

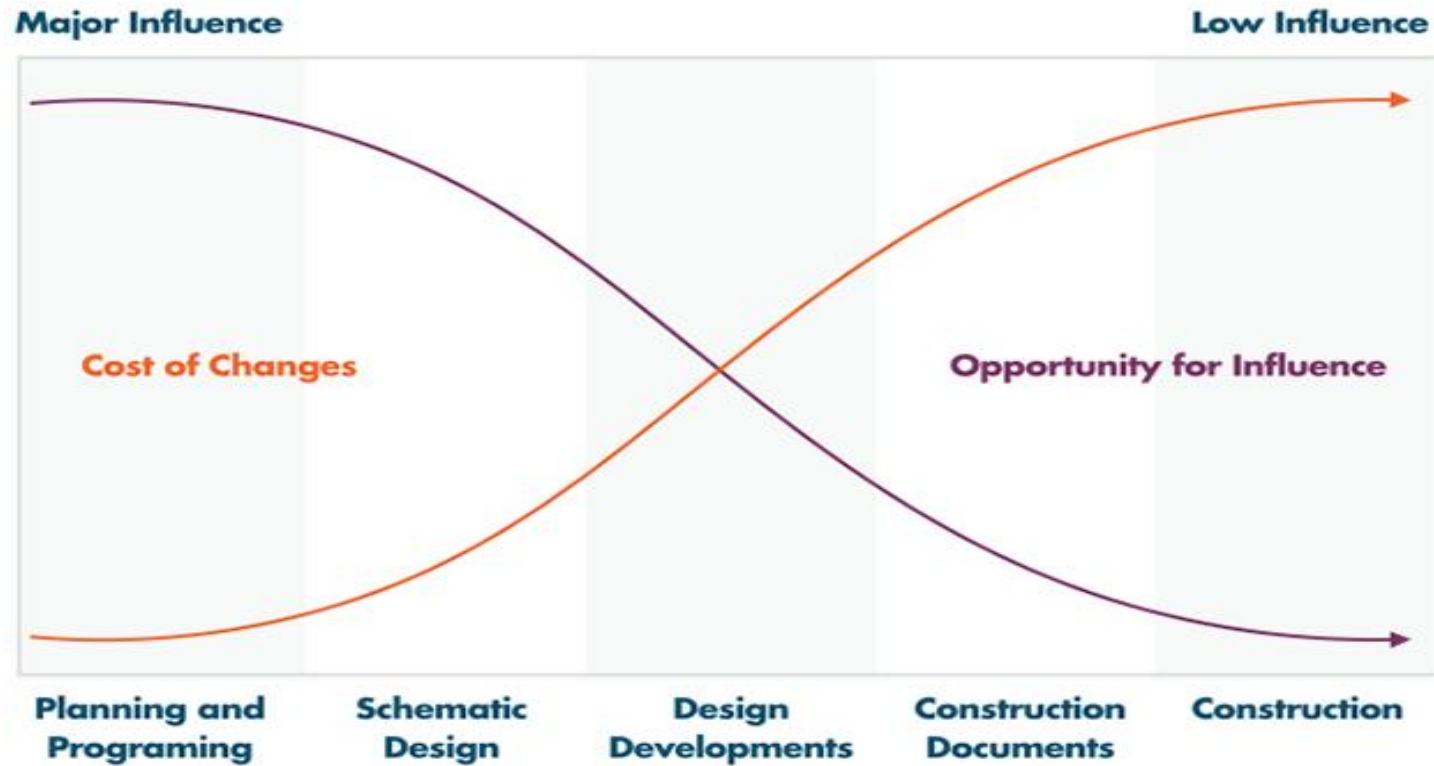


# CI3 INDIA ACTION TEAM 3A- DESIGN PROCESSES

**Building Clients' Consultants' CONSOLIDATION  
ROUNDTABLE, Oct 18th, IIT Madras**



# BACKGROUND



Source: WBDG, [www.wbdg.org](http://www.wbdg.org)





