

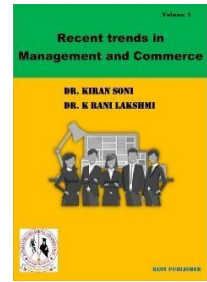
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Risk Assessment in Enterprise Resource Planning by COPRAS Shadow

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Abstract

Concepts of process orientation basically technical and organizational compromise to align imperatives and without a solid mechanism for doing so leverage the benefits of ERP to their full potential can't feel. The system recommends that measuring take place from a balanced viewpoint with the goal of delivering relevant information that may facilitate decision-making, which can assist accomplish the corporate objectives and, as a result, drive the organization competitively forward. In this work, risk in ERP project by COPRAS MCDM approach is presented for estimation as a result of this study, here are some key points to mitigate to avoid failure proves that risks complex architecture and a greater number of modules, complex structure and less top management support of an ERP project.

Keywords: Ineffective communication, Technical performance, Business performance, COPRAS

Introduction

Enterprise resource planning (ERP) system means corporate business operations created to streamline and integrate a business information system. Integrated an access to corporate information systems enterprise ERP as a workable system this is because it has uniformly agreed a professional idea and methodology [1]. Complete ERP systems cross-functional processes within the organization a shared database for ease of use is using theoretically, ERP systems advanced workflow, various business standardization of procedures and real-time, functional with access to up-to-date data seamless process integration across regions are intended to provide [2, 3]. The standard of service determines whether a business is prosperous and successful or mediocre. The quality appears when businesses go through a "metabolic transformation" in how they handle clients and potential consumers. Today's clever businesses can anticipate and surpass client expectations, which are measured by quality, timing, service, availability, and efficiency [4]. ERP solutions clearly appeal. Most companies are usually multiple performs essential ERP functions even with software settings, standardized and integrated ERP the software environment is separate, custom- challenging to achieve with structured systems and provides cost-effective interoperability [5].

Enterprise Resource Planning

Cost was the main competitive driver in the 1960s, which led to manufacturing strategies that were product-focused and relied on large production volumes, cost reduction, and the assumption of stable economic conditions. Basic production of these companies planning and control (MPC) requirements economic order size and economics modern computerized like reorder point with the introduction of reorder point (ROP) systems were completed. In the late 1960s, Tractors and manufacturer of other construction equipment case [6]. Beginning in the 1990s, MRP ii was fully all resource planning for the organization expanded thanks to ongoing technological developments. This project is now product design data warehousing, materials planning, capacity planning, communication systems, human resources, finance and fields including project management can be taken into account. Because of this the term ERP was coined. Production not only companies, but it including information effective utilization of all resources it wants to increase its competitiveness by any organization can use ERP [7]. Since it enables module integration, data saving and retrieval procedures, administration and analytical functions, along with the conventional functionalities of standalone applications, the adoption of an ERP system may really be seen as one of the most successful approaches towards traceability. When Blumenthal (1969) created a framework and integrated architecture for corporate is [8]. Vendors of ERP software frequently release updated versions of their products. These versions are occasionally not backwards compatible and frequently quite different from the earlier versions. If the user organizations have customized the software or created unique interfaces between the ERP system and their internal applications, the issue of version migration is made more difficult [9]. In order to take full advantage of technical advancements in the internet and electronic commerce, ERP systems are growing into extended ERP systems in the 2000s, which forces businesses to think about modifying their business operations once more. This time, the emphasis is on enhancing the quality of contact and communication between businesses effectiveness expanded networks of suppliers and distributors [10]. ERP offers answers to

