

# SEÇÃO INTERNACIONAL

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## HOW TO MEASURE GAIN-SHARING IN AN OUTSOURCING RELATIONSHIP: A CASE STUDY IN INFORMATION TECHNOLOGY ENVIRONMENT\*

**SURENDRA AGRAWAL**

University of Memphis

E-mail: [sagrawal@memphis.edu](mailto:sagrawal@memphis.edu)

**REINALDO GUERREIRO**

University of São Paulo

E-mail: [reiguerr@usp.br](mailto:reiguerr@usp.br)

**CARLOS ALBERTO PEREIRA**

University of São Paulo

E-mail: [cap@usp.br](mailto:cap@usp.br)

### RESUMO

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Este estudo tem o objetivo de analisar o problema da mensuração do *gain-sharing* na terceirização de serviços de tecnologia da informação como um componente da política de remuneração dos serviços contratados entre duas organizações. A metodologia adotada compõe-se de três passos: (i) revisão bibliográfica sobre as decisões de terceirização e precificação de serviços terceirizados no ambiente de tecnologia da informação; (ii) um estudo de caso real em que o problema da mensuração do *gain-sharing* surge no relacionamento entre duas grandes empresas de classe mundial que operam no mercado brasileiro de cartões de crédito; (iii) discussão dos achados do estudo de caso com base na literatura revisada. As principais contribuições deste trabalho são: (i) identificação dos principais problemas relacionados às decisões de terceirização e precificação de serviços terceirizados; (ii) descrição das características e do comportamento dos custos no ambiente de tecnologia da informação e (iii) análise e discussão do método adotado pelas empresas estudadas para mensuração do *gain-sharing*. A pesquisa bibliográfica mostrou uma lacuna na literatura relacionada especificamente à mensuração do *gain-sharing*. Os achados do estudo de caso indicaram que empresas de tecnologia de in-

### ABSTRACT

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This study aims to approach the issue of gain-sharing measurement in an information technology outsourcing relationship as a component of remuneration policies for contracted services among companies. The methodology encompasses three steps: (i) bibliographical revision on outsourcing relationship in information technology environment and pricing in outsourcing decisions; (ii) a case study in which the problem of gain-sharing measurement emerges in the relationship (providing information technology services) between two large-scale international companies that operate in Brazilian credit card market; (iii) discussion of the findings of the case study on basis of the revised literature. The contributions of the paper are: (i) to identify the main issues related to outsourcing decisions and pricing in outsourcing relationship; (ii) to present a description of the characteristics and behavior of costs in information technology environment; and (iii) to provide an analysis and discussion about the method adopted by the companies for gain-sharing measurement. The bibliographical research showed a lack of literature regarding to the specific subject of gain-sharing measurement. The findings of the empirical study indicated that information technology companies are highly structured with fixed costs

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Recebido em 1º.04.2005 • Aceito em 19.05.2005 • 2ª versão aceita em 27.06.2005

\* We wish to thank the anonymous reviewers for their thoughtful recommendations.

formação são altamente estruturadas com custos fixos e que o método de divisão de ganhos adotados pelas empresas estudadas corresponde à economia de custos, a qual é mensurada pelas variações de preço e eficiência de acordo com parâmetros orçamentários. Adicionalmente, observou-se que o método adotado contribui para proporcionar mais transparência e capacidade de análise no relacionamento entre as empresas envolvidas.

**Palavras-chave:** *Gain-sharing*, Tecnologia da Informação, Terceirização, Precificação, Compra.

and that gain-sharing method adopted by studied companies corresponds to costs savings measured by cost-accounting concepts of price and efficiency cost variances according to budget parameters. In addition, it was observed that the method adopted contributes to get more transparency and capability to analyze the business relationship by both receiver and provider companies.

**Keywords:** Gain-sharing, Information technology, Outsourcing, Pricing, Procurement.

## 1 INTRODUCTION

The internationalization process is a contemporary phenomenon that has been driving companies to adopt outsourcing strategies as an alternative to get competitive advantages. In this context the problem of how to remunerate outsourced services and how to share gains that were born when such services were run appears. The present study is concerned with the relationship between business providers and business customers of information technology (IT) services, and focuses principally on the measurement of cost savings in outsourced activities. The study approaches the problem of the measurement of gain-sharing as a component of remuneration policies for contracted services among companies. The main justification of this research is the lack of empirical studies regarding gain-sharing measurement methodology of outsourced services in an information technology environment. The objective of this present study is to investigate and to analyze a real-life situation where the phenomenon of gain-sharing measurement occurs. The research question posed is: How to measure gain-sharing in an outsourcing relationship in information technology environment?

The methodology applied to investigate the research question is a case study in which the problem of gain-sharing emerges in the relationship between two large-scale international companies that operate in Brazilian credit card market. Yin (1994) has observed that, in general, case studies are preferred research strategies (i) when “how” or “why” questions are being posed, (ii) when the investigator has little control over events, and (iii) when the focus is on a contemporary phenomenon within some real-life context. Considering the types of case studies designs proposed by Yin (1994) this study can be characterized as a holistic single case study applied to describe an intervention and the real-life context in which it occurred.

