Legacy IT Systems: Keep 'Em or Cut 'Em?

How do CIOs calculate the expiration date on their legacy IT systems? We explore the keep-vs.-cut dilemma.
The Kindest Cut of All

STAY OR GO? It’s a question we ask ourselves frequently in our everyday lives: Should I keep or toss those leftovers in the fridge? What about that pair of shoes that’s starting to wear? Is it time to replace our old, reliable car with the newest model on the market?

As a CIO, you can’t ignore these kinds of questions in your enterprise, either. Given the proliferation of IT systems, applications and other tools of the technology trade, it’s frankly mind-boggling that some organizations don’t have a formal strategy for evaluating and ultimately cutting ties with legacy systems that simply don’t measure up any more. Then again, it’s not a cut-and-dry analysis:

“There are so many variables you need to consider when weighing the value of legacy systems, and so much of that is unique to each organization,” said Indranil “Neal” Ganguly, CIO and vice president at JFK Health System in Edison, N.J., in the cover story of this issue of CIO Decisions. Among those variables, writes Mary K. Pratt, are cost analysis, consideration of business needs and the company’s broader strategic planning initiatives.

Also in this issue, Mark Schlack, Tech-Target’s senior vice president of editorial,
unveils the results of our 2015 IT Priorities Survey, which finds that IT managers worldwide expect their budgets to increase by 6.7% this year and will invest in mobility and cloud services, among other areas; SearchCIO Features Writer Kristen Lee looks at how enterprises can incorporate a diversified cloud strategy; and Associate Editor Fran Sales investigates the fuss around Docker’s brand of container software and whether enterprises should buy in. Plus, On the Job looks at how L.L. Bean is cataloguing its data and, in One on One, Deepak Agarwal, CIO at the School District of Palm Beach County, Fla., tells us why scalable Web apps are scoring top marks in his book.

Write to me at editor@searchcio.com.
The Legacy Ties That (May or May Not) Bind

There are no easy formulas when determining which legacy systems to keep vs. cut. CIOs and experts give their take.  

BY MARY K. PRATT

EVERY TIME NSM Insurance Group acquires a company, CIO Brendan O’Malley must evaluate the IT systems that come along with it and decide what should stay and what must go.

For example, NSM last year acquired a company with a custom back-office system developed in COBOL in the 1990s. The legacy system did the work the acquired company needed, but it required a niche firm to maintain it at a significant cost and, moving forward, it couldn’t handle NSM’s business requirements. The system would have to go.

“It was an easy decision from every perspective you looked at it,” O’Malley said, adding that most keep-vs.-cut evaluations aren’t so straightforward.

After spending several decades building up their technology infrastructures, companies now need CIOs and their IT teams to decide which legacy applications and hardware systems have reached their expiration dates. The stakes are high: Moving from outdated applications and systems to newer models is frequently a complex, high-risk exercise, but one required for gaining the agility, cost...
savings and improved user experiences that IT leaders are expected to deliver.

The decision to start fresh might at first glance seem obvious, particularly to younger employees and business customers accustomed to user-friendly consumer technologies. Plus, cloud, mobile and other new lightweight, less capital-intensive technologies have become more mature and thus are better options in the enterprise.

But technology experts and CIOs alike agree that there are no easy formulas for deciding when to transition to these newer models from legacy systems that, in many cases, represent a significant financial investment and still handle critical business transactions.

“There are so many variables you need to consider when weighing the value of legacy systems, and so much of that is unique to each organization,” said Indranil “Neal” Ganguly, CIO and vice president at JFK Health System in Edison, N.J., and a board member at the College of Healthcare Information Management Executives.

Veterans of the process say the best approach to the keep-vs.-cut evaluation involves cost analysis, consideration of current and future business needs, and strategic planning. Moreover, such evaluations should happen not just when systems are in crisis, but on an ongoing basis.

**SIZING UP LEGACY SYSTEMS**

That’s the approach O’Malley, who is also an active member of the Society for Information Management, takes. He

**INDRANIL GANGULY**, CIO and VP at JFK Health System, says evaluating legacy systems means understanding where the organization will be several years out.
starts by considering the company’s strategy and how IT will support it.

