WHITEPAPER

Automating Hardware Asset Management:

How to workflow the 7 stages of your asset lifecycle

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The Big Asset Picture

Every organization with physical IT assets has a hardware lifecycle. The question is, how well is your lifecycle documented, automated, trusted, and integrated with other business systems? Organizations need an IT asset management solution to track their hardware, which helps answer the following questions:

- **What hardware do we own?**
- **Where are the assets located?**
- **Do our financial records match our assets?**
- **Are we using what we have?**
- **Can we prove it?**

These aren't new questions. But they still haunt most IT organizations when it comes to managing their physical IT asset hardware lifecycle. Even when "spreadsheet data" is recorded with greater discipline, how much opportunity is lost because of lack of automation and integration with other business systems.

Offering a more modern look at asset lifecycle management.

A truly innovative hardware asset management approach should enable you to more easily prove which assets are in each stage of the lifecycle. Automating the end-to-end asset lifecycle delivers enormous benefits in these four areas:

1. **Financial impact**—Reduces costs through efficiencies as well as through better planning, procurement, and contract negotiations
2. **Risk avoidance**—Reduces risk of asset loss, security vulnerabilities, and compliance with outside regulations, environmental concerns, and company policies. Plus, it minimizes risks of critical business systems running on aging hardware that's prone to fail
3. **Overall experience**—Allows hardware to be moved, tracked, and refreshed at the speed of business, so hardware asset workflows improve the employee and customer experiences alike
4. **Clearer decisions**—Eliminate manual data tasks, normalize and reconcile data—work with cleaner, more reliable, and trusted data to get a more complete picture of your assets and make important decisions.

Reduce costs through efficiencies

Minimize risks of critical business systems

Improve employee and customer experiences

Enable smart decision making

The nuts and bolts of managing an automated asset lifecycle

No matter your level of experience, it's always a good time to review the basics of asset lifecycle management. However, the point of this document is not to define what you already know, but to address how you can refine each lifecycle stage with better workflows. In this discussion, we'll walk through all seven stages and talk about what should happen with an automated hardware lifecycle and provide example workflows to focus on in each stage. How you automate workflows between stages will be as important as the automation within the lifecycle stages.

Prescriptive workflows

Before we get started, many of the workflows mentioned should come as out-of-the-box and prescriptive to achieve the desired outcomes. They should also have a low code or no code foundation in order to expand the workflow to fit your specific business requirements and apply best practices.

Stage 1: Request

Most hardware lifecycles start with a request. In the request lifecycle stage, your workflow should be tightly integrated with service management processes. If you're using an employee portal with request management, you can leverage a service catalog, which provides prescribed hardware and peripheral bundles you configure. A service catalog also helps keep people from performing rogue purchases, especially when it has been properly implemented and meets your employee's needs.

By identifying hardware that gives the best value, you keep your capital expenditures down, while combining hardware that is often ordered together into bundles. In this way, employees get what they need without the hassle of waiting for multiple orders to ship. By limiting the number of hardware options, you also have fewer hardware models to track, support has fewer configurations to support, and IT has fewer lifecycles to manage. The data you build over time from employee feedback and ordering patterns will help you know what hardware and bundles work best for each department in your business. One workflow worth discussion in more detail is the onboarding workflow.

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Onboarding workflows

Many hardware requests come from human resources, especially in the case of new hires. It's important to the experience of the new employee that they have their hardware on the day they start—this says a lot about the organization. It's even more important if they attend new hire training when they start, so they can interact with IT to help setup their devices. However, many organizations struggle with this process and often onboarding and new employee enablement is stinted, leaving employees disenchanted with the organization they just joined.

