Leadership
Executive Update

CUTTER
AN ARTHUR D. LITTLE
COMMUNITY

Vol. 2, No. 1, 2023

TECH DEBT: CAN IT STOP YOUR BUSINESS FROM FLYING?

by Myles Suer

Without question, Southwest CEO Bob Jordan has been in the hot seat. In January, [15 US senators] demanded answers about the airline's management of last year's holiday travel disruptions, which left thousands of passengers stranded at airports. By February, there was a Senate [hearing] about the debacle, calling for a passenger's bill of rights. Clearly, Southwest has a business problem — how it routes its airlines — but it also has a tech debt problem. Given this, Cutter contributor and data business leader Myles Suer set out to get some CIOs' perspectives on the tech debt problem, what happened at Southwest, and what steps can be taken to get Southwest's CEO (and CIO) off the collective hot seat. This *Executive Update* shares some insights gleaned from those conversations.

FROM WHAT YOU READ, WHAT FAILED?

First up, a former CIO, Wayne Sadin, shared the following:

> *Southwest's executive management and pilot union leadership both made statements that their software was inadequate for their current business scale and complexity. Nothing really failed at the technology level. The problem is that most technical debt is secret — an unknown and an undefined off-balance-sheet liability.*

Digging into the specifics of what failed to work over the holidays, another former CIO, Joanna Young, adds:

> *[Southwest's] systems were too rigid, too hard-coded to deal with the length and complexity of widespread storms plus a busy travel time. Worse yet, this was not a one-time issue. Southwest has had a systemic issue — technology, talent, process — that [it] must iteratively address to continue to be a viable business.*

The inability to scale the complexity of today's environment was suggested by Miami University CIO David Seidl. He told me that what he has read on the catastrophe points to 1990s technology, processes designed for a much smaller company, and management-efficiency issues:

> *They were designed for an organization 1/10th the current organization's size. None of this is surprising. Folks that work in M&A or who have experienced rapid growth know these things drive the need for reengineering. The more interesting question is how high the internal knowledge of the likelihood of a problem, while Southwest put money into dividends.*

FAILURE TO UPDATE LEGACY TOOLS LED TO A SYSTEM FAILURE

It is worthwhile to look at corporate culture, too. Even with digital transformation being a key business strategy, New Zealand CIO Anthony McMahon says it appears that "good enough was the prevalent culture for the employees at Southwest. Failure to update legacy tools led to a system failure."

Taking an industry view, Constellation Research analyst Dion Hinchcliffe adds to what these CIOs said:

> *Antiquated systems unfortunately exist in many organizations. I have seen too many organizations run on slim margins where the low-cost option is always best. They delay technology upgrades far longer than is wise. Old servers, ancient code, six- to seven-year-old laptops for some are a strategy. But if you monitor it very closely, what's fascinating is quantifying the technical debt represented by still using phone systems or paper baggage-tracking systems, which Southwest apparently did, even recently.*

IS SELLING THE BUSINESS IMPACT OF TECH DEBT A CIO PROBLEM OR A BUSINESS PROBLEM?

I was curious to know where the blame for the problems described by Hinchcliffe fell. Was it with the CIO for not determining the potential business impact, or the business for not listening to what the CIO shared? Or was it both of their faults? McMahon explains:

I WAS CURIOUS TO KNOW WHERE THE BLAME FOR THE PROBLEMS FELL

> *It can be either, or both. If the CIO does not raise [the issue], it is [the CIO's] problem. If the business does not accept it, it is on them. If the CIO says nothing and the business never thinks to ask, it is both. However, once tech debt has been highlighted, it needs to live in the risk register in a way that it is not just IT's problem to deal with. Tech debt is a business problem at the end of the day.*

Young agrees:

> *CIOs should be the primary advocates, influencers, and business case creators for investment in reducing tech debt. Line-of-business executives, CEOs, and boards should be supportive of serious review of appropriate investment. And time does not wait — tech debt grows as weeks and months go by.*

To be fair, Seidl claims that tech debt varies from organization to organization and from situation to situation:

> *I have walked into a CIO's office with a "CYA (cover your ass) memo" and watched them pause and then realize for the first time ever the depth of the problem and make moves to address it. I have also had friends tell their managers there was a critical infrastructure component that was failing. However, they could not get leadership to spend a few hundred dollars to keep their data center working. Sometimes we do not push the right buttons, but sometimes they do not listen. And sometimes the business or other organizations are not ready to listen, do not have resources to spare, or are focused elsewhere. This is when we have to figure out how to make things better when you can. And sometimes, you have to do something dramatic like write a CYA memo and drop it on your boss's desk. Or resign in protest. Or … otherwise do what the job needs you to do.*

Cutting through the chaff, Hinchcliffe adds:

> *I will be brave and provocative and call tech debt what it is. It is a business problem. Most CIOs are willing to fix technical debt. But the business is rarely willing to pay for it. However, the business does need to step up and help own it — including paying tech debt down. After all, it is a major off-balance-sheet liability in IT, no matter how it got there. This starts with the CFO.*

SHOULD CIOs SELL "FIXING TECH DEBT" TO CMOs?