“You always want to have a strategy and an understanding of the platforms you expect to be supporting in three to five years. Those are the systems you’re going to be investing in or developing to drive your business,” he said. “Something not on your list, that’s going to be legacy. It’s something you want to eliminate or consolidate or replace.”

Once he’s ruled that a system fits the legacy tag, O’Malley then examines the cost of maintaining it, whether it meets current business needs and whether it fits in with the current technology stack.

A one-off system that was once somebody’s pet project or the result of some rogue IT installation that doesn’t fit in with the company’s architecture gets the ax, he said. A system that’s inexpensive to maintain, is doing its job and doesn’t give anyone undue grief could stay.

Ganguly, who started at JFK Health System 15 months ago, takes a similar tack when evaluating the systems that make up the clinical, revenue and back-office infrastructure.

The McKesson Corp. system that will no longer receive vendor support in 2018, for example, was quickly put on the “cut” side of the equation. (Ganguly says his IT department is still evaluating its options for replacing it.)

But, like O’Malley, Ganguly finds the evaluation process typically much more complex, requiring, for starters, a deep understanding of where the organization will be several years out. Then, he considers whether a current system can be used to automate workflows and produce the same process efficiencies that newer systems enable; and whether the system can support the hospital’s increasing use of business intelligence and analytics. The healthcare industry’s
move from a fee-for-service model to one based on pay for performance, accountable care and meaningful use also factors heavily into whether a legacy system stays or goes.

“You have to have an approach that starts with strategy alignment and then looks at where the gaps are, and then evaluate how to fill those gaps,” Ganguly said, adding that he also considers how much it will cost to upgrade and replace a legacy system, along with the value that upgrading or replacing it will produce for the organization.

The approach goes well beyond using a system’s age as a determining factor, and it means that even newer, cloud-based systems might be destined to be cut, said John F. Mancini, president and CEO of the Association for Information and Image Management.

His organization had a fairly new SaaS communications platform for email marketing. It worked fine, but he learned about a cloud-based application from HubSpot Inc.

that, for the same price, offered much more functionality. He weighed both systems’ costs and value, ruled his current platform a legacy system that had to go, then made the switch.

“For any system in any organization you should go through that analysis: Can I get much more bang for my buck? Have I reached that tipping point?” Mancini said.

HOW TO FIND THE RIGHT BALANCE

Dale Vecchio, an analyst at Gartner Inc., says CIOs must balance cost and risk against value when evaluating the lifespan of legacy systems.

JOHN MANCINI, president and CEO of AIIM, says that a system’s age isn’t a determining factor in whether it has to go.
“The legacy system you’ve got to deal with is where the costs and risks are higher than the value,” he said.

However, many IT leaders don’t make those calculations until they run into problems, he said, and subsequently find they’re facing one of three problems: The system costs too much to run, it no longer supports business needs, and/or it requires technology or skills that are hard to find.

That last point has forced some CIOs to find parts on eBay and bring in older workers with those skills out of retirement, Vecchio and other CIOs note. But not every legacy system will put the CIO, the IT organization and the business in such a dire position.

“Everybody’s going to have a legacy system; not every one needs immediate attention,” Vecchio said.

Indeed, CIOs say that most organizations don’t have the money or staff to update, replace or eliminate all of the legacy systems they’ve identified as needing help.

That’s the scenario Kristin Russell faced as CIO for the State of Colorado, a position she held from February 2011 to June 2014. When she started, 50% of the state’s systems were more than seven years old; the ERP system was 23 years old. Many were out of support, leaving the IT department struggling to find the resources to maintain them.

“Everywhere I looked there were legacy systems,” she said.

Russell took a strategic approach, creating an IT roadmap built around a cloud-first strategy.

“That really framed how we would look not just at old systems, but how we’d procure new ones,” she said.

