Improving Quality in Business Process Outsourcing through Technology

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Sufficient evidence shows that Business Process Outsourcing (BPO) is growing rapidly. Technological and communication advances help realize the wide-spread adoption of BPO, due to their quality and cost improvements. Technology applied in BPO through the adopted software, applications and platform has a substantial long-term impact on the whole process, affecting the quality, cost and associated risks of the operation of outsourced activities.

In a previous SAP white paper, the impact of technology to cost has been addressed. As one of a series of SAP white papers, we concentrate here on how technology impacts quality in BPO. In this paper, we identify the quality structure of BPO and distinguish the unique quality characteristics that are different from the traditional service industry. The quality structure includes the major quality measurement criteria, which BPO buyers should consider and BPO service providers should be focus on when offering their services. In conclusion, technology enhances the value of BPO from perspectives of enabling and leveraging the values of standardization, automation, integration, flexibility and innovation.

To both BPO service providers and customers, quality and technology are two equally important elements which need to be concerned carefully. In this paper, we present a quality framework of a BPO service including seven quality dimensions: reliability, tangibility, conformance, responsiveness, flexibility, assurance and security, and four quality enablers: standardization, integration and automation, innovation.

Key words: Technology, Quality, BPO, E-learning process outsourcing, Recruiting process outsourcing

1. Introduction

BPO is an important branch and trend of outsourcing that many management theories and methodologies generated and developed for outsourcing can be applied to. Many corporations, like Dell, AIG, IBM and Citi Group, have been using BPO and leveraging the larger scale of outside service providers to cut costs, improve process quality and speed time to market. Also, many IT service vendors, like IBM, EDS, Accenture, and SAP, have integrated BPO services into their systems and models.

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BPO started with non-core processes and is now moving towards more critical applications. It has boomed with call centers and customer support processes, and now is happening with software development, Human Resources (HR), Finance and Accounting (F&A), training, payroll, and procurement. The trend is moving beyond the outsourcing of typical back-office functions into middle-office functions. BPO is catching up with industries like medical transcription, animation production, and even disaster recovery management systems. Moreover, it is not just India or the Philippines that are booming with BPO. Central & Eastern Europe's markets are aggressively chasing near shore outsourcing from Europe.

Terra (2005) showed that 73% of BPO customers surveyed believe BPO is improving their outsourced processes. The study concludes that BPO is increasingly moving to be about efficiency and effectiveness. In order to deliver a quality and stable service, the provider has a service methodology, the needed infrastructure, people, and skills, technology, and metrics capabilities. Among those requisites, the technological and communication advances is the fundamental factor leading to the wide spread adoption of BPO. The internet and the low cost of communication, in addition to the move into a more standardized applications, open IT platforms, and more integrated systems gave BPO the tools needed to advance and spread. All this will and has been helping the adoption of BPO by reducing risks, increasing the transparency, and improving the process quality while lowering costs.

BPO is growing rapidly. International Data Company (IDC) predicts that BPO will grow at a compound annual rate of 10.9%. With $382.5 billion in annual sales in 2004, global BPO will likely grow to $641.2 billion in 2009 (Gibson (2005)). Moreover, nearly all processes outsourced are highly IT intensive. Donniel Schulman, from IBM's Business Transformation Outsourcing (BTO), highlighted the essential role of IT in BPO, demonstrating how IT should be involved in deciding where BPO investments go (Erlanger (2006)). The sustainable success of any BPO process depends on technology. As technology impacts almost every area of operations management (Slack et al. (2004)), technology profoundly affects BPO services.

Applied BPO technology, like the adopted software, applications and platform, have a substantial long-term impact on the whole process, affecting the quality, cost and associated risks of the operation of the outsourced activities. Technology directly drives the process automation through workflows, paperless document management and online interactive. It facilitates innovative solutions to be implemented and allows providers to create creative new models of processes operations while minimizing cost and disruption of