The initial sections of the study approach relevant issues related to outsourcing—focusing on the phenomenon of internationalization, outsourcing relationships in IT environment, issues related to outsourcing decisions and considerations of pricing in outsourcing decisions. The second part of paper presents the findings of an empirical case study. After considering the competitive atmosphere of credit card market in Brazil, this part of the paper presents operational aspects of the companies involved and the relationships between them in terms of services rendered and the operational flow of activities. The nature and behavior of the costs involved in outsourced IT activities are studied. In this context, the gain-sharing measurement problem is identified, and the main contribution of the study is the critical analysis of the method used by the companies for the measurement of gain-sharing in outsourcing activities in information technology.

## 2 INTERNATIONALIZATION PROCESS

Internationalization has become common among producer service firms that seek to grow rapidly in today’s highly competitive environment. There is no single explanation as to why such firms are expanding across national boundaries. As technological innovation accelerates and as new competitors rapidly emerge, businesses are finding their market position increasingly under pressure. To sustain growth and profit levels it is now often necessary to gain access either to new geographical markets (economies of scale) or to a new range of services (economies of scope).

According to Dunning (1989), the competitive advantages gained by multinational service enterprises can take many forms. These include: (i) economies of scale that allow prices to be lowered or service quality to be raised; (ii) the spreading of risk; (iii) economies of scope that allow wider collections of related services to be offered; (iv) greater proximity

to potential customers; (v) increased local knowledge; and (vi) improved corporate identity.

Coe (1997) has noted that the computer services industry is now exhibiting strong trends in internationalization and diversification. This is one of the fastest-growing and strategically most important service sectors in advanced economies. According to Gentle and Howells (1994), the internationalization process in this industry has occurred as a result of the increasing globalization of both demand and supply in the industry. On the demand side, as key multinational customers have themselves internationalized, these customers have found dealing with different computer service companies in various countries to be unsatisfactory. As a result, major computer service companies have responded by providing comprehensive and consistent services in key cities located across a range of major industrial economies. On the supply side, Gentle and Howells (1994) have noted that competition in computer services is appearing from a number of new sources globally.

### 3 IT OUTSOURCING RELATIONSHIP

Baldwin et al. (2001) has observed that since the early 1990s, there has been a significant increase in the number of organizations that have decided to outsource all or some aspects of their IT/IS functions. Outsourcing information system has been the focus of many studies. The trend among organizations to outsource part or all of their information system has been well documented (SOLIMAN, 2003).

According to Auguste et al. (2000), quoting data from Dun & Bradstreet, third-party providers of routine operational services—such as the processing of payrolls, the movement of inventory and goods, the management of data centers, and the provision of extra manufacturing capacity—took in more than US\$1 trillion around the world in 2000. Terdiman (1993) has noted that, according to the Gartner Group, the IT worldwide outsourcing market is estimated to rise from US\$21.3 billion in 1997 to US\$59.6 billion by 2005, with an annual growth rate of 14%. According to Loh and Venkatraman (1992) IT outsourcing—which is defined as the process of turning over part or all an organization's IT function to external service provider(s)—is done to acquire economic, technological, and strategic advantages. Accordingly, increasing attention has been paid to building a successful partnership between the customer and the provider of IT outsourcing services.

Anderson and Narus (1990, p. 42-58) have defined partnership as “the extent to which there is mutual recognition and understanding that success of each firm is in part dependent upon the other firm”.

Mohr and Spekman (1994, p. 135-152) have defined it as “purposive strategic relationship between independent firms who share compatible goals, strive for mutual benefits, and acknowledge a high level of mutual interdependency”. Narula and Hagedoorn (1999, p. 284) suggest that most cooperative agreements have two possible motivations: “First, there is a cost-economizing motivation, whereby at least one firm within the relationship has entered the relationship to minimize its net costs, or in other words, it is *cost-economizing*. Second, firms may have a strategic motivation. Such agreements are aimed at *long term profit optimizing* objectives by attempting to enhance the value of the firm's assets”.

According to Lee (2001), IT outsourcing is one of the major issues facing organizations in today's rapidly changing business environment. This author observes that, in the 1990s, many organizations experienced difficulties in forming and managing a successful outsourcing relationship with service providers as the nature of outsourcing evolved from a contract relationship between the service receiver and provider to a partnership relationship. To overcome this problem, several firms established intimate relationships with their service providers on a partnership basis—which can be defined as an inter-organizational relationship to achieve shared goals of the participants.

The results of Lee's (2001) study indicate that partnership quality is an important variable for outsourcing success. The strong relationship between partnership quality and outsourcing success indicates that fostering a cooperative relationship based on trust, business understanding, the sharing of benefits and risks, conflict resolution, and mutual commitment is critical to maximize the strategic, economic, and technological benefits of outsourcing.

