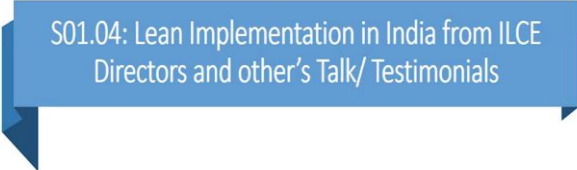



Introduction to Lean Construction
Professor N Raghavan
Department of Civil Engineering
Indian Institute of Technology, Madras
Module 1 Lecture 4



Lean Implementation in India from ILCE Directors and other Talks/ Testimonials

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- Learning objectives
 - To become familiar with Lean Implementation in India from ILCE Directors and other's Talk/ Testimonials

[Topics to be Covered Slide](#)



Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

Hello, welcome again to this session S01.04. When you hear so much of talk about Lean construction, you also may have a question on whether there are actual benefits of practicing Lean, and nothing like hearing it from the actual practitioners from the heads of the various organizations, which are practicing Lean.

And fortunately for us, they happen to be directors, or members of the board of directors of ILCE. And we were able to record, what they have been talking about Lean in an event for CIDC, Construction and Industry Development Council, sometime in last December. And we also had a bumper issue from the Construction World magazine on Lean construction. And all the directors have given interviews in that journal, so compiling these, we have put together for you, many quotes from the various directors and practitioners of Lean in the industry.

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ILCE Board of Director's Talks/ Testimonials

Mr. Anup P Mathew
Chairman of the Board of Directors, ILCE
Senior Vice President and Business Head, Godrej Construction

"Lean is a *commitment*" and needs *top management support* for success. Lean helps *reduce wastes* in the value chain improving productivity. But nothing changes until *behaviour changes*, and hence the need to create a *culture for continuous improvement*."

"Lean has enabled completion of projects *within time* and approved *budgets*"

Construction World (2021) - Lean Construction: The Way To Go - Page: 35, October 2021 - <https://www.constructionworld.in/digital-edition>



Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

To start with, we have Mr. Anup Mathew, who the chairman of ILCE Board of Directors, and he is also Senior Vice President and Business Head of Godrej Construction, a part of Godrej & Boyce. And he says, Lean is a commitment and needs of course, top management support, and that Lean helps a lot in reducing wastage, was a very important thing.

And for it to be effective, there has to be a behavior change, to develop the Lean culture, for continuous improvement. It is a very important quote from Mr. Anup Mathew. And, he is also acknowledged that for their projects Lean has helped completion of projects within time and within the approved budget. Very important quote from the chairman of ILCE.

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ILCE Board of Director's Talks/ Testimonials

Mr. Subodh Chandra Dixit
Member of the Board of Directors, ILCE
Executive Director – Engineering & Construction, Shapoorji Pallonji and Company Private Limited (SPCPL)

"..we continue to *engage* with owners, designers, architects, engineers, subcontractors and end-users to propagate Lean construction management and *promote collaborative problem-solving*..."

"With Lean, we have observed *cost savings* ranging from *5-15% of activity cost*"

Mr. Subodh Chandra Dixit (2020) - CIDC Talk - https://youtu.be/0K03z_yfW0c; Construction World (2021) - Lean Construction: The Way To Go - Page: 42, October 2021 - <https://www.constructionworld.in/digital-edition>



Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

One more director from ILCE, the Executive Director of Engineering and Construction of Shapoorji Pallonji, one of the largest, the construction agencies in India, Mr. Subodh Chandra Dixit. And he has said that, we continue to engage with all the stakeholders to promote collaborative plan, problem solving.

And then when you practice Lean, he has said that there are considerable cost savings, something like 5 to 15 percent. That is a lot of cost saving, if the construction industry in India. So, he has given a very important talk, a quote about what you can do, to practice Lean and get benefits from Lean.

