Business Process Outsourcing; Performance Measurement for Call Center Services

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Abstract
An empirical study assessing the most significant variables affecting the decision of business process outsourcing in call center services (BPO) and their impact on service level agreement objectives and the cost. Special focus is given to opportunistic behavior of the supplier with respect to two different pricing schemes (PPT vs. PPC).

Keywords: Outsourcing, Call centers, Opportunistic behavior

Introduction
Business Process Outsourcing (BPO) has become an important ingredient of organizational restructuring and business enhancement initiatives (Saxena & Bharadwaj, 2009; Handley & Benton Jr., 2009; Gewald, H., 2010). Companies are searching beyond regular boundaries of the firm to obtain performance improvements. The trend towards outsourcing - both onshore and offshore - has been strongly marked in the area of business services. As a matter of fact the growing spread of outsourcing service providers is driving the trend towards outsourcing. BPO phenomena is developing as companies transfer the responsibility of complete functions like human resource management, IT, and finance to outsourcing vendors - sometimes called "unbundling" (McIvor, Humphreys, McKittrick, & Wall, 2009).

BPO is defined as breaking out functions to units beyond the borders of the organization for several purposes, such as reducing operational cost, reducing headcount, to compensate scarcity of resources in the main domain or for buying particular skills not available in the organization. The last reason is linked to the need of integrating a certain skill from outside that may not be available within the firm (Banerjee & Williams, 2009). BPO can also mean moving internal business processes to external service providers to manage it based on an agreed upon service level agreements. It might be done with one or more service provider who will execute the transferred processes based on the client’s requirements (Saxena & Bharadwaj, 2009).

Although The Phenomenon of BPO has grown in the past decade, many organizations have different results and experience with outsourcing and have failed to recognize the performance improvements they were seeking for. Some have claimed that firms did not understand exactly the outsourcing implications and performance management (Aron & Singh, 2005). Many telecommunication companies tend to outsource their call center operations to external outsourcing suppliers aiming to reduce cost and give much attention to their core competencies, however the outcomes of this outsourcing relations
varies between success and failure. This study attempts to measure the impact that different pricing schemes might have on call center in terms of Average Handling time and agreed upon Service Levels. The study focuses on outsourcing call center services in the telecommunications industry worldwide. The following section presents the background on call center outsourcing, and the study variables. Then the research framework and hypothesis are presented followed by data analysis and findings and the study conclusion.

Background

Call Center Outsourcing

Call centers are essential functions of many successful businesses (Hasija, Pinker, & Shumsky, 2008). While many organizations consider outsourcing their entire call center operations to be the best option, others are still hesitant to outsource their main service channels to external vendors. Outsourcing call centers can take different forms, like co-sourcing where part of the call center services are kept in-house and other parts are outsourced external providers (Akşin, de Véricourt, & Karaesmen, 2008). This allows organizations to outsource the less strategic calls and to reduce outsourcing risks. Many organizations are moving their call centers to other countries (off-shore) targeting the lower labor cost. According to the global research company Datamonitor, the outsourcing market in the USA worth almost $24 billion in 2008 and almost 1 in 15 agent’s positions will be off-shored (Ren & Zhou, 2008). Regardless of the low labor cost, many organizations have faced mixed results from outsourcing their call centers. In some cases their outsourcing strategies fired back and caused them to stop or reevaluate the outsourcing project. Dell had to move its call center operations for in 2003 from India back to the United States after many complaints received from customers regarding the language accent and difficulties reaching second level of technical support. In the same year Lehman Brothers, the leading financial services company has to move its call center operations from India back to the US after many complaints received due to the bad quality of service (Ren and Zhou, 2008).

The Call center outsourcing supply chain is different from physical goods supply chain in that when a unit sold to the end use, the retailer gets the revenue; on the other hand call center outsourcing, when the service is provided, the service provider doesn’t get the revenue directly but it goes to the user company and the call center is compensated by the user company (Ren and Zhou, 2008). In a classic call center outsourcing arrangement a firm (client) hires a call center expert (vendor) to provide staff and systems to serve the client’s customers. The client specifies the pricing scheme and the service quality targets in a detailed contract, which may include service level target (e.g. 80% of answered caller in less than 20 seconds) and customer satisfaction objectives (measured by surveys or observed by quality assurance teams) associated with performance rewards and penalties (Hasija, Pinker, & Shumsky, 2008). Table 1 below shows a sample of call center outsourcing contracts, followed by Table 2 that includes the most commonly used abbreviations for contract terms.
Table 1 – Samples of Contracts

