

# **Improvement of Productivity in Construction Projects Using a Lean-Driven Scheduling Method**

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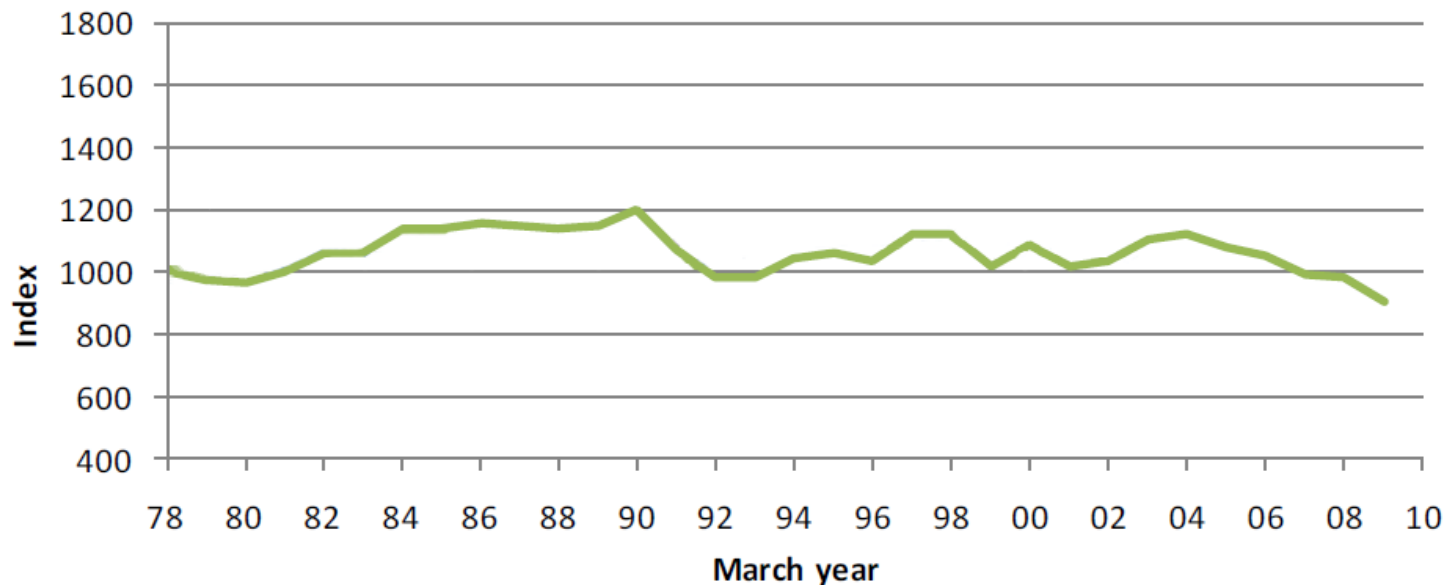
Dr. Vicente González

# • **Contents**

- Research problem
- Use of Lean concept
- Role of buffers
- Conclusion

## • Introduction

- The Problem: Construction Sector is Plugged with Poor Productivity Level



# • Introduction

- Terms and Definitions:

- Productivity:

The volume of outputs from a process per unit of input

- Productivity measurement:

By a multi-factor productivity index (MFP) that  
comprises of labour and capital factors

- Efficiency:

Through maximization of productivity

## • **Background:**

The crucial levers (The Productivity Partnership):

- Literacy and Numeracy, Management Capability and Building Activity
- Customer Education
- Life Cycle impacts and Refurbishment Intervals
- Alternative Financial Products and Liability Issues
- Standardisation, BIM, Mechanisation
- QMS
- Health and Safety, BCA Validation
- Indoor Environmental Quality

