

Trond Bølviken Veidekke

#LeanLPS

Organiza y promueve

Promueve

ITeC



The Change Business Ltd
developing people + delivering projects



Patrocina



Media Partners



infoconstrucción



DPA ARQUITECTURA

BIM Community

Con la colaboración de





COLLABORATIVE PLANNING IN PRODUCTION

Trond Bølviken

Director Veidekke Entreprenør AS

Barcelona, May 12, 2016



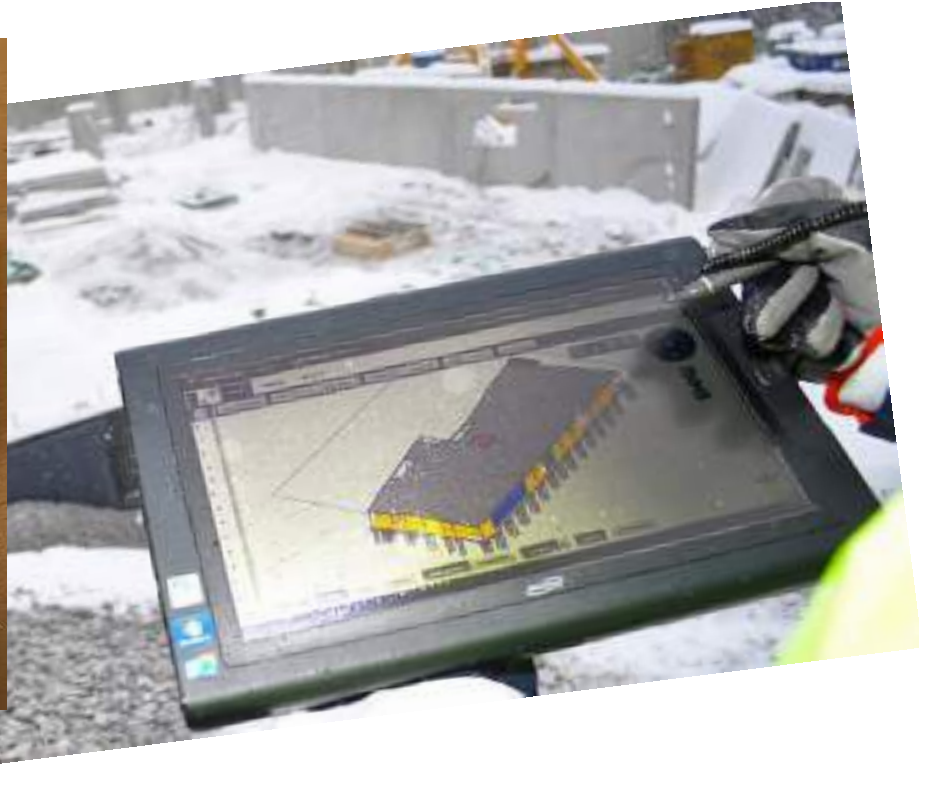
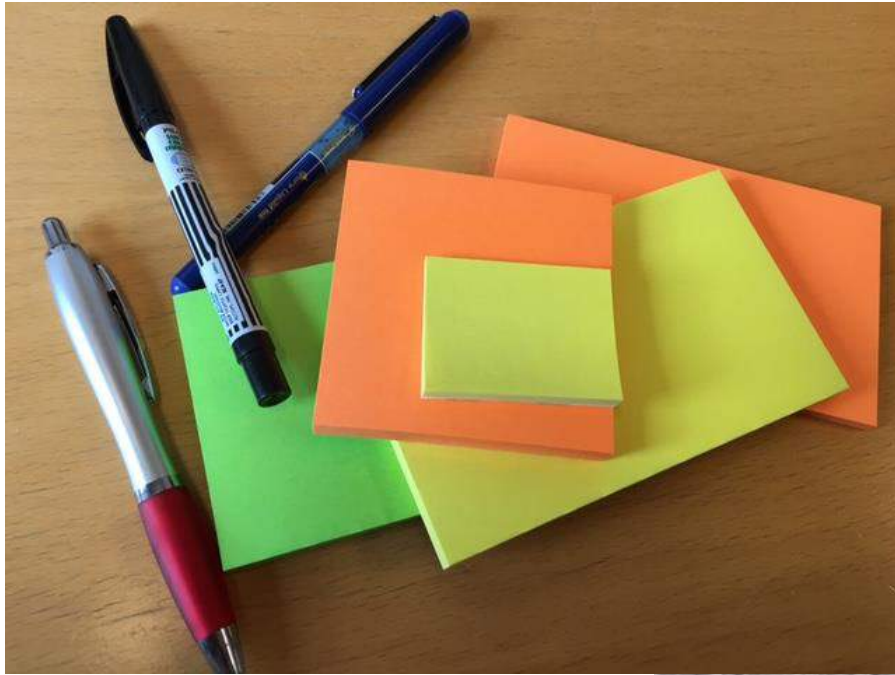
Involverende
planlegging
i prosjektering

