Reducing TCO Through Effective IT Life Cycle Management

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It's a well-documented fact that rationalizing and managing your organizations' IT assets can cut the Total Cost of Ownership (TCO) of those assets down over their lifetime by 40-60%. To put that in context, recall that the initial hardware and software costs for a system may account for as little as 20% of the TCO. So for a single $5,000 server alone, active management may save your organization up to $15,000 over its' lifetime. In the corporate world, where the install base is of sufficient scale to justify the investment, mature IT departments will leverage industry-standard frameworks and technologies to align and optimize their processes, quantify, and actualize these savings across their entire IT Fleet.

In the SMB world, often neither the awareness of such frameworks, nor the means to deploy them internally in a cost-effective manner, are there. For young organizations, often there is no accurate inventory, never mind tracking of TCO at the asset level, limiting their ability to manage their IT Fleet. Standardization on products suited to your needs, and management of those products throughout their usable life, are key factors in IT Optimization.

Enter the IT Service Provider, your trusted partner in such matters. A good Service Provider will work hand-in-hand with you to understand your business challenges, plans, and existing infrastructure, and assist you efficiently through the journey from an uncontrolled IT cost centre, over to an optimized IT service that is capable of detecting and responding to your present and future business needs, cost-effectively.

Life Cycle Management is a critical component of an optimized IT service. By keeping it in mind within the context of your purchase and support decisions, you can count on getting better value for each dollar of your IT spend, over a longer period of time going forward.

The Goals behind Life Cycle Management

The objectives of actively managing the Life Cycle of your IT systems generally include:
1. Maximizing Usable Asset Life; depreciate and amortize assets over a longer period, reducing procurement overhead as a percentage of Total Cost of Ownership (TCO)
2. Maximizing Availability, Reliability, and Security; operate assets in the most stable and supported Life Cycle Stages (whether that support is internal, from a service provider, or the manufacturer)
3. Granular Tracking of your IT fleet Inventory and Costs; necessary for budgeting
4. Minimizing Operating Expenses (identify and mitigate high-cost assets)
5. Ensuring Loss Prevention & Environmental Stewardship

Life Cycle Management is complicated by the fact that some of these goals are conflicting, and must be balanced within the context of your existing infrastructure, budget, and priorities. Maximizing usable product life requires deployment relatively early in the product life, while maximizing availability,

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reliability, and security requires diligent research, recipe development, compatibility testing, and planning for training, deployment, maintenance and support.

Technology Life Cycle Stages

The life of an IT asset can be modeled into various stages for purposes of making educated decisions on when to adopt, or replace. For explanatory purposes, we'll discuss these stages in the context of Operating Systems, although the general properties are similar for hardware or other software. While the timing of these stages isn't always obvious, they can generally be worked out from the product usable life (ie. Data sheet Mean Time Between Failures for hardware, and/or engineering and support plans of the manufacturer for software.) Despite manufacturer intentions, some products don't make it into the mainstream IT market; arguably, Windows 8 is an example.

1. **Bleeding Edge**: Product is new to market, and heavily advertised, but with little or no established user base. General availability of knowledge and expertise on this product is limited, and product may contain significant bugs and vulnerabilities. Little compatibility testing with 3rd-party hardware or software has been done. Adoption of products in this stage is very risky, and will require relatively high levels of downtime for maintenance & patching. How long this stage lasts depends largely on the early market adoption rate, how well-received the results are, the level of attention it receives from Security researchers and media, as well as the responsiveness of the manufacturer to bug reports and feature requests. This stage typically lasts at least 6 months after commercial release, and the transition into the next stage is somewhat subjective (ie. drop in the rate of patch releases.) *Example: Windows 10*

2. **Cutting Edge**: If the product is well-received and business-appropriate, adoption by medium-sized businesses picks up momentum. Some enterprise customers may start pilot testing of the product in this stage, although wholesale adoption of the product in that business segment is unlikely except for SMB's. *Current Example: Server 2012 R2.*

3. **Modern**: If reviews, pilots, and deployments to date are well-received, and no major vulnerabilities or bugs are outstanding, this stage is usually triggered by the release of the first service pack. Most larger enterprise customers deploy to production in this stage. Generally products reach this stage are considered successful because all major bugs and incompatibilities have well-known, well-documented solutions. This stage generally ends with the termination of mainstream support by the vendor (but the product is still supported & patched for new bugs and vulnerabilities),

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unless the replacement product from the manufacturer has not yet been well-received by enterprise customers for planned adoption. *Current Example: Windows 7*

Old: Generally this stage starts with Extended Support period by the manufacturer. Major deployments by customers starts to taper off, in favour of the next replacement product (and the potential for a longer usable life for the new install) rather than one that will be obsolete soon. Most customers will already be actively piloting replacement products by this stage, and deploying fully into production before support for the current product is dropped by the manufacturer. Note that some organizations with the means to do so may continue to run hardware and software after it is no longer available or supported by the manufacturer, provided they have adequate in-house or contracted support and spares. *Current Example: Server 2008*

4. **Obsolete**: The product is no longer supported by the manufacturer, except under paid special arrangements, nor is it patched for newly-discovered bugs or vulnerabilities. Few organizations run assets in this stage due to inherent risk of failure or exploit, unless they run into technical or financial hurdles migrating to a replacement product. *Current Example: Server 2003*

Asset Usable Life

Selecting, testing, procuring, and deploying a new system incurs a significant overhead, including downstream costs such as training your users and support staff. This overhead is absolutely necessary to manage technological risk with appropriate contingency and rollback plans. Increasing the usable life of your products reduces this overhead relative to the total benefits of the acquisition (indirectly, through fewer new products being acquired), and gives your asset more time to pay for itself and contribute to your bottom line.

Usable life for hardware is inversely-proportional to the number of moving parts. A network switch with few or no moving parts may last up to 15 years, while a high-traffic printer with many may last as few as 2 years. Good-quality desktop workstations may last 4 to 8 years, and servers 5-10 years. Usable hardware life is determined predominantly by a combination of Mean Time Between Failures (MTBF), and the availability of spare parts. For software, usable life is determined predominantly by the engineering and support plan of the manufacturer. Operating systems typically are supported for 5 to 10 years, and applications can very widely, from as few as 2 years to as much as 5.

Many organizations will target two generations of operating system for each generation of associated hardware. Achieving this goal requires selection of good-quality hardware, with sufficient resources such as memory and disk space to accommodate not only the current standard operating system, but also the probable requirements of the next replacement. Failure to procure hardware with sufficient resources up-front adds the risk that you will need to upgrade the hardware for the second operating system deployment (adding to the TCO of the machine), and the hardware may no longer be commercially available at that time.

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Beware the Hype

As a key decision-maker in your organization, it's important to be consciously aware of manufacturer / vendor pressure to adopt the latest version of their hardware or software. Manufacturers have structured their pricing over the lifetime of a product to exert a lot of influence over retailers to encourage early adoption, which results in quicker payback of their R&D spend and improved bottom line. This doesn't necessarily deliver the same favorable results to customers adopting product too prematurely. Caving to such pressure carries the risk that you will inadvertently introduce significant vulnerabilities, incompatibilities, or other problems into your organization that were not yet known at the time of adoption.

Many SMB's cannot afford to have a sufficient number of qualified internal IT resources to efficiently manage Life Cycle management thoroughly in-house. Using a Trusted Service Provider in an established partnership, who knows your business, to develop your recipes and deployment plans allows you to be sure these are tailored to your specific technological and business conditions, at a reasonable cost.

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