An Integrated It Offshoring Success Framework For Iraqian Smes

Abdulniser Khald Hamzah[1]*
*Corresponding E-mail: abdulniser.kh.eng@nuc.edu.iq
Department of Computer Engineering TechniquesAl-Nisour University Baghdad,Iraq

Waleed Noori Hussein
E-mail: waleed.hussein@uobasrah.edu.iq
University of Basrah , AL-Zahraa College of Medicine

Jamal Kamil Alrudaini
Email: jamal.k.eng@nuc.edu.iq
Department of Computer Engineering TechniquesAl-Nisour University Baghdad,Iraq

ABSTRACT

Recently, the Malaysian government presented the Malaysia Economic Transformation Plan, where they identified IT offshoring as a potential business service. It has been noted that the SMEs have to face many challenges and issues related to technology adoption in the field of ICT. Many developed countries have already adopted IT offshoring activities for assisting the industries in their countries in automating and streamlining their business processes. In this study, the researchers have investigated the requirements and the major success factors involved in the deployment of the IT offshoring services amongst the Iraqi SMEs for fulfilling their e-Business needs. For this purpose, they used qualitative and quantitative techniques for collecting the data from these Iraqi SMEs. The researchers used the SPSS software for analysing all the collected data.

The outcome of this research is to provide an integrated framework that can assist the SMEs to deploy the IT offshoring approach that accelerate ICT adoption for e-business implementation. The framework consists of four main stages which are *motivation*, *decision*, *implementation* and *evaluation* stage. The proposed framework went through the evaluation process with IT experts to increase the validity of research findings and outcomes.

Keywords *IT offshoring,E-business, SMEs, IT offshoring framework.*
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1. Introduction

Information Technology (IT) offshoring service is regarded as a strategic decision by any organisation owing to the potential risks involved in every step of this offshoring process [1]. The IT offshoring processes are generally adopted by the multi-national and larger local organisations. On the other hand, SMEs use these services for their office automation or non-core activities [2]. Thus, the SMEs need to improve their competitiveness by implementing these services in other processes like storage, developing data farms, back and front-end applications, etc., which can support all their processes [2]. According to the Malaysian Economic Transformation Plan, the SMEs need to reach global customers through their e-businesses. Owing to the

limitations of the SMEs like scarce resources (i.e., manpower or capital) and a lack of awareness, the SMEs cannot develop various IT applications [3-5]; since they do not aim to become an independent and self-sufficient e-business. However, the researchers believe that by using the right technique, the SMEs can develop and become more competitive on a global scale. Hence, they need to implement IT offshoring services for resolving their problems.

Every organisation uses IT services for developing a competitive advantage and for supporting its business operations. Therefore, any consideration with regards to the outsourcing of IT services is a major strategic management factor [6-8]. Currently, the organisations outsource the IT services for acquiring cheap labour and improving globalisation. A majority of the organisations in the world, like banks, have started using the service offered by third-party firms for carrying out many IT-based services. In one study, Rahman [9] highlighted some challenges and issues related to the implementation of IT services like difficulties in controlling and maintaining the network of communication within the organisation. Furthermore, the rapid development in web applications and IT services has led to the establishment of a novel business environment like e-business. The organisations use e-businesses for improving their business and trading opportunities and exploiting novel markets. They increase their sales to decrease their transaction costs, improving their flexibility and collaborating with other business partners [10]. These e-business processes increase their accessibility and online transactions, improve the organisational structure, and eliminate the power dynamics between the organisations, suppliers and customers. Every organisation has to determine the threats and opportunities which are offered by the e-businesses. The rapid development of the IT services has led to the expansion of a better financial environment, as they offer novel opportunities for people, companies, and countries, worldwide [11].

2. IT OFFSHORING: AN OVERVIEW

IT offshoring processes are described as the use of external supplier of goods and services rather than resorting to the use of internal resources for offering the same products [7]. It also includes important decision-making processes wherein the management decides if they aim to establish a particular in-house activity like maintaining data centres or buy them from the external subcontractors [8]. A majority of the organisations that outsource their IT-services generally concentrate on their core business activities and determine strategic advantages of outsourcing the IT-services to a 3rd party. The most common IT services offshoring include data/information processing, software development, system hosting, and maintenance.

