

**STRATEGIC PROJECT SOLUTIONS®**

# Project as Production System

03 December 2014

Effective delivery of projects is critical



# Cost & schedule overruns too common



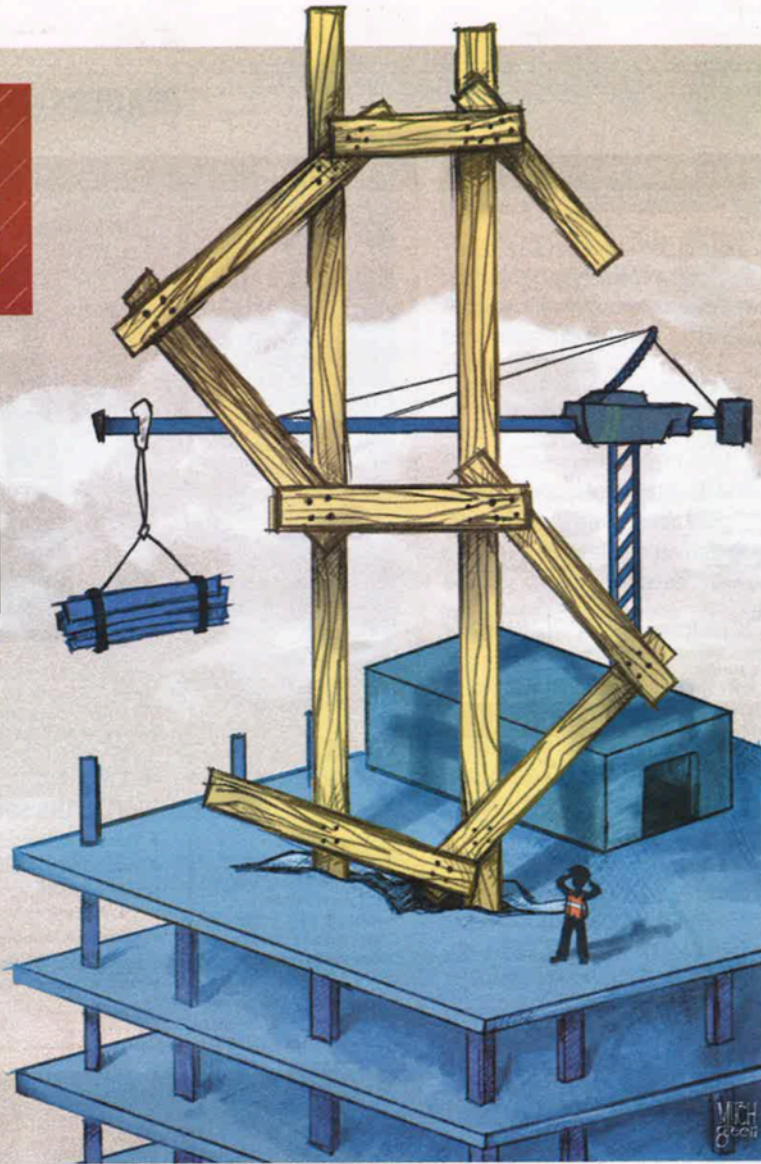
# SAN FRANCISCO BUSINESS TIMES

COVER STORY

## THROUGH THE ROOF

Construction costs paused during the downturn, but the development boom has got them soaring again across the Bay Area. Who's getting the worst of it? Affordable housing developers.

