

Enterprise Change Requires Rethinking About How to Get IT

Analyst: Anne MacFarland

Management Summary

Acquiring IT is like buying food. Some people shop once a month, buying in bulk at attractive prices, and freezing perishables for later use. This requires planning and predictable lifestyles. The once or twice a week shoppers have more flexibility of menu and the ability to use fresh ingredients more regularly. Others shop once a day, which allows them to adapt their purchasing to the needs of the moment. More and more shoppers use credit cards, for the convenience of a limitless wallet and the float of the deferred payment, the cost of which is absorbed by the merchant, unless they carry a balance.

IT assets, like food, have a limited shelf life, due to the rapid evolution of technology and plummeting costs of IT capacities. Many enterprises now procure only what they need for the short term and, like shoppers, defer payments through some sort of financing. They procure at smaller granularities – only so many processors, perhaps via pre-installed capacity on demand. Buying fifty pound bags of rice is no longer attractive when, with changing markets and flexible demand for your products, you no longer know how many you are serving and whether they like rice. Enterprises are also using IT more pervasively, and accessing that IT from a wide variety of places. This has made them short-order cooks, whose menu is constantly being tweaked.

Instead of buying food, of course, you can buy the meal. Hiring a cook, ordering take-out, or eating in a restaurant are different sourcing options with different price points. Similarly, there are many options for financing and sourcing the IT operations that support your enterprise. Asset management software and adequate bandwidth allow an enterprise to avail themselves of multiple options - a little of this, and a little of that. The variety is a very good thing, not just for the ability to tailor capabilities to budgetary constraints and need for flexibility, but also to keep the marketplace fair. Competition favors the buyer.

The IT acquisition challenge is to provide the flexibility to support enterprise processes and initiatives at an acceptable cost – and in a way that mitigates the risks but does not fetter the opportunities. Financing and sourcing options are essential tools for making IT infrastructure available to all who require it. How you *get* IT– how you pay and what you pay for – may be as important to the sustainability of your enterprise as the technology you choose. Flexible financing options can make a difference, from helping the bottom line to making the impossible possible. For more details, read on.

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A Consequence of Many Kinds of Change

Once, computing was expensive, limited, and used carefully by a small fraction of enterprise employees. Now, since computing is often cheaper than the cost of the paper processes it replaces, all sorts of business processes have been digitized to make them accessible, auditable, and integrated into the large pool of information that supports the enterprise. **This multitude of business processes uses the same basic resources, but different processes consume them differently.** Some transactions have a great need for response speed (e-commerce and customer support). Some have a low priority time-wise, but high priority in the larger scheme of things (data redundancy, business continuity, process audit trails, and other compliance issues). Some demands will be volatile, and will need a flexible environment where more resources can be used as needed. Some demand different administrative skill sets. Others have special needs for privacy, preservation of digital rights, or access to collaborative spaces that must be designed into the environment. **The challenge is to meet all the diverse demands for IT by the most effective delivery mode at an affordable cost.**

The problem is no longer simply buying products or even solutions, it is also figuring out how you are going to pay for it in a way that is suitable for your business and for what role the acquisition will play in your business. You may want computers – or you may want computing. In the past you specified what you wanted (preferably with product numbers) and left it to a purchasing department to *get the best deal*. **Now you figure out what you want to do and the units with which it can be measured** (often “transactions,” which are often protracted, complex combinations of many applications).

So how did IT get to this problematic point? Once again, the agent of change is change itself, in many forms:

- **Rapid change in IT capabilities** comes sooner, reducing the costs of acquisition and decimating the residual value of acquired assets
- **Change in maintenance costs**, usually upward, kiting up the costs of maintaining older assets
- **Change in the management costs**, for new automated management may not be usable with older assets
- **Change in the requirements and uses** an enterprise makes of IT, not always in the direction of “more”
- **Changes in the enterprise (not IT) infrastructure** – in what it does, in what processes are outsourced, in how and where employees work (and how many there are)
- **Change in the enterprise financial situation and markets** (budget, cash availability, interest rates)
- **Change in enterprise risk profile**, exacerbated by the growing number of ways to get IT functionality