Then, she crafted an evaluation method that rated each system on the costs required to run and maintain it; its impact on the citizens it serves; its security risks (especially
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pertinent to older systems); the amount of the state’s business going through it and its impact on the business; and finally the system’s age.

“I really wanted to apply some sort of data and science to prioritizing,” said Russell, now a director with Deloitte Digital.

She used the scores to decide which legacy systems needed attention first, and whether to rip out and replace a system (which usually involved business process engineering) or leave it in place and update it.

Colorado’s legacy situation may sound extreme, but Vecchio says it’s not. Many organizations don’t have a good strategy when it comes to evaluating and updating their legacy systems, he said, but a keep-vs.-cut evaluation process like the one developed by Russell must become a routine exercise for the IT organizations if they want to stay out of crisis mode.

“Don’t wait for problems to occur,” agreed

“Everybody’s going to have a legacy system; not every one needs immediate attention.”

—Dale Vecchio, analyst at Gartner

David Dodd, CIO and vice president of IT at Stevens Institute of Technology in Hoboken, N.J.

At Dodd’s IT shop, that means continually assessing the internal and external environment and evaluating whether its systems can deliver the services and capabilities that meet the institute’s current and upcoming needs. The IT department also considers whether the system has operating integrity, whether it functions well and can be integrated where needed, and how it measures up against more modern systems.

“We look at it from a strategic point of view: Is this system allowing us to do business the way we need it to, or does it provide
us with a competitive advantage? What’s the most strategic system we can deploy that we can get the most use and longest life out of? Is it going to be strictly operational or will it give competitive advantage?” he said, adding that these questions must become routine. “This has to be a systemic part of what an IT organization does,” Dodd said. “If it’s not, you’re going to try to survive by moving from one crisis to another.”
Chris Wilson
SENIOR VICE PRESIDENT OF DIRECT CHANNEL
L.L. Bean

A Catalog Full of Data

THE PROBLEM: For L.L. Bean, a 102-year-old retailer, providing personalized customer service is a matter of survival. But the company has roughly 30 different marketing channels, and “short of full authentication on every visit, we’re never 100% confident in how we’re stitching customers together across all of those visits,” said Chris Wilson, the company’s senior VP of direct channel. “So all of these data elements that we used to think of as deterministic are really probabilistic, and it adds a scalar component to all of these variables.”

THE TECHNOLOGY: L.L. Bean also wants to “go fast,” Wilson said. Neither problem would be solved with the company’s legacy approach alone. “At a fundamental level, there is just a lot more unstructured data that doesn’t play terribly well with our traditional, relational database approach,” he said. In a step toward an experimental, iterative approach to doing business, the retailer reached out to RichRelevance, a personalization service provider based on Cloudera Hadoop that lists mega-retailers like Wal-Mart and Target as its customers.

THE RESULTS: Within the pilot program’s first six months, “we’d already put two times more marketing data in the cloud than we had on our internal data warehouse that took us 20 years to aggregate,” Wilson said. And data collection is only a fragment of what L.L. Bean is after: The retailer really wants to make data and analytics a core competency across the company: “[We want] to move away from that center of excellence approach we’ve followed for years and really distribute these tools across the organization,” he said. —NICOLE LASKOWSKI
2015 IT Outlook: Growth and More Cloud Services

The 2015 outlook for IT includes higher budgets and an emphasis on cloud, according to TechTarget’s annual IT priorities survey. By Mark Schlack

IT managers worldwide expect their budgets to grow by 6.7% this year, and are using that added money to go after both established and emerging technologies. Disaster recovery, data center consolidation and business intelligence (BI) continue to receive funding. Mobility and cloud services are among the main newer technologies that will get more attention throughout 2015.

That’s the news from TechTarget’s annual IT priorities survey of 2,012 IT professionals completing the survey this year.

The 2015 outlook for information technology suggests that IT departments have largely moved past the worst times and are pushing forward. (See: “Which of these broad initiatives will your company implement in 2015?”)

Topline budget growth increased from last year’s projection of 5.4%, finally putting a period on the lean years of the recession. In 2012, for example, IT managers projected 2013 budget growth at 2.8%.

