

Costing as a Service

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Abstract: Cost awareness and cost efficiency have always been major concerns to organizations from all industries but in the last few years its importance grew due to the global economic and financial crisis. Considering their small size and market exposure, Small and Medium Enterprises (SMEs) need cost awareness and efficiency more than ever. However, efficient and accurate costing methodologies are out of reach for most SMEs. In this research we propose that costing should be offered as a service to reduce the cost of cost analysis. Our research proposal is a cloud-based costing system that offers costing as a service using Time-Driven Activity Based Costing (TDABC) methodology and the concept of Business Process Costing Templates. When combined, they reduce the cost of cost analysis, especially for SMEs. We used the Design Science Research Methodology (DSRM) to conduct our research. This proposal was demonstrated in three Portuguese organizations and evaluated with feedback gathered from interviews and results from the system instantiation in all organizations.

1 INTRODUCTION

Enterprises are becoming increasingly complex and managing that complexity is a growing challenge. Competition is fierce among these entities that always tried to differentiate between themselves through a variety of factors, one of which is efficiency. Cost efficiency has always been a major concern to organizations but in the last few years its importance grew due to global economic and financial crisis. Due to their small size and market exposure, Small and Medium Enterprises (SMEs) need cost efficiency more than ever (OCDE, 2009).

However, as organizational complexity grows, so does the complexity of cost analysis (Wileman, 2010). Information about how and where the money was spent is a concern of organizations across all industries. Knowledge about costs distribution and true understanding of overhead costs allocation is essential for an enterprise to focus on the most profitable products and services (Delloite, 2011).

In order to obtain detailed information about costs and overheads distribution several cost methodologies were developed. These methodologies evolved and differentiated themselves from traditional cost accounting systems to better distribute overhead costs that have been rising inside organizations in recent

years (Miller and Vollmann, 1985). The increasing importance of overhead costs comes from the fact that the industry has evolved from manufacturing to services (Škoda, 2009). This development implied a substantial growth of overhead costs (Miller and Vollmann, 1985; Škoda, 2009).

Organizations using these accurate costing methodologies know exactly where resources are being spent and what is the profitability of their products or services. However, the adoption of these costing methodologies is far behind of what would be expected. The lack of adoption is explained by the high costs of these methodologies for SMEs since they require time, expertise and expensive and complex software solutions that are out of reach for the most of these organizations (Hall et al., 2011).

2 PROBLEM

Costing has been a major concern to all organizations since their genesis. As a competitive advantage, cost efficiency has been something that all organizations tried to achieve in order to increase their profit margins or reduce the price of their products or services. Cost efficiency is recognized as one of the most important aspects in respect to the competitive advan-

tages of an organization.

Normally, organizations resort to cost accounting in order to analyse costs and achieve the desired cost reductions. This approach has a major issue: traditional cost accounting systems give low detailed information and lack the needed granularity to properly do cost analysis and, therefore, cost reduction. Not least, most accounting systems are focused on mandatory state-demanded reports (Hicks and Costing, 2002) showing only large blocks of information totally misaligned with the organization's business processes. Therefore, when it comes to calculate the cost of a product or service, traditional methodologies give inaccurate values, mostly because they lack the needed granularity and differentiation of information (Lambert III and Chen, 1996). Often, such information is inaccurate because of wrong distribution of overhead costs. Correct distribution of overhead costs is truly essential since they have grown from being a minor share of the total costs to the major one (Škoda, 2009).

Presently, there are several costing methodologies to address the abovementioned problem. These methodologies resort to the activities that occur inside the organization to design the flow of costs from the inputs (e.g. material) to the outputs of an organization (products or services). This cost awareness allows organizations to take measures to improve their efficiency.

The problem with these accurate costing methodologies is that they require a lot of expertise and are normally supported by very expensive and complex software solutions (Hall et al., 2011). Whereas large organizations can support the costs associated with the required expertise and software solutions, SMEs cannot (Hall et al., 2011). It is crucial that SMEs have access to these accurate cost methodologies since they operate in a market that is more competitive (Nandan, 2010) and they are more exposed to the effects of an economic crisis (OCDE, 2009).

To solve this problem we propose that costing and cost analysis should be offered as a service instead of as an investment in a one-time project. This approach should enable organizations to access accurate costing methodologies because costs are diluted over time and the tools needed to perform this cost analysis are also offered as a service. Our proposal will also give organizations the ability to do on-demand cost analysis so that they can constantly evaluate the flow of costs as well as take measures to improve their cost efficiency.

