

Abstract

Enhancement of project control management system for Capital Project delivery

Information is power, when we know something it is hard to ignore. This is the foundation of this thesis. It is to create awareness about the, inadequacy of existing project control and management system (PCMS); need of rapid improvements in PCMS; improvement in PCMS; manifestation of improved PCMS in a capital heavy industrial project delivery settings. Patten et. al says, “if there is anything to be learned from the history of work-process innovation, it is that any system of principles and methods will experience a life cycle. In other words, as processes mature, innovation is required to facilitate survival, let alone growth in sales of any product or service” (Denton., 2010). The Project Control Management System (PCMS) has been used in engineering procurement construction (EPC) industry is in the same kind of situation; it has completed its cycle and in need of innovation. In this thesis “**What Is**” the current state of Project Control and Management System (PCMS); “**What Should Be**” the practices of PCMS and “**How to Close the Gap**” is described. The advancements in PCMS is based on the concepts, principles, process derived from Lean concepts and principles already applied in other industries like manufacturing, aerospace, ship building etc. and gained tremendous benefits. PCMS has been classified into three main features: 1. Desired state, 2. Flow control system, and 3. Control system. Three models have been proposed to enhance these three features of PCMS. Kaizen is proposed to enhance the whole system of PCMS and achieve desired state. Model based on pull control has been proposed to enhance the flow control system during EPC, and model based on visual control has been proposed to enhance control. Kaizen based model will beforehand enhance the whole system so that right thing happens reliably and consistently. Pull control would increase the accuracy of predictability of the flow control system, and visual control would provide real time monitoring and control of the project. The intention of this research is to make current PCMS a Lean PCMS and shift the reactive approach of project control to a more proactive approach. Also, how the proposed Lean advancements in PCMS would look in a capital heavy industrial project delivery is explored and documented. Further a case study on “How to close the gap” using Kaizen methodology (only Kaizen appraisal stage, in real settings) in a large EPC company is described.