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A Plan To Reduce Enterprise Costs And Risks By Managing End-Of-Life IT Assets

Maturing End-Of-Life Management Processes

A commissioned study conducted by Forrester Consulting on behalf of Cisco

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Executive Summary

Put simply, the low level of maturity of end-of-life management processes in Europe is a financial, regulatory, and brand reputation liability. The management processes associated with disposing of end-of-life IT assets has long been an afterthought, lagging in maturity especially when compared with other IT assessment processes. But recent drivers — from increasing data security and environmental regulations to firms seeking opportunities to reduce costs and improve operational performance — are challenging European organizations to rethink their current practices.

As an indication of this, consider the following headlines that speak to consequences of inappropriate disposal of end-of-life IT assets that have cost organizations thousands, perhaps millions, in fines, legal expenses, and brand damage control:

> *"Sensitive information for shooting down intercontinental missiles as well as bank details and NHS records was found on old computers." (BBC News, May 2009)*
>
> *"Following The Trail Of Toxic E-Waste:* 60 Minutes *Follows America's Toxic Electronic Waste As It Is Illegally Shipped To Become China's Dirty Secret." (*60 Minutes*, November 2008)*
>
> *"Server sold at auction compromises more than 5,000 Social Security numbers." (DataLossDB.org, May 2008)*
>
> *"[UK] Information Commissioner Introduces £500,000 Fines For Data Breaches." (*SC Magazine*, April 2010)*

Key Findings

This study is devoted to helping European organizations reduce costs and mitigate risks by improving their maturity of management processes associated with end-of-life IT assets. To do this, Cisco commissioned Forrester in the winter of 2009 to research and analyze the findings from more than 300 European IT professionals and business professionals on their practices, motivations, and maturity when managing end-of-life IT assets. The key findings show that:

- **Financial, regulatory, and business continuity drive end-of-life management.** European organizations cited a number of concerns when managing end-of-life IT assets — operating costs, data security regulations, and business continuity — which in turn serve as the key business case justifications to improve end-of-life management processes. For example, by maturing their end-of-life management processes, a large government agency expects to save more than €700,000 in operating costs and receive more than €100,000 in equipment exchange credits to offset the purchase of new equipment. Moreover, European organizations should not overlook other important justifications, such as complying with environmental regulations and improving green IT practices, avoiding negative brand reputation, and improving overall IT asset life-cycle management (ITALM).

- **End-of-life management is the least mature ITALM process.** While end-of-life management is a component of broader ITALM, it's not treated equally — especially when compared with the other management processes such as procurement, financial management, and operations. Not only do European organizations view end-of-life management as being the least important and least mature, but it also lags in the use of technology and green IT policies.

- **Timing, cause, and final disposition of end-of-life IT assets vary by category.** While end-of-life management as a whole lags in maturity when compared with the other ITALM processes, European organizations manage all categories of end-of-life IT assets at comparable maturity levels. With that said, depending on the IT asset category, there are noticeable differences in end-of-life timing. For example, 32% of mobile phones reach their end-of-life in one to two years, but in the same time period, only 11% of network equipment reaches end-of-life. Likewise, the cause and final disposition varies by asset category and even country. For example, Germany refreshed all IT asset categories faster than any other European country. And while 19% of servers and storage systems that reach their end-of-life are destroyed, only 7% of PCs, monitors, and office peripherals are destroyed.

- **Internal ownership of end-of-life management processes is strong.** Every IT practice requires ownership, and end-of-life management should be treated no differently, given its increasing ability to mitigate risks and avoid unnecessary costs. Overwhelmingly, the majority of European organizations have assigned complete ownership of end-of-life management to either a single individual or group. It's important to note that while the average level of ownership is high, there is variability among countries and industries. Likewise, accountability and responsibility for end-of-life management vary by job type.

- **European organizations rely on providers of end-of-life services.** European organizations rely heavily on providers of end-of-life management services for logistics, final disposition, and other activities. These providers include original equipment manufacturers (OEM), OEM resellers and partners, and third parties. When evaluating these providers, European organizations place the most importance on compliance with data security and environmental regulation, environmentally responsible disposal, supplier stability, and the scope of IT assets recovered. Likewise, the key activities that European organizations expect these providers to perform include certified erasure of sensitive data, ability to recycle or destroy assets, and the ability to pick up and transport end-of life assets.

Call To Action: Assessment Is The First Step To Improvement

The low level of maturity of end-of-life management processes in Europe is a financial, regulatory, and brand reputation liability. To develop a plan for improvement, organizations must first understand what needs to be improved by assessing their internal capabilities and those of the providers they rely on. To get started, Forrester has developed self-assessment scorecards in Figures 18 to 21 below to help IT professionals and their stakeholders:

1. **Assess the people of end-of-life management.** Organizations should assign ownership and accountability of end-of-life management to an individual or group that has executive sponsorship with clear business objectives.

2. **Assess the process of end-of-life management.** Organizations should optimize processes associated with end-of-life management, ranging from the identification of assets to determining final disposition and everything else in between.

3. **Assess the technology of end-of-life management.** Organizations should automate processes, reporting, and integration with providers of end-of-life management services.

4. **Assess the providers of end-of-life management services.** Organizations should evaluate providers of end-of-life management services, using both general criteria, such as data security and environmental certifications, supplier stability, and geographic presence, and the activities performed, such as data erasure, pickup, and transport, and the ability to recycle and remarket.

The Value From Mature End-Of-Life Management

European organizations cited a number of concerns when managing end-of-life IT assets — in particular operating costs, data security regulations, and business continuity — which in turn serve as the key business case justifications to mature end-of-life management processes. But Forrester believes that European organizations should not overlook other important justifications, such as complying with environmental regulations, improving green IT practices, and avoiding negative brand reputation. And finally, organizations cannot be fully successful at broader ITALM if they don't have mature end-of-life management processes — further buttressing the case for improvement.

Employ End-Of-Life Management To Reduce Costs And Risks. . .

By maturing end-of-life management processes, organizations can overcome their chief concerns and deliver the following cost reduction, risk mitigation, and resiliency benefits (see Figure 1):

- **Reduce IT operating and capital costs.** Reducing costs is the chief motivation for European organizations to mature end-of-life management processes. Organizations incur a number of operating costs when managing end-of-life IT assets, ranging from internal labor and real estate costs to identify, inventory, sanitize, and store end-of-life IT assets, to service provider fees to package, pick up, transport, and process the assets for their final disposition. And this doesn't include excessive vendor support and maintenance fees, labor costs, and high energy costs for managing complex, non-energy-efficient, and legacy equipment. Capital costs are then incurred in the procurement phase when end-of-life assets are refreshed with new equipment.

  Example: A large government agency was able to save more than €700,000 annually in staffing and real estate costs by reducing the effort and removal times associated with end-of-life IT assets from six months to five days. And by taking advantage of the services provided by its OEM, the agency received more than €100,000 in equipment exchange credits to offset the purchase of new equipment.

- **Mitigate data security risks and legal liabilities.** Over the past several years, IT security spending has doubled, with regulatory compliance, protecting against data breaches, and identity and access management projects topping the list.[1] As one chief information security officer (CISO) from a retail company commented: "A few years back, we were a small portion of the IT budget; now we are more than 10%. That is a significant [investment] for the company." End-of-life IT equipment contains sensitive information that if dropped into the wrong hands could pose serious data security risks. And irresponsible disposition of IT assets exposes organizations to negative publicity and legal liability as governments increasingly enact regulations and fines to protect individuals against misuse or abuse of information about them.

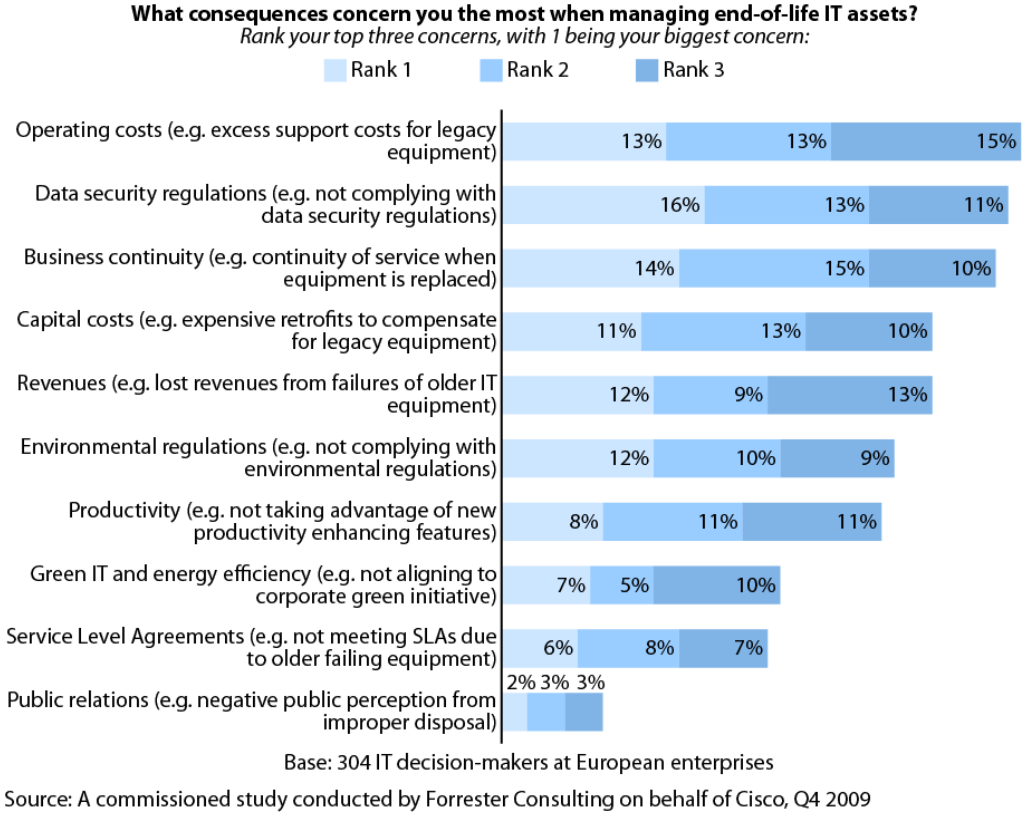
  Example: As of April 6, 2010, the UK's Information Commissioner's Office is able to impose fines of up to £500,000 on organizations failing to comply with the Data Protection Act of 1998. Organizations can mitigate these risks by maturing end-of-life processes to ensure that sensitive information is successfully "wiped" and all identifiers tracing assets back to their organization are removed. If these activities can't be performed in-house, turn to end-of-life service vendors who can also provide certified erasure of data and assume legal liability of your assets and information once it leaves your premises.

