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Author: Mr. Tushar Jadhav
Indian Institute of Technology, India

Mr. Shantanu Shahane
Indian Institute of Technology, India
Ms. Manvi Dhawan
Indian Institute of Technology, India
Mr. Ratnesh Mishra
Indian Institute of Technology, India

EFFECTIVE WAYS OF LEADERSHIP, PROJECT MANAGEMENT AND SYSTEM ENGINEERING
FOR STUDENT SATELLITE PROJECT

Abstract

Students from the Indian Institute of Technology Bombay (IITB) are currently in the process of building a fully functional microsatellite named 'Pratham'. The satellite being built is a 260 mm cube and weighs nearly 10kg.

Working for the satellite for 6 years and even after launch getting delayed from the government side, our team has maintained the enthusiasm and the interest of the team remained high, how? This question will be answered in this paper. 6 years and handling over 100 students makes us to be perfect for writing this paper. Managing student satellite projects encounters problems that are not common in other commercial projects. Academics being the first priority, finding extra time for this type of projects is difficult; salary to students would have changed the scene. Keeping team members interested as compared to other university activities is the PM's first task. Students from different background, knowledge, majors, culture make communication difficult and increase challenges. Different speed of different sub-systems can be a serious problem. Satellite systems need expertise in different fields and as students become master they graduate. Hence knowledge transfer and continuity of project is important. Finding the perfect intersection between interest of the team members and project work is a task in itself.

Most of the projects of this scale fail due to lack of leadership and management than technical aspects. This paper will discuss how and why team bonding is as important as technical aspects. How the working for the satellite helped in improving the grades in academics. This paper also discusses principles of dealing with people which automatically make student respect PM and work for the PM and for the project. Also while working as manager, it is very easy to forget leadership. This paper will discuss how project management, system engineering and leadership are distinguished so that they can be done more efficiently. How diversity in the team can be used to unite the team and increase bonding between them and ensure that all students learn about all aspects of the project.

In the developing countries like India, building a satellite at your own university is not enough but contributing towards the society is also important. This paper will discuss how formation of Student Satellite Society by Team Pratham created a wave of student satellites in India starting 7 new satellites.