



Identifying and ranking key failure factors in software projects(Case study: software services of MMTE Company)

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Abstract:

Software initiatives can fail, mainly when they are outsourced. Both the application company and the provider companies lose money and time as a result of it. Studies on this topic have been carried out by researchers worldwide. This article is based on prior research. It also draws from a recent experimental investigation. The MMTE Company's software service provider system (ERP) is the subject of this study. It was constructed by someone using the C+ program. They reviewed the assessment and results of their investigation. Based on the survey and study, failure factors were identified and ranked. According to the obtained results, it can be concluded that among all the factors mentioned in order: Factors of new technologies, lack of planning and insufficient planning, early identification of risks, incomplete, unclear, and ambiguous needs of the client, changes in the project by the client, commitment to the client are among the main factors of failure for this software project And the factor of not performing the sub-set of mutual duties of the project staff is considered as a low-risk factor here because this factor is correctly implemented in this set.

Keywords: software projects, Break, Project Management, customer, skill

Introduction:

In recent years, there have been significant improvements in app development. It is essential for operating banks, factories, healthcare facilities, transportation, science, and industrial simulation, among other settings. The range of application software has surpassed more functional personal information displays. It currently handles information management for big businesses. Factors include the enormous advancements in peripheral and central memory capacity, the fundamental modifications in computer architecture, the remarkable progress in hardware, and the decline in cost. As a result, there is a greater need for Soft Systems software.

These elements and subpar software development techniques led to production issues. Plans need more control over the complexity of software applications. Three factors make up a project: quality, time, and money. These three factors create a triangle. Reducing project failure rates necessitates

Key Elements Disrupt Project Hi-Soft From the perspective of earlier research:

- Loss and loss of information and data provided by the user
- Incomplete and insufficient requirements
- Changing requirements

Business. It was constructed using C+ software, and an assessment and survey were given to a limited group of workers who utilize it. We identify the factors of failure in the use of software systems.

Literature Review:

Professionals and researchers who study industry technological information with a final. Methods and research have been interrupted. Hey Ra, Rate reduction failed the project, and risk control actions, resources, and significance were done by (Haimes, 1933 Chittister). Risk management and evaluation: They introduced the software project Ra to ascertain why it failed in the current framework. One entity does not own a poll questionnaire (KPMG, 1997). An April saw the completion of Canada's private and governmental advance of 1450 firms.

Information technology project failures have three primary causes. This includes demand uncertainty in place, inadequate project planning (particularly the absence of a plan for precise risk management), and a lack of support from senior management.

In the essay, The Failed Investigation of the Information Technology Project, Andrew Taylor (2000) created a questionnaire. Following the interview, After 1027 project assessments and around 38 project managers, it was discovered that only 130 projectors and 12.7% of all projects were successful. Project failure is described from the perspective of project management activities. Here it is: Project management shortcomings in the region, K2's status Project change management could be a more vital point of project management.

Even though the causes of software project failures in earlier research varied, certain factors were consistently mentioned in all of the studies: "User participation," "Project Manager authority," "Development Team Normalisation," "Lack of support from senior leadership," "ineffective communication," "Absence Responsible team members," and so forth.

Examination of the causes of small- and medium-sized software project failures Lu and associates, 2010). PLS analyzed the procedure, presenting risk factors in software development projects and the critical failure reasons for this category of projects based on model results.

By examining software projects in Northwestern Italy, Maurizio Mauricio et al. (2007) looked at the variables contributing to software project success or failure.

Magneh (2014) investigated and assessed the reasons why small software projects in international outsourcing marketplaces fail. Shahzad et al. (2017) delineated the patterns of software project failure and articulated the principal outcomes of software project failure from multiple perspectives.

Research Methodology:

This article has conducted an experimental investigation on a sizable and working software system in a respectable company by using a questionnaire of factors after examining and analyzing the findings of earlier studies in this field and gathering the best cases in most of the conclusions. Software projects' inability to look at these factors, for instance, For this software project, comparable to other large software projects, a small group of employees has paid to discover failure factors and score these items.

Presentation of findings and results:

The following tables present the results of the surveys conducted on IT, project management, and finance. We analyzed the results by adding and rating the scores in a table. We ranked the major software projects and this one in order of importance by using the graphs to determine the main reasons for failure. Take action.

