Received 31 January 2014
Revised 26 September 2014
Accepted 27 September 2014

Impact of pricing and outsourcing models on Indian information technology service outsourcing

Daisy Mathur Jain
Department of Information Systems, National Law University, Jodhpur, India, and
Reema Khurana
Department of Information Systems, Institute of Management Technology, Ghaziabad, India

Abstract

Purpose – The information technology (IT) industry has grown owing to the increase in IT outsourcing prompted by the need for cost reductions in organizations. The IT industry contracts are based on pricing models, which establish the terms and conditions of payment to be made to vendors by clients. The pricing models followed in the industry are mainly Fixed Time Fixed Price (FTFP) and Time and Material (TnM) and the remaining are mostly variations of these. Using the information collected from vendors, the purpose of this paper is to draw a comparison between these pricing models to see which one is more acceptable to vendors along with researching on the reasons behind that. The outsourcing engagement is also based on a set of processes to be used during the contract time and that is known as the Outsourcing Model (OM) being used. This research also derives how pricing models, OMs and Client Vendor Relationship (CVR) being developed are related.

Design/methodology/approach – Hypothesis have been formulated on the basis of the literature survey conducted by the authors, subsequently questionnaire was formulated and data were collected from – a total of 500 people were targeted, out of which 70 people responded. Out of these 70 only 50 were usable responses. The respondents were at the manager and above level in different organizations classified on the basis of number of employees. Statistical tests were conducted on these data to check the reliability, prove the hypothesis and establish the mediation and moderation relationships between the pricing model, OM and CVR.

Findings – The following paper has established through statistical analysis which pricing model is more befitting to the IT service outsourcing industry and has also demonstrated the moderation and mediation relationship between pricing model, OM and CVR variables.

Research limitations/implications – The major reserach limitation is that it is for only IT vendors in Indian geography. The research can be extended to different businesses and geographies.

Practical implications – The paper has practical implications for the IT service outsourcing industry in India and for their clients to understand the comparison between the pricing models and to study the impact of pricing and OMs on the CVRs.

Originality/value – The research presented is original as no similar work has been found to be published in the journals so far specifically in the Indian context.

Keywords Outsourcing, Service operations, Process management, Client Vendor Relationship, Fixed time fixed price, Time and material

Paper type Research paper

1. Introduction

The growth of the information technology (IT) industry as an effect of globalization has been tremendous. This has been accelerated with information technology outsourcing (ITO) in which a company decides to separate the IT related tasks and give them to another company to produce, based on a defined contract. Research by Gartner predicts

Benchmarking: An International Journal
Vol. 22 No. 4, 2015
pp. 610-623

1463-5771
DOI 10.1108/BIJ-01-2014-0011

that small- to medium-size companies expenditure on IT will grow by 3.9 percent by 2017. Application development and maintenance, managing network, data entry tasks, etc. are examples of outsourced IT-related tasks. Kodak had started this trend by outsourcing large parts of IT work in 1989 (Jenster and Pedersen, 2000; Franceschini *et al.*, 2003).The main drivers of outsourcing are to reduce their costs (Antonucci *et al.*, 1998; Fish and Seydel, 2006; Walton, 1993; Dossani and Kenney, 2009) and focus toward areas, which are core business of the company (Kakabadse and Kakabadse, 2005; Mirani, 2006). The service receiver is called the client and the service provider is called the vendor. The vendors could be individual entrepreneurs or software companies. Among the types of outsourcing are "Onshore Outsourcing" where the client and vendor belong to the same country. "Nearshore Outsourcing" is when the client and vendor are situated in nearby countries. With development of telecommunication infrastructure outsourcing got further boost with "Offshore Outsourcing," where client and vendors are situated in different and far of countries (Fish and Seydel, 2006). The sustenance of this model depends upon the type of work, which defines the Outsourcing Model (OM) chosen as well as the pricing model decided between the parties.