3 RELATED WORK

We will provide an overview of the tools and methods available that could contribute to solve the identified problem.

Cost Accounting (or costing) can be defined as the process of collecting, classifying, assigning and analysing the costs associated with the activity of an organization (Blocher, 2005). Cost Accounting provides the detailed cost information that management needs to control current operations and plan for the future. The goal of cost accounting is to gather all possible information so that it can be structured and used by management to take decisions and measure the organization's performance (Vanderbeck, 2012; Cooper and Kaplan, 1987).

3.1 Costing Methodologies

3.1.1 Activity based Costing

ABC methodology defines an activity as an action executed inside an organization (e.g. packaging) that has a particular cost rate based on the cost of the resources allocated to that activity. Allocation of resources to activities and then to products or services is done based on interviews to those involved in the activities as well as in some estimates provided by the management team. This process results on splitting the costs related to the resources used by the activities using variables like percentage or headcount. Output costs are calculated adding the costs of all the activities that were needed to create the final product or service (Blocher, 2005).

Traditional costing methodologies assign overhead costs by volume, that is, overhead costs are distributed by products using some variable (or driver) that reflects capacity usage (e.g. number of hours) regardless of the specificities of the product. On the other hand, ABC uses activities which mean that different products may use a set of different activities and therefore a set of different cost rates to calculate the final cost of a product or service.

Although ABC has some advantages over traditional costing systems it also has some pitfalls. First, costs are calculated using individual and subjective estimates. The accuracy of these estimates may be questionable since, in most cases, there is no evidence of correctness. Wrong estimates may distort measurements (Kaplan and Anderson, 2007). Second, ABC requires not only the creation of an activity for every task performed inside the organization but also its cost specification. Thus, the complexity of the model grows with the number of activities. Finally, since it

is common to have activities with variable costs (e.g. special packing vs standard packing) and ABC defines activities as single tasks with fixed cost rates, models tend to have many similar activities just to simulate variable costs.

3.1.2 Time-Driven Activity Based Costing

Time-Driven Activity Based Costing (TDABC) (Kaplan and Anderson, 2007; Kaplan and Anderson, 2004) is an alternative costing methodology to ABC focused on assigning overhead costs to cost outputs.

The TDABC model simulates the actual processes used to perform work throughout an enterprise, therefore capturing far more variation and complexity than a conventional ABC model. Such variation and complexity is captured without significant demand for data estimates or processing capabilities. TDABC assigns resource costs directly to the cost objects requiring only two sets of estimates: the cost of supplying resource capacity and the capacity used by each transaction processed (Kaplan and Anderson, 2007).

Regarding flexibility and concerning the limitations of ABC of each activity reflecting only one factor/condition, TDABC introduces the concept of time-equations to model the different resources consumed by an activity (Dejnega, 2011). If we take as an example the packaging of an order that takes longer when gift wrapping is requested, in ABC there would be two activities: one for standard packaging and another for gift wrapping. However, in TDABC it is possible to express this variation with a time-equation.

Finally, TDABC provides mechanisms to gather information about its own accuracy and to identify possible wastes or inefficiencies (Kaplan and Anderson, 2007).

3.2 Business Process Cost Templates

Business Process Cost Templates is a method to reduce the costs of adopting efficient costing methodologies, such as TDABC, through re-utilization and standardization of business processes for organizations inside the same field or industry. The main goal of these templates is to dilute the costs associated with the analysis required to implement a costing methodology, in particular TDABC, making the adoption of such methodologies more affordable (Lourenço and Mira da Silva, 2013).

The method that creates a template for a particular field is composed of two distinct phases: a **Modelling Phase** and an **Application Phase**. The first is done only once and is where the field or industry is analysed and a generic cost model is developed. The

second results of the application of the template produced. The template is instantiated and the specificities of the organization are set. These specificities may include addition or removal of activities, changing the coefficients in time-equations, or adding some unrepresented condition. This adjustment is crucial since not all organizations are identical, even though they belong to the same industry or field (Lourenço and Mira da Silva, 2013).

4 PROPOSAL

We briefly describe our proposal as a **cloud-based costing service that uses TDABC and the concept of Business Process Cost Templates to reduce the costs associated with cost analysis.**

4.1 Costing Service Objectives

We highlight from our cloud-based costing service the following features: Time-Driven Activity Based Costing methodology, Business Process Costing Templates, Creation/Edition of Business Processes and Time-Equations, What-if Analysis, Data Integration, Data Visualization and Automatic Pre-configuration.