To do onboarding in a timely manner, you need to have integrations with the HR systems, so when someone has accepted a job offer, the new employee is given options on what equipment they will use and then automate the process to deliver on time. Be sure to focus on the following with this workflow:

- Leverage event-based triggers from the job offer to provide hardware options, automatically order the hardware, and allocate the expense to the right department
- Track orders and fulfillment from your warehouse, a vendor, or a reseller and make the status visible to the new employee and other stakeholders
- Accelerate IT operations to provision operating system images, software, and access to enterprise applications according to the new employee's role
- Integrate service management processes in case of an incident during the onboarding process and throughout the employee's tenure

Stage 2: Fulfill

The fulfill lifecycle stage starts with processes for authorizations and approvals, which need to be automated. Further accounting rules can be applied to route authorizations based on purchasing thresholds, which may apply to bulk purchases or high-end purchases like servers. Many of the processes related to this lifecycle stage will provide demand-based analytics for purchasing needs.

The fulfill stage is also tightly connected to procurement systems to automatically create purchase orders, leasing agreements, or service agreements. This will depend on how you acquire or lease the hardware—purchase and depreciate, lease and return, or leverage Desktop as a Service from a Managed Service Provider. No matter where you acquire the equipment, this is the stage where it's important to improve how you track your asset-related contracts. When you combine a mix of these methods, it's even more difficult to track and comply with these hardware attainment methods. Integrating your asset management with procurement, vendors contracts, service management, and accounting systems for departmental chargebacks will be important in this stage. It will also be important to capture the asset costs through this workflow with procurement, accounting, and asset management, because this is the data from which your ITAM practice will be able to determine your Total Cost of Ownership (TCO).

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Service catalog workflows

Your services provided though an employee portal or service catalog are only as good as the weakest link in your automation. Make the catalog look good and automate the ordering behind it, but if you don't tie it into an asset system, you've missed the biggest opportunity to track your assets. The workflow areas to focus on so your request management works flawlessly include:

- Developing and fine-tuning the service catalog user experience
- Integration with accounting and procurement systems
- Accessing delivery services to track packages
- Updating asset information and status within your CMDB
- Dashboards and reporting to stakeholders to refine workflows

Stage 3: Inventory

The lifecycle for hardware is much the same as for software asset management, except for the inventory stage. Companies no longer house software, only a virtual reserve of licenses. Some may argue that inventory isn't a lifecycle stage, but rather a sub step to multiple other stages, because inventory is so tightly linked with workflows throughout the lifecycle. For the purpose of this discussion, however, we'll call inventory out as a lifecycle stage, because many purchased assets spend part of their life sitting somewhere waiting to be used. Therefore, how you receive, maintain, and keep track of that inventory is worthy of a separate conversation. There are many reasons why organizations keep an inventory of hardware, but you can extend the idea of inventory to any physical item you want to track. Orders can be created automatically from stock rules when the inventory falls below preset thresholds for any item. This removes the burden and possible mistakes from individuals who would otherwise monitor inventory levels.

Receiving and scanning inventory should be easy and done with the devices everyone has in their pocket. Many smartphones make light work in the stockroom and there should be no reason why multiple people can't scan at the same time. Automating the inventory process will also improve how you compare received assets versus purchase orders, thus seeing the delta between stock expectations and actual inventory. Many organizations have multiple locations housing inventory and being able to transfer inventory quickly from one location to another is a must.

Smartphone scanning makes it possible for any employee to scan their items when they receive them before putting them to use. This is another example of how to further automate processes from one lifecycle stage to another. This capability becomes even more important as organizations negotiate with vendors and resellers to deliver preconfigured devices directly to employees, whether at home or in the office—saving time, effort, and shipping costs.

The ability for anyone to scan a device makes it efficient to perform inventory audits at a moment's notice and ensure data accuracy and show compliance. However, your asset management system should have security checks to make sure data is not changed by anyone other than authorized asset managers.