The decision to outsource taken by the client company is based on several factors. These include reduction is costs, use of skilled personnel, lack of inhouse skilled personnel, focus on core business area, management overhead of employing and maintaining an IT task force, keeping upto date with technology, etc. (Jain and Khurana, 2013; Oza and Hill, 2007). After the decision to outsource is taken, a company must decide on the type of OM to follow. This essentially means which processes to follow with vendors when outsourcing and the level and extent of outsourcing. Various stages of outsourcing (Perunović, 2007; Jain, 2013) have been defined that govern the type of OM chosen. The main models discussed in this paper are Staff Augmentation, Out Tasking, Project-Based Outsourcing and Joint Venture. There are various other types of OMs which are tweaks in the above-mentioned models in order to suit the agreement of processes.

Once the client decides on the OM, a decision needs to be made on the type of contract. Not much research has been done on pricing models and contracts (Gopal *et al.*, 2003). The two main pricing models or contracts that are most popular in the industry are Fixed Time Fixed Price (FTFP) and Time and Material (TnM) (Banerjee and Duflo, 2000). The difference between these models lies in the way vendor will charge the client and the timeline of completion for the project. A detailed contract will also include the responsibilities of various roles in the project, main processes to be used, pricing model and terms of termination of the contract. This paper focusses on the pricing model part of the contract.

An important factor that decides the longevity of the contract eventually is the Client Vendor Relationship (CVR) developed during the course of the project. The relationship between the client and vendor will shape up based on the delivery of work by vendors at decided intervals. If the deliveries are made on time the clients will start to develop trust with the vendor. Further the deliveries should match the requirements specified by the client. Quality certifications adhered by vendors tends to ensure a level of quality and use of processes by vendors. This gives added assurance to the clients about the vendors credibility of work. Further the longer the time client and vendor organizations are associated, the stronger the tendency of developing a bond together. As the teams on both sides intermingle and communicate a relationship between both parties starts developing. Hence we can conclude that these are the components that define the relationship between client and vendor (Jain, 2013).

This paper contributes in three ways. The first is that it does a comparison between TnM and FTFP models to see which has more acceptability from the vendors' perspective. Further there is limited research on how OMs, pricing models and the relationship developed between the client and vendor are related. Keeping in mind both pricing models, an attempt has been made to see how pricing models are mediated or moderated by the OM chosen in developing a good relationship with clients.

2. Literature survey

With its very rich experience in IT service outsourcing India has moved from vendors' role to a partners' role. India offers almost 16,000 diverse firms with diverse capabilities of supplying IT automation services. India is also known as the low cost destination for IT service outsourcing (NASSCOM, 2014). There has been an evident shift in pricing models as customers become more mature in IT industry and seek to go beyond the traditional labor pricing models to more contemporary solutions (NASSCOM, 2012). Customers also look for better pricing deals as there is an increasing need to stretch the dollar (NASSCOM, 2010). Better are the pricing deals for the organizations it definitely impacts the software spending positively (NASSCOM, 2013, 2009).

Among the newer pricing models more well-known ones are gain-sharing agreements, incentive-based contracts, consumption-based shared risk-reward arrangements and demand-based pricing:

(1) in the gain sharing model the gains achieved are shared between vendors' and clients;

(2) in the incentive-based contract incentive is paid to the vendor for attaining delivery levels beyond the service level agreements;

(3) in the consumption-based pricing model costs are based on the actual usage of services; and

(4) in the shared risk-reward pricing model clients and vendors create a repository of service together and for a pre-defined period of time profit sharing is done by the vendor.

However, it can be clearly observed that above pricing models are based on basic forms, namely, TnM and FTFP. Thus it becomes imperative to study the popular pricing models in context of Indian IT service outsourcing industry which are TnM and FTFP.

2.1 Pricing models

The main pricing models are TnM and FTFP. The other pricing models used are customized variations of these models (Gopal *et al.*, 2003).

In FTFP, the two parties negotiate on a fixed price and a definite time period for completion of work, before the project begins. In general when FTFP is used, it is expected that the client is reasonably clear about the requirements for the application to be developed and therefore is able to define the timeline of the development and completion of the project along with the vendor. Any addition or change in requirements is treated as a "Change Request" and accordingly the timeline is revised and additional money is charged as decided in the contract. Since the vendor and client reach an agreement during the contract on the deadline of the project, it is the complete responsibility of the vendor to manage the work accordingly. A fixed fee in set for the

project and addition payment is made for any change requests. Thus in case of FTFP, the risk is mainly borne by the vendor (Gopal *et al.*, 2003).

