

Engineering Project Management

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Abstract: In this paper, Engineering project management process is discussed. two case studies of non-for-profit organizations that work for people with disabilities. These cases elucidate how the project management practices can solve the issues of immense human significance. Persons with disabilities face severe conditions regarding getting accessible educational environment and employment opportunities, which is more in the developing countries than the developed ones. It has been revealed that children with disabilities are less unlikely to pursue their educational journey after primary school completion. The organizations mentioned in this case should adopt a more robust project management tool, which is globally recognized among the non-for-profit and it is called Logical Framework Approach. Following the logical framework, approach ensures that the project manager has split the deliverables based on measurable indicators.

Keywords: Engineering, Management, Study, Project.

I. INTRODUCTION

Project Management is a systematic management of activities aimed towards achieving a unique goal under strict timelines. A management tool that emerged from the arena of civil engineering is now applied to almost every field. This research paper will evaluate how the project manager influences the working of a non-for-profit that works for people with disabilities. Numerous global organizations like USAID and DFID make it mandatory for the grantees to adopt the modern project management methodologies to achieve the social impact. Disability either physical, mental or any other type is considered as the curse in the developing societies where people are not aware of the therapeutics. They treat the physically challenged people like beggars and use abusive language with them. The petty behaviour of our society is due to the lack of awareness of persons with disabilities rights [1].

The project management can be an effective discipline to solve the issues of global concern like disability. It is considered an efficient tool because the process of its application initiates from the end goals. Numerous local and international NGOs are working towards eliminating the misconception that disability is a curse. It is a treatable condition and persons with disabilities can live an ordinary life in the society. Before discussing, that in detail, it eminent to highlight the main data of people with disabilities, exist all around the world. The study highlights not just the data but the challenges physically challenged people face due to lack of awareness, unacceptable societal attitudes, and non-accessible infrastructure issues (Tandon, 1995).

Project Management Process and Role of a Project Manager

The project management process involves the phases that include initiating, planning, executing, monitoring & controlling, and closing. The first stage of this process called initiating involves requirements necessary for determining the project scope. This process typically requires an adequate analysis of the business requirements and needs regarding measurable objectives.

This process also includes a review of the current operations followed by cost and benefits analysis. As the project affects the stakeholders directly; therefore, the analysis of stakeholder ensures the incorporation of needs and expectation in the process. After this step, a project charter is created that include the tasks, costs, schedules, and deliverables.

The second phase of the project management process is called Planning. This is the most vital part of the entire process, which sets the blueprint for the entire operations. The planning should be done considering the current capacity of the organization and the potential of the team. The performance target set below or above the capacity will demotivate the team working on the project. This process typically includes the development of a scope statement, selecting a group that plans the process, and identification of work breakdowns and deliverables. An organization formulating a project plan should dedicate more time to analyze the current position of the body and develop the plan accordingly. A plan should be comprehensive and must include a risk management plan. During the project management process, organizations face numerous challenges that become hurdles in the achievement of project goals; therefore, every possible risk should have a contingency action [2].

II. ENGINEER WITH DISABILITIES AND ROLE OF PROJECT MANAGER

This research paper has selected two case studies of non-for-profit organizations that work for people with disabilities. These cases elucidate how the project management practices can solve the issues of immense human significance. Persons with disabilities face severe conditions regarding getting accessible educational environment and employment opportunities, which is more in the developing countries than the developed ones. It has been revealed that children with disabilities are less unlikely to pursue their educational journey after primary school completion. It has been witnessed that irrespective of 1 billion persons with disabilities; there is still do not

have any reasonable millennium development goals for them. This negligence has been growing with every passing year, which is an alarming situation (Barnes, 2003). People with disabilities face negligence in attaining equitable access to the resources like employment, education, social and legal justice, healthcare that ultimately results in increasing poverty rate among them. However, efforts for providing people with disabilities equal rights and respect in the society, various physically challenged people's organizations are striving hard to take initiatives and promoting a sense of responsibility among the society members. The DPOs (physically challenged people organizations) and project managers who are working days and night for the above-mentioned cause are somehow able to influence the national government policies, not just that, but also affecting the multilateral and respective institutions specifically in Tanzania. The project managers of community-based organizations, i.e., DPOs are striving hard towards increasing lobbying and advocacy activities. However, due to lack of awareness and other domestic issues, the government of developing countries are not emphasizing on the under-privilege people figure 1. Lack of provision of resources restricts project managers to restrain their advocacy activities in the society [3]. In Tanzania, the key issues, which physically challenged people are facing, are directly linked with discrimination and chronic poverty. Due to the reason mentioned above, persons with disabilities unable to attain a proper education, employability, income-earning opportunities, and adequate medical care (Kabue, 2011).