- **Improve business continuity and disaster recovery.** Forrester finds that 64% of European enterprises say that upgrading disaster recovery capabilities is either a critical or

high priority.[2] But because the terms "disaster recovery" and "business continuity" invoke images of hurricanes, tsunamis, and terrorist events — perceived as rare or unlikely events — senior IT and business executives often dismiss disaster recovery preparedness as an expensive insurance policy. In reality, though, disaster declarations and subsequent site failovers are not rare because most of them are caused by mundane events such as power failures, IT failures, human error, and localized flooding. Beyond reducing costs, proactive end-of-life management processes can mitigate operational risks by identifying legacy equipment with higher potential for failure that should therefore be refreshed.

Example: As one IT manager in the software industry explained, "These older servers are a liability in terms of failure and security — and they can't be virtualized, which prohibits further cost savings and disaster recovery benefits." Forrester finds that server virtualization not only facilitates server consolidation and the deployment of networked storage, but it also facilitates the rapid restart of applications at a recovery site when used in conjunction with replication. Without proper end-of-life management processes in place to identify this legacy equipment and assess its likelihood of failure, organizations expose themselves to potentially unnecessary risks from downtime. And increased competition and reliance on technology only increases the costs from downtime, meaning that recovering in 48 to 72 hours and losing 8 hours or more of critical corporate information is no longer acceptable.

Figure 1: Costs, Data Security, And Business Continuity Are Chief End-Of-Life Concerns



. . . But Do Not Underestimate Other Sources Of Value

Beyond reducing costs and mitigating risks, maturing end-of-life management processes will offer European organizations additional sources of value. While these benefits are not chief drivers, Forrester believes organizations should not overlook their ability to (see Figure 1 and Figure 2):

- **Comply with environment regulations and improve green IT practices.** Green IT is on the rise, with 47% of firms globally enacting or creating a green IT strategy, and with a healthy 30% considering it.[3] This is driven by a combination of increasing environmental regulations, rising energy costs, and increasing pressure from stakeholders — ranging from customers to employees to shareholders — to conduct business in an environmentally responsible manner. How does this relate to IT? According to the Natural Resources Defense Council, an environmental action group, electronic waste (which includes end-of-life IT assets) is one of the fastest-growing segments of global landfill waste — and one of the most toxic due to hazardous materials such as cadmium, lead, and mercury.[4] And a number of environmental regulations are aimed at manufacturers of IT equipment that sell their products into Europe, regulations such as the EU Directive on Waste from Electrical and Electronic Equipment (WEEE), which imposes fines ranging from €7,500 per infraction in France to unlimited fines and imprisonment in the Netherlands.[5]

  Example: Forrester finds that two essential components of any green IT strategy should include environmentally responsible disposition of end-of-life IT equipment and energy efficiency — which can be addressed simultaneously through mature end-of-life management processes. First and foremost, IT professionals can employ end-of-life management processes to ensure they are fully utilizing their IT assets — and then extend the life of IT to avoid the environmental impacts and new capital expenditures of having to buy new equipment. From there, end-of-life management service providers can ensure that IT assets are properly disposed of and recycled in compliance with environmental regulations, or ideally, redeployed, donated, or resold to give these assets a second life. And finally, when new equipment is being refreshed, IT professionals should seek out more energy-efficient models or architectures altogether to reduce energy-related carbon emissions and costs. For example, Forrester found that moving from desktops to thin clients helped one organization save more than €300,000 in annual energy expenses because its new thin-client architecture used 13.6 watts compared with 77.1 watts by its traditional desktops.

- **Avoid negative brand reputation.** Improper disposition of end-of-life IT assets poses myriad data security, legal liability, and environmental risks as well as the potential for fines and associated legal fees. But what may be even more costly to organizations is the loss of brand reputation and the creation of negative perceptions relating to pollution, loss of data, and unaudited equipment destruction. And this doesn't just relate to misconduct resulting from immature end-of-life processes internal to your own organization — IT professionals should ensure that they're working with credible recycling partners to avoid these brand risks, not to mention the data security and environmental-related fines associated with improper disposal of end-of-life IT assets.

  Example: These instances have gained a very high profile in popular media outlets. In November 2009, 60 Minutes*, a top-rated investigative news television program, aired a segment titled "Following The Trail Of Toxic E-Waste." The program reported that despite best intentions, your e-waste might be illegally shipped to China without your knowledge. Executive Recycling, a Colorado-based electronics recycler, was exposed for doing just this despite the commitment on its Web site that "Your e-waste is recycled properly, right here in the US — not simply dumped on somebody else."*

- **Improve overall IT asset life-cycle management.** With millions of dollars invested in IT — not to mention corporate growth, shareholder value, and ongoing profitability riding on that investment — operating without effective IT asset management is no longer viable. And as the role of the IT organization shifts from business support to business partner, investing in ITALM people, process, and technology is a necessary cost. The key benefits that European organizations expect to derive from ITALM include improving productivity, reducing operating costs, standardizing the IT environment, and ensuring business continuity (see Figure 15-2). ITALM achieves these benefits by focusing on four core management processes throughout an IT asset's life cycle: procurement, financial management, operations, and end-of-life.

  Example: While end-of-life management is one component of broader ITALM, European organizations view it as the least important and least mature process. Organizations must realize that maturing end-of-life management will ultimately support overall ITALM maturity. And by neglecting end-of-life management, organizations will never be truly mature at ITALM and will at the same time expose themselves to unnecessary financial, regulatory, and brand reputation liabilities as described above.

Figure 2: ITALM Promises Productivity, Cost, Standardization, And Continuity Benefits

Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

The State Of End-Of-Life Management In Europe

The following section reviews the current state of end-of-life management in Europe based on Forrester's survey of more than 300 European IT and business professionals. In particular, Forrester focused on understanding how European organizations define end-of-life and its maturity compared with other ITALM processes. From there, Forrester evaluated the cause, life span, and final disposition practices of key IT asset categories within the data center and across distributed IT. Finally, Forrester assessed the roles responsible for end-of-life management and their use of providers of end-of-life management services.

Defining End-Of-Life Management

With millions of dollars invested in IT, operating without effective management is no longer viable. And to ensure IT assets are managed properly throughout their life cycle, maturing ITALM processes is a necessary cost, especially as the role of the IT organization shifts from business support to business partner (see Figure 3).[6] Forrester defines ITALM as:

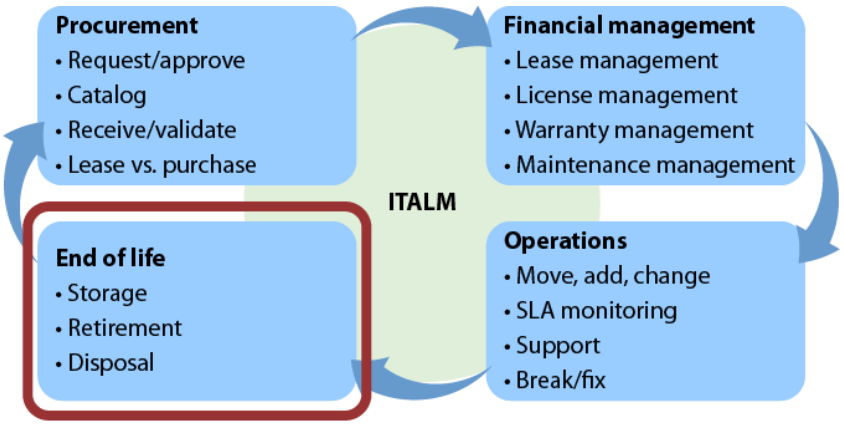
> *The accounting for all assets throughout their life cycle from procurement to disposal.*

While there are four core management processes of ITALM — procurement, financial management, operations, and end-of-life — this document will focus on end-of-life management defined as:

> *Processes to redeploy, remarket, donate, recycle, or dispose of IT assets in compliance with data security, environmental, and industry regulations.*

Putting end-of-life management in this broader context is necessary since organizations cannot be truly successful at ITALM if they neglect this important pillar. Why? Poor end-of-life management practices can lead to a myriad of business risks and opportunity costs — ranging from regulatory infractions and negative brand reputation, to unnecessary spending costs to support legacy equipment, to compromising business continuity issues when replacing equipment.

