A Retirement Plan
For Your IT Assets

White Paper

LIQUIDTECHNOLOGY

This document is designed to provide organizations with a practical understanding of the IT technology device lifecycle, and how to implement a plan for retiring IT assets. It will give decision makers clear steps to forming a secure, compliant, and environmentally responsible transition plan for their end-of-life business enterprise technology.

Executive Summary

In a 2018 study, Statista found that technology companies have shipped an average of 400 million PCs, laptops, and tablets each year worldwide over the last ten years. These devices are the heartbeat of business, academia, and government. But there comes a point for each of these devices when it no longer serves a useful purpose and must be replaced. The process of retiring this technology is known as IT Asset Disposition (ITAD), and it is something that every responsible enterprise must implement.

The successful organization spends a considerable amount of time and money in IT technology procurement, but ITAD may be an altogether different story. Yet, damage from regulatory non-compliance, loss of intellectual property, data breaches and the resulting notoriety, can result in heavy fines, and devastate an otherwise thriving organization.

Shipment forecast of laptops, desktop PCs and tablets worldwide from 2018 to 2022 (in million units)
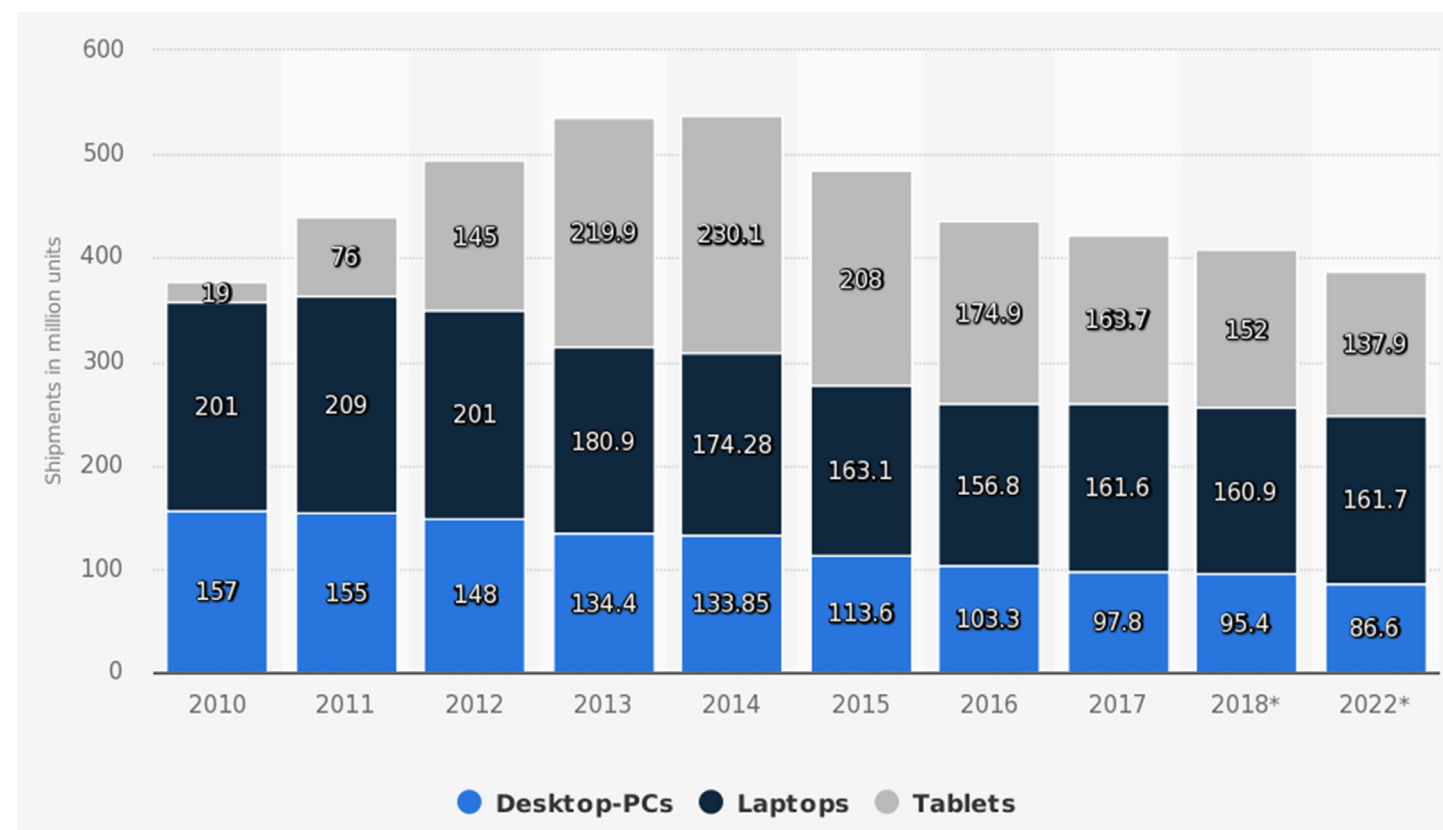
Source: Statista

