Controlling IT Costs

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Abstract

Due to the rising of Information Technology (IT) costs, it becomes necessary to control, reduce and justify them, which implies to establish clear relations between these costs, the IT services and its business clients. Whoever, with costs grouped by IT criteria (hardware, software, etc), the IT managers have some difficulties in providing to each business unity, theirs services costs.

In this investigation we propose to control the IT costs with a technique similar to Activity Based Costing and to send monthly the IT costs to the business units. This process was facilitated by an application that was implemented in OutSystems and based in the best practices of ITIL.

The proposal was evaluated in a public organization, where the results were used as support to decision making.

Key Words

ITIL Financial Management, Budgeting, Accountability, Charging, Activity-based costing, Controlling costs.

1. Introduction

This work has been accomplished in the context of the Master Thesis of the degree Mestrado em Engenharia Informática e de Computadores of the Instituto Superior Técnico.

In Portugal the IT costs in small and medium companies will grow at a rate of 7,8% between 2005 and 2010, reaching 1.331 million euro’s [1]. According to a study, there will be in 2009 a global diminution with the estimated IT costs, it was hoped a raise of 5,9 % comparing to 2008, but it will only reach 2,6% [2-3].

These two facts are the reason why it’s fundamental to manage financially the IT operations. On the other hand, the management of costs must be always taken in consideration, not only in economic bad times, because costs are easier to manipulate than revenues.

This thesis tries to respond to this rising necessity of cost control, focusing especially in the operations costs, that represents in average 70% of the IT budgets [4]. The top executives demand more and more transparency in the IT costs, so this have forced the IT managers to calculate the
costs of providing the IT services. Whoever, they find some difficulties to distribute these costs by the business units, because the IT costs are normally grouped by IT criteria. In this investigation we propose to control the IT costs with a technique similar to Activity Based Costing and monthly to send IT costs to business units. For example, each director of a business unit may be informed that its department has spent 500 euro’s in the mail service. With this kind of information an organization can decide to chargeback for its services.

As investigation methodology has been chosen the Action Research, because this is based on changes in the actual process and in the study of the results of those changes.

This thesis problem is that: to control their IT costs, the organizations need to distribute them, with an efficient and realistic way, by the business departments. But with costs grouped by IT criteria it’s hard to accomplish that distribution.

One of the biggest challenges of the IT managers is to establish a connection between the IT costs and the business units, because if they can’t do it, the IT department may be classified as a “black box” that have high costs and that brings no value to business [5].

IT is fundamental for the business goals, and like another activity, it must be evaluated by its contributions, specially, by the capacity of controlling costs. Some companies do not take maximum benefit that an IT department can give, because IT financial management is not done. On the other hand, the rising number of users, the need to implement new technologies and tools contributes to a higher growth in IT costs, than it makes in other costs [6]. In these cases, the consequences are severe: IT projects overcame budgets and time, IT users became unsatisfied and the top executives see IT as a department that has high costs and little value to business [7].

In those situations some questions emerge, just like: “Why can’t IT provide better services?” or “Why IT budget is so high?”. Normally the IT response to those questions is some like: “We are doing the best we can with the available budget”. Will this response be really true?

To respond to this question, it’s important to make a distribution of costs by the business units, because this is a way of justifying the IT costs, and, although there is a lot of literature about this subject, a practical implementation of that process has been low adoption [8][9].

2. State of the Art

In this section we identify the thesis context, explaining the cost models, the financial management process and the reporting systems studied in this investigation.

2.1 Cost Models

A cost is a value in cash that has been consumed to produce something and it’s not available to be reused [11], for this reason it’s becomes necessary to group and control all costs. This is the function of cost models. In this investigation three costs models have been under consideration, Absorption
Costing in figure 1, Activity based Costing in figure 2 and Time-Driven Activity based Costing in figure 3.

The first one is the most simple and it divides the costs of the resources directly to customers, using absorption rate, just like the indirect costs by the direct costs [12-13].

ABC is a little more complex. Its logic is that the resources are consumed by activities or services and those are consumed by customers. So the distribution from costs to activities, and activities to customers, must be done according to a cost driver that represents the reality, just like number of pc’s or people [14-21]. Finally the last one, Time-Driven ABC, is a simplification of the ABC method. The distribution from activities to customers is the same that ABC, but has been simplification on the first one [22].