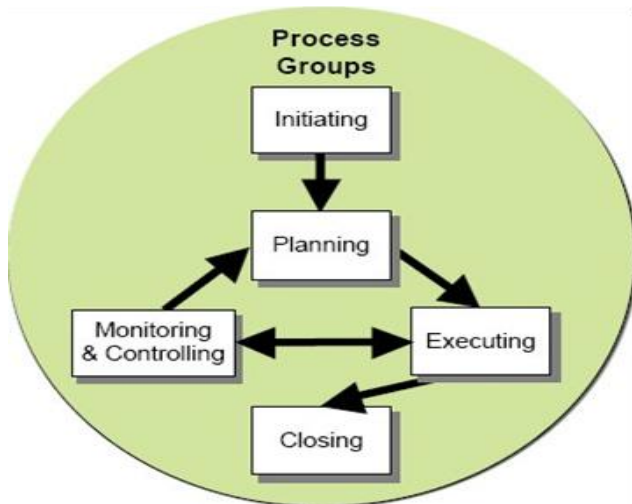


Figure 1: Engineering Project Management Process

The first case is about the application of project management an organization that works to change the mindset of people about disability. This project manager of this organization uses the convention method of project management highlighted in above in this research. The real-life event had been witnessed by one of the project managers of an NGO, who is working for the people with disabilities in Pakistan. The story was shared in various sessions, seminars, and workshops by the project manager at national and international levels. He described the negative attitude of society with physically challenged people. He told that one evening he had to go to the

famous food street of Pakistan, where his disabled team member had to share their success stories with the people. Due to some reason, the project manager could not reach in time, whereas, the disabled team member reached on time and tried to get enter into the venue.

The worst he faced was sympathetic and abhor attitude of the people towards him, he was on his tricycle, which beggars and poor, disabled people often use in Pakistan. He asked the guards to provide him the wheelchair so that he could have entered into the venue. The security guards thought him as a beggar and told him that they did not have any wheelchairs available. The team member called his project manager and asked him to bring a wheelchair along with him. After around an hour, project manager reached to the venue-carrying wheelchair with him. When they entered into the place, they saw around 12 wheelchairs were lying in space at the entrance. That was one of the examples of the inhuman and insensitive attitude of society towards physically challenged persons.

III. POST-SENSITIZATION SESSION

That eye-opening incident actuated project manager to conduct sensitization and awareness sessions at a fast pace in different schools, organizations, and other institutions and contribute their part in making people more sensible and responsible towards physically challenged people.

After eminence months' hardships, the team started to notice the changing attitudes of the society towards the disabled community. The project manager revealed that, after conducting sensitization sessions in different institutions of the country, he has witnessed a positive change in the attitudes towards people with disabilities. He further stated that the community members have become more sensitive towards the disadvantaged population. Society has started to believe that the disabled community is not apart from them, but they are a part of them.

The awareness sessions have made people realized that by the provision of necessities to the disabled community, they could also contribute towards the economic development of the country. This approach is slowly and gradually becoming common among the developing countries societies, however, people are socially accepting the physically challenged people which itself a positive sign for any country's economic and social development. The rough estimate depicted that more than 50 physically challenged children have been enrolled in the primary schools after the sensitization sessions conducted by the Pakistani NGO. That figure itself illustrates an active switch of the society towards conventional or negative thoughts towards persons with disabilities [4].

The NGO is working hard towards creating employability among disabled young and adults. For that, project manager along with the team has been conducting different sessions in the organizations. Those sessions actuate employers to hire the disabled people in various positions and make accessible infrastructure. Physically challenged people mobility issue was another matter that was addressed by them through various sensitization sessions.

Through those sessions, NGO discussed the importance of mobility for the disabled person. They put their efforts in encouraging the hand-controlled transport for the physically disabled persons. The more persons with disabilities are mobile, the more they can explore the options. Positive outcomes have been attained by the efforts mentioned above; around 30% of disabled people families provided them customized transport, which helped in increasing their mobility (Woods, 1993).

A survey was conducted with the participants who attended the sensitization sessions. The participants were provided questionnaires before and after the sessions. The questions are pertinent to their attitudes towards disabled people. The same questions were asked before and after the sessions to observe the attitudinal change among the participants. The participants of the sessions were both disabled and non-disabled people. The below table depicted the following changes in the attitudes of disabled and non-disabled people after the provision of awareness sessions.

IV. RESULT AND DISCUSSION

The first case is about the application of project management an organization that works to change the mindset of people about disability. This project manager of this organization uses the convention method of project management highlighted in above in this research. The real-life event had been witnessed by one of the project managers of an NGO, who is working for the people with disabilities in Pakistan. The story was shared in various sessions, seminars, and workshops by the project manager at national and international levels. He described the negative attitude of society with physically challenged people. He told that one evening he had to go to the famous food street of Pakistan, where his disabled team member had to share their success stories with the people. Due to some reason, the project manager could not reach in time, whereas, the disabled team member reached on time and tried to get enter into the venue [5].