But progress is not uniform. Driven by the U.S. economic recovery,
North American growth for 2015 is expected to be 5.7%, after last year’s 4.5% (and the prior year’s 1.4%). But Europe’s economic woes are taking their toll on IT budgets there, and respondents reported weaker growth, at 3.6%. Digging deeper, 37% of European IT managers reported flat budgets, with only 47% increasing. Worldwide, 66% were increasing with only 24% flat; in North America, 62% were increasing and 29% flat.

Continuing the pattern of recent years, Asia-Pacific continues to see high growth, at 8.4%, but Africa, the Middle East and

Which of these broad initiatives will your company implement in 2015?

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<th>Initiative</th>
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<td>Mobility</td>
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WHERE IT SHOPS ARE INVESTING

Among IT shops that are not cutting budgets, software is the largest area for investment, with nearly half (48%) of all companies investing there; hardware isn’t far behind, with 45% increasing that budget segment. Among just those spending more this year overall, those numbers were 55% and 52%, respectively.

In recent years, we have been probing to see the impact that cloud services are having. This year, we can see that 43% of those growing their budget are growing cloud services, with only 20% increasing outside services. In budget-challenged Europe, cloud services are the single most popular area of budget increases at growth-oriented companies, representing a 48% increase compared with 39% and 43% for hardware and software, respectively. Paradoxically, perhaps, in Asia-Pacific, the pattern is reversed, with hardware and software getting more funding at 55% of shops, and cloud services at only 41%. And among those cutting, cloud services are being reduced the least.

As for what’s receiving funding, top projects continue the pattern of the past 10 years or so, with heavy spending on disaster recovery/business continuity; security, particularly network-related; data center transformation and consolidation, including virtualization-related projects; and business intelligence.

Interest in mobility is strong at 34% globally, but not up from the past two years. The most common ways people are implementing mobility are through deploying
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enterprise apps in mobile form, instituting mobile device management, or implementing a bring-your-own-device program for smartphones or tablets. (See: “Which of these mobility projects will your company do in 2015?”)

Big data has made small gains each year, going from 23% to 26% to 30%, respectively, over the past three years. Big data analytics gets the nod at 25% of companies, while back-end processing and management are close behind at 21%.

We may be seeing the maturing of BI, as overall BI slid down the list of top projects

Which of these mobility projects will your company do in 2015? Check all that apply.

Mobile enterprise app or app dev platform
Deploy mobile device management
BYOD for smartphones or tablets
Deploy mobile content management
Corporate-issued mobile device program
Wearable computers/smartphone devices
to the 10th spot at 31%, after being at 41% last year and 46% the year before.

Advanced back-end database technologies such as in-memory or NoSQL databases are only being deployed at 15% of shops, which may reflect a shift in emphasis, at least for the time being, in paying more attention to getting the information to business users (including mobile ones) and less to building a back-end engine. That may also reflect heavy use of cloud services to accomplish some of that work.

Some of this year’s trendy projects are still getting weak uptake (See: “Top North American projects of 2015”). Social media and collaboration projects are only getting the nod at 18% of companies (and that’s pretty even around the world). Internet of Things projects are taking off at the same number of shops. Corporate performance management projects are only on the agenda at 13% of companies.
MODEST WINDOWS UPGRADE SCHEDULES
The most migration activity in 2015 will likely be around Windows Server 2012, which will be an upgrade at 30% of companies. VMware’s vSphere 5.5 will also be an upgrade at 21% of companies.

On the desktop, IT shops are looking at three potential upgrades as many are still in the process of getting off of Windows XP. Migrations are going to be evenly split between Windows 7 and 8/8.1 (19% and 20%, respectively), with only 9% expecting to go to Windows 10 (which is actually a pretty strong showing for a not-yet-released Windows version). But those numbers rise to the mid-20s in midsized companies, and in large North American companies with more than 5,000 employees and fewer than 10,000 employees, to 33%, for Windows 7 and 8/8.1.

