Offshore IT Outsourcing to South Africa – Analysis of Readiness and Attractiveness

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Abstract. *This paper investigates South Africa's readiness and attractiveness as a potential location for offshore Information Technology (IT) outsourcing. The shift of IT outsourcing from sites in the US and Western Europe to offshore locations such as India, the Philippines and China continues to be significant. Different countries are slowly entering the race to become the next offshore outsourcing hotspot. This includes places such as Ghana, Brazil, Argentina, Mexico and South Africa. This paper analyzes one of these locations, South Africa in depth. The interpretive tradition was applied in conducting the research. One major finding based on initial observatory data was that South Africa was considered to be both attractive and ready; however, detailed interpretive analysis shows that South Africa might be an attractive location but it is not yet ready for offshore outsourcing.*

Keywords: Offshore, IT, Outsourcing, readiness and attractiveness, interpretive analysis.

INTRODUCTION

Offshore outsourcing is the transference of an Information Technology (IT) function from a client company to a supplier organization located outside the borders of the client company's country. It is a commonly used strategy among leading companies in the United States (US) and Western Europe. Companies typically invest in offshore outsourcing with the expectation to lower costs, economies of scale, access to specialized resources, and/or new business ventures (McFarland and Nolan, 1995 and Aubert, et. al., 1998).

Offshore readiness is measured by evaluating internal technical infrastructure capability and external technical infrastructure (e.g. telecommunications infrastructure) along with the internal business process maturity and capabilities (core competencies). Attractiveness is measured by evaluating the regulatory environment, people and cultural factors, and the interface between the client and the outsourcing provider.

The late 1990s saw an increase in the outsourcing of software development, particularly to offshore locations. Rajkumar and Mani (2001) point out that Year 2000 compliance and the conversion to the new European Union currency, the Euro, have stressed many organizations' ability to maintain their systems. These time-sensitive changes have lead to outsourcing more projects to developers offshore. Contributing

to the increase in offshore development are advances in telecommunications technology and personal computers that have increased the ability of companies outside of the US to provide quality IT services especially application development. Currently, the high demand for e-business and Internet-based solutions are continuing the drive for offshore development.

Traditional offshore software development was primarily application development (Carmel and Agarwal, 2002). The applications tend to be highly structured with little to no changes in the requirement specifications and only small amounts of interaction and project management needed from the client. They are ideal for outsourcing as deliverables and bids are understandable and predictable with risks that are better understood. On the other end of the spectrum, current offshore development includes e-business and web application development, and "follow-the-sun" or "round the clock" application development. These projects tend to be less structured in nature needing more client contact and project management than traditional offshore development projects. They are less ideal for outsourcing as deliverables, costs, and risks are less predictable. Offshore software development offers an opportunity to significantly reduce the cost of application development. However, given the change in the types of projects being outsourced and the potential new locations, it is important to examine if new locations are ready and attractive. To that end, it is also important to understand what makes a new location ready and/or attractive.

The first phase of this research identified the critical success factors that outsourcing participants need to meet. Then an exploratory study was performed to determine which factors are the most critical (see Jennex and Adelakun, 2003). Based on our initial findings, this paper developed a framework for analyzing the readiness and attractiveness of new IT offshore outsourcing locations. Many potential client organizations do not have clear processes for looking at potentially new offshore locations. The Readiness and Attractiveness Framework can now be used by researchers and organizations alike to analyze a location's readiness and attractiveness. In this paper the framework was applied to South Africa.

The major research questions answered in this paper are:

1. When is a potential offshore IT outsourcing location ready and attractive?
2. Is South Africa a ready and attractive offshore IT outsourcing location?

RESEARCH METHODOLOGY

This research follows the interpretive tradition (Walsham, 1995a and 1995b); meaning that the research assumes that reality can only be constructed through social dynamics and shared meanings within the existing context (Boland, 1985 and Myers, 1997). That is, phenomena are best understood through the meaning assigned to it by those living it (i.e., common meaning). Common meanings are often subjective but they represent the reality within the context. Interpretive research in Information Systems is aimed at producing an understanding of the context by focusing on the full complexity of the situation.

