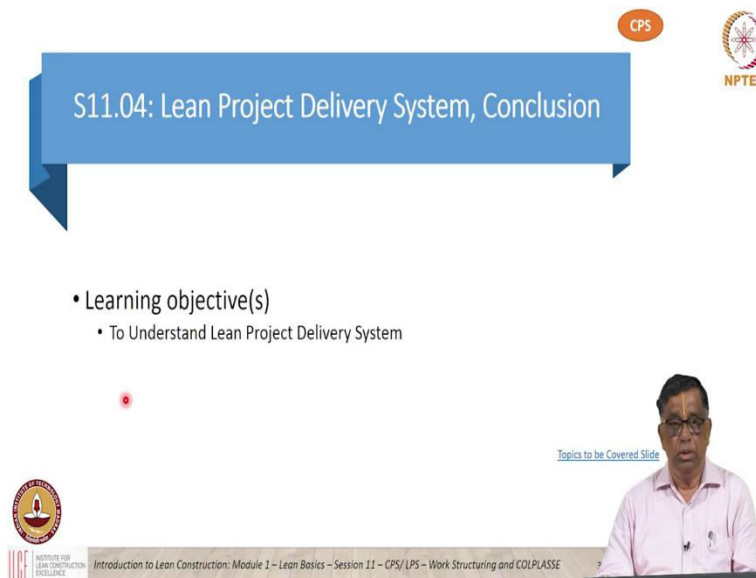



Introduction to Lean Construction
Professor. N Raghavan
Department of Civil Engineering
Indian Institute of Technology, Madras
Module - 01
Lean Project Delivery System, Conclusion

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CPS 

S11.04: Lean Project Delivery System, Conclusion

- Learning objective(s)
 - To Understand Lean Project Delivery System

[Topics to be Covered Slide](#)



 Introduction to Lean Construction: Module 1 – Lean Basics – Session 11 – CPS/ LPS – Work Structuring and COLPLASSE



CPS 

LEAN Project Delivery System

To improve Work Flow Reliability:

- **Production Planning:** Lean Work Structuring
- **Production Control:** CPS (Collaborative Planning System)
- **Usage of Tools**
 - Lean design, Big Room exercises –for design, problem solving
 - 5S, Kanban for Productivity improvement, workplace streamlining
 - Productivity Improvement -Work Sampling, Value Stream mapping
 - Building Information Modeling (BIM) to improve activity performance
 - Overarching Wastage Minimization- for Value improvement
- **Collective Commercial:** Target Value Design; Integrated Project Delivery (IPD) for overall synergy & value creation; Alliance Contracting



 Introduction to Lean Construction: Module 1 – Lean Basics – Session 11 – CPS/ LPS – Work Structuring and COLPLASSE

Now we come to the Lean Project Delivery System. That is the final one in this session. We need to understand exactly what is the Lean Project Delivery System. If you look at the Production Planning, that comes as a result of Lean Work Structuring. We look at it in length, what are the prerequisites, what are the process and what you get as a result of doing Lean Work Structuring.

And the actual Production Control that comes from the Collaborative Planning System, the CPS process by good control on a weekly basis on a daily basis, you can improve the productivity by improving the PPC number and you can control your production. Like I said earlier, CPS improves the certainty level very, very nicely and the production can be properly controlled by looking at the PPC and focusing on that.

Then there are a large number of tools available to you, starting from Lean design, the Big Room exercises, which can actually be used for either engineering or for solving problems, there is a separate session on big group exercises, so do look at that. Then you have tools like 5S, which you have seen earlier. Kanban is a visual control method for controlling the consumption of consumables, then productivity improvement, workplace streamlining and so on.

And how to improve productivity by doing work sampling, or value stream mapping. And then BIM; Building Information Modeling it is a great tool for use with Lean for improving the overall performance. And then, the overarching concept of wastage avoidance, I would rather use the word avoidance than minimization, that is the main factor for improving value for the client.