Big Data for Decision Making

LAST MONTH’S CIO DECISIONS featured a One on One interview with Atefeh “Atti” Riazi, the chief technology officer at the United Nations. Riazi discussed whether big data can change people’s minds, ultimately declaring that “the data may show analytically what the right thing to do is, but there are many factors in play during decision making.” In response, SearchCIO asked its online readers, “If big data can solve problems by pointing to an unexpected correlation that leads to an improvement, does it even matter if we know what the real cause of the problem is?” Some of the responses:

“While knowledge is power, a holistic view of it can guide strategic decision even when politics is in play. One essential factor we should consider, though, is the integrity of what we regard as knowledge. How was the vetting done to elect such data as master data/knowledge? How is it secured and who [can] access such a knowledge database? Building a big data strategy for a supranational organization can be marred by complexities, but derivatives can be endless if quality assurance is met, especially for difficult missions like peacekeeping operations.” — FODAYKAILIE

“Data science is not the panacea for all ills. Big data analytics is a correlation and not a causation. To diagnose the root cause of the problem is to ensure that, even unknowingly, it is not repeated and the results are shared with the environment to create awareness about tools/applications available in this field.” — HARIDAS

Which of the following software initiatives will your company deploy in 2015?

- Mobile applications: 31%
- BI/analytics/data warehousing: 30%
- Data integration: 29%

SOURCE: TechTarget’s 2015 IT Priorities Survey, with 1,485 responses to this question.
Dark Social

**Dark Social** is a term used by marketers and search engine optimization specialists to describe website referrals that are difficult to track, which creates challenges for companies trying to monitor referrals and social media activity. Most often, dark traffic is the result of people sharing website links through email, text messages and private chats. Because dark social links don’t have tracking code automatically appended to their URLs, it is not possible to know how the website visitor found the content. The term was coined by Alexis C. Madrigal, a senior editor at *The Atlantic*, in a 2012 article.

Ensemble Modeling

**Ensemble Modeling** is the process of running two or more related but different analytical models and then synthesizing the results into a single score or spread in order to improve the accuracy of predictive analytics and data mining applications. Whereas a single model based on one data sample can have biases, high variability or outright inaccuracies, by combining different models or analyzing multiple samples, data scientists and analysts can provide better information to business decision makers. Ensemble modeling has grown in popularity as more organizations deploy the computing resources and advanced analytics software needed to run such models.
A Diversified Cloud Strategy to Ward Off Instability

It can be tough for CIOs to get cloud providers to commit to providing long-term services. One way to ensure stability is by using a diversified cloud strategy. By Kristen Lee

For CIOs who have been frustrated trying to get their cloud provider to commit to a long-term contract, attorney Rebecca Eisner, who specializes in cloud contracts, says there’s a technology-driven reason for that.

“A cloud provider wants to retain flexibility because ... the market keeps moving on and if you can’t change your blueprint or foundation, it might leave you in a noncompetitive environment,” said Eisner, a partner at Mayer Brown LLP in Chicago.

Eisner, whose office has recently been doing “lots and lots of cloud contracts,” said that the providers her firm deals with want to maintain flexibility in order to change and adapt to the market and, ultimately, to survive.

“They want the right to terminate for convenience, and they want the right to change the services whenever they need to,” she said.

Of course, that need
for noncommitment puts CIOs and enterprises in a tough spot—and is probably the biggest reason that keeps some Mayer Brown clients from making the leap to cloud services, Eisner said. Rather than eschew the cloud because of a provider’s unwillingness to commit to terms, however, she advises clients that one way to gain stability and security is by using a diversified cloud strategy—that is, using multiple cloud providers at once.

“You don’t ever want to put all your eggs into one basket,” Eisner said. Cloud providers go belly-up (think Nirvanix, the cloud data storage provider that went bankrupt in 2013); cloud startups also get acquired by a company going in a different direction from what you signed on for. It’s important to have an easy escape route. A diversified cloud strategy, similar to a diversified financial portfolio, includes “multiple providers that give you multiple options so that you can hedge against some of these risks,” she said.