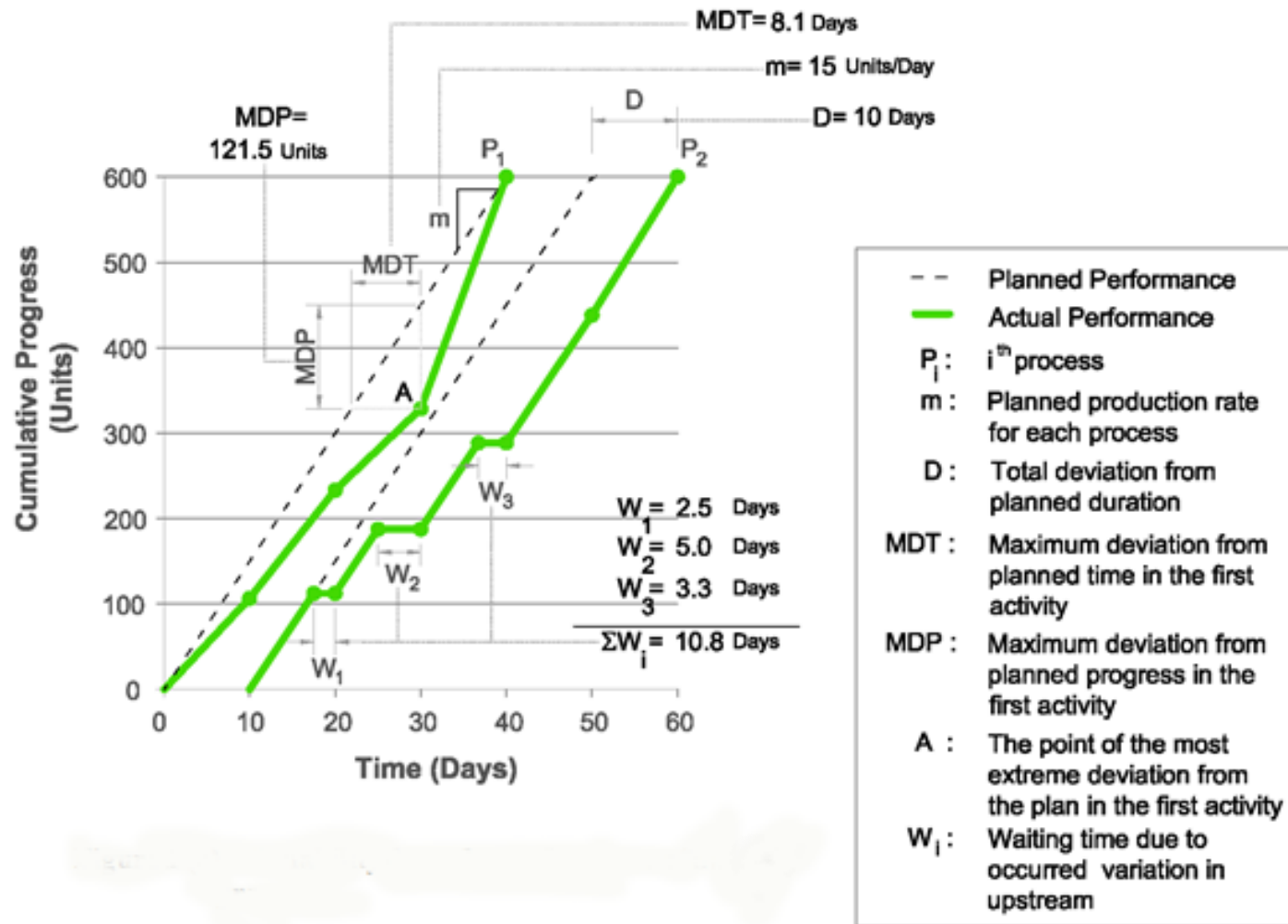
- **Background:**

Management Capability is a very high crucial lever

Thomas et al. (2003): Management is responsible for

- 32% of inefficient working times
