Cloudsourcing: Cloud Computing Meets Outsourcing

With all the recent hype (and counter-hype) about "the cloud," it's easy to lose track of the real innovation that's taking place every day using cloud computing technology. In the future, it's clear that cloud computing, including software-as-a-service (SaaS), platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS), will affect as much as 70% of the $1T enterprises spend on software, hardware and services. This will affect today's model for how enterprises engage with IT. What model will emerge? Call it "Cloudsourcing." This paper is an exploration of Cloudsourcing, its drivers, and its benefits.

What is Cloudsourcing?

Cloudsourcing combines traditional outsourcing with the benefits of the cloud. Rather than simply running your IT infrastructure and applications for you, Cloudsourcing involves actively moving both to the cloud. By running your business on cloud-based IT applications and services, Cloudsourcing dramatically lowers your IT costs (as a % of revenue) and provides you with the people and expertise to create a "virtual suite" of SaaS applications that provide a better integrated, more flexible and elastic technology foundation for your business operations. Cloudsourcing reflects the natural convergence of the shifts that have taken place in computing as well as sourcing over the past decade (Figure 1).

As many IT analysts have voiced over the past several months, cloud computing is the next step in the progression from mainframes to client server to web technologies. In sourcing, IT has rapidly migrated from a mostly internal, captive function to one that has been partially or wholly outsourced in many large enterprises. With the promise of cost reduction, access to skilled talent and ability to focus on core competencies, CIOs have embraced companies like IBM, HP, Accenture, Infosys, TCS and others to provide best-in-class IT capabilities that would otherwise be inaccessible.

The convergence of both trends – movement of applications and platforms to the cloud and outsourcing of IT– will drive this new "Cloudsourcing" IT model. Once again, economics, business needs and technology advances will disrupt current norms.

In its simplest state, Cloudsourcing is composed of three main elements:

- Migration of on-premise application portfolios and infrastructure to cloud-based, multi-tenant infrastructures, platforms and applications.
- Managed services to transition and manage support in this cloud environment including help-desk support, cloud operations, portfolio management, application development, testing maintenance and continuous improvement.
- A cohesive business and technical interface to the cloud that abstracts away the complexity of managing multiple SaaS applications and cloud platforms.

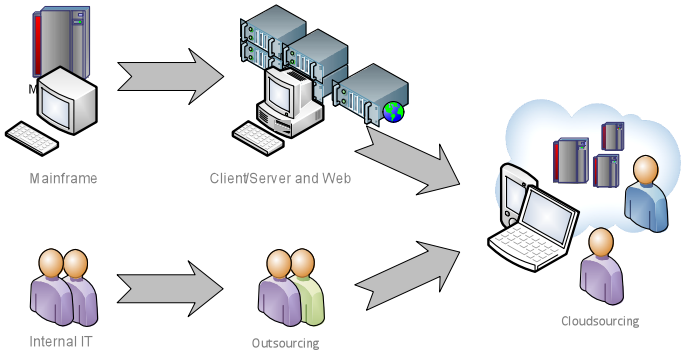

Figure 1 - Evolution to Cloudsourcing

The customer pays a straightforward fee based on attributes like revenue and # of employees, and the Cloudsourcer uses a combination of cloud applications / platforms and their own services / IP to abstract away much of the typical complexity of enterprise IT. The Cloudsourcer can commit to these substantial savings with improved levels of service for two primary reasons:

- **The fundamental cost advantages and flexibility of cloud based applications and services.**
- **A pre-determined and pre-integrated "virtual cloud suite."** By taking a known combination of leading SaaS, PaaS, and IaaS providers, the Cloudsourcer can provide an integrated set of business capabilities (information flow and technical integration) and technology management (application portfolio management, monitoring, coordinated SLAs, etc.).

Furthermore, let's compare Cloudsourcing to what it is **NOT**:

Hosting	Unlike hosting, Cloudsourcers do not directly manage or provide hardware or infrastructure. Instead, they manage the cloud technologies enabling client companies including applications, platforms and infrastructure (storage, computing, etc.). Cloudsourcers own the 'production' deployment in a shared fashion with cloud providers. Cloudsourcers provide this oversight with far fewer people than traditional hosting entails.
IT Outsourcing	Unlike outsourcing, Cloudsourcing aims to use a pre-determined set of cloud applications and infrastructure to meet IT demands vs. hosted data centers running traditional on-premise applications that the customer used previously. Any custom application development occurs atop pre-selected cloud platforms.

In concept, Cloudsourcing is most similar to Business Process Outsourcing, but specifically for IT. Traditionally BPO provides a set of functional services to the business (Payroll, HR and Benefits, IT Helpdesk, Travel). Cloudsourcing addresses the complexity and issues of IT that cross all other functional areas. Companies making the decision to "Cloudsource" may still separately evaluate BPO for specific functional areas within their organizations.