### 4 THE OUTSOURCING DECISION

Soliman (2003) has mentioned that several studies have addressed the factors influencing outsourcing decisions. Jennings (1996) has observed that outsourcing decisions are often emotive in that they challenge traditional beliefs of how the organization operates. According to Ciotti and Pagnotta (2005), the worst reason for outsourcing is the desire to abdicate responsibility for a difficult and challenging area. Outsourcing requires rejection of the ‘we can do it all’ mentality. It also requires confidence that loss of ownership will not result in a reduction in control of activities and the weakening of core abilities. Lacity and Hirschheim (1993) suggest that the outsourcing decision may be a result of rational consideration and it may be a product of organiza-

tional policies, conflicts and compromises. King and Malhotra (2000) have mentioned that cost savings have often been cited as the main reason for outsourcing information system. Another driving force is management's perception that, by surrendering control of its information technology to an external supplier, it can focus better on its core business.

Quinn and Hilmer (1994) emphasized that focusing on core competencies is a major reason behind strategic outsourcing decisions. Humphreys et al. (2000) have proposed a model for 'make or buy' decisions. The first step of the decision model is *defining the core activities of the business*. It is important to define what is meant by a 'core activity'. A core activity is central to the company's successful servicing of the needs of potential customers in each market. The activity is perceived by the customers as adding value, and is therefore a major determinant of competitive advantage. According to these authors these core activities should be developed in-house. In contrast, the activities for which the company has neither a critical strategic need nor special capabilities should be outsourced.

Nellore and Soderquist (2000) have observed that outsourcing is the consequence of the adoption of a resource-based strategy in which firms concentrate on their set of core competencies through which they can provide distinctive value for the customers, while outsourcing the rest of their activities. These authors have noted that the model of Quinn and Hilmer (1994) suggests that activities with a high potential for competitive edge and a high degree of strategic vulnerability should be realized in-house. A careful assessment of a firm's assets and resources must precede any outsourcing decision to ensure that outsourced activities are restricted to: (i) those in which the firm does not have any special capabilities; or (ii) those for which the firm does not have a strategic need.

The reviewed literature points out that collaboration have positive effects and negative effects. The benefits include:

- spreading and sharing the costs and risks of product development (and of business in general);
- reducing costs by using the imperative for cost reduction as a driver for product innovation (noting that the supplier's cost base is generally lower than that of the customers);
- accessing to technological expertise (core capabilities) and exploitation of technological synergies.

The risks and negative aspects include:

- domination of one party, incompatibility in culture and management, or opportunistic behavior of either party;
- the fact that instability in most alliances is directly related to the trust between the collaborating parties, and recognition that trust is subjective and cannot be measured;
- the possibility of high transaction costs associated with the time and effort needed to manage these collaborations.

## 5 PRICING IN OUTSOURCING RELATIONSHIPS

The three basic forms of procurement contracts are: (i) cost-plus; (ii) fixed-price; and (iii) gain-sharing. Price structures influence not only the incentives for both parties but also their interaction costs and the provider's future negotiating position. Loeb and Surysekar (1998), mention that a cost-plus-fixed-fee contract specifies that the purchaser reimburse the supplier for the actual costs of executing the contract plus a fixed fee. Bajari and Tadelis (1999) say that in the fixed-price contracts, the buyer offers the seller a pre-specified fixed price for each type of service. According to Auguste et al. (2000), in gain-sharing contracts, the parties agree on the baseline cost of providing a service. If the cost turns out to have been underestimated, the provider receives the difference. If the actual costs are lower than the baseline, the difference is split between the two parties in an agreed ratio.

Auguste et al. (2000) affirm the two most common pricing choices—cost-plus and gain-sharing—have destroyed value more often than they have created it. With cost-plus contracts, providers lack any incentive to reduce costs. Customers sometimes believe that such contracts will save them money by capping the provider's margins. But cost-plus contracts also limit the incentive of the provider to squeeze costs, because such contracts guarantee the provider a profit margin that no longer depends on the efficiencies it can realize by innovating, by exercising its purchasing power, or by hiring more productive staff. A gain-sharing contract better motivates the provider to innovate and to reduce operating costs. However, it also raises interaction costs. This is the most expensive kind of contract to negotiate and monitor because the parties have to define and accept precise cost projections for every situation. If the savings are lower than expected, further negotiations, in which each party blames the other, are almost inevitable. The incentives to innovate are also limited.

Auguste et al. (2000) have suggested that fixed-price contracts are a better option. When prices are fixed, providers keep the rewards from process innovation. This kind of contract is also less costly to negotiate and does not require customers to be continually auditing their provider expenses (as they are required to do under costs-plus and gain-sharing contracts). On the other hand, these authors have observed that the pricing model to be applied must consider each specific situation and, although providers should try to negotiate fixed-price contracts for their services, they must recognize that in all likelihood they will have to adopt different pricing schemes for different services. The choice of pricing scheme will depend on the receptiveness of the customer and the underlying economics of the offering.

## 6 CASE STUDY

The present study approached the problem of the measurement of gain-sharing as one of the components of the remuneration policies for services adopted contractually among companies. The case study that follows focused on the relationship between two large international companies that operate in Brazil. For reasons of confidentiality, the companies are referred to as 'services receiver' (SR) and 'services provider' (SP). SR operates in the credit card market, and administers a wide network of affiliated establishments while centralizing all completed card transaction operations under its brand name in Brazil. To accomplish this, SR depends on the technological and operational support of SP, a company that renders IT services for large-scale companies and governments throughout the world. The services that SP provides for SR involve capturing, processing, and transmission of data, and the execution of call-center functions for the affiliated establishments.