Offering a costing service in a cloud environment helped us achieve the needed technological cost reduction. Current solutions require local software installations that raise the costs of the service because, in addition to compelling the purchase of the technological equipment needed, it also implies operational costs. Those tools are also very complex and require expertise whenever modifications to the model are needed. These issues prevented managers from performing cost analysis as an ongoing process.

As for the costing methodology, we adopted TDABC for the reasons stated in the Related Work (section 3). TDABC is an accurate costing methodology that solves the problems identified in previous methodologies and that is simple to understand and implement, providing quick benefits for those who adopt it (Pernot et al., 2007). TDABC also has clear connections with BPM that helped us connect it with Business Process Costing Templates.

Regarding Business Process Costing Templates, we chose to use them within our service because they provide a way of creating cost templates to a given industry and distribute them for all the organizations that operate within that industry. These templates can be created and modified by an organization or by a cost analysis expert and included within our tool. Providing cost templates to more than one company leads

to cost reduction, since the cost of creating a template can be distributed by multiple organizations. These templates can be later improved or adapted to the reality of the organization deploying the template. Even though the organization may incur in a cost by doing this, it will be a lower cost when compared to the cost of a complete analysis.

Finally, What-if Analysis, Data Integration and Data Visualization, are meant to provide means of assessing the organization's performance. Although these features are not directly related to the cost reduction of the cost analysis they are required to comply with the guidelines proposed by TDABC.

4.2 Costing Service - Analysis Process

Figure 1 shows the process of performing a cost analysis using the costing service. Users should start by configuring resources and resource pools and importing transactions. If the costing service is being used by more than one user, each one may be accountable for one of the activities. In the case of the resources, users should define, for every resource belonging to the organization, the name of the resource, its monthly capacity and the cost of providing such capacity. On the other hand, regarding resource pools, users should define the name of the resource pool and its classification, whether it is a support resource pool or a functional resource pool. Afterwards, users should configure the resource pool structure, that is, which support resource pools belong to which functional resource pools.

Users must also associate resources to resource pools. Resources can either be associated to support or functional resource pools. After completing these associations, resource pools will have their cost calculated so that users can know the costs of their resource structure before completing the analysis.

Afterwards, users should decide if they want to automatically configure business processes and activities or if they want to manually specify them. The main difference is closely related to the quality of the data available. If users know that their data matches the processes of the organization, they can let the tool automatically configure them. On the other hand, if users already have some sort of "optimized" business process template, they should manually configure the tool. Users may also let the costing tool infer business processes and then fine-tune them. We encourage users to perform an automatic configuration since this simplifies the process of analysis even further.

Finally, users should associate the functional resource pools to the business processes that those functional resource pools are accountable for and then

compute the analysis. Running the analysis finishes the process of cost analysis. However, users may change resource cost values, fine-tune activities and business processes or change associations and then recompute analysis.

4.3 Costing Service Tool

We developed our costing tool according to the guidelines defined by both TDABC and Business Process Costing Templates meaning that they represented our requirements document.

Figure 2 shows the Dashboard of our tool. We provide information regarding the number of Transactions (8682) used to make the analysis, the number of Business Processes (77) identified and the list of the top five most costly Resource Pools and Business Processes.

5 DEMONSTRATION

We demonstrated our proposal by instantiating our artefact (the costing service) in three real world Portuguese organizations, namely "Social Security IT Institute", "Defence Data Center" and "Card4B".

The demonstrations consisted in instantiating the costing service, i.e., creating the cost template, within the costing tool, to the organization being tested. This includes the definition of resources, resource pools, business activities, business processes and the relationships between these entities to the particular environment of the organization being tested.

5.1 Social Security IT Institute

The Social Security IT Institute is a public institute, integrated in the indirect state administration, with administrative and financial autonomy. It is an organization with nationwide intervention. Although several state competences have been assigned to the Institute, we focused our demonstration in the service desk competences.

Following the process described in section 4.2, we started by gathering relevant data to feed the transactional data needed to perform the analysis. We asked the Institute to provide us with a CSV file containing the data to be imported as transactions. We had access to 8682 **real transactions** to perform the analysis.

