

Which organizational structure will facilitate the success of your project? ^{1,2}

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ABSTRACT

Doing business has existed almost forever, and still, the human being cannot find one and only one way to manage people because people are too, so the management also needs complexity to manage the people correctly and efficiently. The lot different structures which exist prove that there is not only one way to structure a company; it is way more difficult than this and that is the reason why many authors write about how to structure the companies, about the advantages and disadvantages of the different structures.

This paper presents an extensive literature analysis to find the best alternatives and solutions to support managers who try to find out what should be their structure to get successful projects, successful company, and successful teams.

Keywords: organizational structure, management, project, team, skills, conflicts, The efficiency.

INTRODUCTION³

Famous authors like Taylor, Fayol, and Sloan investigated to find out the most efficient structure for the company.

Different structures exist in companies with more or less common structures. Among them, functional (Divide the tasks with managers which are expert in their subjects), divisional (company divided into smaller companies called divisions responsible for its division), matrix, team, and finally network structure.

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³ Making Matrix Organizations Actually Work. (2016, March 1). Retrieved from <https://hbr.org/2016/03/making-matrix-organizations-actually-work>

All those structures are different and will define what the head of the company wants to do with the company. It is essential to divide task and jobs among the company to make it work out.

The structure will determine the future success or failure of the company, and that is why this choice is fundamental.

The basic definition of a structure is “A system used to define a hierarchy within an organization. It identifies each job, its function and where it reports to within the organization.”⁴ This structure will indeed allow the management to develop into the company according to the hierarchy.

Management is a set of tools to make people invest themselves in projects for the company with different teams, different rewards and make them use their maximum potential to deal with this project. More a team is larger and more the management issue will be about managing people than smaller where managers need to be aware with the technical issues.⁵

The Cross-functional structure is an organizational structure in which we find matrix management and cross-functional teams composed by members from different departments of the company which are put together for a specific purpose or specific goals.

Matrix has to be carefully used by organizations. It has to be because there is a real business need for this organization to develop a cross-functional structure and a need for more coordination between the teams. They also wrote that it is essential for the teams to have reasons to collaborate.

Another condition for matrix success is to limit the size of the matrix (« 2 teams maximum and not too many different levels »).

Matrix advantage is that it is not needed to escalate issues to the top manager cause the matrix team is supposed to solve the daily issues independently from the rest of the company and efficiently. (Of course, sometimes, it would be needed to escalate in case of sensitive subjects or VIP customers ...).

Once the company built the matrices built, the manager needs to do his best to motivate the employee's lines putting them all with the same level of importance for the project role.

It is difficult to manage people in a cross-functional organization because the leader needs to have a bunch of quality to deal with a team in the cross-functional organization: empathy, conflict management, influence or also self-awareness.

⁴ 4 Types of Organizational Structures. (2018, February 22). Retrieved from <https://online.pointpark.edu/business/types-of-organizational-structures/>

⁵ GUILD OF PROJECT CONTROLS COMPENDIUM and REFERENCE (CaR) | Project Controls - planning, scheduling, cost management and forensic analysis (Planning Planet). (n.d.). Retrieved from <http://www.planningplanet.com/guild/gpccar/acquiring-manpower-for-the-project>

Consequently, the companies need to get the leaders who get all of those competencies. About this, there is one good news and a bad one: The bad one is that very few people have all of those or not enough. The good news is that the leaders can improve these competencies with practice and time