In TnM, the vendor charges a monthly fee for its services. Mostly the rates vary per experience level of the team members. Based on the contract, a monthly fee or per hour fee is charged to the client. Generally TnM is used when the client is not clear about the full set of requirements at the contract stage and hence is unable to decide on a completion date of the project. It is expected that the requirements will be given from time to time and the project will be divided in small sprints. The client does a lot of interaction, knowledge transfer and communication with the vendor team to make sure the requirements are fully understood. Much of the risk is therefore borne by the client in this type of contract. Considering these factors it is expected that the vendors would have a preference for TnM type of contracts (Gopal *et al.*, 2003).

Deciding which model to use is a major decision that will determine the project work. Assuming that vendors would want to bear minimum risk, the preference of vendors would be TnM Model as compared to FTFP. However, in order to test this we state the following:

H1. The vendor finds either one of TnM or FTFP more acceptable.

2.2 OM

After the decision to outsource has been made, one has to decide the OM to be used. This is based (Gottschalk and Solli-Sæther, 2006) on how much risk a company is willing to take, how much of IT work is planned to be outsourced and the budget allocated to outsourcing. In Staff Augmentation, client retains its IT staff and only seeks to supplement the team by outsourcing. In this case most of the risk and responsibility is borne by the client. In Out-Tasking, the vendor is given a specific task to work on like Testing or some development work. However, the client takes the overall ownership, risk and management. The vendor is only responsible for the task assigned. When a complete project is assigned to the vendor and the client is only interested in status updates and end delivery, the model is called Project-Based Outsourcing. When two parties agree to share some assets and investments together they form a Joint Venture. The risks are shared and knowledge acquisition is promoted. The strengths of two companies can take the new partnership to another level of success.

2.3 Relationship between OMs, pricing models and CVR

Once a contract is signed, it is a mark of establishing a relationship between client and vendor. This relationship strengthens or weakens based on several factors like successful deliveries that can win the trust of the client, good quality work by vendors, quality certifications attained by vendors which lead to better processes. The longer time client and vendor are associated, there will be a tendency to adapt to each other and thereby develop better relationship (Mirani, 2006). Kishore *et al.* (2003) suggest that a common understanding developed through knowledge sharing is the key ingredient of developing a good relationship. Lacity *et al.* state that how (Lacity and Willcocks, 1998) profitable a relationship will be would depend on the contract being signed (Figure 1).

The FTFP model suggests that a fixed fee is set for a fixed timeframe for delivery and the vendor is supposed to deliver according to that. This kind of arrangement can work successfully when the clients have been able to give the right requirements at an early stage and the vendors are able to estimate the time that will be taken in development and testing. Assuming these two conditions are met, FTFP will lead to a

good relationship. However, the OM can change this relationship between the two variables FTFP and CVR depending on the type of OM chosen and the associated risk. In case the OM is Staff Augmentation, the team is only responsible to supplement an existing team and hence the relationship will be positive. However, given the OM chosen is Project-Based Outsourcing, the risks for the vendor increase as in this case vendor is mostly responsible for estimations and completion of work and if the estimation of the project was not done correctly at the beginning of the project or there was any miss at the requirement gathering stage by the vendor, the relationship can turn hostile due to deadlines getting slipped. Also when an entire project responsibility is given to vendors, any slip from vendors side, miscommunication or requirement misunderstanding can lead to disastrous results as it might not get discovered until final delivery. Hence we can see that the type of OM chosen moderates FTFP relationship with CVR. Essentially if the OM chosen is less risky for the vendors, FTFP will work well and will strengthen the relationship, however, if the OM chosen is more risky for the vendors and involves more responsibility, it can weaken the relationship given the chances if human error in estimations and work fulfillment:

H2. The association between the FTFP pricing model and CVR is moderated by OM used (Figure 2).

In TnM model, the client is usually unsure about the full set of requirements during contract development stage, hence the client gives a subset of requirements to be fulfilled in sprints. A sprint may be quarterly or six monthly, as decided and the clients are expected to provide the requirements accordingly. The billing is therefore done on a monthly basis accordingly to the number of hours put in by the vendors team and also on the basis of the experience level of the team member. The billing rates as per experience of the vendor are decided during the contract stage and a minimum monthly fee is discussed given that clients fail to keep the team busy due to delayed dissemination of requirements.