In an attempt to understand the South African context, the authors spent two months in the country with six weeks in Cape Town, one week in Pretoria and one week in Johannesburg. These three cities were selected because they are the major economic and political centers in South Africa. More time was spent in Cape Town because it is commonly regarded as the city with most mixed of traditions and cultures. Also, many organizations in Cape Town are acclaimed to be influenced by Western Europe.

The data for analyses were collected by organizing a total of five seminars and workshops at the University of Cape Town and the University of Pretoria. In addition to the seminars, four major companies were visited to discuss IT management within the companies and opportunities for outsourcing in South Africa as a whole.

The seminars and workshops were advertised by the Departments of Information Systems and Informatics at the University of Cape Town and the University of Pretoria, respectively. The company visits were also arranged by both universities. More than 50 people contributed to the data collection process altogether. Participants included IT managers, IT Directors of Operations, developers and users in various industries, professors from the University of Cape Town and the University of Pretoria and some graduate students, most of whom also work part-time or full-time. The specific companies that participated in this research were: Standard Bank of South Africa, the largest bank in Africa and in South Africa; Absa Group Limited, the second largest bank in South Africa; Byte Technologies; and McDonald's Corporation. At each visit only company staff participated in the two-hour meetings.

Data were collected during the seminars. The Readiness and Attractiveness Framework was carefully explained to the seminar participants, and then they were asked to apply it to the South Africa context. Once the framework was understood, it was easy for participants to analyze the various aspects of the framework with respect to South Africa. Data collected at the company visits were based on interviews and discussions about the IT outsourcing industry in South Africa including whether or not the companies outsource and why. The authors also inquired about the availability of the key readiness and attractiveness factors within the South African outsourcing market.

LITERATURE REVIEW

The first part of this research summarized the literature with respect to offshore development success factors. Several authors have identified a number of critical success factors (see Tables 1 and 2). A total of 31 critical success factors were mentioned in the literature, and Jennex and Adelakun (2003) summarized the 31 factors into 5 naturally coherent groups. Segmenting the factors into naturally coherent groups makes it easier for potential survey respondents to assess them for completeness. Rather than determining if the total list needs any additions, they will be asked to determine if any factors should be added to each group's list. Using groups reduces the number of factors that must be modeled and makes the model simpler to visualize. The second part of the research further classified the initial organization by Jennex and Adelakun (2004) into the readiness and attractiveness categories.

OFFSHORE OUTSOURCING CRITICAL SUCCESS FACTORS

The first research question asked when an IT outsourcing location is considered to be ready and attractive. This question was answered directly through the literature review. A location is considered ready and attractive when most of the critical success factors are positively identified at the location. To further elaborate on this question, the critical success factors were grouped into five categories: Technical Infrastructure, Business Infrastructure, People Factors, Client Interface, and Regulatory Interface (Table 1).

Jennex and Adelakun (2003) did not consider one particular critical success factor that is mentioned in the literature – longevity. Kumar and Palavia (2002) discuss the importance of longevity as a factor

influencing the scope and quantity of work given to an outsourcing provider. This critical success factor is omitted in the business infrastructure or client interface groups since it is not relevant to a potentially new offshore location.

Offshore IT Outsourcing provider Readiness			
	INTERNAL (controllable)	**EXTERNAL (not controllable)**	**REFERENCES**
Technical Infrastructure	Up to date PCs, other computer HW/SW	Availability of up to date PCs, other computer HW/SW in the market	Cloete and Courtney (2002); Dedrick and Kraemer (2001); Jennex, Amoroso, and Adelakun (2003); Palvia and Vemuri (2002); Sukovskis (2002)
	Internal telecommunications infrastructure	External telecommunications infrastructure	Cloete and Courtney (2002); Dedrick and Kraemer (2001); Gattiker (2000); Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Palvia and Vemuri (2002); Mukti (2000); Sukovskis (2002)
	Worker technical skills including project management	Availability of skilled technical people including project management	Cloete and Courtney (2002); Dedrick and Kraemer (2001); Jain and Song (2002), Jennex, Amoroso, and Adelakun (2003), Kumar and Palavia (2002), Mukti (2000), Palvia and Vemuri (2002), Sairamesh (2002); Sukovskis (2002); Turban et. al. (2002). Rajkumar and Mani (2001),
	SW control processes		Jennex, Amoroso, and Adelakun (2003), Rajkumar and Mani (2001)
Business Infrastructure	Business plan		Jennex, Amoroso, and Adelakun (2003); Rajkumar and Mani (2001); Raval (1999)
	Business organization		Jennex, Amoroso, and Adelakun (2003); Rajkumar and Mani (2001)
	Business processes		Castelluccio (2000); Jennex, Amoroso, and Adelakun (2003); Palvia and Vemuri (2002)
	Cost/cash control processes		Castelluccio (2000); Dedrick and Kraemer (2001); Turban, et. al. (2002)
	Advertising		Palvia and Vemuri (2002); Turban, et. al. (2002)
	Client contact methods		Castelluccio (2000); Jennex, Amoroso, and Adelakun (2003)
	Payment processes		Dedrick and Kraemer (2001); Jennex, Amoroso, and Adelakun (2003); Mukti (2000); Palvia and Vemuri (2002); Turban, et. al. (2002)
	Legal representation		Cloete and Courtney (2002); Dedrick and Kraemer (2001); Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Sairamesh (2002)
	Size		Jain and Song (2002)