Analyst Rick Villars, vice president for data center and cloud at IT and market research firm IDC, is also a proponent of spreading the risk around to mitigate the potential danger associated with the volatile cloud marketplace. In the infrastructure-as-a-service sector, IDC recently predicted that over the course of 2015, 75% of IaaS provider offerings will be redesigned, re-branded or phased out, Villars said.

By using a diversified cloud strategy, “you are protecting yourself from any one company breaking your service,” Villars said.
A DIVERSIFIED CLOUD STRATEGY TO WARD OFF INSTABILITY

DAVID RUTCHIK, a partner at Pace Harmon, says that before pursuing a diversified cloud strategy, it’s important to know when and how to use it.

Villars agreed that companies will increasingly adopt this same approach with the cloud. “You’re trying to basically put different data sets, different services in the optimal location for each system so that you have the best outcome at the customer endpoint,” Villars said.

THE COMPLEXITIES OF A DIVERSIFIED CLOUD STRATEGY

Although a diversified cloud strategy can be effective in risk reduction and optimizing workloads, it’s important to know when and how to use it. According to David Rutchik, a partner at Pace Harmon LLC,

DIVERSIFIED CLOUD MIRRORS EVOLUTION OF OUTSOURCING CONTRACTS

In addition to reducing the risk incurred by vendor instability, another benefit of a diversified cloud strategy is that a company can strategically place and optimize workloads in order to get the best business outcomes. This is what happened with IT outsourcing, Eisner said.

IT outsourcing went through a trend where, first, customers aggregated everything they could and went to one provider, basically, taking a “one-stop shop” approach, Eisner said. Many CIOs, however, realized they could get more bang for their buck—and more innovation—by divvying up the work. They basically said, “I want this provider to do my end-user computing, and I want this provider to do my mainframe, and I want this other provider to do my server services, and I have another one that does my hosting,” she said.

IT outsourcing went through a trend where, first, customers aggregated everything they could and went to one provider, basically, taking a “one-stop shop” approach, Eisner said. Many CIOs, however, realized they could get more bang for their buck—and more innovation—by divvying up the work. They basically said, “I want this provider to do my end-user computing, and I want this provider to do my mainframe, and I want this other provider to do my server services, and I have another one that does my hosting,” she said.

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THE COMPLEXITIES OF A DIVERSIFIED CLOUD STRATEGY

Although a diversified cloud strategy can be effective in risk reduction and optimizing workloads, it’s important to know when and how to use it. According to David Rutchik, a partner at Pace Harmon LLC,
a management consulting firm that provides IT consulting and advisory services to Fortune 500 and middle-market companies, the factors that play into this decision include what type of cloud computing (e.g., public vs. private) a company is using; what type of data and applications it plans to put in the cloud; and whether it is using a diversified strategy in order to reduce risk or to optimize workloads.

Companies looking to outsource to multiple cloud vendors in order to optimize workloads will be taking on—to put it mildly—a complex task, said Villars.

“Now you are not just having a bilateral relationship; you’re going to have to manage the flow and movement and the quality of service over many different clouds,” he said.

So, the strategy is two-fold. CIOs need not only to decide which suppliers to go with, but also to implement a governance structure for getting everything to work and flow together.

This is one aspect of a diversified strategy that concerns Jonathan Reichental, CIO of the City of Palo Alto. “There’s a map of complexity to that. Everything has to talk to each other,” he said. Plus, this strategy may require hiring new personnel “because not one person can know it all.”

Rutchik agrees that a diversified cloud strategy may not be a good fit, especially when it comes to mission-critical applications and projects.

“You wouldn’t want to parse up your SAP environment into five different places just because you want to have
protection,” he said.

As for using a diversified cloud strategy for mitigating risk in a volatile cloud vendor marketplace, Reichental, for one, prefers to solve that issue by choosing a cloud provider that isn’t going anywhere—in his case, Microsoft Azure. “This is not a startup, this is a significant global player,” he said.