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ILCE Board of Director's Talks/ Testimonials

Mr. Giridhar Rajagopalan
Member of the Board of Directors, ILCE
Deputy Managing Director, Afcons Infrastructure Private Limited

"We are able to save 150 working days at one of our projects by *reducing the cycle time* of an activity by 40 per cent using Lean techniques. After similar such experiences, we believe that *embedding* Lean Construction in *Afcons' DNA* is the way forward"

"Our Quality Excellence Cell was able to generate *cost savings* of around ₹850 million "

Mr. Giridhar Rajagopalan (2023) - CDC Talk: <https://youtu.be/8M9Sv7J2k>; Construction World (2021) - Lean Construction: The Way To Go - Page: 35, October 2021: <https://www.constructionworld.in/2021/10/31/lean-construction-the-way-to-go/>



Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

One more Director of ILCE Mr. Giridhar Rajagopalan, Deputy Managing Director of Afcons Infrastructure, and Afcons has been practicing Lean very, very ardently in the recent past. And what they have done, they have asked their Quality Excellence Cell, also to drive the practice of Lean Construction. And that has been quite successful.

And they had a good amount of cost savings by practicing Lean. And he says that they would like to embed Lean Construction in, Afcons' DNA. That means he wants it to be an integral part of the way they do work; of they do the work in project sites. That is a very important quote, that he would like Lean to be embedded in the DNA of Afcons, that is from Mr. Giridhar Rajagopalan.

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ILCE Board of Director's Talks/ Testimonials

Mr. Devarajan Chinnusamy
Member of the Board of Directors, ILCE
Managing Director, URC Construction Private Limited, Tactive Software

"Construction industry needs more *collaboration*, and thus, Lean paves a way for one such thing."

"Lean has helped us *reduce labour* up to 12-15%."



Mr. Devarajan Chinnusamy (2021) - CDC Talk - <https://youtu.be/5824h0588M>, Construction World (2021) - Lean Construction: The Way To Go - Page: 35, October 2021 - <https://www.constructionworld.in/digital-edition>

Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

And we have another director of ILCE, Mr. Devarajan Chinnusamy. And, he is the MD of URC Construction, as well as Tactive Software, who are developing software for the construction industry. They have been one of the earliest practitioners of Lean in this country. And he says, the construction industry needs more collaboration, and Lean paves a way for such a thing. And he has also acknowledged that there is good amount of savings, for example, labor can be reduced by about 12 to 15 percent, if you practice Lean well. And so Mr. Devarajan is one of the consistent supporters of Lean construction.

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ILCE Board of Director's Talks/ Testimonials

Dr. Koshy Varghese
Member of the Board of Directors, ILCE
Professor in the Department of Civil Engineering and
Dean of Administration at IIT Madras

"When implementing Lean in any enterprise, *four dimensions* have to synergise to ensure successful implementation: *People, Process, Tools and Technology.*"

"Automation strategies that have a *direct impact* on core Lean concepts"

"Our projects cannot afford to not implement Lean."



Construction World (2021) - Lean Construction: The Way To Go - Page: 52, October 2021 - <https://www.constructionworld.in/digital-edition>

Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

Then, Doctor Koshy Varghese, Professor from IIT Madras, one of the earliest teachers of Lean construction in this country. And he is also Lean Coach, been to Lean various project

size to teach Lean to the practitioners. And, he has said there are four dimensions of in any enterprise, the people, process, tools and technology and he has said that Lean has to synergize all these for successful implementation.

Another thing, he is also an expert in automation and construction. So, he said, if you employ proper automation strategies and integrate them with Lean, you have a greater impact from Lean and he has put a punch line our projects just cannot afford to not to implement Lean, that is how important Lean is for Indian projects.

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ILCE Board of Director's Talks/ Testimonials

Mr. Sagar Gandhi
Member of the Board of Directors, ILCE
Head-Strategy and Business Excellence, Shapoorji Pallonji and Company Private Limited (SPCPL)

"With Lean construction, *reduction in material waste* is a great opportunity"

"One of the biggest challenges the construction industry in India faces with *technology implementation* is *misinformation and overselling of technology*. ILCE ensures there is a right dissemination of the knowledge and creates a platform for experience sharing."