<table>
<thead>
<tr>
<th>Client</th>
<th>Service-level agreement (SLA)</th>
<th>Financial incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A)</td>
<td>90% of calls answered within 360 sec.</td>
<td>PPC; SLA penalty; monthly payment limit</td>
</tr>
<tr>
<td>(B)</td>
<td>70% of calls answered within 60 sec.: 70% of calls resolved without escalation</td>
<td>PPC; SLA penalty</td>
</tr>
<tr>
<td>(C)</td>
<td>80% of calls answered within 120 sec.</td>
<td>PPT; SLA penalty; AHT penalty</td>
</tr>
<tr>
<td>(D)</td>
<td>80% of calls answered within 180 sec.</td>
<td>PPT; SLA penalty; AHT penalty; guaranteed base payment</td>
</tr>
</tbody>
</table>

The rows in the table represent different contracts with clients (A) through (D). The second column lists the Service-Level agreement (SLA) for each contract with the waiting-time target, the third column lists financial incentives and penalties. The term “SLA penalty” implies that the vendor pays a financial penalty for not meeting an SLA. Average Handling Time (AHT) is the average service time per customer and “AHT penalty” means that the vendor pays a financial penalty for going over an AHT target (or going under a service-rate target) set by the outsourcer (Hasija, Pinker, & Shumsky, 2008).

Table 2 – Summary of Abbreviations for Contract Terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Contract term</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPC</td>
<td>Pay-per-call</td>
</tr>
<tr>
<td>PPT</td>
<td>Pay-per-time</td>
</tr>
<tr>
<td>SLA</td>
<td>Service-level agreement</td>
</tr>
<tr>
<td>AHT</td>
<td>Average Handling Time</td>
</tr>
</tbody>
</table>

Under the Price-per-Call (PPC) contract term, the outsourcer gets a fixed fee from the client for each call the vendor answers. Under Price-per-Time (PPT) contract term, the outsourcer pays for the vendor per unit of time spent serving the customer (could be hours or minutes). PPT contracts are always accompanied with penalties in case AHT are not achieved. Using a well-designed contract to “get it right first time” has a significant value for the outsourcer when compared with very costly alternatives such as full on-site monitoring of the vendor or renegotiation the contract terms, where the outsourcer uses the contract to influence the “unobservable behavior and poor contract design” (Hasija, Pinker, & Shumsky, 2008). Lack of understanding the outsourcing economics and poor coordination.
with the outsourcer are important reasons that not all companies get the expected benefits from outsourcing (Ren and Zhou, 2008).

**Opportunism**

People are to behave opportunistically means they act with self-guile and for their self-interest (McIvor, 2000). Outsourcing vendors acting opportunistically was one of the risks identified by the transaction cost theory and affects the client–vendor relationship negatively (Kremic, Tukel, & Rom, 2006). Opportunism is considered part of the behavioral uncertainty discussed by transaction cost theory (McIvor, 2000). Opportunism is also regarded as one of the main reasons increasing the transaction cost, potentially high opportunism from vendors will lead the firm to not outsource (Greenberg, Greenberg, & Antonucci, 2008).

**Contractual completeness**

Contractual completeness is the extent to which the firm and outsourcing provider create a contract which effectively coordinates resources and addresses inter-organizational risks. Poppo and Zenger (2002) assert that a more complex contract specifies “promises, obligations, and process for dispute resolution”. Effective contracting practices such as clear service level Agreements and performance contracting with well-established penalty and reward structures are suggested to offer benefits in terms of improved goal alignment and reduced strategic risks. More specifically, it has been suggested that a more complete contract serves two fundamental functions: coordination and control (Mellewigt et al., 2007). The establishment of coordinating provisions outlines how each party’s resources will interface across firm boundaries. Coordination provisions clarify mutual expectations as well as delineate roles, rules, programs, and procedures that enable the joint endeavor to accomplish collective goals (Mayer and Argyres, 2004; Mellewigt et al., 2007; Reuer and Arinó, 2007). On the other hand, control provisions are designed to determine and influence what the parties will do (Das and Teng, 1998). The intent of contractual control provisions is to make outcomes more predictable (Das and Teng, 1998; Poppo and Zenger, 2002) and mitigate the relational risk associated with an inter-organizational arrangement (Das and Teng, 1998; Mellewigt et al., 2007).

**Outsourcing and performance management**

Handly and Benton, (2009) recommended that future empirical efforts could investigate whether a more complete contract when used in conjunction with other “enforcement” practices (e.g. monitoring, inspections, audits) would significantly influence performance outcomes. It was also mentioned by Saxena and Bharadwaj, (2009) that performance monitoring and control is considered one of the main outsourcing management competencies from the client side. Performance Monitoring and management refers to which extent the outsourcing firm has developed clear processes and appointed required resources to monitor and control performance of every individual process. Firms that outsource their business usually follow a “process portfolio” approach and continuously monitoring the performance of all their processes (Saxena and Bharadwaj, 2009). Therefore firms
need to allocate specific resources for monitoring the outsourcer performance (Tate and Ellram, 2009).

