Research Article

Cost Management in IT Outsourcing Contracts: The Path to Standardization

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Abstract

IT Outsourcing contracts are a specific and complex set of IT services that require providers to give special attention to manage a long relationship at optimal cost. The challenge is to identify the best cost structure, cost methodology and IT services variance, in order to manage a service with the highest level of standardization.

Due to the specificity of this work, the research methodology chosen is case study research applied to seven contracts. This research shows that IT Outsourcing providers suffer from several sources of variance in services and increasing contract costs. However, due to economic downturn and competition, organizations are pursuing cost reductions, and providers should take this opportunity to trade-off customization (a characteristic of IT Outsourcing contracts) for standardization (a quality of cloud offering).

The conclusions of the research show that providers need to have a well developed cost management system and mechanisms to control services variance in order to gain useful information about how their performance in a contract might affect a different one, because some contracts are silos, but others can use a common structure.

Keywords: Cost management; IT Outsourcing; Cloud services; services standardization.

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Introduction

Today organizations face hard challenges to keep their businesses above breakeven point. Markets are shrinking and managers are focused on optimization and cost reduction. In this context, new opportunities arise for Outsourcing providers (KPMG, 2012) as well as customer organizations that can (re)negotiate contracts to reflect changing market conditions or move operations to Outsourcing.

Outsourcing as a management concept has been present for a long time (Quinn & Hilmer, 1994) (Dibbern & all, 2004) (Quinn & Hilmer, 1994; Dibbern et al., 2004;

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Brown & Wilson, 2005) as organizations gradually started to outsource non-core business processes to reduce operational costs, obtain higher efficiency standards and increase competitiveness.

Outsourcing deals are based on the scope of the services to outsource ITO, BPO, among others (Brown & Wilson, 2005). Consequently, in order to respond to highly demanding customers, providers need to define a specific strategy for each contract (Cullen, Seddon & Willcocks, 2005; Cullen, 2009).

In this paper, the researchers analyze how providers build and manage their cost structure, in order to respond to the specificity of an IT Outsourcing contract, given the actual market pressure for flexible demand and cost reduction.

Generally, IT Outsourcing have two cost natures: capital expenditure (CAPEX), based on the underlying physical infrastructure necessary for the execution of the services, and operational expenditure (OPEX), based on continuous services during a predetermined period of time. During that time, providers need to accurately measure the cost to serve (Kaplan & Cooper, 1998). However, since IT services have a high level of variance, cost allocation and financial performance measurements are difficult tasks.

Moreover, providers need to identify adequate metrics and cost drivers in order to make meaningful comparisons between different contracts.

Cost data can be collected and analysed through costing systems, such as ABC (Kaplan & Cooper, 1998), and integrated into the overall accounting system for future extraction and analysis by the management and stakeholders. However, the primary emphasis of a costing system should be to provide relevant and reliable information for management decision making rather than focusing only on financial reporting requirements (Horngren, Foster, & Datar, 2000).

Today, the existing literature on IT Outsourcing (Lacity & Hirschheim, 1993; Hanox & Hackney, 2000; Dibbern et al., 2004) offers a considerable body of knowledge. However, existing research on cost structure for IT Outsourcing contract is scarce.

Consequently, the paper's goal is to analyze how providers manage costs and variance of IT services by answering the following research questions:

Research Question 1 (RQ1): What are the cost lines and cost methodologies used to manage an IT Outsourcing contract?

Research Question 2 (RQ2): How the management of an IT Outsourcing contract copes with cost reduction in opposition to the need of revenue increase?

The authors' research work is based on a case study research (Yin, 2008) applied to seven contracts of an IT Outsourcing services provider.

The remaining of this paper is structured as follows. In section 2, the authors discuss what IT Outsourcing and cost accounting are. In section 3, the authors present the research methodology; in section 4 the collected data. Section 5 discusses the results, section 6 provides the conclusion and the last section reviews future research.

IT Outsourcing Contracts

IT Outsourcing contracts are a specific way of delivering IT services. In the following paragraphs the authors present the literature review related to the research questions. In the following section, the focus is laid on the three main theories most referred to as to Outsourcing decision: Transaction Cost Theory (TCT), Power and Politics and Agency Theory, and their success factors and risks identified.

