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Techniques Used in Each Step (RAIAC)**

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# An Extended AIAC Framework with Tools and Techniques Used in Each Step (RAIAC)

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## Abstract

One of the reason businesses fail to realize intended payoffs from their information technology (IT) investments is the inability of most organizations to effectively manage potential risks. I present a framework to conceive and implement an IT investment's payoffs, by extending the AIAC framework to achieve the payoffs, and measure the actual outcomes. The four items in the AIAC framework are Alignment, Involvement, Analysis and Communication. The study is purely qualitative in nature. In-depth desktop literature review is conducted by extending the AIAC to include risk management. A critical analysis of the past models is established to identify the knowledge gaps.

**Keywords:** AIAC framework, risk management, IT Implementation, RAIAC framework

## 1.0 Introduction

The impact of the global financial crisis has highlighted the importance of risk management (Coskun, 2012). Risk management is significance is likewise credited to the changing industry condition portrayed by dangers from political, monetary, regular, and specialized assets (Wu and Olson, 2010). Risk analysis is a precise methodology that adjusts technique, individuals, innovation, procedures and information to survey, assessing and dealing with the hazard that an association faces. Regardless of the developing significance of hazard the board, there is as yet an absence of proof on chance administration during IT usage. Maes, De Haes and Van Grembergen (2012) perceived at an early stage the job that genuine alternatives (deferral, steering, re-appropriating, relinquishment, and so on) could play in overseeing information Technology (IT) speculation chance. In spite of the fact that hazard appraisal forms for the most part have improved, lacking danger detailing in certain associations has prompted an inability to

completely coordinate distinguished dangers into vital and operational choices (Lee, Choi, Lee, Min & Lee, 2016).

As IT investment increments and different zones vie for ventures, estimating result from IT speculation is never again only an activity. It is requested by partners and expected by ranking directors. Associations accept that every IT speculation will yield a result and the IT division is relied upon to exhibit such result. IT enterprise ideas pose different risk levels. By understanding the risk profile, an organization can deal with the dangers all the more adequately and, hence, improve the potential result from the enterprise (Huang, Lee, Chiu & Yen, 2015). Every IT investment has a unique profile. Implementation of a packaged Enterprise Resource Planning (ERP) may be a low technical risk but high organizational risk. The level of organizational risk varies with the organization, its culture, and degree of change to existing business processes.

Giving proof that IT ventures payoff is more noteworthy now than any other time in recent memory. With firms battling to monitor costs, the investigation of IT speculation open doors for strategic and vital applications expanded. To legitimize IT uses, senior administration requests quantifiable adjustments from past speculations and defenses for future solicitations. Such legitimization is required in light of the fact that there are frequently contending demands for financing in different business capacities. With restricted capital use, every speculation is attached to the degree of anticipated result (Chae, Koh & Prybutok, 2014).

In concentrate via Ho, Wu, and Xu, (2011) noticed that when an asset gets fundamental to rivalry however immaterial to procedure, the dangers it makes become more significant than the focal points it gives. He further recommended that business administrators should concentrate on vulnerabilities and dangers, not openings. It's unordinary for an organization to increase an upper hand through the unmistakable utilization of a develop infrastructural innovation, however even a concise interruption in the accessibility of the innovation can be destroying. As organizations keep on surrendering command over their IT applications and systems to sellers and other outsiders, the dangers they face will multiply. They have to set themselves up for specialized glitches, blackouts, and security ruptures, moving their consideration from chances to vulnerabilities.

The initial AIAC framework had processes with four phases Alignment, Involvement, Analysis and Communication as developed by (Rai & Tang, 2014). The process perspective in the framework shows that the process begins with investments to create IT assets, which are then converted into impacts, both at the process and the organizational level. The framework did not clearly discuss the risks involved in the IT implementation. In any IT investments there are risks involved that must be controlled and reduced to minimum for the organization to be able to have high payoffs from IT investments. Therefore the research extended the AIAC framework by adding the variable on risk management. The extended model was called RAIAC framework.

## **2.0 Methodology**

The study is purely qualitative in nature. In-depth desktop literature review is conducted by extending the AIAC to include risk management. A critical analysis of the past models is established to identify the knowledge gaps.

## **3.0 Literature Review**

### **3.1 Risk Management**

Risk management has occupied an important place on the agenda of practitioners, academics and the business community and has been on the rise because it enhances organizational performance and creates value for shareholders as noted by (Dabari & Saidin, 2014). The element of risk is usually taken into account when deciding the investment in an information system. When this is taken into account the business benefits and payoffs will increase hence a better business. IT experts, are increasingly acquainted with the examination and diagnostic issues identified with discovering result from IT. Notwithstanding estimating result, practice-related issues can obstruct or forestall a genuine evaluation of the business estimation of IT. For instance, poor usage can adversely influence result. The IT result usage process that can improve the capacity to get higher result from IT businesses includes understanding the goal of the result evaluation, dangers included, and integral changes required for executing a system that prompts a precise appraisal as confirmed by (Gunawan & Serlyna, 2018).

