



## **INSTITUTE FOR LEAN CONSTRUCTION EXCELLENCE (ILCE)**

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NEWSLETTER 9

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# SALIENT FEATURES IN ILCE LAUNCH SEMINAR

(10 & 11 November 2009)

## **1.0 Report of a seminar organized by Institute for Lean Construction Excellence at Mumbai on 10<sup>th</sup> & 11<sup>th</sup> Nov 2009.**

### **Speakers / Faculty**

- Lauri Koskela
- Mr.Robert Owen
- Mr.Bhargav Dave

### **Case Study Presentations**

- Mr.Peter Bates (Sheperd Construction, UK)
- Mr.Jorge (Granay Montero, Peru)
- Mr.Jeff Ferguson (Sundt, USA)
- Ms.Iris Tommelein (U.O.Berbeley, USA)
- Mr.Sunil Shinde (Tata Realty)

Seminar ended with a panel discussion focused on implementation aspects in Indian context and this was chaired by Mr.Naresh Raisinghani of BMGI International (Consultants).

## **2.0 Learning Points**

- 2.1 Lean is a philosophy, not a set of tools and techniques. It is a simple philosophy involving common-sense principles, which can be implemented from the most basic level of operations across the entire organization.
- 2.2 To get sustainable organization-wide benefit, it has to be run like a programme over a longer time horizon. Typically, the case studies presented indicated a time frame of 6 to 8 years of sustained implementation with huge benefits.
- 2.3 Lean strongly emphasizes on following principles of "Flow model of Production".

**Principle 1.** Reliability and dependability of flow of work are critical rather than optimizing the sequence and point speed of work, as in construction scenario, the uncertainties are inevitable at the time of implementation.

This principle has the following implications in construction :

- (I) Master schedule serves only as a guideline for a common understanding on the milestones envisaged and for ordering long lead items.
- (II) Look ahead planning is critical in identifying all the bottlenecks for smooth flow (could be material, equipment, drawings, space, information, resources etc) and should be done every week, (rolling plan) for a time horizon of 6-8 weeks rigorously to uncover all bottlenecks so that there is smooth commencement of all activities of a crew and quality handover to the next crew.

As highlighted, focus is on reliable flow from one crew to another and not on the optimization of time for execution by crews / processes per-se.

- (III) The speakers repeatedly emphasized that flow streamlining between processes is more crucial than point speed of individual processes.

**Principle 2.** In any production system, based on queing theory, it can be clearly established that “Variability” (meaning non-conformance to committed time, quality etc in delivering a component / product / service) is the No.1 enemy for achieving reliability of flow (which is fully realizing Principle 1).

This principle has the following implications in construction:

- (i) We need to empower the first line supervisors (in Design, Procurement and Construction) to commit to the time and quality of delivery.  
They must confidently say what they “can accomplish” in the ensuing week rather than being forced on what they “should accomplish”.
- (ii) The “Last planner system” which is a methodology for first line supervisors to commit, review and improve their own delivery performance week after week, seems to be a successful mechanism for operationalising this front line empowerment for reducing “variability”.
- (iii) All the case studies presented by the LEAN Practitioners emphasized the rigour with which the “Last Planner system” is religiously implemented in their organization.
- (iv) The consequence of not reducing variability will lead to the following costly alternatives:

- Buffering
- Less output
- More capacity demands on resources
- In construction, it often leads to “Making do” that is starting work without all inputs and some-how managing time, leading to quality, safety and other issues.

**Principle 3.** All the processes should be aligned and engineered to generate value to the customer and any activity which does not add value to the customer directly should be reduced and ultimately eliminated.

This is the “Waste” elimination principle of LEAN.

The implications for construction are :

- (i) The “Value-stream mapping” is a useful tool to map the entire supply chain and for eliminating waste from the supply chain. Similarly, value stream mapping at construction site can help in eliminating / reducing double handling, unnecessary positioning of equipment, in-process inspection, temporary work and support activities.
- (ii) “The project partnering or Alliancing” can help all the stakeholders (Owner, Financier, Designer, General Contractor, Subcontractor) etc to collaborate for creating value for the project as a whole and share the benefits.
- (iii) “Waste reduction” can be an on-going and continuous improvement activity which can act as a lever for engaging all the “People” and improving team work etc.

**Principle 4.** Improving “Learning Capability” is the only way to continuously improve the rate of flow and move towards perfection.

The implications for constructions are :

- (i) The challenge is how to routinise the learning capability. Even a worker should follow
- (ii) Some of the effective tools are tool box meetings, visual management tools – Visual Guarantee (Poke-yoke), Visual indicator, visual signals and visual control.
- (iii) The other powerful mechanism is “Standardisation”. This does not mean simply documenting what is practiced. It involves four steps:

- Hypothesis                      – Specifying what is sought to be achieved / improved & how
- Experimentation                – Operationalising the hypothesis
- Inspection                        – Thoroughly testing the hypothesis
- Standardizing                  – Documenting the success story / practice.

(iv) Many of the case studies by the practitioners emphasized on knowledge sharing between a new project team and a team which has already implemented a similar project and also on “Best practices sharing” through structured databases.

### **3.0 Organisational approach for implementing LEAN**

3.1 Typical approach seems to be

- (a) Creating organization-wide awareness through a programme
- (b) Pilot projects to establish credibility  
(More often facilitated with the help of external consultants)
- (c) Making it an organization-wide programme for adoption, with clear measurements and accountability and lean champions. Strategic planning, Balance score-cards, X-matrix etc could be the launch pads / tools.
- (d) Extending the knowledge to other supply chain partners.

3.2 The case studies presented had highlighted some valuable variations / nuances in some of the organizations.

(case study summary attached as Annexure 1)

### **4.0 Some of the implementation pitfalls highlighted were :**

4.1 False expectations

- (a) LEAN is a journey and not a quick fix solution.
- (b) It is a philosophy and culture changing programme with significant and sustained benefits over a long term 6-8 years.
- (c) Top management has to “Walk the talk” for everyone to get committed to action.

4.2 Inadequate Executive Sponsorship

4.3 Organisational resistance to change – Need to be carefully nurtured with interventions of reward etc to sustain the programme.

## **5.0 Realized benefits through LEAN that were highlighted in the seminar :**

- 5.1 150 companies in Brazil are aggressively pursuing LEAN. Besides large scale following in USA, UK / Europe and Australia.
- 5.2 Significant increase and sustenance of profit margins from 6-7% to 12-14%.
- 5.3 Streamlined co-ordination with significant reduction in non-value added "Follow up" activities.
- 5.4 Productivity of resources improving by 10% - 40%.
- 5.5 Improvement in information flow leading to 3 – 5% improvement in schedules.
- 5.6 Makes project activities more predictable and reveals new opportunities for value creation.

*Compiled by : Mr. G. Pichai, General Manager , Larsen Toubro*

*Next Newsletter – Relational Contracting (Alliance)*