Construction World (2017) - Lean Construction: The Way To Go - Page: 46, October 2017 - <https://www.constructionworld.in/digital-edition>



INSTITUTE FOR LEAN CONSTRUCTION EXCELLENCE
Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

Mr. Sagar Gandhi, another member of the Board of Directors, he is the Head of Strategy and Business Excellence from Shapoorji Pallonji. And he specializes in automation and IT in construction. And, he said Lean construction has been very helpful for reducing material waste, and he strongly advocates technology implementation and is actually very informative, very useful for spreading Lean and the right dissemination of knowledge is important and ILCE will help in doing that.

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ILCE Board of Director's Talk/ Testimonials 

Mr. Debasish Guha
Member of the Board of Directors, ILCE
Co-Founder and Founding Director, ARCOP Associates

*"We have been practicing **Lean design** through a **system approach** at various stages in the overall design process."*

*"It is important to bring in **Lean culture** at **every stage of a project** – starting from site selection to design, construction procurement and finally implementation during construction."*

Construction World (2021) – Lean Construction: The Way To Go – Page: 19, October 2021. <https://www.constructionworld.in/digital-edition>




Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

Next, we have from the ARCOP Architects who are also a chartered member of ILCE, Mr. Debasish Guha is another Director of ILCE. And he has been saying that they are practicing Lean design through a system approach in their company in various stages of project development and design.

And he has said that it is very important to bring in Lean culture in every part of the project, otherwise Lean implementation will not be sustainable, right from site selection through design, construction, procurement, and the final implementation. He says Lean culture has to permeate through all the stages through all the stakeholders that is very important.

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ILCE Board of Director's Talks/ Testimonials 




Prof. N Raghavan
Member of the Board of Directors, ILCE
Professor of Practice, BTCM Division, Dept of Civil Engineering, IIT Madras

*"Lean is a great **gamechanger** in project management. It can help boost up **efficiency**, cut **down wastes**, improve **predictability** in projects."*

*"IIT Madras has developed a three-stage model to assess **Lean maturity at project sites** as well as in organizations."*

*"There is also a plan to organize an **academic conclave** early next year to engage with the various postgraduate technology **educational institutions** to start teaching or further intensify their **Lean teaching efforts**"*

Prof. N Raghavan (2020) – GCX Talk. <https://youtu.be/gj3l3tms8t4> - Construction World (2021) – Lean Construction: The Way To Go – Page: 19, October 2021. <https://www.constructionworld.in/digital-edition>



Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course

Then, I had also given some talks, what I had mentioned earlier, that Lean is a great game changer in project management, it can help improve the efficiency, control the waste like anything, and improve the predictability and uncertainty levels in projects. IIT Madras is also developing a Lean maturity assessment model, and we will introduce it quite shortly.

And, I also talked about a probable academic conclave in next year, where we can bring in the various agencies who are teaching Lean, so that, we can all get together and plan how to teach Lean, and how to make it accessible to more and more people in a better manner.

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ILCE Board of Director's Talks/ Testimonials





Mr. R. Shankar Narayanan
Member of the Board of Directors, ILCE
Head-Corporate Centre, Buildings & Factories vertical (B&F IC), Construction Division, Larsen & Toubro

"Adopting Lean, *cycle time* got reduced from 15 days to 7 days."

"Lean thinking can *optimize construction processes* to improve efficiency."

"There are many *intangible benefits* in terms of better *teamwork and collaboration*, and workmen retention and team motivation."

Mr. R. Shankar Narayanan (2020) - CEO, I&T. <https://youtu.be/3WvDk800Y> - Construction World (2021) - Lean Construction: The Way To Go - Page: 35, October 2021. <https://www.constructionworld.in/igofa-edition>



Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course


Mr. Shankar Narayanan is actually the head of Corporate Center, Buildings and Factories vertical in Larsen and Toubro construction. And, he is also a member of the Board of Directors. And, he has said adopting Lean, cycle time could be reduce considerably by actually halved in many cases, and Lean thinking can optimize the construction process as a good input. And there are many intangible benefits as well from practicing Lean, for example, teamwork and collaboration increase substantially, workmen retention, team motivation and so on. They are very good inputs from Mr. Shankar Narayanan.