The pricing policy in the outsourcing relationship between SP and SR is based on the cost-plus model, with the total cost of services rendered monthly by SP being charged to SR with additional fixed remuneration. The differential aspect of the relationship between these companies is the fact that, apart from the cost-plus-fixed-fee remuneration, there is a special contractual agreement related to gain-sharing. According these agreements the gain-sharing computed yearly must be shared between the companies equally. This is the main issue analyzed in the case study.

### 6.1 Environment and Companies

The global process of change is having significant effects on the Brazilian economy. The main

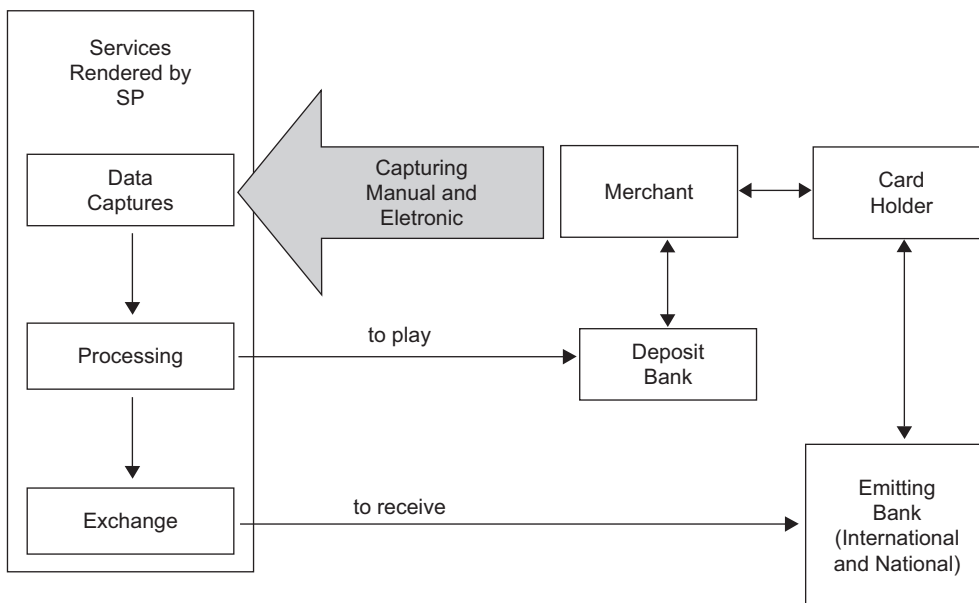
characteristics of the Brazilian economy in recent years have been: (i) low economic growth; (ii) gradual opening of the economy; (iii) privatization; (iv) relative stability of prices; and (v) technological advances. These characteristics have been especially marked in the telecommunication and financial industries, which are passing through significant market and structural transformation. Under the supervision of the Central Bank of Brazil, the financial system gradually implemented a new Brazilian system of payments—through which diverse financial institutions became interlinked and carried out transactions on-line in real time among themselves, the Central Bank, and other large-scale companies.

The credit card market is globally under control of few large brand names—American Express, Credicard, Diners, MasterCard, and Visa. Usually, the rights of exploration of these brand names (also known as 'flags') belong to specific investor groups. These authorize the use of the brand names in various countries, utilizing contracts that involve stock participation in a new enterprise, and thus producing an attractive worldwide business.

The service receiver in this case study (SR) is the holder of the exclusive right of use in Brazil of one of the prominent 'flags' of credit cards. Its stock control belongs to a group of large financial institutions that also operate in the country, apart from the participation of the 'flag's' own international brand. SR has a large number of affiliated establishments and users of this brand of credit card in the commercial service sector. Through the credit card, the user can make purchases in one payment, or parceled out in various payments, from an international network of affiliated establishments to the brand. The user can also use the card to pay for purchases directly by debit in the user's deposit account of the financial institution with which the user maintains a relationship. The user can also make cash withdrawals in other countries. The ready acceptance of credit cards is drastically modifying the profile of transactions made in Brazilian retail trade, and has significantly increased the volume of transactions made by operators.

SR opted to outsource some its activities because of: (i) operational difficulties associated with the growth in transaction volume; (ii) a need to maintain a focus on its main business; and (iii) the challenge to develop new competencies (for example, in information technology). SR relies on the support of SP to accomplish activities that require a high level of information technology—especially those that, although they are not core to SR's business, are essential to its success in this changing environment.

The service provider in this case study (SP) is a large company with branches in several countries.



Source: Elaborated for the authors.

**Figure 1 – Operational flow of the credit card business**

The company is a provider of information-technology services, and administers complex data and voice communication networks. SP has absorbed all of the IT activities related to SR’s transactions in Brazil—including the capture, processing, and transmission of all data. These activities involve direct communication with: (i) affiliated establishments (merchants) to the brand name in Brazil; (ii) the receiver banks (where the merchants maintain their checking accounts); and (iii) the national and international issuing banks. Figure 1 represents the arrangement.