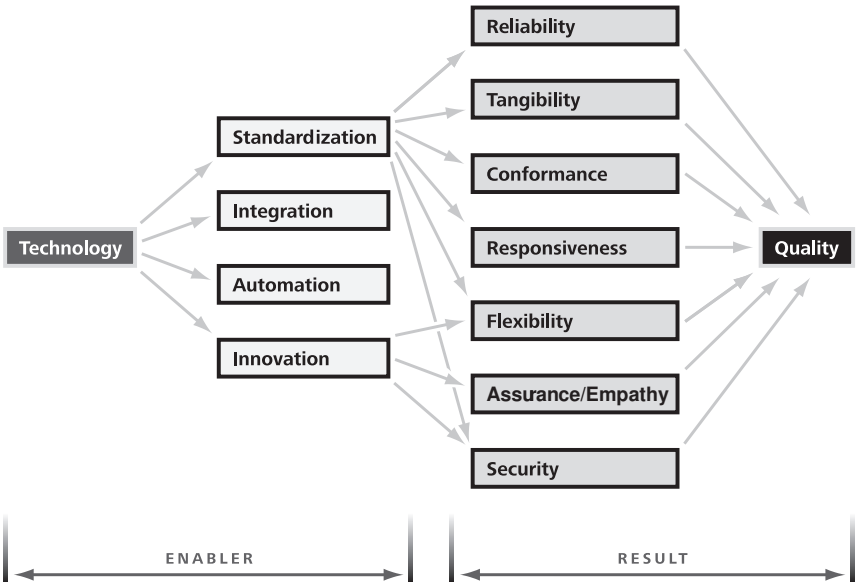
execution. The right technology enables the balance of personalization and standardization of the outsourced activities, creating the capacity to design processes that suit the specificities of each client, while maintaining a standardization level that enables sustainable long term advantages for both the provider and clients. Both on a process and IT level, technology affects the level of integration between the BPO buyers and the service provider. The underlying technology adopted by the service provider can drive his flexibility capabilities to adapt and accommodate for any needed scope or scale changes requested by the BPO buyer or even changes in the sourcing strategy.

Given the potential economic impact of BPO and the critical role of technology in improving BPO service, it is necessary to conduct research on the impact of technology on BPO. However, most of the relatively recent research is concerned with how outsourcing affects the companies' competitive advantages. There is a lack of academic research on BPO quality, as most findings are obtained by BPO industry insiders and advisors. The focus in BPO is changing from just operational cost cutting, into a transformational process where extra benefits are realized by buyers who demand higher level of quality to be supplied by the service providers processes. In this paper, we identify the mechanisms that would contribute to the perception of the customer in judging service quality, explore the relevance of technology and service quality for BPO, and provide managerial insights to BPO practitioners.

To construct a pragmatic service quality framework for the BPO industry, we borrow the European Foundation for Quality Management Excellence Model (EFQMEM), which divides the quality criteria into enablers and results. Although the EFQMEM is usually used to assess the performance of an organization, it provides insights on how to define a quality framework for BPO industry. In this industry, technology can be regarded as one of the enabling resources to create the excellent customer perceptions on quality. Therefore, in this study, a technology-driven customer quality framework for BPO is developed and shown in Figure 1 below.

The remainder of this paper is organized as follows. In section 2, we develop a multiple dimensional quality framework and present the performance measures on each dimension. The impact of the technology to quality in BPO are addressed in section 3. Finally, the industrial implications and conclusion are presented in Section 4.

Figure 1 Technology-driven customer quality framework for BPO



2. Quality framework in BPO

2.1. Related research on service quality

Quality improvements affect operations performance in various ways, such as increasing revenue, reducing costs and improving productivity. Quality has been regarded as one of the major drivers of competitive strategy in every industry. There is no exception to the BPO service industry. However, as Reeves and Bednar (1994) stated that "no universal, Parsimonious, or all-encompassing definition or model of quality exists". The quality construct space is very broad and characterized by industry. The American National Standards Institute (ANSI) and American Society for Quality (ANQ) define quality as:

> the totality of features and characteristics of a product or service that impact its ability to satisfy given needs.

At the level of strategic operations, many researchers have developed different quality frameworks. For example, Garvin (1987) developed a quality framework considering an eight dimension product quality, and Parasuraman et al. (1991) derived a five dimension model of service quality, SERVQUAL (see below table 1).

It is difficult, however, to measure service quality due to three unique natures of services: *intangibility*-service cannot be measured, counted, inventoried, tested and verified in advance of sale; *heterogeneity*-the consistency of service from a personnel is difficult to measure; and *inseparability*-the difficulty in separating consumption from production (Ma et al. (2005)). Zeithaml et al. (1993) states that customers not only

Table 1 Dimensions of Quality [Source: Ma et al. (2005)].

Framework	Dimension	Definition
Product quality (Garvin (1987))	1. Performance	Primary operating characteristics
	2. Feature	Supplements to basic functioning characteristics
	3. Reliability	Does not malfunction during specified period
	4. Conformance	Meets established standards
	5. Durability	A measure of product life
	6. Serviceability	The speed and ease of repair
	7. Aesthetics	How a product looks, feels, tastes and smells
	8. Perceived quality	As seen by a customer
Service Quality (Parasuraman et al. (1991))	1. Tangibility	Physical facilitates, equipment and appearance of personnel
	2. Reliability	Ability to perform the promised service dependably and accurately
	3. Responsiveness	Willingness to help customers and provide prompt service
	4. Assurance	Knowledge and courtesy of employees and their ability to inquire trust and confidence
	5. Empathy	Caring, individualized attention the firm provider gives its customers

judge service quality based on the outcome of the service but also consider the process of service delivery. Specifically, service quality perceptions stem from how well a provider performs vis-à-vis customers' perception about how the provider should perform. Cronin and Taylor (1992) investigated and developed a performance-based measure — SERVPERF. Kettinger and Lee (1997) recommended a revised model as SERVQUAL+, which assesses the service quality in desired level and adequate level. While there have been attempts by numerous researchers to give service quality a tangible aspect to make service quality measurable and determinable, there has yet to be a viable theory developed.

