

Indian Lean Construction Practices

Mainak Ghosal^{1,2*}

¹*Jt. Secretary, Coal Ash Institute of India, Dum Dum, Kolkata*

²*Visiting Faculty, Engineering Colleges under MAKAUT, Kolkata*

***Corresponding Author:** Mainak Ghosal, Jt. Secretary, Coal Ash Institute of India, Dum Dum, Kolkata; Visiting Faculty, Engineering Colleges under MAKAUT, Kolkata.

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In 2008 several Construction bodies sat together and formed The Institute for Lean Construction Excellence (ILCE) with the objective to spread awareness about Lean practices. At present, several Construction majors like L & T, Shapoorji Pallonji, Afcons, URC Construction, TATA Realty, Godrej Construction & many more both construction or non-construction companies are following Lean Construction practices.

If we look at the construction industry today the system that is followed is a combination of project and process management. Project management manages the project solely by Critical Path Method (CPM) but CPM may be both advantageous & disadvantageous. So, to bring in the 'Lean Manufacturing/Project Delivery' flavor or to address the 'Lean Manufacturing/Project Delivery Principle' issue, a term called 'process management' is introduced to complement with the project management requirements. This system was first applied in the Japanese Toyota Production System to develop a more overarching production of cars which impacted the other industries in a huge way. The Toyota way model utilizes the '4P' principles – **P**roblem Solving, **P**eople & **P**artners, **P**rocess, and **P**hilosophy. But unlike manufacturing which is process-oriented, construction is a project-based production process. Lean Construction is a "way to design production systems to minimize waste of materials, time, and effort in order to generate the maximum possible amount of value".

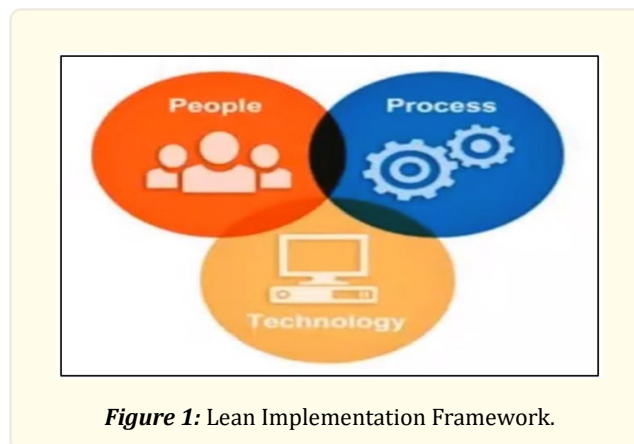


Figure 1: Lean Implementation Framework.

But Lean is not only about processes it is also about People & Technologies and there should be perfect synergies amongst the three dimensions. The interface between Technology & Processes as shown in Figure 1 is what is known as 'Automation'. The construction industry which a few years back neglected automation is now thinking that without automation we are not going anywhere. For example, manual concreting using labourers vs automated concreting through a concrete pump – one can easily gauge the benefits. But

automated methods without Lean application will have reduced benefits as has been seen in many instances says Prof.Koshy Varghese of IIT, Madras. Similarly, for Information Technologies (IT) like Building Information Modelling (BIM) or Sensing Technologies like IOT there is a two-pronged strategy for using these technologies with or without a Lean framework and the benefits will be multi-faceted through using a Lean Framework.

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