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The project manager, in this case, uses the traditional model of project management to solve the issues of education of kids with disabilities. The projected goal, in this case, is improving the physical accessibility of the school. The project manager successfully attains the target within the specified period.

To study the reasons behind low educational attainment among disabled children was reviewed by the project manager. He went to the primary school located in Tanzania to find out the hurdles faced by disabled children in attaining an education.

In the first glance, the poor school infrastructure could be observed. There were no ramps and physically disabled children had to struggle hard to reach to their respective classes. That was the time-consuming process, as well as, tiring task for the children. The issue in that was, toilets were not clean, hygienic conditions were not favorable. When the management was asked regarding those loopholes, they responded that due to lack of funds, school infrastructure was not created as per the requirement of the physically disabled children.

The real life situation has been discussed where a project manager identified the hurdles faced by the persons with disabilities and steps had been taken to resolve their barriers. To measure the extent at which people with disabilities hurdles resolved was through conducting the survey. Responses were collected of pre and post stages, in that research 100 participants from Tanzania were selected. Around 50 families of disabled people in Tanzania were asked questions regarding primary school enrollments, public school infrastructure, and hygiene conditions. The other 50 families of physically challenged people were asked regarding mobility issues, societal acceptance, and educational attainment and employability opportunities for them.

The project manager soon after witnessing the factors mentioned above decided to coordinate with the councils and collaboratively worked to collect donations to renovate school building. After few months' struggle, the adequate funds were raised, and the school building was renovated. By the joint efforts, the accessible school infrastructure was built which did not resolve the accessibility issues of disabled children but also increase disabled students' enrollment. Now, the school has ramps and accessible classrooms, which make easier for the students to attend the classes on a regular basis. Apart from the infrastructure, hygiene was another dangerous element, by the joint efforts, that issue was resolved as well, and hygienic working conditions were provided for them. Following are the responses attained of pre and post stages [6].

The organizations mentioned above should use robust methods of project management to create the required impact. One of such method is called the Logical Framework Approach, which is most frequently used project management tool for non-for-profits. Following this strategy also enhances the chances of getting funding from international donor agencies. This process initiates from stakeholder's analysis and subsequently follows the problem tree analysis, objective tree analysis, selection of strategy, and development of log-frame. This log frame identifies the goal, purpose, outputs, and activities in a systematic way [7]. All these factors are measured through verifiable indicators so that the performance can be evaluated efficiently figure 2.

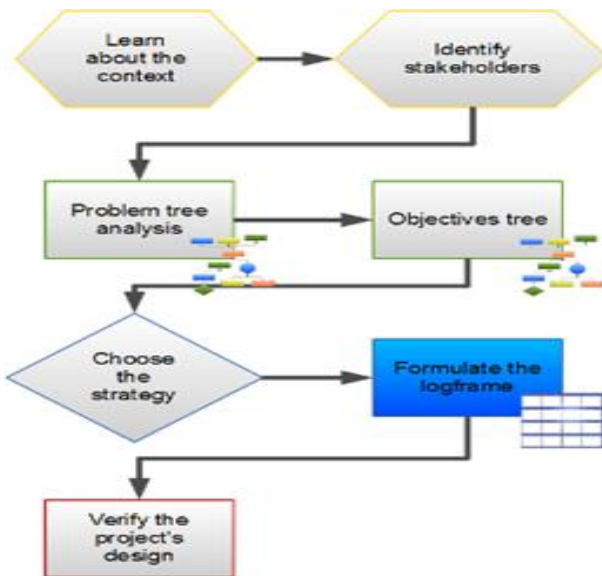


Figure 2: Strategy Flowchart

V. CONCLUSION

Effective project management helps an organization create the indented change within a pre-defined period. The role of a project manager is sheer critical in the entire process, as he/she helps create a blueprint for the planning and execution. The organizations mentioned in this case should adopt a more robust project management tool, which is globally recognized among the non-for-profit and it is called Logical Framework Approach. Following the logical framework, approach ensures that the project manager has split the deliverables based on measurable indicators. This ensures the transparency and highlights each activity is aimed towards a particular goal.

The project managers working in the field of disability should focus their primary efforts on sensitization and infrastructural accessibility. These two aspects can synergize to help some persons with disabilities in the Tanzanian and Pakistani region. While the effectiveness of such programs has been proven through its impact but more needs to do to break the attitudinal barriers. Creating infrastructural changes in the institutional setting is not enough, as the organizations should do the inclusion part of their policy framework. Making this course of actions as part of the system helps the organization make these changes sustainable, not arbitrary. While sensitization sessions are significant to reflect on-ground changes that occur in the mindsets, but its reflection is significance. This reflection can be done by embedding the system of impact assessment.

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