The transaction data are captured by SP by electronic or manual means. Approximately 95% of transactions are electronic. The data are captured by the affiliated establishments and immediately sent to an exchange headquarters at which a decision is made on whether the transaction should be authorized. If authorized, the data of the transaction are stored, processed, and transmitted by SP to the receiver bank (where the merchant maintains its deposit accounts) and to the issuing bank (where the card user maintains its accounts). Credits and collections are realized, and this results in an accomplished transaction.

In this process, speed, security and low cost are critical factors that determine the success of the business. The decision of SR to outsource these IT activities takes into account these factors of process, speed, security and low cost, as well as the need for SR to maintain focus on its main business by delegating activities that require highly specialized know-how.

The services rendered by SP for SR encompass the following activities: (i) development and maintenance of systems; (ii) maintenance of database of the clients; (iii) capturing, processing, and transmission of transaction data; (iv) call center service; (v) operational support to the affiliated establishments; and (vi) back-office services. These activities are managed through a “joint team” formed by SP and SR managers working together, avoiding what Lim (2000, p. 521) refers as “informational asymmetry”.

**6.2 Costs in Outsourced Activities**

The costs incurred in the outsourced activities are: (i) administrative; (ii) telecommunications; (iii) physical space; (iv) hardware; (v) software; (vi) maintenance; (vii) computer usage; (viii) outside labor; and (ix) support. The distribution of costs incurred in attending the outsourced activities is shown in Table 1.

**Table 1 – Distribution of costs by category**

Costs	Distribution
Support	43%
Computer Usage	27%
Outside Labor	14%
Other Costs	16%
<b>Total</b>	<b>100%</b>

Source: Elaborated for the authors.

Table 1 shows that the principal elements of costs are support (43%), computer usage (27%), and outside labor (14%), representing 84% of the total costs. These costs are incurred at the level of administrative units. The administrative units are cost centers—which can be either operational or support. The operational cost centers (OCCs) execute production and customer-service activities linked directly to the accomplishment of the transactions (manual or electronic). The support cost centers (SCCs) execute support activities to the OCCs—such as system development, planning, training, and other back-office activities. Taken together, the OCCs generate 66% of the total costs, whereas the SCCs generate 34%.

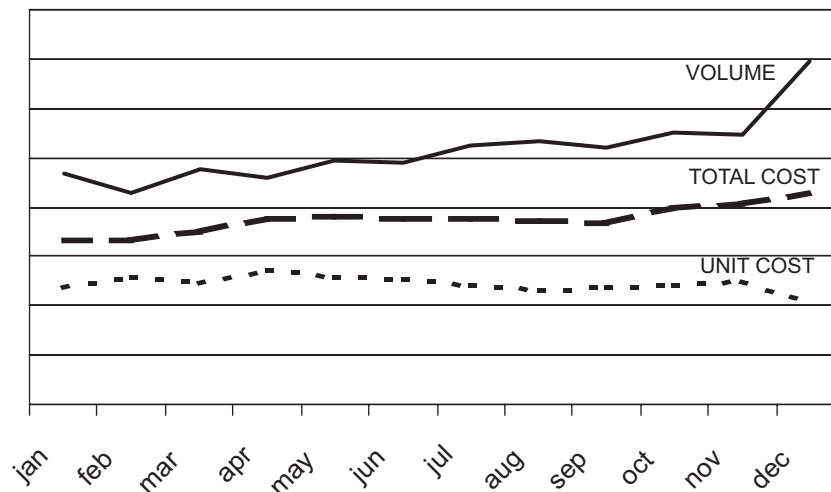
The cost centers are basically structured as fixed costs, with the most significant of these being support, computer usage, and outside labor, as presented in table 1. The wages costs are essentially the same in OCCs and SCCs, computer costs are more significant in OCCs than in SCCs, but outside labor costs are greater in SCCs than in OCCs.

Some elements of fixed costs (such as wages) are valid for short periods of activity whereas other elements of fixed costs (such as costs of hardware and software) are valid for larger periods of activity. Typically, fixed costs refer to the use of resources that possess a limited capacity for production. Wi-

thin a determined interval (range) of activity of any given cost center, the fixed costs remain constant (provided that production capacity is not surpassed). However, if the installed capacity were to be increased, a larger quantity of fixed resources would be required. As long as the new installed capacity is not surpassed, the amount of fixed costs will remain constant. OCCs, for example, have a planned structure of resources (equipment, software use licenses, people, physical space, and so on) to process a predetermined volume of transactions (with the time of computer use constituting the unit used to measure the work). Above this limit, investments in new resources become necessary, thus elevating the production capacity to a new higher level and expanding the range of activities.

In planning the necessary resources for a given cost center, the number of transactions and the use of computer time might be important, whereas, for another cost center, the number of employees or the size of the area to be attended might be more relevant.

The data of case study showed that relevant percentage of the total costs has been comprised by fixed costs—that is, there is no direct proportional relationship between these costs and the volume of processed transactions. Figure 2 shows monthly transaction volume compared with the annual total costs and unitary costs.



