Astel

The Cost of IT

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Document	**White Paper**

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The following document will describe the different ways in which the cost of IT can be distributed fairly to the business units that operate within an organization.

Information technology as a Service (IT-a-a-S)

This is when the IT department provides a service to other departments. The services offered include, but not limited to, desktop support, software maintenance, software development, data centre housing and many more. The situation presented here describes a company that relies on IT for their software needs and to ensure business can go on uninterrupted.

The cost of IT-a-a-S is tangible, there are 2 IT-a-a-S processes we will discuss:

- *Show back*
- *Charge back*

Show back *is the means of calculating the cost of operation of a server, and then notifying the user departments of their overall involvement in that cost.*

Charge back *is the means of calculating the cost of operation of a server, and then producing an invoice for the user departments to pay which will go through the normal financial process.*

The IT-a-a-S processes can be implemented per a server using one of the 3 models:

- Cost based
- Usage based
- Activity based

Cost based is the means of charging each department for the total cost of ownership for a server based on a cost model. The cost model is created by assigning a fixed percentage that will be allocated to each department. The department is therefore charged an amount that is a ratio of the total cost of utilization of the server. This means that one department can be charged 80% of the utilization while the other department is charged 20%. The ratio's are determined by analysts and is an estimation.

Usage based is the means of charging each department for the utilization of the server by actual network usage statistics. There are a few parameters which can be used to determine the ratio in which the cost should be split amongst the departments, for eg. Connection time, bandwidth in/out, machine count, user count, etc. The ratio is determined by the aggregated usage statistics for each department. This means that if one departments users were responsible for 100GBs of bandwidth to an FTP server and another departments users was responsible for 400GBs, then the ratio would be 25% and 75% respectively.

Activity based is the means of charging users per a transaction for an application server. This means that a business unit will determine the cost of a transaction on an application server, then this cost will be assigned to each department as its users perform transactions. For eg. The total cost of

ownership for a single email account on an exchange server could be $5. Each user who owns an email address would be charged $5 to their respective department. The total transaction count could be also used to determine the ratio for activity per a department, where other costs could be assigned to the department.

Total cost of ownership charges can be broken down as follows:

- Server component charge
- Licenses
- Staffing
- Utilities

Per a server costs

Server component charges include CPU, RAM, storage, bandwidth, etc. These components make up the cost of the server, whether virtual or real. The components can be charged individually per an hour (usage based billing), or per a month (subscription based billing). They will normally not be charged for in a private cloud. This includes the invoice amount in a hybrid cloud.

Licenses is the fee charged by a vendor per a user for a piece of software. This cost would be split amongst the departments according to the IT-a-a-S model.

Staffing is required to maintain the server and progress the software. Project managers and network administrators will be required to ensure the operation of the server, Support staff is required for user training and onsite support, etc.

Per environment costs

Utilities are normally indirect costs associated with maintaining server infrastructure. These include premises, electricity, security, cleaning services, etc.

The five charges above make up the **total cost of ownership** of a server. The total cost is normally distributed to each department according to the ratio derived from the IT-a-a-S model chosen and then billed according to the IT-a-a-S process chosen.

The IT-a-a-S processes is applied differently depending on the cloud deployment chosen:

- Public cloud
- Hybrid cloud
- Private cloud

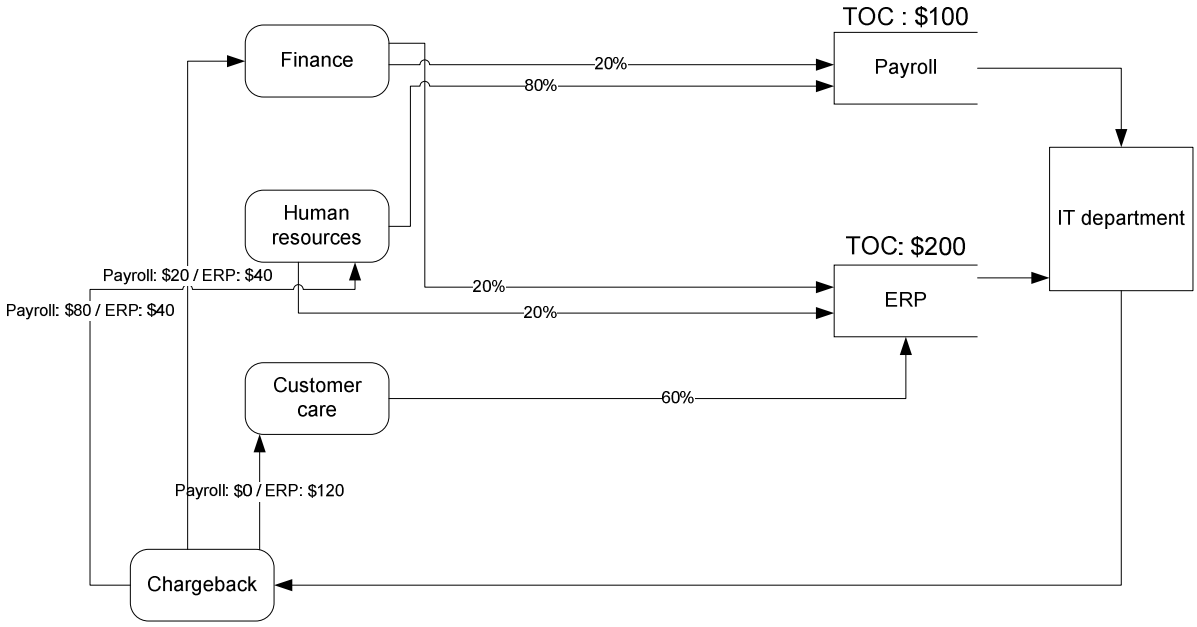
Public cloud or external cloud describes cloud computing in the traditional mainstream sense, whereby resources are dynamically provisioned on a self-service basis over the Internet, via web applications, from an off-site third-party provider who bills on a fine-grained utility computing basis. The cost of IT should be used as an analytical tool to determine the audience the server delivers to