CORY WEINBERG, PAGES 4-5

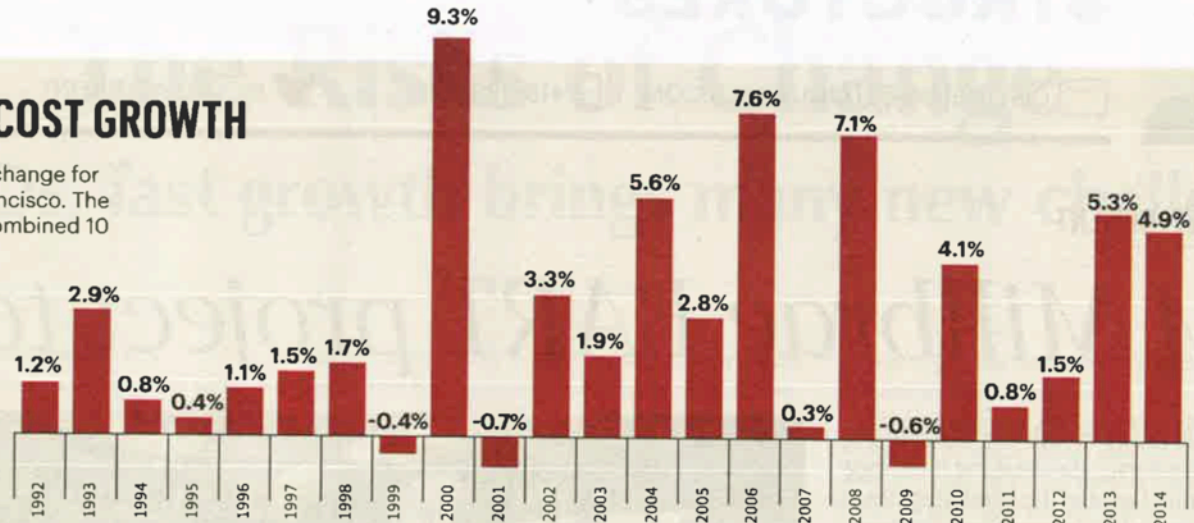


November 21, 2014 San Francisco Times

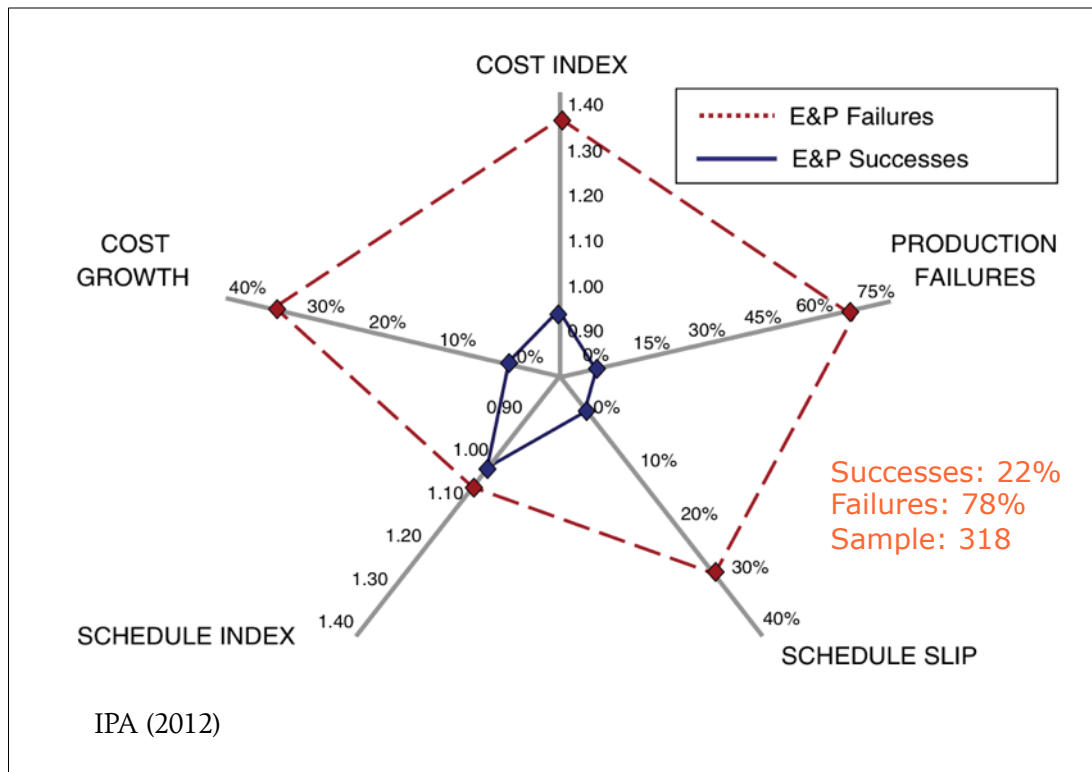
## CONSTRUCTION COST GROWTH

Year-by-year annual percent change for construction costs in San Francisco. The past two years have seen a combined 10 percent cost growth for the first time since 2005-2006, at the height of the housing boom.

NOTE: ANNUAL FIGURES ARE DEC. VS. DEC; LATEST DATA YEAR-OVER-YEAR AS OF AUGUST 2014.  
SOURCES: ENR, RCG



“Although work may be bigger and margins may be higher at bid time, there’s a lot of people working for nothing right now,” Yee said. “With all the labor inefficiencies and lag we pick up out here, you lose the anticipated profits.”



*Of 365 mega projects with capital investment over US\$1B, 64% are facing cost overruns and 73% are reporting schedule delays. - EY (2014)*

# “Normalized Pain”



Who should we be benchmarking ourselves with?

What capability maturity curve should we be following? (What does good look like?)