Table 1:IT Outsourcing providers' Readiness – Critical Success Factors Model

Offshore IT Outsourcing provider Attractiveness			
	INTERNAL (controllable)	**EXTERNAL (not controllable)**	**REFERENCES**
People Factors	General knowledge skills		Cloete and Courtney (2002); Jain and Song (2002); Rajkumar and Mani (2001); Sukovskis (2002)
	Language skills		Chepaitis (2002); Gattiker (2000); Jain and Song (2002); Palvia and Vemuri (2002); Rajkumar and Mani (2001); Raval (1999)
	Cultural awareness		Chepaitis (2002); Gattiker (2000); Palvia and Vemuri (2002); Raval (1999); Smetannikov (2001)
	Project management/ people skills		Chepaitis (2002); Cloete and Courtney (2002); Gattiker (2000); Palvia and Vemuri (2002); Rajkumar and Mani (2001)
	Labor costs		Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Kumar and Palavia (2002); Rajkumar and Mani (2001)
Client Interface	Client knowledgeable		Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Kumar and Palavia (2002)
	Trust		Kumar and Palavia (2002); Palvia and Vemuri (2002)
	Client language skills		Chepaitis (2002); Gattiker (2000); Jain and Song (2002); Palvia and Vemuri (2002)
	Problem resolution process		Jennex, Amoroso, and Adelakun (2003); Kumar and Palavia (2002); Rajkumar and Mani (2001)
		Time differences	Jennex, Amoroso, and Adelakun (2003)
	Client/outsourcing provider capability to travel		Jennex, Amoroso, and Adelakun (2003); Rajkumar and Mani (2001); Smetannikov (2001)
Regulatory Interface		Intellectual property protection	Jain and Song (2002); Palvia and Vemuri (2002); Rajkumar and Mani (2001); Turban et. al. (2002)
		Tax laws	Dedrick and Kraemer (2001); Jain and Song (2002); Rajkumar and Mani (2001)
		Banking/wire transfer laws	Dedrick and Kraemer (2001); Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Palvia and Vemuri (2002); Rajkumar and Mani (2001); Sukovskis (2002)
		Customs/import/export laws	Dedrick and Kraemer (2001); Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Rajkumar and Mani (2001)
		Exchange rules/rates	Dedrick and Kraemer (2001); Jain and Song (2002); Jennex, Amoroso, and Adelakun (2003); Palvia and Vemuri (2002); Sukovskis (2002)
		Travel/visa restrictions	Jennex, Amoroso, and Adelakun (2003); Rajkumar and Mani (2001); Smetannikov (2001)
		Telecom regulations	Jennex, Amoroso, and Adelakun (2003); Palvia and Vemuri (2002); Rajkumar and Mani (2001)

Table 2: IT Outsourcing providers' Attractiveness – Critical Success Factors Model

A FRAMEWORK FOR ANALYZING OFFSHORE IT OUTSOURCING READINESS AND ATTRACTIVENESS

The framework for analyzing offshore outsourcing readiness and attractiveness is presented in Figure 1, a graphical representation of the mix between attractiveness and readiness categories.

