

Managing Request for Change in IT Projects: A challenge from the Contractors Perspective¹

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ABSTRACT

Projects have existed for centuries and even now are used by companies to develop new products. In the Information and Technology sector, contracts between an owner who wants a project realized and a contractor who will do the work are often used. Seeing that a project is realized in an environment that may change from different factors, managing request for changes in a contract are quite the challenge for the contractor who needs to realize a work required by the owner. This document aims to identify and analyze the reasons why request for change in IT contracts is a challenge from the contractor's perspectives, by analyzing scientific papers and interviews about change management in the IT contracts sector with the Use of a Multi-Attribute Decision making. We can expect to see emerge from this paper that the main reasons why conflict may arise between a contractor and an owner is the quality of information of a request for change. It will be developed later that this quality of information is, as well what is the most challenging aspect of a request for change for the contractor. This paper may help the Owner understand the position they put their contractors in when requesting changes.

Key Words: Request for change, contractors, change, challenge, conflict, disputes, Information technology, projects

INTRODUCTION

Since the late twentieth century, the world is experiencing impressive technological advances that change the habits of citizens.

The environment in which people are evolving is changing through the development of new technologies. These changes in the way people interact with each other, work, or live their lives are becoming more and more important, as the technologies continue to evolve and improve.

These continuous influxes of new technologies are developed by companies which, in order to keep a competitive advantage on the market, have to become more and more innovative.

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In order to bring these technologies to life, numerous projects in the Information and Technology (IT) sector are undertaken by these companies, be it to develop new product or to change the way they are working.

In a perfect world, these projects would deliver successful products and create a lot of benefits without issues in the process of doing the project, however the market, especially in the IT sector, is full of competition and therefore constantly evolving, which make realizing projects without managing changes to the environment next to impossible.

In addition to these external factors, when a contract is signed between a company owner and a contractor to realize a project, changes to the scope of the project may happen from the involved stakeholders under the form of request for change.

1. Problem definition

Managing these requests is the role of the contractor. Changes become, then, a true challenge for the contractor to realize what he is hired for, without going too far from his original scope. However, in contract management it is often the owner who has the last word about these requests for change which can lead to conflicts about what the contractors is really supposed to do.

This document aims at, first defining what a request for change is, and then to identify and analyze, from the contractor's perspective, how managing request for change can be a challenge.

Considering this, we will be able to answer the question:

- Is managing request for change a challenge for the contractor?
- What are the main challenges of a request for change?
- How managing request for change can be a source of conflict between the contractor and the owner?

METHODOLOGY

To find evidence that managing request for change is a challenge from the contractor's perspective, it is necessary to identify first what a request for change is. At this end, a research on scientific papers particularly linked to the topic change management in IT contracts created up to 10 from 15 years ago to now published on the subject will be realized to identify the definitions utilized by authors and then choose the one that is the most relevant to the IT sector. These scientific papers will be researched using different databases of scientific paper such as Google Scholar or Scholarvox.

The information gathered from official and scientific documents are valid enough to rely on as a solid reference for this paper.

2. *Development of the Alternatives:*

After understanding what a request for change is, the paper will look at how to manage it in an IT project environment. From this, it will be possible to define 2 alternatives/hypotheses about the management of requests for change in an IT project:

- ***Managing request for change is a challenge for the contractor***
- ***Managing request for change is not a challenge for the contractor***
- ***Quality of the information is the most challenging in a request for change***

3. *Development of the outcomes and cash flows for each alternative:*

The first alternative ***Managing request for change is a challenge for the contractor*** look at the aspect that the request for change adds input, work or serious modifications to the work to be done by the contractor to satisfy the requirements of the Owner. It disturbs the way the work is delivered and can bring forth many changes that are needed to be implemented in a changing scope and a lot of question must be asked to define how these request for change take place in the scope:

- Does this change add or modify the business requirements?
- Does this change need more funds?
- Will the timescale change?
- Does it make sense to make a change now?
- Does it need more resources?
- Does it add complexity to the project?