Outsourcing Decision

With the history of IT Outsourcing, from time to time, organizations face the strategic decision of making a contract with an IS/IT provider for part or totality of

their information systems during a certain period of time. This action is called IT Outsourcing, according to Willcocks and Lacity (1998) "Handing over to third-party management of IT/IS assets, resources and/or activities for a required result". As indicated by Hancox and Hackney (2000, p.217), "Precise definitions of information technology (IT) outsourcing differ in the literature, but there is general agreement that it is the carrying out of IT functions by third parties".

When organizations start the decision process to determine whether to outsource, they can base their decision on one or several theories, the most referenced in literature being: Transaction Cost Theory (TCT), Power and Politics and Agency Theory.

TCT is attributed to Williamson's (1979) but it has been applied extensively in discussing outsourcing relationships by Lacity & Hirschheim (1993); Willcocks & Lacity (1998); Poppo & Zenger (2002); Miranda & Kim (2006) Transaction costs or coordination costs are based on monitoring, controlling and managing transactions. Thus, managers must consider total costs (production costs plus transaction costs) when selecting between make-or-buy alternatives (Lacity & Hirschheim, 1993).

Power and politics focus primarily on the power of the IS department, the vested interests of different stakeholder groups and the political tactics they may enact to sway decisions in their favour (Lacity & Hirschheim, 1993). Thus, this perspective would make a decision making situation in which the various elements in the decision process – even internal actors – tend primarily to their own welfare.

The Agency Theory (Jensen & Meckling, 1976) is essentially concerned with the delegation of work by one party (the principal) to another (the agent) via a contract (Eisenhardt K. , 1989), whether or not they are both within the same organization. An agency relationship is defined as a contract under which one or more people (the principal(s)) engage another person (the agent) to perform

some service on their behalf, which involves delegating some decision making authority to the agent.

In this relationship, both parties want to maximize utility, which is a good reason to believe that the agent will not always act in the best interests of the principal, since both can have conflicting interests. The principal can limit divergences from their interest by establishing appropriate incentives for the agent and by incurring monitoring costs to supervise the agent (Hancox & Hackney, 2000).

The history of IT Outsourcing goes back to the 1960s (Hirschheim, George, & Wong, 2004). Since then, the decision to use external entities to manage internal information systems and the people that operate them represent an option for many organizations to optimize costs and operations.

During the decision process, managers can consider a wide set of factors that have been identified and studied in the past decades by academic researchers (Dibbern et al., 2004) in order to help managers in the decision process. Such factors are twofold; there are benefits as: capability and experience of service providers, cost reduction, increase of flexibility, focus on core competences, among others (Lacity, Shaji, & Willcocks, 2009, p. 134). However, there are also the associated risks, such as weak management, inexperienced staff, business uncertainty, outdated technology skills, hidden costs, lack of organizational learning, loss of innovative capacity, technology indivisibility and fuzzy focus (Lacity, Shaji & Willcocks, 2009; Earl, 1996).

Beside knowing those factors, before IT Outsourcing can work "a company must be capable of managing the IT services first" (Earl, 1996, p. 27) and "Understand your strengths", as concluded by Thomas, Zmud & Mcray (1995, p.15)

In this sense, IT Outsourcing providers must guarantee to customers that they understand the business processes, since IT is part of the Organization business

strategy (Ward & Griffits, 1996) and, consequently, a critical issue.

During the decision process, organizations define the degree of outsourcing that best suits their needs. The degree of outsourcing is the amount of outsourcing as indicated by percentage of IT budget outsourced and/or the type and number of IS functions outsourced (Lacity, Shaji, & Willcocks, 2009, p. 136). If a company outsources 80% or more of the IT budget, then it is considered total/full outsourcing.

According to the same study, high levels of outsourcing are related to lower levels of success. Therefore, organizations with less than 80% of IT budget outsourced have higher success rates.

Outsourcing Configuration

After the main decisions are made, such as the selection of the provider, the degree of outsourcing and contract duration, organizations need to deal with contract configuration. An IT outsourcing contract is a complex and long relationship that can be configured by seven attributes (Scope Grouping, Supplier Grouping, Financial Scale, Pricing Framework, Duration, Resource Ownership and Commercial Relationship) with a set of options that allow organizations to design, implement and manage the IT Outsourcing services (Cullen, Seddon, & Willcocks, 2005).