- 51% of labour efficiency

- **Discussion:** Variability is a major problem

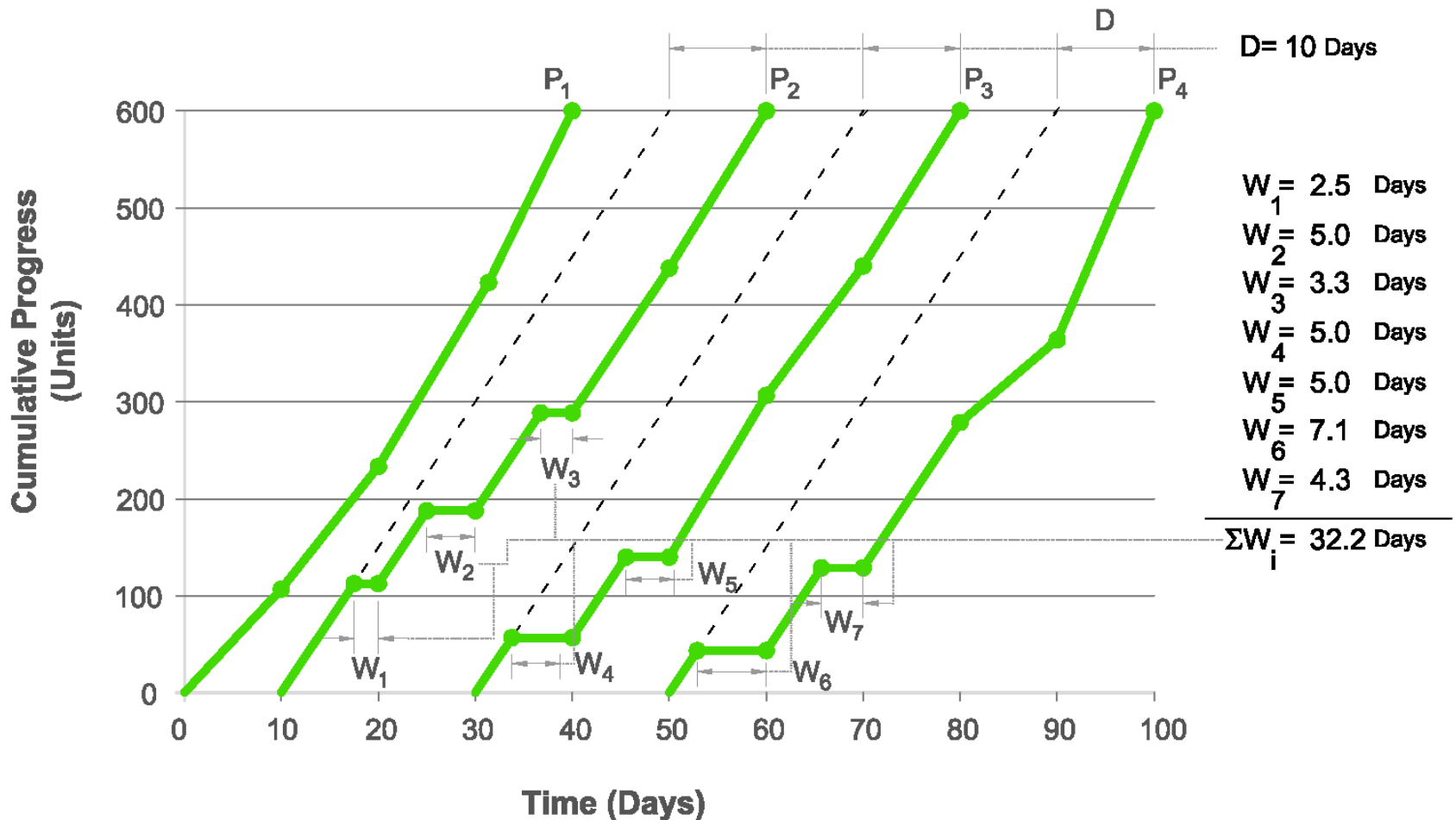


- **Discussion:** Variability is a major problem





## • Discussion: Propagation of the