3. E-BUSINESS PRACTICES FOR SME's IN MALAYSIA

The organisations which adopt e-business processes in their supply chains can reap a lot of profit. However, recent research has indicated that a majority of Malaysian SMEs have not implemented e-business processes. The SMEs are regarded as a vital pillar in the economic development of any country [12-14]. In Malaysia, the SMEs form the largest business sector (99.2%) [15], who contribute significantly to the workforce (56.4%), GDP (32%) and total exports (19%) in the country [15]. However, the Malaysian SMEs also face a lot of competitive pressure from other countries like India, China and Vietnam, since these countries have a lower labour cost compared to Malaysia. Hence, these SMEs need to work more efficiently for competing against the organisations in these countries. This can be achieved by establishing an effective supply chain after implementing e-business technologies [16].

4. RESEARCH METHODOLOGY

In this study, the researchers used qualitative and quantitative techniques, which included structured

questionnaires and interviews. This allowed them to improve the depth and breadth of the research, particularly during data collection [17, 18]. The researchers used a qualitative research strategy for identifying the important factors, potentials and services related to the IT offshoring processes amongst the Iraqi SMEs. For this purpose, they carried out interviews and implemented some common IT sourcing techniques which can be used by the SMEs. They also used a quantitative research approach, wherein they surveyed all the respondents who could contribute to the study. In this study, the researchers included 113 Malaysian SMEs as a sample population. Thereafter, they developed an IT offshoring model for the Iraqi SMEs which could be used in combination with their other e-Business initiatives. The researchers developed a few hypotheses based on their conceptual model and tested the questionnaire, described in Table 1. The results of the study helped in identifying the success factors and components involved in the implementation of the IT offshoring processes.

Table 1: Hypotheses

Hypotheses
Hypothesis 1: Trust positively influences the level of IT offshoring success
Hypothesis 2: commitment positively influence the level of IT offshoring success
Hypothesis 3: Information sharing positively influences the degree of IT offshoring success
Hypothesis 4: contractual completeness positively influences the level of IT offshoring success
Hypothesis 5: Technological capability positively influences the level of IT offshoring success.
Hypothesis 6: Cultural compatibility positively influences the level of IT offshoring success.
Hypothesis 7: Flexibility capability positively influences the level of IT offshoring success.

The questionnaire was designed based on two approaches which are paper-based approach and web-based approach.Additionally, the scale questionshave been used to answer the questions that related to evaluate the influence of the factors that have been identified on IT offshoring success. A summary of the scal itemsthat used to measure each factor is shown in table 2 below.

5. THE DERIVED MODEL

After analyzing the data, the next step was to testthe proposed determinants model that has been constructed by this study. Testing the model includes examining the factors involved. Fig 1 below shows the supported and unsupported factors. The solid arrows show the supported factors, while the dotted arrows show unsupported factors.

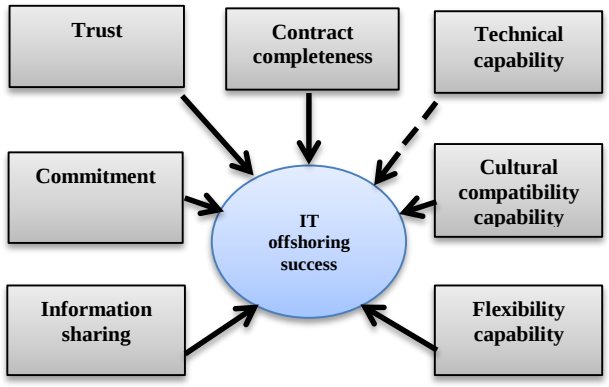

Fig 1: The derived model

Factor analyses and reliability tests were used to test our model. The reliability measures that were discussed further in next section showed Cronbach alphas in the range of 0.707 to 0.919, while the Cronbach alpha for the overall factors is 0.91, demonstrating that all the variables used in this study are reliable and can be used for further analysis. We have found a general support for the factors, with the exception of the technical capability factor. A significant and positive support has been detected for all other factors, showing overall support for the model.

