

INSIGHT

Trash to Treasure: Old PC Equipment Poses Risks, Opportunities

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IDC OPINION

It is not difficult to project the pending dilemma the industry and end users alike will inevitably face: The disposition of PCs will likely create headaches for many and a business opportunity for others. IDC estimates the PC installed base worldwide in 2004 was more than 749 million systems. These systems represent both fully and partly utilized units, as well as computers and peripherals that are not used but not retired yet. Over the past 10 years, the worldwide installed base witnessed a massive expansion, largely because of mass demand for systems as consumers adopted the Internet and companies dealt with Y2K. As prices continuously decreased, PCs could be afforded by a wider population and their adoption expanded significantly. In addition:

- ☒ In the United States, the current installed base is 243 million units. In 1995, the installed base was less than 77 million units. PC penetration exceeds 66% of households and is virtually complete in the commercial sector. The outlook regarding the installed base calls for continued growth as end users shift to portable PCs and flat-panel displays. These figures are much bigger when the peripherals that accompany a personal computer are also considered. Including displays, keyboards, printers, mice, and other components, the size of the disposable universe is phenomenal. With these numbers, it is clear that millions of systems will be moving out of homes and offices and will have to be properly disposed. Some will have their life elongated through a data cleansing and refurbishing process, others will be demanufactured with their various parts reused by other industries, and others will be completely destroyed.
- ☒ Data security and environmental concerns are now major drivers in the PC space; companies, in particular small and medium-sized businesses (SMBs), have yet to adjust to comply with federal and state laws. With an intelligent strategy, IT departments should be able to recover some of their investment and cover the cost of recycling if they select the right refurbishing partner.
- ☒ It appears that there is not enough capacity to process these systems in the refurbishing/recycling industry, and the industry has begun to consolidate, organize, and attract increased venture capital money. And although practices in the refurbishing/recycling industry are sometimes suspicious, industry leaders are working to set up best practices that are likely to serve United States-based businesses and consumers well. Outsourcing IT asset disposition is apparently the best solution for IT vendors and their clients, as long as a rigorous partner selection process is conducted.

IN THIS INSIGHT

This IDC Insight reviews the various aspects of compliance related to PC end-of-life disposition. The document reviews data- and environmental-related compliance while seeking to establish basic guidelines for both IT vendors and their customers for overcoming the challenges and establishing procedures.

SITUATION OVERVIEW

The PC industry has been a leading driver of economic growth in the past three decades. The explosion in the use of computers in businesses has been driven by the need to modernize work processes and boost productivity. In the consumer space, PCs became much more mainstream appliances beginning in the early 1990s, when the Internet, in particular, established itself as the single most important killer app of the decade. With virtually all United States-based companies and more than 65% of households equipped with computers, the issue of end-of-life disposition is quickly becoming a critical topic with environmental and business ramifications. The debate of what to do with the millions of PCs and their peripherals as they are retired has just begun, and it is already raging. It is likely to further intensify, prompting the inevitable involvement of lawmakers and government. Unless the industry provides a reasonable response to this problem, a solution could be imposed on it by the government, as is already happening.

While large corporations have worked hard to establish asset disposition policies that comply with federal, state, and international laws, a great number of companies lack both knowledge on the topic and guidance on how to adopt a new approach to PC end-of-life disposition. Most companies have yet to include asset disposition in their PC ownership cost analysis and consider a good strategy as one that would protect them from possible problems and that can even generate residual income to their organization.

The preliminary results of a survey currently being conducted by IDC suggest that less than 37% of commercial entities of all sizes have a formal PC recycling and end-of-life policy. The same proportion applies to data destruction and legal compliance.

PC equipment disposition and data security compliance in the U.S. commercial sector is still in a state of infancy, but it is likely to grow rapidly as IT departments and business owners grasp the implications of not having a sound policy. There are already signs that awareness among end users is growing. The preliminary results of our survey show that while only 5% of the 1,273 respondents say their organization has a data sanitation budget in the current fiscal year, 22% say their organization will include such a line item in their next budget cycle. This is indeed a major jump in overall awareness.