### **3.2 Risks in IT Investments**

IT investments have different risk profiles. Giving proof that IT invetsment payoff is more noteworthy now than any other time in recent memory. With firms battling to monitor costs, the investigation of IT speculation open doors for strategic and vital applications expanded. To legitimize IT uses, senior administration requests quantifiable adjustments from past speculations and defenses for future solicitations (Rai & Tang, 2014). Such legitimization is required in light of the fact that there are frequently contending demands for financing in different business capacities. With restricted capital use, every speculation is attached to the degree of anticipated result.

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### **3.3 Recognizing the Risk Associated With IT Investments**

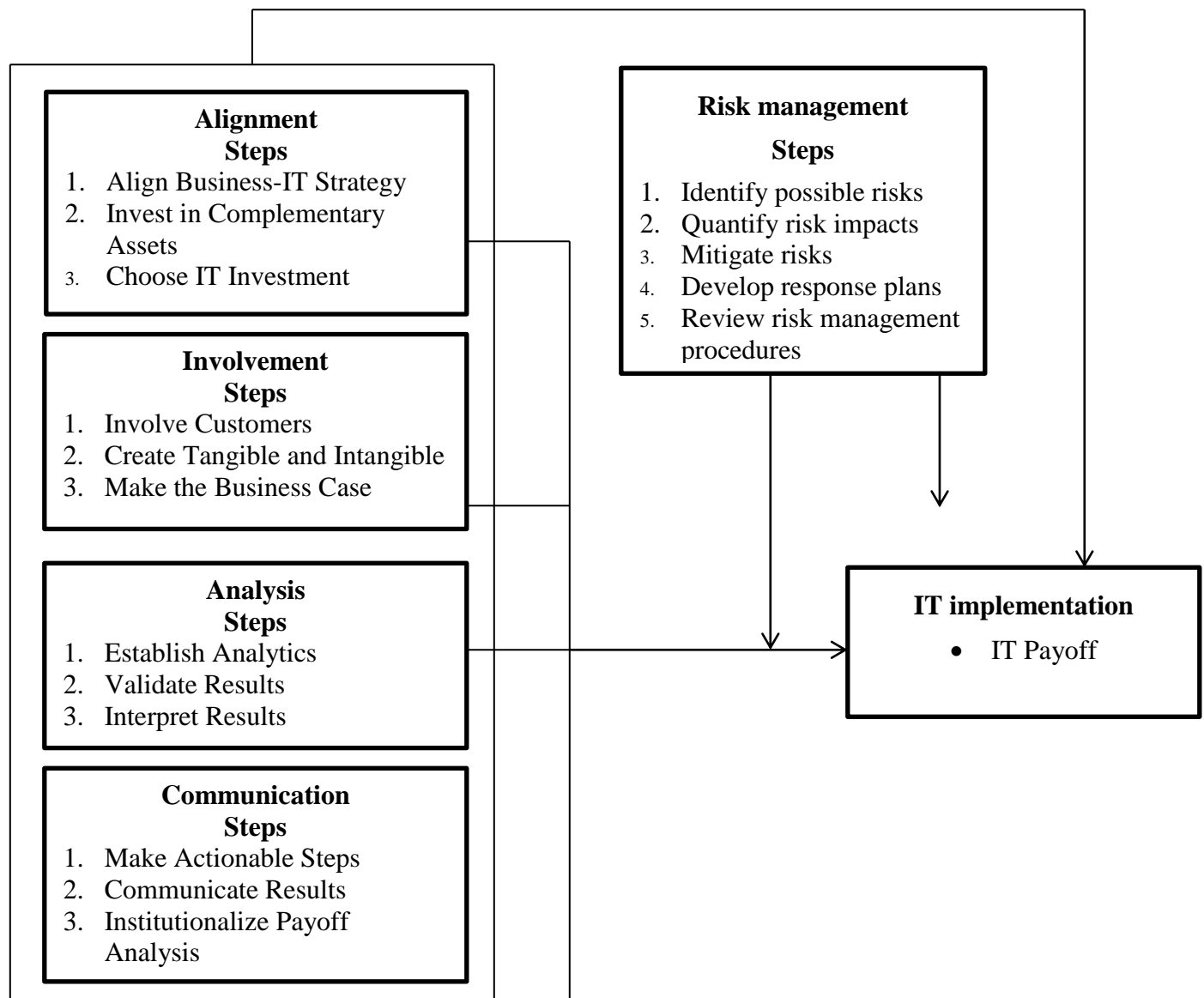
As for the risks related with IT enterprises, there are two significant inquiries: How to deliver the dangers identified with genuine or potential IT interest in a decent and finish way? What's more, to address the predicament of over-or absence of IT speculation, the inquiry is whether to contribute or not and provided that this is true, what amount? There are a few territories of hazard; be that as it may, authoritative dangers, venture dangers, staff dangers and dangers from the outside condition are among the most significant (Chen, Wang, Nevo, Jin, Wang & Chow, 2014). On the off chance that you possess or deal with a business that utilizes IT, it is imperative to recognize dangers to your IT frameworks and information, to decrease or deal with those dangers, and to build up a reaction plan in case of an IT emergency. Entrepreneurs have legitimate commitments comparable to security, electronic exchanges, and staff preparing that impact IT hazard the board methodologies.