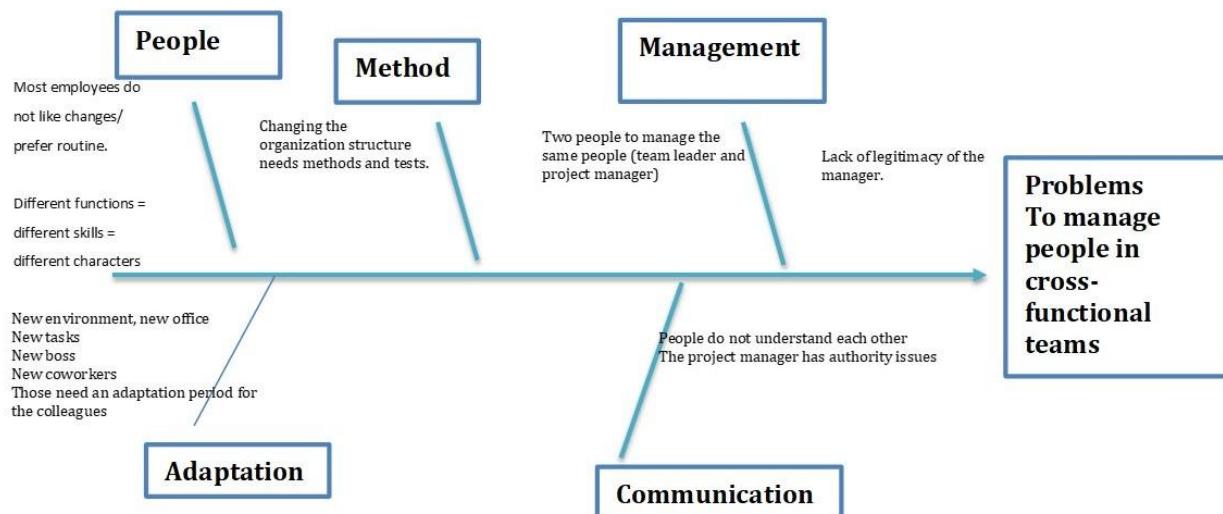


Diagram 1. Root Cause Analysis⁶

The importance of this research is to synthesize the solutions for the managers to help them understand how to manage those people who come from different areas.

In this paper, we will bring different organizational structures as solutions to help companies make better choices for the projects based on their actual situation.

Therefore, the following question will be the focus of this paper:

What is the most effective organizational structure for projects to be successful?

METHODOLOGY

Step 1. Problem identification

The main research problem in this paper is what is the best organizational structure for project success' and find the best solution according to the comparison of each alternative solution.

⁶ By the author

Step 2. Feasible Alternative solution^{7 8}:

According to the problems mentioned above, the following solutions can be obtained from references:

- Line organizational structure
- Functional organizational structure
- Line and staff organizational structure
- Divisional organizational structure
- Project organizational structure
- Matrix organizational structure
- Hybrid Organizational Structure:
- Free Form or Self-Managed Team:

Step 3. Development of Feasible Alternative

Line organizational structure

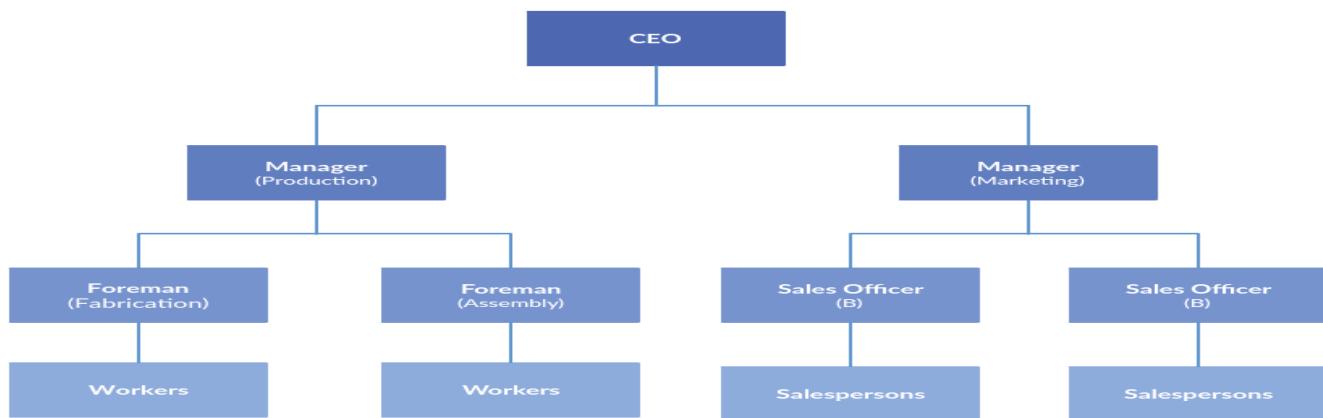


Figure 2. line organizational structure⁹

It is the purest form which is most exist in the small company. In the hierarchical structure, authority flows directly from the top level of management to the manager and subordinates, and there is a vertical management relationship between different levels. In this organizational relationship, the superior system clearly and uniformly orders the subordinate personnel to