Veileder

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Involverende
planlegging | i produksjon



How should we
understand production?

And how should we
apply this understanding
to construction?

Lauri Koskela

What kind of production
is construction?

Glenn Ballard and Greg Howell



WE ARE NOT A FACTORY

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WE ARE NOT A WORKSHOP

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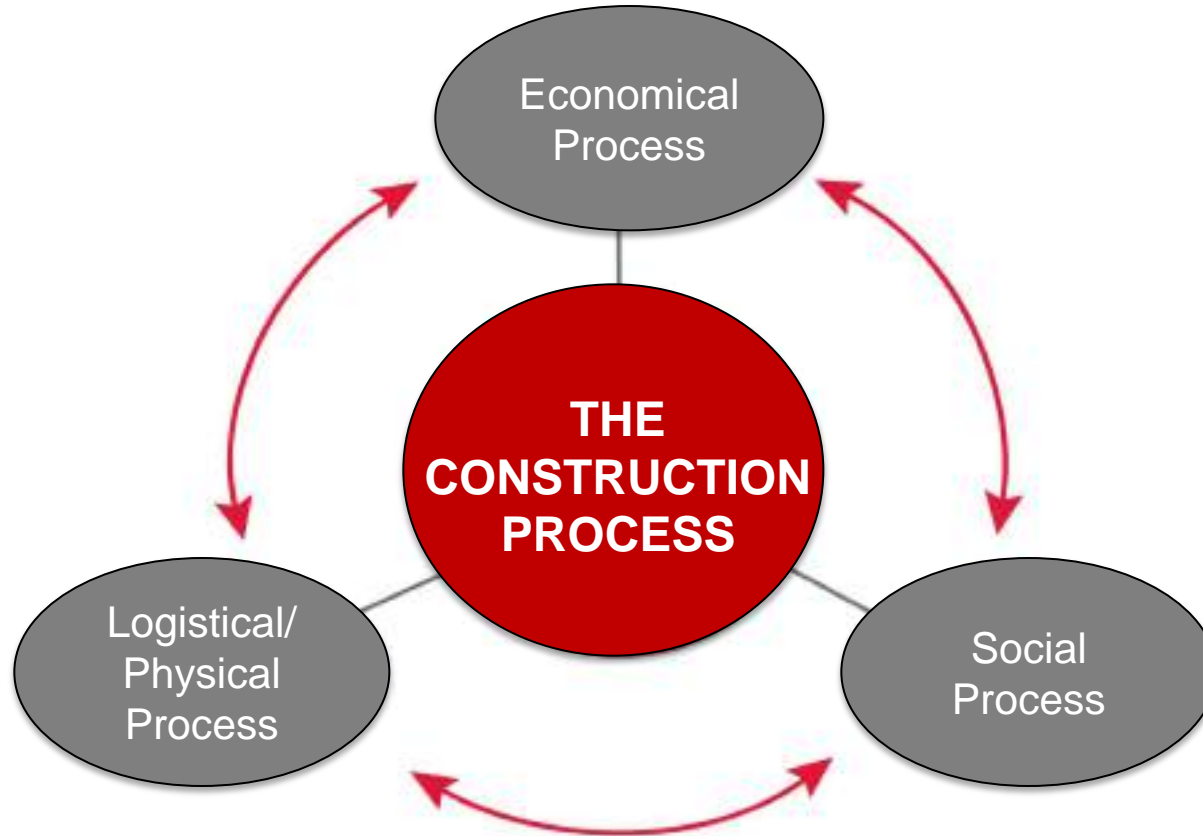
WE ARE NOT AN AIRLINE