An enterprise needs to take full advantages of all the alternatives open to it, so that it can respond adeptly to change. **In this issue we will eschew the alternative of process outsourcing and concentrate on IT financing and sourcing options.**

IT Acquisition Options

Consider the following profile elements of your enterprise. First, *what are your needs for flexibility in both financing and IT capability? How volatile are your business processes? How seasonal?* Second, *what is your tolerance for risk?* This will vary by the business process. What risks do you want to offload? Lastly, what is your unit of procurement granularity - the transaction, or the solution, or the environment? You want to consider different options for different business processes. To minimize the complexity, it is useful to set preliminary parameters of what alternatives your enterprise will tolerate up front, where possible.

The Basics

The basic alternatives of cash, lease, and loan vary in who owns what in what point in time. Obsolescence of an asset is a risk for the owner, and you have to pay, somehow, for the abatement of that risk-. With a purchase, perhaps financed by a loan, the ownership passes at the point of purchase to the buyer. While the source of the loan may have a lien on the asset, the risk of asset devaluation risks squarely with the owner. With a lease, the enterprise may bear many of the lifecycle costs over the term of the lease, but at the lease's end, a settlement must be made of the difference between the expected residual value and the asset's value at the end of the lease. The ending residual value can be negotiated at the start, but may not be considered by the enterprise acquiring the asset. Of course, the buyer will pay more because the lessor is assuming the risk of the future residual value.

Generally, deferral of payment by long-term financing is a risk for the lender, which will show up as an incremental rise in the interest rate charged. **Utility pricing, where you can buy as much as you want by the drink puts a burden on the provider to give you whatever you demand, which is why most utility offerings are capped, with a high surcharge for significantly exceeding the agreed upon range.** There is a reason public utilities are regulated.

The basic variables in long term financing are the size of the down payment, the interest rate, and the structure and timing of payments. There may be several fixed or variable payment options that can be matched to customer budget cycles, revenue streams, or ROI milestones. Of course, the longer the term, and the more of the payment that is pushed into the future, the higher the total charges for interest. Changes in terms will cost you – but the ability to renegotiate may be crucial to the deal. **You can't get something for nothing – but you should be able to tailor your obligations to fit your profile.**

Think hard about which of the factors of

cost, structure and timing are most important to your enterprise, particularly if you are in survival mode. In addition, each of the parties in your purchasing chain of the requesting entity, the purchasing department, the CIO, and, often, the CFO will have different sensitivities to these variables. **If you know your financing parameters going into a buying engagement, it is more likely that you will be satisfied with the outcome.**

Granularity Matters

Computer vendors traditionally have sold hardware in boxes – or bundles of boxes. Maintenance and service were usually an annual percentage of the acquisition. These costs have usually been 15-20% a year for large systems. Now, software frequently is sold as a monthly license that includes maintenance and service. Alternately, software can be sold for an up-front charge, and carry separate maintenance and service charges. Per-server software pricing has been joined by per-processor charges and seat-based pricing (and sometimes aggregations of the two) for greater granularity. Both hardware and software may now have inherent capabilities to increase capacities on demand electronically (which triggers an invoice). **The optimal pricing structure for the enterprise is tied to the nature of the applications involved.**

Capacity on Demand

Hardware *Capacity on Demand* features can be found in servers (CPUs or blades in a chassis and sometimes memory), storage arrays (disk drives), and switches (ports). There usually is an up-front premium charged for this over-provisioning, and the customer usually does not pay for this capacity until it is turned on. The customer gains almost immediate access to reserve capacity that the vendor has pre-installed on the customer's floor. **Capacity Upgrade on Demand benefits both customer and vendor, but it is a pricing scheme, not a metered utility.** Some vendors are toying with metered, utility-style pricing, but that has yet to win wide acceptance.