6. RESULTS AND DISCUSSION

The boundary conditions of our research are related to IT offshoring arrangements which involved in small and medium enterprises (SMEs). Hence, the findings would be less relevant to large organizations, which needanother criteria and measurements for influencing factors and cost controls to be considered. As seen in sample details, these arrangements cover many areas such as Application development, End-user support, Hardware maintenance, Networking, Security [19-22], Software development & maintenance and others, in a vast majority of firms such as Information and communication technology (ICT) [5, 23, 24], Manufacturing, Trade, Construction, Education, Financial Services, and others. Given the difficulty of achieving firm level outcomes for these offshoring areasof previous literature, this research emphasizes that these are highly

Table 2: Questions items

Constructs	Descriptions	Question items	Sources
Trust	Measuring trust in the relationship between the partners	1. Our vendors make decisions which benefit us under all circumstances 2. Our vendors willingly assist us, without any exception 3. Our vendors are sincere all the time 4. We have a friendly relationship with our vendors	[25], [26], [27]
Commitment	Measuring commitment in the relationship between the partners	1. We always strive to maintain a good relationship with our vendors 2. Our relationship with our vendor is very strong 3. Both of us strive to keep our promises to one another 4. Both of us are willing to continue our relationship	[28], [27]
Information Sharing	Measuring the information sharing in the relationship between partners	1. Both of us share essential information 2. We share vital business knowledge related to our core business processes 3. The information offered by us helps in the execution of our vendors' business activities 4. Both of us share vital information related to the technical and business environment changes which can affect our businesses	[28]
Contract completeness	Measuring completeness contract between the partners	1. We have developed an incentive contract which includes well-defined performance rewards and penalty clauses 2. The performance objectives have been clearly described in this contract 3. This contract includes clauses which allow an easy switching or re-internalising of all activities if our relationship with the vendor fails. 4. A cross-functional team is involved in the contract development and approval 5. This contract clearly describes a dispute resolution	[29]

		process 6. All the service requirements related to the base pricing have been understood by the various contract stakeholders	
Internal IT capability	Measuring the internal Technical IT capability of the enterprise	1. We have a specific scheme for the IT standardisation 2. We can integrate the IT processes 3. We understand the IT trend	[28], [25]
Cultural Compatibility Capability	Measuring the capability of cultural compatibility	1. Both the parties in this relationship have a compatible corporate culture 2. Both the parties in this relationship readily accept the cultural differences 3. Both the parties implement a similar process for problem-solving, decision-making, and communication	[30, 31]
Flexibility Capability	Measuring the flexibility capability	1. Both the parties in this relationship can adapt to the changing circumstances 2. Both parties in this relationship will willingly accommodate one another if the conditions change 3. Both parties in this relationship will design a new deal instead of holding each other to the primary terms if some unexpected situations arise.	[30, 31]
IT offshoring success	Strategic, economic, and technological benefits of IT offshoring	1. We can refocus on the core business. 2. We have increased our IT competence. 3. We have increased access to some skilled personnel. 4. We have improved the scale economies in the HR department. 5. We have improved the economies of scale related to technological resources. 6. We have improved the control of the IT expenses. 7. We have decreased the risk of technological obsolescence. 8. We have also improved the access to vital information technologies. 9. We are very satisfied with the general benefits derived from IT offshoring.	[25, 32], [19, 33], [34], [28],

customized offshoring arrangements, as compared to the nature of some offshoring arrangements.

Table 3: Factors and the related results

Factors	Hypothesis	Standardized	Direction	Str

		Coefficients		relationship
Trust	H1	0.768	Positive (+)	Strong
Commitment	H2	0.950	Positive (+)	Strong
Information sharing	H3	0.700	Positive (+)	Strong
Contract completeness	H4	0.783	Positive (+)	Strong
Technical capabilities	H5	-0.024	Negative (-)	No
Cultural compatibility	H6	0.792	Positive (+)	Strong
Flexibility capability	H7	0.715	Positive (+)	Strong

Our results show that trust and commitment across the client and vendor relationship are strongly related to IT offshoring success.This is consistent with the results ofHan, Lee [28]. However, this result shows that trust and commitment in relationship are not enough for success IT offshoring arrangements at a large scale. We identified that information sharing within relationship also have direct significant influence of IT offshoring success rate.

It was also reported in the previous studies that highly success enterprises are using a certain standard in defining and monitoring their offshoring arrangements[29], which is called a high level of contract completeness.Thus, this research attempt to include the contract completeness requirement as one of determinant for IT offshoring. The finding shows that the contract completeness havea highly significant influence related to IT offshoring success.This indicat that contract completeness is an important determinant for IT offshoring success.

This research has also considered the IT offshoring integration,which meanscovering as much as possible of the dimensions of IT offshoring to improve integration.This involved a few other elements that are categorised under capability dimension such as technological, cultural compatibility and flexibility. Three main capability factors have been tested, the technical capability is the first factor shown within these results, which illustrated insignificant influence on IT offshoring success.