Likewise, a well-developed contract with specific Service Level Agreements (SLA),which represent the contractual means of helping organizations to manage the contract and a governance model (high values of coordination and consensus between client and provider), are also essential factors for IT Outsourcing configuration and success (Poppo & Zenger, 2002; Wullenweber, Beimborn, Weitzel & Konig, 2008; Goo, Kishore, Rao & Nam, 2009).

Outsourcing Cost Management

Accounting is the major means of organizing the information about economic activities. After that, information is provided to decision makers and stakeholders in the form of financial statements (Horngren, Foster, & Datar, 2000).

All organizations have to comply with accounting standards, national and international, each with a different purpose and involving data gathering at different levels of the organization.

In order to provide information to the different stakeholders, there are three types of accounting: management accounting, which measures and reports financial and non-financial information that support decision making and goals achievement at different levels in the organization; financial accounting, which serves external decision makers, such as government, stockholders, suppliers and financial institutions that rely on financial statements to make decisions; and cost accounting that is related to the cost of acquiring or consuming resources and provides information to both management and financial accounting (Horngren, Foster, & Datar, 2000, p. 3).

Cost management is used to describe the set of activities in planning and controlling, which incorporates the continuous reduction of costs. Consequently, these activities are linked with revenue and profit analysis made at the management accounting level.

Like any other organization, IT Outsourcing providers need to manage costs to support managers' decisions related to contractual terms and obtain profit.

Cost management can be divided into three main areas: first, cost perspective, in which costs are generated in organizational activities, product or project development and setting prices. Second, cost allocation, when costs are assigned to a specific cost object. Third, cost accounting, where costs are registered in a management system that provides information to financial and legal accounting (Horngren, Foster, & Datar, 2000).

Nowadays, cost management is a solid field of knowledge that allows organizations to choose from the most suitable cost management methodology available. The methodologies are: activity-based costing (ABC); Grenzplankostenrechnung (GPK); lean accounting; life-cycle costing; job order costing; Kaizen (continuous improvement) costing; process costing systems; resource consumption accounting (RCA); standard costing and target costing (IFAC, 2009).

Costs can be classified according to several categories: fixed, variable, direct and indirect. These categories are not exclusive since they can be combined; for example, a cost may be fixed and indirect, or variable and direct.

However, cost classifications are not static and through the use of costing methodologies(like ABC), managers can turn many indirect costs into direct costs, by selecting activities and cost drivers that trace and link many indirect costs to cost objectives, just as explicitly as they have traced direct material and direct labour costs (Kaplan & Cooper, 1998).

Figure1 presents the main functions of an accounting system and relates the management accounting system to cost classifications, which can be influenced by the costing perspective and costing methodologies. Cost classification can be direct or indirect, and then grouped as type of cost, which can be fixed or variable, with two possible natures of cost: capital expenditure (CAPEX), related to investment, hardware and buildings, or operational expenditure (OPEX), related to equipment maintenance, materials, labour, etc.
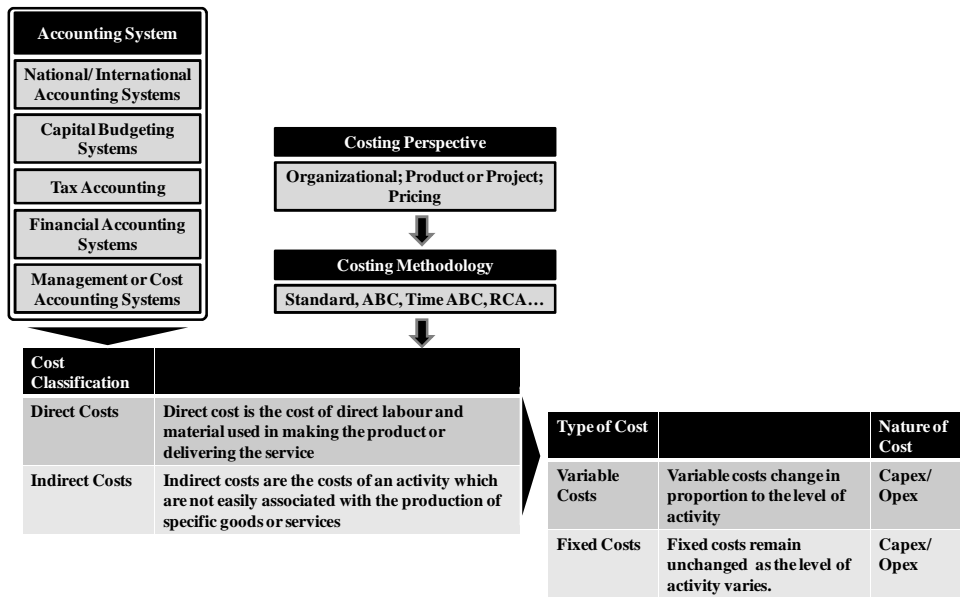

