

# Determinants of Business Process Outsourcing in Human Resource Function

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## Abstract

The management of organizational Human Resource is steadily shifting away from pure hierarchical to market mechanisms that involve external vendors. HR Business Process Outsourcing (BPO) has recently emerged as a significant administrative innovation in an organization's strategy. Our paper attempts to understand firm-specific factors influencing the scope of HR BPO needs. Study results show that IT maturity and firm size are influential factors on the scope of HR BPO needs. We hope that our attempt at empirically examining and predicting this emergent phenomenon will stimulate others to look at this important strategic challenge facing firms from a theoretical perspective. Such research initiatives will allow us not only to better understand this complex phenomenon, but also to drive useful management prescriptions grounded on theory-based research.

Keywords : Coordination, Business Process Outsourcing, BPO scope, BPO adoption, Human Resource Management, Cluster Analysis, Small and Medium Enterprises

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## 1. Introduction

The problem in the Human Resource (HR) function is the lack of coordination among interdependent HR sub-processes. The examples of the interdependency can be found between the development of HR strategy and the recruitment of new employees as well as between evaluation and training of employees. When the recruitment is not coordinated with HR strategies, a problem such as recruiting new employees whose qualifications do not match with strategic needs of the company may occur. Similarly, a coordination problem occurs when training of a particular employee does not reflect the evaluation results of that employee. Lack of coordination among the sub-processes is associated with the lack of integration among information systems that support those processes. More companies are moving to the employee self-service portal. Since employee satisfaction is important for the enterprise, the integration of the portal with various HR sub-processes is required for efficient processing and seamless experiences of the employee. However, it is difficult to provide the employees with seamless experiences in the case of a lack of the integration among sub-processes as well as underlying information systems.

One solution to address the coordination problem is linking interdependent sub-processes and underlying data from those processes, resulting in comprehensive HR information systems. Recently, SAP has provided a fully integrated HR system. The system integrates

recruitment, training, HR administration, time management, and payroll and benefit applications through a centralized database. For example, HR administration, time management and payroll applications are integrated in the following way : all employee master data (name, department, employee status, rate of pay, job, position, recurring payments, absences, overtime, benefits, and time tickets) are kept up-to-date and synchronized among all applications. Time transactions such as absences and attendance are passed to the payroll application. Transactions are then passed from payroll back to HR administration for updating [mySAP, 2003].

Another solution to the coordination problem is outsourcing the HR sub-processes through a vendor who can provide the integrated services by converging multiple processes and supporting information systems. As the business environment changes rapidly and competition becomes fierce, companies focus on their core competency and outsource non-core functions to outside vendors [Fish and Seydel, 2006]. Recently, companies are increasingly adopting Business Process Outsourcing (BPO) that outsources non-core business processes as well as supporting Information Technology (IT). Gartner group defines BPO as “the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administers and manages the selected processes based on defined and measurable performance metrics [Gartner, 2003].” BPO permits the company to focus on its core-competency by outsourcing constantly changing

business processes and supporting IT (35). BPO can leverage the provider's leading-edge technology as well as their economies of scale, gaining significant reduction in costs.

One report indicates that the HR BPO market will grow rapidly, with a revenue growth rate of 45~50% annually for the next several years [Murphy et al., 2002]. In Korea particular, 99.7% of the firms are SMEs (Small and Medium Enterprises) with fewer than 300 employees [Joo, 2004]. In contrast to their contribution to Korean economy, SMEs have difficulty in recruiting and retaining quality employees as indicated by a recent survey [KFSB, 2005]. The survey reports that only 9.9% of those surveyed people prefer to work in SMEs as opposed to 76.4% wishing to work in a larger company. SMEs are increasingly recognizing the importance of HR management to remain competitive yet HR is not their core competency. BPO is being considered to resolve current HR problems faced by SMEs.

Our paper attempts to understand firm specific factors influencing the scope of HR BPO needs. We offer an assessment of a set of widely held assertions and beliefs as to what kinds of SMEs are considering HR BPO and what areas of HR (i.e. the scope of HR) are being considered for outsourcing. First, HR sub-processes for which the outsourcing needs of SMEs will be surveyed, are identified : recruiting, training, HR administration, payroll, and benefit processes. Then, the variables that are likely to affect the scope of BPO needs are identified : operating environment, firm size, IT maturity and culture. A series of research

propositions describing anticipated relationships between firm-specific variables and scope of BPO needs are presented.