Regarding the resources, there are several resources involved in all the business processes and departments inside the organization. These resources are diversified and include technical and management

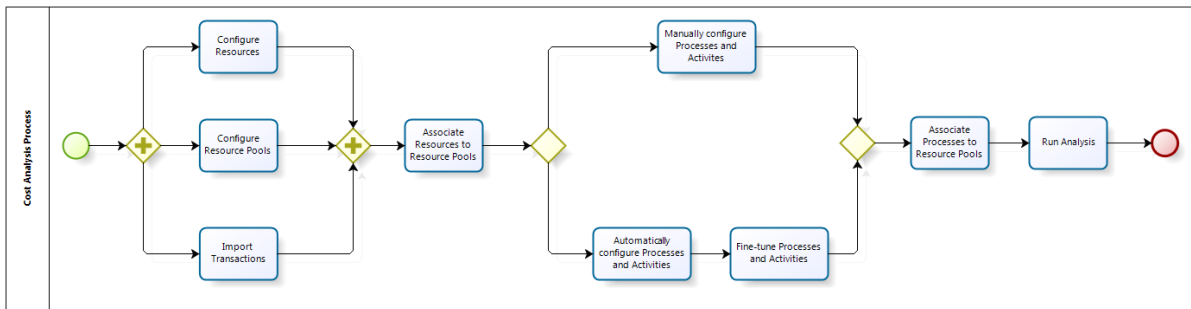


Figure 1: Costing Service - Analysis Process.

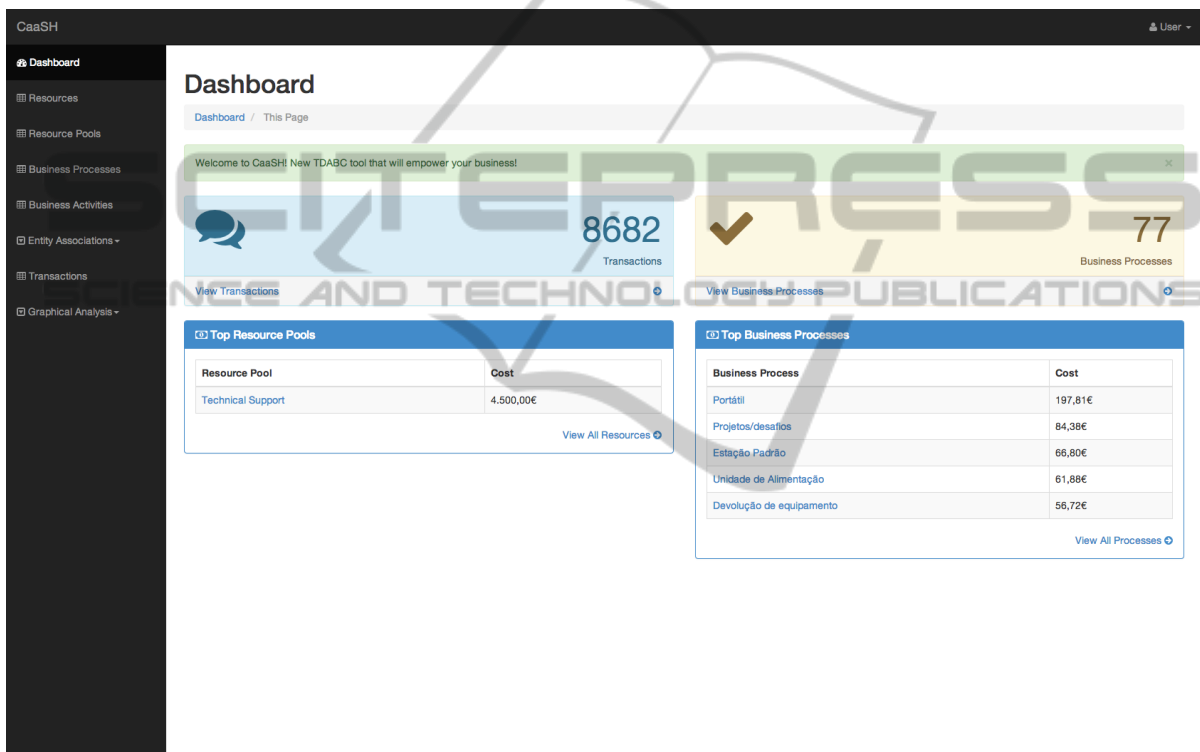


Figure 2: CaaSH - Dashboard - Costing Tool.

staff, electricity, rents, material and equipments. Although all these resources and resource pools (such as the Technical Support department) are properly identified, the organization opted to avoid gathering the unit costs of each resource and their contribution to the resource pools. This decision was justified since the organization had been previously involved in a cost analysis project. From the results of this former project, the Institute knew the daily cost of the technical support staff. However, they were unable to link it to the execution of the business processes, which is the main objective of our demonstration.