Figure1 - Cost Classification and Accounting Systems Areas (Developed by Authors)

IT Frameworks and Cost Management

Nowadays, organizations can use one or several IT service management frameworks to manage IT. In this research, the authors selected Control Objectives for Information and related Technology (COBIT) from the IT Governance Institute (ITGI) (ITGI, 2005), because it is strongly focused on control.

COBIT has two processes directly related with costs. Firstly, the process "PO5 - Manage the IT investment" in the domain of "Planning and Organisation," which is associated to control over the process of managing the IT investment that satisfies the business requirements to ensure funding. Secondly, the process "DS6 - Identify and allocate costs" in the domain

"Delivery and Support" related to identifying and allocating costs to ensure a correct awareness of the costs attributable to IT services, which are enabled by a cost accounting system. This ensures that costs are recorded, calculated and allocated to the required level of detail by business requirements.

Research Methodology

After the first phase of research, based on problem statement and literature review, the authors used a research configuration centred on case study research (CSR). CSR epistemologically focuses on a single or few research objects and is an empirical investigation of phenomena within their global environmental context, in which the unit of measurement of CSR is usually associated with the concept of an entity (Yin, 2008).

Additionally, Yin notes that in CSR data collection possibilities can be limited due to technical, legal, or privacy reasons (Yin, 2003, pp. 3-9).

Although some authors criticize CSR for its lack of external validity, the depth and detail of findings supplants the importance of external validity and the method can deal with a full variety of evidence such as documents, artefacts, interviews and observations. Thus, it allows a comprehensive analysis of the topic under investigation (Yin, 2003, pp. 3-9).

Research Configuration

Research configuration was leveraged by previous literature review that allowed the creation of an interview agenda to support and lead discussions with practitioners (IT service managers).

The interactivity of the method chosen (as opposed to what would happen in a quantitative methodology) also afforded enough flexibility to discuss interesting or unexpected topics that emerged during the conversation, allowing richer data to be obtained.

Research configuration was developed to allow the analysis of multiple case studies. One of the reasons that Yin indicates a preference towards multiple case studies is that external validity can be strengthened, depending upon the results. Replication logic is sought in the selection of the sampled cases. Cases that are seen to be different are iteratively compared and contrasted.

As recommended by Eisenhardt K. (1989, p.545), a sample size between four to ten cases should suffice for a valid case study research.

Participants and Cases Analysed

The authors analysed a set of seven cases developed by a major Portuguese provider of IT Outsourcing services. All interviews followed the same protocol. Each IT Outsourcing deal was analysed for the occurrence or non-occurrence of the constructs under investigation, contract reports and interview sessions with service managers, which lasted between one hour and half to two hours. Notes and audio recorded discussions were transcribed for analysis. The diversity and information obtained on the seven selected cases, in a confidential basis, provided multiple perspectives to triangulate the data (Burke & Christensen, 2012; Jick, 1979). Data collection by the authors was carried out for seven months, between 2011 and 2012.

Since the case selection (presented in Table 1) represents a convenience sampling, the authors cannot scientifically make generalizations (Bryman & Bell, 2007). However, as they had the unique opportunity to study real cases, the results may be used to identify common patterns with future formal modelling to validate these patterns (Lee, 1991).

Table 1. Set of Cases Analysed by Authors

Coded Name	Scope of Contract	Sector	Employees	Years of Contract
EDF	IT + IS + Coms	Construction	800	5
ES	IT + IS + Coms	Banking	12.000	5
SOV	IT + IS + Coms	Consumer Goods	400	4
BC	IT + IS + Coms	Banking	6.000	5
CI	IT + Coms	Media	1.000	3
PL	IT + Coms	Services	200	3
SCL	Coms	Public	4.600	5

Results

In order to answer the research questions, the authors conducted an analysis, based on documents and interviews, along with case study research methodology (Yin, 2008). Additionally, the preparation of interviews and selected documents was based on the work of (Cullen, Seddon, & Willcocks, 2005) and (Horngren, Foster, & Datar, 2000), which allowed building the following tables related to cost classification of IT Outsourcing contracts.