Using a questionnaire, this study identifies the outsourcing needs of SMEs in each of the HR sub-processes discussed above. Then, cluster analysis is performed to categorize the scope of BPO needs. Then, the categorized BPO scope is then matched with the company characteristics to test anticipated relationships between the company characteristics and the scope of BPO needs. Based on the results of the survey, the propositions are examined. The paper concludes with a review of the results and a discussion of the study's implications.

## 2. Coordination In Human Resource Process

Coordination is defined as the act of managing interdependencies between activities to achieve a goal [Malone and Crowston, 1990]. Interdependencies among activities exist whenever the output of an activity is the input to one or more other activities. Interdependencies also exist when several activities are using same objects or must occur at the same time. In total, there are three types of interdependencies among individual activities : prerequisite, shared, and simultaneity. Coordination of prerequisite interdependencies involves ordering activities and moving information from one activity to the next. While coordination of shared resource involves allocating resource required by multiple activities, coordination of simultaneity involves synchronizing the activ-

ities that must occur at the same time.

Similar types of interdependencies and coordination mechanisms can be found in the organizational theory [Thompson, 1967]. For coordination among pooled interdependent units, they suggest establishment of standardization, by which the actions of each unit can be constrained and consistent with those of others in the interdependent relationship. This coordination is appropriate when the environment is relatively stable and repetitive. Coordination among sequentially interdependent units is accomplished by planning or scheduling for sharing information that governs each of their actions. Coordination by plan does not require the same degree of stability and routinization that is required for coordination by standardization and thus is suitable for more dynamic situations. Coordination among reciprocally interdependent units can be achieved by mutual adjustment. As the situation is more variable and unpredictable, the company relies more on coordination by mutual adjustment.

HR function consists of five sub-processes : recruiting, training, HR administration, payroll, and benefit processes. These HR sub-processes are interdependent. For instance, the recruiting and training sub-processes may be operated and managed independently, yet they could be interdependent in that educating the mission of the company through internet-based e-learning contents is a part of recruiting sub-process in attempt to attract high-quality applicants.

Another interdependency can be found among

HR administration, recruiting and training sub-processes. These processes are interdependent in that recruiting and training sub-processes must be aligned with strategic objectives set by HR administration sub-process. The lack of coordination in this interdependency could result in recruiting new employees whose qualifications do not match with the HR strategy; or not properly re-educating the employees for the area where the skill shortage is expected. When the mismatch is found, another iteration of the related HR sub-processes is imperative. The reiterations to achieve alignment result in longer cycle time of HR process. This problem becomes more costly when skill shortages and lack of competence result in unreliable promises and annoyed customers. Whenever interdependencies among constituencies exist, coordination of those constituencies plays a vital role for optimum performance of the whole. The HR sub-processes and their constituent tasks that need to be coordinated are discussed below. The scope of BPO needs are identified by surveying firm's needs in the specific HR tasks in the sub-processes.

The recruiting sub-process requires the most time and costs among HR sub-processes. The advance in IT introduces new ways of the recruitment. Currently, outsourcing of the recruiting sub-process is mainly associated with e-recruitment such as recruiting system development and operation. Constituent tasks of the recruiting sub-process include : (1) development and operation of the recruiting system, (2) development of the recruiting strat-

egy, objectives and plan, (3) advertisement, resume/personnel screening, and selection, and (4) BPO effect analyses.

The training sub-process includes HR development, education and evaluation. Currently, outsourcing of the training sub-process is mainly associated with the following tasks : non-core tasks such as registration, operation, and test/after-care of educational program; or core tasks requiring expertise such as educational program development. The constituent tasks of the training sub-process include : (1) development and operation of the training system, (2) development of the training strategies, objectives, and plans, (3) educational contents development, (4) operation of educational program and (5) BPO effect analyses.

The HR administration sub-process involves development, maintenance and deploying people to accomplish the firm's goal. The constituent tasks of the HR administration sub-process are : (1) development and operation of HR administration system, (2) development of HR strategy, objectives and plan, (3) employee data and record management, (4) employee self-service management and (5) BPO effect analyses.

