

## **Challenges in Construction Project Management as faced by Millennials in Developing Countries<sup>1, 2</sup>**

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### **ABSTRACT**

Basically, this presentation will show what is happening in the industry in developing countries Vs USA and how does a millennial look at it and fit into it. As we all know that the culture of each country is one of the major aspects to take into account in stakeholder management when referring to millennials; whether they manage a project team or they are being managed by project leaders. No doubt that each country has its own different working environment.

In developing countries, the culture and the nature of each project play an important role in CPM. Currently many case studies show that it's not anymore about the waterfall process or the new agility techniques that matter, however, it's about how to be creative and adapt to the nature of each project in all its circumstances since each project varies in its location, time, budget and resources.

Of course, it is very beneficial to study theories but also its more important to learn from our mistakes and be down to earth; maybe we can think of new holistic approaches or come up with a model that can be used later as a tool for managing each project independently.

Also, this paper aims at understanding what challenges are, how they are formed and how they are perceived by millennials. Research involves doing a deep dive study into the mindset of millennials at the industry today and the understanding of major concerns of the industry.

### **INTRODUCTION**

“Project” is a temporary endeavor undertaken to create a unique product, service, or result, as defined in PMBOK guide sixth edition. The keyword in this definition is the word “unique” because one has to understand that each project has to be treated independently based on many factors in order to fulfill its objectives successfully and attain its strategic position.

From my experience, managing projects in developing countries has become very challenging especially in the construction industry as the waterfall project life cycle has to be integrated and all project team and stakeholders have to understand the terms adaptability and flexibility.

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<sup>1</sup> Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally presented at the [7<sup>th</sup> Annual University of Maryland PM Symposium in May 2020](#). It is republished here with the permission of the author and conference organizers.

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All project managers are aware of the project life cycle and how projects are being managed throughout all the knowledge areas and process groups.



**Figure 1. Project Life Cycle**

This paper will mainly focus on the challenges faced in developing countries and the importance of having a new generation of flexible and creative project managers in the construction field. And accordingly, the paper will review the changes happened in the science of project management that is now reflected in the PMBOK sixth edition.

## EVERYTHING IS CHANGING

Project Management Institute noticed that the distance between what is really happening in the market and theories written and studied in books started getting wider so they tried to respond to bridge the gap. And from here, all changes happened from PMBOK 5<sup>th</sup> to 6<sup>th</sup> took place.

First of all, some control processes have been renamed. They exchanged the word control with the word monitor which gives more sense of empowerment than controlling. As PMBOK 6<sup>th</sup> edition is focusing more on adapting, facilitating and monitoring.



**Figure 2. Processes that have been renamed**

Second and more importantly, they started highlighting the concept of tailoring in project management. Project managers were used to apply their practices and follow certain methodologies developed by experts within the organization. However, “Good practice” does not mean that the knowledge described should always be applied uniformly to all projects. In tailoring, the project manager has to collaborate with the project team and all stakeholders.

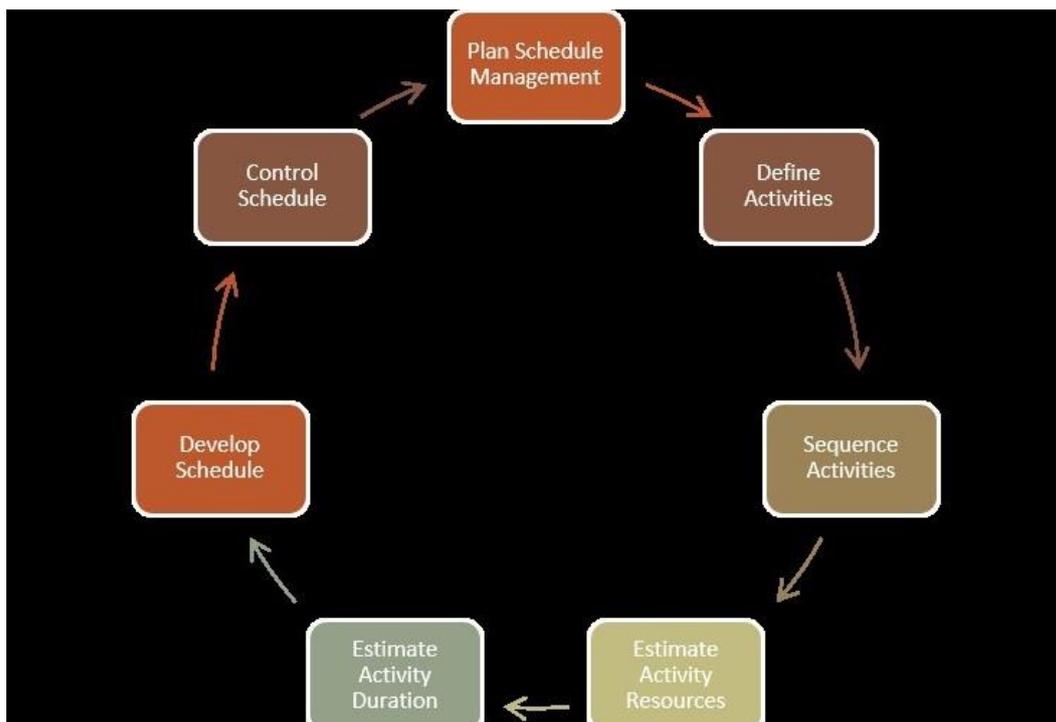
Also, tailoring should address the competing constraints of scope, schedule, cost, resources, quality, and risk. The importance of each constraint is different for each project, and the project manager tailors the approach for managing these constraints based on the project environment, organizational culture, stakeholder needs.