Source: Elaborated for the authors.

**Figure 2 – Transaction volume, total costs, and unit costs**

### 6.3 Identifying the Method Adopted by Companies for Gain-Sharing Measurement

The interviews with the managers of the companies showed the fundamental premise of the method adopted by researched companies relies on parameters (cost projection) materialized in flexible budgets and standards for each operational cost center established by the “joint team”. The method is comprised of four steps.

1. *Elaboration of the original budgets*—taking into account the amounts and the values of the resources forecast for each volume level and for each cost center (considering its particular work units).
2. *Revision of the original budgets (or elaboration of the revised budgets)*—consisting of a revision of the quantities and values of the resources previously planned for each volume level and for each cost center (considering its particular work units). The revised budgets constitute the base for comparison of expenses incurred and, therefore, the measurement of gain-sharing;
3. *Counting of the expenses incurred*—based on the same concepts and criteria adopted in the previous phases.
4. *Comparison of the expenses incurred with the constants in the revised budgets*—allowing a measurement of gain-sharing and an evaluation of the contribution of the cost centers (and the diverse elements that make up their costs). The comparison between actual costs and estimated costs

allows the measurement of cost savings to be obtained.

As previously noted, the amount of fixed cost stays constant within a determined interval of activity. The measuring of the savings of fixed costs is through a comparison of the forecast total value of expenses (for a given level of activity) with the actual total value of the expenses incurred. The following situations can occur:

#### I. The actual activity volume is not the same as the planned volume, but occurs within the relevant interval

In this case, the economy of fixed cost is computed by comparing the total value of planned costs (for the level of activity executed) with the total value of actual costs. Cost efficiency exists at any point within the relevant interval when the actual costs are smaller than the costs planned for the interval.

#### II. The actual activity volume was not the same as the planned volume and it was outside (above or below) the relevant interval.

In this case, the relevant interval in which the activity volume occurs should be determined, and this should fit with the corresponding budget of valid cost for the interval of relevance. In the same way, the cost efficiency is measured by the difference between the costs incurred and the costs estimated for that interval of relevance.

#### Procedures

Table 2 shows the steps and procedures required for implementing the method.

Table 2 – Procedures of the method

Steps	Procedures
1. Elaboration of the original budget (for cost center for different levels of volumes)	<ul style="list-style-type: none"> <li>• define work units of the cost centers;</li> <li>• plan the volume intervals of the work units;</li> <li>• define the structure of the resource accounts;</li> <li>• consider the physical amounts of resources;</li> <li>• consider the unitary values of the resources;</li> <li>• determine the total values (quantities × prices);</li> <li>• consider the total values of the resources for which there are no estimates of physical amounts of resources.</li> </ul>
2. Revision of the original budget (for cost center for different levels of volumes)	<ul style="list-style-type: none"> <li>• confirm the work units of the cost centers;</li> <li>• reschedule the volume intervals of the work units;</li> <li>• confirm the structure of the resource accounts;</li> </ul>

Continua



Steps	Procedures
2. Revision of the original budget (for cost center for different levels of volumes)	<ul style="list-style-type: none"> <li>revise the physical amounts of resources of the original budget;</li> <li>revise the unitary values of resources of the original budget;</li> <li>determine the total costs (quantities × prices);</li> <li>revise the total costs of the resources for which there are no estimates of physical amounts of resources.</li> </ul>
3. Counting of the amounts realized by cost center (for cost center for the level of volume reached)	<ul style="list-style-type: none"> <li>measure the actual volume of work units occurred;</li> <li>measure the actual total costs.</li> </ul>
4. Determination of the efficiencies of costs (for cost center for the level of volume reached)	<ul style="list-style-type: none"> <li>count, for cost center, the variations between the actual costs and the revised projected values, established for the volume of work units occurred;</li> <li>determine the occurrence of gain-sharing through the consolidation of values of the total cost variations of all cost centers, considering that gain-sharing exists only when the total amount of actual costs is inferior to the total amount of revised projected costs.</li> </ul>

Source: Elaborated for the authors.

### Example of the method

In the case study under consideration, the cost center named Production is an operational area responsible for the capturing, processing, and transmission of the data concerning the realized transactions of SP. Table 3 shows the planned performance (original and revised) and the realized performance of this cost-center in a month, with simulated data.

In Table 3, it is observed that the total costs originally planned for the period were \$1,018,737,

for a level (range) of activity of 300,000–500,000 minutes of computer processing, and \$1,788,782 for 500,001–700,000 minutes. The revised values were, respectively, \$1,121,486 and \$1,938,234 (staying in same activity intervals). The performance realized in the month (corresponding to 600,000 minutes of computer processing) was a total cost of \$1,886,182.

