



Four Key Strategies For Lowering Hardware Costs And Raising ROI

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Introduction: Keeping IT Strategic

Over the last twenty years, when the question was raised as to how to increase productivity, improve vendor integration, better align with customers, or how to increase a company's competitive advantage, the answer inevitably revolved around information technology. IT has revolutionized business practices throughout organizations, leaving very little that hasn't been touched and positively impacted by its empowering capabilities.

But in recent years the pace of innovation, change, and strategic advantage from IT has slowed considerably. A weak economy has put many initiatives on hold. Corporate management in these more difficult economic times is scrutinizing IT spending more than they have in the past. And from a technology standpoint, there isn't a "next big thing" that is so compelling as to justify a wave of reengineering throughout the business community.

The question is, is this slowdown temporary, or does it signify a fundamental change in the IT industry? As some have suggested, has IT matured out of its growth phase to become more utilitarian than strategic?

Certainly the answer to this depends on how fast and how strongly the economy recovers, and on the power and value of new innovations, but perhaps a more important factor is the sustainability of IT spending: whether organizations will be financially able to take advantage of strategic IT opportunities if and when they do arise.

According to statistics from the Bureau of Economic Analysis, spending on information processing equipment and software as a

percentage of all business investments rose from 18% in 1987 to 48% in 2002, and is projected to go over 50% in 2003 (see graph below). This raises a fundamental question of whether companies can continue to increase (or even sustain) the percentage of total capital spending allocated to IT.

To further complicate matters, only 10% of a typical IT budget is available for innovations and new functions (65% is allocated to operations, management and maintenance, and the remaining 25% allocated to migrations and upgrades).ⁱ

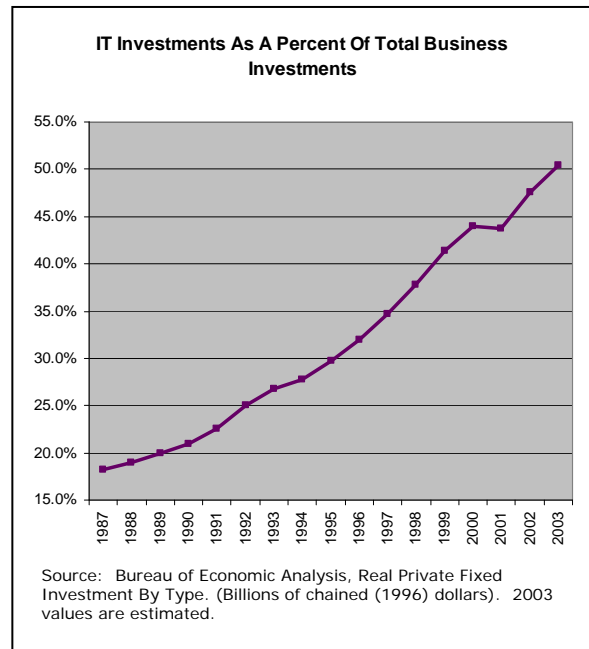
Therefore, it's questionable whether companies can increase or even sustain their current levels of IT investment, and their current IT budgets leave little room for innovation. This suggests a real need to reduce IT operational costs in order to make more funds available for true innovative initiatives. Only then can IT continue to be strategic.

The purpose of this paper is to propose four key hardware related strategies for lowering the operational and upgrade costs within an IT department, which will then make more of the IT budget available for truly strategic initiatives. The four strategies proposed are:

- Extending the useful life of hardware
- Consolidate and standardize
- Procurement based on hardware lifecycles
- Reviewing maintenance contract alternatives

While it's understood that hardware expenses are only a portion of overall IT spending, the scope of this paper only addresses potential savings in hardware spending.

The conclusion of this paper is not that IT is no longer strategic nor that spending on IT should decrease. Instead, this paper is focused on finding creative ways to allocate existing budgets through operational savings that enable strategic IT spending when the opportunity does arise.



Strategy #1: Extending The Useful Life Of IT Hardware

“During the next five years, users will harvest significant budget dollars with relatively little pain by exploiting the residual useful life inherent in existing and future IT asset portfolios.”

