

The Call for Technology Commons

By Dr. Howard A. Rubin

Forget the notion of IT Shared Services. The future is in 'Technology Commons', both as a technique to leverage large-scale technology economics and as a way of dealing with governance issues using mechanisms that have been in place for hundreds of years.

Throughout history, both pre-industrial and industrialized societies have discovered effective ways to collectively share resources. By the mid-nineteenth century, American farmers in the Northeast and South successfully organized cooperatives to process, market and distribute wool, cotton, tobacco, grains and dairy products. Before federal legislation began to hamper farm cooperatives beginning in the 1950s, some farmers shared harvesters, jointly operated agricultural processing centers and ran shared distribution networks.

For most independent farmers with finite resources and small plots of land to till, it was prohibitively expensive, time-consuming and inefficient for them to individually market and distribute their products to consumers. The establishment of cooperatives to help farmers to lower their production and distribution costs made perfect sense. Now apply this analogy to your organization's IT operations.

Picture two corn farmers with adjacent 1,000-acre plots in Iowa. Both operate similar machinery to harvest and store their crops. There's no inherent competitive advantage in the equipment they use, so they agree to share the costs and maintenance of the equipment under a cooperative agreement that's more cost-effective for both of them. As a result, they each turn a higher profit through lowered operating expenses without ceding any competitive advantage to the other.

Similar approaches are beginning to materialize on the digital landscape. 'Technology Commons', including universally-accessible e-mail systems

such as Google's Gmail and Amazon's Elastic Computer Cloud (EC2), are beginning to proliferate, providing end users with low-latency, high-speed Web Services at a marginal price point.

Widespread availability of high-bandwidth networks has opened up immense possibilities for pioneering organizations to leverage these types of opportunities. For instance, top officials from leading U.S. research universities, including MIT, Harvard, Princeton and Stanford, are in the early stages of exploring potential opportunities for sharing high performance computers, storage and other technology services across high-speed networks. Comparable discussions are taking place among IT and business leaders in hospitality, financial services and other industries.

Tech Commons offer participants several benefits. Consider some of the opportunities available for a major investment bank. Most banks invest heavily in rolling out new revenue-generating products and services to customers during bull market runs. As new systems are deployed to support new business opportunities, they require additional processing power and storage to support them. Correspondingly, banks add more servers and storage capacity.

But when business contracts during a bear market, investment banks typically find themselves saddled with excess computing capacity they're still required to pay for and support. It's like becoming an empty nester when you're children go off to college. You suddenly have this big house with lots of empty space that's no longer being utilized.

A similar comparison can be drawn to retailers who typically do the bulk of their transaction processing during the six-week holiday shopping period. Once the holiday shopping season has passed, consumers have finished making their returns and retail business returns to normal levels, most retail servers are utilized at a fraction of their capacity.

The creation of Tech Commons, either by organizations in the same industry or across different types of vertical industries, provides retailers, banks and other types of organizations opportunities to utilize their IT investments more cost-effectively, drive down their fixed IT costs and free up more capital for discretionary or “grow-the-business” type projects. An investment bank or retailer with excess server capacity could lease, rent or otherwise share that resource with other organizations under a for-profit business model or potentially through a barter-type arrangement with other participants.

In this report, we'll explore other potential benefits of utilizing Tech Commons, including the direct impact on lowering operational costs, as well as an examination of the primary barriers to success and how those can be overcome.

Leveraging 'The Commons' to Lower OpEx

Ninety-five percent of operating expense (OpEx) resides not in IT but in other areas of organizations, predominantly in labor. In 2009, the U.S. Fortune 500 will pay out roughly \$10 trillion in aggregate OpEx and just \$500 billion of technology expense.

On the whole, IT is only a small percentage of OpEx. But it's opportunities that are available to organizations, such as the application of Tech Commons, where IT investments can be applied to dramatically improve OpEx.