Table 2 presents the lines of direct costs identified, in which the type of cost is clearly defined as fixed or variable as well as the nature of cost as CAPEX or OPEX. A short description of the cost line is provided.

Table 2. Provider Cost Structure for Direct Costs with Defined Type of Cost (Developed by Authors)

Provider - IT Outsourcing Cost Structure					
	Type of Cost		Nature of Cost		
Cost classification	Fixed	Variable	CAPEX	OPEX	Description
Direct Costs					
Hardware and Software					Costs associated to SW and HW
ICT Infrastructure Hardware	x		x		Servers, Routers, Switch necessary to the implementation of the services
SW IT Service Platform	x		x		Software Licences needed to execute the contract
SW Maintenance	x			x	The maintenance cost of SW
HW IT Service Platform	x		x		The purchase of HW needed to execute the contract
HW Maintenance	x			x	The maintenance cost of HW
Renting, Leasing	x			x	The costs of renting or leasing specifi HW/ SW for the
Dedicated Human Resources					Human Resources required to execute tasks in scope
Help-Desk/ Service Desk Team		x		x	Service desk team required for the contract
Service Manager	x			x	Service manager required for the contract
Contract Manager	x			x	Contract Manager
Dedicated Technical Team	x			x	Fixed team required to execute the services in scope
Shared Technical Team		x		x	Variable team required to execute the services in
Cost of Extra Labour		x		x	Costs of extra labour of Human Resources
Cost of HR Training		x		x	Specific Trainning related with services scope
Projects					Projets needed to setup, optimize and phase out
Transition Project	x			x	Project necessary to execute due diligence, setup and services in scope
Transformation Projects		x		x	Projects to perform transformations on the IT/IS infrastructure based on provider knowledge and customer reality and strategy for the contract
Termination Project		x		x	Project to step out of the customer reality with knowledge transfer to customer or another provider
IT Services					Execution of IT/IS and Communications monitoring, management, maintenance and development tasks
IT monitoring and administration		x		x	Monitoring, Management activities of ICT infrastructure (Servers, Routers)
Application Maintenance		x		x	Activities dedicated to Application Maintenance
Application Development		x		x	Activities dedicated to Application Development
Communications		x		x	The value of Communication services (Voice, bandwidth) consumption

According to the provider, there are other direct costs that can be either fixed or variable. The explanation is that costs will be fixed if the provider is able to foresee the governance, SLAs and penalties costs, based on contract configuration. If not, both costs are variable. However, according to the provider, the variance in effort of governance model (meetings, escalation process, reporting), SLAs and penalties costs are not billed to the customer.

Table 3 presents direct costs– the data identifies the type of cost that is not clearly defined as fixed or variable, but the nature of cost is only OPEX.

Table 3. Provider Cost Structure for Direct Costs with Undefined Type of Cost (Developed by Authors)

Provider - IT Outsourcing Cost Structure					
	Type of Cost		Nature of Cost		
Cost classification	Fixed	Variable	CAPEX	OPEX	Description
Direct Costs Other Direct Costs					Costs that are calculated to be added to the total price
IMAC	x	x		x	The cost for change Install, Move, Add, Change orders
Governance Costs	x	x		x	The transactional (control) costs of contract management
SLAs	x	x		x	The costs associated to service level agreements
Penalties and Risk	x	x		x	The costs associated to penalties and risk

A major theme argued by the provider is the quantity of the service level agreements (SLAs) offered in an IT Outsourcing contract, since the higher the quantity of metrics, the more variability can be expected in costs. Often SLAs are defined according to the customers' purpose and goals while the provider has to accept them and design the contract configuration as agreed with the customer. As stated by the provider, "In one Help-desk contract, the main metric can be; phone calls answered in less than 15 seconds and in another contract it can be the number of incidents solved at first contact, this difference forces us to change the operational configuration of human resources and platforms for both contracts."