**WARNING:**  
Benchmarking can be  
hazardous to your  
operation's health!

Download Now >

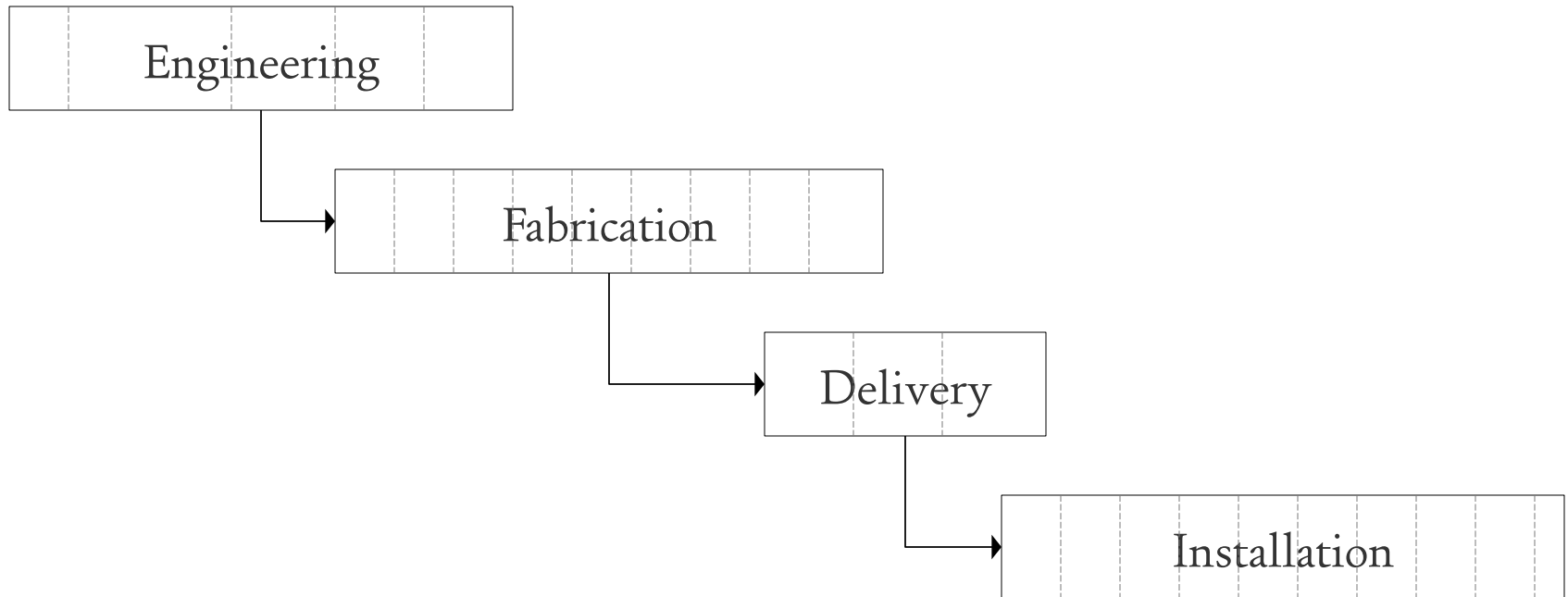
Today's major capital projects are too complex and dynamic for the current approach to managing them

Over reliance on functional  
project management

Lack of investment in  
management of production  
(execution of work)