When the clients decide on using TnM model, the OM chosen would explain how the relationship would continue. This implies that work will be provided to vendors at intervals. The processes that would define how the work needs to be done will aid the development of the relationship. The processes here are referring to the OM that will be

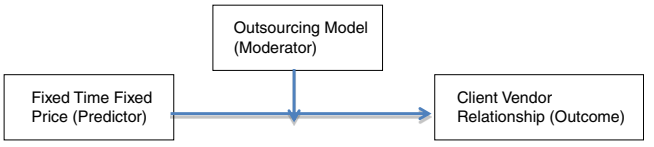

Figure 1.
Relationship between FTFP, CVR and Outsourcing Model as moderator

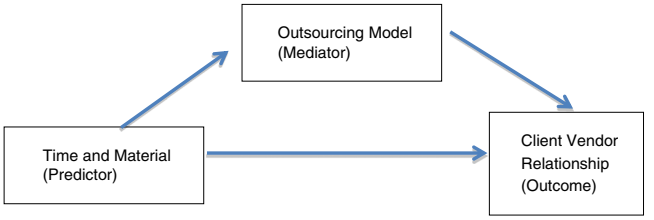

Figure 2.
Relationship between time and material, CVR and Outsourcing Model as mediator

used. Hence the TnM model will associated with CVR based on the OM chosen. Thus we can say that OM mediates the relationship between TnM and CVR:

H3. The association between the TnM pricing model and CVR is mediated by OM used.

3. Methodology and data collection

3.1 Research data

The collection of data were done by creating a questionnaire on a 5-point Likert scale using Survey Monkey with questions for TnM, FTFP, OMs and components of CVR. This questionnaire link (contents of questionnaire are shown in Appendix 1) was circulated to Manager and above positions to various vendors companies vie e-mails, LinkedIn and social networking sites like Facebook. A total of 500 people were targeted, out of which 70 people responded. Out of these 70 only 50 were usable responses. According to Andy Field (2009) any sample larger than 30 is adequate for statistical analysis, so the analysis was carried out with the sample of 50.

The demographic profile is given in Figure 3. The demographic information about the type of companies in terms of number of employees and profile of respondents is given in Table I.

3.2 Description of variables

The data were tested for reliability. Mostly several items were created in the questionnaire to ensure validity and check for reliability. The descriptions of the

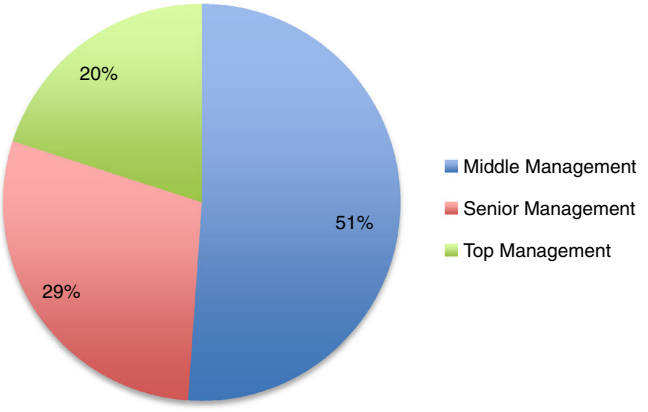

Figure 3.
Pie chart depicting the profile of respondents in terms of level in the organization

Number of employees		
Range	Frequency	%
Less than 100	12	24.00
100 to less than 1,000	7	14.00
1,000 to less than 5,000	4	8.00
5,000 to less than 100,000	10	20.00
100,000 and above	17	34.00

Table I.
Table depicting the profile of respondent companies in terms of number of employees

variables are given in Table II. The reliability was checked for items under each variable. In general they displayed acceptable reliability scores. These have been shown in Table III. The questionnaire was created using literature survey on the variables as well as the experience of the authors. The validity of the questionnaire was checked by sharing it with a focus group of two professors and one practitioner, feedbacks from this focus group were used to further improve the questionnaire and scale identification before it was circulated to target group for responses.

An average of these items per variable was used to represent the individual variables when performing statistical tests.

Table III depicts the reliability of the data collected through Cronbach's α test conducted using SPSS, reliability is very important for conducting further empirical analysis (Busenitz *et al.*, 2000; Paul *et al.*, 2000).