### **3.4 Risk Definition**

There are several areas of risk; however, organizational risks, project risks, staff risks and risks from the external environment are among the most important (Murphy, 2002).

- Organizational risks incorporate the danger of the venture not being lined up with business targets, being inconsistent with existing authoritative structures and frameworks, or lacking administration support.
- Project risks identify with basic venture the executives aptitudes, size, multifaceted nature and length of the undertaking, uncertain or inadequate meaning of the business issue as well as the proposed business arrangement, equipment and merchant related hazard, and that's just the beginning.
- Staff risks involve the degree of client duty just as client abilities to abuse IT applications, and IT staff solidness.
- With regard to the outer condition, contenders' activities, government enactment and generally speaking financial execution can affect the IT usage and potential settlements. Absolutely, the quantity of potential hazard components is much more prominent.

To effectively put resources into IT and oversee resulting dangers one needs to attempt an organized methodology, for example, introduced here, enveloping every potential hazard and including the full expenses and advantages of IT usage. In the review of 175 associations around the world, just 35 percent of respondents concurred they viably dealt with the hazard related with business change (Ali, Green & Robb, 2015). The risks that may be involved in IT investments should be identified early enough before the organization invest in the IT services, they need to be managed and be controlled. This will help the organization on having a higher payoff. Figure 1 shows an Extended AIAC Framework with risk management (RAIAC).



**Figure 1: An Extended AIAC Framework with Tools and Techniques Used in Each Step (RAIAC)**

The original AIAC variables are assumed to have a direct relationship with IT payoffs. The relationship between these variables and payoffs is represented by the hypothesis  $H_1$ ,  $H_2$ ,  $H_3$  and  $H_4$ . Risk management is also expected to have a direct relationship with IT payoffs and this is shown by hypothesis  $H_5$ . The joint relationship between the four independent variables (alignment, involvement, analysis and communication) on IT payoffs is given by  $H_6$ . The moderating effect of risk management on the relationship between AIAC and IT payoff is demonstrated by  $H_7$ . The relationship between alignment, involvement, analysis, communication and risk management

will be explored using Structural Equation Modeling (SEM) model generated through AMOS software. The relationship between alignment, involvement, analysis, communication and risk management results to an improved model which we have termed as RIAC. The research has extended AIAC by adding the Risk Management variable. The new RAIAC framework has 5 variables which regulate the IT payoffs as illustrated above. The process perspective in the framework shows that the process begins with control of the risks then investments to create IT assets, which are then converted into impacts, both at the process and the organizational level.

1. In the *Risk management* phase- the managers and stakeholders in the organization should identify, analyze, and responding to risk involved in IT investment in the best interests to meet objectives and gauge payoff.

2. In the *alignment* phase, all technology investments undergo a critical review of the fit between the business strategy and the IT investment in supporting that strategy.

3. In the *involvement* phase, the customers or users of the IT investment are engaged in the payoff process and in selecting the appropriate metrics to gauge payoff.

4. In the *analysis* phase, the actual payoff is assessed. Unfortunately, many IT payoff projects conclude at this point and do not learn from the experience.

5. In the *communication* phase, the findings of the analysis are disseminated in a meaningful and useable form to promote learning and improvements in achieving paybacks.

### 3.5 Appropriate Responses to Risks

Accept – taking no action to counter risks

Share – Minimizing chances of incurring risks by sharing potential risk with another partner organization

Transfer – getting into an agreement with an insurance firm to take over the risk at a cost

Reduce/Mitigate – a step to minimize effects associated with risks.

Avoid – taking precautionary measures against potential risks.