Although existing quality frameworks are not directly appropriate for BPO, previous studies on quality measures are useful in developing a more accurate quality dimension for BPO industry. BPO shares various features with IT outsourcing and is highly technology dependent. Therefore, some of the general and IT outsourcing theories and concepts are applicable to BPO research. The quality research on IT/IS outsourcing and ASP are the most relevant to the BPO industry. Grover et al. (1996) explained that outsourcing involves the quality expectations of both the service provider and the service receiver, and that service quality is measured with tangibility and reliabilities. Additionally, Ma et al. (2005) implemented an exploratory study on service quality of ASPs and identified seven factors to measure service quality: features, availability, reliability and assurance, empathy, conformance and security. Despite of the similarities between BPO, IT/IS outsourcing and ASP, their differences are also evident. Based on the comparison analysis on IT/IS and ASP in Ma et al. (2005), we can extend the comparison to BPO industry (see Table 2).

Given the differences, it is inappropriate to adopt either of the quality dimensions from IT/IS outsourcing and ASP. Thereby, referring to the findings from the IT/IS outsourcing quality and ASP service quality, we

Table 2 The comparison of IT/IS outsourcing, ASP and BPO model.

	Perspectives	Traditional IT/IS outsourcing model	ASP model	BPO model
Similarities	Client expectation	The quality and availability of support staff, the ability of the vendor to grow, indication of some vendor competence, and tangible evidence of success		
	Applications	Standard, non-critical applications/processes		
	Contract	Service level was specified in a contract to govern the services that providers rendered		
	Client-relationship	Maintain a good relationship with clients		
Differences	Target market	Large clients with IT departments	SMEs with low IT experience	Any clients with focus on core competence and expectation to stay lean.
	Vendor Characteristics	"Name" vendors, with potential global span	Entrepreneurs and start-ups	Technically advanced, global expertise in specific functions
	Contract type	Long, broad, strategic	Short, standard, usage-based, and non strategic	Long, standard, and strategic, broader, deeper
	Available functions	Pick your services from application development to infrastructure operation	Web-based application services	Any non-core functions, to efficiently manage critical information and intellectual property.
	Product customization	Tailored or client-determined	Standard packages with one site fits all	Tailored and Standardized
	Resource ownership	Mixed bag	Vendor server hardware and application ownership	Vendor technology and application ownership, customer intellectual property, data and information ownership

identify the BPO service quality dimensions in Section 2.2.

Cronin and Taylor (1992) describe service quality as the difference between the product or service performance and customer expectations. In other words, the realization of service quality is the gap between the customer expected quality and perceived quality. Therefore, for a quality BPO service, it is important to identify the quality criteria from the perspective of the customer so that effective services are provided to satisfy and surpass the customer's expectations. In section 2.2, with respect to each dimension of quality, the client quality expectations are clarified. Two typical types of BPO services, E-Learning processes and Human Resource Management processes, are employed as examples to help analysis.

E-learning is "the use of technology to manage, design, deliver, select, transact, coach, support and extend learning" (*Elliot Masie, The Masie Center*[1]). The development and implementation of a course must involve several technically proficient people or a programming expert, and therefore, it has been a popular option to outsource the entire process, from course analysis to design and development until implementation.

[1] Source: `http://www.masieweb.com`

The total human resource recruitment spending in the United States in 2000 was around $40 billion. Recent surveys reveal the growing concern among senior management regarding the recruitment and retention of talent in the organization. Innovation, integration, and attention to detail are key factors to a quality Human Resource Recruitment Process (HRRP). It is costly for organizations to have a dedicated team for improving the activities in the recruitment process, and most companies' human resource departments spend only 10% of their time on the acquisition of talented recruits; in contrast, HRRP providers are dedicated to enhancing the process by creating access for their clients to the most talented applicants (PricewaterhouseCoopers (2002)). Insead of simply sourcing and screening candidates as recruitment agencies do, a full HRRP service covers an end to end recruitment process.