problem



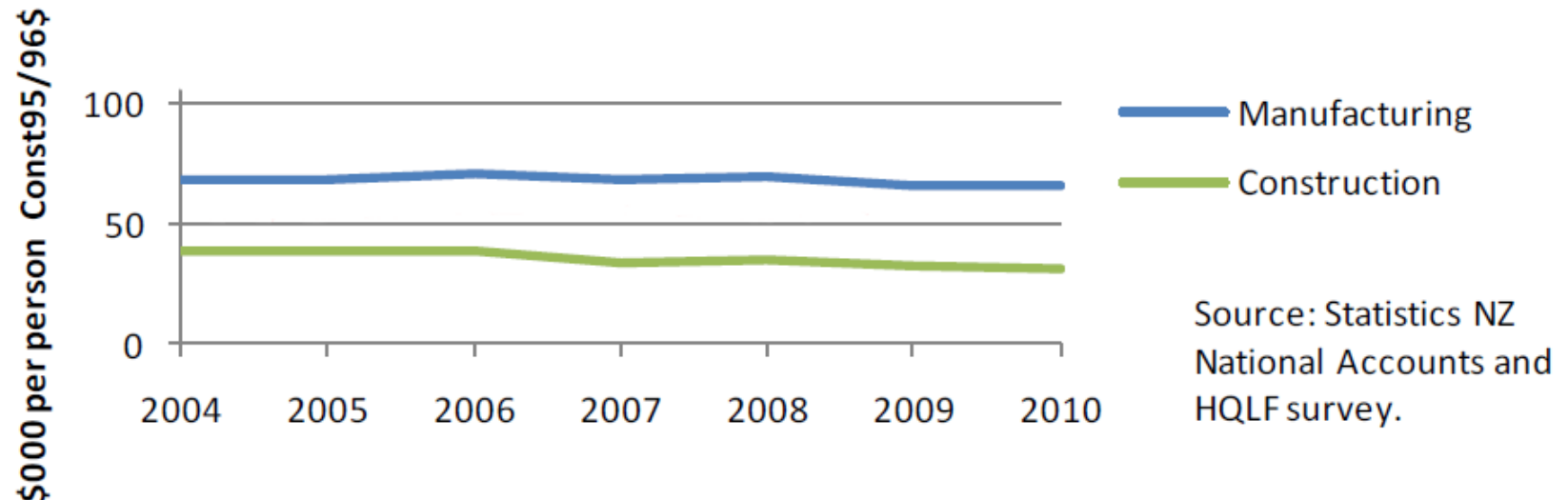
- **Discussion:** Propagation of the problem



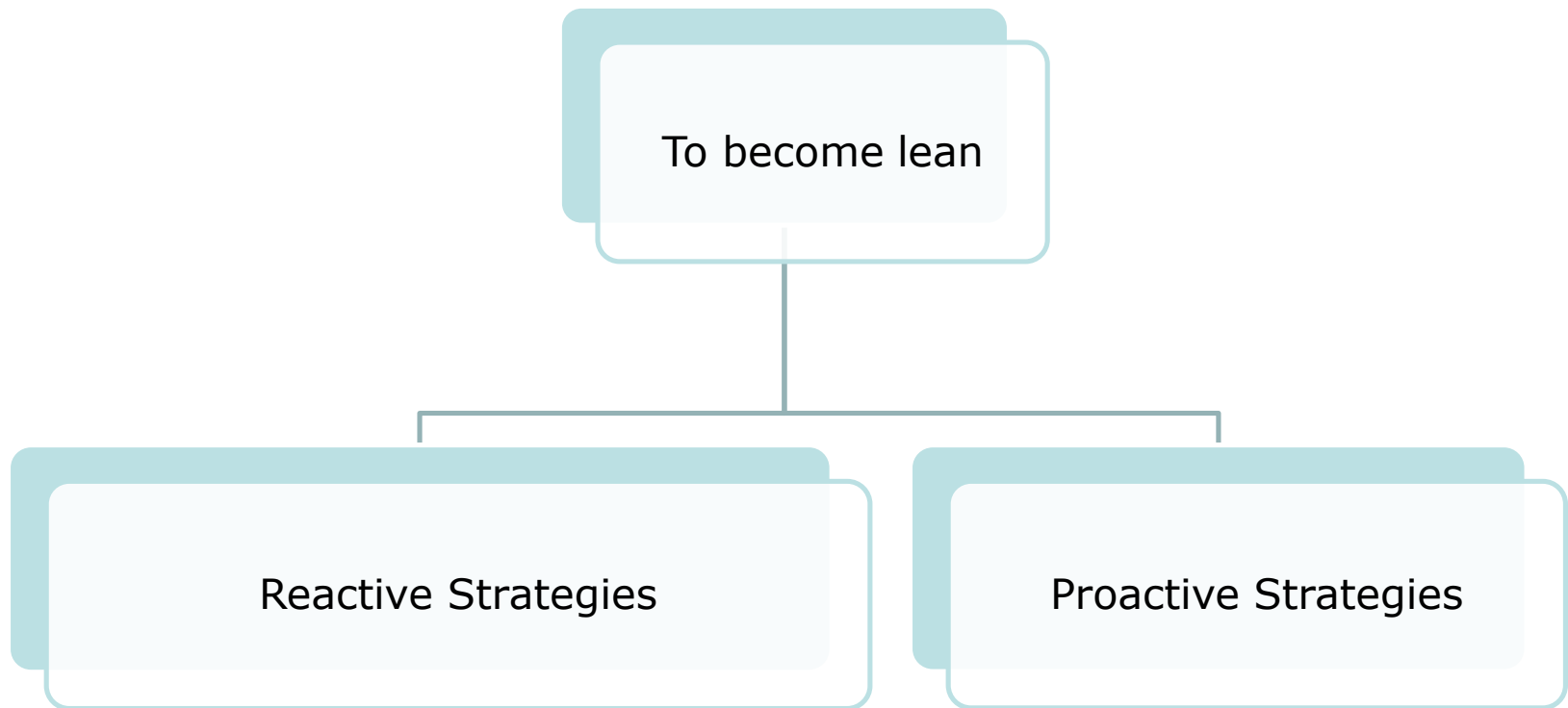
Variability accounts for 30% to 49% of  
productivity reduction