Huang, Lee, Chiu and Yen (2015) gave that the Risk Management Payoff Model can and ought to be joined into all operational and capital venture choices. Utilizing the Model will guarantee that the appraisal of hazard introduction turns into a central part of the dynamic procedures

inside the association. In the rule, Huang, Lee, Chiu and Yen (2015) recommend that hazard evaluation can turn into an essential piece of the association's dynamic procedure by:

- \* Articulating the organization's risk management attitude in its mission statement and strategic objectives;
- \* Communicating the risk management philosophy, specifically the link between risk management and strategy;
- \* Consistently incorporating risk awareness in the budget process;
- \* Instilling risk awareness in the corporate culture and enabling employees to become aware of all risks that are faced;
- \* Conducting risk education and training to ensure that employees understand how risks can be identified and managed;
- \* Articulating risk policies and tolerances through the use of analytical tools and assessments;
- \* Introducing mechanisms to connect performance evaluation and incentives to risk management initiatives; and

### **3.6 Risk Management Process**

Posting potential hierarchical dangers could build the consideration directors and representatives pay to occasions that may demonstrate chance. Every association can build up a mix of strategies and supporting instruments to distinguish dangers, for example, inside investigation, process stream examination, revelation of driving occasion pointers, and encouraged, intelligent gathering workshops and meetings, meetings to generate new ideas, alleviation procedures.

### **3.7 Critique of past literature**

There exists past literature on risk management. Dabari and Saidin (2014) did an investigation on a hypothetical structure fair and square of hazard the board usage in the Nigerian financial division: The directing impact of top administration support. The examination was absolutely quantitative where polls were utilized to gather information. There exists a relevant hole. The examination concentrated on chance administration usage in the financial part. Hazard the executives is a significant system for successful treatment of vulnerability identified with business. Venture chance administration arranges hazard over the different degrees of the association with an attention on overseeing dangers and openings. In view of the surviving writing, the usage of hazard the board will improve execution and upgrade investor esteem by distinguishing, assessing, checking and controlling all dangers that can frustrate the association from accomplishing its set destinations. Ali, Green and Robb (2015) led an investigation on the most proficient method to oversee data innovation venture chance. Right now, introduced a methodology for overseeing IT speculation hazard that serves to normally pick which



alternatives to intentionally implant in a venture in order to ideally control the harmony among hazard and prize. Benaroch (2002) likewise show how the methodology is applied to an IT venture involving the foundation of an Internet deals channel. This paper grows IS inquire about on the utilization of ROA with regards to IT venture dynamic. The present paper concentrated on issues relating to how to apply ROA from a hazard the executives viewpoint. Specifically, this paper presents a methodology that abuses genuine alternative ideas so as to ideally design an IT interest considering its dangers. The paper likewise introduced an applicable representation of the methodology in real life. At last, a basic assessment of the methodology and the going with model assists with distinguishing a few issues along which the methodology can be extended. This paper presents a methodology that utilizes ROA to effectively arrange IT investments to deal with the harmony between their worth and hazard.

Rabechini and de Carvalho (2013) led an investigation to appreciate the effect of hazard the board on venture execution. Further it means to examine the level of dissemination of hazard the board practice in Brazilian organizations. The methodological methodology includes an overview of 415 ventures at various degrees of multifaceted nature in various mechanical areas in a few conditions of Brazil. The results show that grasping peril the board practices has a basic beneficial outcome on adventure accomplishment. They in like manner show a constructive outcome from the closeness of a peril chief on adventure accomplishment. The examination's fundamental obstructions are the methodological choice of non probability testing and a survey reliant on respondent perception. From the rational point of view, concentrating on vulnerabilities during the endeavor, using the risk the board systems and significantly understand the business condition are essential accomplishment factors, mentioning thought of adventure boss and peril chiefs. Coltman, Tallon, Sharma and Queiroz (2015) in their study the measurement of IT investment continues to be of interest to academia as well as the business community. However, academic and trade literature cite mixed results from IT investments. Several research and contextual issues might explain the equivocal results and suggest guidelines for future studies. The paper discussed these issues and provides directions for future research in measuring IT payoff. From the literature, it is evident that none of the authors discussed risk management as a variable in the context of IT implementation. Furthermore, for those authors who discussed risk management and pay off, the context of discussion differed significantly. This is the knowledge gap. The study therefore extended the AIAC framework by adding the variable on risk management. The extended model was called RAIAC framework.

#### **4.0 Conclusion**

One of the reason enterprises fail to attain projected payoffs from their information technology (IT) investments is the inability of most organizations to effectively manage potential risks. The initial AIAC framework had processes with four phases Alignment, Involvement, Analysis and Communication. Nevertheless, the model did not consider the aspect of risk management. The framework did not clearly discuss the risks involved in the IT implementation. In any IT investments there are risks involved that must be controlled and reduced to minimum for the organization to be able to have high payoffs from IT investments. Therefore the research

extended the AIAC framework by adding the variable on risk management. The extended model was called RAIAC framework. The model is deemed superior as it include the aspect of risk management that is critical during IT implementation.

### 5.0 Recommendation

Risk management is an essential aspect that should not be left out during IT implementation. Thus, risk management processes in an organization should be aligned with IT plans. The study recommends adoption of risk management practice in IT investments for the organization to be able to have high payoffs.

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