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Towards a Taxonomy for Globally Distributed Work

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ABSTRACT

In the business process management parlance, different engagement models, such as bodyshopping, outsourcing, offshoring, etc. have evolved between the service providers and their clients over the last decade. The common denominator in these models is the distribution of work and/or that of workers across the globe. There is a gap in defining a framework to define different manifestations of globally distributed work. In this exploratory research, a unifying framework is proposed to characterize globally distributed work in order identify and explain different vendor-client engagement models. The proposed framework is applicable for any kind of work that is distributed across the globe. In this paper, the specific case of software development processes has been explained in terms of the type of the application, the type and location of the developer, and the holder of intellectual property (IP) rights. The role of IP rights in the evolution client-vendor engagement models has been explained.

Keywords

Globally Distributed Work (GDW), Outsourcing, Offshoring, Business Process Management (BPM), Business Process Outsourcing (BPO), Intellectual Property (IP) rights

INTRODUCTION

Business entrepreneurs over the centuries have always been exploring distant frontiers in pursuit of cheaper goods and services. In the earlier phases of business development, it has been mostly trading of goods – buy cheaper goods at one location and sell them where you get a better price. Inherent in this process is knowledge about markets and distribution of work (buy/sell operations). In the current context, the businesses operate in an environment of well connected information and transport highways. This has facilitated not only trading of goods but also of services. Trading of a service is similar to that of product in that the service is bought or developed at a cheaper cost in one location, and sold or provided at a higher cost where it is needed. Information highways have made trading of services more feasible and viable by providing cheaper means of communication and collaboration. However, this has also brought in the issues of coordination and engagement models between the vendor, i.e. the service provider and the client.

The trend setter in this trading of services is software development. The business enterprises in the Western hemisphere, particularly, in USA, have discovered and exploited the availability of cheaper labor to develop their computer-based business application and support systems in the Eastern hemisphere, particularly in India and China. Depending on the different engagement models that have evolved between the service providers and their clients, several business process management (BPM) models have been coined such as bodyshopping, outsourcing, offshoring, etc. The common denominator in these models is the distribution of work and/or that of workers across the globe.

Kumar and Krishna (2005) have opined that Globally Distributed Work (GDW) “encompasses a broad range of activities – offshore and near-shore IT Services, software and BPO work, distributed R&D activities, medical and pharmaceutical research, technical and financial research, and distributed production facilities. It includes both outsourced work as well as work distributed to and conducted at MNC-owned or partnered companies and work-units at various sites around the globe.” As identified by Kumar and Krishna, Business Process Outsourcing (BPO) is a manifestation of (GDW). Niranjana, Saxena and Bharadwaj (2005) have classified BPO based on two dimensions of the service provided, viz. criticality and complexity. Similarly, there are other efforts in classifying global distribution of work in specific contexts. There is a gap in developing a framework to define different manifestations of GDW. In this exploratory research, a unifying framework is proposed to characterize GDW in order identify and explain different vendor-client engagement models.

FOUR DIMENSIONS OF GDW

In order to explain the proposed framework, the case of software development is illustrated in Table 1. However, this is applicable to business processes in other domains also such as R&D, innovation, creative media, etc.

Let us look at a case of a client who wants software to be developed for an application.

What is the type of the application for which software is to be developed?

The application type is classified as the following.

- (i) An internal required application of the client, i.e. consumed by the client.
- (ii) An internal required application of the client and is as well a generic requirement of client business sector, i.e. the application is internally consumed and it may as well be sold outside, or
- (iii) An application product being developed to be sold in the market, i.e. not for internal consumption.

Case (i) above is considered as a local (L) application. As long as the application is generic enough to be usable by others, it is considered as global (G) in this taxonomy, i.e. (ii) and (iii) above. The G type of software development involves issues such as genericity, granularity, conformation to standards, etc.

Who is the developer?

The developer of the software for the business application is classified as client (C) itself or as software vendor (V) which includes freelance developers. Developer type C includes in-house or distributed software developers employed and owned by the client. Developer type V includes software developers who are employed and owned by a Vendor.

Where is the developer located?

The developer is located physically inside the client's national boundaries (I) or outside (O). When the software developers of a client are distributed in different locations within the national boundaries, they are considered I type and they represent the distributed work groups. The O type developers represent the GDW environment.

Who owns the Intellectual Property (IP) rights of the software developed?

In normal circumstances, the IP rights of a creative artifact such as a painting, a poem, a cartoon, etc. belong to the person(s) who created it. In the software parlance, this issue becomes tricky. The software developer writes a computer code to generate a computer-based solution of a client's business application. There are two components of intellectual property involved in the process, viz. (i) the knowledge about the client's business application, and (ii) the knowledge and skills of developing suitable computer code and its design and architecture. If the developer is employed and owned by the client, the case is simpler in the sense that the client owns the IP rights. Developer type V raises the issue of ownership of IP rights because the client provides the domain knowledge while the vendor provides the software development knowledge. In the prevailing business context, many clients are developing vendor-engagement models with specific delineation of the IP rights between the client and the vendor vis-à-vis cost, schedule, etc. of the software development project.

Taxonomy of GDW

The first four columns in Table 1 describe the traditional modes of software development wherein the developers are located within the national boundaries of the client. This includes early trend of bodyshopping which is a precursor to the current trends of outsourcing and offshoring. Columns 5 to 8 broadly define the different modes of GDW currently being used. There could be further delineation within the GDW columns based on the extent of IP sharing.