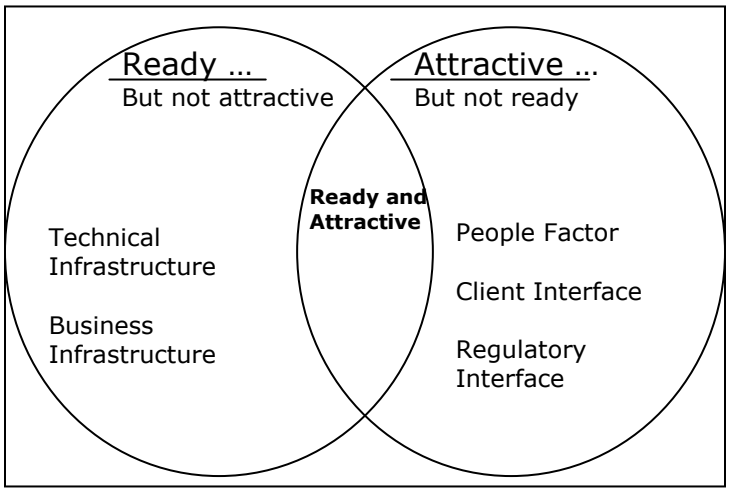

Figure 1: Offshore Outsourcing Readiness and Attractiveness

OFFSHORE OUTSOURCING READINESS

In this paper offshore IT outsourcing readiness is measured by analyzing the availability and reliability of IT infrastructure and the matured business processes and IT capabilities (core competence) at the offshore location (Table 1).

The IT infrastructure and business infrastructure components directly impact the ability of the outsourcing provider to perform the system development project. As shown in Table 1, an IT offshore location needs a stable, reliable internal and external technical infrastructure. The outsourcing providers have direct control over the internal technical infrastructures but no control over the external technical infrastructure (e.g., telecommunications infrastructure).

The more technical capabilities and resources in an offshore location, the more likely the location can deliver quality products and services on-time and on-schedule. This perception lends to making companies in that location with greater technical abilities appear to be at a higher readiness level. The business processes of the outsourcing provider determine the likelihood that the outsourcing provider will remain viable for an extended partnership.

OFFSHORE OUTSOURCING ATTRACTIVENESS

IT outsourcing attractiveness includes all of the supporting and peripheral factors and activities needed to develop an IT project – regulatory interface, people factors and client interface (Table 2). The external attractiveness factors are beyond the control of the outsourcing provider, for example, the IT regulatory environment. The literature review shows that government IT policy is an important attractiveness factor. A location like India has IT policies that make India to be very attractive and it facilitates the growth of the IT offshore industry within the country. The government of India developed highly equipped centers solely for IT outsourcing providers.

Human factors such as language, skills and staff cultural awareness are controllable to a certain extent. According to Iyamu and Roode (2010:5) "no organization has total power to determine what the choice(s) of an actor will be in a particular circumstance". People factors ensure the outsourcing providers have the ability to understand the context in which the client operates. One major factor making India very attractive is the use of English as the primary language for business and government activities. In addition, India was formerly a British colony giving them a distinct advantage over other Asian countries when it comes to quickly understanding and adapting to Western Cultural norms and traditions.

This research also considered client interface factors as controllable. The client interface is the defined communications process between the participants. This directly impacts the transference of requirements and project/process knowledge, and guides the participants in the resolution of conflicts. The more mature a company's client interface is, the more attractive it is to potential clients. Another important client interface factor is trust (Jennex and Adelakun, 2003). Trust has a direct impact on the way the outsourcing providers and client interact but neither organization has direct control over this variable. Both organizations, however, influence the effectiveness of the client interface factors.

INTERPRETIVE ANALYSES OF SOUTH AFRICA'S READINESS AND ATTRACTIVENESS

Readiness

This section presents a summary of the interpretations of the people interviewed in South Africa. Based on the data collected through initial observation in Cape Town, the authors positioned South Africa in the ready and attractive quadrant (Figure 2). However, based on comments and data collected during the interview sessions we interpreted the participants' comments as attractive but not ready.

One of the main issues raised was the lack of technically-skilled human resources. A seminar participant who works for a major consulting company in Cape Town noted that one of their major problems is having so few skilled IT resources on hand. Those skilled workers who are available are constantly moving from one organization to another for greener pasture. Further inquiry revealed that this movement is not only from one company to another, but also out of the country entirely to places such as the United Kingdom (UK) and the US, and in some cases to other countries in Africa.