⁷ types of Organizational Structures | Management Study HQ. (2016, December 17). Retrieved from <https://www.managementstudyhq.com/types-of-organizational-structures.html>.

⁸ Types of Organisational Structures: their Advantages and Disadvantages. (2014, January 3). Retrieved from <http://www.yourarticlerepository.com/organization/8-types-of-organisational-structures-their-advantages-and-disadvantages/22143>

⁹ Types of Organizational Charts | Organization Structure Types for Companies. (2018, September 19). Retrieved from <https://creately.com/blog/diagrams/types-of-organizational-charts/?fbclid=IwAR3NVSkB2QUc8tgQAEbA5fPCqomYDkgfB-YPkf9sfGhGcDIaaouN6R4q67U>

obey, including the production line personnel, and is only responsible for the person above. All line-departments are involved in achieving the company's goals.

Functional structure



Figure 3: functional organizational structure¹⁰

The functional structure provides a separate hierarchy for each part. Functional departmentalization is to integrate relevant professional skills and job functions into every department, so that every department has the participation of experts, thus improving work efficiency and quality. In this organizational structure, the functional manager can give instructions to the personnel of other departments and be executed.

Line and staff organizational structure

THE LINE AND STAFF STRUCTURE

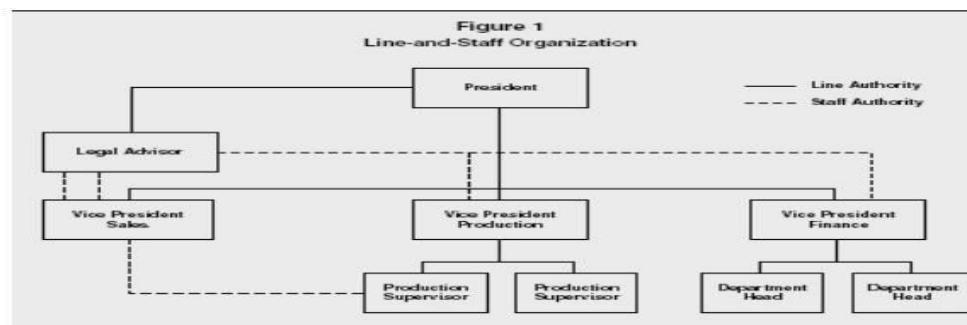


Figure 4: line and staff organizational structure¹¹

¹⁰ 8 Types of Organisational Structures: their Advantages and Disadvantages. (2014, January 3). Retrieved from <http://www.yourarticlerepository.com/organization/8-types-of-organisational-structures-their-advantages-and-disadvantages/22143>

¹¹ Organizational design!structure. (2014, December 12). Retrieved from

<https://www.slideshare.net/daniyal Khan357284/organizational-designstructure?fbclid=IwAR3iP2LfCoh5rd3Ykq3of8qWj9vR07xQ35DMSfu9TXpC7gRFo5h7KuIns64>

In this organizational structure, functional experts are added to the line department to provide more expert advice to line managers to strengthen scientific in analyzing the business issue and make the line more expert. Therefore, the line has more expert advantages, and this does not weaken the practical unity of command.

Divisional organizational structure



Figure 5: divisional organizational structure¹²

This organizational structure exists in large enterprises with multiple departments. It provides flexibility by establishing independent departments under large groups according to different requirements. These organizational structure units are formed according to the product, customer, geographical area and time. A high degree of autonomy allows each company to manage its operations and reports only to the parent company's top management.