# OBJECTIVES OF THE FORUM

Identify and  
categorize issues

Discuss and propose  
mitigation measures

Prioritize the  
mitigation measures





# PROPOSED METHODOLOGY

Discuss, identify and categorize design issues

Identification of possible mitigation strategies and prioritization model

Discuss, prioritize mitigation measures & identification of pilot projects

Implementation and evaluation on pilot implementation be implemented

Report on findings from pilot implementation



# DESIGN TEAM MILESTONES

April  
29<sup>th</sup> '16

- Workshop on design process improvement
- 30 design related issues identified

May –  
July  
'16

- Design process mapping in four different organizations
- Identification of other design related issues

Aug  
30<sup>th</sup> '16

- Interim workshop
- Review of progress

Oct  
18<sup>th</sup> '16

- Discussions & Inputs from Consultants

Oct  
19<sup>th</sup> '16

- Discussion and feedback from Clients & others





# TODAY'S AGENDA

Presentation by Ms. Vijayalaxmi on Design Management issue & tools.

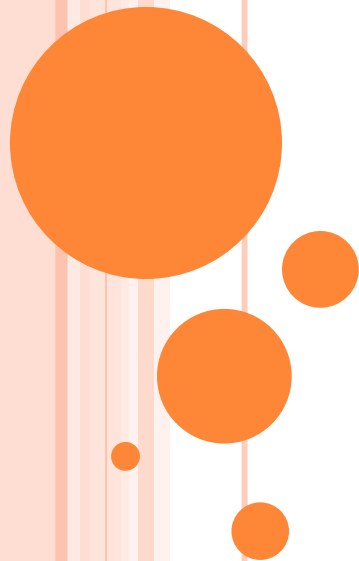
Feedback from participants





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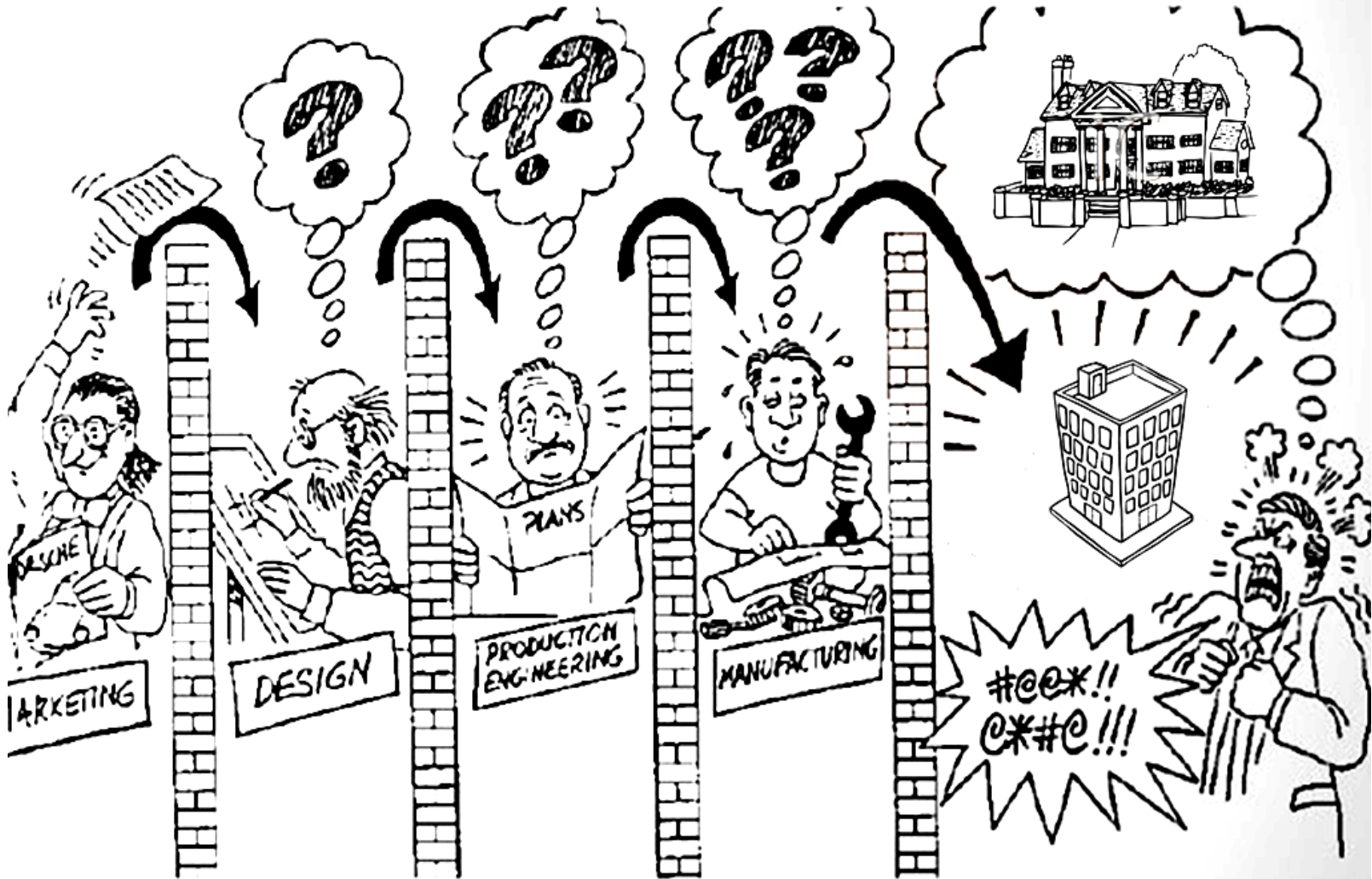
# OUTLINE