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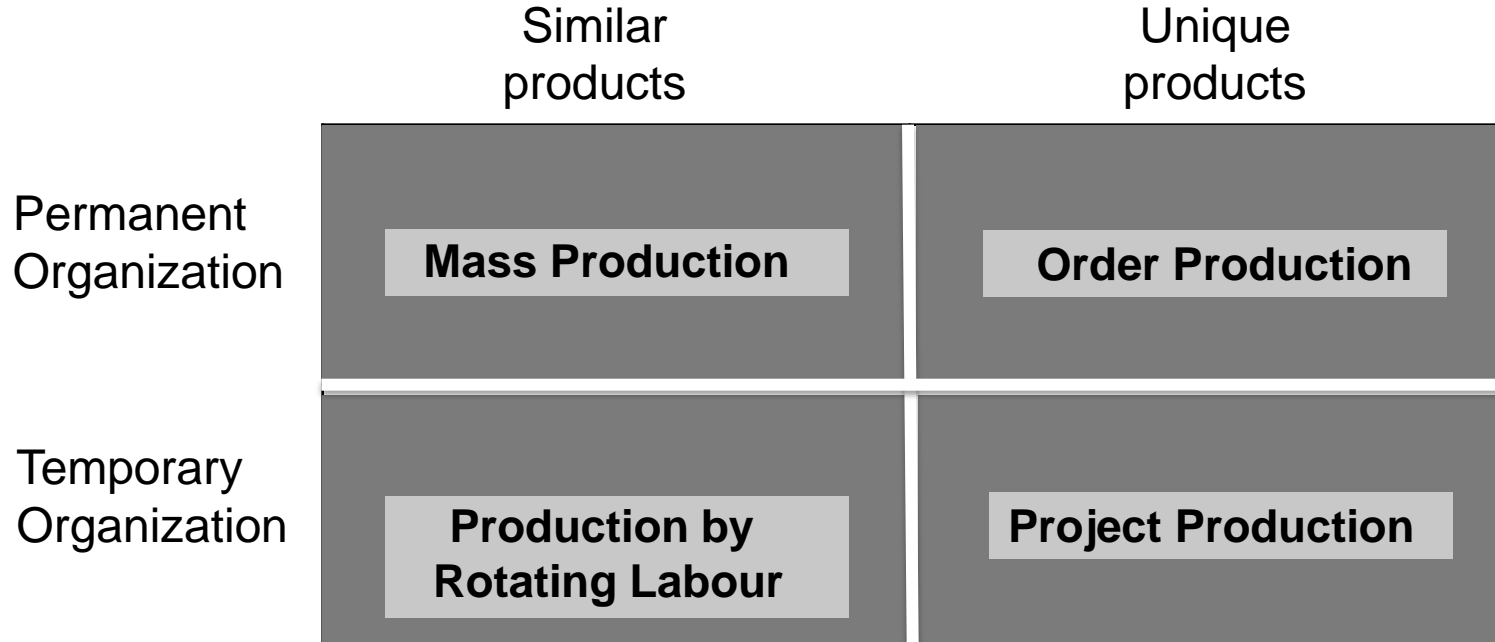


PECULIARITIES OF CONSTRUCTION

- + Production is moved to the product
(not the other way around)
- + Production runs through the product
(not the other way around)
- + Project production