2.2. Quality dimension in BPO

As a special service provider, BPO service quality is the degree and direction of variation between the service receiver's expectations and perceptions. As Kumar (2004) pointed out "Service excellence has become the basic instinct and real value differentiator that drives client satisfaction. Operational excellence, product/service leadership and highly effective client relationship management are keys to assuring superior service delivery. The service provider must have a clearly defined service vision in line with outsourcers' priorities and hones on creating measurable values". Therefore, we develop a BPO quality structure including seven dimensions shown in Table 3 below.

In each dimension, the sub-measures are identified based on the nature of BPO service. These criteria are strongly acknowledged as some of the main factors leading to BPO success.

1. Reliability

Reliability is how to manage the outsourcing relationship, assuring the successful service delivery after the deal is signed and the outsourced process activities are in operation. Grover et al. (1996) suggested that the success of outsourcing is heavily dependent on the reliability of the service a service provider provides.

In Human Capital Management, the finalized and easy-to-use results should be available. A full HRRP service begins with the job requisition through hiring the new employee, including: information collection and applications management, candidate sourcing (internally and externally), recruitment agencies management, screening, interviewing and testing, reference checking, offer and contracts management, on-boarding and even any needed initial training.

Table 3 Dimensions of BPO service quality.

Quality dimension	Qualitative Description	Sub-measures
Reliability	Ability to perform the promised service dependably and accurately	On-time Accuracy Accessibility Correct historical record Disaster recovery
Tangibles	Physical facilitates, equipment, and application, appearance of personnel	Advanced technology Global expertise Application's friendly user interface Ease of data reporting and extracting Application scalability Application interoperability
Conformance	The degree a service's design and operating characteristics meet established standards	Systematically process design Consistent process delivery and manage Efficiency and Effectiveness Added value
Responsiveness	The timeliness of service	Speed Competence Ease of repair Customer relationship
Flexibility	The process ability to deal with changes	Re-scalability Upgrade Innovation Transition
Assurance/ Empathy	Client-focused process development and management	Shared approach to problem solving Helping customers in improving their entire operations Quality assurance systems or tools Expertise availability and know how Fit of work practices with that of customers, etc.
Security	The freedom from danger, risk, or doubt	Confidentiality Physical safety Financial safety

In outsourced E-Learning activities, customer expectations include:

- Service providers will deliver promised service by a certain time;
- Accurate learning resources and tools are delivered;
- Sufficient capacity is provided to record the learner's learning history;
- The speed and effects will not be impacted by the amount of the users;
- When customers have a problem, excellent service providers will resolve the issue as soon as possible.

2. Tangibility

Tangibility includes the physical evidence of service. Technology is the first visible quality feature in BPO. Technology and applications allow the monitoring of process operations. Technology adds to the BPO quality and success by making the operations more visible by different views suited for different role-based levels in the client's organization, e.g. operational vs. managerial vs. strategic and planning level.

For example, in outsourced E-Learning activities, cutting-edge technology is one of the critical factors in matching the learning architecture a company needs to provide the best solution for the business process. When delivering the learning system to a business, the service prodivers' technology choices should bear in mind the existing technical infrastructure and the needs and skill levels of the employees who will work with whatever products and systems are chosen.

Other customer expectations include:

- Physical advances - global expertise in the course relevant field;
- Assessment tools - diversity should be provided, etc.;
- Courses - well designed and structured;
- Easy to apply - a competency model that really works;
- Comprehensive - covers all job descriptions and management levels;
- Automated - most of the analysis can be automated using online assessment tools.

3. Responsiveness

Responsiveness concerns the willingness or readiness of employees to provide service. Customer-facing staff can be brought up to speed with new offerings far more rapidly, and brand service values can be communicated to customer touch points more efficiently and consistently. Providers cannot escape errors at any stage of BPO service, so the ability to discover errors swiftly and track down their causes are important. This will result in the quick operation restoration, and thereby increase client satisfaction due to minimum interruption and early discovery of problems. This is aligned with Tax and Brown's (1998) arguments regarding how effective service recovery from failure is one of the major demands that customers expect.

Using outsourced E-Learning process as an example, other customer expectations include:

- When a break-down happens, an excellent E-Learning service provider should be able to resolve it promptly;
- Specific individuals should be available to provide help on any application problems.

4. Conformance

Conformance is the degree to which the design and operation of an application of service meets its established standards. Although BPO is usually considered service first, it is actually providing applications to organizations. Any outsourced business process involves some specifications which are usually restricted

by a contract. The BPO activities should align the outsourcing objectives with the appropriate contract reviews, performance monitoring and measurement systems. Therefore, quality BPO service should provide the needed framework for driving the behavior of the BPO provider towards sustaining the quality level of service required.