The results of the study indicated that the internal technological capabilities of the organisations negatively influenced the success of the IT offshoring activities. This contradicted Hypothesis 5 presented in the study. Cohen and Levinthal [35] noted that if the employees shared a specialised language, coding scheme or expertise, their technical strength "hindered the combination of the external knowledge and pathological results related to the Not-Invented-Here (NIH) syndrome". In another study, Rigby and Zook [36] mentioned that 2 out of the 5 surveyed executives stated that their organisation was affected by the NIH syndrome.

This significantly affected the willingness of the organisation to adopt and implement external knowledge and ideas. Hansen and Nohria [37] also mentioned that this NIH syndrome was a major barrier which affected the collaboration between various organisations. If the organisation possessed a strong technical team, it could suffer from this syndrome, and not cooperate with the external service providers or be open to external ideas [25]. However, these findings were contradictory to those reported by Han, Lee [28], who noted that the organisations having effective IT capabilities could positively affect the information sharing, communication quality and collaborative participation levels.

Conflicts occurring between the external and internal IT abilities of the organisation can weaken the efficiency of their IT activities [38]. This further hinders the effect of IT offshoring projects. The offshoring companies have to establish an interaction routine which maximises the intensity and the frequency of the socio-technical interactions, before enjoying the supernormal relational rents. Additionally, strong technical

abilities could enable the organisations to complete their projects on their own, if the service providers underperform (with regards to their expectations) or threaten to stop working on the project [39, 40]. Thus, having high technological capabilities alone does not allow the offshore firms to share knowledge amongst their business partners.

In contrast, cultural compatibility capability has shown highly direct significant influence on IT offshoring success. Similarly, flexibility capability for the enterprise has shown significant influence related to IT offshoring success. However, in spite of the statistical analyses, content validity is untested.

7. FORMULATION OF THE FRAMEWORK

The proposed framework was developed based on findings from literature review,questionnaire and interview sessions. The results from the survey and interview were collected from the Iraqian SMEs. The research findings have provided insights and understanding of the IT offshoring within e-business context for Iraqian SMEs. Therefore, one of the objectives of this research is to propose a framework to be considered as a roadmap for SMEs to considering IT offshoring. Furthermore, the research also aims to identify and categorize the critical factors affecting the offshoring process of IT and its reversibility, in order to minimize the risks associated with the IT offshoring process. The propped framework provides a step-by-step guideline on how to successly apply IT offshoring within e-business context among Iraqian SMEs.

The Fig 2 shows the proposed framework, which called as e-business integrated offshoring framework. This framework provides a step-by-step approach, by presenting some phases that help SMEs deal with IT offshoring steps. The developed framework contains consists of four main stages: *Motivation stage, Decision stage, Implementation stage,* and finally *Success evaluation stage*.

7.1 Motivation Stage

The motivation stage, leads the participating companies in the direction of offshoring. The majority of motivation and reasons for offshoring identified by this study have been categorized as follows:

- Financial and innovative concerns: financial concerns are represented by decreasing the total cost of ownership. This motivation appears to be compatible with the specific conditions of SMEs, such as, limited budgets and resources. While, the innovative issues are related to achieving innovativeness within SMEs business competitive environment.
- Cognitive issues: Offshoring is regarded as a technique used by an organisation to effectively resolve their business issues, compared to the in-house logistics performance. A cognitive motivation includes a well-defined corporate policy or analysis of the various alternatives which indicate that offshoring was the best technique used by the organisation.

7.2 Decision Stage

The decision stage was the primary step involved in the proposed framework. Before implementing any offshoring plan, the organisations need to determine the long-term implications and limitations of seeking any help from an external party [29, 41]. The organisations have to acquire a thorough understanding of the various activities and related resources which offer them a sustained advantage and describe their core competencies. Additionally, owing to the path dependencies, the decision-making teams need to determine what facets of the organisation describe their future capabilities, and how offshoring could affect their portfolio consisting of strategic alternatives. In an earlier study, Handley [42] stated that the organisations need to follow a specific path or trajectory of competence development.

7.3 Implementation Stage

The implementation of the offshoring process is regarded as an activity that is shared between the vendors and organisations. The implementation stage handles the tasks which need to be executed by every party, for successfully implementing the offshoring of the IT activities.

This stage includes the start-up activities related to the planning and execution of the offshored agreements, in addition to the establishment of a detailed administrative and budgeting function needed for their management and a formal launch of this project.