Project organizational structure

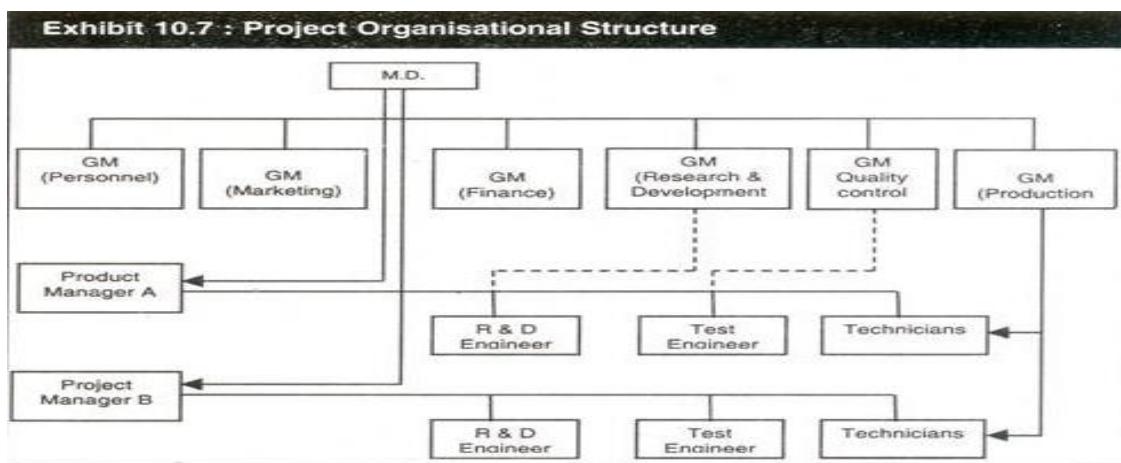


Figure 6: project organizational structure¹³

¹² Organizational Design. (n.d.). Retrieved from https://kiguse10.blogspot.com/2013/04/organizational-design.html?fbclid=IwAR2mSxvQd6hEv9Rhl2xV6NTj5xQrqB5hQakYo_b1-2skmEFzfQokJTkxEmU

¹³ 8 Types of Organisational Structures: their Advantages and Disadvantages. (2014, January 3). Retrieved from <http://www.yourarticlerepository.com/organization/8-types-of-organisational-structures-their-advantages-and-disadvantages/22143>

This is a temporary organization structure formed in a specific period for a specific project, is based on the project as the guidance, to mobilize the team of experts with different functions areas to implement the project results. The team members from the cross-functional departments will return to their respective teams or assigned to a new project, when the project has been completed.