Solutions

For an increasing number of enterprises, clearly linking business benefits to the costs paid for them, and avoiding the complex data-centric granularity may be appealing. They may choose to pay for their IT in aggregations which include hardware, software, and the services needed to deploy them. If they pay by usage, the usage may be a business-side metric, hiding the numerous and somewhat obtuse aggregation of data center metrics. *Solution-level aggregations*, including software, hardware and migration services, may be useful for justifying funding for new initiatives. *Uniform global contracts* across multiple geographies can bring sense to chaos of international operations.

Develop a Profile of Preferences and Aversions

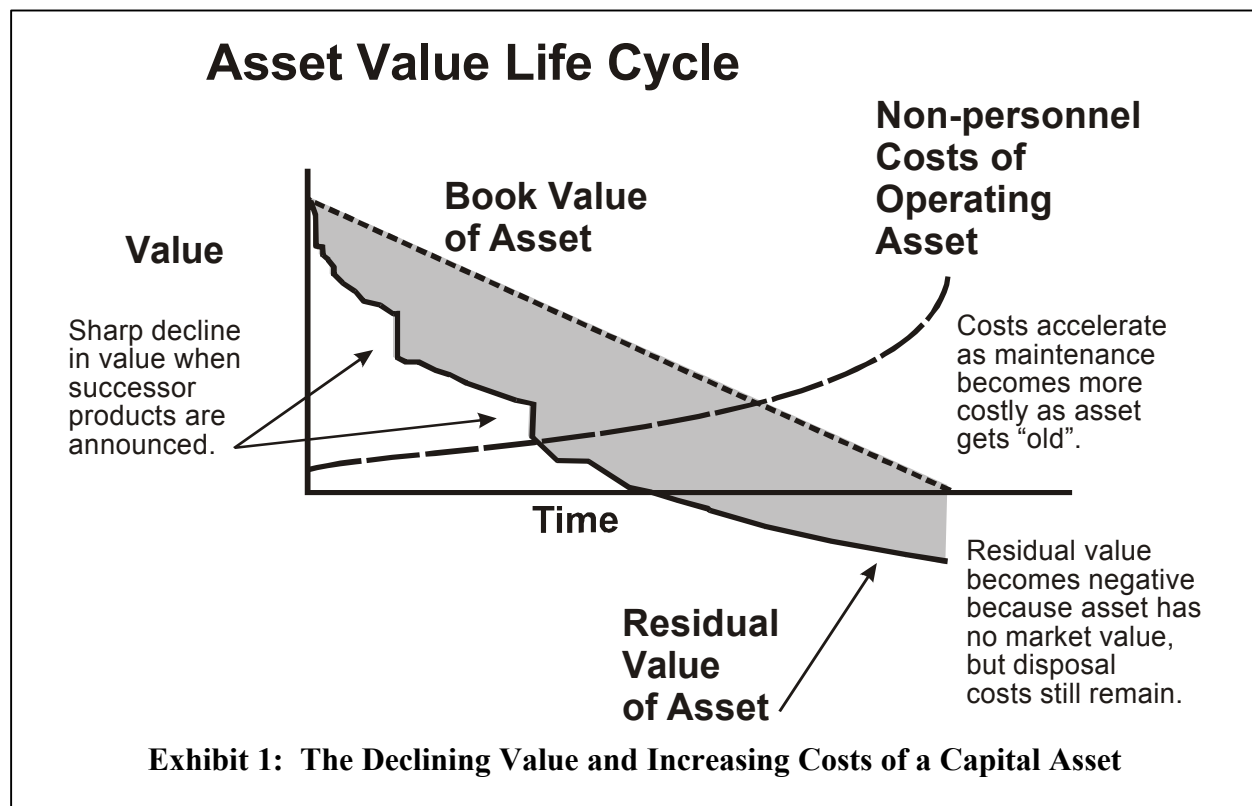
Think of where you want the simplicity of *aggregative pricing* and where you want the precision of *granular metering*. For processes whose costs you want to limit, a lack of expansiveness can be a source of control. For revenue generating processes,

you generally will want more flexibility. The costs of tailoring your finances are worth the comfortable fit and enterprise flexibility they give you.