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ILCE Board of Director's Talks/ Testimonials






Mr. Harleen Singh Oberoi
Member of the Board of Directors, ILCE
Senior Vice President and Head of Project Management Group, Tata Realty and Infrastructure Limited, Tata Housing



"We *now* have *better control* on time, cost, quality and safety in a Lean implemented project."

"*Weekly big room meetings* are organized with contractors, reviewing the *target versus actual progress*. Necessary decisions are taken during these meetings and *issues* on the work front are *solved very efficiently*."

Construction World (2021) - Lean Construction: The Way To Go - Page: 49, October 2021. <https://www.constructionworld.in/digital-edition>


Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course




Another director of ILCE Mr. Harleen Singh Oberoi is a Senior Vice President and Head of Project Management Group of Tata Realty and Infrastructure and Tata Housing. And he says they have better control on time, cost, quality and safety by practicing Lean. Another important input he has given is they are practicing weekly big room meetings and with the contractors, and there they discuss the actual progress of versus the target. And he says they are able to solve many problems very efficiently by the big room process. That is a very good input from him.

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Some More Testimonials






Dr. Ashwin Mahalingam
Professor, BTM Division, Dept of Civil Engineering, IIT Madras




"You need the *operating system* and the *applications*. Perhaps start with Lean to set processes in place – this can often be done with additional investment."

"Wisely choose BIM tools and applications, skill your staff on these, and then *integrate BIM into your Lean process*.....once this integration has been achieved, sit back and watch *efficiency (and profitability)* skyrocket!."

Construction World (2021) - Lean Construction: The Way To Go - Page: 58, October 2021. <https://www.constructionworld.in/digital-edition>

Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course



Then, Doctor Ashwin Mahalingam is a professor in Building Technology and Construction Management Division of IIT Madras and he is an expert on BIM and automation systems and

civil engineering. And he says you need an operating system and the applications for Lean to succeed and we need to set the Lean processes in place in, in our projects.

And when you are using BIM, he says we need to be careful to choose the right BIM tools and applications. Otherwise, you will be wasting your time and integrate BIM into your Lean processes properly, so that we get the best efficiency and profitability by practicing Lean.

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Some More Testimonials




Dr. Bhargav Dave
CEO and Co-Founder of VisiLean*
*a construction-tech start-up incubated in Helsinki, Finland

“Production Planning is driven by a *collaborative approach* that involves the *Last Planners* making *sound commitments* for work to be executed onsite.”

“It is essential to adopt an *integrated approach* so tools can *communicate at each stage* to automate *workflows* and communication channels around a single stream.”

Construction World (2021) - Lean Construction: The Way To Go - Page: 45, October 2021. <https://www.constructionworld.in/digital-edition>

INSTITUTE FOR LEAN CONSTRUCTION INTELLIGENCE Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course



Then we have Dr Bhargav Dave who is actually an Indo-Finnish expert and he is the CEO and co-founder of a company called VisiLean, a very important software application in the area of Lean construction. And he says Lean production planning driven by a collaborative approach and using the last planners to make sound commitments is very essential for making projects, success. And, he wants us to adopt an integrated approach.



So, that the tools can be communicate at each stage to automate the workflows, that is a very important thing. Instead of looking at the various stages of projects or various components of projects, he said, look at the overall workflows and communication channels around single stream. So, the overall collaborative approach with the last planners that is very important for success of Lean.

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Some More Testimonials



Dr. R Venkatesan
Professor at the National Institute of Construction Management and Research (NICMAR), Hyderabad

“Primarily with the support of IIT Madras, ILCE started *implementation of the Lean* programme on an *experimental basis*. Along with IIT Madras and IIT Bombay, other premier institutes like NICMAR and CEPT are also joining in this journey.”