Figure 3: End-Of-Life Management Is A Core Pillar Of IT Asset Life-Cycle Management



Source: Forrester Research, Inc.

Comparing End-Of-Life Management With ITALM

End-of-life management is not treated equally in the context of the other core ITALM processes of procurement, financial management, and operations. In short, not only do European organizations view end-of-life as being the least important and least mature, but end-of-life management also lags in the use of technology and the maturity of green IT policies. The following summarizes the current state of end-of-life management in Europe when compared with the other ITALM processes:

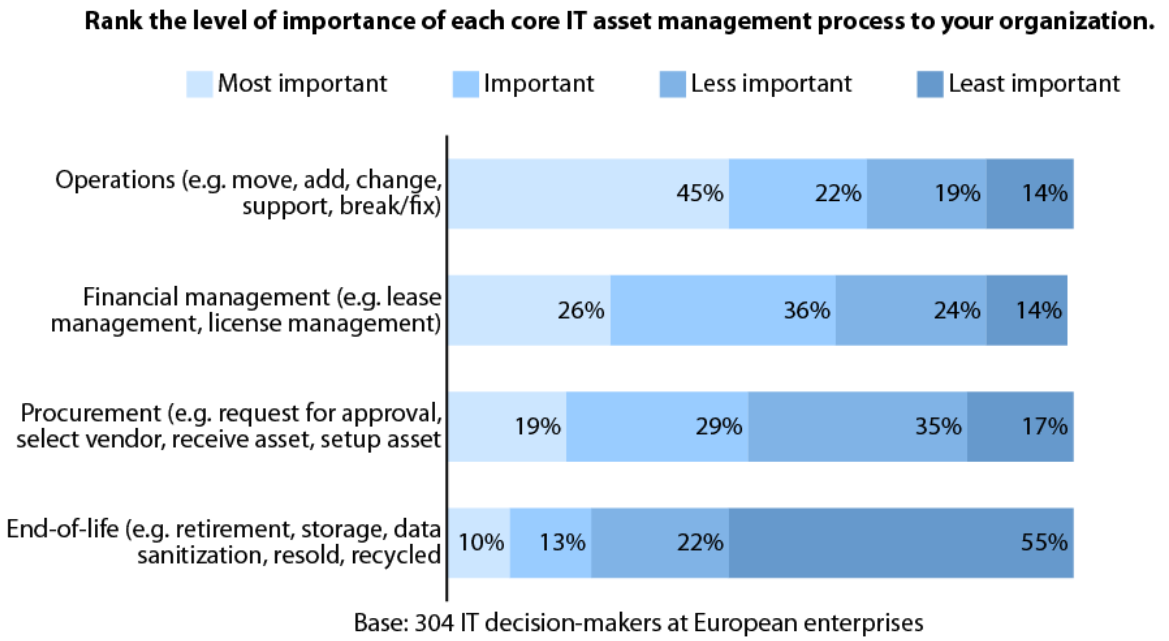
- **End-of-life management is the *least important* ITALM process.** When compared with the other pillars of ITALM, end-of-life management is viewed as the least important by European organizations (see Figure 4). This was significant across all European countries, with 55% of respondents ranking end-of-life management as "least important" compared with, for example, only 14% ranking the "operations" pillar as "least important."

- **End-of-life management is the *least mature* ITALM process.** Given that end-of-life management is viewed as the least important pillar of ITALM, it's not surprising that it's also viewed as the least mature set of processes by European organizations (see Figure 5). Overall, 49% of European organizations believe their end-of-life management practices are mature, meaning either "optimized" or "managed." However, this varies by country. In France, 63% of organizations view the maturity of end-of-life management processes as mature — the highest when compared with any other European country — and even more mature than any other ITALM process. On the contrary, only 33% of German organizations believe their end-of-life management processes are mature, which is the lowest in Europe.

- **The *use of technology* in end-of-life management trails other ITALM processes.** Fifty-nine percent of European respondents use an integrated technology suite or standalone technology to improve end-of-life management processes (see Figure 6). This compares with 71% of respondents using technology to improve the other ITALM processes. While end-of-life management trails other ITALM pillars in its use of technology, it doesn't deviate as significantly as it does in "importance" and "maturity" mentioned above.

- **The maturity of *green IT* in end-of-life management trails other ITALM processes.** Thirty-nine percent of European organizations believe the maturity of green IT policies are mature, meaning "optimized" or "managed" (see Figure 7). While this trails the other ITALM processes, it's only a slight deviation, since 46% of European respondents believe that their green IT policies across the other ITALM processes are mature.

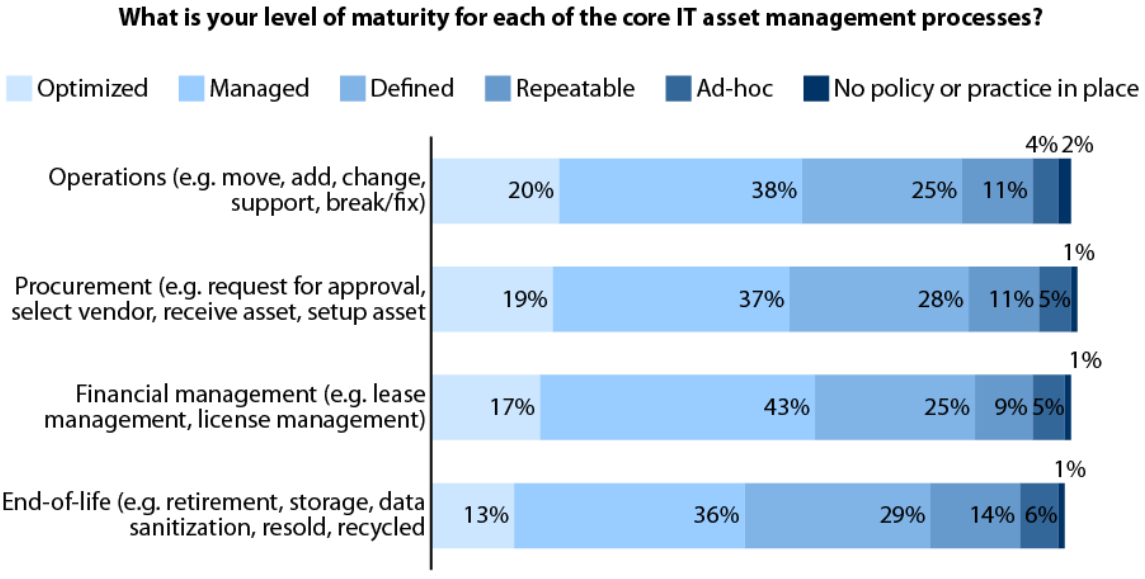
Figure 4: End-Of-Life Management Is The Least Important ITALM Process



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

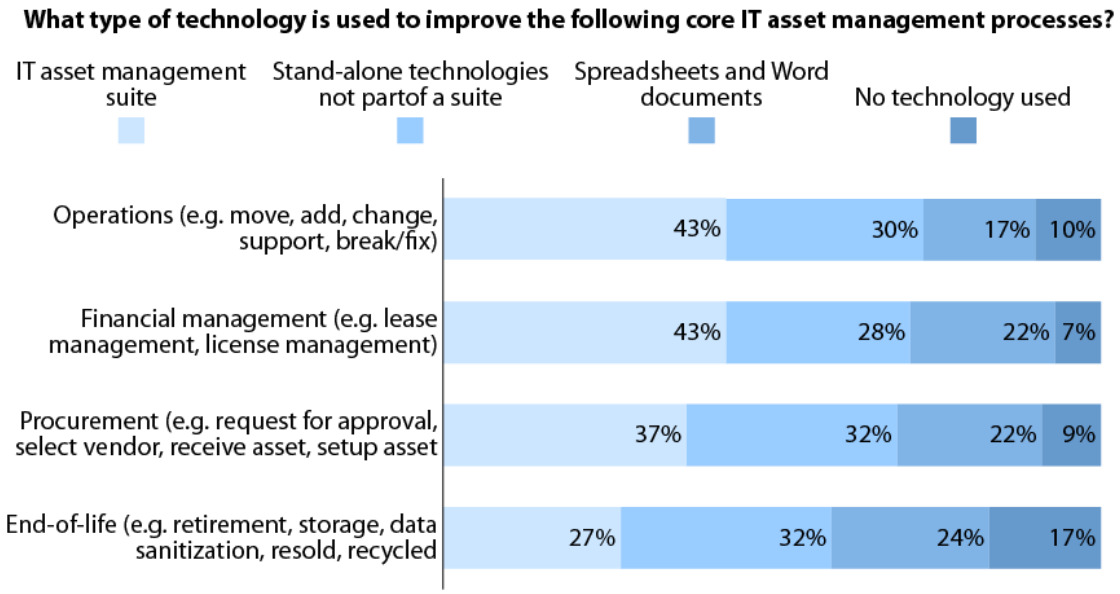
Figure 5: End-Of-Life Management Is The Least Mature ITALM Process