– Meta Group ⁱⁱ

We’ve passed through some wild and exciting times in computer technology. The ‘80’s and ‘90’s brought cascading waves of innovation, which in turn spawned the promises of labor reduction, increased productivity, improved responsiveness, better alignment with customers and suppliers, and radically new economies. True to Moore’s Law, everything (processing power, storage capacity, network speed) seemed to double every 18 months, providing a technology staircase that led to more promising innovations.

It was within these exciting times that “best business practices” regarding rules of obsolescence and replacement cycles were formulated. Organizations typically adopted the practice of refreshing technology every two to three years to keep up with the incredible pace of innovation. Over these years aggressive replacement cycle assumptions became embedded in everything from IT budget plans, hardware depreciation schedules, and vendor maintenance agreements – all of which helped perpetuate the two to three year replacement cycle.

When Is Hardware Obsolete?

When is it time to replace existing hardware? These Seven Factors of Obsolescence can shed light on when major upgrades are appropriate.

Functionality

Combinations of hardware, software and infrastructure are called upon to perform certain tasks with a certain level of productivity. When functionality requirements increase, or performance decreases, and the shortfall between expectations and results is critical enough to justify an upgrade, then the existing equipment is obsolete.

Compatibility

Changes or upgrades in one part of the network often create incompatibilities in other areas, rendering these components obsolete.

Reliability

Security and reliability are important core attributes of corporate networks. When age or other factors result in unacceptable levels of reliability, the equipment becomes obsolete.

Competitive Advantage

When the opportunity for achieving competitive advantage requires a technology upgrade, and the upgrade promises a sufficient ROI, then the existing technology is obsolete.

Short replacement cycles could be justified at times when rampant innovation necessitated it and IT budgets were more forgiving. Yet current economic conditions have forced cost reduction measures in all areas, and delaying the replacement of hardware has proven to generate savings that far outweigh any negative impacts. According to META Group, companies that adjust their IT hardware replacement cycles to an asset's true useful life within an enterprise (three to five years) will achieve a near-term savings of 10% to 20% of their overall hardware budget.ⁱⁱⁱ

In addition to reducing direct capital costs, there are substantial indirect savings that come from replacing hardware based on its true useful life rather than replacement cycle best practice assumptions. These include:

- No migration expenses – The cost of de-installing the old and installing the new hardware
- No training costs - The costs associated with the formal and casual learning that new hardware requires, and the inefficiencies that come with lower levels of product expertise.
- No downtime – both planned and unplanned downtime that result from replacements
- No cascading costs - Upgrades in one area often create incompatibilities that result in additional hardware, software, and infrastructure upgrades.

Availability

New or refurbished product needs to be available to accommodate growth or the replacement of failed components. When lack of availability becomes a big enough concern to justify an upgrade, the equipment is obsolete.

Support Costs

Hardware maintenance costs usually increase with the age of equipment. When these costs can't be reduced (see page 11), and they justify an upgrade, the equipment is obsolete.

Boredom

We've become accustomed to regular refreshes of technology and want things that are new, fresh and fast. While this category is difficult to cost justify, it does factor into obsolescence decisions.

Even after a product becomes inadequate for a certain situation, there are often opportunities for redeploying the product in less critical or less demanding applications. Stated differently, equipment becomes ultimately obsolete only when the cost of redeployment outweighs its benefits.

Recommendations

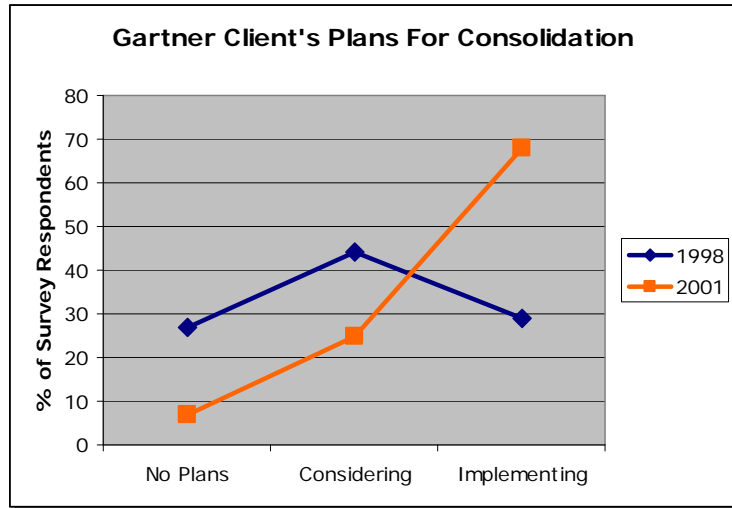
Organizations interested in optimizing their hardware investments will establish new replacement cycle best practices that are aligned with current IT objectives and resources. Rob Shafer of META Group states: “Fundamental to effective IT asset management is the important distinction between the asset’s useful and economic life”.^{iv} This suggests that replacement cycle policies based on departmental plans, budgets, depreciation schedules and maintenance agreements don’t always reflect an asset’s useful life, and may result in the underutilization of hardware assets. Only by addressing these ingrained planning and operational assumptions can full useful product lives be attained. Recommendations for achieving the full useful life of hardware assets include:

1. Review underlying assumptions of your replacement cycle best practices
The two greatest factors affecting the true useful life of hardware are an organization’s rate of innovation (how fast things change) and the rate at which support costs escalate as hardware ages. These two factors have changed significantly over the last 3 years and replacement cycle assumptions should reflect these changes.
2. Find creative ways to ensure availability for replacement or growth
A product’s discontinuance or lack of availability often leads to the premature replacement of hardware. To avoid this, organizations should take advantage of the availability that refurbished hardware offers. In addition, refurbished hardware can significantly reduce hardware costs, particularly when hardware is being added or upgraded in the mid-life of a product’s lifecycle. Refurbished equipment may be the only alternative for equipment that is discontinued by the manufacturer.
3. Establish maintenance programs that support longer hardware replacement cycles
Vendor maintenance programs are notorious for forcing hardware into obsolescence before the end of its useful life. Maintenance costs often become so excessive that the best financial alternative is a premature replacement. Managers should consider third party maintenance, self-maintenance and hybrid maintenance alternatives to place competitive pressure on or to replace vendor maintenance programs. Maintenance programs should be negotiated to accommodate longer product lifecycles as well as more lenient acceptance of refurbished equipment into maintenance programs.

Strategy #2: Consolidate & Standardize

“According to Gartner research, the typical help desk five years ago supported 20 to 25 applications, whereas today this number has ballooned to an average of 200 applications. Growth in hardware devices has increased in the range of 300 percent or more over the same five year period.”^v

As IT managers struggle to deliver quality services with fewer resources, a growing number are considering a strategy of simplification, standardization and consolidation to achieve improved operational efficiency. Particularly promising is the combination of standardizing on relatively few hardware platforms and centralizing on what was once a distributed infrastructure. According to Thomas Pisello, author of *Return On Investment For Information Technology Providers*, there is great opportunity in consolidation: “The migration to enterprise class servers and Storage Area Networks can achieve savings of 20% or more in resources and costs.”^{vi}



Source: Gartner Research

The operational benefits that arise from standardization and optimization strategies include:

Lower administrative costs

Standardizing on fewer hardware and software platforms reduces the workload for system managers and helpdesks. Physical consolidation moves servers, storage and applications closer to support personnel.

More efficient hardware utilization

For example, consolidation of storage through Storage Area Networks enables better utilization of storage across all devices in the network.

Improved availability

Consolidation and standardization create a more manageable environment, which reduces the number and severity of outages.

Simplified deployment

New applications and features are easier to deploy because there are fewer variables to accommodate.

Accountability

Costs, performance, and operational standards are difficult to measure and manage in a distributed, nonstandard environment.

The Five Levels of Consolidation

Consolidation and standardization cover a broad spectrum of re-architecture, ranging from relatively simple to very complex implementations. The five primary strategies are described below:

	Description	Complexity
Physical Consolidation		
Centralization	Relocating server and storage devices to fewer locations, which are easily accessible by support personnel.	Low
Aggregation	Replacing many smaller servers of the same type with fewer more capable servers.	Low
Standardization	Creating a homogeneous environment by standardizing on fewer hardware and software platforms as well as fewer standard images and revision levels.	Medium
Logical Consolidation		
Data consolidation	Aggregating multiple databases into a fewer number of core databases serving multiple applications.	High
Application Integration	Standardizing on fewer, more robust applications that integrate the functionality of multiple existing applications	Very High

Recommendations

Recognize the costs, risks and benefits of consolidation projects

Consolidation and standardization initiatives can range from relatively simple to extremely complex (see table above). Similarly, the project costs, risks and benefits increase as complexity increases. Organizations should weigh their needs, objectives, resources and willingness for re-engineering in determining the scope of consolidation projects.