The payroll sub-process is important to motivate employees and ultimately accomplish firm's goal. At the same time, payroll can be a complicated and time-consuming set of activities that does little to increase revenue or market share for a company. Thus, this sub-process is a popular area for outsourcing. The constituent tasks of the payroll sub-process include : (1) development and operation of pay-

roll system, (2) development of payroll strategy, objective, plan, (3) tax filing and compliance, (4) insurance, and (5) BPO effect analyses.

The benefit sub-process includes operation and management of insurance, health and other benefits. Benefit sub-process becomes more complex due to a dramatic increase in the number of benefits offered. The constituent tasks of the benefit sub-process include : (1) development and operation of benefit system (2) development of benefit related strategy, objective, plan, (3) health insurance, (4) other benefits, and (5) BPO effect analyses.

### 3. Dimensions of Company Attributes

In this section, variables that are likely to affect the scope of BPO needs are identified : operating characteristics, firm size, IT maturity and culture. Research propositions describing anticipated relationships between firm specific variables and the scope of BPO needs are presented.

#### 3.1 Operating Environment

As companies are surrounded by more cost pressure, they tend to place tight control on the operations. In one study [Klaas et al., 1999], companies facing cost pressures and thus requiring flexible HR management in terms of adjustment in staffing levels perceive increased amount of HR outsourcing to be more beneficial. From TCE (Transaction Cost Economics) perspective, more cost pressures cre-

ate more values perceived by managers of the firm, which sufficiently offset the risk of opportunistic behavior by the service providers [Zammuto and Krakower, 1991].

A difficult financial situation can be a result from a combination of competitive intensity, sales decrease and an undesirable economic forecast for the firm [Argyris, 1953]. 'Competitive intensity' is defined as the degree of rivalry among firms producing products that are close substitutes [Jaworski, 1998, Gatignon, 1984, Porter, 1980]. Companies facing intensive competition are likely to have more pressure for cost savings and efficient personnel management. Otley [Otley, 1978] found that managers in a tougher operating environment for making profits relied more on budgets than managers in liberal operating environments. Thus, more emphases are placed on budget assessments/monitoring and costs/expenses [Merchant, 1984, Otley, 1978, Jaworski, 1998].

Companies in the tougher environment also tend to adopt new technology [Kim and Lee, 2002] to create value and cumulate knowledge. Thus, the following proposition can be derived :

- ***Proposition 1 : The operating environment of the company will be related to the scope of HR BPO needs.***

In this study, firm's competitive intensity, fund pressures and market position were asked to estimate the firms' operating environment.

### 3.2 Firm Size

The size of the company is determined by the number of employees, sales amount and assets [Kim and Lee, 2002]. From TCE perspective, firm size relates to the economy of scale and transaction costs that determine a choice of the governance structure [Williamson, 1996, Klaas, 1999, Bunduchi, 2005]. According to a study on HR outsourcing, smaller firms that have higher per unit cost to acquire specialized HR services, perceives greater cost savings from increased HR outsourcing [Klaas et al., 1999].

According to the organizational value studies, firm size is also related to organization's value system hence to the organizational design strategy. Smaller organizations are likely to have 'flexibility-oriented values' that mainly use decentralization and differentiation strategies. Kelly [1990] found that organization's size significantly affect the organizational design strategy in the domain of production worker's jobs. In her findings, the probabilities of decentralization are higher in small, single-plant enterprises than in large, multi-plant enterprises.

On the other hand, large organizations tend to emphasize 'control-oriented values' that are characterized as centralization and integration [Zammuto and Krakower, 1991]. Within control-oriented values, organizations are likely to use hierarchical coordination and control system that mainly comprises with formalization and long-term planning (i.e. two aspects of hierarchical coordination and control

systems). Example of a large organization with centralization and integration focus is IBM. IBM's Human Resource Service Center (HRSC) delivers centralized human resource support to over 500,000 employees and retirees [Gonzales, 1999]. Thus, the firm size is selected as a variable that is likely to affect the scope of BPO. The following proposition can be derived :