The Economics of Cloudsourcing

Cloud computing has already proved to be a disruptive force in IT, due in part to its reduced total cost of ownership compared with on-premise or hosted solutions. IT systems supporting customer relationship management, email and collaboration, HR systems, high performance computing and even storage are moving to cloud-based applications and platforms because they provide substantial economic value and, in most cases, provide an even higher level of capabilities.

One of the major contributors to this value is multi-tenancy. A single instance of a multi-tenant application serves multiple customers (or tenants). By only having a single instance to maintain – that is, troubleshoot, fix, upgrade, enhance and support – the application provider is able to focus its resources. In contrast, a single tenant infrastructure serves each customer with separate instances of software, hardware and infrastructure. This creates headaches for the provider such as sustaining old versions, tracking customer-specific patches or hot fixes, performing lengthy upgrades (including data migrations), and regression testing multiple configurations. All of this disappears with multi-tenancy.

The resulting efficiencies in staff, resources, and infrastructure provide pure multi-tenant providers with a significant cost advantage over traditional on-premise application providers as well as single-tenant hosted solutions. While there may be additional time involved in designing the multi-tenant architecture up-front, the associated costs are dwarfed by downstream benefits. In contrast, hybrid providers (providing both on-premise and 'cloud' solutions) face a much more imposing cost structure since they have to manage traditional architectures while also developing and managing a multi-

tenant one. The hybrid approach is an appealing near-term approach for many companies. However, in the medium and long term, it will not be economically sustainable and reduces business benefits to the lowest common denominator.

Extending the concept of multi-tenancy to service providers (Cloudsourcers) helps explain how Cloudsourcing provides a financially attractive proposition compared to other models.

For years, the debate among business and IT leaders has been whether to, or how much to, outsource to third party SIs. Compared to captive IT organizations where the technology infrastructure and staff are dedicated within a company (Figure 2), outsourcing provides significant economies of scale for IT skills and infrastructure. However, for some businesses, the internal IT model was necessary to provide unique capabilities or competitive advantage. For most, some form of outsourcing has provided both economic and business value and been a positive addition to the options available for managing IT.

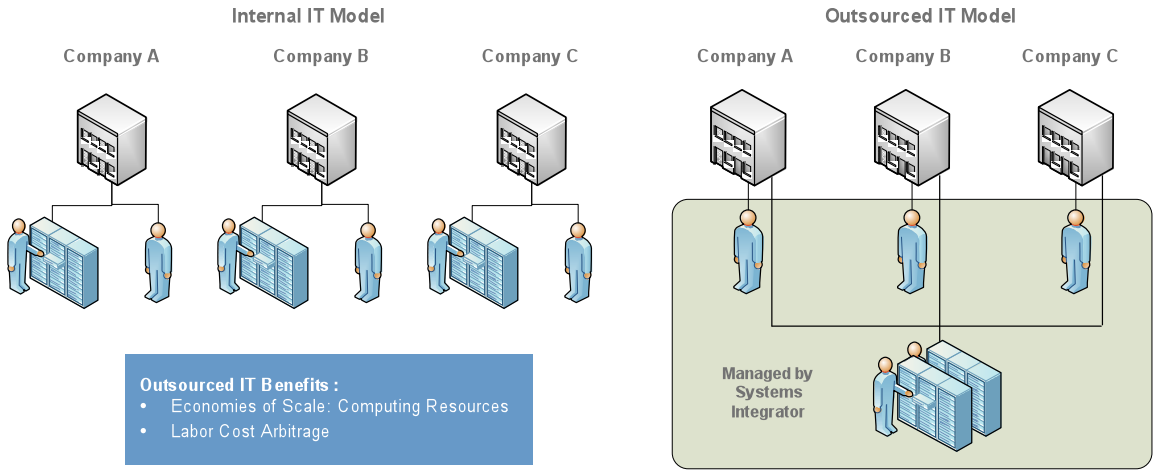

Figure 2 - Internal IT vs. Outsourced IT Model

In the traditional outsourcing model (Figure 2), companies contract with SIs/Outsourcers to provide infrastructure and personnel to deliver on the business' IT needs. A smaller internal IT team focuses on managing the outsourced relationship as well as the application portfolio.

To support the outsourced IT model, SIs/Outsourcers have built teams to manage the application and computing infrastructure on behalf of their customers. Individual customer requirements, however, continue to drive dedicated hardware, software and personnel. SI/Outsourcer teams manage customer-specific hardware platforms and software versions, custom configurations (at all levels of the 'stack'), upgrades (hardware and software for desktops and servers), help desks, test labs, and regional infrastructures. Significant numbers of SI/Outsourcer staff are also dedicated to specific technologies. A scan of many major SIs/Outsourcers finds thousands of people focused on different vendors, even where functionality overlaps almost completely – e.g. SAP, Oracle/Siebel/PeopleSoft, Microsoft, and other vendors.