Turning Compliance into Opportunity

IT asset disposition compliance in the United States essentially takes two forms. Although a great number of IT executives understand compliance to represent a set of laws that deal with information and the way it is handled and secured, there is also

another angle to compliance that deals with the proper retiring of hardware. So safeguarding information and eliminating unwanted hardware are two of the biggest challenges facing businesses today.

While large corporations have established processes that deal with both forms of compliance, small and medium-sized businesses, in particular, are far behind the curve when it comes to understanding the risks of not complying with a tightening regulatory environment. A survey conducted by IDC to be released shortly provides indications of this lack of awareness.

Safeguarding Information

Essentially, information-related compliance deals with three areas. The first area involves the financial regulation that has emerged in the post-Enron era. This area of compliance has been driven by the Sarbanes-Oxley Act of 2002. Also known as SOX, Sarbanes-Oxley introduced a set of financial reporting and certification rules that most public companies must follow. The second area, also linked to SOX and other federal and state laws, is document retention — companies must keep records of transactions and communications. Finally, public concern over privacy and security has created another layer of compliance that IT departments are struggling to incorporate.

Other laws of significant impact include (but are not limited to):

- The Gramm-Leach-Bliley Act, which introduced safeguards to secure customer information
- The Health Insurance Portability and Accountability Act (HIPAA), which aims at protecting health information
- The Fair and Accurate Credit Transaction Act of 2003 (FACTA), which deals with the disposal of consumer information and records to reduce the risk of fraud

The Hardware Challenge

There is also the hardware disposal angle. Despite the fact that over the past three years, IT managers have been working hard to build an infrastructure that deals with these federal requirements, state and local authorities, in particular, have been concerned by the increase of electronic waste found in their landfills. Over the past three years, a handful of states have been attempting to solve a growing problem, the disposal of hardware that contains dangerous toxics. The challenges to states and localities in particular, since the federal government has remained largely neutral in the debate, are monumental. This year, IDC estimates that some 243 million PCs are in use in the United States. This installed base of systems includes either fully or partially used units and units that may just be stored in attics or storage facilities waiting disposal.

These systems are also connected to a series of peripherals that will eventually require disposal at the end of their life or at some point in the future. That includes, in particular, CRT monitors, which are considered a major environmental problem given their heavy metal content and their impact on landfills, but also printers, external

storage devices, and other peripherals. For example, in California, about 10,000 computers become obsolete every day. Although the scope of the problem is less magnified in smaller states, PC and electronics waste disposal is still a big challenge. In Hennepin County, Minnesota, alone, more than 98,000 PCs and 44,000 CRTs were collected in 2003 through the official recycling channels. The estimated quantity of lead generated by this waste collection program was 89 tons, costing local governments \$0.49 per pound.

Hardware disposal is a crucial problem across all business sectors. But given the size of its workforce, the problem is much more serious for the federal government. The federal government estimates that about 10,000 computers each week are considered excess or surplus. These are systems that are no longer used and in need of disposal. Virtually all large and medium-sized businesses, government agencies, and educational institutions face the problem of PC-related waste.

FUTURE OUTLOOK

Failure to Comply Can Be a Source of Legal, Financial, and Practical Problems

Not all companies are fully aware of these compliance rules, and therefore they may not recognize the threats they may face and the opportunities they may miss.

On the negative side, the inability or lack of interest of companies to comply with regulation can be the source of legal, financial, and/or practical troubles. While there are several documented cases of legal action against companies that have failed to secure data and information, including *Rambus Inc. v. Infineon Techs* and *Zubulake v. UBS Warburg*, there has been less noise and fewer high-profile cases when it comes to the improper disposal of hardware. However, there are major risks for companies that ignore federal, state, and local laws on hardware disposal. While not all states regulate the disposal of computers, almost all of them at the legislative and executive levels are looking at what states such as California, Massachusetts, Maine, Minnesota, and others have been doing to regulate PC disposal. Regulations are likely to be enacted in an increasing number of states, and companies must be prepared to fully comply.