Though Reichental may have a point, Pace’s Rutchik said forming a cloud strategy is not as simple as picking a successful cloud provider who isn’t likely to go out of business. Azure, for example, had a global outage Nov. 19, 2014, that lasted about 11 hours, and there have been times where businesses’ websites have been down for 18 hours due to an outage with their “significant global” cloud provider. “That’s just not an acceptable way to do business,” Rutchik said.

In his view, the type of cloud provided by the cloud vendor plays a significant role in whether a diversified cloud strategy is really needed. With the public cloud, there are no protections or redundancies guaranteed, he said, so a diversified cloud strategy is necessary in order to gain some protection. With private cloud, not so much: “You can get service levels, you can get multiyear contractual commitments. You protect yourself ... by having redundancy built into your overall agreement that has separate disaster recovery capabilities, that has termination rights, things like that,” Rutchik said. “It’s a different offering.”
Deepak Agarwal
CIO
School District of Palm Beach County, Fla.

As CIO at the 11th largest public school district in the nation, Deepak Agarwal was a SearchCIO IT Leadership Award finalist in 2013 for his consolidation of technology pockets throughout the Palm Beach district, reducing the school system’s IT costs by 30%. His early adoption of Google’s cloud computing platform for email and apps saved another 16% of the budget. Through all this, IT earned near-perfect customer satisfaction ratings from the district’s approximately 22,000 employees.

SearchCIO caught up with Agarwal recently to ask about his latest efforts around application consolidation.

What have you found to be the chief challenges to consolidating applications?
Chief among the reasons for application consolidation failure is that the scopes of the new, comprehensive applications don’t seem to address all of the facets of each ancillary system or clearly defined ownership of areas of responsibility. Additionally, the up-front costs of new systems (hardware and software) initially appear to be excessive. A comprehensive five-year plan detailing costs, outlining processes and data ownership and governance will define a roadmap for success.

Describe an application consolidation project you’re currently working on.
Focus is the new student information system that is about to begin its first phase of the installation and configuration process within
our district. Focus will consolidate many ancillary applications that interface with our current student system. It is a Web-based system that runs on a Windows platform utilizing the latest technology and will give stakeholders, such as parents and teachers, access to real-time data. It is a major addition to the scope of the current student information system.

Experts say it is important to understand why you are doing an app consolidation project before selling it to the business and going forward. What was the case for the Focus project? The current student information system, TERMS, is a text-based, mainframe application that handles state reporting and student records. This system is now outdated in technology and it’s difficult to hire and retain the staff with these skill sets. The Focus system offers the newest technology in a comprehensive, Web-based system that will enable secure access to student information for various stakeholders in today’s mobile environment. Ancillary applications such as Gradebook and Edline will be incorporated into the new system and, as such, user support becomes more streamlined for service desk personnel. A cost comparison between the existing student information system, TERMS, and the ancillary software systems that support our user base showed licensing fees, training of new personnel, etc., to be more cost-efficient with the implementation of the new software. Mobile, 24/7 access was also a key factor in this decision.

What technologies are you using that help solve the problem of application bloat—or are there technologies that accept app bloat as a reality and seek to manage rather than solve the problem? Application bloat can be avoided if the product has been properly vetted within its user base.
purchase district-wide. We also have a minimal standard [for] hardware/software requirement criteria, such as [that] applications must run in a virtual environment and perform successfully on multiple browser platforms. The virtual environment that is currently in place allows for expansion of that application’s server base when performance requires additional compute power. Implementation of these guidelines allows for the flexibility of a software package to expand in scope while minimizing the need for additional hardware.

Web-based applications offer access to a broader user base. An example is gathering daily student attendance. Entering that information into the existing system is currently assigned to one or two employees at each school, with the information to be entered at the end of the school day. Therefore, attendance information wasn’t available until a nightly process uploaded that information into the student system. The new student information system has the capability to allow teachers to enter their attendance as they take it during class. Attendance is updated dynamically and is available immediately while freeing up those employees who formerly entered the attendance data for other tasks. —LINDA TUCCI
Should Enterprises Rush to Use Docker's Container Software?