Globally Distributed Work

	1	2	3	4	5	6	7	8
Dimension	In-house S/W Development	Typical S/w Vendor	Bodyshopping	Client-Vendor Joint Product Development	Commercial Off the Shelf Packages	Outsourcing	Offshoring – Client Model	Offshoring – Vendor Model
Type of Application	L	G	L	G	G	L	L	G
Type of Developer	C	V	V	C/V*	V	V	C	V
Location of Developer	I	I	I	I	O	O	O	O
IP rights rest with	C	V	C	C/V*	V	V	C	V

Table 1. Taxonomy of GDW

(L: Local; G: Global; C: Client; V: Vendor;

I: Inside the client’s national boundaries; O: Outside the client’s national boundaries;

*Depends on C/V engagement model)

In-house software development for internal consumption

The Column 1 represents the In-house Software Development teams. It is possible that these teams are distributed. Research on group support systems and distributed workgroups have already focused on relevant issues in this domain.

Typical software vendor (In-house Software Development for external consumption)

Column 2 represents the typical software vendor whose developers are within a national boundaries. Special cases in this category are those large clients who initially develop software for internal consumption and subsequently ‘productize’ it to sell it in market. Ramco Systems Ltd. in India has initially started as the IT wing of the Ramco group of companies. It has developed ERP systems for Ramco’s group of companies. After a decade of stabilization and maturity of its ERP systems and components, RSL is selling its products in global market. However, RSL now gets involved in other modes of development including GDW. There is an evolutionary trend for software vendors with this column representing a starting point.

Bodyshopping

In this mode of distribution of work, software development is done by the Vendor for an internal application of the client; however the vendor physically transports the developers to the location of the client. In the early 1990s, while developing the software in the ‘bodyshopping’ mode, Vendors exploited the lack of awareness of the clients about their respective IP rights of the developed artifacts, went on productizing their clients’ work and selling it to other clients. However, the IP rights of the developed artifacts in this mode are strictly with the client.

Clients hiring software vendors (developers) located within national boundaries to develop 'products'

Clients have been getting more aware of the Intellectual Property (IP) rights of their 'knowledge' inputs into the application software development. This awareness has led to the phenomenon where the client hires the software vendor to develop a 'generic' application which can be 'productized'. In this mode, the client can have an prior agreement on IP rights and royalty arrangements with the Vendor and the client can transform into software vendor. There are several small to medium companies in Hong Kong which adopt this strategy to protect their IP interests.

Commercial Off-The-Shelf (COTS) Packages

Traditionally, this mode has been popular with SMEs (small and medium enterprises). Well recognized problems in this mode are the requirement of subsequent customization, integration with existing systems, maintenance, reliability, accountability, etc. This mode of software development is the trivial case of Globally Distributed Work in the sense that work is not distributed by design. Vendors develop products and sell them globally. Clients buy the COTS products. While integrating the COTS products with their existing systems, clients interact with the vendors who are globally distributed. The issue of IP rights is relevant in this case too. As this mode has been under use for over decade, some IP sharing arrangements have evolved. These arrangements are culture-specific.

Outsourcing

There is significant amount of research on outsourcing in the last five years. Important issues for the client have been to design systems to exploit the benefits from outsourcing. However, outsourcing has raised new concerns also. Relationship management between client and vendor has assumed high importance. The focus has been shifted from business process analysis (BPA) to business process management (BPM). Service-oriented architectures (SOA) have proved to be better means to leverage outsourcing opportunities.

OFFSHORING

Offshoring is the counter phenomenon of bodyshopping and a good example for globally distributed work. In this mode, the client, driven by its own business rationale, locates some of its business processes elsewhere in a different country in the globe. The offshored business processes are managed and executed from the distant location. The offshoring model has two types, viz. a client offshoring its business processes (Column 7) and a vendor offshoring its software development (Column 8). In either case of offshoring, the country from where offshoring is resorted to seems to lose some employment opportunities in the short run. However, several studies are underway which seem to suggest that in the long run, the country from where business enterprises have resorted to offshoring gain significant cost savings making their workforce available to perform more knowledge-oriented, high value-added tasks compensating the initial loss of job opportunities. Confirmatory longitudinal study of the phenomenon is required to derive any conclusions in this regard (Nicholson, 2003).

Offshoring Client Model

Client itself sets up its own offshore center in the distant location (ex. Philips, United Air, etc.) to fulfill some of its business processes. It is possible that some of the offshore services may be provided by a vendor in the remote location enabled by franchise from the client, such as call centers. Many Indian offshore service providers such as TCS, Wipro, Infosys, etc. are examples in this category.

Offshoring Vendor Model

Just as clients are motivated to offshore some of their business processes, software vendors also are offshoring part of their business processes, i.e. software development processes, to a different country. Microsoft, Philips, Sun, etc are examples. They have setup large establishments in India (in Bangalore, Hyderabad, Pune, etc.).

Initially offshoring has been used by the clients for low knowledge-intensive, less innovative work such as Call office management, medical report transcription, etc. It is now expanding to more knowledge-intensive services such as tax, legal and medical consultation, marketing campaign planning, etc. (Ramasubbu and Krishnan, 2005).

CONCLUSION

In the recent business process management parlance, we hear several models of engagements between a client and a vendor, viz. bodyshopping, outsourcing, and offshoring. In this paper, a taxonomy is proposed to define these engagement models using the globally distributed work as the common thread. The four dimensions used for this taxonomy are (i) what is the type of the application for which software is to be developed? (ii) Who is the developer? (iii) Where is the developer located? and (iv) Who owns the IP rights? The intellectual property (IP) issues are shown to be very critical in delineating these engagement models. This taxonomy will help in providing a framework to explain the evolution of the client-vendor engagement models in the emerging field of BPM.

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