Matrix organizational structure

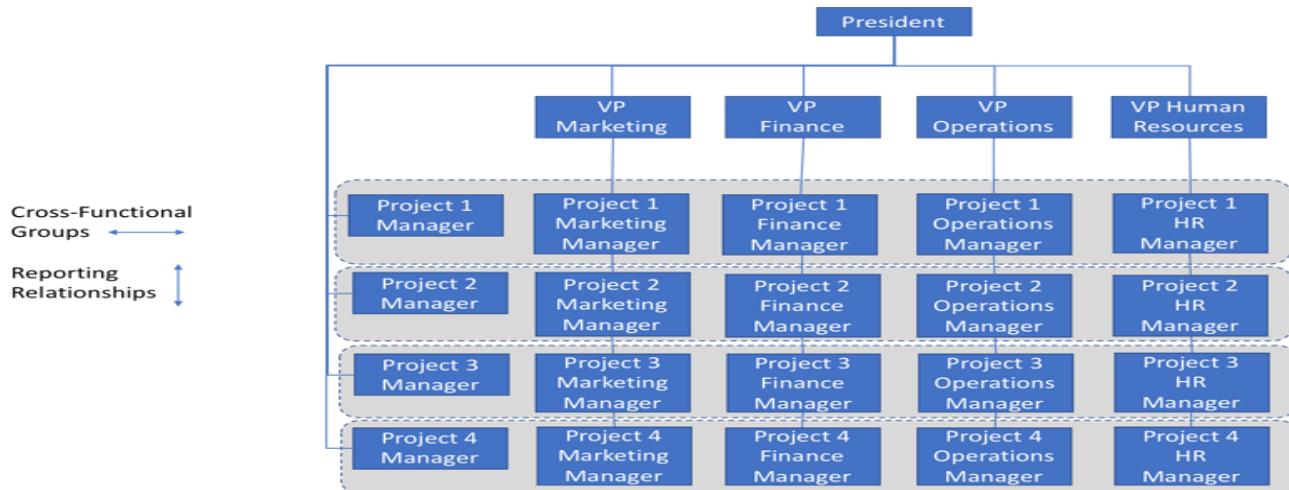


Figure 7: matrix organizational structure¹⁴

Unlike the project organizational structure, it is a permanent organizational structure which is combined with projects and functional structures and shared by the project manager and functional manager. Matrix organizational structure has mainly applied these companies that need to deal with the rapid change of the external environment. In this management model, the project manager and functional manager have the same authority which may lead to the conflict but have a high chance that the task will be accomplished quickly and effectively.

¹⁴ Vertical, Horizontal, and Matrixed Organizations (And Why You Should Care). (2018, April 21). Retrieved from <https://heroictechwriting.com/2014/09/21/vertical-horizontal-and-matrixed-organizations-and-why-you-should-care/?fbclid=IwAR1aTzx8eBn7F6HjbGqtRx2gQcbyMPvB-GSz7inikW6mdv58q-5HrrM080>

Hybrid Organizational structure

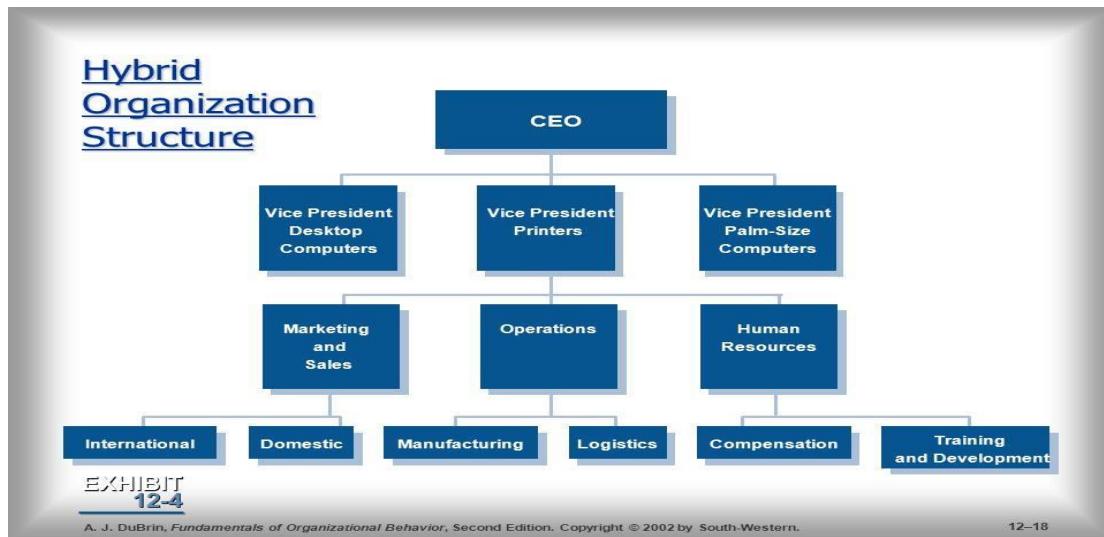


Figure 8: Hybrid organizational structure¹⁵

This organizational structure is mainly used for large international companies which under the considerable environmental uncertainty in an international environment, this structure can be achieved by a divisional structure or functional expertise or efficiency. Under this structure, the international companies will set the corporate office in origin and establish the international department in the different country.