The Asset Value Lifecycle

When considering asset options, consider the value lifecycle of an IT asset. Traditional depreciation methods provide a constant decline in book value that is at odds with pragmatic reality. In actuality, the market value of state-of-the-art assets starts to decline on installation. As the asset capabilities are superceded, its market value plummets. As other uses are found where the asset's capabilities are good enough, its market value may be stabilized, particularly if its use allows an enterprise to avoid buying additional equipment. **The slope of the decline in market value will depend on what alternatives come to market, and how large the costs of supporting the asset become.** As with an older car, they do not shrink.

You may notice that the market value line in the graphic below dips into the



negative. This represents the carrying costs of older equipment that many enterprises continue to house because they feel they cannot dispose of it safely. Their concerns – of data privacy exposure and of violating environmental regulations – are valid, but many enterprises underestimate the on-going ancillary carrying costs – the costs of space, the licenses and property taxes – that they may be paying for unused assets. When recycled (refreshed for resale, or broken down for parts or even elements), most equipment has some residual value – but not for the enterprise storing it. Several vendors provide disposal and recycling services. **Removal of old equipment may be an additional cost – but in the long term it still saves you money and reduces risk.** There are many places in the asset value lifecycle to buy in and sell off.

State of the Art or Older Generation?

New, high-end IT products are what vendors prefer to sell, and what many enterprises need for greatest efficiency. But remember that *new* becomes *used* as soon as you take it out of the packing case. **Most of your inventory of assets is, in fact, used, and your ability to fund new projects may increasingly rely on finding an appropriate reuse, or shared use, for them.**

You may choose to acquire used equipment for a number of reasons. You may need to maintain a homogeneous environment. You may have cost constraints. You may need a cheaper way to do a low-priority necessity to save money for where extravagance is necessary. **Older equipment, if not best of breed, may be the best fit for your budget.**

Transferring Owned assets to Lease and Vice Versa

A buy-back lease allows enterprises to sell their existing equipment (getting it off their books as an asset) and lease it back, to continue internal operations as before. It is a way of getting off the depreciating market value curve early.

To hop on the value curve at a later and lower point, an end-of-lease purchase of

assets at a depreciated price is often possible. This may be worth it, if your enterprise has a continuing need for the assets and the cost of maintenance is bearable. Remember that maintenance costs are typically based on acquisition costs, which often are much higher for three-to-five year old equipment since hardware prices erode from 10% to 40% per year, on a measurable use basis. Remember that you may be paying hidden costs for inefficiencies and for systemic work-arounds (replication, staged processes) to get around the shortcomings of aging equipment. **New equipment may well be less costly, and more prudent, overall.**

Rental

Despite the lure of permanence, there are still times when you want to rent capacity, or a certain application capability, for a limited period, with no residue of ongoing costs. Equipment rental, and, at a finer granularity, *on-off-capacity-on-demand* processor and software *rental* found in some larger servers, fill this need. **As open standards take hold, and virtualization allows separation of the use from the underlying vehicle being used, it should be possible to add and remove equipment more expeditiously. On a larger scale, grid protocols offer another way to “rent” capacity.**¹ In the past, rental options may have been treated with disrespect. As the value of asset ownership becomes more ephemeral, this acquisition mode is finding renewed favor with enterprises large and small.

Sourcing

Sourcing is a long-term form of rental – not just of assets but also of managed environments. Not every enterprise needs to run all of its IT environments itself. There are some compelling reasons to put the arms-distance of sourcing between the

¹ More on grids as a sourcing option later in this bulletin. See also *All Nodes Are Not Created Equal - Thinking Differently About the Grid Nodes* in **The Clipper Group Explorer** dated March 39, 2003, at <http://www.clipper.com/research/TCG200311.pdf>.

enterprise and the IT environment that supports it.

- One is *the need to externalize a relationship* to enable a full-scale and aggressive negotiation of qualities of service in a usage-fee based environment. You can specify the state-of-the-art that you need, negotiate a price. It is clean.
- Outsourcing can also be a way to *indemnify a source of risk*. If you have negotiated service level agreements from an outsourcer and your end users complain, the buck stops there.
- Outsourcing can be a way to *reduce the skill sets* you have to hire.