# Conventional View

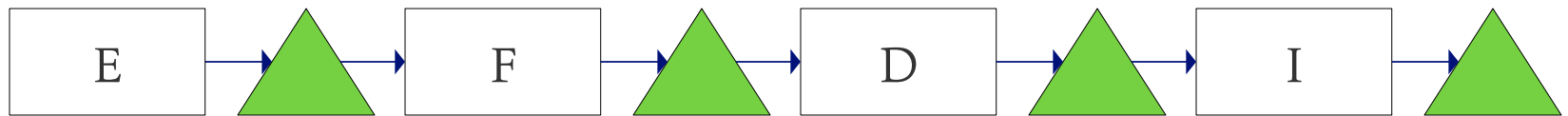


# Project as Production System



Per each system/subsystem

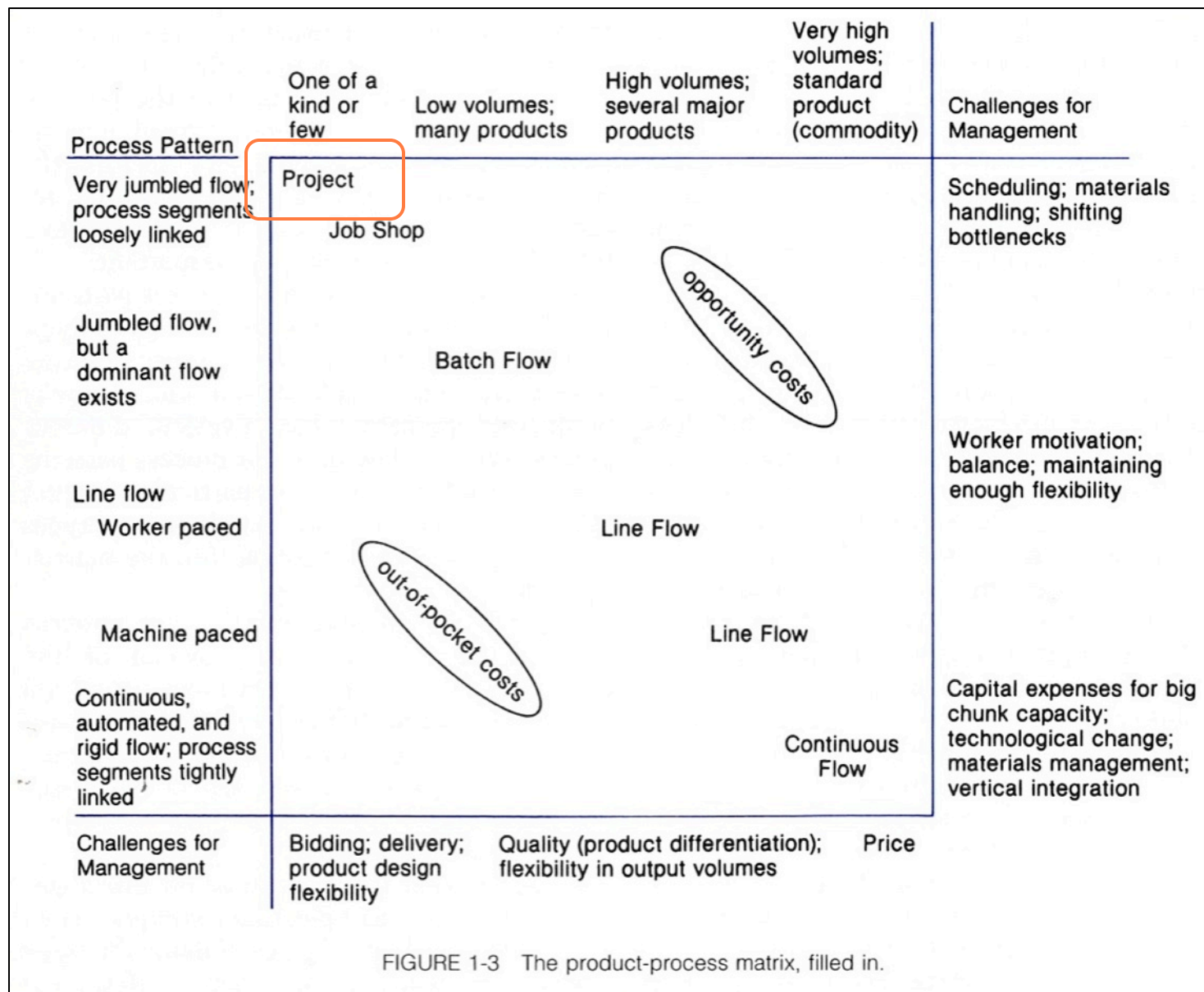
# Project as Production System



Per each system/subsystem

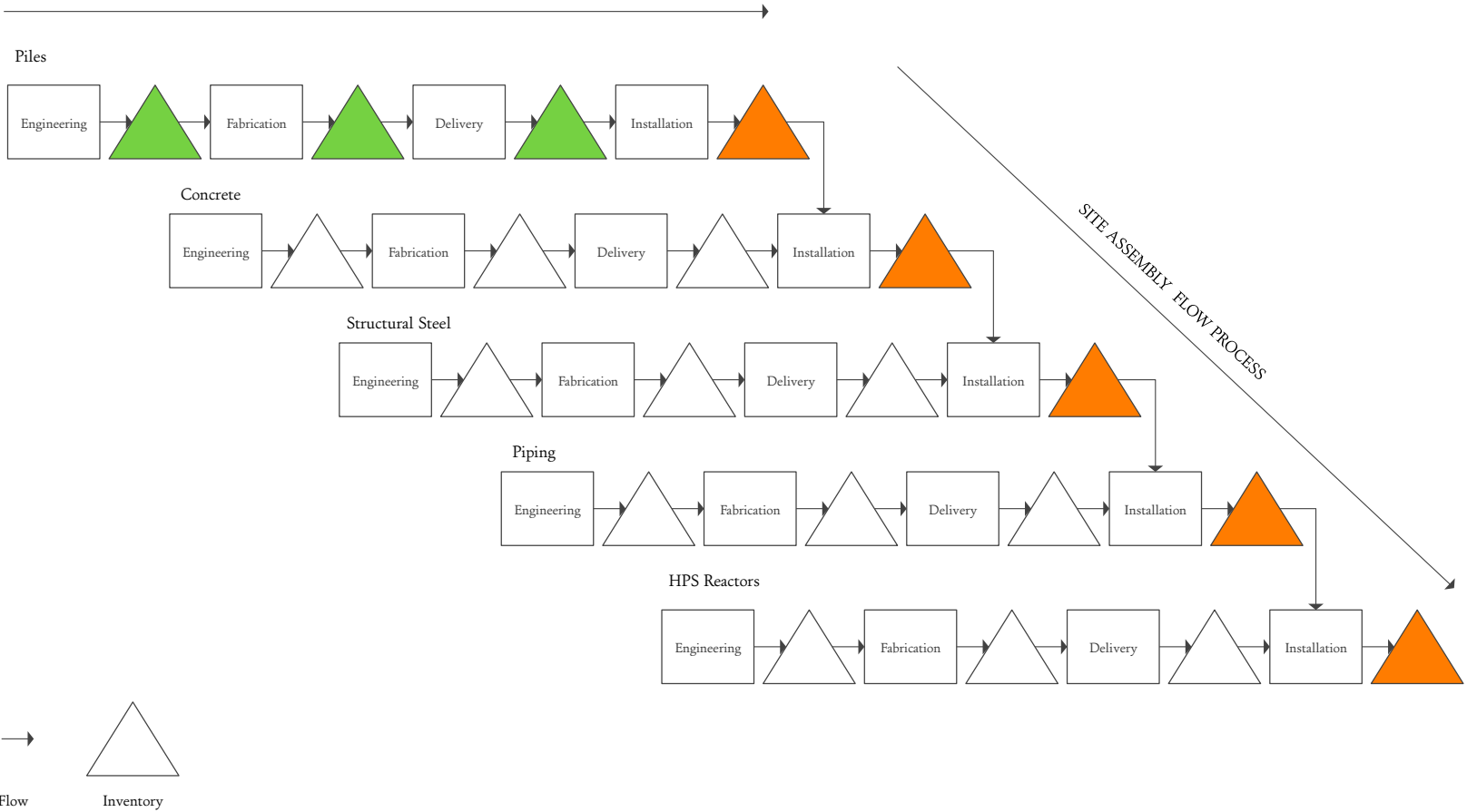
Schmenner did this in 1993!