Table1. Questionnaire table of the first person (informatics staff of the company)

The first person informatics staff Company				
Row	Risk factors	Against	agree on	Points(0 – 10)
1	Unrealistic user/customer goals		*	8
2	Undefined system requirements	*		0
3	Lack of personnel		*	7
4	New technologies		*	8
5	Lack of external components (bad interfaces)		*	4
6	Lack of planning or insufficient planning		*	3
7	Early identification of risks	*		0



8	Lack of participation and user/customer interaction		*	6
9	Lack of senior project management		*	4
10	Unrealistic estimate of the program	*		0
11	Incomplete, unclear, and ambiguous needs of the user/customer		*	8
12	Inexperience of the user/personnel	*		0
13	I need to gain the necessary skills of the .provider/personnel	*		0
14	Poor presentation of project status and information		*	2
15	Commitment to the user/customer		*	5
16	Changes to the project by the user/client		*	7
17	Unstable systemic (or organizational) environment		*	6
18	Failure to properly engineer requirements		*	7
19	Customer emphasis on low price	*		0
20	Failure to perform the sub-set of mutual duties of the project staff	*		0
21	Technical complexity		*	5
22	Lack of development of project staff coordination		*	5
23	Project volume	*		0
24	Diversity in culture	*		0
25	Adding additional providers personnel/ late into the project	*		0
26	Exceeding budget and project resources	*		0

Table2. Questionnaire table of the second person (project management and planning staff)

second person (management staff and project planning)				
Row	Risk factors	agree on	Against	Points(0 – 10)
1	Unrealistic user/customer goals		*	0
2	Undefined system requirements		*	0
3	Lack of personnel		*	0
4	New technologies	*		5
5	Lack of external components (bad interfaces)		*	0
6	Lack of planning or insufficient planning	*		4



7	Early identification of risks	*		6
8	Lack of participation and user/customer interaction	*		2
9	Lack of senior project management	*		1
10	Unrealistic estimate of the program	*		2
11	Incomplete, unclear, and ambiguous needs of the user/customer	*		6
12	Inexperience of the user/personnel	*		4
13	I need to gain the necessary skills of the provider/personnel.	*		3
14	Poor presentation of project status and information	*		4
15	Commitment to the user/customer	*		7
16	Changes to the project by the user/client	*		7
17	Unstable systemic (or organizational) environment	*		2
18	Failure to properly engineer requirements	*		2
19	Customer emphasis on low price	*		7
20	Failure to perform the sub-set of mutual duties of the project staff	*		1
21	Technical complexity	*		1
22	Lack of development of project staff coordination	*		1
23	Project volume	*		9
24	Diversity in culture	*		7
25	Adding additional providers/personnel late into the project		*	0



26	Exceeding budget and project resources		*	0
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Table3. Questionnaire table of the third person (financial staff of the company)

The third person (is the financial staff of the company)				
Row	Risk factors	agree on	Against	Points(0 – 10)
1	Unrealistic user/customer goals		*	0
2	Undefined system requirements	*		10
3	Lack of personnel		*	0
4	New technologies	*		8
5	Lack of external components (bad interfaces)	*		7
6	Lack of planning or insufficient planning	*		8
7	Early identification of risks	*		8
8	Lack of participation and user/customer interaction		*	0
9	Lack of senior project management		*	0
10	Unrealistic estimate of the program	*		6
11	Incomplete, unclear, and ambiguous needs of the user/customer		*	0
12	Inexperience of the user/personnel		*	0
13	I need to gain the necessary skills of the provider/personnel.		*	0



14	Poor presentation of project status and information	*		3
15	Commitment to the user/customer		*	0
16	Changes to the project by the user/client		*	0
17	Unstable systemic (or organizational) environment		*	0
18	Failure to properly engineer requirements	*		6
19	Customer emphasis on low price		*	0
20	Failure to perform the sub-set of mutual duties of the project staff		*	0
21	Technical complexity		*	0
22	Lack of development of project staff coordination		*	0
23	Project volume		*	0
24	Diversity in culture		*	0
25	Adding additional providers/personnel late into the project		*	0
26	Exceeding budget and project resources		*	0