It is important to note that the managed environments of outsourcing do not remove the need to keep the finger on the pulse of these environments, from an enterprise perspective. **There is a need for a CIO to supervise and knit together multiple environments – and to match requirements with enterprise needs.** What you are doing here, as you did when considering financing alternatives, is building a profile of your priorities and parameters so that you can develop usefully specific requirements. The following need to be considered:

- **Management:** Management means different things in different situations. If you hand off operations to an outsourcer, are you looking to hand off responsibility entirely? If you are outsourcing day-to-day management, what kind of oversight do you want? What kind of oversight will be inadequate?
- **Platforms:** Sometimes IT needs are outsourced to environments that are separate and dedicated to the customer. But the best outsourcing price may come from a large multi-tenant data center utility that can use the diversity of their tenants to load balance across the whole infrastructure, reducing the price of their services. Are you looking for platform specificity in addition to (or as part of) your service level agreement? Consider this by business process or even by application within the business process.

Will this be an all-or nothing decision, or can you get dedicated platforms for certain applications for a surcharge?

- **Expertise:** Do you want expertise (in an application, application type, industry, regulatory environment) as part of your source? One of the cost benefits is in sourcing to an environment that can keep up with changing regulations (the old service bureau concept). Do you have risks or high costs of keeping current that you want to indemnify by a sourcing relationship? Will sourcing give you the indemnity that you need, or do they just make vague promises?
- **Culture:** Each business has hidden and overt cultural norms that will resonate (or not) somewhere along the sourcing spectrum. What cultural roadblocks to outsourcing or multi-sourcing litter your enterprise landscape? Do you want to address the hard task of rationalizing them? Can you localize the areas of fear and contention to certain areas of sensitivity to gain sourcing flexibility more widely?
- **Cost Structure:** Most contracts contain costing options. Fixed costs are generally cheaper but inflexible. Variable costs are more fair – but more expensive. Pure utility (by the drink, with no cap) will be the most expensive per-drink option, but the least wasteful. Broken-out costs are more informative – but, at the same time, more confusing. Wrapped or clustered costs are simpler, but more opaque.

It all comes down to what is right for your enterprise. Consider your budget and the risk profile of your business processes. Then you can consider the following modes of outsourcing, the first of which may be very familiar.

IT Sourcing Options

In-Sourced Data Center

An internal data center with assets dedicated to business units in a departmental-level sourcing arrangement is commonplace for many internal IT operations.

In some cases, the assets are owned by the business units. The flexible financing options listed above are crucial to bring costs in line with objectives and benefits. **But the dedication of assets by department, or even by application, means that you have to acquire enough assets to meet peak demands of each department. The internal data center has been traditionally considered less risky than dealing with external organizations – but if it is an aggregation of departmentally-owned assets, it is also a source of risk to the enterprise.**

Aggregating data center assets as a separate business unit allows the data center to use resources more prudently, particularly for enterprises whose business units have different patterns of intense IT use. Charge-back is the way to reallocate data center costs back to the departments that use it, changing the data center from a money-pit cost center to a break-even operation. The charge-back scheme can be designed on a by-the seat – or by-use basis. Charge-back that includes a lot of overhead costs may not compete on costs with external, purer, sourcing environments – but they may be the best fit for your enterprise. All the processes have to be done somewhere – and keeping the ugly ones internal may not be an attractive way to go.

Dedicated Outsourced Environment

The outsourced environment may be a ***dedicated infrastructure***, where a certain number of servers, switches and storage are dedicated to a single tenant. It might even be on a customer site, with outsourced management. In that case, the difference between this and the in-sourced data center might be only a matter of organizational affiliation. An off-site data center can be at a lower-cost location, and you will still get to know the relevant personnel very well.

Multi-Tenant Outsourced Environment

A ***multi-tenant data center*** environment increases the arms length between the outsourcer and the tenant, for the

agreement rests not on specific equipment but on service level of application availability, security and response time. The ability to use infrastructure as pools, with proper security, allows for greater efficiencies, more options for flexibility, and the opportunity for lower costs.