TYPES OF PRODUCTION



TYPES OF PRODUCTION

Similar
products

Unique
products

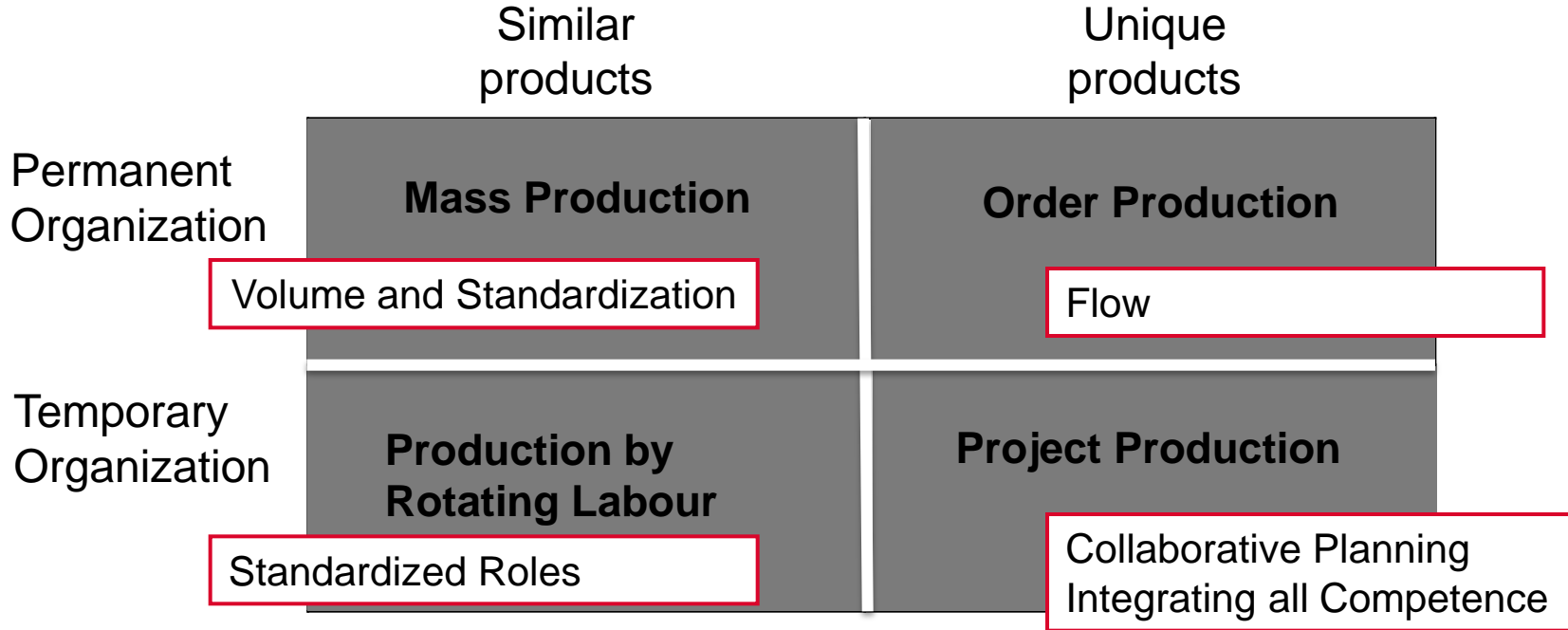
Permanent
Organization



Temporary
Organization

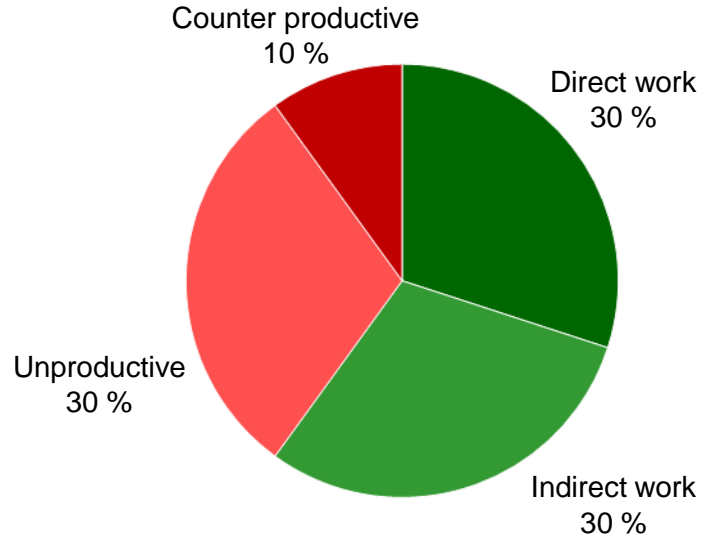


PRODUCTIVITY STRATEGIES

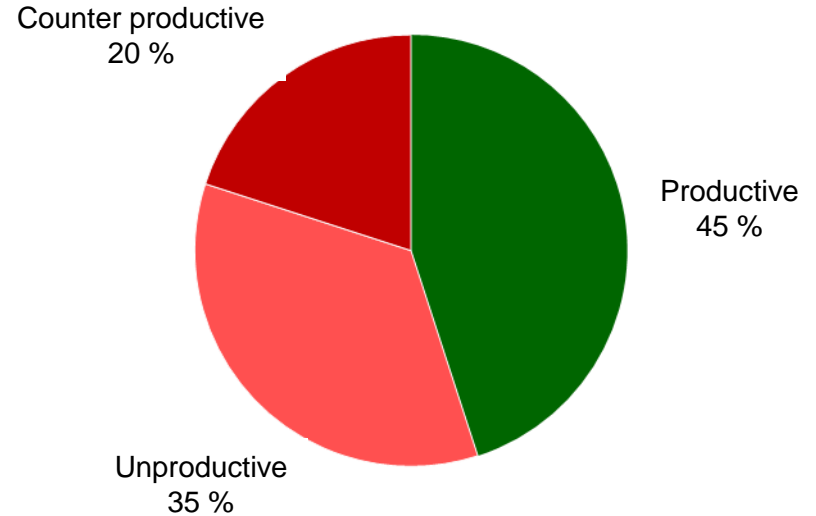


USE OF WORKING HOURS

CONSTRUCTION



SHIPBUILDING (REBUILDING)