Despite the crucial role of the contract and the Service Level Agreement (SLA) in controlling the relationship, BPO governance should be built around a partnership to support the increasing dependency between the client and the service provider. Such a trusted provider/supplier relationship would revolve around open communication, fairness and the belief in mutual benefit and interdependence. The quality monitoring and measurement should be viewed as a benefit for both parties.

The conformance performance in BPO involves how the provider is able to align his activities with the evolving goals of the client. Only then will the providers' activities be completely client focused and will add real value. For this to succeed the client should provide the needed resources for managing the relationship, or the provider will not be able to fulfill his part of the relationship. For example, in the HR-Recruitment process, the governance team should not only control the cycle time or the cost-per-hire but more importantly, the new-hire efficacy and turnover. Quality in the recruitment process does not end with the hiring step but would also measure how the newly hired employee fits the job, and how the selection was accurate, reliable, and effective. HRRP providers are dedicated to enhancing the process creating access for their clients to the best of the talents.

In a particular HRRP deal, the buyer and the provider used to hold a monthly virtual meeting between senior managers to measure the each side's satisfaction (Center-Everest (1992)). This way any quality drop will be more visible at senior levels and more likely to be rapidly resolved.

For the aspect of conformance, the clients of the E-Learning Process Outsourcing service often have the following expectations:

- The excellent e-learning service providers understand the specific needs of their customer (learners);
- The learning process should be more efficient and effective comparing with the legacy system or content;
- The learning activity is more pleasant.

5. Flexibility

Quality is not only delivering the service but consistency in delivery. BPO contracts are relatively long-termed, between 3 and 7 years, and the clients' requirements and needs frequently change. In order to achieve sustainable quality, BPO service providers need to cope with scope or scale changes including clients' organizational restructuring, Merge and Acquisition (M&A) activities or even the sourcing strategy change. In other words, flexibility is one of the important qualities of BPO service.

BPO agreements should be designed to allow for adaptability. Contracts should enable elements to evolve and adapt to organizations' service level requirements, like service level improvement clauses with incentives schemes. Quality entails service providers to *proactively enhance value*, hence the need to adapt to their clients' changing needs. This is an element of being customer focused and aligned to clients' strategic needs. In addition to day-to-day operations, the service providers should engage in frequent benchmarking and innovation for their own processes to be able to cope with the increasing quality demands while maintaining their efficiencies and economies of skill and scale to drive long-term profitability. While the BPO relationship should be built on partnership, the contracts must be built with the view of the possibility of a breakup, in case of re-sourcing the processes back in-house or move to another BPO provider.

The challenge also comes from the change in outsourcing from just operational cost cutting into a strategic way to drive corporate performance and competitiveness. To gain this, outsourcing is changing to become more of a transformational process where performance is monitored and the benefits measurable, not the mere transfer of an existing operation. It is now a process of continuous improvement by both the outsourcing organization and the outsourcing vendor to meet the ever changing business needs. This requires that the IT innovation and deployments to catch up with the operational continuous change and improvement.

Outsourcing, especially in the process of HR-Recruitment, provides flexibility to the organization's staffing function (RES (2005)). For example, flexibility reflects the ability of BPO service provider to adapt to their clients' seasonal peaks, and scale to maintain their service metrics, like time-to-fill and cost- per-hire, even at times of talent shortages.

An E-learning process should be able to support both synchronous and asynchronous learning, accommodate diversity course resources and assessment tools, etc. Synchronous learning has a significant strength in the number of different applications it can be applied to. Thinking of live E-learning as not solely a training

medium, but as a highly flexible tool for everything from one-to-one collaborative working to corporate communications across an entire organization could be beneficial.

Customer expectations include:

- Flexible learning forms and time should be available;
- Advanced Learning management system is very important;
- Dynamic systems that are easily adapted to fit organizational change.

6. Assurance and Empathy

Assurance and empathy are both client focused quality criteria. Assurance is reflected by the knowledge and courtesy of employees and their ability to instill trust and confidence. Empathy is the degree of individualized attention the service provider gives its customers. As the quality advantages of BPO service, assurance and empathy are the critical view organizations gain when they outsource their processes to the provider. In other words, assurance and empathy help improve the perceived service quality, customer value and customer satisfaction. In a HRO deal, the buyer and the provider can hold a monthly virtual meeting between senior managers to measure the each side's satisfaction. This way, any quality drop can be more visible at senior levels and more likely to be rapidly resolved.