A fast-growing body of legislation is making companies increasingly nervous about the way their PC disposal policies could affect their image and their finances. For a long time, companies have failed to incorporate the very final element of the PC life cycle in their overall ownership analysis. As the installed base continues to grow, it has become evident that PCs' end of life came at a cost since the right policies are generally ignored. Still, a great many companies continue to ignore several facts, including the following two:

- ☒ Costs are incurred even when systems are no longer used. Storing systems for a long period adds to the cost of ownership as companies continue to use space, pay property taxes, and pay for the licenses of the software still stored in hard drives, among other costs.

- ☒ The retention and storing periods of unused systems are likely to expand because the donation "market" is shrinking. The reality is that nonprofit organizations, educational institutions, and even individuals are "saturated" with donated systems and are now no longer interested in being at the receiving end. As technology reaches record low prices, those that used to be on the receiving end can now afford new systems.

Proper Compliance Can Reduce the Overall Cost of PC Ownership

For companies that do not have an efficient PC/display disposal strategy, establishing one does not have to be a cost center. In fact, the refurbishing and recycling industry has been able to create a model through which their clients can recycle in a way that shelters them from potential lawsuits, allows them be environmentally sensitive, and recovers some of their investment in IT assets, albeit marginal. Specifically:

- ☒ In the legal arena, respectable asset disposition companies have ways to guarantee that the data stored in hard drives cannot be accessed. The companies that offer such services typically use a process that has been used by the U.S. Department of Defense as a standard for avoiding data loss.
- ☒ In the environmental arena, professional recyclers have the technology to handle the toxic elements of electronic waste, therefore reducing any harmful impact on the environment. By doing so, landfills and local communities are protected and companies' images remain intact.
- ☒ Companies that are involved in PC recycling are also generally involved in refurbishing. In general terms, once they identify that a system can be recovered, a value is determined and a percentage of that value is given back to the client or original owner. Although this is a residual value, companies with large installed bases can generate fairly substantial returns.
- ☒ Also from the financial standpoint, the U.S. Congress is attempting to introduce new incentives to push companies to dispose of their computers properly. Senators Wyden and Talent have introduced legislation that would provide businesses and other commercial and government entities recycling more than 5,000 display units or computers per year an \$8-per-unit tax credit. If passed, this initiative would have very important repercussions to companies' finances, with eventually a reduction in their PC ownership cost.

ESSENTIAL GUIDANCE

Opportunities for IT Vendors

While compliance is adding more pressure to the already hectic workload of IT departments in U.S. companies and other institutions, it must be considered an important opportunity for a great number of IT providers to expand their revenue stream. Technology providers, and certainly PC vendors, must offer to their customers solutions that address the complexity of establishing infrastructure

capacities and processes that are in accordance with federal financial and data security compliance, while offering secure removal of obsolete hardware. The following are some basic observations and essential recommendations for IT vendors:

- ☒ Although tier 1 PC vendors such as Dell, HP, Gateway, and IBM are already active in the field of hardware disposal, and to a more limited extent in data security given their direct relationships with end users and through their respective leasing programs, a number of third-party companies are also benefiting from this wave of compliance activity, offering services that address the broad aspects of compliance.
- ☒ In the areas of security and compliance with federal laws, technology vendors and solution providers must be equipped to assist IT departments in creating, formalizing, and automating processes, policies, and procedures in accordance with the existing regulatory requirements. According to IDC, the opportunity for IT vendors able to provide compliance services will be phenomenal: IT department spending on compliance management will exceed \$20 billion in 2009, increasing at a 22% compound annual growth rate through the 2005–2009 forecast period. This spending will be spread among software, hardware, and services, areas that are of particular interest to almost any PC technology provider.
- ☒ To play in this space, IT vendors must be able to help their customers identify risk and isolate the weak points in their IT infrastructure. What must be kept in mind when drafting such support plans is providing IT departments the proper database tools to conduct auditing, perform monitoring, and report corporate activity at any level of the business. These functions must be performed quickly in case of litigation. In addition to the requirement of establishing proper auditing, monitoring, and reporting mechanisms, vendors should be ready to supply the additional hardware required in the process, including storage.
- ☒ Not all IT vendors can take advantage of this market. Those interested in growing a revenue stream from that space must:
 - ☐ Understand the business process that drives the need for technology and build offerings that can easily be incorporated into the existing process, without causing disruption or forcing users to change their behavior.
 - ☐ Establish relationships with various partners that supply complementary technology and service providers, as well as domain experts. This partner ecosystem should address the customer need for end-to-end solutions. Outsourcing hardware removal, data sanitation, and the proper disposition with third-party experts is the best option for entry in that market with minimum risk.
 - ☐ Reduce the gap between IT and business requirements. In this effort, IT vendors must understand the requirements of IT and those of the corporate decision makers whom they report to. The goals of the two groups often clash, but a savvy solution provider should be able to reduce that gap.

