



THE TECHNOLOGY YOU NEED WHEN YOU NEED IT®

THE HIDDEN COSTS OF CLOUD COMPUTING OVERCOMING THE CHALLENGE OF PREDICTING AND MANAGING THE USAGE OF CLOUD SERVICES

Background

Every IT Manager has had to go through the painful experience of trying to budget for cloud resources. Unfortunately, cloud services are complex, and so is the pricing, making it very difficult to fully predict and budget for them. Combining that with the difficulty of truly predicting and managing your usage has resulted in many cloud services earning the reputation of having “hidden” costs.

The truth is that no cost is completely “hidden”, and cloud services try to be clear about what you will and won’t pay for up front. However, customers can still feel “tricked” when their bills come in higher than anticipated.

Defining Cost Types

In the comparison that follows, we refer to two different “types” of costs. They are very different in nature, but both can have catastrophic effects on your bottom line if not accounted for when budgeting for the Cloud.

Internal (or Business) Costs: Internal Costs, sometimes referred to as Business Costs, refer to the costs you incur as a cloud customer that aren’t directly related to paying your CSP. They are very much required to pay for your cloud service, but because of their “indirect” nature you’ll never actually receive an invoice for them or cut a check to pay for them – there is no “price per unit”. Predicting what these costs will be requires experience, plain and simple.

CSP Costs: Cloud Service Provider (CSP) Costs refer to the direct costs associated with the services rendered by your CSP. These are the more easily predictable of the two types of costs – they have a “price per unit”, and you are directly invoiced for them. The danger with these costs is that they become less predictable linearly with the predictability of your usage.

Categories of “Hidden Cost”

With a bit of foresight, planning, and help from your CSP, the minefield of additional costs (both from a CSP-driven and internal business cost perspective) is 100% navigable. Through our experience working in the cloud, KPS has categorized the biggest causes of the “hidden cost” problem into four key areas that you can focus on to make sure you never get “tricked” again:

Resource Management Costs – This is the most obvious of the four categories of hidden costs, and most commonly manifests itself in the form of unforeseen quantities or line items on the bill from your CSP. The cloud gives you unparalleled insight into the resources you need to run your applications, but if you don’t use that information to your advantage, the cloud can (and will) end up costing more money than it needs to, and sometimes more money than you expect. These costs can pile up from a number of places, but the big ones are:

- *Over-Provisioning* – When you are paying for more resources than you actually need, aren’t you defeating the purpose of the cloud?
- *Under-Provisioning* – When you don’t give your applications enough resources, you can actually cost yourself money in overages, as well as degraded performance in your application.
- *“Spin It Up and Forget About It”* – The cloud makes it easy to temporarily provision resources, but often times these “temporary” resources become a bit more permanent because we forget how easy (and necessary) it is to de-provision them when we are done.

- *Non-Optimized Storage Tier Choices* – Storage performance is an extremely critical property of applications. The problem is that very few people truly understand their performance requirements on an app-to-app basis. Do you really need all the IO you're paying for, or can you migrate some data to lower performance tiers to save money?
- *Costs of Internal Staff for Resource Management* – CSPs typically provide the tools for your staff to manage resources, and often allow customers to scale down internal staff. While it's true that cloud tools can make staff more efficient in managing your environment, the problem is that using those tools and reviewing resource reports takes both time and expertise for internal staff – don't overly scale down!

Environment Management Costs – Aside from managing the virtual resources, managing a cloud environment still requires architectural, integration, and administration decisions. If you don't have the skill set to perform those tasks and make those decisions, you can often see astronomical costs for "fixing" what was put in place. Examples include:

- *Customization* – Your environment is a unique snowflake. While there are best practices for setting up cloud environments, most require a degree of customization to meet your business needs. Making sure that customization is planned out and prepared for is critical, requiring time and money in the form of customer staff.
 - *Maintenance Activities* – Just because you have an environment doesn't mean you can set it and forget it. Software must be patched, data must be recovered, and systems must meet compliance requirements. If you don't have the skill set, you may be forced to have a CSP do this kind of work.
 - *Consultancy* – Your architecture matters and the cloud is a much different beast than your traditional equipment stack. In this case, the old adage of "A minute of planning saves 10 in execution" could not be truer. Do you have the skill set to plan your cloud architecture? What about the skill set to make sure your applications will even work in a cloud environment?
- *Poor Integration* – Integrating cloud environments with non-cloud (or even other cloud) environments costs money. CSPs use different technologies – all requiring very different areas of expertise. Finding staff that know the ins and outs of all the various portions of your hybrid environment is tough.
- Cost Management Costs** – It may seem odd to mention "cost management" as a potential cause of "hidden costs", but the truth is there are important considerations outside of the basic unit price of a CSP's offerings:
- *The "Free Tier"* – A lot of CSPs have so-called free tiers of service that allow customer to try their service at no risk. While 'try before you buy' is a great feature, two problems can arise. First, and this should be obvious: If you run over the resource limits, you will be billed. It seems straight forward, but you might be surprised at how easy it is to be lulled into a false sense of security and overrun on your usage. Second: Free trials can sometimes serve to hook you on the service without having a real sense of how you'll get billed – perpetuating the "hidden cost" reputation of cloud services.
 - *Appliance Charges* – CSPs offer an impressive array of virtual services and products, but they aren't free. Assuming you have the skill set in-house to use them, they can help you manage your resources automatically for better or worse (in terms of resource costs). It's up to the customer to figure out if the skillset and cost of these appliances overcome the savings they can offer.
 - *Exit and Migration Fees* – Everybody has heard of this, but have you ever looked into the actual costs? In basic cases it serves as a minimal form of vendor lock in that requires a bit of capital to overcome. In extreme cases, it can end up costing a lot more time and money than you budgeted for if you ever need to execute on an exit strategy.



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CSP Management Costs – These hidden costs are less about specific costs from the CSP and more about costs you can incur if you don't manage your CSP selection correctly. CSPs all have different service levels for support, reliability, and security that can cost you money on the business side.

- *Troubleshooting and Support Levels* – Many CSPs will help you use their service, but customers need to ask how fast they will respond. Many offer no SLAs around their response time – it's all best effort. Do you have the time to be leisurely with your operational activities? What's the cost of waiting for a CSP's help to your business?
- *Reliability and Downtime* – What's the cost of downtime to you? Does the CSP offer credits for downtime? Making sure the cloud service you choose meets your reliability requirements is one of the most important things you can do, in addition to setting up DR and backup. If you want true reliability, you'll need to set up two environments – one for production and one for DR.
- *Security and Data Loss* – It goes without saying that different CSPs implement different security measures. Making sure these security measures live up to your requirements is critical to do when considering the cloud provider. Knowing the risk of data loss and the cost to your business is critical, but the cost if you are unprepared can be astronomical.

KPS' cloud and managed services are aimed at ensuring customers exercise the due diligence, have the right planning, and maintain the appropriate staff skillsets necessary to avoid the pitfalls of "hidden costs". Through KPS, customers are able to supplement their pre-existing solutions, or create entirely new ones on an as-needed basis. By allowing customers to optimize their 'aaS' environments for specific budgets across the range of traditional, on-premise, and off-premise solution deployments, KPS not only ensures customers get the technology they need, when they need it – but also that it stays within the budget they have available for it.