. This stage is divided into three dimensions: *1) Relationship Dimension; 2) Contract Dimension; and 3) Capability Dimension.* The dimensions involved have been described below:

7.3.1 Relationship Dimension

Relationship phase is defined as the association between the provider of IT offshoring, and the client company, which comprises exchange behaviors through its characteristics and process. Kearney [43] have investigated the dimensions of relationship phase, and have specified these dimensions, based on their level of importance and the analysis of the frequency; they have established that, trust, commitment are central elements of a success relationship. A successful relationship is based on some factors like commitment and trust. Many earlier researchers regarded these factors as a vital determinant of the relationship dimensions and dynamic processes. These factors help in maintaining and strengthening any relationship. Hence, a majority of the earlier studies were based on social exchange or relational exchange theories. As a result, the researchers selected these factors as a major component of the relational dimension in this study.

7.3.2 Contract Dimension

In this study, the researchers defined the contract dimension as a process and properties related to the drafting of the text contract along with the contract management activities, which are implemented during the contract development and post-contract stages. At this stage, the developed contract was negotiated and signed by both parties, i.e., offshorer and provider. This indicated that the success of the offshoring process is based on the development of a good contract. This contract needs to be studied by both parties. Before signing the contract, the parties need to get the agreement reviewed by their legal counsel, who is knowledgeable in the preparation and performance of the contracts. Contract management refers to an action-oriented competence, which permits the performance measurement procedure, offers performance information for diagnosing the issues and prescribing solutions for managing the IT offshoring dyad behaviour. It also includes additional activities during the post-contract phase for ensuring the success of the IT offshoring activities. Some of the criteria included for completing the contract include *Precise costs*, *Penalty clauses*, *Service level agreement (SLA)*, and *Termination clauses*.

7.3.3 Capability Dimension

The capability dimension can be divided into two sub dimensions which are *Cultural Compatibility Capability and Flexibility Capability*.

7.4 Evaluation Stage

This stage evaluates the overall benefits/results of the IT offshoring project. It refers to the overall a
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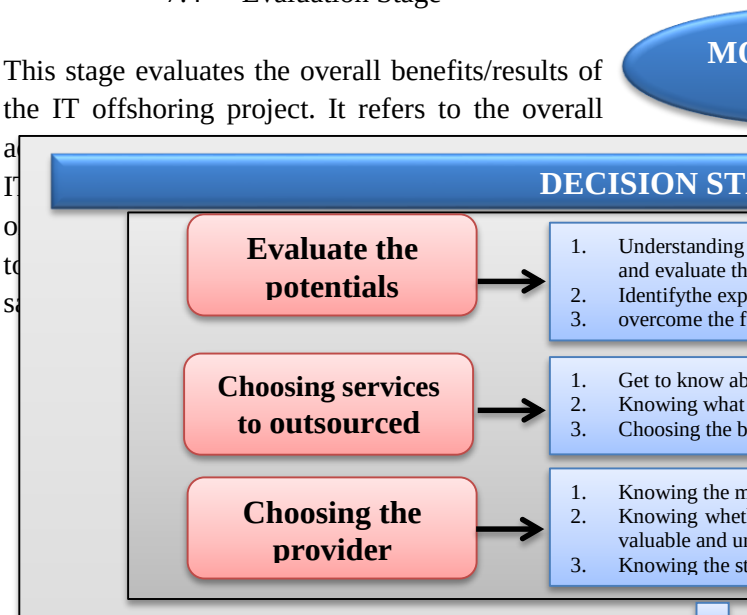

Fig 2: The IT Offshoring Strategic Process Framework

IT offshoring success by the satisfaction of a three dimensions of benefits (strategic, economic and technological benefits), which can be achieved by the company through IT offshoring. Other researchers such as Earl [45], and Han, Lee [28] have also used these criteria to evaluate IT offshoring success. Following the same steps with the above researchers, we have also divided this stage into three dimensions, which are *Strategic benefits, Economic benefits, and Technical Benefits.*

7.5 Validation Process

In this research the validation process of the proposed framework has been performed as follows:

The stages of the framework with questions regarding to the framework validation has been sent to five experts, each one from a specific field, such as IT department, business department, and SMEs. The outcome of the validation process helped to determine the utility of the proposed framework. Each one of the five experts represented separate perspective. The fig 3 shows the framework validation process.