These are all questions that the contractor must asked himself before doing the job and it can lead to challenges along the way, especially to get all the information needed to complete the changed job which then, could lead to conflicts with the owner who usually wants changes but doesn't always act to help the contractor manage these.

The second alternative, ***Managing request for change is not a challenge for the contractor***, look at the point of view that, the request for change doesn't necessary change the way the contractor is doing his job or doesn't add exceptionally complex challenges to the delivery of the work. It can especially be true if the contractor is working with a specific method of Project management such as Agile Project Management which considers changes as part of its method of work and an iterative way of working in order to manage these changes without issues. The request for change is then almost a normal action and doesn't modify the complexity of the project.

The third and final alternative, ***Quality of the information is the most challenging criteria in a request for change***, look at the different attributes of a request for change as well as the challenges encountered by the contractor in managing this request for change. If a request for change is badly done, it will increase the workload of the contractor, it can increase the budget

to do exactly what the owner expects, take more time to the contractor to understand the request or even create conflicts between the contractor and the owner.

4. Selection of a criteria

First, in order to decide which alternative between the first one the second one is true, a table will be created to analyze which of the interviews deem each alternative as true or false:

		Alternatives	
		Alternative 1: Managing request for change is a challenge for the contractor	Alternative 2: Managing request for change is not a challenge for the contractor
Interviews	Interview 1 : Finals Challenge		
	Interview 2: Change Management Process		
	Interview 3 : Resistance to change (Pieters Cannel)		
	Interview 4: Change Management At Safaricom		
	Interview 5 : Own Experience at ENGIE		

We will then be able to identify if the third alternative is true in these scientific papers and interviews with the use of a few criteria such as:

- the **use of standards** of Project management, (Is this project realized using a specific method of project management?)
- the **complexity** of the project (Does the complexity of the overall project will increase?)
- the **time** needed to deliver the changed work, (Does the time needed to deliver the work will increase?)
- the **scope** of project (Does the impact of the request for change influence the scope vastly?)
- the **budget** to deliver the change (Does the budget needed to deliver the work will increase?)
- the **resources**, (Does the resources needed to deliver the work will increase and will it be harder to manage these resources (resistance to change)?)
- The **quality of information** (Does the request for change has enough information to start the work?)

The minimum acceptable criteria would be the **impact** of the criteria: does the impact of each criteria make the request for change a challenge for the contractor?

This paper, by analyzing several scientific papers and 5 interviews of Project Managers will be able to qualify these criteria through a Multi Attribute Decision Making (MADM) analysis by using the **NON-COMPENSATORY MODEL of Disjunctive Reasoning**. With an Ordinal scale that will respectively amount from 0 to 1. It is the most appropriate Ratio Scale because this paper will analyze the rank of the criteria.

		Interviews							Total:	Rank:
		Use of standards of project management	Complexity of the project	Time	Scope	Budget	Resources	Quality of Information		
Criteria	Use of standards of project management									
	Complexity of the project									
	Time									
	Scope									
	Budget									
	Resources									
	Quality of Information									
Conflict with the owner										

FINDINGS

5. Analysis and comparison of the alternatives:

Several authors analyzed and determined a definition of Request for Change, but this paper will base its analysis on the definition “a change request represents a documented request for a change and management of the activities in a change process which is one of a core activity in a software process”² due to its implementation of the IT aspect.

By analyzing 5 interviews of IT changes within a company, it was possible to analyze, that, out of these 5 companies, all of them experienced at the minimum 1 Request for change. By creating the following table, it was possible to show how requests for change impacted these companies:

² Nordin, A. R. M., & Suhailan, S. (2009).