Based the perspective of assurance and empathy, quality BPO service should support the increasing dependency between the client and the service provider. A trusted relationship between BPO service providers and their clients should be built around open communication, fairness, belief in the mutual benefit and interdependence. In addition, quality BPO service requires that the service provider has formal systems and procedures to consistently fulfill the requirements of different customers and deliver services to the agreed service levels. Moreover, higher levels of quality capability require that the providers must have quality and performance measures in place to monitor performance progress and proactively enhance the quality of service they are providing. Other customer expectations include:

- Providing effective customer training and education programs;
- Sharing work practices and problem solving approaches with their clients;
- Deploying more staff to improving the functions of the system;
- Helping customer in strategic planning and setting proper expectations;
- Detailed fee-for services, no hidden costs, etc.

7. Security

In BPO, the outsourced business process often interacts with other business processes of the customer, or intervene important or confidential business information. BPO service has to guarantee the security of the customer business. Concretely, the quality of security should be analyzed from the following aspects:

- Confidential data and information;
- Security auditing;
- Encryption and anti-virus protection;
- Secure physical environment.

3. Enabling Quality by Technology

The ability of the service provider to deliver quality service beyond the expectation of the outsourcing firm has a significant impact on the success of BPO. Technology plays an important role in improving quality performance in BPO during the entire BPO life cycle (see Figure 2). Technology allows the rapid development of various ready-to-use best-practice templates that suits most needed business processes. It offers ready-to-run user interfaces and screens, in addition to the generic built-in out of the box interfaces and integration scenarios that are compatible with most business applications and software.

Figure 2 BPO service life cycle

Proper technology used by the service provider could allow for saving a blueprint of the clients business process, which would be used in later stages. Technology could allow for a smooth, efficient transition of data, processes and knowledge and real-time documentation updates. By enabling and leveraging the values of standardization, automation, integration and innovation, technology impacts BPO and enhances the value of BPO. All this shortens the transition phase and minimizes the impact and duration of the transition, and so accelerates the time to benefit, till reaching the agreed quality levels and a streamlined operation. It also reduce the risks associated with custom code, hence increasing the quality level and customer satisfaction during this crucial initial phase.

3.1. Standardization

For the BPO provider, technology impacts the service quality through affecting the ability to standardize. Providers can not drive any standardization strategy without having a standard technology, a uniform platform that empowers his standardization activities, while still allowing for “personalization”. For the BPO clients, technology accommodates the exceptions related to the language or the country specific rules and laws with the ability to satisfy the country-specific requirements and dissimilarities. Thus, allowing the company to have a uniform standardized process execution throughout all the different divisions, units, and countries.

The right technology enables the balance of personalization and standardization of the outsourced activities, creating the capacity to design a process that suits the specificities of each client, while maintaining a standardization level that enables sustainable long term advantages for both the provider and the clients. The standardization reduces the complexity of operations, and thus, helps in reaching higher *reliability, responsiveness and conformance*.

Technology allows the adoption of best-practices which are built on ready-to-use templates that cover most of the needed process practices. These templates allow for the same scenarios to be standardized across different countries, with the availability of different language support and country specific tuning. All this is achieved with no need for any custom-made user interface or screens; this consistent standardized user-interface decreases the time to deploy, the error rate and training needs. Moreover, this facilitates the use of systems by occasional users due to its simplicity and intuitive design that ensures fast adoption and reduces the risks linked to occasional users use.

While offering the gains of an integrated single system instance, multi-tenant technology allows BPO providers to adapt the business processes for an individual customer without impacting any of the processes of the other customers sharing the same common platform. While in BPO the gain is extended to that of simpler operations, better support, and easier maintenance. Applying this service provider standardization across the different clients, BPO providers provide their clients with benchmarking data that can be used to compare their processes to other companies and other industrial standards. This can not be utilized without following a relatively standardized process, or else the comparison would not be applicable. For example, in an HR context, HRRP providers can provide their clients with aggregated HR key figure reporting and

analytic data with all personal and company identifiers are removed. This service gives great insight into performance and quality levels of the different business processes. For example, companies can contrast their head count cost, their training budgets, their hiring costs and turnover. So adopting standard processes allowed by technology not only enhances the quality levels of the service providers but also that of the BPO buyers.

Following the standardization created by technology, the BPO providers also achieve scale benefits through a virtual centralization. In other words, technology enables the decentralized execution on the entire business or inter-country level while ensuring the high quality through the centralization of the standarized process blueprint. This also leads to the effect technology driven integration.

3.2. Integration

Standard interfaces and open standards are built to make it easier to integrate processes together. Their function is not to glue a series of systems together but rather to enable consistency. Technology allows an accurate and centralized consolidation of candidates' information gathered from various sources. Following standard practices and abiding to industry standard processes and applications helps create a better integrated environment. This not only reduces the need for custom code, but also allows the use of software generic templates and interfaces with only minor configuration changes. The integration between the different outsourced processes is easy, neat and tight, and the same for integration with the retained in-house processes and systems.