*Production/Operations Management Fifth Edition – Roger W. Schmenner 1993*

SUPPLY FLOW PROCESS



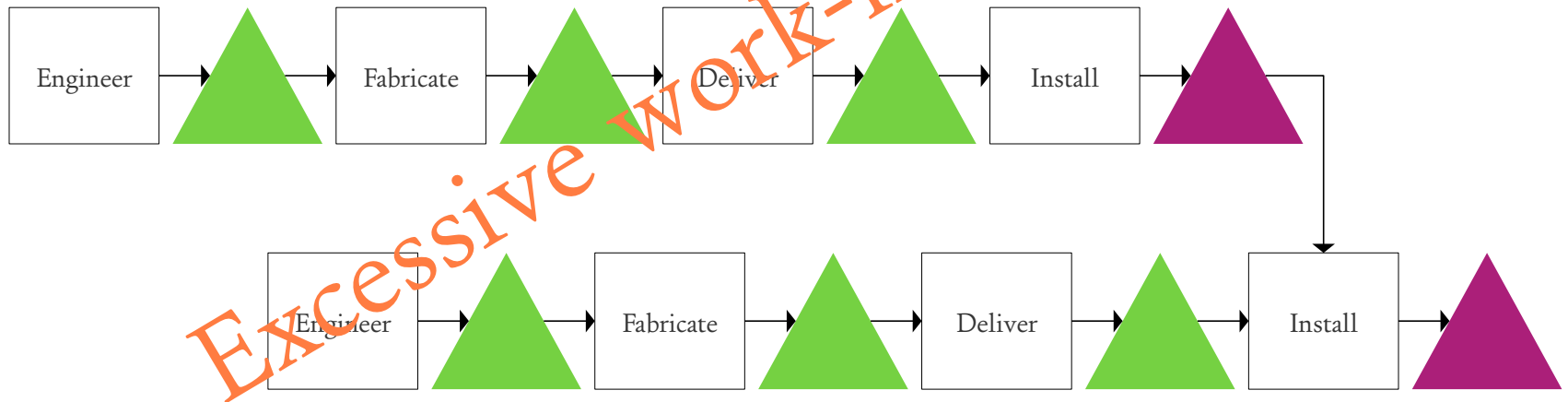
How should it behave?

Inventory (finished drawings / specs) to decouple engineering from fabrication enabling optimization of technical resources – may also be required by outside stakeholders

Inventory (finished goods) to decouple fabrication from site installation enabling optimization of raw materials and capacity use including transportation

Inventory to optimize use of capacity onsite

Inventory and or time buffer to decouple operations between trades or crews enabling optimization of capacity onsite