Another relevant dimension related to SLAs is the difference between what is written in the contract and the customers' expectation, as stated by the provider: "We can have the same metric in two or more contracts, for example, time to fix a desktop, if customer A demands 4 hours and customer B demands next business day (NBD), we do not standardize to 4 hours, because it will have higher costs and customer B would benefit from services that are not being paid for. However, despite the SLAs limits, customer pressure increases via formal and informal channels and many times we have to augment our response capacity. Consequently, we have to deliver a higher SLA with no financial retribution, but if we fail on the SLA, the customer demands the penalty. This could be minimized if the concept of bonus was accepted by customers, but until today none of our contracts has that concept implemented."

Additionally, to direct costs, Table 4 presents the set of indirect costs identified.

Table 4. Provider Cost Structure for Indirect Costs with Defined Type of Costs (Developed by Authors)

Provider - IT Outsourcing Cost Structure

Cost classification	Type of Cost		Nature of Cost		Description
	Fixed	Variable	CAPEX	OPEX	
Facilities Costs					Costs of Facilities (Datacenter, Warehouse, staff rooms)
Cost of Energy in Datacenter		x		x	Energy consumption
Cost of Renting of Datacenter	x			x	Renting of facilities where DC is located
Cost of Renting facilities	x			x	Other facilities necessary (warehouse, staff rooms)
Cost of Water in Facilities		x		x	Water consumption in facilities
Cost of Energy in facilities		x		x	Energy consumption
Cost of Surveillance and Security	x			x	Video surveillance, access controls
Cost of HR Training		x		x	Genaral Training of Human Resources, not related specifically to contract scope
Cost of Shared Platforms		x	x	x	Platforms to support multiple customers, IVR, Ticketing Software
		x		x	The costs of comercial and presales activities

Other factors identified by the provider are environmental or contextual factors. As stated by one of the service managers interviewed, "besides the standard cost lines often we have to consider contextual factors, inherent to the specific contract configuration, which can have significant impact not on the number of cost lines, but on the value those will take."

Table 5 shows the environmental factors that impact costs.

Table 5. Environmental Factors with Impact on Costs (Developed by Authors)

Environmental Factors	Description
Organizational Culture	The need to adapt to the customer's organizational culture
Geoghraphic distribution	The location of customer sites will determine higher or lower variance in costs
Country Culture	The need to adapt to customer country culture
Multilingual Support	The need of multilingual support can set higher or lower costs

The provider used in this research is nationwide in Portugal, which allows it to have access to different labour costs in different cities, for instance between Lisbon and Oporto.

Additionally, the provider stated that an IT Outsourcing contract configuration is also based on several types of professionals with different labour costs. This is due mostly to experience, knowledge and time of hiring, since professionals hired before 2009 are more expensive than professionals hired after that date. Another factor identified is that, in IT Outsourcing contract, extra labour is not billed to the customer.

Table 6 shows the factors inherent to labour.

Table 6. Labour Factors with Impact on Costs (Developed by Authors)

Labour Factors	Description
Labour Market Factors	The use of low labour countries or regions, where the services provided will set higher or lower costs of human resources
Labour Time Horizon	Human resources can be hired for different periods of time, with different costs (Permanent, Contract)
Labour Type of Contract	Human resources can be hired for different types of contract, with different costs (Permanent, Contract, Project, Task)
Labour Date of Hire	Many IT professionals who were hired in the past earned higher salaries than they do today. This factor directly influences cost and team building

Another issue that has impact on costs is the use of capital expenditure (CAPEX) with specific amortization periods, which are essentially related with equipment and software licensing. In many cases the equipment is owned by the provider, by the customer or even a mixed configuration. For example, the software might belong to the customer, but the hardware to the provider. (Cullen, S, Seddon, P & Willcocks, L. 2005).

Another issue with a high level of unforeseen costs identified by service managers is the number of repairs, new installations and number of incidents– all factors associated to workload and demand, stated as a risk that the provider has to undertake or mitigate. Additionally, size makes metrics worse, because it is assumed that large contracts benefit from scale effect, but in general they are also more complex, which increases management time and costs.

Table 7 identifies the demand as a factor with impact on costs. However, in general the provider charges the customer for extra services.