Evolving technology is providing this kind of support integration. Business software providers and BPO providers are promoting the embrace of open standard and inter-operable interfaces. The industry is moving forward to embed web services and Service Oriented Architecture (SOA) into solutions offering, in addition to supporting standard technologies like Business Process execution Language (BPEL). Another example is HR–XML Consortium,[2] of which SAP is a charted member, which involves most of the HR industry software and applications companies. This consortium is building the XML specifications for e-business and automation of HR related data exchanges. This means more integrated business processes, and smoother systems interfaces which will lead to better integration and performance view, and therefore, better business

[2] source: `http://www.hr-xml.org`

decisions and more effective strategies. Through these common standards total integration is becoming more feasible, rapid and efficient.

An integrated system provides the most effective data and information storage, and thereby, improves the *efficiency and reliability* of service. For example, in an HR management context, an employee does not have to fill his/her timesheets more than once or track his/her tasks and assignment in more than one interface. The company does not hold different versions of the employee addresses or bank accounts or does not hold it in different places.

For the clients, technology facilitates access to a diversified pool of talent gathered from the organization career website, powered by the BPO provider, from the organization's internal employee's database, employee referral programs, and the recruiters website contracted by the BPO provider. Abundance of candidates sometimes leads to hiring without posting the position, using only skill and job matching through the unified candidates' pool. All this enhances the quality of the candidates available for selection, and provides BPO clients with higher quality new hires. Technology created and developed the potential information and other resource utilization.

Quality in BPO is often linked to how the service provider can offer an integrated system on which the client processes will run. An integrated system approach ensures greater leverage of the potential of automation and streamlined workflow across different processes. A fully integrated system also ensures a sustainable quality for the BPO buyers, maintained throughout systems deployment, maintenance and upgrades. Furthermore, an integrated solution makes achieving centralized operations possible without the need of location centralization but through "virtual" centralization (BPO Excellence (2006)). The virtual centralization allows location decisions to be opportunistic in enabling BPO providers to not sacrifice quality. For example, in HR service delivery, the contact agents and case workers can be located in off-shore locations, while policy experts and accounts managers can be located near the customer.

Moreover, integrated processes, applications and systems allow for more automation and more integrated workflows that link different business processes together and streamline the different activities. For example, production scheduling needs to be linked with job requisition, which in turn needs integration with project budgeting and accounts payable. This kind of integration enhances the *accuracy and effectiveness* of the process execution, but it is impossible without proper support from the underlying technology and knowledge which are the key advantages of BPO providers.

3.3. Automation

Standardization and centralization facilitate and leverage another driver for quality called automation. Technology directly drives the process automation through workflows, paperless document management and online interaction. Technology can automate change requests through real-time workflows that make process governance more effective and more efficient. Another effect of applying technology to the BPO process control is the remote monitoring and supervision of the outsourced activities execution. Technology enables BPO buyers to closely monitor and supervise the process operations. Through automation, technology facilitates this control mechanism, making the process steps clearer.

Automation not only speeds the process and decreases cost, but also delivers a more secure and agile service with an enhanced quality of process and new-hires. For example, workflow automation increases the quality perceived by BPO buyers, as well as their job candidates by making the process simpler. Automation transforms processes from the inefficient batch process flow into a synchronized real-time flow. It provides quicker access to accurate and real-time information through streamlined data routing, thereby increasing the quality of decision making. The process activities are more visible, so the process and its operational quality are more transparent, better measured and better managed.

Another supporting example for advancement in workflow management and self-service techniques applies for the HR-Recruitment process. Through self-service, technology allows automated workflows to be driven by the employees, or even by candidates triggering a job application. Moreover, technology allows for alerts and reminders to be automatically sent to streamline the flow along the process steps. In addition, the scheduling and communication with candidates is managed through the same workflow interface. Through a self-service and single user interface, hiring managers can take control of the screening process, starting with job requisition and continuing through accessing candidates' information, testing, scheduling appointments, and hiring. Other systems allow candidates to self-manage their information and applications submitted for various vacancies, like the career sections of Shell, Yahoo, Microsoft, and IBM. Technology enables these seamless flows with the added protection of secured authorization systems with tracking capabilities.

The impact of automation is also evident in the *HR-Recruitment* process. The different BPO service providers confirmed the value and emphasis of automation. For example, the job requisition process is totally automated through different workflow routes which include:

- Direct online job definition by the hiring manager;
- Candidate pool screening and skill mining;
- Existing and new candidates' data flows directly to and from the candidate pool database;
- Testing, assessment and sometime background checks by third party providers.