Outsourcing has succeeded because it takes advantage of economies of scale attributable to consolidated data centers and expertise. It has succeeded despite significant embedded cost elements from its fundamental reliance on a heterogeneous set of single-tenant applications running on dedicated infrastructure.

Cloudsourcing retains the advantages of outsourcing for customers while stripping away many of the remaining cost inefficiencies.

Cloudsourcing offers further cost efficiencies in two fundamental ways – by leveraging cloud providers for all application, platform and infrastructure needs and by using a "virtual suite" of pre-integrated cloud applications and infrastructure to make many traditional IT services less cumbersome or even obsolete.

Cloudsourcing relies on cloud providers for low level management and service levels of their multi-tenant applications, platforms and infrastructures. The Cloudsourcer then focuses on a higher level of management and visibility across an entire "virtual cloud suite."

Unlike internal or outsourced models, the Cloudsourced model (Figure 3) relies on cloud providers to provide the following services as part of their usage-based subscriptions:

- Hosting of a single multi-tenant version for all customers atop a standard technology stack
- Seamless upgrades for all customers (with no migration or added consulting costs in order to be current)
- Elastic computing power and storage capacity allowing customers to scale both to meet increased or reduced demand
- Security, backup and disaster recovery in line with industry best-of-breed approaches
- Open APIs to support integration and migration to competitive products, if required
- Real-time performance monitoring via a web browser
- Primary user access through a supported web browser
- Regional data centers to reduce latency impacts to distributed users

This list seems daunting until you realize that:

- Google provides these services with Google Apps for $50/user/year,
- Salesforce.com's CRM Professional Edition does as well for $65/user/month and
- Amazon Web Services provides them for a Large Linux Server at $0.40 per hour plus data transfer costs ($0.10 per GB in/$0.17 per GB out)

These are just examples, but legitimate cloud providers have to provide these services to be viable. They mirror services provided by Outsourcers, but the costs are being amortized across millions of users – an economy of scale that is difficult to match with a dedicated infrastructure approach, whether internal or outsourced. In addition, by using a pre-determined set of cloud providers, the Cloudsourcer can provide a "virtual cloud suite" by creating a unified layer for management, integration and business process innovation atop the individual applications.

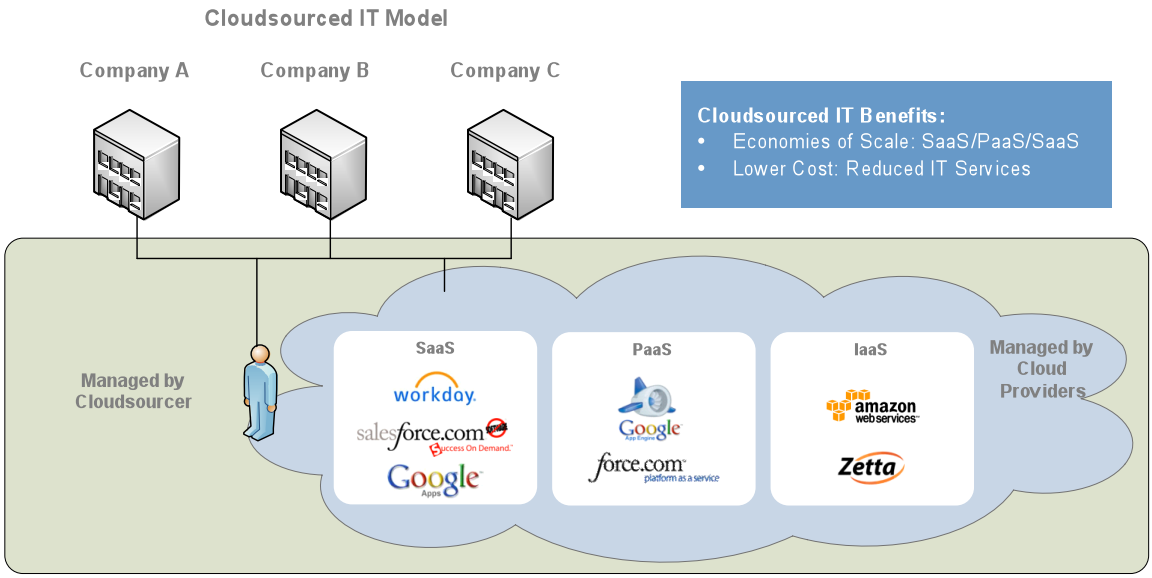

Figure 3 - Cloudsourced IT Model

Cloudsourcing fundamentally alters the IT services model. By significantly reducing or even eliminating areas of work often encompassed by outsourcing contracts (upgrades, configuration management, regression testing, hardware/software installation and maintenance, database administration, backups, etc.), Cloudsourcers can focus on more value-added services for their customers, such as:

- Cloud monitoring – provide operations management and oversight across a diverse set of cloud technologies and infrastructures.
- Business model prototyping – leveraging cloud technologies to rapidly prototype and model new business requirements and business processes
- Platform application development – rapidly developing and extending applications using cloud platforms (which was been shown to be 4.9 times faster on the Force.com***, for example)
- Cloud integration – tying together applications quickly in response to shifting business processes
- Legacy integration - interfacing with legacy systems to provide access to data via browser-based applications wherever its needed
- Mobility strategies – leveraging the cloud to enable easy mobile access (this is possible with traditional outsourcing as well, but much easier in a Cloudsourcing scenario)

Cloudsourcers do retain some traditional internal and outsourced IT tasks including help desk, enterprise architecture, portfolio management, and training/change management. From an IT and business perspective, Cloudsourcing offers an alternative to the choice between relinquishing control of a business process for cost savings (Outsourced IT Model) or dealing with the high costs and complexity of supporting an entire infrastructure (Internal IT Model). Cloud platforms give companies a way to control the parts of the 'stack' that matters most, the application and business process layer, and abstract away the management of infrastructure. This approach allows the IT team to focus their energies on driving innovation and supporting the business. See http://www.appirio.com/blog/2009/05/do-your-most-strategic-apps-belong-in.php for a more detailed discussion on this topic.

Conclusion

So, what's the bottom line on Cloudsourcing and its savings? The Cloudsourcing approach is new and a large set of data isn't yet available, but Appirio estimates, based on our experience, that the savings on IT Services alone is 30-40%, based on the tasks that are no longer relevant. Reduced services costs will compel enterprises to embrace the Cloudsourcing approach. From an overall perspective, analysis based on Gartner 2008 IT costs and spending pattern benchmarks sheds light on the savings potential offered by Cloudsourcing. Gartner's data shows IT costs between 3.2% and 5% of revenues depending on company size and industry. The overall cross-industry average is 4% of revenues. For the average $1B company, IT Costs of $40M break down as follows (based on Gartner benchmark data):

IT Cost Center	Percent of IT Costs	IT Costs
Hardware	19%	$7,600,000
Software	20%	$8,000,000
Personnel/Benefits	37%	$14,800,000
Outsourcing	17%	$6,800,000
Other	7%	$2,800,000
Run	67%	$26,800,000
Grow	20%	$8,000,000
Transform	13%	$5,200,000

By 2012, Appirio believes that IT costs in companies that adopt Cloudsourcing will average 3% of revenues. Best-in-class companies will see their costs reduced by almost 50% as emphasis shifts from "running" on-premise applications and data centers to growth and transformation. Significant savings will be reflected in all IT cost centers, but most notably in hardware and outsourcing.

For a $40M IT budget, the ramifications of these shifts are illustrated in the following table:

IT Costs for $1B Company	% of Revenues	IT Costs	Savings vs. Current IT Model
Current IT (Average)	4.0%	$40M	----
Cloudsourced IT (Average)	3.0%	$30M	$10,000,000
Cloudsourced IT (Best-in-Class)	2.0%	$20M	$20,000,000

The level of savings provided by cloud computing and Cloudsourcing will inevitably disrupt the IT market over the next few years. Companies that embrace the potential and strive to achieve best-in-class results will recognize significant cost advantages while also enabling business process innovation. Like any model, however, Cloudsourcing will continue to evolve. It will evolve to encompass next generation business process outsourcing based on cloud technologies. It will evolve to include desktops-as-a-service where user desktops are provisioned on-demand with the assistance of Cloudsourcers. It will evolve to where mobile devices become the main entry point into "the Cloud" for users across the enterprise. It's the natural progression and a continued convergence of computing and sourcing in the enterprise.

Getting Started

To get started on your path to the cloud, contact Appirio at cloud@appirio.com for more information on our half-day cloud orientation workshop or visit our website at www.appirio.com.

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Appirio (www.appirio.com), a cloud solution provider, offers both products and professional services that help enterprises accelerate their adoption of the cloud. With over 2500 customers, Appirio has a proven track record of implementing mission-critical solutions and developing innovative products on cloud platforms such as salesforce.com, Google Apps, and Amazon Web Services. From offices in the U.S. and Japan, Appirio serves a wide range of companies including Avago, Hamilton Beach, Japan Post Network, Ltd, Pfizer and Qualcomm. Appirio was founded in 2006, is the fastest growing partner of salesforce.com and Google, and is backed by Sequoia Capital and GGV Capital.