		Interviews				
		Interview 1 : Finals Challenge	Interview 2: Change Management Process	Interview 3 : Resistance to change (Pieters Cannel)	Interview 4: Change Management At Safaricom	Interview 5 : Own Experience at ENGIE
	Use of standards of project management	The company had anticipated changes through strategic planning. It had developed a four year strategic plan which would be adjusted from time to time as the need to do so arose.	Structures, policies and procedures were not in place as they should be	The company had anticipated changes through strategic planning, which would be adjusted from time to time as the need to do so arose.	The company was leading a good change management. The structure accommodate the change, that good leadership is essential since the C.E.O is the driver for the change, managers should be able to communicate the change to their respective employees and offer guidance and direction in the change process	They use an Agile Method of Project Management
	Complexity of the project	The nature of the changes requested didn't impact the complexity of the project	The project became more complex as the request for change was something that changed a part of the business case.	The nature of the changes requested didn't impact the complexity of the project	The project was always interrupted with new request for changes coming from different stakeholders	The requested changes didn't impact the complexity of the project as they were in line with the objectives of the business case
	Time	There was no time problem here as the changes to the project were handled with care and were integrated quickly into the process.	There needed more time to input the request for change into operational mostly because the team didn't own the right skills.	The work to be done was integrated into account by the owner who extended the deadline	There needed more time to input the request for change into operational mostly because the team didn't own the right skills.	By using the Agile method, a deadline cannot be passed.
	Scope	The changes requested were related to the features of the new information system. 2 new features were requested and added to the final product	The changes requested were related to the impementation of a whole new part to the project wich made it change the scope of the project	The changes requested were related to the features of the new information system. 4 new features were requested and added to the final product	The changes requested were related to the impementation of a whole new part to the project wich made it change the scope of the project	Some changes requested were related to the impementation of a whole new part to the project wich made it change the scope of the project

Criteria	Budget	Upgrading the information system of the SACCO required a huge capital outlay which was not readily available forcing the SACCO to enter into some credit arrangement with the system developers to have them settle the payment in installments.	There was a necessity for more budget than what was prepared for the original project.	The capital budgeted for changes was sufficient to take into account these changes	There was an inadequacy of funds to manage the requested change despite Safaricom Making huge profits.	There was a necessity for more budget than what was prepared for the original project.
	Resources	Resource inadequacy where the resources available were not enough to meet the high costs involved in implementing the change process	Highly motivated individuals but not a team. Lack of skills in leadership and change management	It would add more administrative workload for the technicians	resistance to change was very evident especially to the specific employees in situations where the change affects them or their departments. Staff not fully appreciating the strategy on requested change management.	The resources were efficient as collaborators with the rights skills were hired depending on the request for change.
	Quality of Information	Good quality of information	Targets were not clear for the management team and the staff.	Very good quality of information and details	Targets were not clear for the management team and the staff.	Some targets were not clear for the management team and the staff. Extra research had to be done by the team and the contractor to have a better understanding of the changes requested.
	Conflict with the owner	There was no conflict, as the owner communicated well on what he requested and the added change was actually coherent to the objectif of the project	The contractor didn't want to put this new part as it changed the original scope too much, but the owner pressured the contractor with deadlines and budget without listening.	The number of time were the owner tried to put a request for change was very confusing for the contractor as some of them didn't even concerned the project. Fortunately the owner often listened to the contractor when the changes requested were too much out of scope.	Ownership of the company, with the majority shareholder being Vodafone posed a challenge in managing change since Vodafone influenced the change management process employed or to be employed to the best of their interests. Thus the contractor had difficulties managing the request for changes as it came from everywhere.	The number of time were the owner tried to put a request for change was very confusing for the contractor as some of them didn't even concerned the project. Sometimes the owner listened and cancelled the request for change and other times he didn't.

Once this analysis of the different interviews was done it was possible to create a table to compare the 2 first alternatives. Which of these interviews recognize each alternative as true?