Southwest proved tech debt directly impacts customer experience (CX). So should CIOs sell the fixing of it to CMOs? According to Young:

> *Absolutely! The brand damage was considerable at Southwest, and the customers impacted are now making different travel choices. The average consumer is getting more aware of how technology impacts their experience. CMOs and CIOs should be discussing [this] today if they were not already.*

THE CASE FOR FIXING TECH DEBT OCCURS THROUGH COLLABORATION

But how should this conversation occur? Ideally, says Seidl, it should be less about a sales pitch and more about a partnership: "CIOs and CMOs should be talking about CX and how it is influenced by technology. This includes how *better* technology *better* satisfies customers. Ideally, there should be a virtuous cycle."

For this reason, McMahon suggests that the case for fixing tech debt occurs through collaboration: "Expecting the CIO to go on their own to the altar of finance and beg for money puts them in direct competition with every other request for funding. Collaboration does not necessarily mean the case will sell, but it helps significantly."

Hinchcliffe adds that "technical debt is part of a major list of challenges that can hold CIOs back from driving forward real change and progress. I collectively call these issues 'legacy mountains.' For this reason, there should be a technical debt budget set aside in good years."

Financial services CIO Dennis Klemenz is right when he says, "If you are a CIO, you better have used the Southwest [fiasco] as an example of what happens if we do not deal with tech debt. Decisions made today may not go into effect for three years. You must plan ahead. Whether it is the CMO, COO, CFO — whomever you need to speak to, you need to fix it."

LONG-TERM FIXES: WHAT'S NEEDED?

Southwest interestingly lacks digitally savvy board members, and their CIO appears to be a mid-level executive at best. Given this, Sadin says:

> *The failure was at the C-suite and board of directors' leadership and oversight. The CIO failed to explain the technical debt baggage properly, or management did not listen or care, or the operations executives did not make a "good enough" case to the CFO. It does not matter. The whole C-suite is a team, and they collectively failed. Boards have oversight responsibility. They need to ask relevant questions and understand the answers. There is no excuse because "duty of care" means that question needs asking.*

KNEE-JERK REPLACEMENTS CAN HAVE ADVERSE EFFECTS

Young adds that the "FAA [Federal Aviation Administration] CIO is mid-level, too. CEOs need to think hard about the level of IT leadership in their organization. Often, IT reports to COO/CFO-type executives, which colors IT as a cost center when technology should be about value creation and sustainability."

Looking at what needs fixing, McMahon says, "I would appoint an advisory board that works alongside the CIO and reports to the board of directors to develop a sustainable roadmap. Knee-jerk replacements can have adverse effects, especially if IP is lost in the process, or if the person responsible is never accountable."

But, Hinchcliffe says, "This is a time to be bold," adding that he would take the following steps:

- Make the CIO report to the CEO.
- Add technical debt to the governance, risk, and compliance processes.

- Get the CFO to make a major down payment on high-priority tech debt.
- Help finance by offering vendors glowing endorsements.

LESSONS FOR CIOs, CEOs & BOARDS

So what lessons can CIOs, CEOs, and boards take away from the Southwest case study? Young provides six of them:

1. Get an inventory and understanding of tech debt.
2. Tie tech debt to real business impacts, such as CX, operational expenditure, and employee experience.
3. Determine the cost of change (make sure real revenue and expense impacts are known).
4. Realize that tech debt isn't eradicated in a day.
5. Prioritize; get small wins first and learn how to transform iteratively.
6. Know you can't fix tech debt without also fixing process, data, talent, and governance debt.

For Seidl, tech debt is a business risk. For this reason, he says that "organizations should identify technical debt. They should validate their assumptions and test, especially when things have changed in significant ways from when the system was established or acquired."

Hinchcliffe adds the following takeaways:

- Do not fly too close to the sun (tech debt).
- Give IT more leadership control.
- Luck isn't a strategy.
- CX is ever more driven by IT investment.
- One day, the bill will definitely and suddenly come due.

PARTING WORDS

There are concrete business risks associated with tech debt. It is on the CIO to make the business case, but it is on the business to consider it seriously. The linkage to brand and brand equity is now clear. A few years ago, I heard the new CIO of Target speak. He said there could be no more serious compromises at Target. Otherwise, their business franchise will be over. Businesses today are built on digital. It is time for CEOs and boards to treat tech debt like it matters.

About the Author

Myles Suer has been a data business leader at various companies, including Alation, Informatica, and HP Software. He is the facilitator for CIOChat, a platform that brings together worldwide executive-level participants from a mix of industries, including banking, insurance, energy, education, and government. Mr. Suer has been published in *Computerworld*, *CIO Magazine*, *eWeek*, *CMS Wire*, and *COBIT Focus*. He has been named #1 leading influencer of CIOs by LeadTails as well as a top 100 digital influencer. He holds a master of science degree from the University of California, Irvine, and an MBA in strategic planning from the University of Southern California. He can be reached at mfsventures@gmail.com.

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