In addition, as the task of training, evaluating and retaining employees has moved to the center of corporate strategic planning, new technology tools have emerged to enable a changing role for learning within business such as the Learning Management System (LMS) in outsourced E-Learning processes. It provides end users with a single point of access to disparate learning sources. It also has the functionality for design, management and assessment of learning, enabling an excellent control for direct Human Resource Development (HRD). From a technical perspective, LMS is a technology to link and integrate all the other technical components, and also other existing ERP and HR applications.

In general, organizations can leverage the technologies of automatic data extraction and data mining techniques provided by service providers to reduce the HR recruitment cycle, increasing its *accuracy and reliability*, and hence, the quality of the recruitment outcome. The customer specific configurations, switches, and options results in more effective yet standardized implementations that are easier to implement, maintain, and upgrade. In summary, the effect of process automation is the reduction in the frequency of errors, and improvement in error detection and correction. This improves the reliability and accuracy of the process outsourced and adds to its perceived quality.

3.4. Innovation

Though innovation was never a main drivers for outsourcing, many buyers now perceive innovation as one of the biggest advantages of outsourcing. Technology drives innovation and business processes adoption directly, such as the development of different internet tools. Business practices could also lead the process innovation, but technology facilitates it a self-service technique. Technology enables innovations like intelligent collection, analysis, and mining of information to create better visibility, which in tur creates competitive advantage. Recently, in HR management, innovations have been created and applied, such as corporate blogs used as a recruitment marketing tool in the recruitment trends of sharing information with candidates. Another example is Really Simple Syndication (RSS), an innovative technology to publicize current vacancies to potential candidates.

Given that the BPO underling technology evolves at an acceptable cost, innovation would lead to higher levels of quality. Newly created innovation supports a continuous increase in operational efficiency by allowing easy adoption of changes in processes through the high level of personalization and configuration options. Innovation allows companies to connect with candidates faster and select and recruit more accurately. An example of technological innovation that will affect the BPO quality is the use of Wiki web technology that enhances the quality of data support and knowledge management processes. Another example is the advancements in Interactive Voice Response (IVR) and voice recognition technologies. The service *reliability* of contact centers will increase dramatically by adding the feature of human dialogue, while achieving the economical gains of IVR.

In the HR-Recruitment process, innovative practices improve the quality of the recruitment process. Gartner uses data extraction techniques, powered by BrassRing recruitment solutions,[3] to extract job candidates' information from uploaded files into structured fields, which is then presented to and confirmed by the candidates in real-time. This eliminates the need for internal data entry and the associated risk of data errors. Many, if not all, of the BPO providers offer data mining techniques to automate the initial screening process, by intelligent matching of the vacancies' requirements with the candidates' skill information. This is another example of innovation and automation adding to the *efficiency and effectiveness* of the BPO process.

Additionally, HRRP providers offer their business process modeling and predictive analysis techniques based on HR historical data. These predictive analysis, modeling, and planning tools allow organizations to analyze the effect of tactical decisions, using tools to compare the results to budgets and forecasts, use what-if analysis to model plan modifications, and fine-tune business plans (White (2005)). Using these innovative tools in an HR context, the process *flexibility* is increased, so that managers can optimize temp-labor recruitment schedules and ensure they match work peaks and hiring demands, like at times of marketing initiative or new product campaigns. These provider-led innovations help companies to analyze possible scenarios and related consequences to make better decisions.

4. Conclusion

This study developed the theoretical dimensions of service quality for the BPO industry and explored how technology affects these quality factors. Technology is a main enabler of BPO and a major factor of its

[3] Source: `http://www.kenexa.com/Solutions/RecruitmentProcessOutsourcing`

success. The effect of technology in BPO is built upon standardization, integration, automation and innovation. These factors not only drive and maintain but also improve the reliability, tangible, and conformance, responsiveness and flexibility, security along the whole of process activities.

As the application objective of BPO is shifting towards that of enhancing the competitiveness of BPO buyers, the value of the technology driving BPO is increasing. The use of standard integration interfaces, best-practice templates and configuration options enhance BPO quality. Technology provides the execution platform to enable benefits, like speeding up the adoption of best-practices, interfaces and new upgrades, and providing a sustainable quality level during maintenance activities. The underlying technology provides business value to both the buyers and the service providers. Due to this value, companies seeking BPO are actively seeking ways to leverage the advantages by making the most of technology. Therefore, this study provides the quality factor and standards driven by technology when selecting a BPO service provider.

However, the quality dimensions and quality enablers discussed above are not exhaustive and overlapping exists among them. We hope to provide managerial implications to practitioners by this study. Given the boom of BPO applications and the limitations on the research of BPO quality theory, it is also expected to invite further study in greater depth and width. A broadly recognized quality framework for BPO would be helpful to push BPO development forward.

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