the issues with legacy systems, lowers development risk, boosts global competitiveness, and improves corporate efficiency, among other things. Other potential benefits include suppliers, alliances and integrated whole of customers' ability to monitor and manage the organization, about customer demands and requirements lots of information, underground working capital savings and improved customer satisfaction are included [11]. The vast variety of business operations in organizations, including sales and distribution, manufacturing and supply, human resources, and finance, are supported by integrated assistance from standard package ERP systems. More precisely, there is no question that the majority of businesses consider conventional ERP packages as the solution to fixing the issues with their legacy systems and boosting their level of international competitiveness. [12]. By building and maintaining a single database of company data, many businesses that use ERP systems aim to eliminate data redundancy and inconsistency. There are no more data re-entry mistakes or omissions from one business procedure to the next. The ERP design also supports the simultaneous and automated updating of many applications (i.e., information exchange across business processes) without the need for manual intervention. This lowers personnel expenses, red tape, and mistakes [13]. After the benefits had been put into place, it became evident that they had not been able to boost profitability or save costs for employees, inventory, or system maintenance as much as they had hoped. The ability to complete financial cycles, procurement, and order management cycle time, on-time delivery, and overall productivity all outperformed expectations, according to respondents [14]. The resource accessibility determines a contractor's capacity for production. A construction business typically has access to two types of resources: internal resources that it already possesses and external resources that it may buy on the open market for a fee. Utilizing internal resources to their fullest and utilizing the market to balance the company's operations are both frequent goals [15]. After the ERP has been successfully implemented, the focus shifts to how to make the system work as efficiently as possible. In fact, an ERP system's value comes more from its effective and efficient use than from the system itself [16]. However, there are issues with ERP systems. Implementation difficulties and structural problems are the two categories into which problems fall. The transition from pre- to post-ERP implementation is where implementation issues arise. However, mistakes made during implementation could surface much later [17]. ERP systems have shown to be efficient for processing transactions but less efficient for reporting and decision-making. Abb, plc, and balanced scorecards are just a few of the more recent accounting techniques that are made possible by ERP systems, which also offer incentives and methods for their adoption [18]. The disparity in priorities between customer businesses, who want to offer the best solutions for business challenges, and ERP suppliers, who desire a generic solution usable by a larger market, may be the cause of the high failure rate of ERP deployment. In other words, it becomes crucial to figure out how to better align organizational processes and activities with best practices for ERP [19]. With the advent of ERP systems, companies now have access to the information platform we have learned a lot over the years their methods, ideas and tactics may come into effect. The truth is the application of much academic research is actually there is less. Instead, ERP vendors of their software being forced to customize for market niches. Because these consumers buy software that doesn't suit them, they will definitely refuse. [20].

COPRAS

COPRAS (Complex Proportional Assessment), selects the best option from a group of workable options by calculating a solution using the ideal-worst solution ratio and the ideal-solution ratio. Many scholars use this method to address decision-making challenges [21]. The relevance and utility level of the versions under investigation are assumed to be directly and proportionally dependent. Scale weight and alternatives smooth numerical data to determine estimates can be used. Real world situations to be honest, crisp data is common Not enough [22, 23]. To avoid risks and hazards that might compromise the project's goals, it is important to identify the source of risk. Asking questions of experts and conducting literature research are the easiest ways to discover In an ERP project risk factor. For the same purpose, a number of researches cited Research publications have been done [24]. In order to avoid risks and hazards that might compromise the project's goals, it is important to identify the source of risk. Asking questions of experts and conducting literature research are the easiest ways to discover. For the same goal, a number of referred research publications have been examined. In this paper Evaluation Parameters: Time impact (e1), Cost impact (e2), Technical performance impact (e3), and Business performance impact (e4). Alternate Parameters: Inadequate training and instruction (a1), Complex architecture and high numbers of modules (a2), Lack of business processes reengineering (a3), Poor project team skills (a4), Low top management support (a5), Ineffective communication (a6).

TABLE 1. Definition of measure of risk assessment criteria

| | e1 | e2 | e3 | e4 |
|----|-------|-------|-------|-------|
| a1 | 65 | 59.8 | 24.5 | 62.7 |
| a2 | 92.5 | 64.3 | 62.2 | 60 |
| a3 | 69 | 74.2 | 62.3 | 81.11 |
| a4 | 69.44 | 54.88 | 45.9 | 67.88 |
| a5 | 55.11 | 51.23 | 48.57 | 47.22 |
| a6 | 57.77 | 51.21 | 44.57 | 56.78 |

Table 1 shows the data set value of risk factors involved in enterprise resource planning.