+ We execute projects



+ We are a producer



+ Production is a core activity



+ Production is a strategic issue



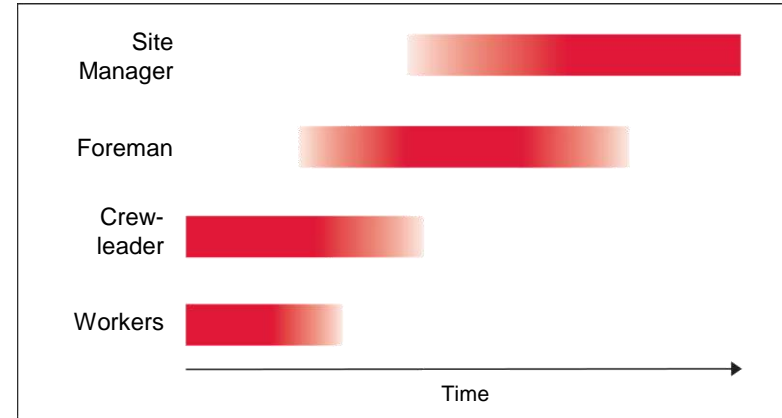
+Project based production



+Management and leadership
through planning



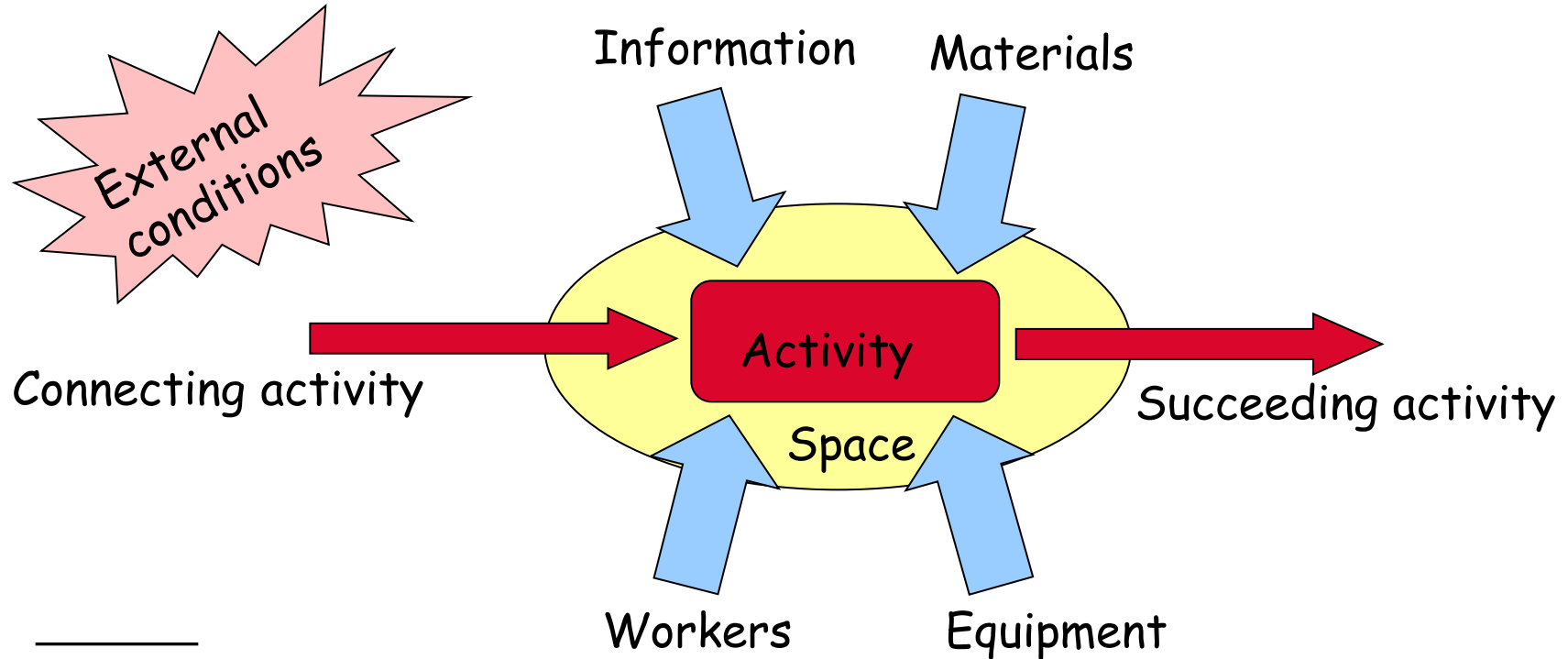
+Collaborative planning



PRODUCTION CONTROL PRINCIPLES