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Inventory workflows

A big part of automating inventory is how you use your smartphone and seeing the difference between what you should have and what you do have—which would also be nice to see from your smartphone. By having a workflow for inventory integrated with other systems across a similar platform, your data is more accurate. Areas of this workflow to pay attention to are:

- Having an app on your phones to scan
- Integration with procurement to view purchase orders
- Scheduled audits

Employee termination workflow

When people leave, your assets should come back to you without delay as well as the data and work that may be stored on that device. When you tie together service, operations, and asset management processes, you can keep data safe, receive the asset back quickly into inventory, and determine whether the hardware needs to be redeployed or retired. Pay attention to the following aspects of your termination workflows:

- Integration with HR workflows that trigger a termination
- Security systems to lock out access to the device and enterprise systems
- Shipping processes to recover the asset
- Handling data from the returned asset
- Putting the hardware back into inventory or reassigning ownership
- Retiring the hardware if it's past its warranty date

Stage 4: Deploy

The deploy lifecycle stage is easily seen as where hardware meets software, meets a person. This lifecycle stage is where the device is configured to meet the needs of the employee's role or for a customer. The deploy stage includes configuring the device with a base image or reimaging the device, which often includes IT operations processes. The deploy stage also includes securing and ensuring the device is clean of malware and has the latest software free of vulnerabilities. Assets may be deployed via direct shipping from vendors to remote employees, from local inventory, resellers, or managed service providers. The deploy stage can also mean redeploying or changing the ownership of a device that may be reallocated to someone else. It's important to track devices from someone who leaves, so that devices don't end up in colleagues' drawers, only to be opened, reconnected to the network, and expose vulnerabilities from old software on the device.

Assets may be deployed via direct shipping from vendors to remote employees, from local inventory, resellers, or managed service providers.

Remote employee workflows

A pandemic has cast a new light on life as a remote employee and assets walked out of corporate offices during this abrupt transition. Do you know where those assets are? As more work shifts to people working anywhere, those organizations that aren't deploying hardware through zero-touch provisioning processes will struggle. Your need to deliver and track assets will only grow. Your remote employee workflows should remove many of the impediments to getting people up and running quickly. To do this, focus on:

- Hardware that is partly or fully provisioned before landing on the porch, whether from your inventory or a reseller
- The scanning and logging of assets when received—what does the employee have to do?
- Integration with the CMDB to update asset locations, whether through discovery or other methods

Stage 5: Monitor

All of the previous stages add data to your asset management system. It's important that in each of the previous stages the data comes in cleanly with the ability to automatically reconcile discovery sources, so you know exactly what you have. From the monitor stage on, it's often about ensuring the data stays clean and remains useful and trusted. A fundamental piece of the technology required for hardware asset management is consistent hardware normalization. Without a continuously updating library of standardized item names, data life becomes chaotic and no one trusts the data because you end up with 5-25 names representing the same thing.

One of the key areas of the monitor lifecycle stage is paying attention to the aging and usability of your hardware. If you have a comprehensive view across your entire hardware asset estate, you can plan better for hardware refreshes. Being able to integrate with service management data about device-related incidents and user feedback provides further understanding to determine asset reliability and performance that may sway your purchasing planning, negotiations, and decisions.

A big reason for the monitor lifecycle stage is to mitigate risk. That risk can come from assets that pop up on the network in unexpected places. Risks can also come from vulnerabilities through outdated software on assets. The key here is to be integrated with IT operations workflows as well as security operations workflows. What you don't know will eventually hurt you—whether financially, or through the loss of assets and data, or to the reputation of your department or organization. These risk factors are even more pronounced in highly regulated industries such as finance, healthcare, and government.

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IT portfolio visibility workflow

To protect sensitive company or customer data, you need to know exactly what assets are where, so you can protect the data that's on them and can better manage the hardware. During this workflow, asset discovery will also enter data for assets that are in any stage of the lifecycle. For the purposes of our discussion, we'll put the IT portfolio visibility workflow here in the monitor lifecycle stage. It's important to monitor network activity and to perform scans for new equipment or hardware that shows up on the network. The information discovered will be important to IT operations for managing those devices, to security operations for doing vulnerability scans, and to asset managers to know what they have, where it is, and who is responsible for it. Make sure you understand how the following processes within your workflow affect your data:

- Updating the CMDB with newly found assets on the network
- Active monitoring of devices on the network
- Hardware normalization
- Asset reconciliation
- Mapping virtual assets to the physical infrastructure
- Mapping assets to the specific business services and applications they support