- **Discussion:** Management of Variability

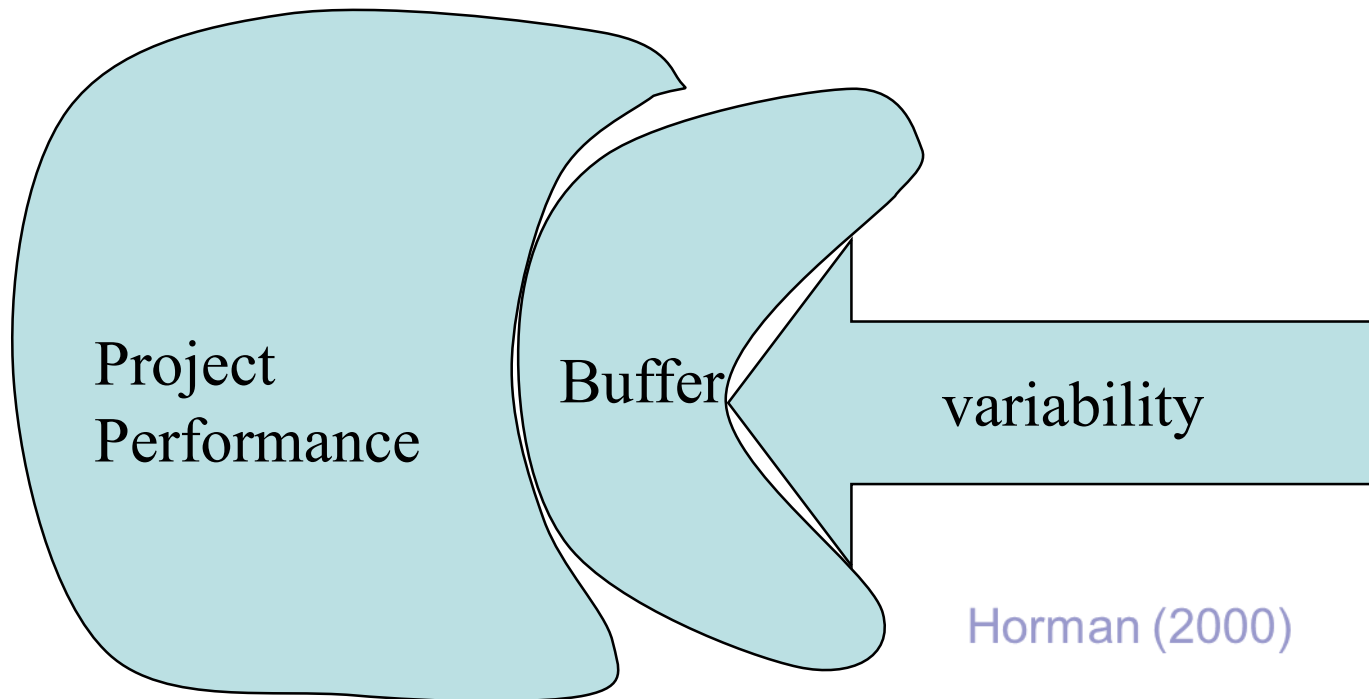
A conceptual approach: Lean Construction