" A proper retirement plan for your digital assets can help your enterprise eliminate situations where these problems occur. "

A sustainable, IT asset retirement plan can help an organization navigate all the way through the digital lifecycle. This includes proper device decommissioning, data erasure, equipment disposal, and chain of custody documentation for mission-critical intellectual assets. Proper planning can literally save your organization millions while averting risk and protecting organizational reputation.

DEFINITION OF TERMS

IT Asset

An IT asset is any digital information, system or hardware owned and used by an organization to conduct business.

Disposition

Disposition of assets is the act of disposing of those assets through means of sale or some other transfer method. It is part of the complete lifecycle of digital technology and it is a growing industry across the globe.

Disposition is a legal term and it is used with that intention. The legal disposition of IT assets is complex. An enterprise can't just throw a computer away, nor would it want to. With proper handling, a device can still bring value to that organization even at this late retirement stage.

ITAD is an emerging solution focused on minimizing risk and financial loss associated with IT asset disposal. Currently, the global ITAD market is worth more than $9.898 US Billion and is expected to double by 2024. One reason this industry is growing so prolifically is that Americans throw 9.4 million tons of electronics away every year. The number is going to jump much higher as the Internet of Things (IoT) continues to ramp up.

WHY ENTERPRISES NEED ITAD

The following are some ways enterprises generate disposable IT asset inventory.

Cloud Migration - With the scale and cost savings many companies are considering a move to the cloud. As this transpires, CIOs find themselves in need of qualified ITAD professionals to take care of original and expiring server hardware. A qualified ITAD provider knows the best way to sell IT excess, handle pickup, and securely manage data destruction. Gartner predicts that Information as a Service (IaaS) will grow by 35.9% in 2018, reaching $40.8 billion by the end of the year and $83.5 billion by 2021. At these levels, cloud migrations could generate 10 percent more dispositional inventory than 2017.

Data Center Relocation and Consolidation - As data centers evolve and regional server operations relocate to better serve the needs of their customers, on site staff may not have the resources necessary to inventory hardware and remove these assets before the lease expires. Secure compliant destruction of all data, the sale of salvageable equipment, and environmental standards must be achieved to protect organizational interests.

NOTE: Data Center Knowledge reports a decline in a number of corporate owned servers from 8.55 million in 2015, to 8.4 million in 2017. This process is expected to continue, reaching the 7.2 million level in 2021.

Office Moves - ITAD inventory results from from corporate bankruptcies, office moves and closings, mergers, and acquisitions. These organizations are racing the clock to get out the door and ahead of expiring leases and asset depreciation. Organizations look to ITAD providers to help them to sell-off valuable equipment and recover investment dollars.

Emerging Technologies and the Importance of Computer Upgrades - As software improves it requires new hardware to support it. New applications coupled with stricter security requirements make it essential that organizations keep up with equipment lifecycles. Aging and obsolete equipment is harder to maintain and secure, manufacturer support and software and firmware updates become less frequent, bugs and incompatibility issues begin to arise all causing thriving companies to produce end-of-life IT assets.

Warehousing and Storage Facilities - Some organizations choose to delay decisions on what they will do with old IT equipment. That leads to off-site storage. Unfortunately, equipment might have resale value but will depreciate significantly if left in storage. It may also become vulnerable to theft and possible hacking resulting in sensitive intellectual property stolen. In some cases, organizational storage is generating storage fees, while no longer bringing profit into the business operation.

NOTE: Uncertainty over compliance is often a barrier to decision makers taking action. It's one thing to know about these rules, it's another to navigate them accurately.