- ***Proposition 2 : The size of the company will be related to the scope of HR BPO needs.***

### 3.3 Information Technology Maturity and Culture

The level of IT maturity and creative culture of the firm could influence the adoption of IT intensive BPO as well as the scope of BPO. IT maturity is defined as the degree to which companies incorporate IT in order to achieve organizational aims [Arribas and In-chusta, 1999]. There are multiple criteria to differentiate more mature firms from less mature firms. The criteria include expenditure on hardware, years of computer use, user participation in IS projects and formal IS planning and evaluation [Benbasat et al., 1984]. Another criterion to measure IT maturity is the degree of IT integration [Karimi et al., 1996] -as firms approach maturity phase, firms tend to integrate the IS.

The firms see BPO as an opportunity to renovate their process using new breed of Information technology. Thus, the following pro-

position is derived :

- ***Proposition 3 : IT maturity of the company will be related to the scope of HR BPO needs.***

This study includes the following items to measure IT maturity : expenditure on IT at the firm level, usage level of IT at the firm level, level of IT adoption by HR department and use of integrated system such as ERP (Enterprise Resource Planning) systems.

Culture is defined as "the set of important assumptions that members of communities share in common [Sathe, 1985]." The role of culture in promoting a new way of doing things and successful implementation of IS is vital [O'Reilly, 1989; Bradley et al., 1993; Pliskin et al., 1993, Weber and Pliskin, 1996; Romm et al., 1991]. Thus this study considers creative culture of the business to have positive impact on adoption and degree of IT intensive BPO. Thus, the following proposition is derived :

- ***Proposition 4 : The creative culture of the company will be related to the scope of HR BPO needs.***

The following items were included to measure creative culture : freedom for risk taking, rewards for change, openness in communication, minimization of the bureaucracy, autonomy in decision-making and teamwork [O'Reilly, 1989].

## 4. Research Methodology

A survey instrument was used in this study to ask HR BPO needs and characteristics of the company. The questionnaire consists of two parts. The first part includes 42 questions to assess the BPO needs in the areas of recruit, training, HR management, payroll, and benefit processes. The second part consists of questions to identify firm specific factors such as operating environment, firm size, culture, and IT maturity. Participants responded to five-point Likert-scale items except for the question on firm size. The response labeled 'very low' was assigned a value of 1 and 'very high' was assigned a value of 5. 550 questionnaires were distributed to HR managers or CEOs in SME via e-mail or in a visit. Due to the characteristics of SMEs, often the CEO is in charge of overseeing HR functions. A convenience sample was adopted, i.e. companies in Seoul vicinity of Korea, selected on the basis of easy access. Among 550, 30 surveys were returned. While 66.7% of the respondents were from top management, including the CEO, the rest were from middle management. The limitation of this research is the relatively low response rate. The reason could be attributed to the fact that HR BPO is new to Korean SME. The reliability of the instrument was assessed using Cronbach's alpha (See <Table 1>). Reliability was acceptable and ranged from 0.88 to 0.94.

Cluster analysis was performed to identify the scope of BPO needs. Then, the cross ana-

lyses were applied to identify the firm-specific variables that are significant to explain the characteristics of each cluster. Based on the result of the survey, the propositions were examined.

<Table 1> Reliability of the Instrument

Dimensions	Number of Items	Cronbach's alpha
Recruiting	7	0.8823
Training	10	0.8928
HR Administration	9	0.9380
Payroll	8	0.9172
Benefit	8	0.9418
IT Maturity	9	0.9319

## 5. Deriving the Scope of HR BPO Needs

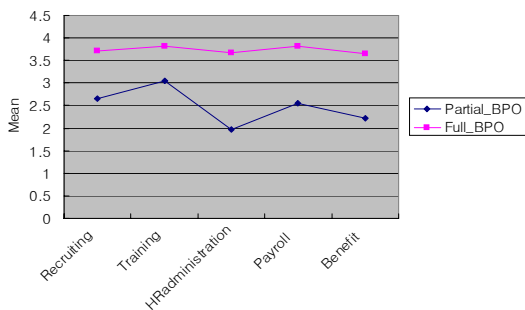
Cluster analysis was used to identify the emerging patterns of BPO needs. Cluster analysis is a multivariate technique of classification criteria to produce the item grouping (Hair, 1998). Combinational methods combining both hierarchical and nonhierarchical methods were used as the clustering algorithm. Results of the cluster analyses indicated that three clusters were formed <Table 2>. The number of cases in each cluster is also shown in <Table 2>. The second cluster includes only 1 case. Therefore, the second cluster was excluded in the discussion. While the first cluster was named Partial\_BPO, the second cluster was named Full\_BPO. While the first labeled as FULL\_BPO indicates the BPO needs in all of HR sub processes, the second labeled as PARTIAL\_BPO indicates the BPO needs in the training sub process.