Based on these limitations, we defined a resource and a resource pool that matched the daily value supplied. We knew that the monthly time capacity of this

resource was 8 hours/day and 22 days/month, which was converted in minutes with a 10% waste on working hours, giving the final monthly time capacity of 9504 minutes for each technical support worker. If we assume (since we cannot disclose the real value) the cost of providing such capacity as 200€/day, the cost of providing 9504 minutes of technical support labour would cost 4400€. Since there is no other support resources or resource pools, this means that the capacity cost rate (CCR) of this resource is 0,46€.

From the 8682 transactions supplied, the automatic configuration of the costing tool was able to detect 77 business processes with 791 unique business processes instances. This means that the analysis was performed using data from 791 complete executions

of a business process (from the 77 identified). Figure 3 shows a sample of the results obtained from the analysis. The sample shows, for each business process identified, the average time and cost of execution as well as the number of instances that were identified for that business process. The red and green rectangles also show another interesting result from the cost analysis. The red rectangle shows a group of three business processes that were identified by the costing tool and that correspond to the same business process, as we were able to verify with the Social Security IT Institute management. This results from the wrong definition of workflows inside the IT Service Management software (EasyVista) which leads to wrong categorization of incidents/service requests in the service desk. The green rectangle shows the same problem described earlier but this time with an even minor difference (name pluralization).

Not only the costing tool delivered what was expected, i.e., the cost of executing the business process that accomplishes the resolution of a service request or incident, but it also provided valuable insights to the organization regarding the workflows definition in the IT Service Management software. The organization can easily know the average time and cost of executing a business process. Moreover, the institute can further analyse the data and find **the cost for every execution of every business process**. The Social Security IT Institute management members considered these results very useful since they can now further analyse the different costs that the same business process generates. For instance, a desktop related incident has an average cost of 23,22€ but the minimum cost and the maximum cost of such incident was, respectively, 2,31€ and 70,83€. Having this information, the management may now try to understand what motivated such difference and take measures to mitigate the cause.

5.2 Defence Data Center

The Defence Data Center belongs to the General Secretariat of the Ministry of National Defence (Portugal) and among its several competences they are also responsible for service desk activities.

The Defence Data Center service desk uses EasyVista software for IT Service Management, i.e., the same software used by the Social Security IT Institute. It is also configured according to the best practices defined internally (ITIL). This means that the demonstration was almost identical to the previous case. Again, we followed the costing service process of analysis (section 4.2).

Results obtained from the analysis are similar to

those shown in Figure 3. Again, we detected groups of business processes that were identified by the costing tool and that correspond to the same business process. As we stated before, this results from the wrong definition of workflows inside the IT Service Management software.

5.3 Card4B

Card4B develops and operates integrated mobility solutions through interoperable contactless ticketing, passenger information, embedded systems and smartphones, systems integration and business intelligence. Presently, Card4B is developing a project, designated ecoDrive - Intelligent Eco Driving and Fleet Management, which is a multidisciplinary project, targeting the public transportation network, in which INOV is responsible for the identification of business processes (BPMN) and the cost analysis of those business processes using a TDABC approach.

The costing service described in the proposal (section 4) was adopted as a solution for the ecoDrive project since it delivered all the needed features to accomplish the objectives defined. However, this project required that the identification of business processes and activities was done prior to the system deployment, meaning that we would only have access to real transactional data after the system enters in production, since there is no digital data from the past.

Starting with the business processes, we were able to identify 10 different business processes, each one with its distinct set of activities. For example, we identified a business process "Occurrences" that is related to the different events that may cause changes to the operational service of a bus. The activity list of this business process includes "Change Driver" and "Change Vehicle". Another example was the business process "Corrective Maintenance" that features activities such as "Repair of damage" and "Damage Report". These 10 business processes and respective activities are the ones that will constitute the foundation for the transactional data to be exported from the software being developed by Card4B for the public transportation industry.