"… *Once they are well trained and skillful enough to compete internationally, they leave the company and then move out of the country*." Consultant, Cape Town

The brain drain, as it is known, is a real issue in much of South Africa. In addition to the IT professionals, other professions like medicine and engineering are also experiencing the departure of skilled workers from the country. Those leaving are primarily the Afrikaans-speaking and English-speaking white South

Africans who were educated during the apartheid era. Recent data shows that black South Africans are also in pursuit of advance professional career outside the country.

This issue was addressed from the other point of view by those interviewed in Pretoria. The absence of skilled IT labor was linked to the larger problem of limited general education throughout the country. During apartheid black South Africans were rarely allowed solid, advanced schooling, meaning that the majority of South Africans are simply not educated in general and certainly not in IT specifically. It is only in the last ten years that black South Africans are free to go to the top universities. Therefore, a huge population exists with limited IT experience. Naturally, most clients would like to outsource to locations with more mature IT skill sets in addition to their business acumen.
"We simply [i.e. the universities] don't have the ability to produce many IT people like in India." Industrial Participant, Pretoria

The two banks visited in Johannesburg offered a slightly different perspective on the view that South Africa is not ready for outsourcing. When one of the participants at Standard Bank was asked if they outsource any part of their IT operation, he simply replied no.

"There is [absolutely] *no IT company in South Africa that can handle our operations*." IT Director, Standard Bank, Johannesburg

When pressed, he explained that there is no South African IT Company specifically that is capable of running their IT operation. He even thinks that the foreign companies like EDS and IBM may not be capable of handling their operations. This explanation is interpreted to mean that there are not enough IT resources within the country to handle the IT operations of a large South African bank, let alone a foreign bank or other large foreign company. So companies in South Africa mostly insource and do not benefit from advantages of outsourcing within the country – a common practice in US.

The IT manger at Absa said that they insource 100% of their IT operations, and believes it would be a disaster to outsource any part of it. He said they spent a large amount of money on training and retaining IT employees, and he doubts if any IT company in South Africa could surpass their results or reduce costs.

Another major concern in South Africa is the high cost of telecommunications services. While the available telecommunications infrastructure is very advanced and may even be better than in India, it is considered to be too expensive and not widely available outside of the major cities. Lastly, South Africa was deemed not ready because the telecommunications is currently a monopoly which accounts for much of the high cost.

"The government has approved a second telecom company but it is not yet effective." Professor, Cape Town

Based on all of the various interpretations of technical infrastructure in South Africa, this paper concludes that the country is not ready to take advantage of IT offshore outsourcing on a large scale as in India or Philippines. Having come to that conclusion, it is important to highlight that very advanced and sophisticated IT usage and development was observed at various locations, such as the University of Cape Town. The problem, however, is the localization of superior technical work. The technical skills and

infrastructure are not widespread across the country. Based on a single site study one could easily conclude that South Africa is ready for outsourcing, but deeper interpretive analyses reveal the opposite.

Though the technical infrastructure is not in place, most of the participants at the seminar and interview agreed that the business processes in South Africa are good. The author's interpretation is that business infrastructure factors are well developed in general and this area is not a barrier to successful IT outsourcing. For instance, checks and credit cards are widely accepted at most stores.

Attractiveness

After the collapse of apartheid in 1994, South Africa gained increased attention and popularity from the international community and businesses. Most participants agreed that as companies like McDonald's moved into the country there was a sense of a hope for the political and economic future. Other international organizations have joined efforts to reward South Africa's democracy, like the International Football Association (FIFA) naming the country host of the 2010 World Cup Competition. South Africa also benefits from the presence of Mr. Nelson Mandela, a powerful political and international human rights leader.

More than ten years later South Africa still has its social problems (with both high crime and HIV-infection rates) but overall the country has remained politically stable and preserved its status as the largest, most well-developed economy in Africa. Businesses are in a constant state of growth with the country's stock exchange being one of the 10 largest in the world, and the Rand joining an elite group of 15 currencies where foreign exchange transactions are settled immediately lowering the risk of transacting across time zones. In addition the government has made many strides towards improving education, health care and transportation infrastructure for its people while also passing legislation to promote business growth and job creation.