Paired *t*-test was used to do comparison between the acceptability of TnM and FTFP. Regression analysis (Baron and Kenny, 1986) was used to test the association between the pricing models and CVR by testing OM as a moderator between FTFP and CVR and by testing OM as a mediator between TnM and CVR.

4. Data analysis and results

It was hypothesized that either of TnM or FTFP would be more acceptable to vendors. The theoretical inclination is surely toward TnM for vendors given that the risk factors in TnM is lesser for vendor.

Our aim is to compare the pricing models TnM vs FTFP to determine which is the preferred pricing model in the industry. We use paired *t*-tests in order to gather views about both these pricing models by the same set of people who were Manager and above positions in order to have people with both experiences so that a good comparative assessment could be made. There were six items each for both TnM and

Table II.
Table depicting the variable names and their description

Variable name	Description
Fixed Time Fixed Price	Represents a pricing model where a fixed fee and tentative time for project delivery is set before the project begins. This variable was measured using seven questionnaire items
Time and Material	Represents a pricing model where a monthly charge is negotiated and charged by the vendor. This variable was measured using seven questionnaire items
Client Vendor Relationship	Represents the components of client vendor relationship picked from prior study done by the authors (Jain, 2013). This variable was measured using six questionnaire items
Outsourcing Model	Represents a set of main Outsourcing Models prevalent in the industry. Four Outsourcing Models were chosen to denote an average risk of choosing an Outsourcing Model. This variable was measured using four questionnaire items

Table III.
Table depicting the reliability of the variables

Variable	Likert scale	Cronbach's α
Fixed Time Fixed Price	5-point	0.892
Time and Material	5-point	0.881
Client Vendor Relationship	5-point	0.673
Outsourcing Model	5-point	0.847

FTFP in the questionnaire. An average of all values in TnM was used to represent TnM. Similarly an average for all values of FTFP items was taken to represent FTFP. The paired *t*-test is used to test the null hypothesis that there is no significant difference between using TnM and FTFP pricing models in the industry when outsourcing. Computing the differences between values and testing for normality using Kolmogorov-Smirnov test in the new variable tested the assumption of normality as required for Paired *t*-test. TnM and FTFP averages were also also normal. The paired *t*-test showed a large by negative correlation coefficient of -0.532 ($r = -0.532$) and was significant at the 0.01 level. Further the test showed that there was significant probability ($p = 0.001$) and chance that a t value ($t = 3.943$) would happen if the null hypothesis was true. Since the probability 0.001 is < 0.01 ($p < 0.01$), hence t is significant. Since t is positive, our conclusion is that TnM is significantly more acceptable than FTFP, $t\,(49) = 3.943$, $p < 0.01$ as shown in Tables IV and V.

Testing moderation

In moderation, we do a regression between independent variable, moderator and interaction between independent variable and moderator with the dependent variable. In this case the equation will be as follows (Grover *et al.*, 1996):

$$\mathrm{CVR} = \mathrm{b0} + \mathrm{b1\ FTFP} + \mathrm{b2\ OM} + \mathrm{b3(FTFP \times OM)} + \mathrm{e}$$

where CVR is the Client Vendor Relationship, FTFP the Fixed Time Fixed Price and OM the Outsourcing Model.

As per literature reference (Baron and Kenny, 1986), "The moderator hypothesis is supported if the interaction path is significant." The interaction shows that $p = 0.046$ which is lesser than 0.05. This was calculated using SPSS using the process defined by Professor Andrew F. Hayes. Hence we can state that OM is a moderator for this association. Further the individual regressions between OM and CVR was significant but not significant between FTFP and CVR. Thus *H2* stands proven.

Testing mediation

The four necessary steps to test mediation are, (Baron and Kenny, 1986):

(1) regression performed with independent variable predicting mediator should be significant;

Table IV. Paired sample correlations

		n	Correlation	Sig.
Pair 1	TnM and FTFP	50	−0.532	0.000

Table V. Paired samples test

		Paired differences							
					95% Confidence interval of the difference				
		Mean	SD	SE M	Lower	Upper	*t*	df	Sig. (2-tailed)
Pair 1	TnM – FTFP	0.77619	1.39179	0.19683	0.38065	1.17173	3.943	49	0.000

(2) regression performed with independent variable predicting dependent variable should be significant;

(3) regression performed with mediator variable predicting dependent variable should be significant; and

(4) multiple regression performed with independent variable and mediator predicting dependent variable is not significant.