2.2 ITIL Financial Management

An IT department must be financially managed, it must predict its expenses (budgeting), it must register all its costs during a period of time, and it must attribute those costs to business units, so that it can demonstrate to its clients that IT is managing it budget the best way possible.

Financial management may also be seen as a connection point between IT and the business, because it ensures a more professional relation [6]. Sometimes, the IT department has the trend to take all technology opportunities without thinking in the needs of the business, but with a financial management the budget is focused in the business goals. On the other hand, the business does not question the IT job, because it’s informed about the way the money is being spent, and does not look for IT services outside its organization.
2.3 Critical Analyses

Due to the way that Absorption Costing distributes the costs, it’s a methodology inexact and it generates doubtful information, so it cannot resolve the problem of this thesis.

ABC as the advantage of being the most accurate of the cost models, but, due to its complexity, in practice it has a very hard implementation [10]. The Time-Driven ABC does not resolve the problem mentioned before, because it does not generate information about the costs activities relation.

Although the ITIL Financial Management generate information about the costs and establish a connection with IT and business, it cannot respond to the problem, because it’s based on Absorption Costing.

3. Proposal

The solution that we propose is the implementation of a cost distribution process, which through services can establish a connection between costs and business units. This process is based on ABC and supports the ITIL Financial Management, in other words:

1. Accountability based on ABC
2. Mandatory Charging

With the purpose to mitigate the complexity of the ABC method, we purpose some activities:

- Use the application developed in this investigation;
- Use simple, fair and realistic cost drivers;
- Automate the process of collecting costs, through the integration with financial systems of the organization;
- Automate the distribution of the value of services to customers, by integrating with systems that manages the provided services (Incidents management, etc.)

These practices have the objective to make the methodology of ABC less complex and expensive, because only makes sense to implement it, if the information that it creates has more value to the business, than the effort that is being made to implement it.

The proposal is also composed by the mandatory charging, because when the business units does not know how much they are spending in IT services, they think those are for free and they trend to abuse and make requests higher than its needs [6].

4. Implementation

This section presents the practice context of the investigation and it describes the two iterations of the process implemented.
4.1 Context

The investigation has been developed in the Information Systems Department (ISD) of the Turismo de Portugal organization. This ISD is responsible for providing services to about 650 users, distributed by all business units of the organization. It had the need to clear the flux of their IT costs.

The team responsible for the implementation included:

- The researcher;
- The Information Systems top manager;
- Some members of the financial department of the organization;
- Five key clients

4.2 First Interaction

The first step was to ensure that the invoices of all the costs would be available always when needed. This has been achieved by making responsible an employee to export, in all beginning of the month, the list of invoices from the previous month.

Next, it was necessary to treat the invoices in the ERP system of the organization and processed with the upload in the application developed. This one creates the costs associating the invoices by type and by supplier. After this, the user needed to identify which of the costs was indirect and direct, and which was annual and needed to be divided by the 11 months after.

The next step was to identify the provided services by the IT to the business, because the service catalogue was not defined. The following services were defined: Service Desk, Systems Administration, Application Maintenance and Communications.

After these aspects have been secured, it started to process the distribution of costs to services. This has been done based on percentages achieved in interviews and by observation.

To attribute the costs of services to the customers, it was defined for each service its cost driver and in the end of each month, data were imported from the supporting systems, allowing to verify what should be the distribution by the departments. Therefore, for each service has been choose the following cost driver:

- Service Desk – Number of incidents resolved by the Service Desk. Supported by incident management system.
- Application Maintenance – Number of changes. Supported by the changes management system (Not implemented, because the change system was not ready in time for this investigation).
- Systems Administration – Number of incidents resolved by the Systems Administration sub department. Supported by the incident management system.
- Communications – Number of user.
Evaluation
Short presentations were realized with five top executives, with the objective to explain the all process of costs distribution, and to collect some feedback from the business side.

Results
The concerns of the business units were similar, because the majority focused in the way that the costs are distributed. These concerns were important to define new charging policies, because new variables were identified, for example, it was important to know the font of an incident. Would it be correct to charge for an incident that the IT department was guilt for?
Another question raised was the weakness of the cost driver number of persons.