1. Plan in greater detail as you get closer to doing the work
2. Produce plans collaboratively with those who will do the work
3. Reveal and remove constraints on planned tasks as a team
4. Make and secure reliable promises
5. Learn from breakdowns

7 PRECONDITIONS FOR A SOUND PRODUCTION ACTIVITY



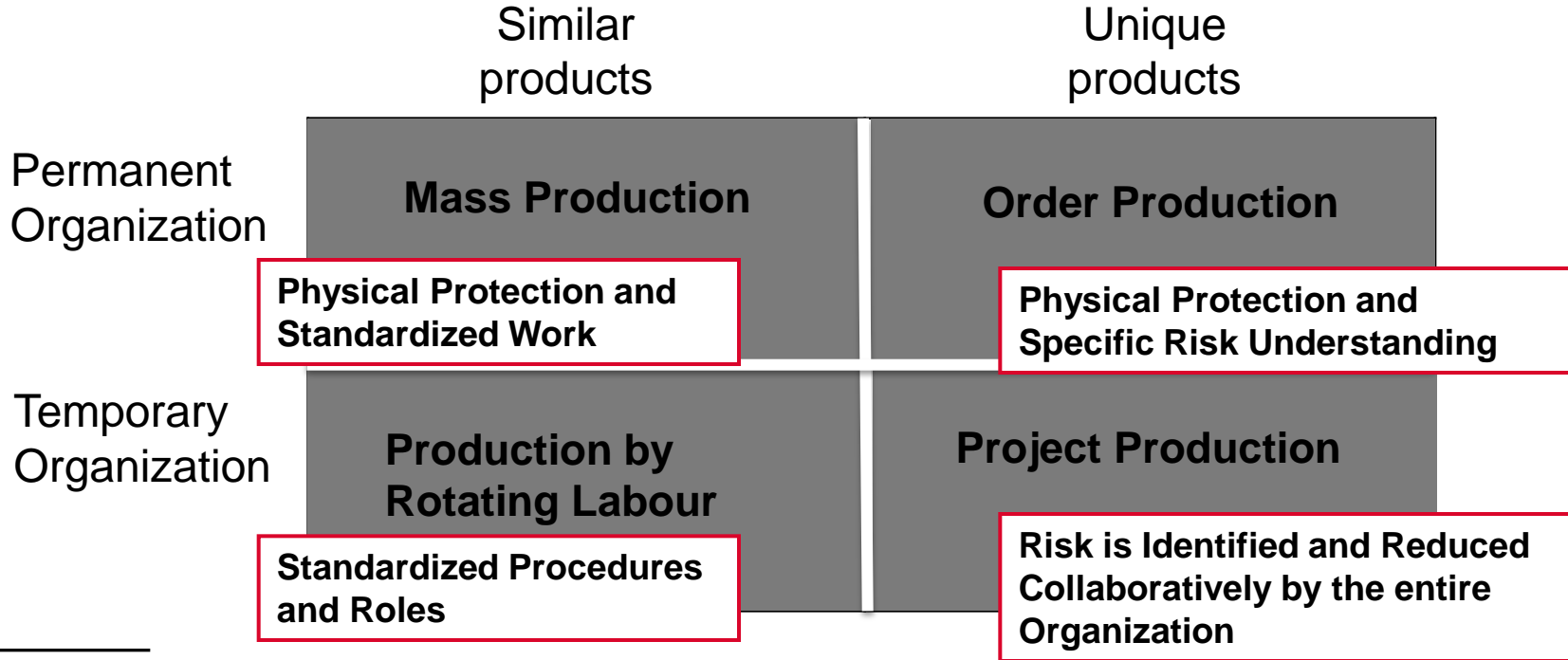
THE PLANNING SYSTEM IN COLLABORATIVE PLANNING