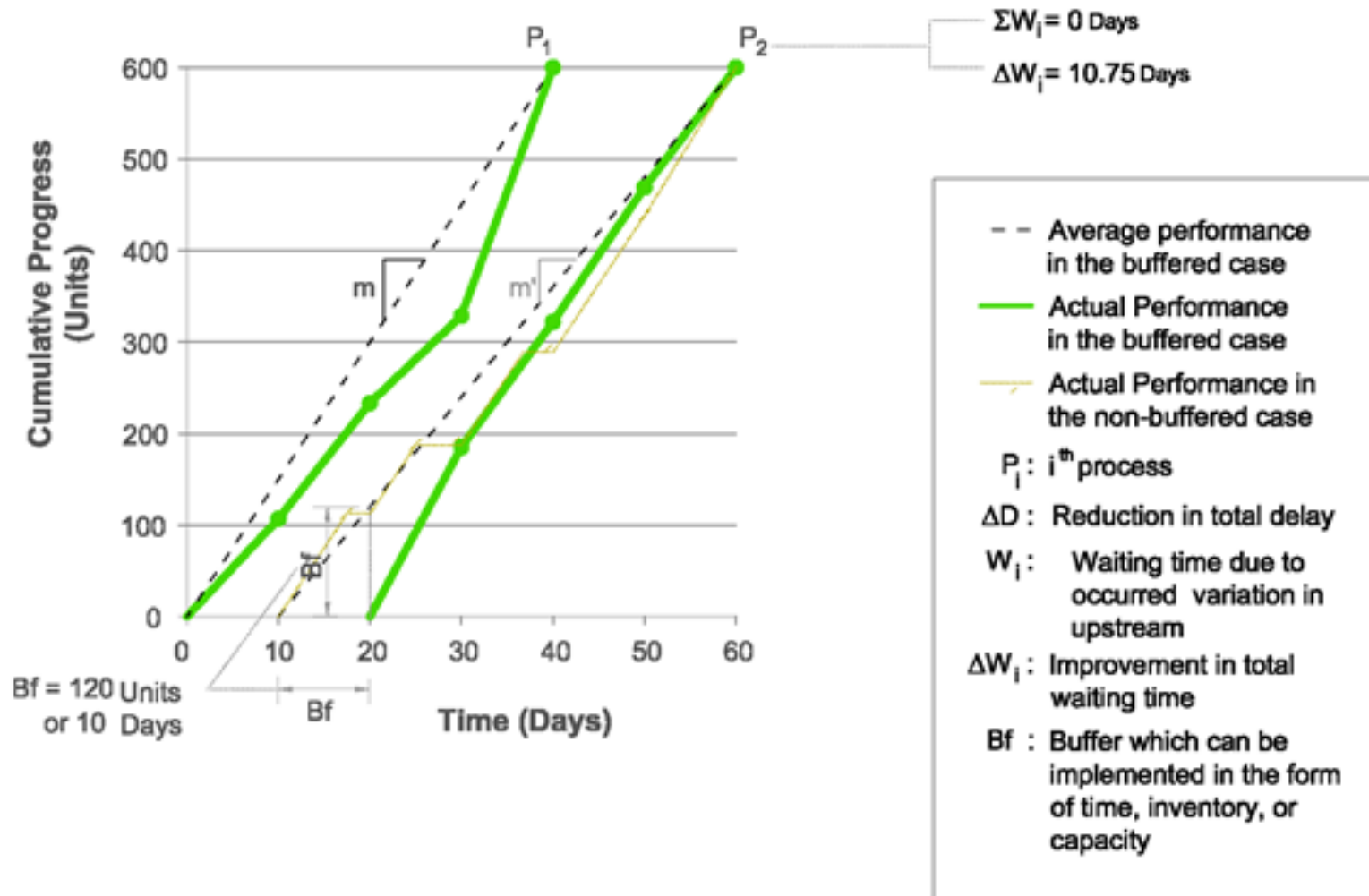
- **Discussion:** Management of Variability