If the Step 4 shows a significant variation, then we call it partial mediation. Thus *H3* stands partially proven.

The coefficients tables are shown :

The Tables VI-X above shows that when both independent variable (TnM) and mediator (OM) are tested to predict CVR, the relation is still significant, as well as though the value of the coefficient of TnM reduces to 0.128 from 0.169, it does not

Table VI. OM predicts CVR, TnM independent variable

Regression	Description	R^2	F (Anova)	Sig. (Anova)
TnM→OM	Independent variable predicts mediator variable	0.276	18.266	0
TnM→CVR	Independent variable predicts Dependent variable	0.11	5.943	0.019
OM→CVR	Mediator variable predicts Dependent variable	0.081	4.215	0.046
TnM, OM→CVR	Independent variable, mediator predicts dependent variable	0.127	3.414	0.041

Table VII. TnM and OM

Model		Unstandardized Coefficients B	SE	Standardized Coefficients β	t	Sig.
1	(Constant)	1.724	0.456		3.777	0.000
	TnM	0.534	0.125	0.525	4.274	0.000

Note: Dependent Variable: OM

Table VIII. TnM and CVR

Model		Unstandardized Coefficients B	SE	Standardized Coefficients β	t	Sig.
1	(Constant)	3.675	0.253		14.511	0.000
	TnM	0.169	0.069	0.332	2.438	0.019

Note: Dependent Variable: CVR

Table IX. OM and CVR

Model		Unstandardized Coefficients B	SE	Standardized Coefficients β	t	Sig.
1	(Constant)	3.762	0.257		14.620	0.000
	OM	0.142	0.069	0.284	2.053	0.046

Note: Dependent variable: CVR

reduce to 0. This denotes that OM partially (and therefore not fully) mediates the association between TnM and CVR.

5. Results' analysis

As per above, *H1* is proven as it has been empirically found that TnM has more acceptability as compared to FTFP. Some of the reasons behind this could be that TnM is less risky for vendors (Gopal *et al.*, 2003) and offers more flexibility as compared to FTFP for vendors. Further since OM determines the way work needs to be done and the processes, it moderates the association between FTFP and CVR because FTFP comes with its risks for vendors so *H2* is also proven. Since the money flow is monthly and based on the work given, OM explains the association between TnM and CVR and *H3* is partially proven.

The results drawn out empirically from this paper have direct application in the software service outsourcing industry in Indian context when vendors take outsourcing projects from the clients and need to decide on the pricing and OMs to be offered.

6. Conclusions, limitations and further research direction

When an organization decides to outsource its IT work, it has to make twofold decision. One of them is to decide how much to outsource which then decides the type of OM to use. This in turn decides the kind of processes to be used during the engagement. Second, it has to decide the pricing model, it terms of how and in what way the pricing will be done. The industry mainly recognizes TnM and FTFP as the main pricing models in the ITO industry and the remaining are mainly variances of these two. Once the contract is signed, it is the beginning of a relationship between these two organizations. It is therefore imperative to see how this relationship, OM and pricing model are related. The objective of the above paper was to understand this relationship. Further, the paper tests which of the two pricing models is more generally acceptable. According to the data collected, TnM is a more acceptable pricing model compared to FTFP. Further OM moderates the association between FTFP and CVR, however, it partially mediates the relationship between TnM and CVR.

A major limitation (which may also be the further research direction) of this research is that it is testing the moderation and mediation between pricing models and CVR in presence of OM, where as there are other parameters impacting CVR, namely, technical value addition, business value addition, knowledge sharing, communication, etc. and similar studies can be conducted for all these parameters. Also the research may be extended to include other sectors apart from IT and countries other than India.

Model		Unstandardized coefficients *B*	SE	Standardized coefficients *β*	*t*	Sig.
1	(Constant)	3.544	0.289		12.274	0.000
	OM	0.076	0.080	0.152	0.947	0.348
	TnM	0.128	0.081	0.252	1.575	0.122

Note: Dependent variable: CVR

Table X.
OM, TnM and CVR

References

Antonucci, Y.L., Lordi, F.C. and Tucker, J. (1998), "The pros and cons of IT oursourcing", *Journal of Accountancy*, Vol. 185 No. 6, pp. 26-31.