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Figure 6: End-Of-Life Management Lags In Technology Adoption



Base: 304 IT decision-makers at European enterprises

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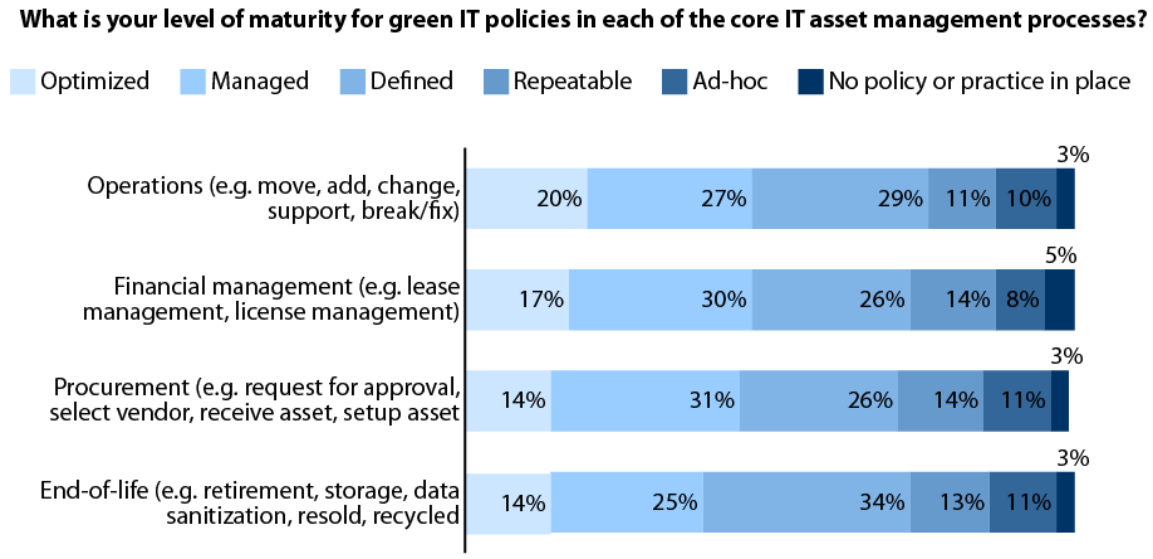
Figure 7: Green IT Policies Are The Least Mature In End-Of-Life Management



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

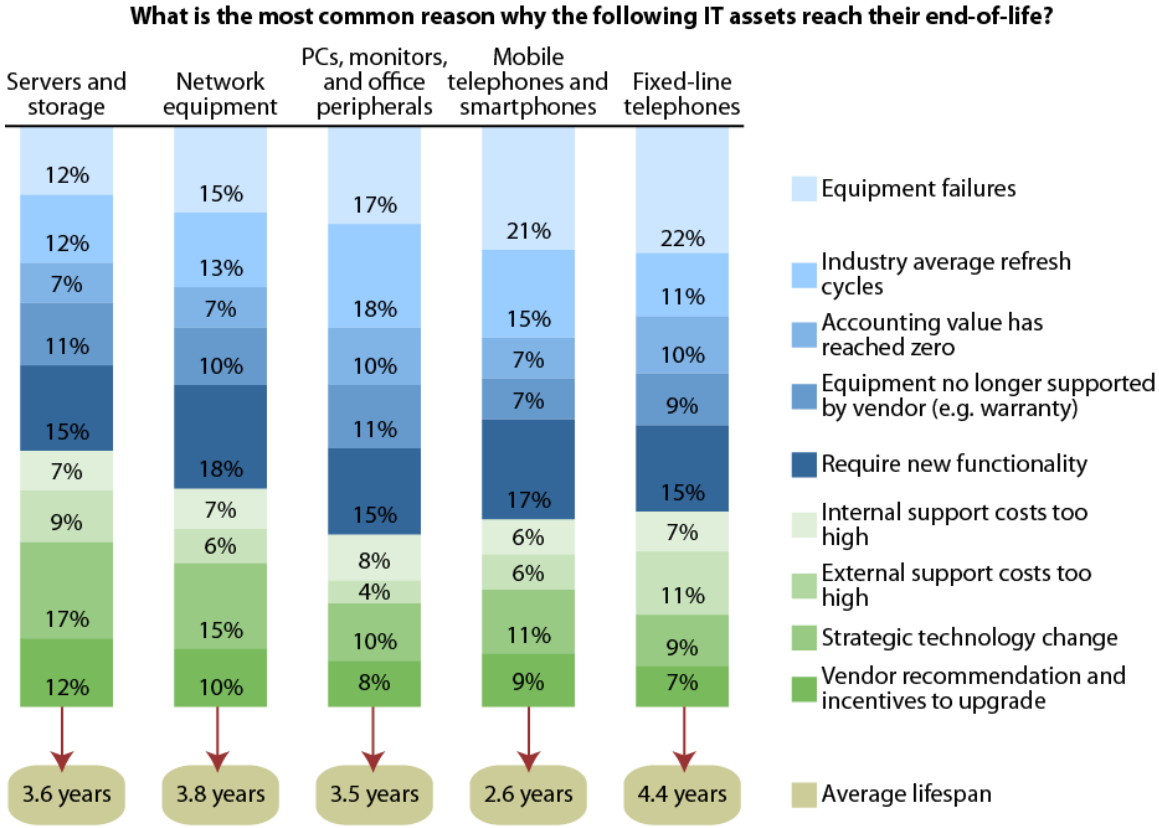
The Life Span And Cause Of End-Of-Life By IT Asset

The life span of an IT asset — or the time it takes an IT asset to reach its end-of-life — will be heavily dependent on the cause of end-of-life. The reasons that an organization deems an IT asset as having reached its end-of-life are quite complex, ranging from practical reasons like equipment failures and losses, to financial motivations like excessive internal and external support costs, to strategic reasons like taking advantage of new features and functionality. The following summarizes the causes of end-of-life and life span across key IT asset categories:

- **The pace of end-of-life is driven by cause and varies widely by IT asset category.** The average life span of an IT asset varies widely among categories (see Figure 8). For example, 64% of network equipment has a life span of three years or longer — the opposite is true for mobile phones, where 68% of devices reach end-of-life within three years or less. Beyond variances in asset category, Germany is an outlier, where all asset categories reach their end-of-life sooner than any other European country.

- **Failures, new features, industry averages, and strategic changes drive end-of-life.** There are a number of reasons why an IT asset reaches its end-of-life (see Figure 9). The most common is “equipment failures,” ranging from faulty equipment and legacy equipment to lost or broken devices like PCs or mobile phones. Other chief reasons include: “requirements for new functionality” (e.g., upgrading network equipment for 10 Gigabit Ethernet or Windows 7 requiring new PC hardware), “industry average refresh cycles” (e.g., benchmarking data received from vendors, consultancies, or peers); and “strategic technology changes” (e.g., moving from desktops to thin clients or standalone servers to blade systems). The primary cause of end-of-life does vary by IT asset. For example, while the primary end-of-life cause for mobile telephones is “equipment failures” — “require new functionality” is the primary driver for network equipment.

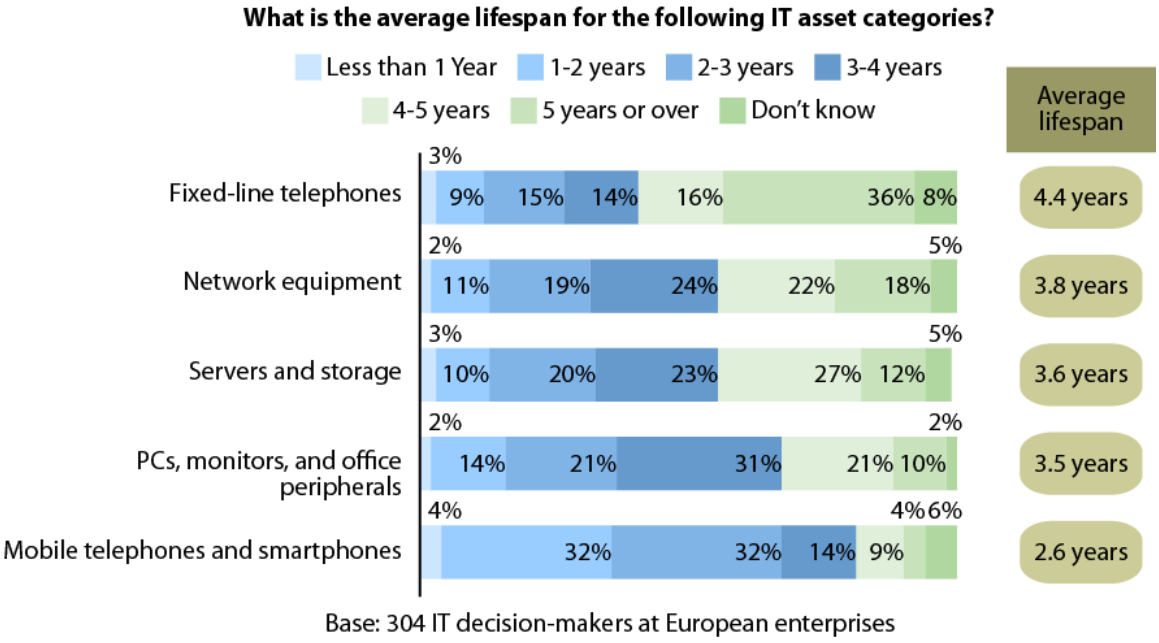
Figure 8: Failures, Features, Industry Cycles, And Strategic Changes Drive End-Of-Life