Vulnerability remediation workflow

Security should be thought of as a team sport within IT—everyone needs to do their part. Asset management can help by having detailed asset data for software, clouds, and hardware. This data is then used within a vulnerability assessment to identify vulnerable devices and create and assign IT operations and software owners' tasks, which they will use to perform patching and remediation actions. This workflow works best when you have the following:

- Integration with vulnerability management processes
- Data from cloud, software, and hardware assets
- Ability of security operations to insert tasks into IT operations workflows

Stage 6: Service

Hardware breaks down and people need help setting up devices, troubleshooting them, or re-configuring them. It's important to connect asset management and service management workflows with the hardware data that helps every level of support troubleshoot, diagnose, and accelerate their time to resolution. Automated record updates between service management and hardware asset management are essential to keeping service level agreements and maintaining accurate data. The information gathered from incidents will help steer future hardware buying and maintenance decisions.

One area where assets may get lost or misplaced is in the event of a device swap out. It's easy to lose a loaner device within the system and there is a lot of tracking that needs to happen when a device is sent back for repairs or replaced under warranty. Often this requires a support analyst to go into multiple systems and fill out various fields. Then when the device returns or a new one arrives, there is additional follow-up to close out the incident. Many of these manual processes can be shortcut if hardware asset management is in place.

Another benefit of a well-run service lifecycle stage is having support contracts and warranty information tied to assets. So, when a device needs repair or service, an organization knows which vendor to contact and the details of the support. If your support organization can easily tell that a device is still under warranty, you also avoid the potential for paying added service or repair costs to the vendor.

Swap out workflow

Life happens, and devices need to be replaced before they're out of warranty. Key integrations and workflow functions to pay attention to include:

- Ability to scan and enter new device
- Warranty repair or vendor return systems
- Inventory processes for either the loaner, a newly assigned device, or the returning device if not given back to the employee

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Stage 7: Retire

It may be the last stage in the lifecycle, but it's just as important as any other. Neglect this stage and pay a hefty price when leased third-party managed items come up for renewal and are not returned on time.

The disposal workflow is important because of regulations, environmental concerns, and the risks related to ensuring your organization's data is wiped and doesn't pose a future threat. Your ability to integrate a certified disposal vendor into your workflow and to certify that devices have been cleaned through IT operations processes will be key to this lifecycle stage.

Not all devices need to go to the landfill. Repurposing, recycling, or donating devices that are beyond their warranty to others can go a long way toward your organization's standing in your industry and community. Many companies have donated devices to charitable causes or organizations. Other organizations give older devices to the employees for their families and children to use. Whatever the motive, it's good to track these assets until they leave your organization and then subtly use the information about where they ended up to increase good will.

Retiring asset workflows

To keep your business running, it's important that the aging assets supporting business applications are tracked and refresh cycles are properly planned and managed. Any legacy hardware in the datacenter needs to be cycled out on schedule to keep critical business systems running. Delays in refreshing aging assets may impact service uptime, customer SLAs, and spike third-party support costs for assets that are beyond the support life of the model.

Make sure you know the assets are disposed of properly or donate them to your local communities, schools, and non-profit organizations. Might as well gain good will and awareness for your business among the people who lift, support, and work at your business. Focus on the following in your retiring workflows:

- Plan regular asset refreshes
- Integration with disposal vendors
- IT operations systems for wiping and certifying that it is clean
- Asset management dashboards to view the number of assets approaching retirement
- Linked to HR processes to assess whether assets from employees leaving the company need to be redeployed or retired
- Repository of disposal certificates and reports
- How a disposal updates your asset data