Most people have heard of Nicholas Carr, the former executive editor of the *Harvard Business Review* who wrote a 2003 article for the publication entitled 'IT Doesn't Matter'. In the article, Carr reasoned that the strategic importance of IT has diminished as hardware and software have become more commoditized.

“My argument is not that you don’t need IT or that it’s not important, but that it doesn’t matter strategically and doesn’t provide one company with any way to distinguish itself in any meaningful way from its competition,” Carr said.

There’s some truth to Carr’s argument. The storage systems used by, say, a multinational re-insurance company don’t provide it with any competitive advantage over other industry rivals. The same can also be said for the servers, desktop machines, PDAs and even some of the more mundane software that are used to run an organization’s day-to-day operations such as general ledger, payroll and accounts receivables. These are precisely the types of technologies and applications that are tailor-made for use in ‘The Commons’, whether they’re utilized through a consortium of companies in a similar industry or if they’re hosted by some other third-party provider in the cloud at a lower operational cost. But counter to Carr’s assertions, IT *does* matter and it matters very much. It’s really the differentiation of IT that matters for pioneering organizations that are able to apply it strategically through targeted investments.

Companies that have optimal technology intensity -- the best mix of IT investments to grow and protect revenues while reducing and avoiding costs at a managed level of risk – typically outperform their peers by 3%-to-5% of their pre-tax profit margins, according to Rubin Worldwide.

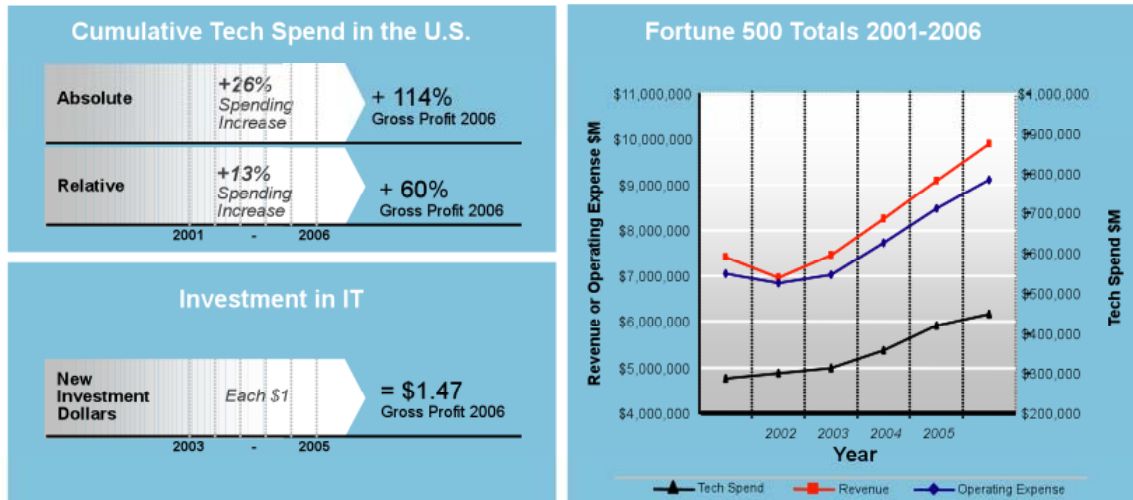


Figure 1. Each \$1 of new investment in IT between 2003 and 2005 had helped drive \$1.47 of Gross Profit in 2006.

Organizations that invest the most in IT don't necessarily outperform their peers. Instead, it's those companies that make the most effective use of their IT investments that are the biggest return-on-investment beneficiaries.