- Traditional Design Process
  
- Current Design Management Practices & Issues
  
- Tools for Design Management
  - IT - BIM
  - Lean
  
- Discussion





# TRADITIONAL DESIGN (THROW-IT-OVER-THE-WALL)



# CURRENT DESIGN MANAGEMENT PRACTICES IN INDIA



**Market competition**

**Variability in concept design**

**Lack of standard plan of work**

**Lack of a systematic scheme or protocol**

**Lack of a framework for applying DM tools**



# EFFECT OF IMPROPER DESIGN ON EXECUTION TEAM



**Rework and variation**

**Increase in workload of project personnel**

**Decrease in effectiveness and efficiency**

**Questionable design in terms of constructability**

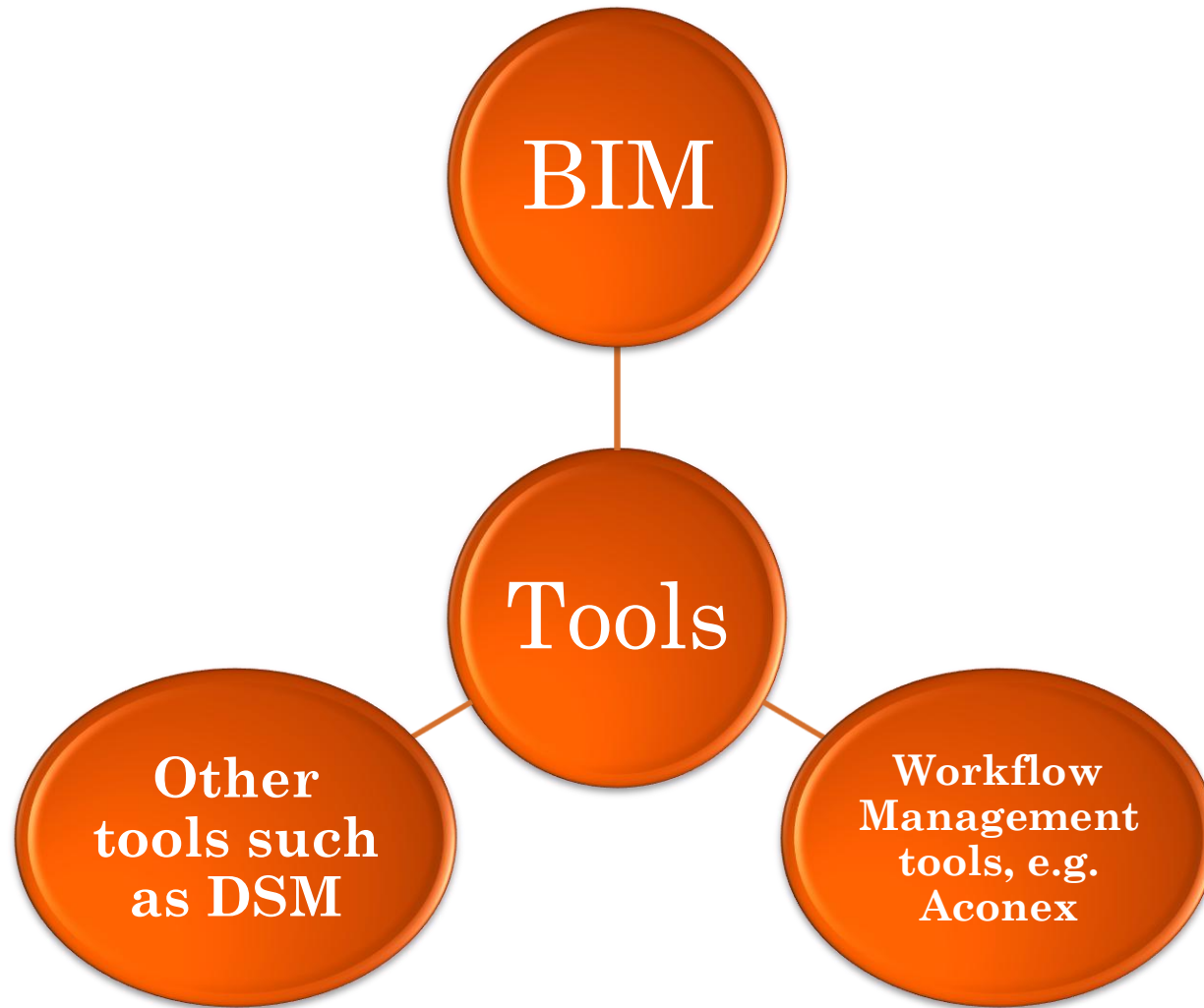
**Affects performance of execution team**