Docker’s brand of container software has tech giants buzzing. What’s all the fuss about, and should enterprises pounce? By Fran Sales

Containers have been around for a while. In fact, if you consider containers a method of OS-level virtualization, as does Joerg Fritsch, research director for Gartner’s security and risk management division, you could say the technology has been around for more than a decade.

“Containers are not a landmark innovation,” he told me in an email. If you take into account OS-level virtualization technology like BSD jails and Unix chroot, containers have actually existed for up to 30 years, he said.

So why are the likes of Google, IBM, Amazon and Microsoft, as well as non-tech firms and big banks, signing up for what The New York Times describes as “a new way to create software,” facilitated by Docker’s brand of container technology?

For starters, as Forrester’s Dave Bartoletti lays out, Docker makes containers easier and more efficient to use, providing benefits that allow companies to provide services in such a way that formerly was possible only from large cloud vendors. “Those include near-instantaneous app launch, rapid scale-out and
server efficiencies much better than traditional virtualization,” he wrote in Forrester’s blog.

So, if Docker containers do all these things better than traditional virtualization, how do they actually work? By acting as an “installer on steroids,” according to Fritsch. Docker’s open source software doesn’t only instantiate containers in a more efficient way than hypervisors do. It also combines this virtualization technology with a way to package and deploy software—a “plain, low-fuss” combination that can prove useful in bringing companies closer to continuous integration and continuous delivery, Fritsch said.

That last part is crucial, especially as more businesses become software-based and seek to create “systems of engagement” in the cloud, Bartoletti said. “The age of the customer is all about speed. Faster time to market, more frequent software releases, automated server deployments, instant cloud scaling—anything that removes friction from the [application development] process is hot as we move into 2015,” he said.

Another advantage containers have over traditional virtual machines (VMs) is their lower infrastructure costs—software engineers told The Wall Street Journal that containers can run from two to six times as many programs as VMs using the same hardware. This means that container technology could potentially upset a virtualization software market that IDC valued at $4 billion in 2013 and that’s growing rapidly, WSJ reported. Have some doubts about that? VMware, one major player in this market,
announced a partnership last year with the startup to offer Docker-compatible technology.

Compared with VMs, containers also require fewer technicians, a draw for Web-based companies such as Pantheon, which has two full-time technicians running 70,000 sites. That adds up to work that would require about 50 employees were it being done on VMs, the company’s CEO told WSJ.

Does all this mean containers are ready for enterprise use?

Yes—well, almost. Fritsch’s report on Docker’s container management software gives it mostly high marks, saying it’s mature enough to be used as public and private platform as a service (PaaS), but warns there’s still some work to be done on securing it when used in mixed environments, where additional safeguards such as SELinux still need to be applied.

Fritsch also adds in the report: “They disappoint when it comes to secure administration and management, and to support for common controls for confidentiality, integrity and availability.” In other words, Docker’s container system lacks the mature system and administrative controls available in a VMware or KVM management system, for instance—controls that allow visibility into certain actions beyond just how compute resources are used. On the plus side, these containers do provide extra layers of virtualization and security when run on top of virtualized systems like hypervisors or cloud infrastructure.

So, what’s the bottom line? Containers still have a way to go, which can perhaps explain why the technology hasn’t had much uptake in the enterprise. Plus, its use cases have been limited to cloud-based companies thus far, Bartoletti told SearchCloudComputing. “The reason it’s taking off so...
quickly is it’s really being driven by the development teams, not IT right now,” he said. However, these caveats shouldn’t be reason for enterprises to steer clear of using Docker, especially if one of your company’s goals is application portability and improving application management, David Linthicum, senior vice president of Cloud Technology Partners, told SearchCloud-Computing. But he cautioned that it’s probably best if you stick with a proof of concept for now and wait until the bugs have been worked out. •
EDITOR’S LETTER

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ARE DOCKER CONTAINERS READY FOR THE ENTERPRISE?

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