1. Master schedule	➡	Basis for contract
2. Phase schedule	➡	Correct main sequence
3. Look ahead schedule	➡	Removing constraints, buffer of sound activities
4. Weakly working plan	➡	Only sound activities
5. Team plan	➡	Allocate tasks
6. Morning meeting	➡	A final check of preconditions

Strategy involves
creating “fit” among a
company’s activities.

Michael Porter

SAFETY STRATEGIES



THE PLANNING SYSTEM IN COLLABORATIVE PLANNING

			Time	Rig	HSE
1. Master schedule	➡	Basis for contract			
2. Phase schedule	➡	Correct main sequence			
3. Look ahead schedule	➡	Removing constraints, buffer of sound activities			
4. Weakly working plan	➡	Only sound activities			
5. Team plan	➡	Allocate tasks			
6. Morning meeting	➡	A final check of preconditions			



Collaborative Planning – for a safe and sound production

	Plan levels	Responsible	Where	Time scheduling	Production site logistics	Safety risk management
	Project development and design	Project manager Design manager	Pre-project /initiation stage	Develop phase schedule for design Establish decision schedule	Evaluate: Traffic solutions Placement of materials, barracks, cranes etc.	Obtain (or develop) SHE-plan (safety, health and working environment) Visualize and communicate overall risks
1	Master schedule	Project manager	Before start-up of project	Develop overview of main activities Set milestones	Develop overall site plan	Identify hazards (in and between activities) Visualize hazards in plan
2	Phase schedule (for each phase)	Site manager	Phase schedule meeting	Develop phase schedule	Develop site plan for current phase	Identify hazards (within activities and in parallel activities) Visualize need for Safety Job Analysis (SJA) in plan
3	Lookahead schedule (5-9 weeks)	Site manager	Operation meeting	Detailing of activities Identify and remove hazards	Include placement of incoming deliveries in site plan	Evaluate risk within activities Communication between parallel activities Decide SJAs
4	Weekly work plan (2-4 weeks)	Foreman	Supervisor meeting	Control that all activities have same level of detailing and follow the right sequence Identify and remove hazards	Go through incoming deliveries for the next few weeks Update site plan	Evaluate risk within activities Make sure communication between parallel activities Develop SJAs
5	Team plan (upcoming week)	Team supervisor	Team meeting	Go through activities for the upcoming week	Go through deliveries in the upcoming week, and their placement	Go through SJA
6	Last check-out	Individually, and team based	Morning meeting	Decide final team plan Incidents from yesterday Go through today's operations	Go through incoming deliveries and their placement	Go through risk in today's operations
	Running operations	Each and everyone	In their work			Evaluate running risks in daily work

COLLABORATIVE PLANNING IN VEIDEKKE

**It's not a
quick fix**

2003:
The first project testing Last Planner

2006-2008:
Tests in all 4 branches

2008:
The first Veidekke guide to Collaborative Planning in
Production

2012:
The integration of time scheduling, site logistics
and safety risk management

2013:
The first Veidekke guide to
Collaborative Planning in Design

MOTIVATION

COMPETENCE