Comparing the realized costs with the planned costs for the volume of 600,000 minutes, it is obser-

**Table 3 – Example of the method**

Resources	Original budget		Revised budget		Actual	Variations
	Range 1 (minutes) (300,000 to 500,000)	Range 2 (minutes) (500,001 to 700,000)	Range 1 (minutes) 300,000 to 500,000	Range 2 (minutes) 500,001 to 700,000		
Support	171,122	207,312	188,234	228,043	216,056	11,987
Outside labor	16,758	46,726	18,552	51,640	55,842	(4,202)
Computer usage	806,458	1,443,473	890,105	1,590,820	1,548,994	41,826
Maintenance hardware software	9,242	44,472	8,345	38,552	35,647	2,905
Physical space and others	8,969	16,865	9,866	18,552	19,214	(662)
Administrative	6,188	9,934	6,384	10,627	10,429	198
Total cost	1,018,737	1,768,782	1,121,486	1,938,234	1,886,182	52,052

Source: Elaborated for the authors.

ved that there was a total gain of \$52,052—which corresponds to the total of the cost variations in the period. Among the favorable variations, the most significant flowed from the use of computers (\$41,826) and support (\$11,987). In contrast, variations related to external services (\$4,202) and to physical space (\$662) were negative—demonstrating that the costs were larger than forecast.

## 7 DISCUSSION

As previously noted, several studies approach different aspects of outsourcing relationships. However, no study has specifically addressed gain-sharing measurement—apart from the work of Auguste et al. (2000), which touched on the subject.

The concept of gain-sharing adopted by the researched companies was not formally declared and it was inferred through the analysis of the procedures as *the sharing of a benefit obtained by developing an activity in a more economical manner in relation to an established parameter*. According this definition gain-sharing can be viewed as an element that seeks to express the economical benefits in business relationship between the companies. The definition is supported on the following premises:

- be measured against a previously established parameters;
- reflect the effort involved in various actions that are undertaken;
- induce performance improvement;
- be objectively measurable;
- be expressed in monetary terms; and
- be mutually acceptable to the parties.

The first premise is the most important because it drives the procedures for measurement of gain-sharing. According to the adopted definition of gain-sharing by companies, gain-sharing value is related to cost savings and to cost-accounting concepts of price and efficiency cost variations. According to Horngren et al. (2000), price variation reflects the difference between actual and budgeted input prices, whereas efficiency variation reflects the difference between actual and budgeted input quantities.

In this case study, the total benefits obtained from the business relationship between the companies are produced by:

- an increase in activity volume (that is, greater production); or
- a reduction in costs (that is, less resource consumption).

The gain produced by increasing activity volume generated an additional contribution margin to SR, proportional to the volume of business. The increment in the activity volume is promoted by SR, whereas SP supports the growth and made it possible by allocating resources (human, physical, and technological) and adjusting the capacities of the various activity centers. SP is responsible for being pro-active in implementing technological and operational solutions to meet the levels of activity reached by SR. Therefore, although SP did not increase activity volume, it does produce an intangible benefit by assisting in the processing of a larger volume of activity. This required more responsibility, larger operational risk, and less flexibility.

This kind of benefit is not correctly considered gain-sharing (because SP have no action on producing it), but it should be included (and remunerated) in the pricing agreement between the companies—in accordance with the premise that the return should have relationship with the investment made and the risks assumed. It would be unjust to maintain a fixed level of remuneration to SP for assisting in volumes of services significantly higher than those originally assumed. Although it clearly generates a benefit for SR, this matter should be treated in the pricing policy of the services, rather than through the concept of gain-sharing.

Hartman et al. (2001, p. 234) put the view of efficiency in their study as the input conservation, that is: “a branch is considered efficient, relative to its peers, if it is able to generate the same amount of revenue using less resource”. In this case study, the gain that SP affords to SR through cost savings (when less resources are consumed than previously assumed) is correctly considered as gain-sharing because:

- the cost savings are entirely transferred to SR;
- the gain arises from the efforts of actions undertaken by SP;
- the gain reflects increased performance in relation to pre-established parameters;
- the gain is objectively measurable;
- the gain is measurable in monetary terms; and
- the gain is based on previously defined agreements.

In view of the above discussion it can be inferred that the method applied by companies to measure gain-sharing relies on solid assumptions. The only issue that should be considered in this case is the additional remuneration for SP attending increa-

sing level of service generated by SR activities with the same fixed remuneration.

The main restrictions of the method adopted by companies are due to expensive kind of contract to be monitored (being necessary to carry out a joint team to manage the outsourced activities) and because the parties have to define, revise and accept precise cost projections for every situation.

## 8 CONCLUSION

The outsourcing of IT activities is characterized by the establishment of a relationship in which both parties (buyer and provider) obtain competitive advantages by maintaining a focus on their respective businesses. In such a relationship, the important question of measurement of gain-sharing arises, but this issue is not well addressed by the literature. The research carried out with a methodology of case study, showed an empirical use of gain-sharing concept. The main findings of the research were:

(i) Gain-sharing in this case study refers to the sharing of a benefit provided by SP developing an activity in a more economical way in relation to an agree-

ed parameter. It was observed that the concept of gain-sharing used by companies in this study corresponds to costs savings measured by cost-accounting concepts of price and efficiency cost variances.

(ii) The analysis of the method adopted by the companies, which is based on budget parameters, allows the measurement of gain-sharing and contributes to transparency in the relationship between the companies.