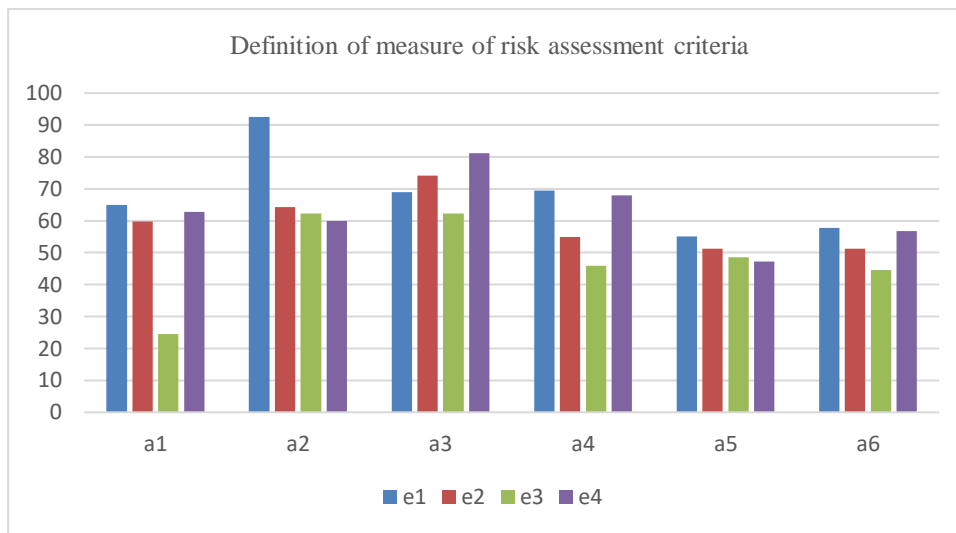


FIGURE 1. Definition of measure of risk assessment criteria

Figure 1 shows the graphical representation of risk factors involved in enterprise resource planning.

TABLE 2. Normalized Data

| | e1 | e2 | e3 | e4 |
|----|------|------|------|------|
| a1 | 0.19 | 0.20 | 0.10 | 0.20 |
| a2 | 0.26 | 0.21 | 0.26 | 0.19 |
| a3 | 0.20 | 0.24 | 0.26 | 0.25 |
| a4 | 0.20 | 0.18 | 0.19 | 0.21 |
| a5 | 0.16 | 0.17 | 0.20 | 0.15 |
| a6 | 0.16 | 0.17 | 0.18 | 0.18 |

TABLE 3. Weight data

| | e1 | e2 | e3 | e4 |
|----|------|------|------|------|
| a1 | 0.25 | 0.25 | 0.25 | 0.25 |
| a2 | 0.25 | 0.25 | 0.25 | 0.25 |
| a3 | 0.25 | 0.25 | 0.25 | 0.25 |
| a4 | 0.25 | 0.25 | 0.25 | 0.25 |
| a5 | 0.25 | 0.25 | 0.25 | 0.25 |
| a6 | 0.25 | 0.25 | 0.25 | 0.25 |

Table 2 and 3 shows normalized data and weight data for given analysis.