WHY SOME COMPANIES FAIL TO DEVELOP AN ITAD PROCESS

Global laws regarding privacy and the protection of sensitive data have become stricter in the last two years. Environmental regulations continue to develop, as well, and the cost of non compliance in either case can result in stiff penalties. Without the expertise and training to properly follow the proper protocols the results of a poorly handled disposition can be potentially costly. With the stakes this high, it's not surprising that some organizations struggle. Below is a list of some common pain points:

- Unclear where to start
- Don't have enough time to devote to ITAD
- Unsure about compliance standards and regulations
- No expertise to assign value to aging IT equipment

Before everything starts, an organization must be clear on the necessary steps to safely move IT equipment. They need to be sure every piece of equipment has received the same diligent care and intellectual property protection.

None of these things have to be a barrier. An ITAD professional with the right certifications and training can safely guide an enterprise through these waters. That is why having a reputable ITAD provider is essential. Your ITAD professional will stay ahead of the twists and turns of regulations on data privacy, on environmental responsibility, and on health and safety best practices.

When working with an ITAD professional, ensure they follow NIST 800-88 and D.O.D. 5220.22 compliance standards, check their references, and make sure they are insured. Look for a provider that understands the rigors of proper asset disposition and has the certifications to prove it. These certifications must include the following:

- An e-Stewards 2.0 certification indicates this provider will help your organization pass any third party audits and prevent downstream hazards in regards to electronic waste (e-waste). It assures that recycling practices align with legal standards.
- An R2 certification is an EPA "responsible recycling practices" for accredited certification programs.
- The National Association for Information Destruction (NAID)® AAA is a rigorous information security practices certification developed by security professionals and is recognized by private and governmental organizations.
- The ISO 14001 certification covers environmental management systems and assures you that your disposition will align with ISO auditory standards.
- The OHSAS 18001 certification covers occupational health safety best practices within the workplace, thereby reducing injuries and illnesses and mechanical downtime.

ITAD IS NOT A SET AND FORGET PROCESS

Regulatory concerns are in a constant state of flux. An ITAD professional will help your business untangle the complexities involved within each layer of your disposition—data privacy regulations, environmental responsibility, and the precursors to resale of usable assets. The environment and local laws may vary considerably for different jurisdictions and geolocations. With the effect of the Internet and the resulting expansion in the supply chain, more and more companies are going global.

THE END-OF-LIFE IT ASSET RISK LANDSCAPE

Data Breaches
The rising tide of equipment disposal has a host of problems associated with it. First and foremost, there's the risk of data loss. The average cost per breach in the United States has risen to $7.01 per record, $4 million per event. Everyday, 4,462,215 data records are lost or stolen. The second highest cost associated with a breach is the loss of business. This amounts to an estimated loss of $1.63 million for an otherwise healthy business.

Data, Payments, and Personal Records Regulations
Industry regulations are very particular when it comes to data destruction. Breaches don't just wreak havoc with a company's reputation; they are costly. The government levies steep fines and financial and banking institutions are particularly vulnerable. Personal data and payment records are subject to the Fair and Accurate Credit Transactions Act (FACTA), the Gramm-Leach Bliley (GLB), the Sarbanes-Oxley Act (SOX), and the State of California mandates their own California Information Practice Act (CAL SB1386). Personal data regulations need to be researched on a state by state basis. Additionally, the European Union has recently enacted the General Data Protection Regulation (GDPR) with all of its data erasure specifics. Violators can face fines of up to €20 million, or 4% of the worldwide annual revenue of the prior financial year, whichever is higher, for GDPR alone.

One standard that is specific to the payments industry is PCI Data Security Standards (PCI DSS). It covers security of payment account information.

The healthcare industry has even tighter restrictions and is a target for identity theft. Patient data confidentiality is protected under the Health Insurance Portability and Accountability Act (HIPAA). In a recent case at the University of Texas MD Anderson Cancer Center where the health information of tens of thousands or patients was leaked, a judge upheld the imposition of penalties of more than $4.3 million. The breach came because the facility failed to implement effective safeguards for personal data.

Environmental Responsibility and E-Waste Disposal Considerations
Another important consideration is the environment. It is unsafe to dump computers into landfills or overseas. E-waste contains dangerous metals and toxic chemicals that do not break down organically. These substances can get absorbed into the air or seep into groundwater and harmfully impact local communities and wildlife. State, local, federal, and global regulations for disposal of e-waste are tightening and may vary as to specific requirements and documentation. Failure to comply with regulations can result in litigation and heavy fines.