Take the opportunity to re-architect

The tide of decentralization brought immediate solutions at a time of unprecedented change in IT, and it also created an environment that is expensive and difficult to manage. Large and small consolidation initiatives should be consistent with a greater vision for re-architecting the network for improved efficiency and reliability. The cumulative effect of multiple consolidation efforts will then be synchronized towards a more efficient architecture.

Consider refurbished equipment to reduce costs

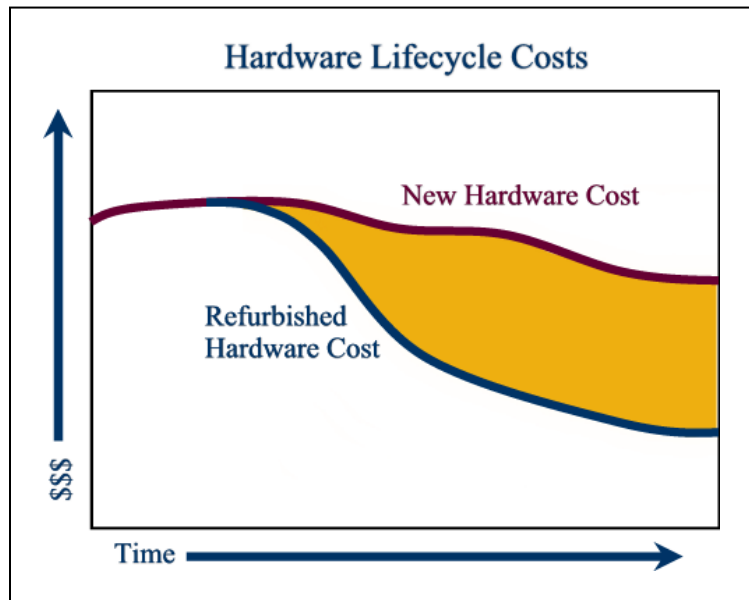
The down-side of consolidation is it requires significant upgrades to the IT infrastructure, and therefore a significant investment. Refurbished hardware can be a very effective way to reduce costs. It is ideal not only for production hardware but also for development, test and training machines. For physical consolidation initiatives, the refurbished market can provide hardware savings of as much as 65% by purchasing the equipment an IT manager is consolidating away from, and selling back to them the refurbished hardware that they plan to standardize on.

Strategy #3: Purchase Based On Hardware Lifecycles

“Only the solutions that clearly demonstrate Return On Investment are being considered.” - IDC, 2001

When markets were booming and innovation was occurring at a break-neck pace, IT managers chose to buy primarily new hardware to avoid obsolescence, headaches, or anything else that might detract from trouble-free implementations.

But that was then and this is now. The priority pendulum for most companies has swung away from leading edge technology and towards cost savings. According to Jim Browning of Gartner Group, “... the world economy has gone from euphoric exuberance, in which technology investment ran almost unchecked, to retrenchment and scrutiny.”^{vii}



With companies focused on risk management, operational efficiency and productivity, return on investment has become the new standard by which most projects are measured. Many companies are establishing the business practice of utilizing mid-life refurbished hardware where the latest in technology isn't required, thereby avoiding the higher cost and rapid devaluation inherent in new equipment.

According to Gartner Group, “Used equipment is particularly suitable for enterprises that have made investments in prior generation technology and want to remain on that platform or software revision, or when there is uncertainty or delays surrounding the upgrade path for older technology. Frequently, used equipment is also purchased for spare parts or replacement machines on-site and for enterprise disaster recovery initiatives.”^{viii}

According to the results of a recent CIO.com survey ^{ix}, the purchase of refurbished equipment is becoming more accepted and respected in the industry. Some of the survey's interesting findings include:

Who's buying refurbished equipment?

- 77% of respondents said that their companies buy used / refurbished equipment.
- 46% expect their spending on used IT equipment to increase in the next 18 months.
- On average, they expected their used IT purchases to increase by 15%.