Looking at it

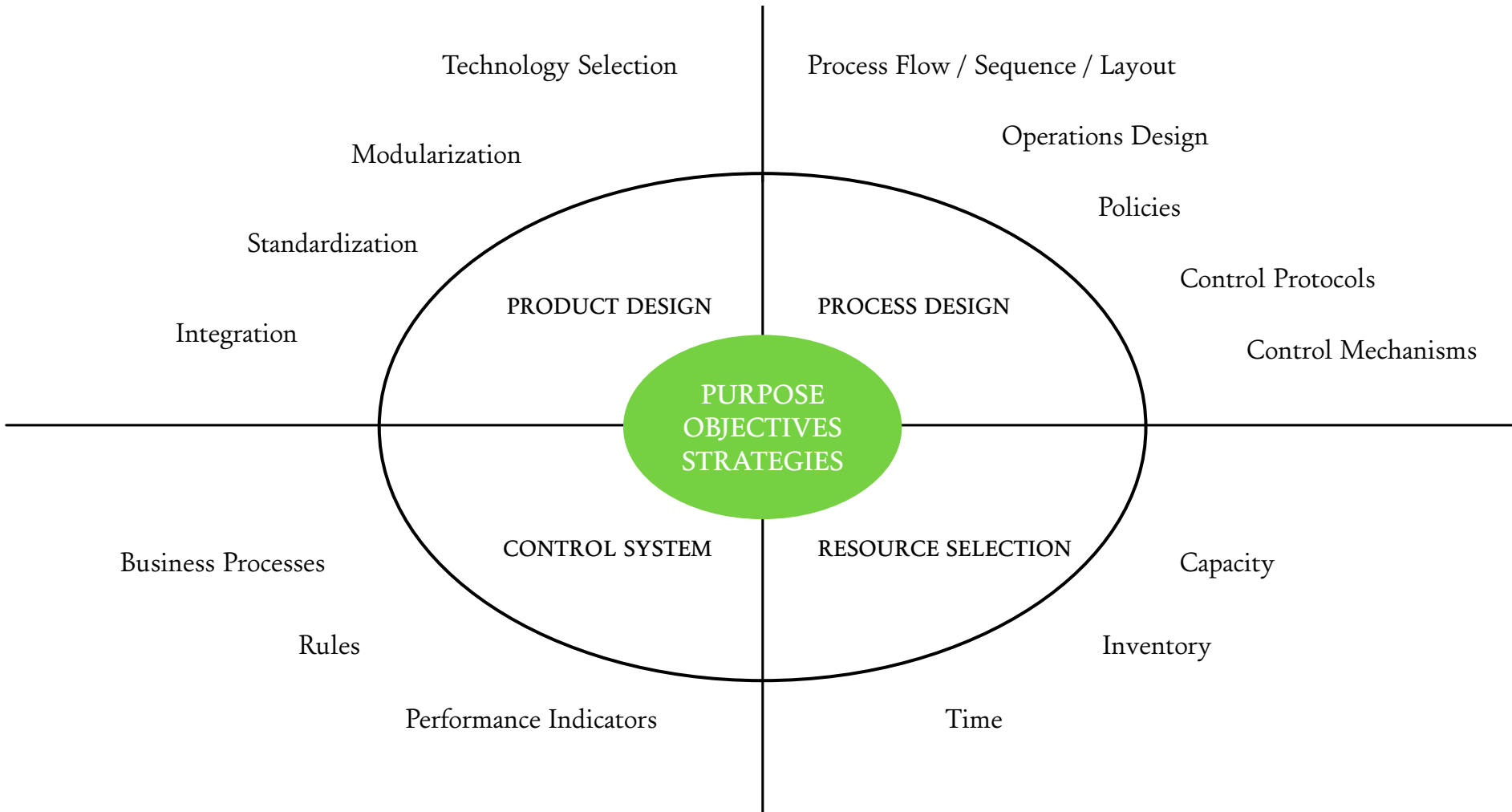
vs.