TABLE 4. Weighted normalized decision matrix

| | e1 | e2 | e3 | e4 |
|----|--------|-------|---------|--------|
| a1 | 0.0463 | 0.049 | 0.02516 | 0.0492 |
| a2 | 0.0659 | 0.053 | 0.06387 | 0.047 |
| a3 | 0.0491 | 0.061 | 0.06397 | 0.0636 |
| a4 | 0.0495 | 0.045 | 0.04713 | 0.0532 |
| a5 | 0.0392 | 0.042 | 0.04987 | 0.037 |
| a6 | 0.0411 | 0.042 | 0.04577 | 0.0445 |

TABLE 5. Bi and Ci values

| | Bi | Ci | Min(Ci)/Ci |
|----|------|------|------------|
| a1 | 0.10 | 0.07 | 1.00 |
| a2 | 0.12 | 0.11 | 0.67 |
| a3 | 0.11 | 0.13 | 0.58 |
| a4 | 0.09 | 0.10 | 0.74 |
| a5 | 0.08 | 0.09 | 0.86 |
| a6 | 0.08 | 0.09 | 0.82 |

Table 4 and 5 shows the weighted normalized matrix and Bi & Ci values respectively.

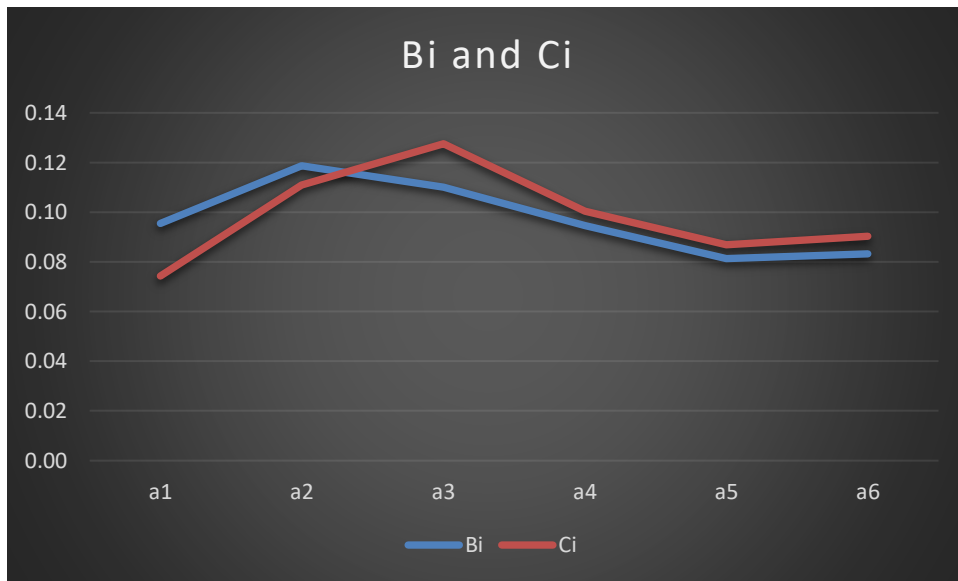


FIGURE 2. Bi and Ci

TABLE 6. Qi rank

| | Qi | Rank |
|----|------|------|
| a1 | 0.22 | 1.00 |
| a2 | 0.20 | 2.00 |
| a3 | 0.18 | 6.00 |
| a4 | 0.19 | 4.00 |
| a5 | 0.19 | 3.00 |
| a6 | 0.19 | 5.00 |

Table 6 shows Qi rank value for risk factors.