Improper disposal of IT equipment creates e-waste considered to be one of the greatest environmental hazards of our times. Up to 50 million metrics tons of e-waste are disposed of around the world annually*. It is illegal to simply throw out IT equipment in many states and many providers at the local level are not e-Stewards certified. Those firms that are not e-Stewards certified are not as focused on the implications of data security and are seeking an opportunity to resell the equipment, most often exporting to countries with lower e-waste standards. The result is a negative impact on the environment and exposure of your data to potential breeches. Working with an e-Stewards certified company ensures decommissioned IT equipment is handled properly.

Recycle And Resale of IT Assets
Every risk can impact the bottom line. Recycling and resale are ways in which organizations can recover some of their original purchase investment and the ITAD niche is growing. It is important to note that resale value diminishes over time and that scheduling disposition earlier in the equipment lifecycle will allow organizations to recoup additional IT asset funds.

"Comcast, the cable-television and Internet provider, was ordered to pay the state of California $25.95 million in a legal settlement for unlawful disposition of electronics, including remote controls, splitters and routers. AT&T reached a similar settlement of $23.8 million, the year before, over waste disposal violations."

ITAD CORE PRINCIPLES
WHEN TO SCHEDULE DISPOSITION

Having a retirement plan for IT assets takes the guesswork out of the process. Everything can be timed to eliminate risk, comply with industry regulations, protect the environment, and obtain the greatest possible resale value.

Executing IT asset disposition properly and in a timely manner actually yields a higher return on investment.

HOW LONG A COMPANY SHOULD EXPECT TO KEEP TECHNOLOGY

IT administrators can maintain peak operational standards in the enterprise environment as long as they have manufacturer support. The following will help identify the stages of that support.

Current equipment is still available for purchase. It is covered by manufacturer warranty and continues to receive help desk support, and software and firmware updates on a regular basis.

Aging equipment is nearing the end of the purchasing cycle. Service agreements may still hold true. If not, end users may purchase additional help desk support, however, it is no longer covered by manufacturer warranty. It continues to receive occasional software and firmware updates.

Obsolete equipment has passed the purchasing cycle. It may have time before collapsing but the organization will definitely want to have a replacement strategy ready.

As with manufacturer support, there are clear timeframes for optimal resale value. The following are recommended time frames for the resale market.

THE VALUE WINDOW FOR IT ASSETS

Technology	Disposition Window
PCs/Laptops	3-5 years
Switches/Routers	5-7 years
Smartphones/Mobile Devices	3-4 years
LCD Monitors	10 years
Servers	3-5 years

When it comes to dispositioning, sooner is better. An enterprise will recoup more of the original investment the earlier they disposition these devices. Avoid letting unused technology sit in a closet depreciating. Action can mean more money to purchase new technology in the next refresh cycle.

Enterprise Equipment Refresh Cycles
The same ITAD efficient enterprise will have a three-year, five-year, and ten-year technology replacement plan depending upon the technology demands of each of its business units. One very practical reason is device rollouts can take time. A company with a few thousand employees might take more than a year to deploy a laptop upgrade, for instance, and can take upwards of a year with unboxing, loading of software, and setup.

Servers and data center refreshes can be longer ordeals. The process timeline expands with the number of servers required, and the degree of software and data to be migrated. Server maintenance is a key incentive for why so many companies are opting for cloud solutions.

Do you change all of your technology at once or are there stages for different pieces of your equipment? One unseen cost beyond digital devices is the software training required for help desk teams who will support the transition within the organization. They must become familiar with the software before the rollout to minimize employee disruption.

Resale Value
How much can a company expect to recoup? There are a number of moving parts that impact resale value. An ITAD provider understands the best markets and how to position clients for the best possible return.

NOTE: the installation of the latest software on IT assets does not necessarily add value for resale. It may not yield a reasonable return on investment to add upgrades if an organization is planning an ITAD. We recommend discussing with your ITAD provider before taking this step.

The equipment that retains the greatest value for resale generally has a higher initial Manufacturer Suggested Retail Price (MSRP). The more it cost originally means the more it should be worth down the road. Keep in mind, the sooner you sell the equipment the more you'll recoup.

- Age
- MSRP
- Industry demand

The known brands retain the greatest resale value. Most niche brands in storage or security have little to no used resale market value. Not surprisingly, all of the major Original Equipment Manufacturers (OEMs) retain a higher percentage of their value yielding greater returns on the original investments.