# DESIGN IMPROVEMENT TOOLS AND TECHNIQUES







# BIM IN DESIGN

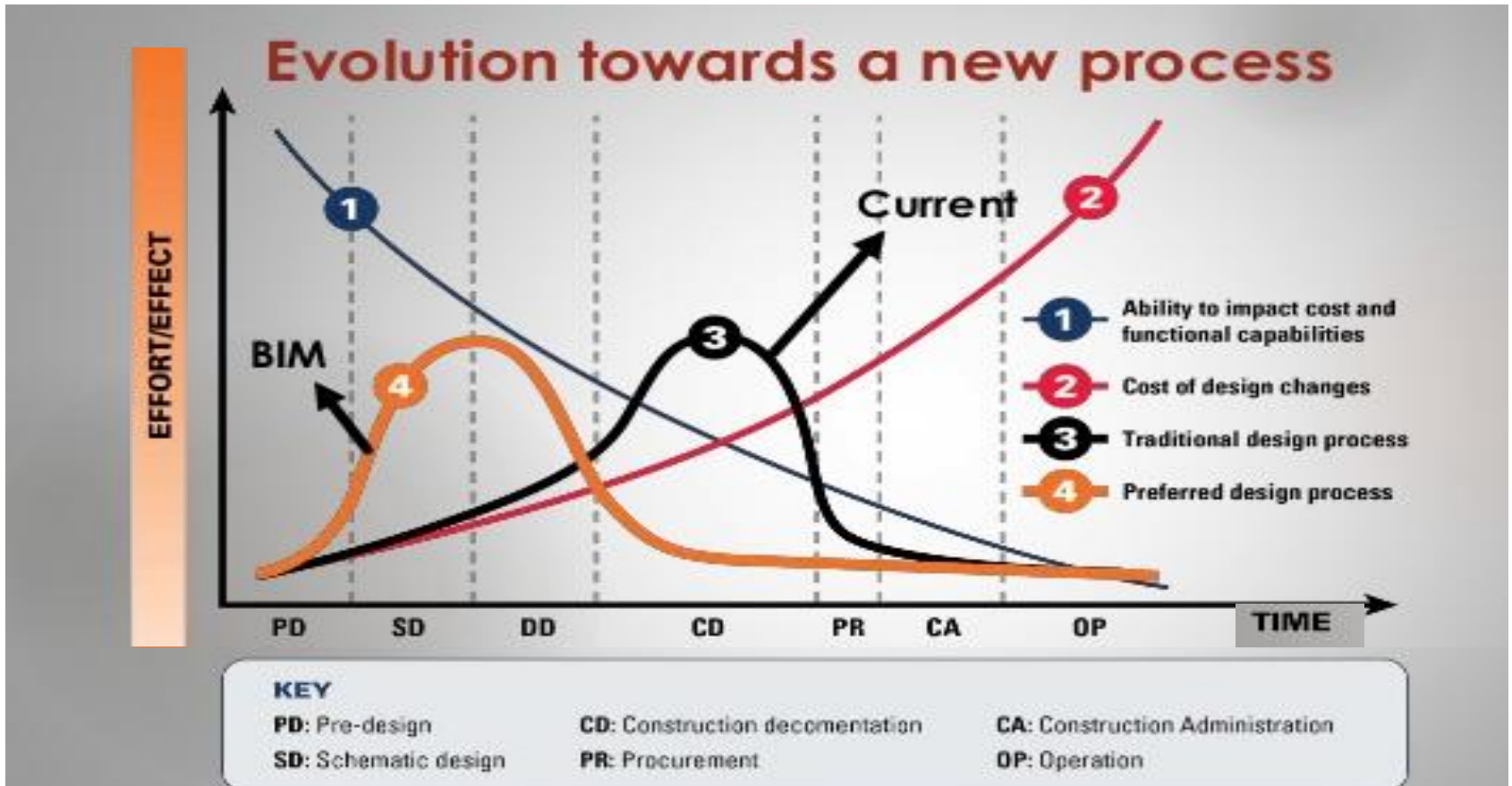
**Integration of processes**

**Elimination of inefficiencies and redundancies**

**Increasing collaboration and communication**

**Better productivity results**





The Macleamy curve



# BENEFITS OF INFORMATION TECHNOLOGY IN DESIGN



- Improvement in the quality of design documents
- Reduction in design cycle time
- Improved budget and cost control
- Better access to information
- Easier monitoring of the designers' activity





# BENEFITS OF INFORMATION TECHNOLOGY IN DESIGN



- Improved material procurement systems
- Collaboration between designers' activity
- Better project performance (lower cost, shorter durations, improved quality)
- Better management of design changes





# LEAN DESIGN

## Value generation

Identifying, challenging and clarifying stakeholder purposes

Exploration of alternatives and trade offs

Output against purposes

## Waste reduction

Superior product/ process design

Easily, safely and rapidly built

Economical and efficiently operated and maintained

Easily altered and sustainable



# PARICIPANT / ORGANIZATION FEEDBACK



1. Is design an issue on your construction project ?
2. Are the **design processes** on your projects defined ?
3. Does your organization use **Design Management tools** for planning and monitoring design activities ?
4. Do architectural/ design processes take longer than required ?
5. Can the process of Design be **standardized** ? (Stages & Duration)
6. Why is **BIM** adoption limited in the industry ? What are the barriers to its adoption ?
7. Can **early involvement of contractor** help in improving design quality and reducing project cost and time?
8. Can **early involvement of operators' representatives** help in improving other aspects such as maintainability, sustainability, etc. ?





THANK YOU