When Companies Become Prisoners of Legacy Systems

Three coping strategies for dealing with sprawling systems that have grown nearly too large or risky to replace.

Many companies that have been in business for 30 or more years are using software built or purchased during the Jimmy Carter and Ronald Reagan administrations. While state of the art at the time, this technology is now the IT equivalent of rabbit-eared TV sets. Yet it is still running critical business operations—general ledgers, inventory management, and other back office systems.

In many cases, these systems have difficulty scaling. They strain to support the complexity and variety of current products and services. And their functionality has not kept pace with the times. Some large banks, for example, run systems so old they've had to "wrap" them in expensive data management systems to give customers online access. Such limitations may prevent companies from surging ahead in the marketplace, introducing new products, moving into new geographies, or expanding services to customers on new platforms.

Further complicating matters, companies saddled with decades-old systems cannot easily replace them. Legacy hardware and software platforms often form the bedrock of their operations. Moreover, companies have incrementally enhanced these systems over many years, to the point where they are exceedingly complex and almost impossible to duplicate with a replacement. These companies have become prisoners of their legacy systems.

Escape from Alcatraz

Companies have three basic options for addressing outdated legacy systems: replace them with another in-house system, switch to an external provider, or continue to enhance the system. Let's consider the circumstances in which each option may make sense.

Replace. Ripping out an old system and replacing it with a new in-house system is not practical in many cases. Trying to switch out a sprawling system that evolved over two or more decades in the two years companies typically devote to large systems implementations presents significant risks and requires an extremely careful transition. And since the replacement system is often a software package, customizing it to meet legacy needs can be exceedingly complex.

But certain situations compel companies to face the risks and pursue an in-house replacement. One trading company had systems built on hardware from a manufacturer that went out of business in the '80s. The company maintained those systems for many years by purchasing old computers on auction sites for spare parts. When an old system ceases to provide business benefit—or worse, begins costing business opportunities—it may be time to cut the cord.

Because replacing mission critical legacy systems can cause significant business disruption, companies should only consider wholesale replacement under the following circumstances:

- If the legacy technology is causing the company to lose ground in the marketplace (perhaps because the technology is not global, does not allow the company to serve customers effectively, or is unreliable);
- If the cost structure for the technology is way out of alignment; or
- If the company cannot find trained staff to maintain it.

Arguably, all three conditions should be in place to merit the enormous internal effort and resources required to replace a legacy system with another in-house system. Companies that decide to undertake a replacement should gear up with the appropriate degree of program and project management, technical resources, communications and change management, executive sponsorship, and committed funding.

Switch to an external provider. Companies often consider moving from a legacy system to a SaaS provider when they wish to decrease their IT organization's software development and maintenance efforts. If a SaaS provider can offer, say, 85 percent or more of the functionality a company needs "out of the box," CIOs should seriously consider it. This does not mean the conversion is less complex; organizations will still need to address the new system's functional gaps. In addition, moving to a SaaS provider will task CIOs with migrating data to the provider's system, securing data, and integrating it with other application systems as necessary.

But SaaS may make less sense for companies with tens of thousands of users, especially if the provider charges "per seat" for applications or cannot sufficiently scale its infrastructure. And some companies still hesitate to use SaaS for mission critical systems. Assessing whether the provider's software can scale, offers adequate functionality out of the box, and integrates easily with on-premise systems is critical to making the SaaS decision.

Continue enhancement. If a legacy system does not cause enough pain to merit a full-blown replacement, companies may decide to simply continue the systems enhancement cycle. For organizations that no longer wish to maintain legacy systems internally, one common strategy involves moving maintenance to a low-cost labor center. Offshore development centers can devote additional resources to an organization's system, and often have the expertise to modernize older software to make it more accessible to Web-based and mobile technologies.

Bear in mind that enhancement may only buy a legacy system a few more years of life. Legacy systems should ideally have a multiyear plan and schedule for either extending their life or replacement.

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Organizations imprisoned by legacy systems generally have invested in those systems at a level sufficient to keep them running, but insufficient for supporting strategic growth. Had those companies pursued a continuous investment cycle, as opposed to spending on enhancements only when absolutely necessary, they could have kept the technology up to date and replaced aging components as required. Let this be a lesson for companies as they consider maintenance budgets for newer systems.

Legacy systems' lack of business capability, combined with the retirement of the baby boomers who developed, implemented, and maintained them, will likely force CIOs to address them. And as they consider future technology investments, they should look to confirm they're making decisions that won't imprison their companies tomorrow.

—by Adam Schneider, principal and chief advisor for Deloitte Center for Financial Solutions

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October 1, 2013, 12:01 am

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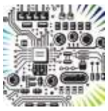

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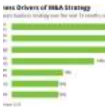

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