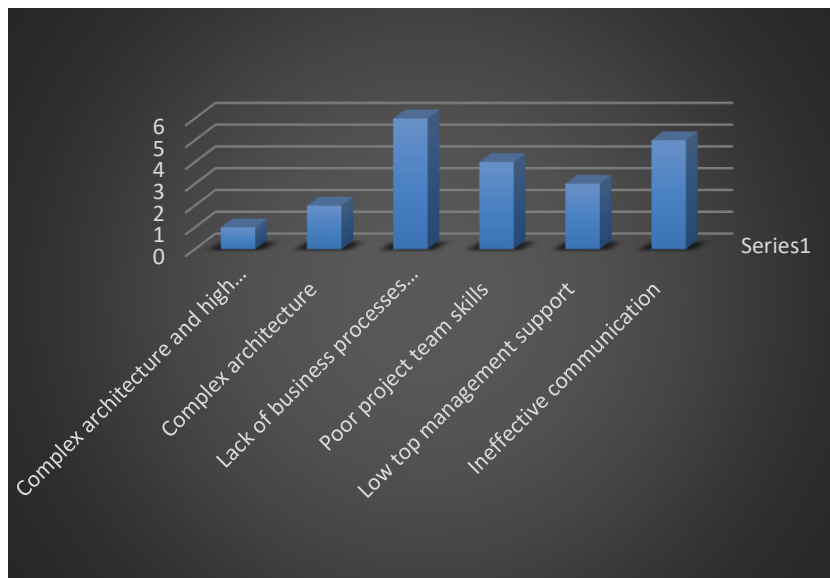


FIGURE 3. Ui value

TABLE 7. Ui Rank

| | Ui | Rank |
|----|----------|------|
| a1 | 1 | 1 |
| a2 | 0.916963 | 2 |
| a3 | 0.828321 | 6 |
| a4 | 0.848201 | 4 |
| a5 | 0.854002 | 3 |
| a6 | 0.844188 | 5 |

Table 7 shows the Ui rank for risk factors.

TABLE 8. Risk rank for given alternate

| | Rank |
|--|------|
| Complex architecture and high numbers of modules | 1 |
| Complex architecture | 2 |
| Lack of business processes reengineering | 6 |
| Poor project team skills | 4 |
| Low top management support | 3 |
| Ineffective communication | 5 |

Table 8 shows the rank of risk factors involved.

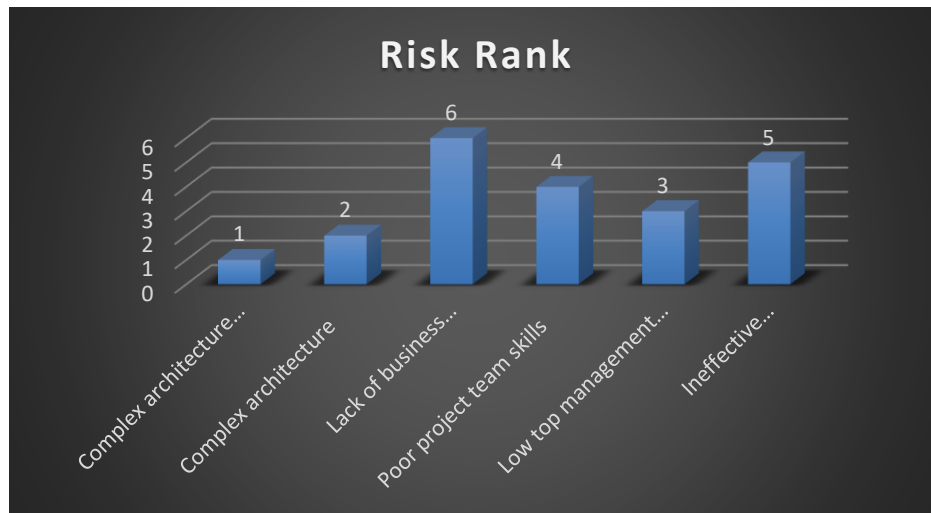
**FIGURE 4.** Risk rang for given alternate

Figure 4 demonstrates that Complex architecture is rank two, Complex architecture and Low top management support is rank one, low top management support rank three.

Conclusion

The capacity to accelerate the supply-chain process has become one of the key sources today. Enterprise resource planning (ERP) systems, a fundamental advancement in information systems (IS), were created as a result of this requirement. Many companies have their traditional systems and manage their IT resources Organize their own information more effectively Rather than building technical systems off-the-shelf ERP solutions. cross- Managing operational business operations and That's a lot of software packages to offer Despite the fact, ERP based on integration they are usually million Countless dollars to buy and more To install, and very important. Project risk assessment is a difficult process for project managers and is categorised as a multi-criteria decision-making (MCDM) problem. In this paper, COPRAS has introduced an MCDM technique for risk assessment.

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