<Table 2> Number of Cases in the Cluster

Cluster	Number of Cases
Cluster 1 (Partia_BPO)	9
Cluster 2	1
Cluster 3 (Full_BPO)	20

Results of the cluster analysis were plotted in <Figure 1>.



<Figure 1> HR BPO needs for two clusters

FULL\_BPO group showed outsourcing needs in all of the HR sub processes. 66% of the responding SMEs fall in this category. The majority of this group appears to be in the Competitive Environment <Table 3>, above average IT Maturity <Table 5>, with Creative Culture <Table 6>. Although FULL\_BPO group showed outsourcing needs in all of the HR sub-processes, this cluster showed the highest interests in the training and payroll sub-

processes <Figure 1>. At the task level, FULL\_BPO showed interests in all tasks of each sub-process. ‘The planning’ task of each sub-process showed the lowest outsourcing needs. This means that the planning tasks are strategic ones that are relatively difficult to be outsourced.

PARTIAL\_BPO group showed outsourcing needs only in training <Figure 1>. At the task level, this cluster showed interests in ‘Development and operation of the training system’, ‘educational contents development’ and ‘BPO effect analysis’ tasks of the training sub-process. Most of firms in this cluster has ‘less than 30 employees’, above average in competitive Operating Environment <Table 3>, above average in creative culture <Table 6>. Although overall mean in Recruiting is below 3, at the task level this cluster showed interests in ‘development and operation of the recruiting system’ and ‘BPO effect analysis’ tasks of the recruiting sub-process.

## 6. Examination of Propositions

According to the cross analyses performed between company characteristics (operating environment, firm size, culture and IT maturity)

<Table 3> Operating Environment and BPO Scope

Operating Environment	PARTIAL_BPO	FULL_BPO	Pearson Chi-Square	Asymp.Sig. (2-sided)
Not Competitive (1~less than 2)	0	0		
Less Competitive (2~less than 3)	3	0		
Average (3)	0	2	16.615	.083
Competitive (3~less than 4)	3	11		
More Competitive (4~less than 5)	3	7		

and these clusters, Firm Size (0.002) and IT maturity (0.014) were considered to be significant factors to explain the scope of BPO needs ( $p < .05$ ).

In <Table 3>, Chi-square analysis does not support the contention of proposition 1 that the operating environment of the company will be related to the scope of IT-based HR BPO. However, comparing cell frequency provides insight into the relationship between Operating Environment and BPO adoption. In Table 3, 80% of the sample (24 out of 30 samples) is either competitive or more competitive and they seek FULL\_BPO more than PARTIAL\_BPO. This finding supports the proposition that companies in either a competitive or a more competitive environment will seek a broader scope of IT-based HR BPO for cost savings and value creation. Proposition 1 can be modified as follows :

- ***Proposition 1 : Companies in either competitive or more competitive environment seek broader scope of IT-based HR BPO for cost savings and value creation.***

In <Table 4>, Chi-square analysis supports the contention of proposition 2 that the size of the company will be related to the scope of IT-based HR BPO. Even though Chi-square analysis does not evaluate individual cell significance, further insight into the relationship between Firm Size and BPO scope can be gained by comparing cell frequency. In <Table 4>, except those cells that have the smallest Firm Size (Less than 30), FULL\_BPO has more frequency than PARTIAL\_BPO. According to a CEO of the firm with less than 30 employees, “we are too small to outsource. we can not afford to get smaller by outsourcing