- **Managing request for change is a challenge for the contractor**
- **Managing request for change is not a challenge for the contractor**

		Alternatives	
		Alternative 1: Managing request for change is a challenge for the contractor	Alternative 2: Managing request for change is not a challenge for the contractor
Interviews	Interview 1 : Finals Challenge	True	False
	Interview 2: Change Management Process	True	False
	Interview 3 : Resistance to change (Pieters Cannel)	True	False
	Interview 4: Change Management At Safaricom	True	False
	Interview 5 : Own Experience at ENGIE	True	False

Table 1: Comparison of alternatives to interviews

Following this comparison between the 2 first alternatives by putting it to perspective with the 5 different interviews analyzed it was possible to identify which one of the 2 was true. Once this first comparison to define if a request for change is a challenge was done, an analysis of the third and final alternative **Quality of the information is the most challenging attribute in a request for change** was possible to identify which attribute has more impact on the others in the request for change:

		Interviews							Total:	Rank:
		Use of standards of project management	Complexity of the project	Time	Scope	Budget	Resources	Quality of Information		
Criteria	Use of standards of project management	0	0	0	0	0	0	0	0	0
	Complexity of the project	1	0	0	0	0	0	0	1	1
	Time	1	1	1	1	1	1	1	6	4
	Scope	1	1	1	1	1	1	0	5	3
	Budget	1	1	1	0	1	1	0	4	2
	Resources	1	0	0	0	0	1	0	1	1
	Quality of Information	1	1	1	1	1	1	1	7	5
	Conflict with the owner	1	1	1	1	1	1	1	7	5

Table 2: Comparison of the importance of the impact of the attributes

To have a better understanding of this comparison, it was also necessary to study the correlation between different criteria and their impact on each other:

- **Is there a significant correlation between the Quality of the information and the other criteria?**

By analyzing the comparison, the quality of information has, in fact the most impact on the other criteria: it impacts **Time**, as the time needed to understand the request can be elongated or shortened due to the quality of the information given inside the request. It impacts also the **budget** as the product requested can be badly done due to bad quality of information. It also impacts the **conflict with the owner**, especially when the quality information is bad, then the contractor receive instruction he doesn't understand or see as relevant in the project which can create conflict. Thus, there is a **positive correlation** between the Quality of the information and the other criteria.

- **Is there a significant correlation between the Use of Standard of Project Management and the other criteria?**

In fact, the use of Standard of Project Management doesn't especially have an impact on the other criteria in these interviews. It is necessary to have some methods of project management, but it doesn't guarantee less impact on the request for change for the contractor. Thus, there is a **negative correlation** between the use of Standard of Project Management and the other criteria.

From the table 2, it is possible to create a ranking of the different attributes in comparison to their level of challenge and impact on a request for change.

Attributes	Rank
Quality of Information	5
Conflict with the owner	
Time	4
Scope	3
Budget	2
Complexity	1
Resources	
Use of standard of Project management	0

Table 3: Ranking of the challenging aspect of the attributes

6. Selection of the preferred alternative

As seen in Table 1: Comparison of alternatives to the interviews, the interviews **accepted as true** the alternative 1 **Managing request for change is a challenge for the contractor**. It can be proven by the fact that a request for change add simply more work to do for the contractor.

The second alternative **Managing request for change is a challenge for the contractor** is then **refused** seeing as, in the analysis of the readings and the comparison, each time a request for change happened, it was considered with a challenging view by the contractor despite the use of standards of Project management.

For the third and final alternative, as seen in Table 2: Comparison of the importance of the impact of the attributes as well as the Table 3: Ranking of the challenging aspect of the attributes, it was possible to cross the different attributes to one another and to see which dominate the other in term of impact. From this comparison it is possible to accept the third alternative **Quality of the information is the most challenging in a request for change as true**. In fact, this attribute is deemed as the most important one in a request for change and has an impact on each one of the other attributes.

7. Performance Monitoring and post-evaluation of results

As this paper showed, we can now say that **Managing Request for change is a challenge from the contractor's perspective**. The most important challenge from him to face has been found to be the **quality of the information** received in a Request for change, coming from the Owner. Depending on its quality of information, the request for change can increase or decrease significantly the workload of the contractor and avoid or start conflict, especially conflicts due to the misunderstanding of the request.

To make it less challenging for the contractor, the first item to use in a company to manage a request for change is a formal Template. In companies that do not use agreed templates for a request for change, the work will cost more, will take more time and might not be what is expected.

Using the templates provided by competent companies is the best way to make sure the contractor understands everything he needs to work.