Hybrid Outsourced Environment

A ***hybrid*** of dedicated and multi-tenant space may be comforting to many enterprises. This is like a hybrid of owned and leased corporate assets.

Transitional Sourcing Options

Whenever an enterprise changes its sourcing profile, there will be a ***transitional state that has its own priorities and skill needs***. Some service providers define this as a separate, optimized deliverable. Some sourcing providers define the transitional state a bit more broadly, allowing it to cover multi-site enterprise support, where each site has areas of responsibility and areas of oversight.

A variant on this transitional service is the localization service where enterprise data center capabilities are transitioned to a new geography. There will be local regulations, labor practices, and other considerations to be addressed. Often these are most expeditiously handled by one who has done it frequently. Once set up, the management of the new data center can be a separate sourcing decision.

Multisourcing

With advances in technology (such as automation, metering tools, management schemes, portal-based aggregations of information), ***multiple sourcing becomes possible***. Oversight by the enterprise CIO of multiple sites, if the service levels are clear and enforceable, is a reasonable ambition – if it is the way to support your enterprise.

Sourcing Utility Pricing

Most enterprises need the same pricing flexibility in sourced environments that they do for their acquired

assets. The leveraged efficiencies of multi-tenant environments can produce many opportunities for lowering costs. Sourcing contracts usually are a fixed capacity base price plus a higher-rate surcharge for usage spikes. Usually the base amount, and the size of the variable margin, can be reset or renegotiated as experience dictates. This keeps the outsourcers users happy and the outsourcer's data center manageable.

The units of computing to date have been some combination of data center metrics such as processor count, bandwidth, or the amount of storage dedicated or used by the application. These are meaningful in data center terms, but may require experience that an enterprise does not have if it negotiating for the hosting of an application with which it is not familiar. **It is important to negotiate a contract with which you are really comfortable, in terms that are meaningful to your enterprise**

The Grid – A Larger Scale of Utility

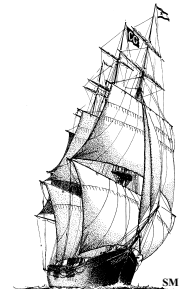
Grid architectures offer the option of accessing additional capacity from underused assets flexibly. They may be used in data centers, or they may be used to link managed environments and load balance between them. Grids have been deployed within enterprises to get even more efficiencies out of an infrastructure.

Extending this beyond the enterprise, particularly if payments for usage are involved, requires automated management and metering products that have yet to mature, and buy-in by independent software vendors (ISVs). **It is clear, however, that grids will become a basic part of the sourcing landscape.**

Conclusion

There are many options to getting IT. Acquiring, or accessing IT assets based on peak capacity needs may not be prudent. **The more assets can be shared and reused, particularly between entities with different peak profiles, the more reasonable the cost of getting IT becomes.**

What wakes you up at night? If it is the fear that you don't really know what a business process costs, you should architect for cost clarity. If you worry about having paid too much, you will want utility-style metering. For things that are less important, the bottom line – as you choose to determine it – will probably be the primary consideration in how you get IT. **Choose the structures, in both in sourcing and in financing, that works best with your enterprise. Target what you need and how you want to get it. Then go for IT!**



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➤ ***The Clipper Group can be reached at 781-235-0085 and found on the web at www.clipper.com.***

About the Author

Anne MacFarland is Director of Enterprise Architectures and Infrastructure Solutions for The Clipper Group. Ms. MacFarland specializes in strategic business solutions offered by enterprise systems, software, and storage vendors, in trends in enterprise systems and networks, and in explaining these trends and the underlying technologies in simple business terms. She joined The Clipper Group after a long career in library systems, business archives, consulting, research, and freelance writing. Ms. MacFarland earned a Bachelor of Arts degree from Cornell University, where she was a College Scholar, and a Masters of Library Science from Southern Connecticut State University.

➤ ***Reach Anne MacFarland via e-mail at Anne.MacFarland@clipper.com or at 781-235-0085 Ext. 28. (Please dial "1-28" when you hear the automated attendant.)***

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