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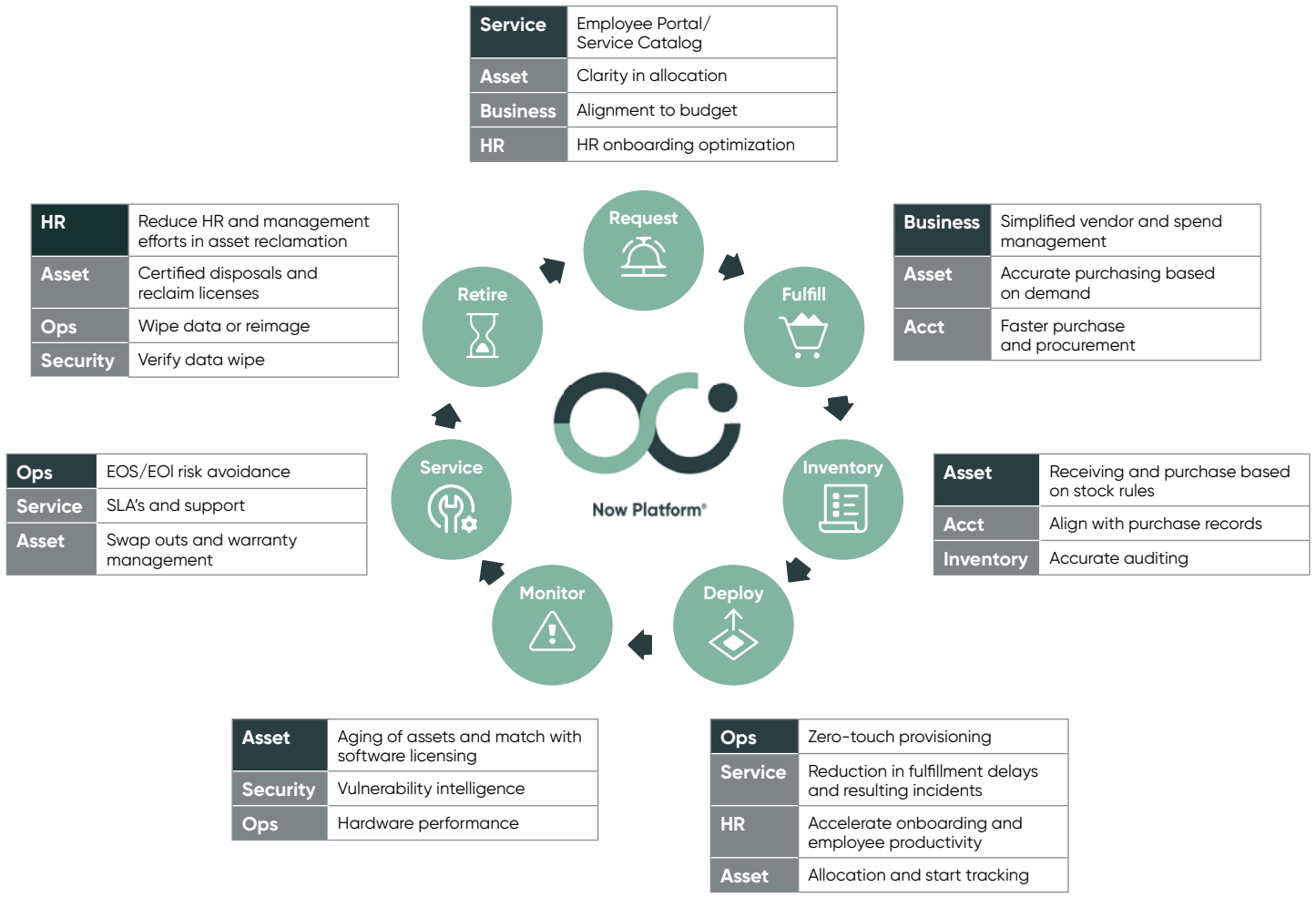
Think outside the network box

You can track nearly any asset within this same asset lifecycle construct. Get creative, there may be other use cases you have within industries like healthcare, government, manufacturing, retail, agriculture, and energy where you can tie non-networked assets or IoT devices into workflows to help you digitally transform your business. Until you know what assets you have, deploy them quickly, secure them continuously, and refresh them on schedule, you will lag behind when it comes to digital transformation—this goes as much for an IoT sensor in a windmill as it does for the laptop you may be reading this on.