**Research Framework**

The following framework presents the relationship between contractual completeness in call centers and opportunistic behavior towards different pricing schemes and how it could affect vendors’ performance. In the first scheme (PPC) the supplier tends to decrease the average handling time of the incoming call aiming to increase the answered the calls to increase their revenue which might jeopardize the customer satisfaction and increase the cost. However in the second scheme (PPT) the supplier tends to increase the average handling time of the incoming call aiming to increase their revenue which will increase the client cost.

![Figure 1 – A framework for measuring and mitigating the effects of different pricing schemes](image)

The model suggests performance monitoring and management guidelines in terms of specific penalties for each type of contract to mitigate opportunistic behavior. The client should add penalties for exceeding AHT in case of PPT contract in order to control the cost, and add penalties for not meeting customer satisfaction targets in case of PPC, as decreasing AHT compared to target might jeopardize the desired customer satisfaction. The model also suggest that the client should closely monitor the outsourcer headcount levels to ensure that they the required number of agents to achieve the required service level.

**Research Hypothesis**

**H1: Pricing Scheme and Service Level**

There is significant difference between PPT and PPC schemes in term of overall Service Level in the call center industry in the telecom sector.
**H2: Pricing Scheme and Average handling time**

There is significant difference between PPT and PPC schemes in term of overall AHT in the call center industry in the telecom sector.

**Data and Analysis**

The researcher obtained real data from two different companies having two different pricing schemes in their call center outsourcing contracts (Price per time and price per call), the data obtained represents 107 weeks for each contract type covering service level agreements KPIs in terms of Average Handling Time (AHT) and Service Level (SL). Table 3 shows the set performance targets under each contract type.

<table>
<thead>
<tr>
<th>Contract Type</th>
<th>AHT target</th>
<th>SL target</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPT</td>
<td>350 Seconds</td>
<td>70% - 20 Sec</td>
</tr>
<tr>
<td>PPC</td>
<td>228 Seconds</td>
<td>70% - 20 Sec</td>
</tr>
</tbody>
</table>

The data obtained was processed in order to test the research hypotheses as follows:

For H1, the researcher used the following variables: The contract type as control factor (independent variable) where two types of contracts were identified namely Price per call (PPC) and Price per time (PPT), the second variable is the service level (SL) as dependent variable, where the researcher used the result of deducting the target service level objective from actual service level achieved data (Actual – Target). The researcher used 214 weekly results from two different companies, and using two different types of contracts. One way ANOVA technique was used to test the hypothesis at $P<0.05$, two tailed sig. the result came highly significant as the mean of SL for PPT scheme exceeded the target SL by 6.71% while the mean of SL for PPC scheme fell short by 0.93% of the target SL. The tables 4 and 5 below show the statistical analysis:

**Table 3 – Performance Targets**

<table>
<thead>
<tr>
<th>Contract Type</th>
<th>AHT target</th>
<th>SL target</th>
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<tbody>
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<tr>
<td>PPC</td>
<td>228 Seconds</td>
<td>70% - 20 Sec</td>
</tr>
</tbody>
</table>

**Table 4 Descriptive - Service Level**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std Deviation</th>
<th>Std Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td></td>
</tr>
<tr>
<td>PPT</td>
<td>107</td>
<td>6.7171</td>
<td>18.27838</td>
<td>1.76704</td>
<td>10.2204</td>
<td>-40.00</td>
<td>29.0</td>
</tr>
<tr>
<td>PPC</td>
<td>107</td>
<td>-.9252</td>
<td>5.70782</td>
<td>.55180</td>
<td>-2.0192</td>
<td>.1688</td>
<td>-19.00</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>2.8959</td>
<td>14.04095</td>
<td>.95982</td>
<td>4.7879</td>
<td>-40.00</td>
<td>29.0</td>
</tr>
</tbody>
</table>

**Table 4b. Test of Homogeneity of Variances for Service Level**

<table>
<thead>
<tr>
<th>Levene</th>
<th>Df1</th>
<th>.df2</th>
<th>Sig</th>
</tr>
</thead>
</table>