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Figure 9: The Time Of End-Of-Life Varies Greatly By IT Asset Category



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

End-Of-Life Maturity And Final Disposition By IT Asset

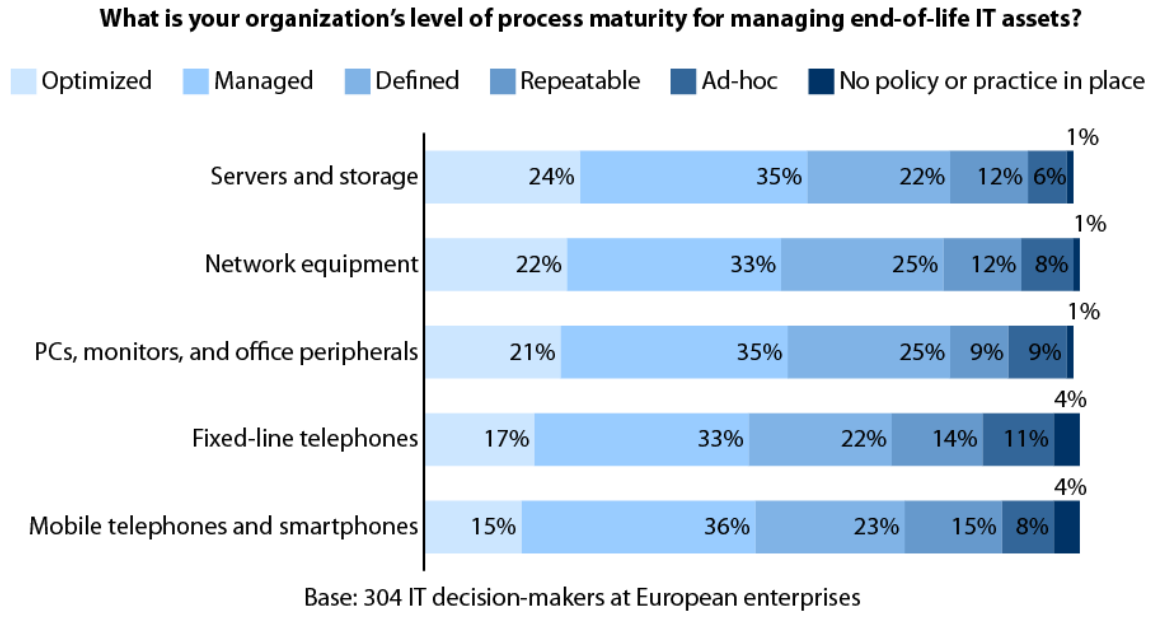
While the maturity of end-of-life management trails significantly compared with other ITALM processes, the maturity of end-of-life practices between IT asset categories is very consistent. However, there is variability in the final disposition of IT asset categories, which represents an opportunity for both financial and environmental improvement. The following summarizes the maturity of end-of-life management and final disposition practices across IT asset categories:

- **The maturity of end-of-life practices is consistent across IT asset categories.** For the most part, the maturity of end-of-life management practices across the various IT asset categories for European organizations is very consistent (see Figure 10). Organizations are most comfortable in their abilities to manage servers and storage equipment, with 59% rating their maturity as either "optimized" or "managed." This is closely followed by PCs, monitors, and office peripherals, at 56%, and network equipment, at 55%. Mobile and fixed-line telephones were the least mature, but not significantly, with maturity ratings of 51% and 50%, respectively. The largest source of opportunity for improvement resides with fixed-line phones, where 15% of organizations have either "ad hoc" or "no policy or practice in place" to manage end-of-life equipment.

- **Variability exists in the final disposition of IT assets by category.** While the maturity of end-of-life practices is relatively consistent across IT asset categories, there was noticeable variability in the final disposition — or what happens to an IT asset when it reaches its end-of-life (see Figure 11). On average, 22% of all IT assets are either stored or destroyed, which is not ideal financially or environmentally — this reaches as high as 30% for server and storage equipment and 38% for all IT assets in the transportation industry. A better

option is to give IT assets a "second life" through resale, redeployment, donation, or recycling, since organizations can receive revenues, credits, or tax deductions to offset the fees and labor costs associated with end-of-life management. At the same time, these options avoid the negative environmental impacts associated with land-filling the end-of-life equipment and the impacts from the manufacture and transportation of buying new equipment.

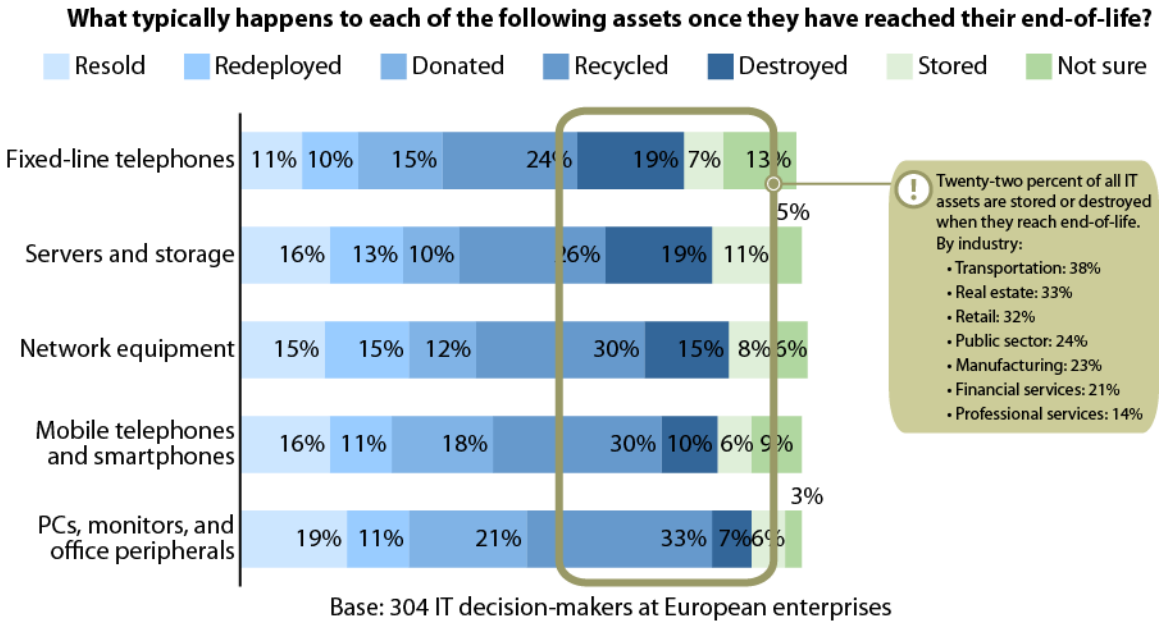
Figure 10: While The Maturity Of End-Of-Life Is Consistent Across IT Asset Categories . . .



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Figure 11: . . . There Is Variability In Final Disposition Practices



Base: 304 IT decision-makers at European enterprises

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Ownership Of End-Of-Life Management Processes

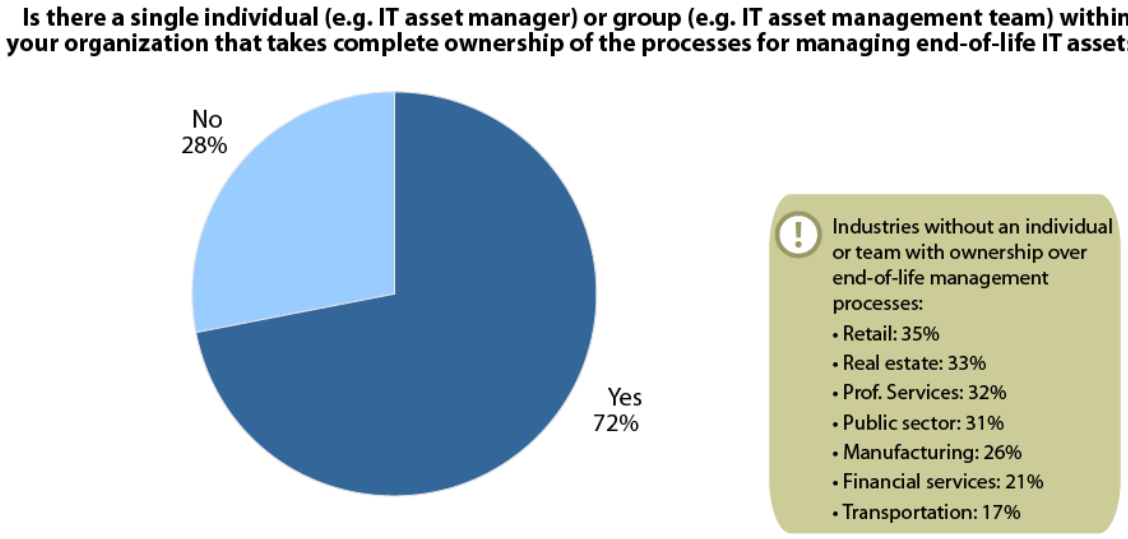
Every IT practice requires ownership, and end-of-life management should be treated no differently given its increasing ability to mitigate risks and avoid unnecessary costs. Overwhelmingly, the majority of European organizations have assigned complete ownership of end-of-life management to either a single individual or group. It's important to note that while the average level of ownership is high, there is variability among countries and industries. Likewise, the types of individuals accountable for end-of-life management are different from those responsible for executing the processes. The following summarizes the key findings on the extent and types of individuals owning end-of-life management processes in European organizations:

- **Internal ownership of end-of-life management processes is strong in Europe.** On average, 72% of European organizations have assigned internal ownership to end-of-life management (see Figure 12). However, this varies by country and industry. For example, level of ownership reaches as high as 79% in Germany and as low as 65% in the UK. Likewise, 36% of retailers have not assigned ownership to end-of-life management, which is nearly twice the amount in the transportation and financial services industries, where only 17% and 21% of organizations, respectively, have not assigned ownership.

- **Overall accountability and execution of end-of-life management varies by role.** While the majority of European organizations have assigned ownership to end-of-life management, accountability and execution of the necessary processes vary depending on the role or job function (see Figure 13). On average, CIOs and IT asset managers are chiefly accountable for end-of-life management, but subject matter experts — typically data center managers, distributed IT managers, IT security and risk managers, and IT sourcing

and vendor managers — are responsible for its execution. However, it's worthwhile pointing out country differences. For example, "finance managers" are slightly more accountable than CIOs for end-of-life management in Germany, whereas in France the "facilities manager" along with the "IT asset manager," "business unit leader," and "IT sourcing and vendor manager" edge out the CIO for accountability.

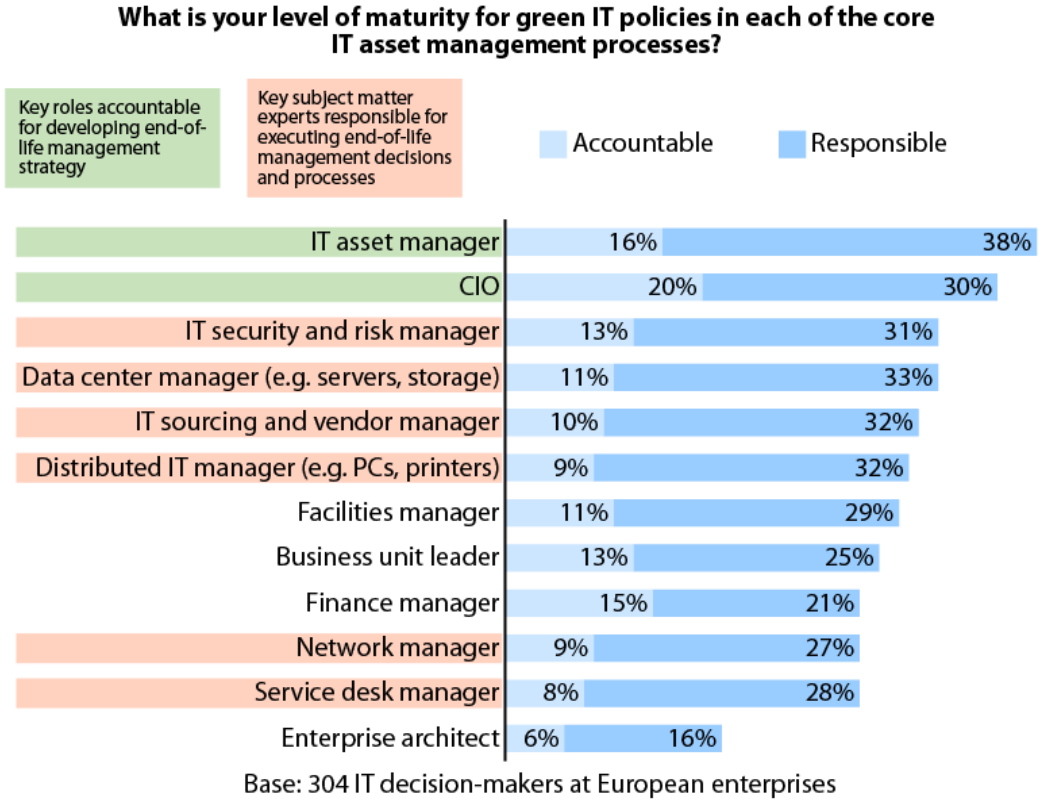
Figure 12: Most European Firms Have Assigned Ownership To End-Of-Life Management



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Figure 13: Accountability And Responsibility For End-Of-Life Management Varies By Role



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Providers Of End-Of-Life Management Services

Providers of end-of-life management services play a major role in helping European organizations fulfill their end-of-life management responsibilities. Organizations tend to use their OEM, OEM reseller and partner network, or third party equally for end-of-life management services, particularly for logistics and final disposition. When evaluating these providers, European organizations prioritize data security and environmental certifications, environmentally responsible disposal, supplier stability, and the scope of IT assets recovered. Likewise, the key activities that European organizations expect from their providers include certified erasure of sensitive data, ability to recycle or destroy assets, and the ability to pick up and transport end-of life equipment. The following summarizes the key findings on the role and key requirements of providers of end-of-life management services in Europe:

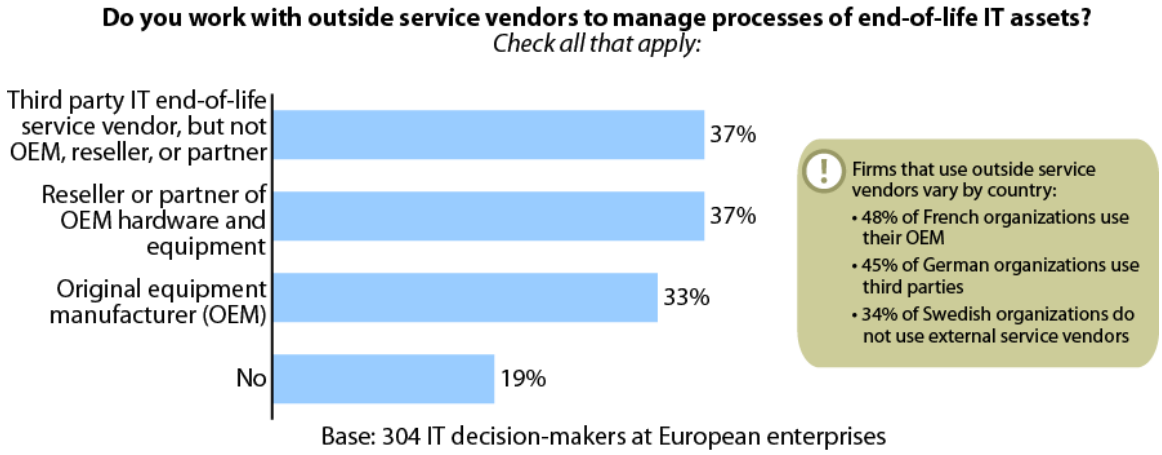
- **Organizations rely on the varying types of end-of-life management providers equally.** More than 80% of European organizations use a combination of providers of end-of-life management services more or less equally (see Figure 14). However, these figures can vary significantly depending on the country. For example, 48% of French organizations use their OEM for end-of-life management services, which is in stark contrast to German organizations, where OEMs are used only 25% of the time in favor of third parties, which are used 45% of the time. Even more so, 34% of Swedish organizations do not use external providers at all, which is nearly double the European average of 19%.

- **End-of-life management providers are used for logistics and final disposition.** End-of-life management providers are primarily used for logistics and final disposition activities, such as "package, pick up, and transport IT equipment to the next stage of disposition," "deliver equipment to resale, redeployment, or donation candidates," and "recycle or destroy end-of-life equipment" (see Figure 15). Internal IT and business groups retain more strategic and sensitive elements of end-of-life, such as "determining which IT equipment has reached its end-of-life" and "erasing sensitive data and identifiers on IT equipment."

- **Providers must be certifiable, eco-responsible, and stable, with a broad recovery of assets.** When evaluating providers of end-of-life management services, European organizations place the most importance on a handful of general criteria (see Figure 16). First and foremost, external providers are expected to have "certifications proving compliance with data security regulations," closely followed by "certifications proving compliance with environmental regulations" coupled with "environmentally friendly disposal." Other key criteria include "supplier stability" and the "scope of end-of-life IT assets recovered."