<Table 4> Firm Size and BPO Scope

Firm Size	PARTIAL_BPO	FULL_BPO	Pearson Chi-Square	Asymp.Sig. (2-sided)
Less than 30	7	6		
30~100	2	8		
201~300	0	1	20.901	.002
Over 301	0	5		

<Table 5> IT Maturity and BPO Scope

IT Maturity	PARTIAL_BPO	FULL_BPO	Pearson Chi-Square	Asymp.Sig. (2-sided)
Lower (1~less than 2)	1	2		
Low (2~less than 3)	2	0		
Average (3)	1	1	46.881	.014
High (3~less than 4)	5	12		
Higher (4~less than 5)	0	5		

HR (Kim and Won, 2007).” Thus, proposition 2 can be refined as follows :

- **Proposition 2 : Except extremely small companies, SMEs seek broader scope of IT-based HR BPO for value creation.**

In <Table 5>, Chi-square analysis supports the contention of proposition 3 that IT Maturity will be related to the scope of IT-based HR BPO. Further insight into the relationship between IT Maturity and BPO scope can be gained by comparing cell frequency. For those cells that have higher IT maturity (3~less than 4 and 4~less than 5), FULL\_BPO had more frequency than PARTIAL\_BPO. Thus, proposition 3 can be refined as follows :

- **Proposition 3 : Companies with high and higher IT maturity seek broader scope of IT-based HR BPO.**

In <Table 6>, Chi-square analysis does not support the contention of proposition 4 that creative culture of the company will be related to the scope of IT-based HR BPO. In <Table 6>, 73% of the sample (22 out of 30

samples) is either creative or more creative. For creative or more creative companies, FULL\_BPO had more frequency than PARTIAL\_BPO. Thus, the proposition 4 can be modified as follows :

- **Proposition4 : Companies with creative culture seek broader scope of IT-based HR BPO.**

## 7. Conclusions and Limitations

The governance of the organizational Human Resource function is steadily shifting away from pure hierarchical to market mechanisms that involve external vendors. HR BPO has recently emerged as a significant administrative innovation in an organization’s strategy. Our paper attempts to understand firm specific factors influencing HR BPO adoption and the scope of HR BPO.

As indicated by study results, IT maturity is an influential factor on the scope of BPO adoption. This implies that firms with higher IT maturity take BPO as an opportunity for higher level of transformation and a correspondingly higher degree of changes. Firm size is found to be another influential factor on

<Table 6> Creative Culture and BPO Scope

Creative Culture	PARTIAL_BPO	FULL_BPO	Pearson Chi-Square	Asymp.Sig. (2-sided)
Not Creative (1~less than 2)	0	0		
Less Creative (2~less than 3)	1	3		
Average (3)	0	3	42.117	.07
Creative (3~less than 4)	8	11		
More Creative (4~less than 5)	0	3		

scope of BPO adoption. An interview with a manager indicates that SME considers outsourcing as value-creating opportunity. According to the manager, the company needs a better management in benefit, evaluation and payroll processes to make their employees more satisfied. For small companies in Korea, the benefit package has been regarded as luxury. Sometimes, new government policy and laws in employee benefits are not reflected in the company policy, which results in less benefit for the employees. In addition, unfair practice or no objective measure for evaluation and payroll management made some employees leave.

In another interview with the CEO of a SME, recruiting and training are tremendous overhead [Kim and Won, 2007]. They cannot afford to have a dedicated training program or effective recruiting program of their own. Since college graduates avoid working in SME, SME needs more systematic approach to recruiting quality personnel as well as retaining them. In order to retain employees in the company, it is also important for employees to feel upgraded but the reality of SMEs is contrary. As indicated by study results, firms in the competitive environment and firms with creative culture of the firm seek some degree of BPO adoption. This implies that SMEs view that BPO as cost savings as well as innovation.

Bias could exist in this study because this study is based on a relatively small sample due to a low return rate. BPO in Korea is an emerging phenomenon. The findings cannot

be extrapolated to all SMEs but merely provide an indication in the sample frame. There is a need for survey research with a larger sample. We hope that our attempt at empirically examining and predicting this emergent phenomenon will stimulate others to look at this important strategic challenge facing firms from theoretical perspective. Such research initiatives will allow us not only to better understand this complex phenomenon but also to drive useful management prescriptions grounded on theory-based research.

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