Looking for it

# NOT PROJECT CONTROLS

**Operations Management** provides  
the basis for designing and  
controlling production systems

# Production System Design Parameters



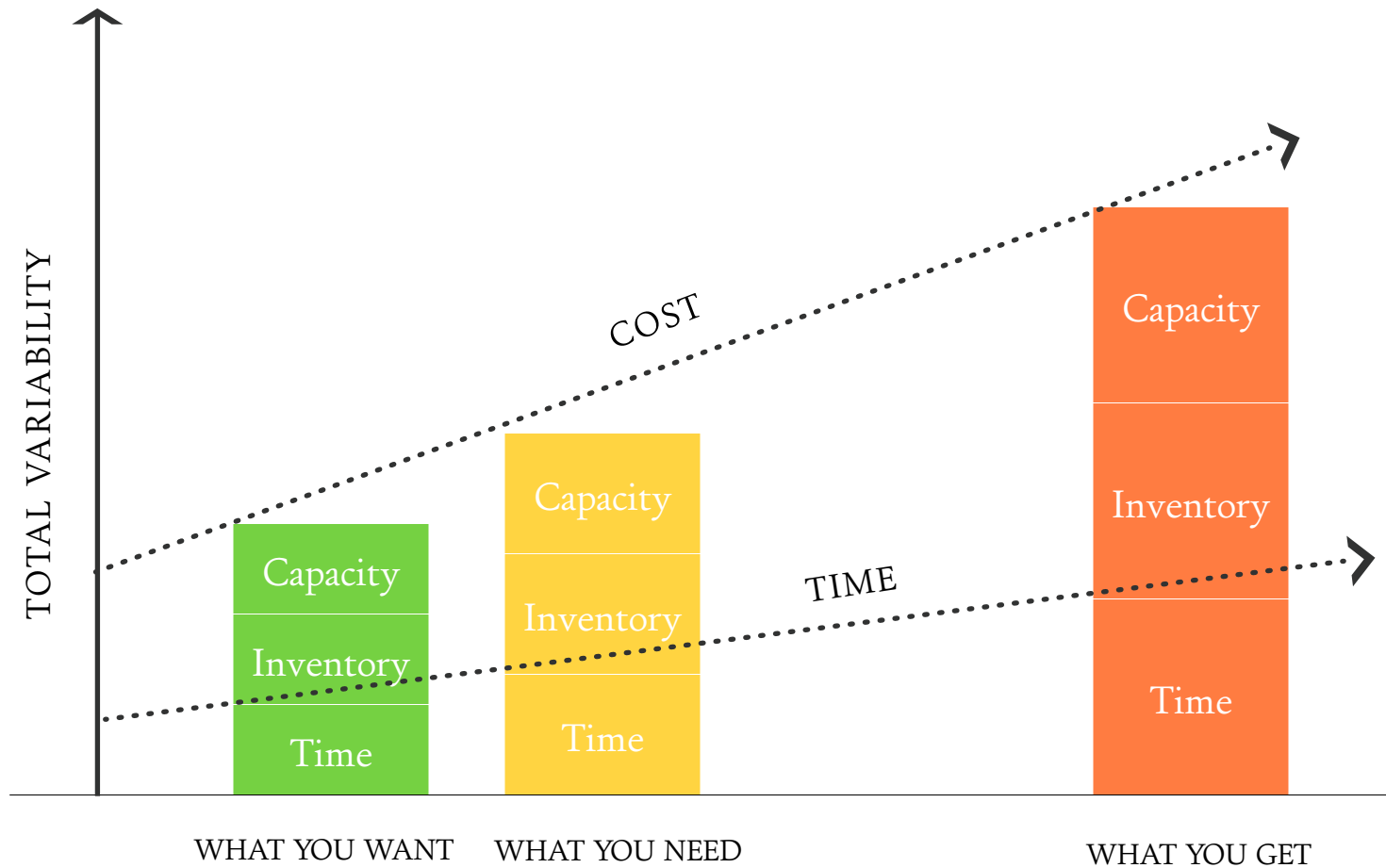


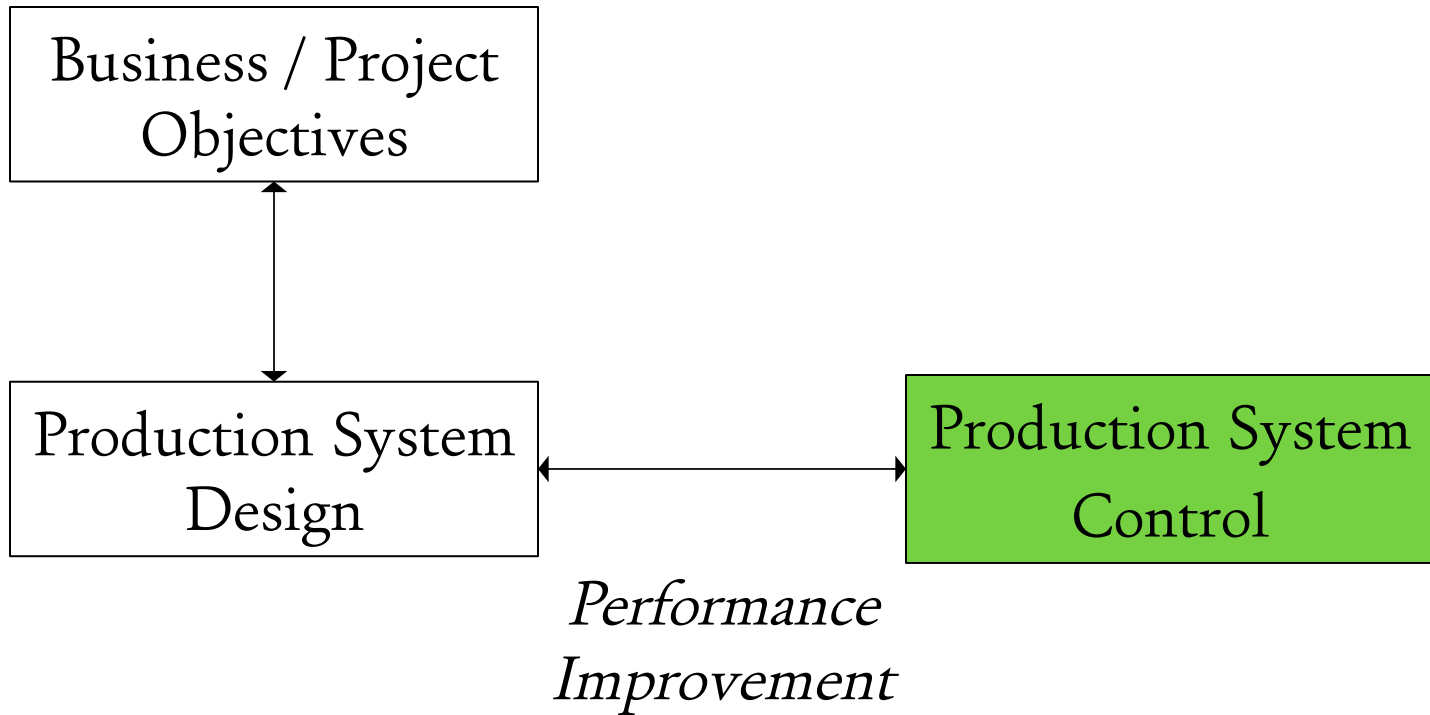
How do we ensure production systems behave per the designs?