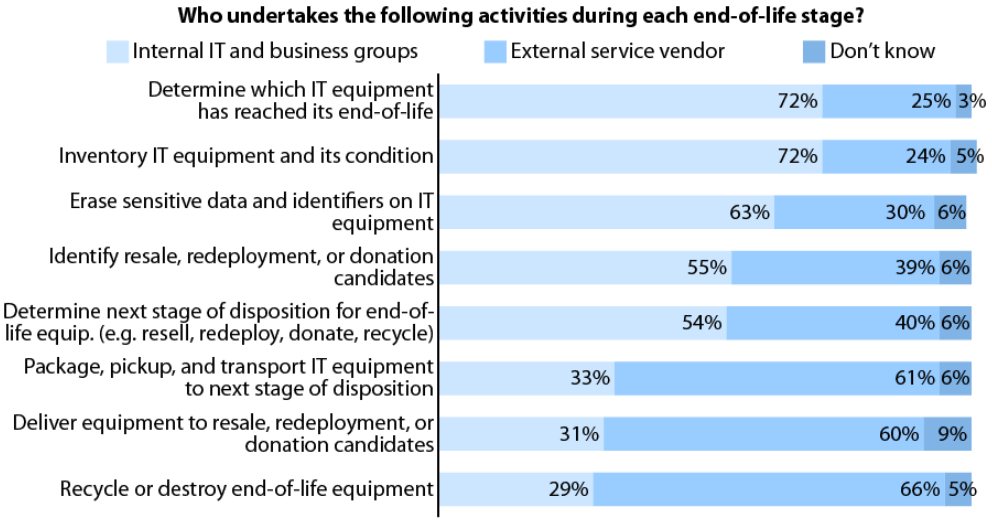
- **Providers must offer certified data erasure, recycling, and logistics capabilities.** European organizations prioritize a number of activities they expect their providers of end-of-life management services to perform (see Figure 17). In particular, this includes "certified erasure of sensitive data and identifiers on end-of-life IT equipment," "ability to recycle or destroy end-of-life IT equipment," and "pick up and transport end-of-life IT equipment to next stage of disposition."

Figure 14: OEMs, Their Resellers And Partners, And Third Parties Are Used Equally



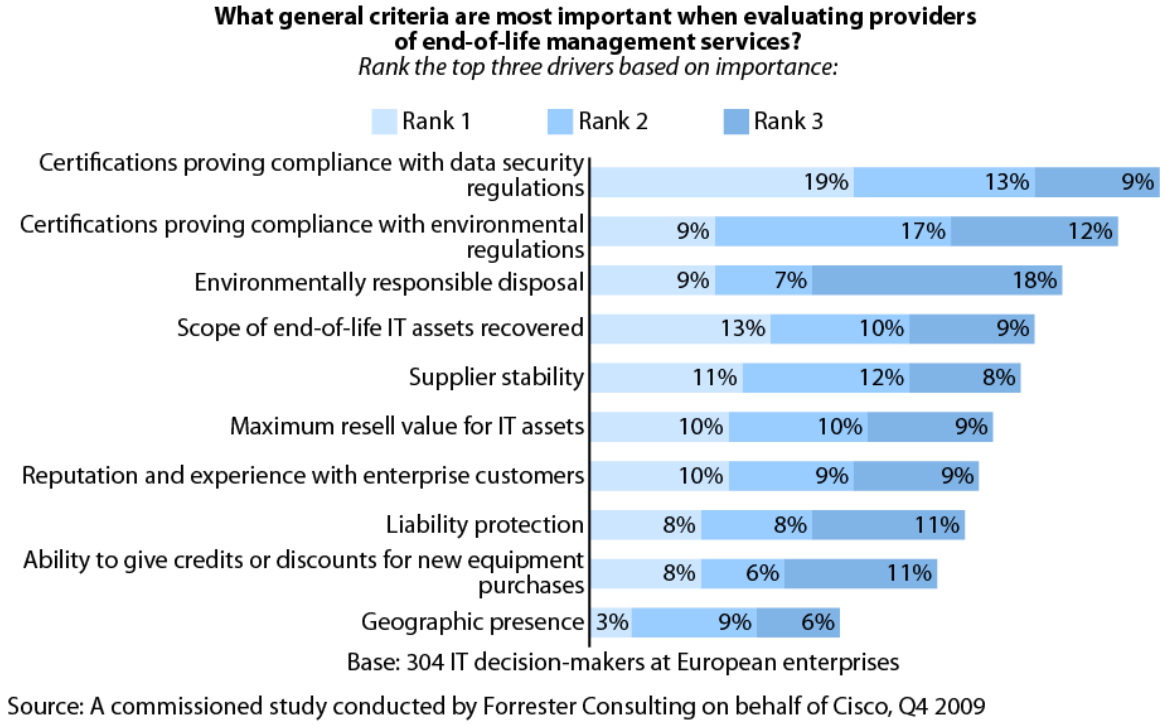
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Figure 15: External Providers Are Primarily Used For Logistics And Final Disposition



Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

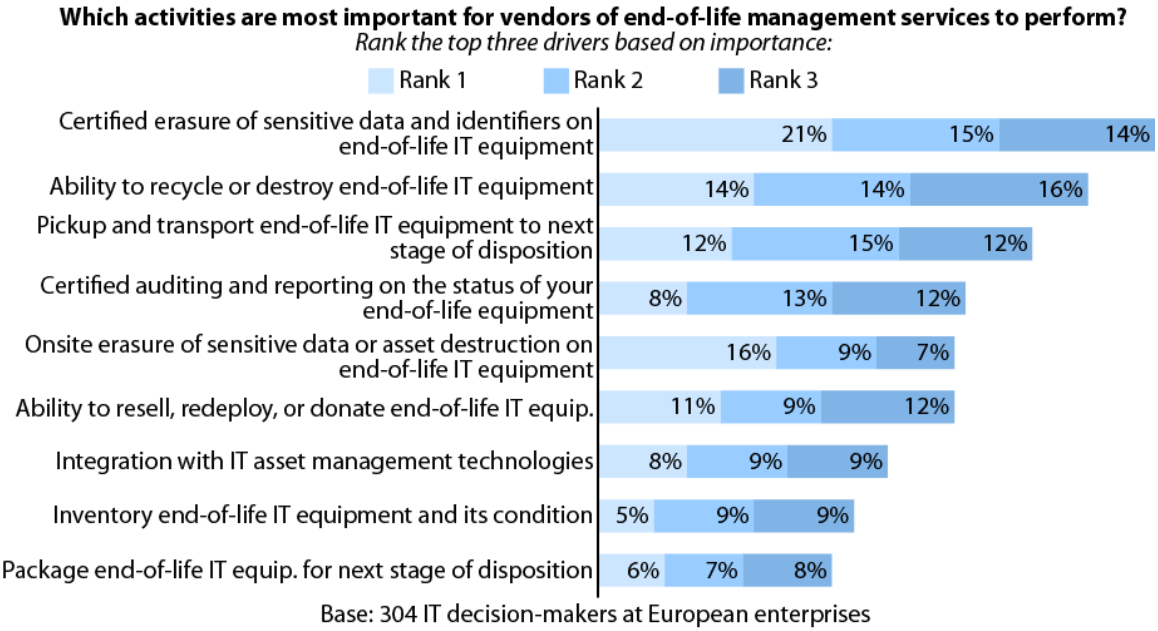
Figure 16: Providers Must Be Certifiable, Eco-Responsible, Stable, With A Broad Recovery



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Figure 17: Providers Must Offer Certified Data Erasure, Recycling, And Logistics



Base: 304 IT decision-makers at European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Q4 2009

Call To Action: Assess Your End-Of-Life Maturity

The first step in developing a plan for improvement is to understand what needs to be improved. From there, organizations can develop a plan to address their gaps. To that end, Forrester recommends that organizations assess both their internal capabilities and those of the providers they rely on, using the assessment tools below. These tools are based on the business justifications and the current state findings for end-of-life management from the sections above.

Assessing Internal Capabilities

To mature end-of-life management processes, organizations should first assess their internal people, process, and technology capabilities (see Figures 18 to 20). From a people perspective, organizations should assign ownership of end-of-life management to an individual or group that has executive sponsorship with clear business objectives. Key processes range from identifying end-of-life assets to determining final disposition. And from a technology perspective, organizations should identify opportunities to automate these processes, reporting, and integration with service vendors.

Assessing Provider Capabilities

Once you have assessed your internal people, process, and technology capabilities, the next step is to assess those of your end-of-life management services providers (see Figure 21). To help identify the providers that will meet your needs the best, Forrester advocates that you evaluate a combination of general criteria (e.g., data security and environmental certifications, supplier stability, geographic presence) and the activities performed (e.g., erasure of data, pickup and transport, and ability to recycle and remarket).