Construction World (2021) – Lean Construction: The Way To Go – Page: 79, October 2021 - <https://www.constructionworld.in/digital-edition>

ILCE INSTITUTE FOR LEAN CONSTRUCTION EXCELLENCE Introduction to Lean Construction: Module 1 – Lean Basics – Session 01 – Introduction to the Course



And, Dr. R Venkatesan, he is the person from NICMAR, Hyderabad and he has agreed to host ILCC-2022 in Hyderabad next year. So, he says with the support of IIT Madras, ILCE has implemented Lean program not only in experimental basis, but now it has come to be practiced all over the country and more organizations than IIT Madras. For example, NICMAR, the various colleges, CEPT, IIT Bombay, IIT Delhi, they are also coming around to push Lean to further and further heights.

So, we have a number of industry experts and also some academic experts, who have told us something about the importance of Lean practices for benefit of the construction industry and the benefits which you can get from practicing Lean. So, I hope you all see the, these sayings, see them look at them thoroughly and learn from what they have said to take your Lean practices to much greater heights. Thank you, all the best.

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Quiz



1. Mr. Dixit has mentioned that Savings in Activity cost is about ___.

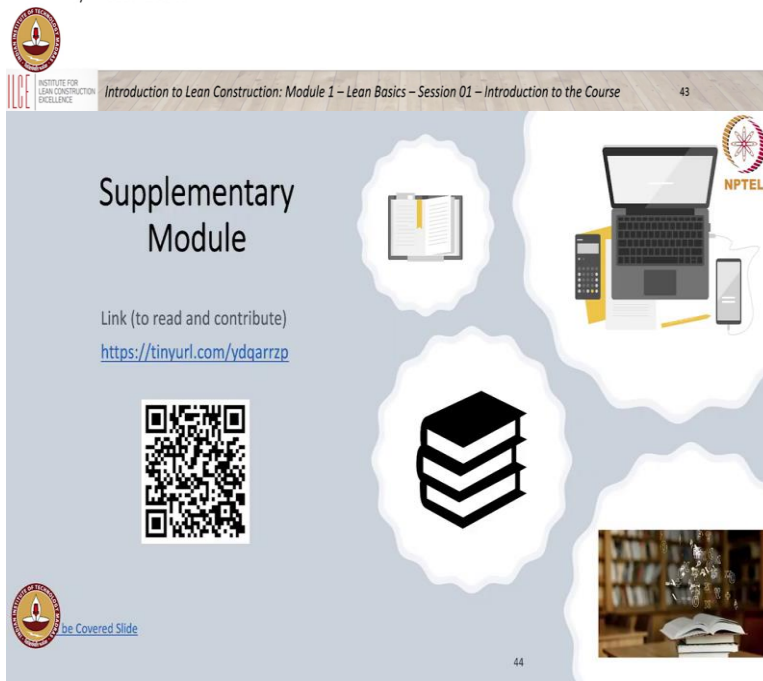
- a) 0 to 2%
- b) 30-40%
- c) 60-70%
- d) 5-15%
- e) 70-80%

d) 5-15%

2. Mr. Giridhar has mentioned cost savings of about ___.

- a) ₹ 10-20 Cr
- b) ₹ 200-300 Cr
- c) ₹ 20-30 Cr
- d) ₹ 80-85 Cr
- e) ₹ 150-200 Cr

d) ₹ 80-85 Cr



The slide features a light blue background with a white cloud-like pattern. On the left, the text 'Supplementary Module' is displayed in a large, bold font. Below it, a link is provided: 'Link (to read and contribute) https://tinyurl.com/ydqarrzp'. A QR code is positioned below the link. In the center, there is an icon of a stack of books. To the right, there is an illustration of a laptop, a smartphone, and a calculator. The slide includes logos for IIT Bombay (Institute for Lean Construction Excellence) and NPTEL. The text 'Be Covered Slide' is visible in the bottom left corner, and the number '44' is in the bottom right corner. The top of the slide contains the text 'Introduction to Lean Construction: Module 1 - Lean Basics - Session 01 - Introduction to the Course' and the number '43'.