Free Form or Self-Managed Team

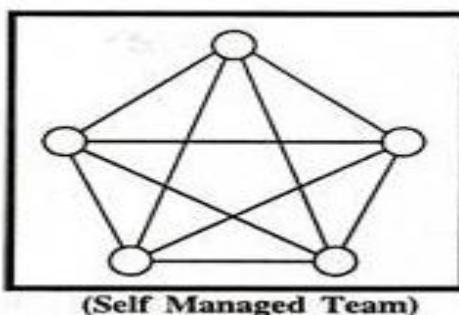


Figure 9: free form or self-managed team¹⁶

¹⁵ organization Structure and Design - ppt video online download. (2017, July 12). Retrieved from https://slideplayer.com/slide/5769477/?fbclid=IwAR1L4Xk4SzKPuHWVEzV4WOkYB9L7st4yj51eYbO12kkjPk_8GSrIJdmYzak

¹⁶Teams: Importance, Types and Other Details (With Diagram). (2015, August 18). Retrieved from http://www.yourarticlerepository.com/organization/team-development/teams-importance-types-and-other-details-with-diagram/63941?fbclid=IwAR2R2rrUD-uJhKaf42qXk4Zx3fA6yUTqz_ARp2Xo_p2QS_UYWb-_j4a-YM

Self-managed teams are more democratic than traditional organizational structures, where hierarchy is less obvious. Usually, a team leader will be appointed to complete the decision, and the decision will be made internally. Authority is not apparent in such a team. This mode allows the team more freedom.

Step 4.Attributes / Criterions

In order to analyze the previously selected solutions, the key attribute should be selected as a standard for evaluation analysis, and all alternative solutions should be accurately compared to choose the best solution.

Literature review^{17 18}

Through the study and research of the literature, discovered the main attributes based on the critical elements of the proper organizational structure. Therefore, selected the most relevant attributes as follows:

Work specialization: Work specialization refers to the division of employees into specific tasks related to their work experience or skills by enterprise leaders. With this way, it can not only avoid the delay because of the lack of work experiences but also avoid the performance of tasks below their abilities. Can better assign employees to corresponding work tasks.

Departmentalization: Departmentalization is the process of dividing the individual groups into departments based on activities such as functions, products, geography, and customers and so on. Each department is usually from by the workers with the same function, which can significantly improve the efficiency of work.

Chain of command: Command chain is a mode in which the higher level of the company conveys orders to the lower level. In order to avoid the low efficiency, the employees report to single superiors instead of to several managers, at the same time, the authority order the problem to the next level, this simplifies the company's operation mode and communication to achieve more efficient work.

The span of control: The span of control refers to the optimal number of people that the manager can supervise in a company. If the number of people is too large, the manager will not be able to detect problems in time. Thus, supervision efficiency will be reduced. Generally, 16 employees under the supervision of 4 managers are the best.

Centralization/decentralization: Centralization means that all of the company's budgets and decisions are submitted to the senior level in a centralized manner, decentralization allows all

¹⁷ elements of Organizational Structure. (2010, April 15). Retrieved from <https://bizfluent.com/list-6313135-elements-organizational-structure.html>.

¹⁸ Six Elements of Organizational Design. (2011, August 7). Retrieved from <https://smallbusiness.chron.com/six-elements-organizational-design-18039.html>

levels of management to have the opportunity to give opinions on essential goals of the company.

Formalization: Formalization refers to the procedures, guiding schemes and regulations adopted by the company's management, which also reflects the company's cultural appeal. For example, employees' daily commute time, rest time, work clothes and so on.

In order to find out the more dynamic attributes, the 'Perform a Pair-wise comparison of attributes' can be used in this research. It is an efficient model for the contrast of attributes.

	Departmentalization	Chain of command	Span of control	Centralization /decentralization	Work specialization	Formalization	Score	Rank
Departmentalization	x	1	1	1	0	1	4	2
Chain of command	0	x	1	1	0	1	3	3
Span of control	0	0	x	1	0	1	2	4
Centralization decentralization	0	0	0	x	0	1	1	5
Work specialization	1	1	1	1	x	1	5	1
Formalization	0	0	0	0	0	x	0	6

Table 10: Evaluation of the attributes ¹⁹

GREEN = HIGHER; RED = SAME; YELLOW = LOWER

Results: Work specialization > Departmentalization > Chain of command > Span of control > Centralization/Decentralization > Formalization

As we can see from table 10, the work specialization is the critical criteria to measure the alternative. Those elements will help us to measure the different alternatives to know which structure is better and will make the projects successful.