and how costs can be reduced by improving network redundancy and caching. The main purpose is to improve the user experience as opposed to determining the cost of the user to the company.

Hybrid cloud is also called hybrid delivery, these are normally cloud service providers (CSP) who offer technology to manage the complexity in managing the performance, security and privacy concerns that results from the mixed delivery methods of IT services. A CSP would normally deliver services to multiple companies. The cost of IT is useful in this scenario since the IT department would have to charge each department for the total cost of ownership of a server, this cost will include the invoice paid to the CSP for using their infrastructure. This would be a full IT-a-a-S implementation since the IT department would procure all services on behalf of the business.

Private cloud products offer the ability to host applications or virtual machines in a company's own set of hosts. These provide the benefits of utility computing – shared hardware costs, the ability to recover from failure, and the ability to scale up or down depending upon demand. The cost of IT is necessary in this scenario since the company must bear the cost of the entire cloud infrastructure and operation. The IT department can then prove how much it costs to run each virtual server. It then can take these costs and apply a IT-a-a-S process so that the different business units will understand their contribution towards these costs.

How the IT department will use chargeback

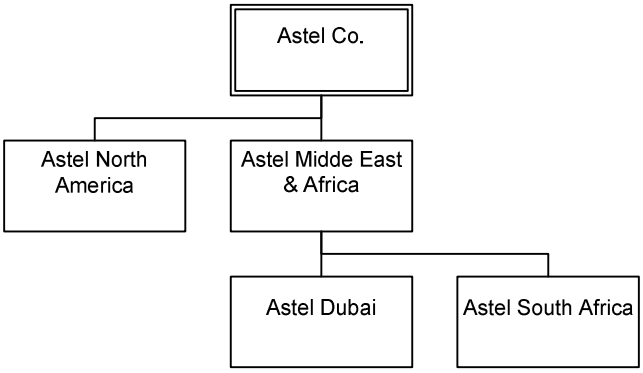


1. The three departments (Finance, Human resources, Customer care) will use the servers provisioned by the IT department.
2. The IT department will settle the bill for the servers to a cloud service provider or internally.
3. The servers will implement a IT-a-a-S model that will determine the ratio split between departments.
4. The IT department will use the chargeback tool to determine how the total cost of ownership per a server will be distributed to the relative departments.

5. The chargeback tool will create a invoice or summary based on the IT-a-a-S process which takes into consideration the ratios generated by the IT-a-a-S model.

How the business will create an organizational structure for its users

It was discussed earlier that users will be part of a department, these departments should be structured to match the companies organizational structure. Users will be assigned to departments so that their actions can be attributed to a node in the organizational structure.



Keeping the historical changes to the organizational structure is very difficult. This is normally not advised as this will slow down reporting considerably. The same goes for keeping a users historical location amongst departments.

An organizational structure is created separate from the server, the organizational structure is then assigned to a server. Therefore a single organization can have multiple structures and at least one structure must be assigned per a server.

IT-a-a-S comparison

GloBill chargeback solution has the ability to apply IT-a-a-S processes on a per server basis.

- Servers can be configured independently to be either a showback instance or a chargeback instance
- Servers can have their own individual organizational structure that can be re-used.

Cost model comparison

GloBill's chargeback solution offers the ability to assign utilization data by IT metrics. The system stores users that are assigned to an entity in the organizational structure. The metrics below are used to determine which entities used more server resources.

- Usage based Network statistics
    - Bandwidth
    - Connection time
    - Machine count
    - User count
- Activity
    - $ per transaction
    - $ per day
    - $ per Account

Total cost of ownership comparison

GloBill TCO calculation is based on actual billing information.

- Server components
    - The subscribed package and services utilized by a virtual machine are used in the calculation of TCO.
- Licensing
    - Software licensing costs are specific to a virtual machine.
- Staffing
    - Management & maintenance staff are assigned to a virtual machine on a per hour basis.
- Utilities
    - Utility costs are assigned to an environment and are split equally amongst virtual machines.
- Ad-hoc
    - Services rendered to internal staff, such as software upgrades.