Specification of Learning
One learning achieved from this iteration was the need of new services. The services defined in this iteration were too much technology oriented and some customers did not comprehend them.
Another learning was related to the need of implementing a reporting system. Since the cost with people represents 30% of the IT budget, it becomes clear that a system with capacity to register all the activities of the employees would bring more credibility to the distribution process.
Finally we can also conclude that the proposal has capacity to solve the defined problem of the thesis, because a distribution process was implemented with success and the customers have contributed with positive feedback.

4.3 Second Iteration
In this iteration were made some changes in the proposal, with the objective to answer the needs identified in the first iteration. One of those changes was the definition of the service catalogue based on ITIL v3. There was an effort to establish relations between the IT capabilities and the business assets, so that the services were oriented to business.
The new services were:
- Document Management – Service that allows the employees of the organization to save theirs documents in a safe way;
- Data-Center – Data storage service that stores the information of several applications used by the business;
- Financial Management – Set of applications available by the IT, that allows the business to control their capital assets;
- Software Maintenance - Service that gives support to all applications used by the business;
- Hardware Maintenance – Service that gives support to all IT infrastructures that support business activities;
• Communications – Service that allows the employees communicate by internet and by phone;
• Statistics – Set of applications specialized in statistics.

As was done in the first iteration, in this the second it was defined for each service a cost driver and the choose one were:
• Document Management – Number of incidents that were associated to the set of applications of this service;
• Data-Center – Number of employees by department;
• Financial Management – Number of incidents that were associated to the set of applications of this service;
• Software Maintenance - Number of incidents that were associated to the set of applications of this service;
• Hardware Maintenance – Number of incidents that were associated to the set of infrastructures of this service;
• Communications – Number of employees by department;
• Statistics – Number of incidents that were associated to the set of infrastructures of this service.

Another change was the implementation of the reporting system, which was difficult by the resistance of some employees in using the system. To mitigate this inertia, some concerns were implemented. The most important was the total support of the top manager.

With the new services defined and the reporting system implement, it was time to distribute the costs trough the services. Unlike the first iteration, in the second it was followed two behaviors depending on the type of costs. The human resources costs were attributed according the information created by the reporting system, and the rest were attributed by percentages based on the distribution of the incidents.

**Evaluation**

Just like in the first iteration, the evaluation was made through interviews with top managers of the business, besides it was made a questionnaire to the employees that used the applications developed in this investigation.

Another way of evaluation was the collection of graphics and reports from the applications.

**Results**

Analyzing the costs over a few months allowed to clarify the purpose of each cost in the IT services. This analysis allowed also to rectify some errors in the invoice registration. In practice, to each cost it
was defined a tree with tree levels. The cost (root), the services associated (middle level) and the departments (leaves), and this three levels represented the flux of each cost.

![Cost Flow Diagram](image)

**Figure 4 – Cost Flux**

It was generated information about several perspectives of the costs: cost by supplier, cost by type and cost by incident. It was possible to see the evolution of all the costs along several months.

![IT Costs by Clients](image)

**Figure 5 – IT costs by clients**

Everyone did understand better the group of services presented in the second iteration.

The reporting system had also interesting results, beyond it had registred the services associated to each employee activity, it also registred the type of activity (reunion, investigation, event, tests, etc), which application or project associated and which business employee as made the order (if applicable).
Specification of Learning

The first learning achieved from this iteration is that through IT services aligned with the business process, the IT department can communicate with its clients using business terms. We achieved this conclusion, because the feedback from the clients about the new services was very positive.

We have also realized that a reporting system is difficult to implement if the right activities are not made. To be successful it must have the top managers support, it must be very simple to use and it must respond to some feedback of the users.

5. Conclusion

In way to have a full chargeback process implemented, it must exist a mentality change, because this process can’t just be seen as a mean to recover costs, but also a valuable decision support system. When the IT costs became clear and the business managers know the relation between those and their IT services request, then they can take decisions based on this relations.

If I would have the opportunity to begin again the same thesis I would start by implementing the reporting system, because it can generate a lot of information that can distribute automatically the human resource costs. But I would have very attention to the resistance that this system may create. Another think that I would do different was the inclusion of the business managers in a sooner step. With their views of the IT services, it’s easier to define services that really mean something to its users.

5.1 Future work

As future work we propose the investigation of how to treat and distribute the investments, so that the proposal of this thesis can manage all IT costs and not just the operational ones. We propose the study of the framework VAL IT [23] to support in this objective.

References