Why are they buying refurbished?

- 41% cited lower capital costs
- 30% stated performance of new vs. used doesn't justify buying new.
- 15% cited budget constraints

What kind of refurbished products are they buying?

- Servers (45%)
- PCs and workstations (38%)
- Routers (33%)
- Networking equipment (26%)
- Switches (28%)
- Storage (24%)

Recommendations

Buy the level of technology that's required by the application

Hardware is not becoming technically obsolete as quickly as it did in the past, and not all server or storage applications require the latest in technology. Look for opportunities where mid-life technologies can be utilized.

Always consider refurbished prices against new prices

Regular quotes on refurbished hardware provides insight into the new / used price differential, identifies significant opportunities for savings, and if nothing else, provides leverage when negotiating with vendors.

Buy refurbished in times of uncertainty

When the life of a specific application is in question, upgrades are looming, new technology seems to be around the corner, or budgets are uncertain, refurbished hardware provides a low cost, already depreciated alternative to new.

Strategy #4: Review Maintenance Contract Alternatives

Security and reliability are the cornerstones of any well-managed enterprise network, and services that are critical to ensuring up time should not be compromised. That being said, it is worth reviewing hardware maintenance alternatives to ensure a good fit with the resources and demands of an organization. Alternatives to consider include consolidating service suppliers, renegotiation of vendor contracts, and self-maintenance.

Using 3rd Party Maintenance Providers To Consolidate Service Suppliers

According to IDC research, enterprises commonly have over a dozen support suppliers, with many organizations having to manage over 20 supplier relationships. As a result, IT managers have to manage multiple points of contact, unclear delineations of who is responsible for what, and potential confusion at a time when systems are down and speed is critical. To address the complexity imposed by multiple service vendors, many organizations are consolidating their outsourced services among a fewer number of suppliers. The benefits associated with this consolidation of vendors include:

- Streamlined processes and points of contact when services are required
- Cost savings based on a higher volume of business with selected vendors
- Increased speed and flexibility

The key to consolidating service providers is identifying those areas where a single supplier can effectively manage and service products from multiple vendors.

Negotiating Service Contracts

In the past, hardware maintenance contracts were non-negotiable. Now, with a slumping economy and more determination from IT managers, vendors are more willing to negotiate in order to close a deal. Recommendations for hardware maintenance negotiations include:

- Avoid evergreen clauses – Evergreen clauses allow a contract to automatically renew if the client doesn't formally cancel the service at a specified time. The result is a commitment to paying for a service you don't want or need.
- Lock in rates – Negotiate for a fixed rate for three to five years, or agree to limited increases tied to a standard economic indicator (e.g. the consumer price index).
- Accommodate longer product lifecycles – Make sure that the contract period or renewal clauses allow for what you consider to be the hardware's true useful life.
- Don't be afraid to ask – When a deal is on the line, vendors can be very accommodating. Be creative in identifying changes that provide real benefit for your organization, and then ask for them.

Consider Self Maintenance

Self-maintenance is not for everyone. Typically it is an alternative for companies with a strong focus on containing costs, less complex / less critical environments, and sophisticated IT managers who have the time and talent to go it alone. Self-maintenance organizations typically act as their own general contractor with vendor relationships for the following:

- Product Training
- Just-in-time Inventory - Overnight availability of systems or parts (memory, processors, power supplies, drives, etc.)
- Parts availability and Board Level Repair
- Technical call center support

The key to effective self-maintenance is making sure that 1: all of the bases are covered between subcontracted service providers and internal resources, 2: resources are available to quickly react when necessary and effectively coordinate resources to resolve issues.

It's a buyer's market out there right now, which makes it a great time to review maintenance alternatives, renegotiate where possible, consolidate where it makes sense, and possibly move towards self-maintenance for those that fit the profile.

Summary: Making Room For Strategic IT

“Smart IT investing doesn’t require a return to the spendthrift ways of the late 1990s. Companies that understand where to focus and how to time their efforts can find IT investments that will not only differentiate them from competitors but also provide a lasting competitive advantage – and avoid investments that won’t.”- McKinsey Global Institute^x

Obtaining funding and resources for strategic IT projects will be very challenging in the years to come, with three key factors that are placing severe pressure on IT budgets and reducing the ability for IT managers to truly innovate:

1. A weak economy and a newfound commitment to ROI make approval difficult for new projects, upgrades, and improvements.
2. Spending on information processing equipment and software is projected to exceed 50% of all business capital investments in 2003, which raises the question of how much more companies can afford to spend even after the economy recovers.
3. Only 10% of a typical IT budget is available for innovation and new functions, with the rest allocated to operations, management and maintenance.