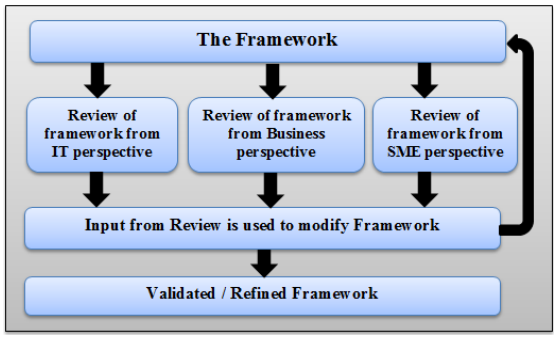

Fig 3: the framework validation process

Based on the outcomes of the validation process, we had slightly modified the formulated stages of the framework, such as, decision stage and implementation stage.

The findings and the feedbacks have been used to make sure that, the framework meets all the requirements and needs to apply IT offshoring for SMEs. Furthermore, based on the comments from experts, the contents and components of the framework have been enhanced.

7.5.1 Results From The Validation Process

This section discusses the results of the framework validation, regarding to the recommendations guidance, achievable, and generic implementations of applying IT offshoring in SMEs. We make a face to face validation, while handing the printed framework and the validation questions to the experts. The questions have been developed by the researcher for the framework validation purpose.

Based on the answers received from the experts, the results were as follows: the experts have confirmed that; firstly, this framework is very much suitable to proceed with the designing, assessing and implementing of IT offshoring in SMEs. Secondly, the framework is achievable and might effectively guide any enterprise, which wants to adopt IT offshoring. Thirdly, these stages are generic, therefore it is essential for the enterprises to review and make more stringent decisions, based on their own profiles.

Based on the discretion above, it can be concluded that, the proposed framework has been success validated, since all the experts had given as a positive response. The changes below have been included in the proposed framework:

1. Modifications in dimensions design.
2. Modifications in some of the items within choosing the provider dimension.
3. Changes in implementation stage

8. CONTRIBUTION OF THIS RESEARCH

This study has contributed to the literature in the following manner:

1. The researchers developed a novel framework which can be used for the IT offshoring projects implemented by the SMEs. This framework categorised the offshoring procedure into 4 different stages, which describe all activities involved in the IT offshoring process.
2. Furthermore, this framework described some factors which affected the success and failure of the IT offshoring process. This offers a better understanding of this process. This model integrated the activities which are vital and relevant to the IT offshoring process.

3. This study testing a three dimensional model within the implementation stage; which are relationship, contract and capability. Each dimension includes some specific and significant factors to determine it.

9. LIMITATIONS AND FUTURE WORK

Some of the features of this study can limit the generalisation of the study conclusions. These present novel opportunities for further research. A few of these limitations are described below:

1) Though the research model supported the hypotheses proposed in the study, the cross-sectional nature of the designed framework limits its ability to eliminate probable issues.
2) The size of the population sample was very small. Small sample size can lead to a self-selection bias and instability of the parameter estimates. Thus, the findings of the study need to be interpreted and generalised with caution. Finally, the results of the study display a bias as the population sample was limited to Malaysian SMEs.
3) This study focused solely on the IT executives and managers, based on the perspectives of the client or service receiver. Hence, additional research needs to be conducted from the service provider's perspective to determine if similar factors generate the same effect.
4) Thus, all the factors included in the study were tested in Malaysia. This highlights the significance of investigating this topic in other countries.

10. CONCLUSION

IT offshoring processes are a vital component of a modern business. In the case of many organisations, offshoring is regarded as a smart and feasible technique of focusing on the core competencies instead of the business model. This will help in significantly increasing the revenue of the firms. With many opportunities arising for offshoring the non-core functions, the researchers have developed a new approach which included some stages that were generally neglected. These stages can ensure the success of this venture in the long run.

By recognising the value of the processes and maintaining tight control, the organisations can understand the complete scope of the IT offshoring functions and develop mechanisms for managing the IT offshoring relationships. When the organisation determines the potential of defects or change which are introduced by the IT offshoring activities, it allows the organisation to save a lot of money and time, in addition to the reputation of its management and offshoring vendor. Furthermore, the communication and implementation of the offshoring activities help in smoothening the roadblocks which develop in these projects. In this study, the researchers carried out a survey and interview process before developing a framework. This framework is based on the understanding and

analysis of the literature review, surveys and interviews. This framework helps in improving the knowledge of the IT offshoring activities implemented by the SMEs, in addition to their ability to determine the IT offshoring potentials.

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