Banerjee, A.V. and Duflo, E. (2000), "Reputation effects and the limits of contracting: a study of Indian software industry", *Quart. J. Econom*, Vol. 115 No. 3, pp. 989-1017.

Baron, R.M. and Kenny, D.A. (1986), "The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psycology*, Vol. 51 No. 6, pp. 1173-1182.

Busenitz, L.W., Gómez, C. and Spencer, J.W. (2000), "Country institutional profiles: unlocking enterprenurial phenomena", *Academy of Management Journal*, Vol. 43 No. 5, pp. 994-1003.

Dossani, R. and Kenney, M. (2009), "Service provision for the global economy: the evolving Indian experience", *Review of Policy Research*, Vol. 26 Nos 1/2, pp. 77-104.

Field, A. (2009), *Discovering Statistics Using SPSS*, Sage Publications Ltd., Thousand Oaks, CA, pp. 42-45.

Fish, K.E. and Seydel, J. (2006), "Where IT outsourcing is and where it is going: a study across functions and department sizes", *Journal of Computer Information Systems*, Vol. 46 No. 3, pp. 96-103.

Franceschini, F., Galetto, M., Pignatelli, A. and Varetto, M. (2003), "Outsourcing: guidelines for a structured approach", *Benchmarking: An International Journal*, Vol. 10 No. 3, pp. 246-260.

Gopal, A., Sivaramakrishnan, K., Krishnan, M.S. and Mukhopadhyay, T. (2003), "Contracts in offshore software development: an empirical analysis", *Management Science*, Vol. 49 No. 12, pp. 1671-1683.

Grover, V., Cheon, M. and Teng, J.T.C. (1996), "The effect of service quality and partnership on the outsourcing of information systems function", *Journal of Management Information Systems*, Vol. 12 No. 4, pp. 89-116.

Jain, D.M. (2013), "Aspects of client vendor relationship and the risks therein, interdisciplinary perspectives on business convergence, computing, and legality", *IGI Global*, pp. 91-112.

Jain, D.M. and Khurana, R. (2013), "Need for sustainable global business model in software outsourcing the Indian perspective", *Business Process Management Journal*, Vol. 19 No. 1, pp. 54-69.

Jenster, P.V. and Pedersen, H.S. (2000), "Outsourcing – facts and fiction", *Strategic Change*, Vol. 9 No. 3, pp. 147-154.

Kakabadse, A. and Kakabadse, N. (2005), "Outsourcing: current and future trends, thunderbird", *International Business Review*, Vol. 47 No. 2, pp. 183-204.

Kishore, R., Rao, H.R., Nam, K., Rajagopalan, S. and Chaudhury, A. (2003), "A relationship perspective on IT outsourcing", *Communications of the ACM*, Vol. 46 No. 12, pp. 86-92.

Lacity, M.C. and Willcocks, L.P. (1998), "An emplirical investigation of information technology sourcing practices: lessons from experience", *MIS Quarterly*, Vol. 22 No. 3, pp. 363-408.

Mirani, R. (2006), "Client-vendor relationships in offshore applications development: an evolutionary framework", *Information Resource Management Journal*, Vol. 19 No. 4, pp. 72-86.

NASSCOM (2009), *Strategic Review*, NASSCOM, New Delhi, pp. 40-41.

NASSCOM (2010), *Strategic Review*, NASSCOM, New Delhi, pp. 54-55.

NASSCOM (2012), *Strategic Review*, NASSCOM, New Delhi, pp. 49-50.

NASSCOM (2013), *Strategic Review*, NASSCOM, New Delhi, p. 22.

NASSCOM (2014), *Strategic Review*, NASSCOM, New Delhi, pp. 6-7.

Oza, A. and Hill, K.L. (2007), "Outsourcing to India: advantage or disadvantage?", *Allied Academies International Conference. Academy of Information and Management Sciences. Proceedings*, Vol. 11 No. 1, pp. 15-19.

Paul, A.B., Doyle, J.R. and Green, R.H. (2000), "Testing the reliability of weight elicitation methods: direct rating versus point allocation", *Journal of Marketing Research*, Vol. 37 No. 4, pp. 508-513.