As we stated before, we didn't have access to real transactional data since the system is not in production yet. In this particular case, our tool will import transactional data from JSON web services rather than from a CSV file, enabling the costing tool to get data in real time. As a result, after configured, the costing tool can pull data, in a given time interval, so that it can produce updated metrics without user intervention.

Name	# Instances	Average Cost	Average Time	Actions
Acesso a Leitor CD \ Disco Rígido \ Pen USB	2	5,56€	00:12:00	[Icons]
Acesso Remoto	2	17,59€	00:38:00	[Icons]
Administrador NT-UNIX-Linux	8	5,38€	00:11:00	[Icons]
Alteração dados Conta	1	8,33€	00:18:00	[Icons]
Alteração de Configurações (Workflow/Catálogos etc.)	5	28,70€	01:02:00	[Icons]
Aplicações Web	6	10,42€	00:22:00	[Icons]
Auditorias/Consultadorias	43	10,53€	00:22:00	[Icons]
Backup	1	11,57€	00:25:00	[Icons]
Backup - Restore	21	16,31€	00:35:00	[Icons]
Backup/Restore	41	10,23€	00:22:00	[Icons]
Bandeja	2	8,10€	00:17:00	[Icons]
BSC	1	33,33€	01:12:00	[Icons]
CASA	1	12,96€	00:28:00	[Icons]
CNP	2	7,64€	00:16:00	[Icons]
Configurações	99	7,23€	00:15:00	[Icons]
Conta - Login	60	6,50€	00:14:00	[Icons]
Desktop	40	23,22€	00:50:00	[Icons]
Devolução de equipamento	1	56,02€	02:01:00	[Icons]
Disco Rígido	2	35,19€	01:16:00	[Icons]
Disco USB	1	1,85€	00:04:00	[Icons]
Discos Rígidos	4	6,48€	00:14:00	[Icons]
Easyvista	4	8,10€	00:17:00	[Icons]
Email	18	10,31€	00:22:00	[Icons]
Erro Entrada de Dados	6	2,01€	00:04:00	[Icons]

Figure 3: CaaSH - SS IT Institute - Business Processes Sample.

6 EVALUATION

The goal of this evaluation is to determine if the solution proposed in the Proposal (section 4) solves the problem stated in the Problem (section 2).

The evaluation method will consist in the following steps:

- Interviews and Questionnaires.** Gather feedback from the proposal through the demonstration and identify improvements;
- Österle et al. Principles.** To formally evaluate the research;
- Demonstration’s Critical Review.** To critically evaluate the research, objectives fulfillment and the demonstrations conducted;

6.1 Interviews and Questionnaires

After demonstrating our costing service, we conducted a small questionnaire to those involved so that we could obtain a more structured feedback. The questionnaire was made to five interviewees with the following business roles: Planning, Quality and Audit Manager, Budget Manager, Planning and Control

Manager, Accountant for Client Support and an IT Director.

We carried out four questions to these professionals that helped us assess the artefact utility and the fulfillment of the objectives defined earlier. These questions were also defined having in mind the needed information to formally evaluate the research.

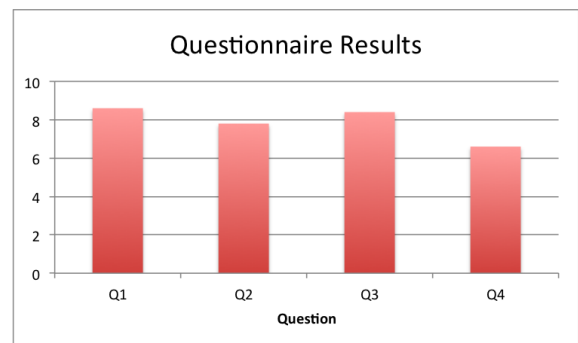


Figure 4: Questionnaire Results.

Figure 4 shows the questionnaire results which averaged 7,85 out of 10. We also gathered feedback from the interviews that provided us insights in different topics needed to evaluate this research as we will further detail in this section.

6.2 Österle et al. Principles

Österle et al. proposes an evaluation method based within four principles (Österle et al., 2010). Our research met the four principles of Österle. This evaluation is based on the feedback received from practitioners, which were described in the previous sections.