Table 7. Demand Factors with Impact on Costs (Developed by Authors)

Demand Factors	Description
Demand for extra services	Workload of incident calls, IMACs, break-fix, Storage Capacity, Bandwidth, Application changes

Summarizing the information gathered, the authors identified three main groups with impact on costs: First, the IT Outsourcing configuration group (Cullen, Seddon, & Willcocks, 2005), based on the scope showed in Tables 2, 4, 5, 6 and in assets ownership...

Second, Hidden costs group in Table 3,which can be divided into three sub-groups, transactional costs associated with contract governance that include monitoring paperwork reporting requirements. These costs are often assigned to overhead accounts, rather than allocated to products departments directly. Contingent costs associated to penalties, fines and future liabilities are costs that may or may not be incurred at some point in the future. They can only be estimated in probabilistic terms. Examples of this are penalties for underperformed service level agreements and future remediation costs. Intangible costs, like corporate image, community and consumer relations, are difficult to estimate and are associated with maintaining corporate image, good relationships with investors, employees and customers, among others.

Demand costs group, in Table 7, is presented as a factor with impact on costs and revenue. The provider needs to answer market demand and to do that, a supply chain needs to be prepared.

Findings

In order to obtain the answers to the aforementioned questions, the authors mapped the results with literature review. The results are shown in the following paragraphs.

Discussion of Research Question 1

(RQ1): What are the cost lines and cost methodologies used to manage an IT Outsourcing contract?

In order to take full advantage of IT Outsourcing services, customers need to know their objectives, systems and know-how to manage IT services in order to decide what to outsource, how to outsource, in what degree and for how long.

For the provider, each IT Outsourcing contract has unique aspects that are difficult to measure and price. Some customers keep their own on-site staff, equipment ownership and responsibility for part of the services so as to support organization business (Cullen, Seddon, & Willcocks, 2005), while others totally rely on the provider. Given the range of possibilities, it is not usually simple to identify the exact cost structure and which cost drivers must be measured during the Outsourcing life cycle in order to have standard performance indicators across different IT Outsourcing contracts.

The analysed cases showed that approximate costs are calculated for the full contract duration at market prices when the provider intends to sign the contract, allocating the resources to answer customer requirements and using the same approach described by Brealey (2004) for investment projects.

In this study, the comparison between contracts shows that IT Outsourcing contracts have a common cost structure grounded on direct and indirect costs that are adapted for every contract based on scope, but the concept of cost driver is not used.

The authors identified that cost allocation is driven by the requirements of financial cost reporting. This fact limits the provider's ability to identify and manage the contract's costs. For instance, the account department needs to know the cost of each server, but a service manager who wants to reduce variance also needs to know the time each server spends on each incident and the financial metrics fail to detect these costs' details.

The present research shows that cost methodology is based on standard costing with the identification of direct costs in labour and assets, which tends to be the most significant cost category in service organizations, also stated by Horngren (2000). In addition, there is the use of overhead costs, which are then divided arithmetically by the number of tickets per contract.

This approach with aggregated standard costing connected with financial statements should be limited in favour of using costing methodologies that focus on closer connections to operational realities in terms of cause-and-effect relationships that convert its inputs into outputs and outcomes, and which are essential to the effective use of costing to support business decisions (IFAC, 2009).

Discussion of Research Question 2

(RQ2): How the management of an IT Outsourcing contract copes with cost reduction in opposition to the need of revenue increase?

A recurrent theme in this research is the provider's difficulty in managing flexible demand from IT services. According to Fitzsimmons & Fitzsimmons (1998), service demand management can be done in several ways. However, the authors focus on partitioning demand through appointment scheduling; publication of pricing incentives and promoting off-peak demand through service catalogue and request management, also referred to by Addy (2007, p. 81- 103); and the use of a knowledge base and service desk to identify sources of demand and problems.

Some problems can be solved by better training, better products, better innovation and automated-response systems while others depend on shaping the behavior of customers (for instance, by offering tools and guidance to help them solve problems themselves, like an IT knowledge base (Addy, 2007, p. 155).

On the opposite side of demand, the provider needs to manage supply in order to be able to execute cost optimization. For that, it is necessary to distinguish between value-added costs and non-value-added costs in task execution. On the one hand, a value-added cost is the cost of an activity that cannot be eliminated without affecting a service value to the customer. On the other hand, non-value added costs need to be minimized, since there are costs that can be eliminated without affecting the service value to the customer. An example of an approach to eliminate non-value added costs is a just-in-time (JIT) or activity-based costing (ABC), initially developed for products, but also applicable to services.

