating to a new solution, or disposing of the old one to end all legacy solution costs. Lack of budget provision often means that this replacement activity isn't started or completed until the sixth year. So, a five-year depreciation can often result in a six-year or longer life cycle. This risks additional remediation costs such as emergency replacement. “Sweating assets” beyond their useful life takes risks that can cost far more than it saves. **Risk management** is the prevention of unpredictable future costs and other negative business impacts.

**Timetable Costs**

Vendor product life cycles and pricing for maintenance and support also play an important part in optimizing life cycle costs. Technology and product roadmaps are the best place to start planning when technology debt payments will become due. Every technology solution component has a “use by” date after which it will no longer be supported or maintained. Specialist tools, such as Flexera Technopedia or Juriba Dashworks, can help CIOs stay informed, but they don’t free your team from taking responsibility for planning and budgeting.

**Map Cost Dependencies**

Dependency maps help to determine the scheduling and scope of updates and upgrades. Technology architectures, such as virtualization or middleware, allow loosely coupled software layers to be planned independently. Enterprise architecture and infrastructure dependency mapping tools help. Many organizations follow technology best practices, but fail to carry them over into their IT financial management.

**Nothing Will Be the Same Again**
Technologies change, so new assets and services will rarely be identical to the old ones and neither will their costs. When buying services in place of assets, this focus shifts from asset life cycles to contract life cycles, from capital to operating budget. Capital depreciation and amortization expenses are replaced by subscription fees in the operating budget. Variable cost models are, by their very nature, less predictable. But being able to vary costs downwards is valuable when business needs change or revenue falls. The cost of cloud consumption may be difficult to predict, but the risks are low if costs rise and fall in line with revenue.

Different Rules

CIOs complain that business leaders cannot forecast as far ahead as they are being asked to plan. Referencing business plans and forecasts is an essential defensive strategy. CIOs also know that an increasingly digital business will need new features and capabilities that cost more. There is always a choice between higher and lower cost alternatives. Engage with sourcing, procurement and vendor management teams to fully understand options. Consult with the business stakeholders or owners, if only to rule out unacceptable alternatives to provide a more realistic range between scenarios. Gartner knows of no substitute for planning the inevitable end of each life cycle.

Keep Cost Liabilities Real

Plan for the cost of money and reference key financial indicators such as interest rates and exchange rates. At higher interest rates, debt repayments cost more. In the worst case scenario, debts will cost less, but the income needed to repay them will also be worth less, especially in foreign currency (see “IT Procurement Best Practice: Manage Currency Risk in IT Vendor Contracts”). Your organization’s debt posture must be managed under guidance from the CFO, finance or treasury team, who may need to buy foreign currencies at better rates in order to pay suppliers. These are some of the most commonly overlooked costs when planning pessimistic and optimistic scenarios and their relevant debt contingencies.

Write Off or Write Down Debts

Sometimes the leaders of an organization that is having a challenging year need to turn the situation around. As part of their transformation or restructuring, they are likely to identify debts they don’t want to carry forward into future years because they no longer generate the value needed to justify them. An IT provider midway through a long multiyear contract chose to write off the remaining amount it owed and move to cloud solutions that cost much less to acquire and run. Communicating the change to investors helped the CFO keep them onboard while debts were written off. Investors prefer to hear bad news once, when they know better news will follow, because a problem has been resolved. CIOs need to be aware of their CFO’s financial strategy to work more effectively within it.
Evidence

1. “Here Are the Profit Margins for Every Sector in the S&P 500,” Business Insider. Also see NYU’s research into operating and net margin by sector.

2. “IASB Clarifies Requirements for Classifying Liabilities as Current or Non-Current,” IFRS and “FASB Proposes Improvements Related to Distinguishing Liabilities From Equity,” the Financial Accounting Standards Board.

3. “Magic Quadrant for Enterprise Architecture Tools”


5. “Oil Major Shell to Write Down up to $22 Billion of Assets in Second Quarter,” CNBC.

Recommended by the Authors

A Primer on Technical Debt
Measure and Manage Your IT Debt
Protect Your Legacy and Technical Debt
Overcome Barriers to Agility by Reducing Technical Debt in I&O
Infrastructure Resilience Debt: Pay Now or Pay Later, but Manage Your Debt
Compute Infrastructure: How to Optimize the Management of Life Cycle Variations
Optimize Your Cost to Migrate to Windows 10 Using Gartner's Cost Model
Address Technical Debt With Gartner's PAID Model and Avoid Bankrupting Your Application's Future
Use Continuous Modernization to Build Digital Platforms From Legacy Applications

Recommended For You

10 Rules for Rapid IT Spend Reduction
Simplify and Depoliticize IT Chargeback Through Collaborative Governance
Toolkit: 101 Rapid IT Spend Reduction Ideas
Drive Smarter Savings With More Advanced Cost Definitions
Drive Smarter Savings With Foundational Cost Definitions