It's part of the rationale for taking advantage of Tech Commons. It's inefficient for companies to have 'Islands of Technology' such as standalone data centers, storage silos and other non-strategic systems which cost millions of dollars to operate yet don't offer them any competitive advantage or otherwise differentiate them from their peers. The costs to house and maintaining those systems with a dedicated staff is prohibitively expensive – it makes more sense to have some other entity host those systems for you at a reduced rate by applying more efficient economies of scale. In turn, corporations that turn over commodity IT services to 'The Commons' can lower their fixed IT operating costs and direct more investment into revenue-generating projects. Lowering fixed IT costs also creates more agility for the organization to react to new business opportunities more quickly. In a typical company, only 36% of IT expense is variable, meaning that 64% of IT costs are fixed and constant, according to Rubin Worldwide. In some organizations, the percentage of IT spending that's variable is even

lower. This means that organizations that are stuck with high fixed IT costs have less flexibility than their competitors to react to changing market conditions and surgically inject IT investments in new business projects.

But by changing the existing IT model and applying innovative approaches such as Tech Commons to lower IT infrastructure and other mundane operating costs, the portion of IT spending in an organization that's variable and can be applied to strategic investments can rise to 60% or higher.

<i>Model Company Tech Spend</i>	<i>\$M</i>	<i>% Variable Today</i>	<i>% Variable Future State Model</i>
Total Tech Spend	\$5,000	36%	60%
Compensation	\$1,800	50%	70%
Contractors and Sourcing	\$500	100%	100%
Hardware Depreciation	\$600	0%	33%
Hardware Maintenance	\$400	25%	50%
Software Expense	\$500	25%	50%
Software Capitalization	\$500	0%	50%
Telecommunications	\$300	25%	60%
T&E	\$50	50%	50%
Recruiting	\$50	100%	100%
Facilities/Rent	\$300	10%	33%

Soft Vs. Hard Landing Controls

Figure 2. Charting the limits of IT Agility.

The most opportunistic time for technology investment is during an economic downturn; it is the *only* area in which investment can change the operating profile of an organization. Doing so effectively can create an insurmountable gap with your competitors. In this type of economy, you want to grow your revenues and shrink your operating expenditures. Tech Commons can help you do that.

Conversely, bad IT economics will place your organization on the wrong side of this gap and may even create advantages for competitors that are more agile.

Fifty percent of all IT costs are people-related. Without question, organizations can outsource some IT activities to lower their labor costs, particularly for commodity-type activities such as help desk services and software maintenance. But you can't let everyone go. You need some resident knowledge in-house among people who know how these systems work, how they've been coded, what the integration points are, etc.

By contrast, Tech Commons can be applied to help lower an organization's fixed hardware and software costs. There's an opportunity for early adopters to improve their IT infrastructure costs by a factor of 10 through the use of private and public cloud computing models.

Managing the Commons

In his seminal 1968 work, *The Tragedy of the Commons*, author Garrett Hardin astutely noted some of the challenges and flawed assumptions associated with various types of commons, including how efforts to farm the seas or develop new strains of wheat will not solve the world's overpopulation problem. As with any types of commons, such as common pastures that have been over-grazed by livestock, there are inherent problems associated with the management and successful operation of a shared activity.

With Tech Commons, one of the most glaring challenges includes the security risks inherent with sharing a common system or application between multiple entities. Then there are liability issues associated with operating a shared resource as well as other legal and contractual concerns that have to be addressed. Sarbanes-Oxley and antitrust issues must also be considered when members of a commons represent a

significant bloc of a particular industry. Participants in a Tech Commons would also have to iron out confidentiality agreements and put together effective governance structures with agreed-upon internal controls that satisfy all members.

But each of these are concerns that can be dealt with. Most commons can be governed by a board of representatives from participating companies to ensure that no single member has too much power. “The efficiency of a commons infrastructure makes a ton of sense except in areas where there’s value-added risk or concerns about security,” says John Sviokla, Vice Chairman of Diamond Management & Technology Consultants, Inc. in Chicago and a former Harvard Business School professor. “Sharing a common infrastructure for firms on Wall St. might be mitigated by desires for controls and risk avoidance,” says Sviokla. “When you look at the fact that technology in most firms is a relatively small part of their cost of goods, it makes sense.”