☒ In the areas of hardware disposal and data cleansing, successful models and benchmarks already exist. Several companies have been building processes and capacity to guarantee proper data destruction and appropriate hardware recycling, thus lowering risks to companies and reducing technology ownership costs. When working with customers, IT vendors that do not offer such recycling and data cleansing capacity must be able to build the proper relations with those already involved in the market. When seeking partners, these vendors need to establish:

- ☐ That the recycler has the proper safety standards to conduct data destruction in its own facilities
- ☐ That the potential partner can deliver compliance documents that protect their customers in terms of data loss and in case of future litigation
- ☐ That the recycler has sound environmental policies when recycling waste
- ☐ That the service provider's processes are documented and validated by an objective third party in the form of industry-standard certifications such as ISO14001, ISO18001, or ISO9001

All of these offerings should be presented as a value to customers in terms of reducing the risks from the loss of data and from legal liabilities that can result from improper disposition. While data destruction is in itself a straightforward revenue-generating activity, with service providers charging a fee for each disk drive they erase, implementing a whole IT infrastructure to introduce compliance to federal and state laws can be tricky and challenging. Defining the requirements, steps, tools, and software from the hundreds of packages and applications available on the market requires a skill set that is difficult to build. IT vendors that are qualified and have the right skill set, or those that are willing to invest in building such skill set, can certainly benefit from the compliance bonanza.

Recommendations for IT Departments

A great number of companies have no formal policy on asset disposition. This is a major risk, as highlighted in this document. Two points come to mind when addressing this problem:

- ☒ **Companies must shift the responsibility of asset disposition to a CXO-level official.** IT asset disposition policy is too important to leave to facilities managers or environmental managers and should be incorporated into planning and budgeting decisions. Responsibility should ultimately fall to a single senior-level executive. This executive should establish policies and processes with the involvement of IT, finance, legal, and facilities management. While this list is not limited, as other functions should also participate in creating the guidelines, ultimately one single senior executive should be fully responsible in terms of policy and process design, implementation, and oversight.
- ☒ **Businesses must think of asset disposition as a full business function and a potential source of revenue.** From the pure business standpoint, IT

departments must now consider the retirement of their systems as a critical function and as either a cost center or a new revenue stream. A cost center would come from the fact that companies have no proper PC disposal policy, putting them at a serious risk. In contrast, a proper asset disposition policy can be considered a new revenue stream. To avoid risks, we recommend that companies outsource their asset disposition function. Outsourcing appears to be the most secure way of guaranteeing that proper processes are established at minimum cost. Establishing a process in-house would require additional investments that may not be necessary. When considering a partner, IT departments must ensure that the partner they select can:

- ❑ Secure the data stored in the system through a thorough certified cleansing mechanism (A process of data cleansing should guarantee that any residual confidential data is removed from the PC.)
- ❑ Ensure that the hardware, which may include plastics and solid toxic products, is properly disposed of by a professional recycler
- ❑ Provide a payback mechanism for systems that are salvaged through refurbishing
- ❑ Demonstrate that their processes are completely transparent to their customers
- ❑ Document the disposition of every piece of equipment and ensure that the customer will not have any future liability

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