The leaders in past rounds of IT innovation were those who were both technical and business visionaries. The leaders of the next round of innovation will be those with technical, business and efficiency vision. Prior to the innovation opportunities, they will have created an IT cost structure and productivity that makes room for and justifies strategic IT spending. This means a tenacious commitment to lowering operational, management and upgrade costs, which allows for allocating more of the IT budget towards innovation.

From a hardware standpoint, substantial cost savings can be achieved by adopting the four key strategies of extending the useful life of hardware, consolidating and standardizing, purchasing based on hardware lifecycles, and exploring maintenance contract alternatives. More broadly, this paper recommends challenging certain paradigms that have become ingrained in the budgeting, accounting and managing of IT operations, with a clear focus towards reducing operational and upgrade expenses, in order to accommodate new strategic initiatives when they arise.

End Notes

- ⁱ *Return on Investment For Information Technology Providers.* Thomas Pisello, Information Economics Press
- ⁱⁱ *Harvesting Latent IT Asset Value.* Rob Schafer, Meta Group
- ⁱⁱⁱ *Harvesting Latent IT Asset Value.* Rob Schafer, META Group
- ^{iv} *Harvesting Latent IT Asset Value.* Rob Schafer, META Group
- ^v *Return on Investment For Information Technology Providers.* Thomas Pisello, Information Economics Press
- ^{vi} *Return on Investment For Information Technology Providers.* Thomas Pisello, Information Economics Press
- ^{vii} *Surviving in a Weak Economy.* Jim Browning, Gartner Group
- ^{viii} *Buying Used IT Equipment: A Buyer's Checklist.* Francis O'Brien, Lars Mieritz, Gartner Group. Note Number TG-15-4027
- ^{ix} *Second-Hand IT.* CIO Research Reports, Jun 27, 2002
- ^x *Getting IT Spending Right This Time.* Diana Farrell, Terra Terwilliger, Allen P. Webb, The McKinsey Quarterly, 2002 Number 2

About World Data Products

Since 1987, World Data Products has been the leader in refurbished server, storage, and network equipment. Products include Cisco, Dell, Hewlett Packard, IBM, and Sun Microsystems servers, workstations and storage products.

In addition, World Data Products offers a wide range of services to compliment its product offerings, including technical support, board level repair, maintenance services, leasing, short-term rental, consulting and training.

World Data Products Industry Leading Characteristics

- Founded in 1987
- 120 employees
- \$70 million in revenues
- Process more than 4,000 transactions every month
- Multi-million dollar Inventory
- Global customer base of more than 4,000 organizations
- Ranked in the 2003 and 2004 VARBusiness 500 as one of the industry's top VARs, systems integrators and IT consultants

World Data Products Hardware Specialization

<u>Servers / Workstations</u>	<u>Storage</u>	<u>Networking</u>
Compaq / HP <ul style="list-style-type: none">• Compaq• HP 9000• HP Netserver	<ul style="list-style-type: none">• Brocade• Compaq• EMC• Hitachi• HP• IBM• McData• StorageTek• Sun• Veritas	<ul style="list-style-type: none">• Cisco• Juniper• Foundry
IBM <ul style="list-style-type: none">• AS/400• RS/6000• Netfinity		
SUN		
Dell		

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- ⁱ *Return on Investment For Information Technology Providers*. Thomas Pisello, Information Economics Press
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- ⁱⁱⁱ *Harvesting Latent IT Asset Value*. Rob Schafer, META Group
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- ^v *Return on Investment For Information Technology Providers*. Thomas Pisello, Information Economics Press
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- ^{ix} Second-Hand IT. CIO Research Reports, Jun 27, 2002
- ^x *Getting IT Spending Right This Time*. Diana Farrell, Terra Terwilliger, Allen P. Webb The McKinsey Quarterly, 2002 Number 2