Figure 18: Assessing Internal End-Of-Life Management People Capabilities

Self-rate your organization's end-of-life management "people" capabilities using the following point system:
None = 0 Planned = 1 Improving = 3 Optimized = 4

"People" capabilities	
End-of-life management processes have the following levels of sponsorship and ownership:	
End-of-life management has business executive sponsorship.	
End-of-life management has IT executive sponsorship.	
An individual or team has complete ownership over end-of-life management.	
End-of-life management delivers the following sources of value:	
Reducing IT operating costs is driving motivation of end-of-life management.	
Reducing capital IT costs is driving motivation of end-of-life management.	
Complying with data security regulations is driving motivation of end-of-life management.	
Improving business continuity and disaster recovery is driving motivation of end-of-life management.	
Avoiding negative brand reputation is driving motivation of end-of-life management.	
Complying with environmental regulations is driving motivation of end-of-life management.	
Improving overall IT asset life-cycle management is driving motivation of end-of-life management.	
The value from end-of-life management efforts is being tracked.	
Providers of end-of-life services are being utilized.	
Total score:	____

Scoring guidelines:
0-9: Nonexistent or minimal "people" capabilities with no planned improvements
10-18: Nonexistent or minimal "people" capabilities but with planned improvements
19-27: Established "people" capabilities with improvement needed in planning
28-36: Well established and optimized "people" capabilities

Source: Forrester Research, Inc.

Figure 19: Assessing Internal End-Of-Life Management Process Capabilities

Self-rate your organization's end-of-life management "process" capabilities using the following point system:
None = 0 Planned = 1 Improving = 3 Optimized = 4

"Process" capabilities	
The importance and maturity of end-of-life management processes compared to ITALM processes:	
End-of-life management is a pillar of ITALM.	
End-of-life management is equally important as other ITALM processes.	
End-of-life management is equally as mature as other ITALM processes.	
The importance and maturity of end-of-life management process compared to ITALM processes:	
PCs, monitors, and office peripherals	
Mobile technologies and smartphones	
Fixed-line telephones	
Servers and storage	
Network	
The primary reasons for end-of-life are well known for the following IT assets:	
PCs, monitors, and office peripherals	
Mobile technologies and smartphones	
Fixed-line telephones	
Servers and storage	
Network	
Environmentally friendly or green policies are applied throughout the end-of-life management processes of the following IT assets through:	
PCs, monitors, and office peripherals	
Mobile technologies and smartphones	
Fixed-line telephones	
Servers and storage	
Network	
Total score:	____

Scoring guidelines:
0-14: Nonexistent or minimal "process" capabilities with no planned improvements
15-28: Nonexistent or minimal "process" capabilities but with planned improvements
29-41: Established "process" capabilities with improvement needed in planning
42-54: Well established and optimized "process" capabilities

Source: Forrester Research, Inc.

Figure 20: Assessing Internal End-Of-Life Management Technology Capabilities

Self-rate your organization's end-of-life management "technology" capabilities using the following point system:
None = 0 Planned = 1 Improving = 3 Optimized = 4

"Technology" capabilities	
End-of-life processes are managed through a standalone technology suite or integrated into a broader ITALM suite for the following IT assets:	
PCs, monitors, and office peripherals	
Mobile telephones and smartphones	
Fixed-line telephones	
Servers and storage	
Network	
A standalone technology suite or broader ITALM suite is used to improve the following end-of-life management processes:	
Identify inventory of IT equipment and its condition	
Determine when IT assets have reached their end-of-life	
Erase sensitive data on end-of-life IT equipment	
Track status of IT assets managed by providers of end-of-life services	
Total score:	____

Scoring guidelines:
0-7: Nonexistent or minimal "technology" capabilities with no planned improvements
8-14: Nonexistent or minimal "technology" capabilities but with planned improvements
15-21: Established "technology" capabilities with improvement needed in planning
22-27: Well established and optimized "technology" capabilities

Source: Forrester Research, Inc.

Figure 21: Assessing The Capabilities Of Providers Of End-Of-Life Management Services

Rate the capabilities of the provider's of end-of-life management services using the following point system:
Not sure = 0 Weak = 1 Average = 3 Strong = 4

Provider capabilities	
Rate how well your providers of end-of-life management services meet the following criteria:	
Certifications proving compliance with data security regulations	
Certifications proving compliance with environmental regulations	
Environmentally responsible disposal	
Supplier stability	
Scope of end-of-life IT assets recovered	
Maximize resell value of IT assets	
Reputation and experience with enterprise customers	
Liability protection	
Ability to give credits or discounts for new equipment purchases	
Geographic presence	
Rate how well your providers of end-of-life management perform the following activities:	
Certified erasure of sensitive data and identifiers on end-of-life equipment	
Ability to recycle or destroy end-of-life IT equipment	
Pickup and transport end-of-life IT equipment to next stage of disposition	
Certified auditing and reporting on the status of your end-of-life equipment	
On-site erasure of sensitive data or asset destruction on end-of-life IT equipment	
Ability to resell, redeploy, or donate end-of-life equipment	
Integration with IT asset management technologies	
Inventory end-of-life IT equipment and its condition	
Package end-of-life IT equipment for next stage of disposition	
Total score:	____

Scoring guidelines:
0-15: Unsure of highly unconfident in provider's end-of-life management capabilities
16-29: Not confident in many of provider's end-of-life mangement capabilities
30-43: Confident in provider's end-of-life management capabilities with room for improvement
44-57: Highly confident in provider's end-of-life management capabilities

Source: Forrester Research, Inc.

Appendix A: Survey Methodology & Demographics

In this study, Forrester conducted an online survey of 304 European organizations to evaluate their practices, motivations, and maturity when managing end-of-life IT assets. The study began in October 2009 and was completed in November 2009. Additional insight into the survey demographics can be found below:

- **Respondent distribution by *country*.** The distribution of survey respondents by country includes: France (25%), Germany (25%), the Netherlands (12.5%), Sweden (12.5%), and the United Kingdom (25%).

- **Respondent distribution by *size*.** The distribution of survey respondents by organization size includes: 2,001-3,000 employees (18%), 3,001-5,000 employees (24%), 5,001-10,000 employees (19%), 10,001-20,000 employees (14%), and more than 20,000 employees (25%)

- **Respondent distribution by *department*.** The distribution of survey respondents by department includes: procurement (7%), operations (9%), business management (10%), finance (13%), and IT (62%).

- **Respondent distribution by *role*.** The distribution of survey respondents by role includes: enterprise architect (5%), facilities manager (5%), service desk manager (5%), IT sourcing and vendor manager (6%), data center manager (6%), IT security and risk manager (7%), network manager (9%), distributed IT manager (9%), IT asset manager (9%), CIO (10%), finance manager (12%), and business unit leader (17%).

- **Respondent distribution by *level of insight into end-of-life management*.** The distribution of survey respondents by level of insight into end-of-life management includes: from a procurement/finance perspective (16%), from an IT perspective (37%), and from both an IT and procurement/finance perspective (47%).

- **Respondent distribution by *extent of outsourcing*.** The distribution of survey respondents by extent of outsourcing includes: all of our IT is fully insourced (36%), and IT is partially/selectively outsourced (64%).

- **Respondent distribution by *industry*.** The distribution of survey respondents by industry includes: real estate (4%), retail (7%), transport (8%), financial services (17%), professional services (19%), public sector (22%), and manufacturing (23%).

- **Respondent distribution by *daily personal computer (PC) use*.** The distribution of survey respondents by employees' daily PC use includes: 0%-25% of employees use a PC daily (4%), 26%-50% of employees use a PC daily (13%), 51%-75% of employees use a PC daily (33%), 76%-100% of employees use a PC daily (50%).

- **Respondent distribution by *organizational structure*.** The distribution of survey respondents by organizational structure includes: federated (17%), decentralized (26%), and centralized (56%).

Appendix B: Endnotes

[1] Security professionals have been complaining for years about their inability to influence the organization and that information security is a thankless job. Recent conversations with CISOs and data from Forrester's annual security survey suggest that we have seen significant progress in the visibility and influence of information security. Despite a tightening budget environment, security budgets are on the rise. Security managers now report higher up in the organization hierarchy, and security is taking on additional responsibilities such as business continuity and third-party security. Source: "Security Budgets, Reporting, And Responsibilities Are All Rising In 2009," Forrester Research, Inc., January 20, 2009.

[2] Source: Enterprise And SMB Hardware Survey, North America And Europe, Q3 2009, Forrester Research, Inc.

[3] Forrester's sixth enterprise green IT survey shows that adoption of green IT practices persist despite the ongoing economic recession. Source: "Market Overview: The State Of Enterprise Green IT Adoption, Q4 2009" Forrester Research, Inc., December 24, 2009.

[4] Source: "Following The Trail Of Toxic E-Waste," CBS, *60 Minutes*, August 30, 2009 (http://www.cbsnews.com/stories/2008/11/06/60minutes/main4579229.shtml?tag=contentMain;contentBody).

[5] While all organizations dispose of IT equipment in some way, IT asset disposition (ITAD) has long been an afterthought. But recent changes — from increasing data security and environmental regulations to firms seeking opportunities to reduce costs and improve operational performance — are challenging organizations to rethink these processes. Source: "Q&A: IT Asset Disposition," Forrester Research, Inc., October 30, 2009.

[6] If you aren't already treating IT asset life-cycle management (ITALM) as a core discipline inside your infrastructure and operations (I&O) organization, then now is the time to justify it and get started. The economic benefit of managing IT assets efficiently allows I&O to shift spending to other important areas, such as IT service automation and IT service portfolio management. Source: "Cover Your Assets: Use IT Asset Life-Cycle Management To Control IT Costs," Forrester Research, Inc., December 24, 2008.