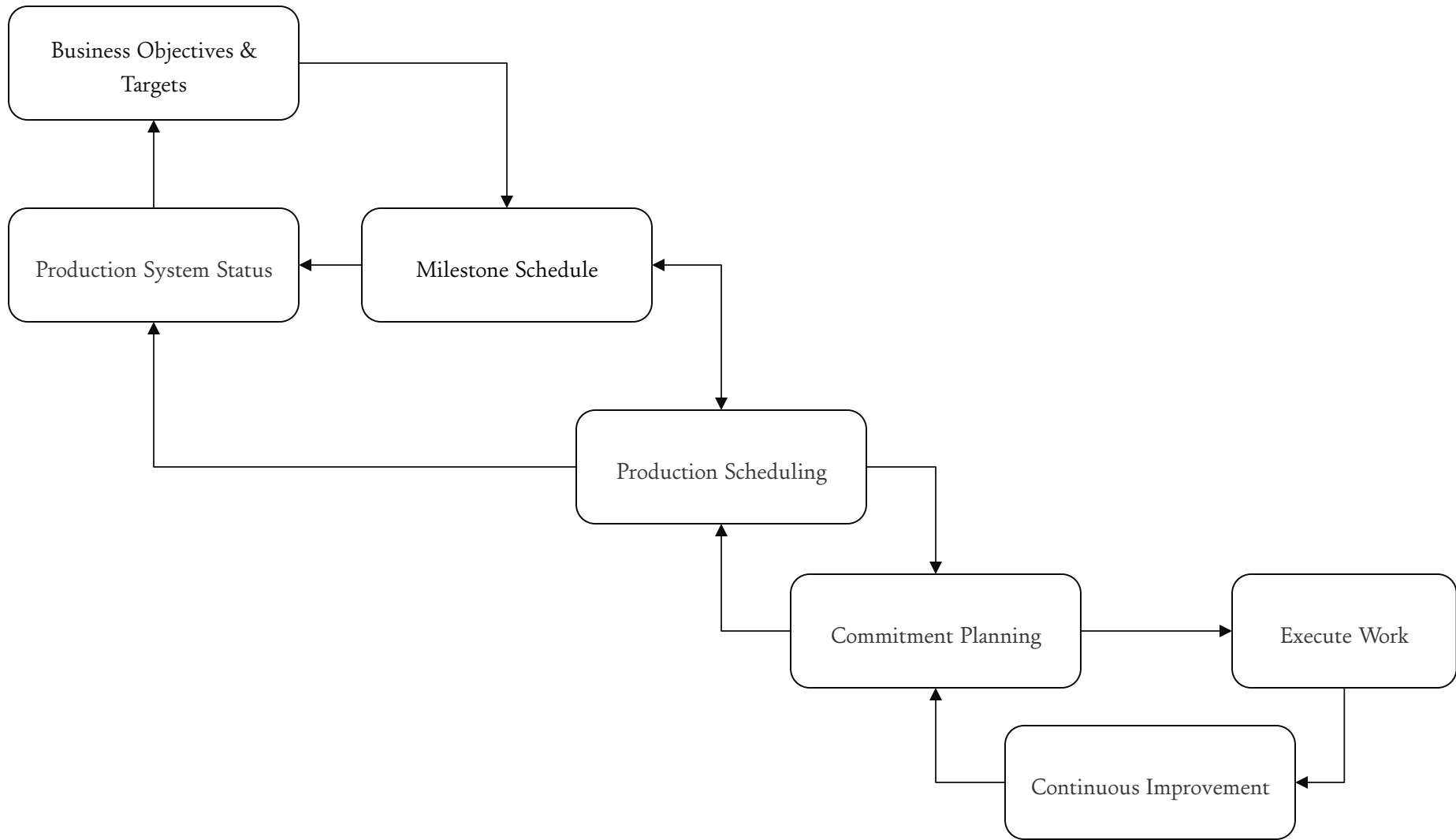


# Production System Control

Business Processes

Rules/Policies

Measurements



Project Management  
+  
Production Management



# Research

Not collecting best practices

But developing next practices