¹⁹ By the author

FINDINGS

Step 5. Analysis and comparison the alternatives

In order to find out the more effective organizational structure for projects to be successful, using a Multi-Attribute Decision making (MADA) method according to the rank of attributes find the differences between each solution from the analyzed in step 4.

Attributes	Feasible alternative							
	Line	Functional	Divisional	Project	Hybrid	Line and stuff	Matrix	Self-managed team
Work specialization	Yellow	Yellow					Green	Yellow
Departmentalization	Red	Green				Yellow	Red	Red
Chain of command	Red	Green	Yellow		Yellow	Yellow	Red	Red
Span of control	Green	Yellow	Yellow	Green	Red	Green	Yellow	Green
Formalization	Yellow			Yellow	Yellow	Yellow	Green	Yellow
Centralization/ Decentralization	Red	Yellow	Yellow	Green	Red	Yellow	Green	Green

Table 11: MADA analysis of alternatives ²⁰

Green: good; Yellow: Moderate; Red: bad

The color codes that be used to fill the table as follow:

- the green code indicates the attributes have achieved in the alternatives.
- the yellow code indicates the attributes have achieved in the alternatives, but the performance is not good.
- the red code indicates the attributes have lousy performance in the alternatives

Now, start to analysis according to the attributes identified, which organization structure looks better to get the successful project. Qualitative analysis can be applied for this and will help us to find the best organizational structure for the project to be successful.

²⁰ By the author

We are going to assign the color code to each of our previous attributes to support the qualitative analysis. Therefore a relatively weighted technique can be applied here:

The table below shows the score corresponding to each attribute:

Attribute	Score
Better	1
Moderate	0.5
Worse	0

Table 12: Relative weighting rank²¹

	Line	Functional	Divisional	Project	Hybrid	Line and stuff	Matrix	Self-managed team
Work specialization	0.5	0.5	1	1	1	1	1	0.5
Departmentalization	0	1	1	1	1	0.5	0	0
Chain of command	0	1	0.5	1	0.5	0.5	0	0
Span of control	1	0.5	0.5	1	0	1	0.5	1
Formalization	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5
Centralization/ Decentralization	0	0.5	0.5	1	0	0.5	1	1
Total	2	4	4	5.5	3	4	3.5	3

Table 13: Quantitative analysis²²

As we can see from the previous quantitative analysis, in order to determine the best alternative, the Non-dimensional data technique will be used as follow:

²¹ By the author

²² By the author

Attributes	Step 1	Step2		line		Functional		Divisional		Project		Hybrid		Line and stuff		Matrix		Self-managed team		
	Relative rank	Normalized weighted (A)		(B)	(A) \times (B)	(C)	(A) \times (C)	(D)	(A) \times (D)	(E)	0.5	(F)	(A) \times (F)	(G)	(A) \times (G)	(H)	(A) \times (H)	(I)	(A) \times (I)	
Work specialization	1	1/21	=	0.05	0.5	0.025	0.5	0.025	1	0	1	0.05	1	0.05	1	0.05	0	0,05	0.5	0.025
Departmentalization	2	2/21	=	0.09	0	0	1	0.09	1	0	1	0.09	1	0.09	0.5	0.045	0	0	0	0
Chain of command	3	3/21	=	0.14	0	0	1	0.14	0.5	1	1	0.14	0.5	0.07	0.5	0.07	1	0	0	0
Span of control	4	4/21	=	0.19	1	0.19	0.5	0.095	0.5	0.5	1	0.19	0	0	1	0.19	0.5	0,095	1	0,19
Formalization	6	6/21	=	0.29	0.5	0.145	0.5	0.145	0.5	1	0.5	0.145	0.5	0.145	0.5	0.145	1	0,29	0.5	0,145
Centralization /decentralization	5	5/21	=	0.24	0	0	0.5	0.12	0.5	0.12	1	0.24	0	0	0.5	0.12	0.5	0,24	1	0,24
SUM	21		SUM	1	SUM	0.36	SUM	0.615	SUM	0.57	SUM	0.85	SUM	0.2245	SUM	0.62	SUM	0,675	SUM	0,6