Seeing that the **quality** and then the **relevance** of the Information of a request for change is necessary for both parties to work in cohesion. This is what needs to be fully monitored in a request for change.

By observing that a high number of request for change are either badly written or doesn't have enough information, the most relevant recommendation that could be put in place is: **a minimum number of words should be mandatory in the "Description of the proposed change" and "Reason for the change" part of a request for change**. If the number of characters isn't to the minimum required, the document cannot be printed and sent to the contractor. This will help the owner to have a better understanding of what he requests and a better clarification for the contractor to do the changes. Inserting a minimum number of characters on the template is very easy and wouldn't cost anything to the company.

To monitor this recommendation:

First: it is necessary to calculate the number of request for change emitted for a project before this recommendation. And then compare it to the number of request for change emitted for a project after this recommendation. It will help to see if the owner had a better reflection on the relevance of the change in comparison to the project. More information will help the owner to have a better understanding of the changes brought by the request and he may re-think twice before sending it.

The second way to monitor this recommendation would be to the budget and the time used by the contractor to respond to the request for change before and after the recommendation. There should be less budget and time spend by the contractor to try to meet the request for change. On the contrary the contractor should be able to execute the request for change faster.

Finally, the last way to monitor this recommendation is to compare how many claims from the contractor were linked to the request for change before and after the implementation of the recommendation.

CONCLUSIONS

Originally, this paper was designed to research, analyze and answer the following questions:

- **Is managing request for change a challenge for the contractor?**

Answer based on the research and comparison:

By analyzing these interviews in correlation with the different criteria of challenges found in the readings necessary to this analysis, it became evident that a Request for change IS a challenge for the contractor as stated in the first Alternative: ***Managing request for change is a challenge for the contractor***. It can be proven by the fact that a request for change adds simply more work to do for the contractor.

- **What are the main challenges of a request for change?**

Answer based on the research and comparison:

The first challenge encountered by the contractor is that the added work obliges him to redo most of his plan, especially concerning the **time** and the **scope** of the work he is doing. In the interviews, it is possible to see that the **Scope** was changed each time to match for the request for change, not necessarily adding complexity to the work but changing the work to be done and that the team was preparing to do from the start.

A second challenge that arise most of the time and that can be seen in the comparison of the interview is the **Resources**, and mostly the human resources needed by a request for change. In these interviews the contractor and his team didn't have all the skills needed to implement the changes requested by the owner. Not only did it delay the work (finding the right person took time) but it also increased sometimes the budget planned for the change management.

Finally, a third challenge can be deducted from the comparison of these interviews: **Quality of information**. It appears that this criterion is the main challenge for the contractor. In fact, the quality of information impacts all the other criteria and can even lead to conflicts between the contractor and the owner as bad quality of information increase the workload of the contractor, especially to understand clearly what is needed of him. When there is a bad quality of information related to the request for change, it can lead to misunderstandings, delays, and more budget spend...

- **How managing request for change can be a source of conflict between the contractor and the owner?**

As seen earlier in this paper, managing a request for change is a challenge, but the importance of this challenge greatly depends on how the request for change originated from the owner. By analyzing scientific papers and interview, it has been identified that the third challenge: **Quality of information** helps understand how the owner has an impact on the work done by the contractor, and it is, then possible to imagine how different kind of Owner management can result in conflict. Two major sources of conflict linked to a request for change have emerged from the readings:

- If the quality of the information is bad, then the contractor might not exactly do what the owner intended to have, creating a conflict between the intentions of both parties.
- A high number of requests for change is also a source of conflict for the contractor that had an original work to do and prepared for it and then had to change it over and over because of a poor clearly stated boundary.

These conflicts tend to aggravate the relationship between the contractor and company and create delays, more budget spent by both sides, and misunderstanding. The project can be sometimes at risk of being closed.

As a follow up to this paper, an analysis of a request for change template would be interesting in order to see how the information is relevant to this challenge. It would be a good opportunity to propose then a more detailed template to be filled by the Owner.

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