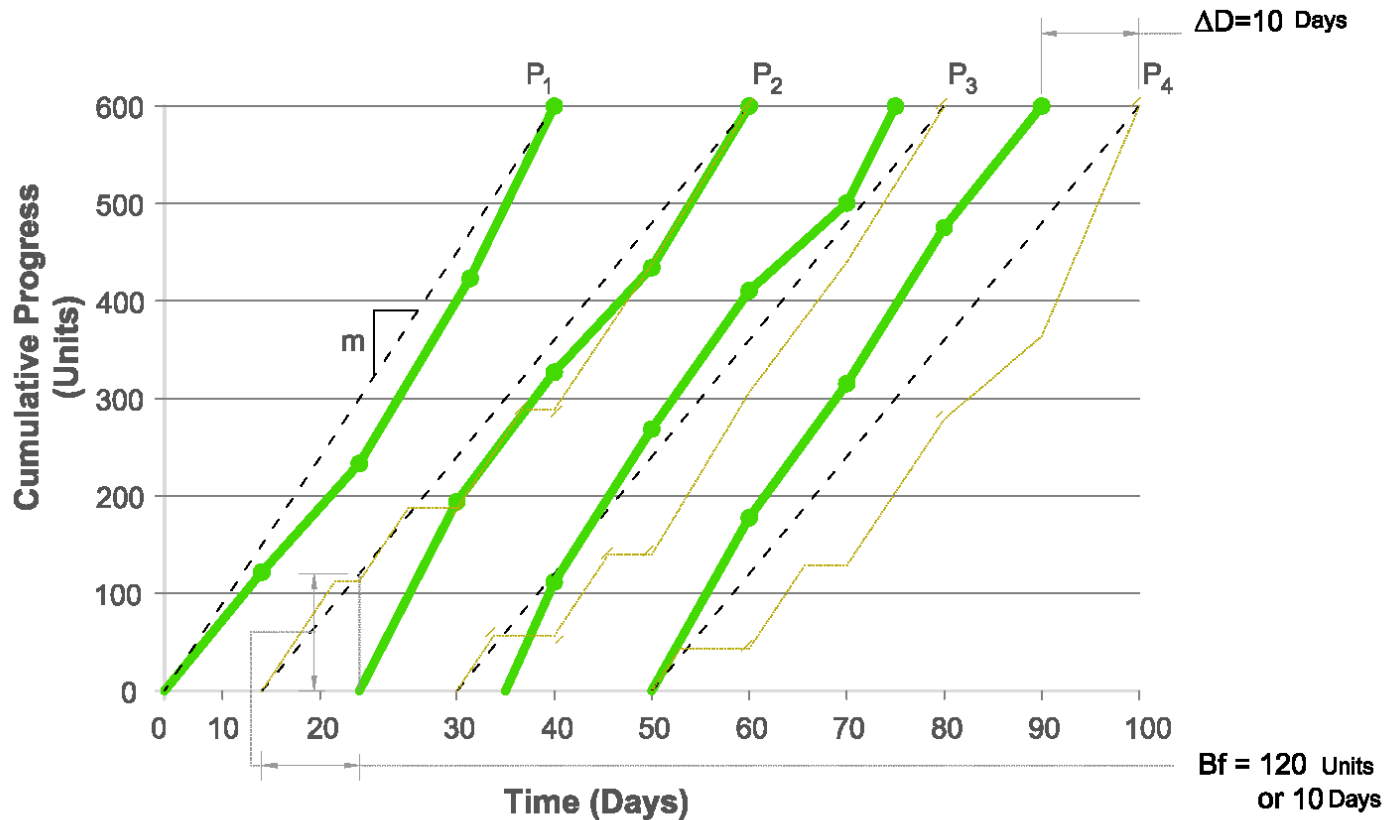
- **Discussion:** Proactive Strategies



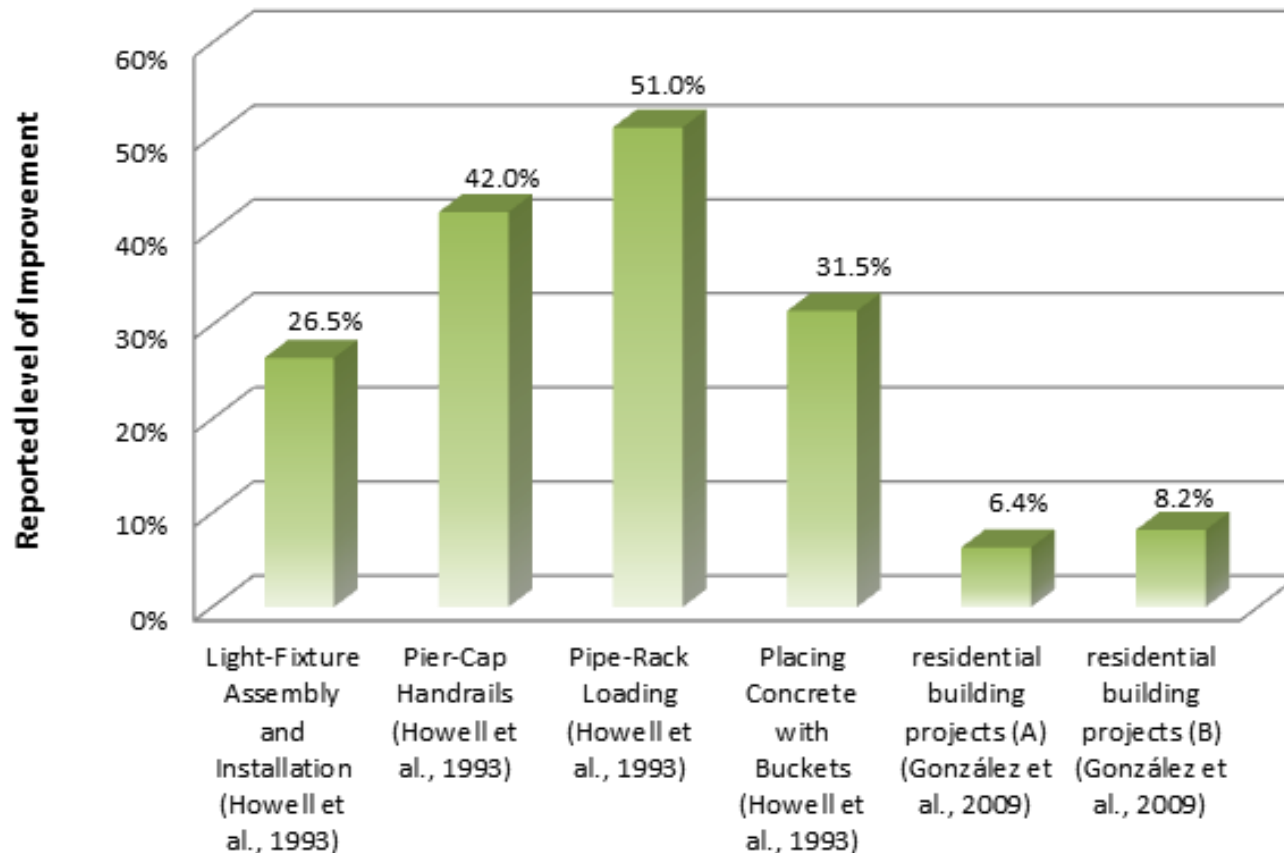
## • Discussion: Role of buffers



- **Discussion:** Role of buffers



- **Discussion:** The observed improvements





- **Conclusion:**

- Individual Level
- Firm Level
- Industry Level



# **Thank you**