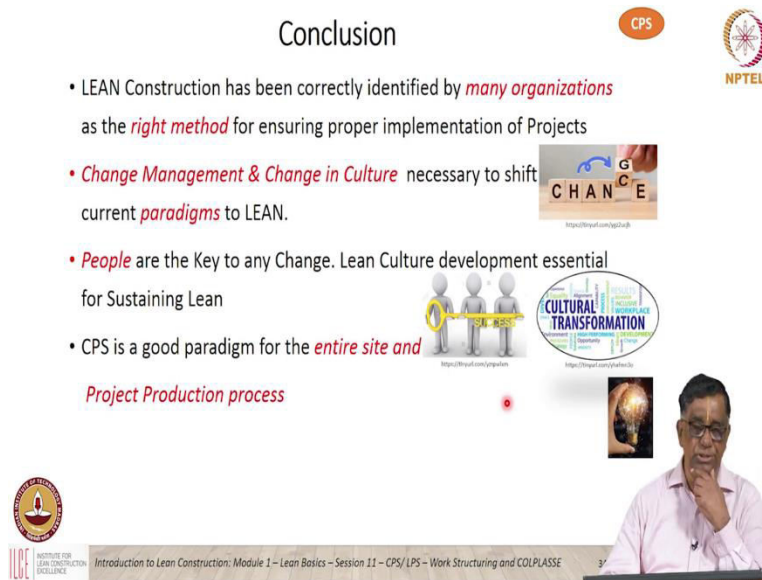
As you know, lean abhors wastage and it wants to improve value at every stage in every step. And then there are the contracting mechanisms, the collective commercials, one can do target value design, integrated project delivery, by including the consultants, designers, architects and the contractors in the same team for overall synergy and value creation.

And we also can go for alliance contracting, when you also bring the client on board along with the architect or engineer and the contractor, they everybody can work as a big team share all the gains and pains and improve the project optimize it to the exact degree required no wastage, no cost overrun or no time reduction. So, these are the various factors aspects of Lean Project Delivery System.

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Conclusion

- LEAN Construction has been correctly identified by *many organizations* as the *right method* for ensuring proper implementation of Projects
- *Change Management & Change in Culture* necessary to shift current *paradigms* to LEAN.
- *People* are the Key to any Change. Lean Culture development essential for Sustaining Lean
- CPS is a good paradigm for the *entire site and Project Production process*



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So, looking at the whole thing, in conclusion, Lean Construction has been correctly identified all over the world are also in India by many organizations as a right method for ensuring proper implementation of projects. As I said, one of the biggest bugbears of construction is the lack the high uncertainty levels, the lack of reliability, the lack of predictability, all these improved to a great extent, by practicing lean.

Of course, you required to have in place good change management process and change in culture to be able to realize the benefits properly from lean and people are the prime movers and people are the key to any change to Lean culture development is what is driving people is what will make people perform properly. I always maintain the level of quality and the level of safety in any project side depends purely on the culture of the organization, the culture of the project.

Lean, no safety and quality cannot be taught and cannot be no told again and again. It has to come as a matter of habit as a matter of culture. So, same way lean also gets to be practiced well, if you have lean as a basic predominant culture permeating across the entire project. And CPS is a very good paradigm for the entire project for the production process. So with that, we sincerely hope that all of you will be able to understand Lean, process properly and practices in your project sites.

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Session 11 – CPS/ LPS – Work Structuring and COLPLASSE - Summary



Topics Covered

- [S11.01](#): Lean Work Structuring
- [S11.02](#): Impact of PPC on Productivity, Other Key aspects, Advantages of CPS, The Necessary Conditions, Blocks on the Road for CPS, CPS Summary
- [S11.03](#): COLPLASSE: Look-Ahead Plan, Constraint Analysis, Weekly Plan, Summary
- [S11.04](#): Lean Project Delivery System, Conclusion
- [Supplementary Module](#)



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We have now finished a Session 11 on Collaborative Planning System. We covered Work Structuring and the software called COLPLASSE Collaborative Planning System Simulation Exercise. And the first part we covered Lean Work Structuring the starting point for practicing CPS. Then the second session we looked at the impact of PPC on productivity to how the two are properly interlinked and several other key aspects, the advantages of practicing CPS, the necessary conditions which are required for facilitating CPS and what can be the blocks on the road to practice CPS and how to overcome them. And finally, as a quick summary of CPS.

Then, the next session we looked at the COLPLASSE software which facilitates your documentation for practicing CPS. We had the Look-ahead Plan, Constraint Analysis, weekly plans and the very useful summary sheet at the end of the COLPLASSE toolbox. Then we also looked at the Lean Project Delivery System, how that is composed with what that is composed of how it works, and a concluded on CPS. And we had the supplementary module from which you can learn more about CPS. So, start practicing CPS, all the best. Thank you.

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Quiz

CPS



1. Match the following:

- | | | | |
|----------------------------|--------------------------|----------------------------|--------------------------|
| A1. Production Planning | B1. CPS | A1. Production Planning | B3. Work Structuring |
| A2. Production Control | B2. Alliance Contracting | A2. Production Control | B1. CPS |
| A3. Collective Commercials | B3. Work Structuring | A3. Collective Commercials | B2. Alliance Contracting |

2. Name the three main commercial formats of Lean concepts for contracting:

- a) Target Value Design
- b) Integrated Project Delivery (IPD) for overall synergy & value creation
- c) Alliance Contracting



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Supplementary Module

Link (to read and contribute)
<https://tinyurl.com/yf74v4yk>



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