6
For H2, the researcher used the following variables: The contract type as control factor (independent variable) where two types of contracts were identified namely Price per call (PPC) and Price per time (PPT), the second variable is the average handling time of calls (AHT) as dependent variable, where the researcher used the result of deducting the target AHT objective from actual AHT achieved data (Actual – Target). The researcher used 214 weekly results from two different companies, operating and using two different types of contracts. One way ANOVA technique was used to test the hypothesis at $P<0.05$, two tailed sig. the result came highly significant as the mean of AHT for PPT scheme exceeded the targetedAHT by 29.34 seconds while the mean of AHT for PPC scheme fell short by 2.37 seconds of the targetedAHT. The tables below show the statistical analysis:

**Table 5c. ANOVA Service Level**

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>3124.684</td>
<td>3124.684</td>
<td>17.043</td>
</tr>
<tr>
<td>Within Groups</td>
<td>212</td>
<td>183.339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>213</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5 - Descriptives Average Handling Time**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std Deviation</th>
<th>Std Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPT</td>
<td>107</td>
<td>29.34</td>
<td>39.706</td>
<td>3.838</td>
<td>21.73</td>
<td>36.95</td>
<td>-40</td>
</tr>
<tr>
<td>PPC</td>
<td>107</td>
<td>-2.37</td>
<td>4.158</td>
<td>.402</td>
<td>-3.17</td>
<td>-1.58</td>
<td>-12</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>13.48</td>
<td>32.338</td>
<td>2.211</td>
<td>9.12</td>
<td>17.84</td>
<td>-40</td>
</tr>
</tbody>
</table>

**Table 5b. Test of Homogeneity of Variances AHT**

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>229.650</td>
<td>1</td>
<td>212</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Table 5c. ANOVA AHT**
<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>53796.491</td>
<td>1</td>
<td>53796.491</td>
<td>67.506</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>168944.935</td>
<td>212</td>
<td>796.910</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>222741.425</td>
<td>213</td>
<td>796.910</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Findings**

The above analysis shows a significant difference between PPT and PPC in terms of Service Level and Average Handling Time. This confirms the existence of the opportunistic behavior of the outsourcing supplier. Outsourcing supplier tend to increase the AHT in relevance to AHT targets in SLAs with PPT contracts to increase their overall revenue while they tend to decrease the AHT in relevance to AHT targets in SLAs with PPC contracts to answer more call and increase their overall revenue. Therefore the client should add penalties for exceeding AHT in case of PPT contract and add penalties for not meeting customer satisfaction targets in case of PPC because decreasing AHT compared to target might jeopardize the desired customer satisfaction.

We can also observe that PPT schemes tend to exceed service level objectives while PPC scheme tend to pearly meet the SL objective or fell short of it. This could be explained by the fact that outsourcing suppliers using PPT schemes tend to hire more agents to guarantee the highest time possible in order to maximize their revenues while PPC suppliers usually adapt a cost conscious approach leading them to strictly control the number of agents in the call center which explain their failure to meet the target. Thus, the client should closing monitoring the outsourcer headcount levels to ensure that they the required number of agents to achieve the required service level.
Conclusion

This study aims to support telecommunication companies that are planning to outsource their call center services to an external supplier with the important factors that they need to consider during the outsourcing decision making process, particularly in light of the supplier opportunistic behavior associated with different pricing schemes (PPT Vs. PPC) and it is impact on the SLA objectives and the cost factor. These factors when identified should help companies build a win- win relationship with the outsourcing vendor and allow them to enjoy the outsourcing benefits.

In the first scheme (PPC) the supplier tended to decrease the average handling time of the incoming call, in order to increase the number of answered the calls and thus increase their revenue. This might jeopardize the customer satisfaction and increase the cost of the client. In the second scheme (PPT) the supplier tended to increase the average handling time of the incoming call aiming to increase their revenue, which will in turn lead to an increase in the client cost. Results also showed that PPT schemes tended to exceed service level objectives while PPC scheme tended to partly meet the SL objective or fell short of it. This could be explained by the fact that outsourcing suppliers using PPT schemes tend to hire more agents to guarantee the highest time possible in order to maximize their revenues while PPC suppliers usually adapt a cost conscious approach leading them to strictly control the number of agents in the call center which explain their failure to meet the target.

In order to control for the supplier opportunistic behavior, it is recommended that the client add penalties for exceeding AHT in case of PPT contract in order to control for the cost, and add penalties for not meeting customer satisfaction targets in case of PPC because decreasing AHT compared to target might jeopardize the desired customer satisfaction. Also, in order to control the service level objectives, it is recommended that the client closely monitor the outsourcer headcount levels to ensure that they are sufficient to achieve the required service level. Researchers interested in the field of call center outsourcing should shift their attention toward finding more variables that contribute to the BPO decision making process and its effect on outsourcing performance and the relationship between client and supplier.
References