Sound project management methodologies take into account the unique nature of projects and allow tailoring, to some extent, by the project manager. However, the tailoring that is included in the methodology may still require additional tailoring for a given project. *PMBOK Guide sixth edition P.28*

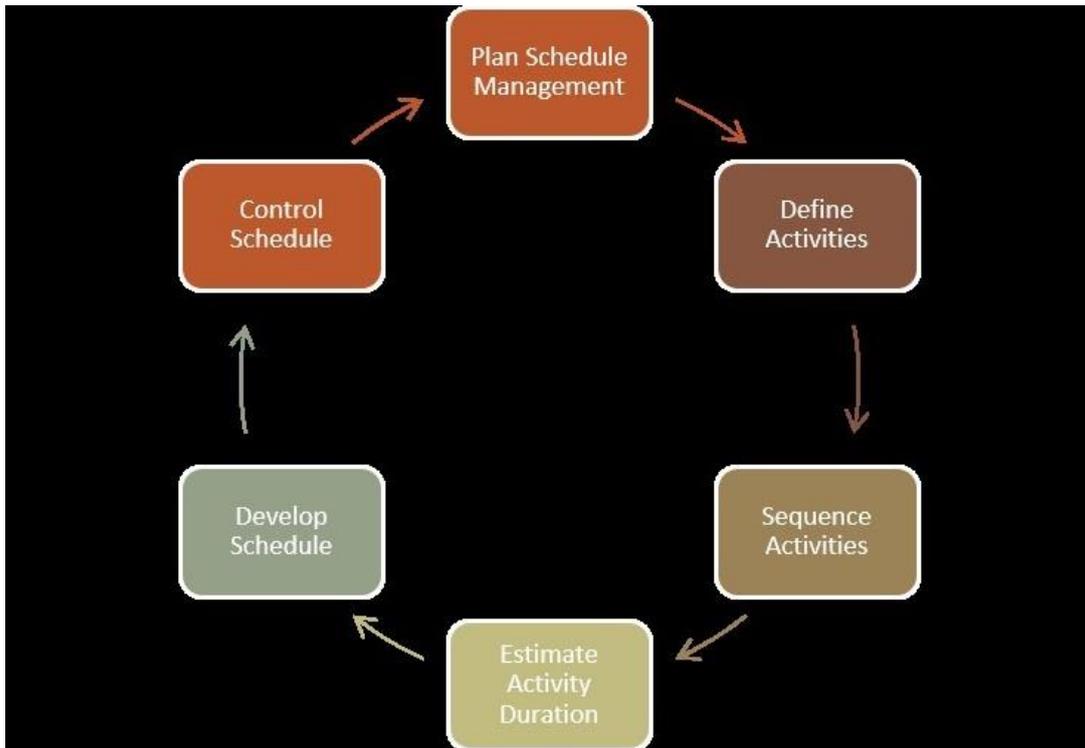
Additionally, new outputs were released as part of the ITTOS (inputs, tools & techniques and outputs) like the new lessons learned register. And a new chapter for Project manager roles and responsibilities is added which is effectively aligned with the PMI talent triangle and current best practices. Also, significant emphasize is given to Agile practices and its integration with all knowledge areas. Plus, the release of agile practice guide along with the PMBOK.