1. **Abstraction.** The artefact we propose can be applied to the majority of the service-oriented or process-based organizations;
2. **Originality.** None of the interviewees had knowledge of any research or product similar to the proposed artefact. Similar research was not found regarding the costing service;
3. **Justification.** Our artefact is justified by the lack of a similar solution and from the positive feedback gathered during this research;
4. **Benefit.** According to the interviewees, at least in the industries consulted, there would be a valuable benefit, since it would provide an easier and more affordable way to perform a cost analysis.

6.3 Demonstration's Critical Review

We consider that our research was properly evaluated and tested with our demonstrations. We demonstrated our proposal in three Portuguese organizations, from two distinct industries, with the objective of providing those organizations with new ways to conduct simple and reliable cost analysis.

Our demonstrations targeted three organizations that are making clear efforts to consider business process costing a priority. Two of the three organizations (the service desks), already have their services oriented according to best practices such as ITIL and ISO 20000. That gave us an advantage regarding the costing service implementation. Although our service provides an easy way to start costing business processes and services, we do realize that the organizations deploying such service should have a considerable maturity in their architecture.

We were able to deliver average cost per business process and real cost per business process instance. We consider the latter to be a great benefit to service-oriented organizations since it enables organizations to comprehend the average cost of supplying a service or executing a business process but also the real cost for every business process instance executed. This helps organizations detect erroneous paths and singular problems that occurred at a moment in the organization.

Finally, every interviewee that saw the costing service configuration and use considered the process of

conducting a cost analysis using our tool very easy and understandable.

7 CONCLUSION

Cost efficiency has always been a major concern to organizations from all industries around the world. In recent years, economic crisis and increased competition in an increasingly global economy pushed even further the need for cost efficiency and cost awareness. It became crucial to assess and benchmark an organization's performance and to identify improvement opportunities across all sectors of the organization and over the cost stream.

Our artefact is a cloud-based costing service meant to provide costing as a service. Our main objective was to develop a solution to reduce the costs associated with cost analysis so that SMEs can reach the accurate costing methodologies needed to assess an organization's cost efficiency and performance.

We validated our proposal in three Portuguese organizations belonging to two different industries: Services industry (two Service Desks) and the Public Transportation industry. We completed the demonstrations by instantiating the proposed costing service.

7.1 Main Contributions

We believe that our proposal brings a valuable contribution in the context of costing and cost analysis. The resulting costing service allows organizations to conduct a bigger share of the cost analysis without demanding significant levels of expertise or capital.

The proposed costing service not only provided a solution to the problem of high costs of cost analysis but also delivered a costing tool capable of correctly and completely support TDABC and Business Process Costs Templates. These methods combined with the capabilities of our costing tool produced well-defined steps that act as a guideline for both analysts and managers looking for a cost analysis solution. The end result is a costing service capable of delivering the ability for an organization to do cost analysis with internal resources and expertise, without needing substantial investment.

7.2 Limitations

The limitations regarding our proposal can be divided into two groups, technical limitations and conceptual limitations.

Regarding the technical limitations, although we consider our costing tool to be more than just a pro-

totype, we must state that it lacks some characteristics needed to be a full cloud-based costing service. The developed costing tool does not support integration and importing of tax and analytical accounting data. In order to avoid data input mistakes and to enable high volumes of data integration this would be mandatory. We also consider that the developed costing tool, although producing some useful metrics, lacks the ability to produce management reports.

As for the conceptual limitations, they are related to profitability, capital and investment characteristics that are needed to correctly reflect all the costs within the analysis. The research process and the interviews revealed that although costs and cost analysis are major concerns to organizations, they are strongly tied to capital costs, working capitals, return on investments and profitability. Although we excluded from the beginning of this research such concepts and metrics, we must acknowledge that the lack of such characteristics is a limitation that must be addressed in future research.

7.3 Future Work

Although we achieved three full demonstrations in two distinct industries, we consider that applying the service to more complex and different industries would be desirable since that could further validate the proposed costing service. Our demonstrations were carried using a significant volume of transactional data. However, high transactional volume industries would be advisable to further test the costing service.

Another interesting aspect would be to develop BPMN importing capabilities within our costing tool. Since some organizations already have their business processes modelled in BPMN it would simplify the process of cost analysis even further.

Finally, the costing tool should also be able to import business processes and activities specific drivers. This would enable the tool to produce different metrics other than just the cost of business processes and activities. Since our effort was to develop a service to reduce the cost of cost analysis, we opted to leave this feature as a future development because it would require transactional data to be much more specific than the datasets we had access to, conditioning the costing service validation and demonstration.

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