Nowadays, providers and customers are moving to outsourcing cloud services (Tramacere, 2011) to allow standardization of operating environments.

Standardization can be done on several dimensions: increasing customer participation through service catalogue and self-care platforms (Addy, 2007, pp. 81-103); and sharing infrastructure capacity, like cloud offering. The provider mentioned that the type of cloud used in IT Outsourcing contracts is mainly based on a private cloud, also stated by Lageschulte et al., 2011. By cross training employees, the work force becomes more flexible because people can be transferred with less retraining. Likewise, scheduling work shifts will help integrate with partitioning demand (Fitzsimmons & Fitzsimmons, 1998).

Service level agreements (SLAs) also contribute to cost variance because they vary among contracts, and customers tend to demand more responsiveness from the provider, even with service levels agreed and contracted.

Finally, market analysis (Kotler & Armstrong, 2009)is always necessary to estimate capacity so as to analyze the evolution of the customer's business and to evaluate the demand for IT services since, generally, projects are designed to meet the demand, reaching a maximum value of its productive capacity after some time (Brealey, Myers, & Marcus, 2004).

Conclusion

IT Outsourcing contracts need specific metrics and cost drivers to be consistent throughout the entire life cycle. As shown above, every contract is different. This difference results from the contract configuration (Cullen, Seddon, & Willcocks, 2005), the underneath cost structure and cost values (monetary cost per item),which vary from contract to another.

The sources of difference are: scope, scale, geographic distribution, workload, use of capital, ownership of equipment (owned or leased by the provider or by the customer (Cullen, Seddon, & Willcocks, 2005, p. 374); diversity of SLA types, governance and relationship complexity; duration of contract; labour costs; and an additional factor that contributes to variance which is market behaviour that will influence most other dimensions.

Also, the high cost of serving an IT Outsourcing contract should encourage providers to use more efficient costing methodologies. Traditionally, high performance costing methodologies (like ABC and RCA) are used in industry organizations in order to optimize production, cope and avoid material and labour waste, whereas in service companies these methodologies are essentially based on labour hours (Horngren, Foster, & Datar, 2000). If control mechanisms are not in place, the necessary tasks can be done with extra labour not accounted or billed to customer, as identified earlier in the research.

The findings strongly establish the importance of understanding the different types of factors that contribute to variance in IT Outsourcing contracts, since each

customer's environment has unique aspects that are difficult to measure and standardize. Thus, to minimize cost variance, providers should work on three major groups.

Firstly, cost allocation and management. Selecting the most appropriate methodology (IFAC, 2009) will allow the provider to manage resources identifiable and measurable; charge policies and procedures; link to service level agreement; and automate reporting. In addition, providers must consider that the primary emphasis of a cost system should be to provide relevant and reliable information for management decision making, rather than focusing only on financial reporting requirements.

Secondly, collaborative and innovation actions between parties is binding in order to keep trust and technology enhancement, because if failed, the result will be a loss of competitive advantage for the buying organization (Evans & Wolf, 2006, p. 218).

Thirdly, managing flexible demand with appropriate indicators (historic and predictive) could allow a better preparation of supply infrastructure, since services are produced and consumed simultaneously. As a result, time is an important dimension to consider in the production of services.

Finally, managing demand and supply; providers can standardize environments in order to more effectively optimize and manage human and technical resources. Albeit knowing that IT Outsourcing contracts are in the spectrum of high cost to serve with highly customized services, providers must find a set of common processes between contracts to allow the optimization of operations.

Study Limitations and Future Research

The work developed so far would benefit from a broad empirical study with more providers so as to test and enrich the findings.

In the future, it would be interesting to do a longitudinal study in a set of providers to analyse the evolution of cost accounting systems (like ABC or RCA) and the use of IT frameworks in an adverse market, such as in recessions like what is currently happening today in Portugal, Spain and other countries in Europe.

Another interesting research theme would be to analyse the evolution of standardization offer in IT services (Tramacere, 2011) and the acceptance from IT Outsourcing customers, since the main driver for customization are the customer needs. Additionally, it would be interesting to analyse the level of hidden costs supported by labour force in IT Outsourcing contracts.

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