Finally, from time to schedule management. Schedule management is now replacing the term time management as time is a very broad word that doesn't ensure carrying out planned activities in a timely manner.

The process of estimate activity resources has been moved to the project resources chapter.



**Figure 3. Project Time Management Processes**



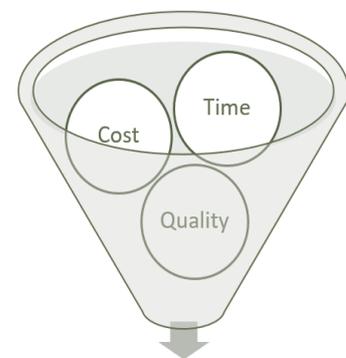
**Figure 4. Project Schedule Management Processes**

**CHALLENGES IN CPM**

PMI research indicates that technical skills are not enough in today’s increasingly complicated and competitive global marketplace. Organizations are seeking added skills in leadership and business intelligence. Members of various organizations state their belief that these competencies can support longer-range strategic objectives that contribute to the bottom line. To be the most effective, project managers need to have a balance of these three skill sets (leadership – technical skills – strategic and business management)

In developing countries, the construction industry is one of the fast-growing industries among all others. Commercial zones, corporate buildings, recreation areas, infrastructure projects and all types and scales of real estate projects are all counted.

As all project managers know, for a project to be successful it has to balance between these three major constraints; time, cost and quality. However, this is very challenging to be achieved. Unfortunately, in developing countries business men always invest money in mega projects for development. So, the project manager always risks either the quality or the project timeframe because it has to stay on budget. And if a specific project will get high exposure, then it will never be submitted on time because the quality can’t be sacrificed in this case.



Successful Project  
**Figure 5. Quality Triangle -Project Constraints-**

One second reason for a project to be behind schedule is that sometimes the delivery date is set without previous planning or research. The one setting the date is not the one who is in charge to study the project. Accordingly, all scope and schedule management processes are reversed and that is called the crashing technique in which it requires adding resources.

Another key challenge in developing countries is that most of the time the scope of work is not well defined or is changing frequently and this messes up all the scope management processes and accordingly schedule management again. I believe that this happens because the project charter is not studied well or was not shared with all stakeholders in the project.

## **EXAMPLES OF MEGA PROJECTS IN EGYPT**

### **Example #1: Tactic Village**

Client: Ministry of Interior  
Start Date: 2010

Location: 6 of October City  
Completion Date: December 2017

Area: 8.4 km<sup>2</sup>



**Figure 6. Tactic Village, the administrative building**

Project Brief: On End of November 2014, it was announced that all the village will be submitted in 6 months.

Project Components: 3 types Residential – administration – classroom building – tribune – hospital – 2 types of simulation buildings – Shooting range building – mosque – services building – Sports center

Challenges:

- Scope was changing every time the contact person changes at the ministry of interior.
- Had to adapt on the submission date that was announced on TV in an interview with the minister of interior
- Asphalt item was totally forgotten that was about 6 Million EGP to be added in the BOQ
- Not enough human resources to deliver this amount of work on time.

### Example #2: New Administrative Capital

Client: the government  
Area: 714 km<sup>2</sup>  
Start Date: 2015

Location: New Cairo  
Budget: above 20 billion dollars  
Completion Date: still in progress



**Figure 7. New Administrative Capital – Master Plan**



Figure 8. New Administrative Capital – Phase 1



Figure 9. New Administrative Capital  
Phase 1, District 3

Project Brief: Egypt Economic Development Conference (EEDC) was a three-day event that took place on March 13, 2015 in Sharm El Sheikh with over 2,000 delegates from 112 different countries. On the first day, a proposal for a new Egyptian capital city was announced for investment and economic development.

**Challenges:**

- Project submission date was announced without any previous studies
- Investors need to see their return on investment as quickly as possible (time is money)
- Referring to the cost – quality and time triangle, cost and quality couldn't be sacrificed and that's the reason that makes the project till now is still in progress.
- Not enough human resources to deliver this amount of work on time.