Apple*	IBM
Brocade	Juniper
Cisco	Lenovo
Dell/EMC	Netapp
Hewlett Packard Enterprise (HPE) / Hewlett Packard (HP)	

*Apple retains a premium value over all other brands.

Replacement Frequency

Security considerations compel some industries to replace equipment more frequently than others. Institutions including those involved in financial trading, technology developers, big data, and AI require the latest equipment due to their demand for higher speeds and greater storage and processor capabilities. The younger equipment they frequently dispose of is a more attractive and valuable commodity on the resale market.

Industries such as manufacturing, retail, professional service providers, and healthcare providers are slower to upgrade and their used assets are older and most often, less valuable. However, data destruction is a necessary step in the resale of all IT assets. Many of these industries are subject to stringent data privacy regulations and ITAD service providers eliminate confusion, ensuring complete compliance with those rules.

Summary

IT is evolving. Cloud computing, artificial intelligence, and big data, as well as the digital expansion driven by the Internet of Things (IoT), are shifting the requirements and compatibility of current computing technologies. This process evolution has also given rise to massive amounts of e-waste.
Exemplary IT Asset Disposition begins before you even buy your equipment. Savvy decisions at this stage can help offset the cost of high-quality purchases for a company. Have a reputable ITAD professional guide you through chain-of-custody documentation, data destruction, e-waste recycling, and resale of aging but valuable equipment.

As the CIO or IT director, it is up to you to choose an ITAD strategy that ensures your company's security, maximizes ROI, and minimizes business risk. It is imperative that you understand the span of your IT asset lifecycle, the security and environmental regulations that allow proper disposition, recouping as much of your original investment as possible.

The right IT asset investment can bring the value you need now while preparing your organization for an optimal exit strategy. Liquid Technology recommends that you partner with a proven and qualified ITAD provider. They can help your enterprise sidestep expensive mistakes, meet regulatory requirements, and establish a best practices process for this necessary step in the digital device biosphere.

Liquid Technology's Computer Liquidation Services

At Liquid Technology, we pride ourselves on providing fast, fair and reliable computer liquidation. Our Assessment Specialists oversee the entire computer hardware liquidation process, from the initial quote to the expedited removal of the equipment by our expert team of project managers and a fast issue of payment.

Liquid Technology's suite of computer liquidation services include:
- Data erasure/wiping or disk destruction*
- Environmentally-friendly recycling or disposal
- Brokerage and/or purchase of excess equipment
- IT asset management

For Experienced Computer Liquidation, Contact Liquid Technology Today.
Contact Liquid Technology's Assessment Specialists for reliable and experienced computer liquidation services now. We provide quick and easy liquidation of all your excess IT assets, and we specialize in offering fair prices and fast removal of your surplus equipment. We can be reached by calling our toll-free number, by email or simply complete our quick form and a Liquid Technology Assessment Specialist will promptly respond to you. Feel free to include a spreadsheet of your surplus inventory to help expedite the computer liquidation process.

Liquid Technology works worldwide and offers data destruction services that adhere to both DOD 5220.22-M and NIST 800-88 standards. We hold e-Steward 3.0, R2:2013, NAID AAA, ISO 14001, and OHSAS 18001 certifications.

Liquid Technology Certifications

- Liquid Technology is certified in the most recent R2:2013 Standard, meaning that we meet the latest requirements for certification.
- Liquid Technology is certified under the e-Stewards 3.0 Standard. This means we are in full compliance with the most current industry standards.
- Liquid Technology is ISO 14001:2015 certified, meaning that we meet the guidelines outlined in ISO 14001.
- Liquid Technology is OHSAS 18001 certified, meaning that we provide our workers with the safest workplace environment possible, thereby reducing injuries and illnesses as well as mechanical downtime.
- Liquid Technology is National Association for Information Destruction (NAID)® AAA certified, meaning we meet or exceed NAID's standards and guidelines.

For more information about responsibly recycling old IT equipment through an experienced, EPA-compliant computer recycler, contact Liquid Technology at 1-800-797-5478 or visit us on the web at www.LiquidTechnology.net. enterprise sidestep expensive mistakes, meet regulatory requirements, and establish a best practices process for this necessary step in the digital device biosphere.

Want to find out more about what Liquid Technology does?

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