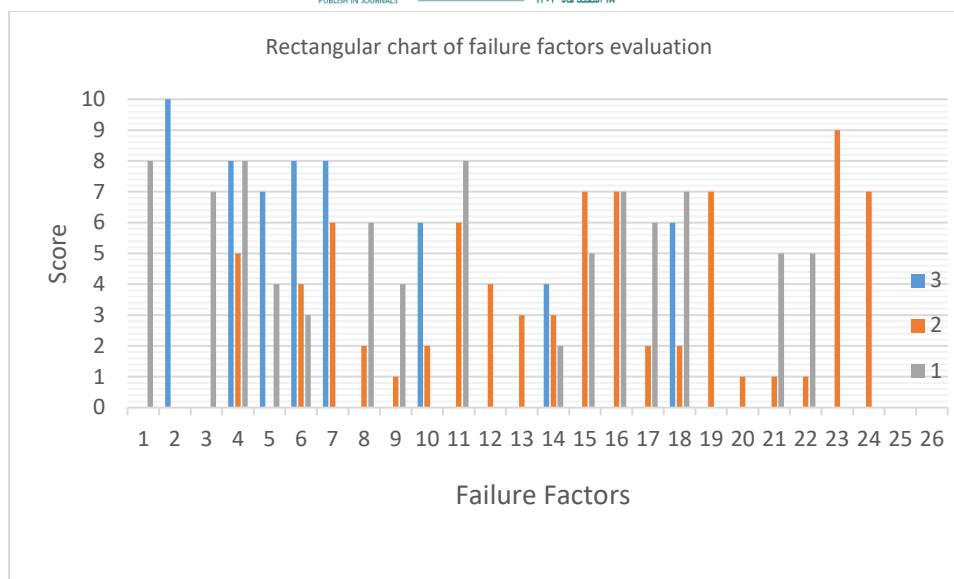


Fig 1: Rectangular diagram of evaluation of failure factors (results of 3cases together)

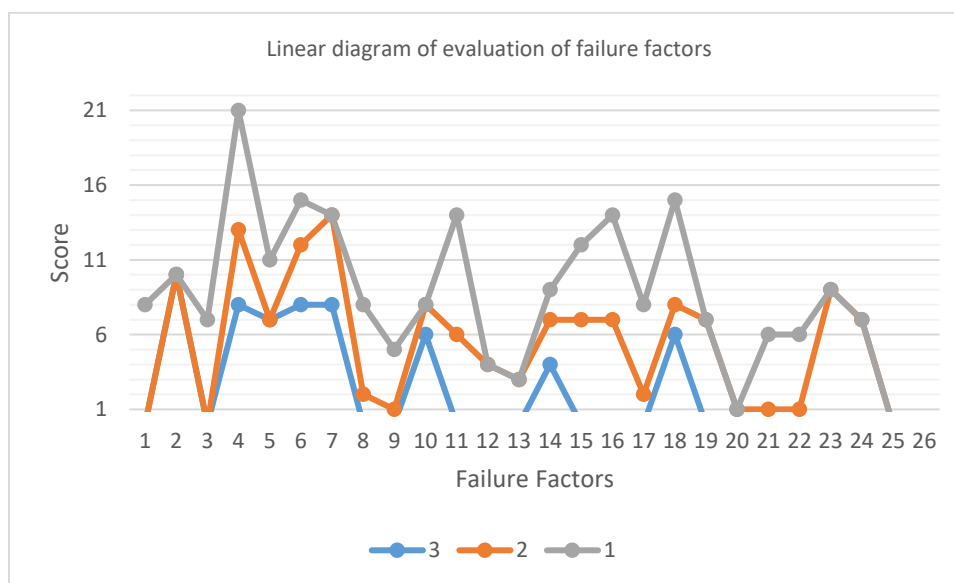


Fig 2: Linear graph of evaluation of failure factors (results of 3 cases together)