**Example #3: New Suez Canal Branch**

Client: the government  
 Area: 72 km length  
 Start Date: August 2014

Location: Sinai  
 Budget: 30 billion Egyptian Pounds  
 Completion Date: July 2015

Actual dredged quantities according to progress of works	258.8 million cubic meters
Duration of execution	12 months, including mobilization of dredgers
Consortium's first dredger to be employed in the project	Dredger "Al-Marifaa" on Nov. 5th,2014
Quantities of Dry excavation works	250 million cubic meters
Highest daily rate of dredged quantities was achieved by dredger "Ibn Batouta" on April 6th,2015	230,000 cubic meters
Highest daily output of dredged quantities was achieved on May 31th ,2015	1.73 million cubic meters
Number of dredgers employed in the project	45 dredgers
Number of sedimentation basins	20 basins

**Figure 10. Suez Canal Branch – Facts and Figures**

Project Brief: Creating a new canal, parallel to the existing one, to maximize benefit from the present Canal and its by-passes, and double the longest possible parts of the waterway to facilitate traffic in the two directions and minimize the waiting time for transiting ships. This will certainly reduce the time needed for the trip from one end of the Canal to the other, and will increase the numerical capacity of the waterway, in anticipation of the expected growth in world trade.

The project cost around 30 billion Egyptian pounds and no foreign investors were allowed to invest in the project, but rather Egyptians were urged to participate in funding the project through bank certificates of deposit initially yielding 12%, later raised to 15.5%.

The Egyptian armed forces helped in digging and designing the canal. The enlarged capacity allows ships to sail in both directions at the same time over much of the canal's length. Beforehand,

much of the canal was only one shipping lane wide, with limited wider basins for passing. This is expected to decrease waiting time from 11 hours to 3 hours for most ships, and to increase the capacity of the Suez Canal from 49 to 97 ships a day.

Challenges:

- It was announced that the New Suez Canal project will operate after a year (instead of three years). As the revenues of the canal will increase from 5 billion dollars to 12.5 billion dollars annually.
- Construction of the rest of the projects (which include building the city, industrial zone, technology valley, and fish farms) began in February 2015.
- Technical difficulties initially arose, such as the flooding of the new canal through seepage from the existing canal.

## CONCLUSION

Project management is change. And change drives an organization's ability to remain competitive in its culture. It's a key strategy going forward. And the ability to manage that change successfully separates good organizations from ones who are not competitive. Also, having an organization that can innovate in process, in product and in technology mean that they can remain competitive, and they can drive the change that they need to stay relevant in the marketplace. And, most importantly, how we use scarce resources to drive projects successfully and deliver the right results. So, if you take these three foundational tenets; change management, innovation and organizational alignment and you blend them together along cultural aspects, that basically is the foundation for a successful project management. This was explained by Prof. Paul Tumolo, MBA, Harvard University

Millennials value culture as much as money. Also, Organizations that are looking to attract the best talent need to realize that waving dollars under people's noses isn't the most important thing anymore. Building a psychologically safe culture where great work flourishes, is.

Unlike previous generations, Millennials aren't prepared to put up with poor culture. Their average tenure is currently just over two years, yet when they find an organization that places great emphasis on their wellbeing and development, they will reward it with loyalty and continual innovation.

## KEY TAKEAWAYS

Since all the previous examples were extremely challenging yet they were delivered successfully, here are the takeaways

- Each project has to be treated independently
- We don't have to follow the science of project management blindly
- Flexibility and tailoring are significant factors when it comes to developing countries
- Innovation is a key point in project management

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## About the Author



### **Jailane Atef Amer**

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**Jailane Amer, PMP**, Born and raised in Cairo – Egypt, she graduated from Cairo University, Faculty of Engineering, Architecture and Engineering technology program in 2013. She conducted several studies related to project management starting 2015 with mini MBA from Cairo University, then she took her Project management professional – PMP- certification. While studying for her Bachelor’s degree, she attended several workshops related to sustainable architecture and environmental studies at Lincoln School of Architecture, Lincoln University, UK. She was also chosen to represent Cairo University in workshops and architecture competitions at the American University in Cairo. She also participated in architectural design workshops with students from Politecnico Di Milano University, Italy at Cairo University.

In 2015, she was working as a teaching assistant at the German University in Cairo for urban economics course. She worked as an architect in several reputable engineering consultant companies. In 2017, she joined a community development project as a project coordinator. This project was a collaboration between Ain Shams University in Egypt and Stuttgart University in Germany that aimed to develop and turn the attention to the different hidden cultures in informal settlements.

She is now a PMI member in the Washington DC chapter and she aims to continue her academic studies in engineering management. Jailane has also started volunteering in social and educational reform activities. In 2019, she joined the Smithsonian National Air and Space Museum and participated in the project management symposium at the University of Maryland. She can be contacted at [eng.jailane.a@gmail.com](mailto:eng.jailane.a@gmail.com)