(iii) The method allows an analysis of the earnings in detail (by area, by activity, and by resource element), thus identifying opportunities for improvement and providing measurable benefits for both parties. By the other hand the study evidenced what Auguste et al. (2000, p. 59) refers as high "interactions costs" in gain-sharing contracts due to the necessity of preparing and revising the budgets and to work with a joint team of managers of both companies.

Despite the fact that the findings of this case study research cannot be fully generalized, they can be useful for expanding concepts and driving solutions of gain-sharing measurement in similar situations of outsourcing relationship in an information technology environment.

## REFERENCES

- ANDERSON, J. C.; NARUS, J. A. A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing* 54 (1), p. 42-58, 1990.
- AUGUSTE, B. G.; HAO, Y.; SINGER, M.; WIEGAND, M. The other side of outsourcing. *The Mackinsey Quarterly*, number 1, p. 53-63, 2000.
- BAJARI, P.; TADELIS, S. *Procurement contracts: fixed price vs. cost plus*. Working paper, Department of Economics, Stanford University, 1999.
- BALDWIN, L. P.; IRANI, Z.; LOVE, P. Outsourcing information system: drawing lessons from a banking case study. *European Journal of Information System*, 10, p. 15-24, 2001.
- CIOTTI, V.; PAGNOTTA, B. The other side of outsourcing. *Healthcare Financial Management*, vol. 59, n. 2, p. 38.
- COE, N. Internationalization, diversification and spatial restructuring in transnational computer service firms: case studies from the U. K. market. *Geoforum*, vol. 28, no. 3-4, p. 253-270, 1997.
- DUNNING, J. H. Multinational enterprises and the growth of services: some conceptual and theoretical issues. *Service Industries Journal* 9, p. 5-39, 1989.
- GENTLE, C.; HOWELLS, J. The computer services industry: restructuring for a single market. *Tijdschrift voor Economische en Sociale Geografie*, 85 (4), p. 311-321, 1994.
- HORNGREN, C. T.; FOSTER, G.; DATAR, S. M. *Cost accounting: a managerial emphasis*. Upper Saddle River, Prentice Hall, 2000.
- HARTMAN, T. E.; STORBECK, J. E. BYRNES, P. Allocative efficiency in branch banking. *European Journal of Operational Research*, 134, p. 232-242, 2001.
- HUMPHREYS, P. K.; LO, V. H. K.; McIVOR, R. T. A decision support framework for strategic purchasing. *Journal of Materials Processing Technology* 107, p. 353-362, 2000.
- JENNINGS, D. Outsourcing opportunities for financial services. *Long Range Planning*, vol. 29, n. 3, p. 393-404, 1996.
- KING, W. R.; MALHOTRA, Y. Developing a framework for analyzing IS sourcing. *Information & Management* 37, p. 323-334, 2000.
- LACITY, M. C.; HIRSCHHEIM, R. *Information system outsourcing: Myths, metaphors and realities*. Wiley, Chichester, 1993.
- LEE, J-N. The impact of knowledge sharing, organizational capability and partnership quality on IT outsourcing success. *Information and Management* 38, p. 323-335, 2001.
- LIM, W. S. A lemon market? An incentive scheme to induce truth-telling in third party logistics providers. *European Journal of Operational Research* 125, p. 519-525, 2000.
- LOEB, M. P.; SURYSEKAR, K. Payment ceilings in cost-plus contracting. *Management Accounting Research*, 9, p. 311-327, 1998.

- LOH, L.; VENKATRAMAN, N. Determinants of information technology outsourcing: a cross sectional analysis. *Journal of Management Information Systems* 9 (1), p. 7-24, 1992.
- MOHR, J.; SPEKMAN, R. Characteristics of partnership success: partnership attributes, communication, behavior, and conflict resolution techniques. *Strategic Management Journal* 15, p. 135-152, 1994.
- NARULA, R.; HAGEDOORN, J. Innovating through strategic alliances: moving towards international partnerships and contractual agreements. *Technovation*, 19, p. 283-294, 1999.
- NELLORE, R.; SODERQUIST, K. Strategic outsourcing through specifications. *Omega – The International Journal of Management Science* 28, p. 525-540, 2000.
- QUINN, J. B.; HILMER, F. G. Strategic outsourcing. *Sloan Management Review* 35 (4), p. 43-55, 1994.
- SOLIMAN, K. S. A framework for global IS outsourcing by application service providers. *Business Process Management Journal*, 9, 6, p. 735, 2003.
- TERDIMAN, R. Outsourcing: what's next, in: *Proceedings of Gartner Group Third Symposium on the Future of Information Technology*, 4-8, October. 1993.
- VOLLMANN; T.; CORDON, C. Building successful customer – supplier alliances. *Long Rang Planning*, vol. 31, n. 5, p. 684-694, 1998.
- YIN, R. K. *Case study research: design and methods*. Thousand Oaks, Sage Publications, 1994.

**NOTE:****Address of the authors:**

The University of Memphis  
101 Wilder Tower  
Memphis – TN – EUA  
38152-3520

University of São Paulo  
Av. Prof. Luciano Gualberto, 908  
Cidade Universitária – prédio 3  
São Paulo – SP – Brasil  
05508-900