Culturally, South Africa has the largest population of citizens of European descent in Africa making the country more Western in terms of development. English (and Afrikaans secondarily) is the most widely used language for commerce and, historically, businesses have been managed in the Western tradition. These dynamics, combined with a primarily Christian society, make South Africa an easy cultural fit with US and European companies. In these sorts of similar environments, management of client/outsourcing provider relationship is less of a problem.

These positive cultural and political factors help make South Africa an attractive location for potential outsourcing. Add to this discussion is the fact that IT labor costs are definitely cheaper than the IT labor costs in the US and companies have many reasons to consider South Africa attractive .

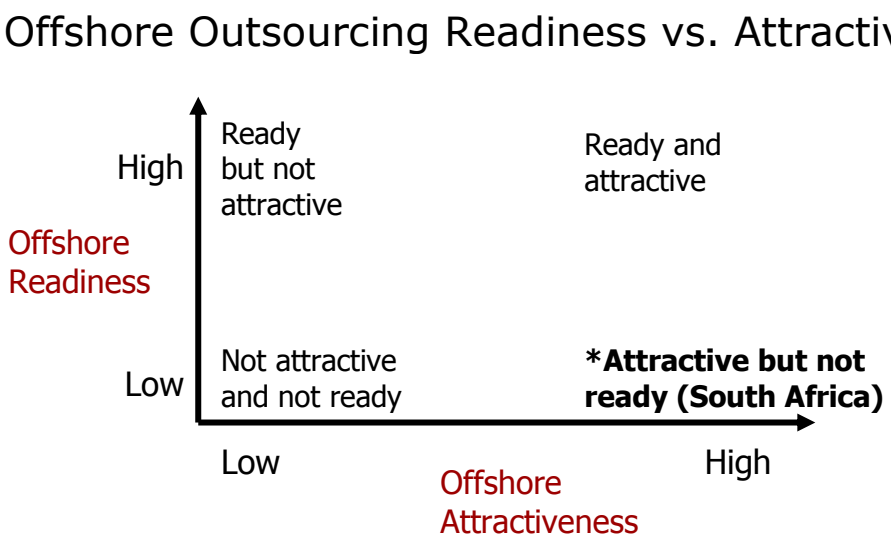

Figure 2. Interpretive Analyses of South Africa's IT Offshore Outsourcing Readiness vs. Attractiveness

CONCLUSIONS

The question of when a potential offshore IT location is considered ready and attractive was answered through a literature review. A total of 31 factors were summarized into 5 naturally coherent groups. Two factor groups (technical infrastructure and business infrastructure) measure readiness while the other three factor groups (regulatory interface, people factor and client interface) measure attractiveness. The conclusion reached is that a location is theoretically considered both ready and attractive when most of the factors identified in the literature are positively present.

The technical infrastructure and business infrastructure factor groups directly affect the ability of the outsourcing provider to meet the needs of the client. Upcoming locations, especially in economically emerging countries, need to ensure they get technically qualified people with good general business knowledge. This is not an unexpected finding. The external technical infrastructure, like the telecommunications infrastructure, is out of the control or influence of the outsourcing providers. This situation highlights the critical role the government has to play in establishing the technical readiness of an offshore location. The telecom infrastructure in South Africa is very advanced, but considered to be too expensive for many offshore clients.

Some of the attractiveness factors are also out of the control or influence of the outsourcing provider and the client. For example, intellectual property rights protection and other regulatory laws are controlled by the governments – and not always favorably for IT outsourcing providers. However, most of the attractiveness factors were considered to be positively present in South Africa.

What was somewhat unexpected was that IT labor cost was not highly emphasized by many of the interviewees. This points to the fact that awareness is growing that it takes more than low cost programmers to ensure successful offshore IT projects.

Ultimately, the value of the Readiness and Attractiveness Framework is that it provides US and European companies a starting point for analyzing a potential IT offshore outsourcing location. The framework also provides great value to companies and government of South Africa is they would like to be the next hot IT outsourcing location.

Areas for Future Research

There are two major areas for future research. The first is collecting more data so that analysis of regional differences can occur. The second is comparative analyses of a few selected locations.

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