Table 14: Non-dimensional data technique²³

Step 6. The best Alternatives and Recommendation

As we can see from the table 14: **line organizational structure** and **Hybrid organizational structure** have **the worst** performance so delete both, and also, the **divisional organizational structure** and **the self-managed team** are better than the previous two organizational structures but compare with others, still, have **low** performance so can be deleted. **Project organizational structure** has the **best** performance, However, in order to demonstrate the result, can use a ratio scale. It shows results clearly:

- Project organizational structure VS Matrix organizational structure:
0.85/0.675*100%=125.9%
- Project organizational structure VS line and stuff organizational structure:0.85/0.62*100%=137.1%
- Project organizational VS functional organizational structure:0.85/0.615*100%=138.2%
- Matrix organizational structure VS line and stuff organizational structure:0.675/0.62*100%=108.9%
- Matrix organizational structure VS functional structure:0.675/0.615*100%=109.8%

²³ By the author

Therefore, project organizational structure is 125.9% better than matrix organizational structure; 137.1% better than line and staff organizational structure; 138.2% better than functional organizational structure. It is the best organizational structure for the project to be successful.

After compared all the selected alternatives process and develop the feasibility with criteria, project organizational structure is the best one for successful project finally. Moreover, the matrix can be the second choice which is becoming a new model for companies.

Step 7. Performance monitoring and post-evaluation of results

As the paper analyzed, we determined with strong evidence that the project organizational structure is the best organizational structure for project success. Because of its efficiency and results, therefore, we can see the values of project organizational structure are:

- ❖ The work is highly specialized because the work is relatively independent and sophisticated, professional skills are necessary for completion.
- ❖ The division of labor is clear, the supervision dimension is optimal, and decentralization gives managers the power to manage their subordinates better. Also, the nature of the work will not be repeated. These are the key factors to complete a successful project.
- ❖ Highly complex product portfolio can be completed efficiently, through the cooperation of experts to develop creativity.

Thus, Project organization structure is often applied in project-oriented projects, such as the research and development of new products, the construction of Bridges and large infrastructure, factories, houses, residential areas, the establishment of shopping business circle and other fields.

However, project organizational structure also has a few defects need to pay attention:

Due to the overlapping of power relations, conflicts may occur between the department manager and the project manager on the exercise of power over the project team, and there may be risks of over-specialization in the process of project participation. After the completion of the project, the team members will be sent to other projects with high mobility, which also reduces the loyalty of employees to the parent functional department.

Therefore, in this organizational structure, full and active communication between team members plays a crucial role.

CONCLUSION / RECOMMENDATION

In this paper, I have discussed different structure organization, about the key elements of those structures and the way to put them together to accomplish a project or get some results. According to the structure the company is using, the company would have to use different managing style (management) to lead the employees to the success of the company. From both those statements, a question is essential for every people who want to run a company which is:

What is the most effective organizational structure for projects to be successful?

Therefore, this paper studies and analyzes this major problem and USES different methodologies to find the most effective organizational structure for successful projects.

Firstly, to define the relevant attributes which are critical factors for proper organizational structure. Then, each key factor is compared, and a relative ranking is given by "Perform a Pair-wise comparison of attributes" model.

Secondly, compared each feasible alternative based on the selected attributes by MADA analysis and give the color code for each alternative. After, according to the color code give the score with "relative weighting rank" for three different colors, then grand each selected alternative by using "quantitative analysis."

Finally, to use Non-dimensional data technique to calculate the final results and compares each score. Through comprehensive researches of paper, it is significant to find that Prevention resolution is the best solution in BOT project disputes.

Through the above methodologies of comprehensive analysis and research on the paper, we can find that the project organizational structure is the best for project success.

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