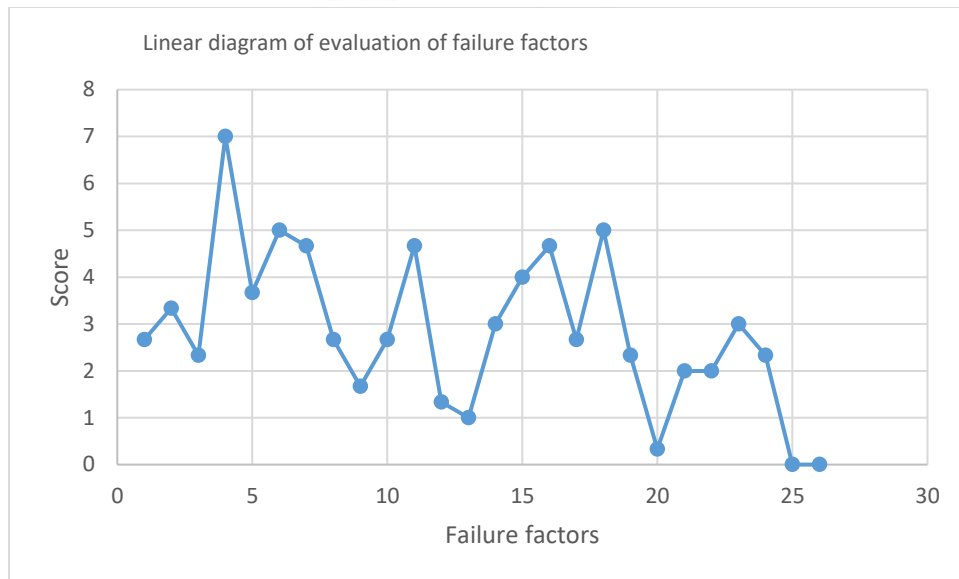


Fig3: Rectangular diagram of evaluation of failure factors (average results of 3 cases together)

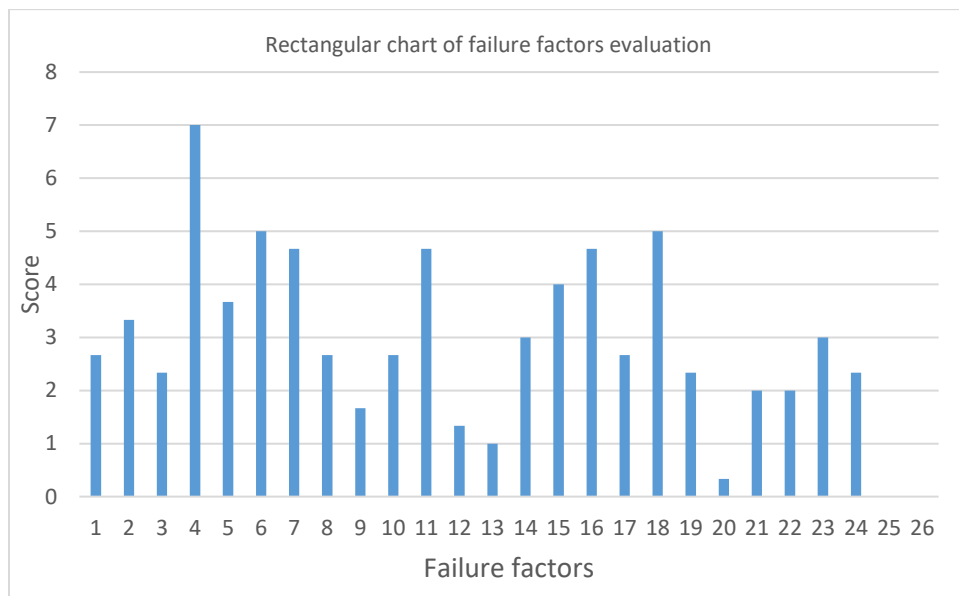


Fig 4: Linear graph of evaluation of failure factors (average results of 3 cases together)

Based on the results gathered, it can be stated that of all the elements listed in the following order: the addition of new technologies; absence or inadequate planning; early risk identification; incomplete, unclear, and ambiguous client needs; and changes. The customer's commitment to the project is one of the primary causes of the software project's failure, and the project staff's inability to complete their shared tasks is one of the low-risk factors in this case because it is implemented correctly in this set.

Discuss:

Regarding the significance of risk management and early detection, the results are consistent with the findings of references [2] and [11], according to the results obtained to generalize these results with the results of prior studies. The outcome of inadequate or nonexistent planning aligns with the sources [3] and [10]. The new technologies factor is based on references [9] and [10]. Authorities are responsible for the customer's vague, conflicting, and incomplete needs [10] and [13]. Agent of the user's or client's project modifications. It aligns with the sources [9] and [10]. Respectfully, the user/customer commitment element never changes [10].

Conclusion:

This article presents the results of a recent experimental study on software projects and the causes of their failure. The investigation findings were analyzed utilizing charts in this study, which used a questionnaire and an analysis of most outcomes aligned with earlier research. The likelihood of failure in most current software projects can be decreased with similar activities, proper risk management and early identification, accurate and sufficient planning, adaptability to new technologies, and exact identification and acknowledgment of client needs.

Critical failure factors for other organizations and related projects can be checked and evaluated, and this questionnaire can be used in any other institution or organization that works in this field (with minor modifications based on the organization's conditions and the software project under review). Therefore, further research in this area can yield more significant results while considering other variables and making minor adjustments to the work already presented.

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