Perunović, Z. (2007), "Outsourcing process and theories", *POMS 18th Annual Conference Dallas, Texas, May 4-7*.

Gottschalk, P. and Solli Sæther, H. (2006), "Maturity model for IT outsourcing relationships", *Industrial Management & Data Systems*, Vol. 106 No. 2, pp. 200-212.

Walton, D. (1993), "Getting outsourcing business", *Journal of Property Management*, Vol. 58 No. 5, pp. 26-30.

Further reading

Kirti, S. and Chatterjee, L. (2011), "Configurations of outsourcing firms and organizational performance", *Strategic Outsourcing: An International Journal*, Vol. 4 No. 2, pp. 152-178.

(The Appendix follows overleaf.)

Appendix

Subject	Items
Time and material	You have worked more in TnM model with your clients
	TnM model is profitable
	TnM model is not very risky
	Project schedules are met easily in TnM model
	TnM model leads to good quality delivery
	TnM model does not lead to increasing cost though it has dependencies on client knowledge transfer.
	Majority of projects are following TnM model in your company
Fixed Time Fixed Price	You have worked more in FTFP model with your clients
	FTFP model is profitable
	FTFP model is not very risky
	Project schedules are met easily in FTFP model
	FTFP model leads to good quality delivery
	FTFP model does not lead to increasing cost though it has dependencies on client knowledge transfer.
	Majority of projects are following FTFP model in your company
Outsourcing Model	Staff Augmentation keeps responsibility with clients and hence there is less control and lesser risk in case of failure
	Responsibility of only specific tasks (Out tasking) of projects involves lesser risk as there is lesser dependency on the vendor
	Project based outsourcing (vendor has responsibility of complete project delivery) involves more risk as there is complete dependency on the vendor for completion of the project
	Joint venture offers a low risk option as there is lesser investment required and stakes are the distributed
Client vendor relationship	Service delivery: good quality code delivered leads to more trust and thereby better client-vendor relationship
	Service delivery: conformance to requirements in a delivered code leads to increased confidence for the vendor and thereby better client vendor relationship
	Service delivery: you tend to get more work/projects from clients who have been happy with deliveries
	Quality certification: clients feel assured if mature processes under CMM or Six Sigma are followed
	Quality certification: teams following CMM guidelines tend to deliver better quality code
Engagement time	Engagement time: a project that has been associated for a long time tends to have a team that has good understanding of the project requirements and is able to develop long term relationship with clients

Table AI. Questionnaire contents

About the authors

Daisy Mathur Jain is pursuing PhD in the area of Outsourcing from the National Law University, Jodhpur (India). At present she is a Visiting Faculty to the NLU Jodhpur. She has over 12 years of experience in the software industry and has been an Account Manager managing multiple accounts in various geographies across the world, in particular US, UK and Australia. She has worked at various places in US and UK in different capacities. She has worked in various software organizations like TCS, Sapient, Interra IT and 3Pillar Global. She teaches MIS to students doing MS in Cyber Law and Cyber Security via distance learning programs. She has

done PGDCA (Post Graduate Diploma in Computer Applications) from Institute of Management Technology (IMT) Ghaziabad. Prior to this she did BA (Hons) in Economics from the SRCC.

Dr Reema Khurana is a PhD in the area of Open Databases and Information Integrity from the SNDT University, Mumbai. She has done MS in Software Systems from the BITS, Pilani and MCA from the IMT, Ghaziabad. She has over 23 years of experience as a Software Consultant and in Post-graduate Business Education Design and Delivery. Prior to joining IMT, she has worked with NIIT Ltd in the capacity of an Associate Consultant. She has also been involved in consultancy assignments in the area of software requirements elicitation and design for various public and private sector companies. Her current teaching interests include business analysis and process management, business and IT consulting, business and innovation in networked economy, management information systems, and software project management. She has published papers in leading international journals. Her research interests include information systems, information integrity systems, information systems outsourcing, IT in retail and e-education delivery mechanisms. She is also a PhD Supervisor, guiding thesis in the area of service outsourcing and information integrity systems. Dr Reema Khurana is the corresponding author and can be contacted at: rkhurana@imt.edu