Service	Employee Portal/ Service Catalog
Asset	Clarity in allocation
Business	Alignment to budget
HR	HR onboarding optimization

HR	Reduce HR and management efforts in asset reclamation
Asset	Certified disposals and reclaim licenses
Ops	Wipe data or reimage
Security	Verify data wipe

Business	Simplified vendor and spend management
Asset	Accurate purchasing based on demand
Acct	Faster purchase and procurement

Ops	EOS/EOl risk avoidance
Service	SLA's and support
Asset	Swap outs and warranty management

Asset	Receiving and purchase based on stock rules
Acct	Align with purchase records
Inventory	Accurate auditing

Asset	Aging of assets and match with software licensing
Security	Vulnerability intelligence
Ops	Hardware performance

Ops	Zero-touch provisioning
Service	Reduction in fulfillment delays and resulting incidents
HR	Accelerate onboarding and employee productivity
Asset	Allocation and start tracking

One Platform—Native Integration for All IT Workflows

The power of ServiceNow is that everything runs on a single platform using the same data, data model, and infrastructure. Hardware asset management is only one component of complete IT asset management (ITAM) practice and is tightly integrated with software asset management for both on-premises software and software in the cloud; plus, cloud insights helps you see and manage your cloud infrastructure spend. See and interact with asset data and spending throughout your asset lifecycles and across your entire estate or down to an individual asset level.

Throughout this discussion we've highlighted workflows and how each one is better enabled when integrated with other IT and business workflows. A platform is a much better play for workflows than is a collection of point tools with brittle integrations between multiple systems. The difference between systems and vendors is often the structure of the data and when one data structure changes, it breaks the integration to other systems, this is avoided with a platform because all the systems adhere to the same data structure. There is also a significant savings of time and effort related to managing all these processes and workflows between different systems and interfaces. Many organizations are also looking to consolidate their tools and their infrastructure in order to put themselves in a better situation for digital transformation. When there is a common data model on a single platform, automating workflows between departments becomes reality.

The Now® Platform gains greater importance as you leverage all the data you have in it. At the heart of most service management practices is the CMDB and each lifecycle stage and related workflow adds to or leverages the data within the CMDB. When transitioning into a hardware asset management practice, discovery can help build up the data that will be used to manage all your assets in whichever lifecycle stage they're in, not just the ones that start with a request. In each lifecycle stage, the data is updated and kept in close synch with your CMDB, the ERP for IT.

The industry leading practice is to manage hardware assets from the same place you manage software and cloud assets. Connect the business with a single platform so you can plan, operate, service, and retire IT assets from the same management experience. Automate the IT lifecycle with workflows to reduce cost and risk in your business. A single platform for IT, it's a no brainer.

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The Now Platform gains greater importance as you leverage all the data you have in it.

Automate the IT lifecycle with workflows to reduce cost and risk in your business.

Summary

Every company has an asset lifecycle. The way you manage, track, automate, and visualize your lifecycle makes a big difference whether it helps or impedes your organization's ability to grow and react. When you automate your asset lifecycle, you can expect your IT asset management to do the following:

- **Reduce costs and risks** in a material way for your business
- **Transform your data and workflows** to work more efficiently and enable greater trust in your hardware-related decisions
- **Answer questions and provide proof about where your assets are,** how they're being used, whether they are secure, when they need to be refreshed, and if you disposed of them in the right way
- **Enable simple and resilient integration** with your IT, business data, and workflows
- **Improve the employee or customer experience** with hardware assets

ServiceNow believes the best way to workflow your asset lifecycle is on a single platform, using a common data model and architecture. There is no substitute for having accurate and trusted data, an architecture that allows you to develop faster solutions for highly dynamic needs, and an easier way to integrate workflows throughout your organization. What makes sense is managing hardware in the same place you plan, operate, service, secure, and manage IT—and that is on the Now Platform.

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2020-12 SNC-ITAM-00202 ASC-JR-SM