

# Optimization of Resources through New Project Execution Models

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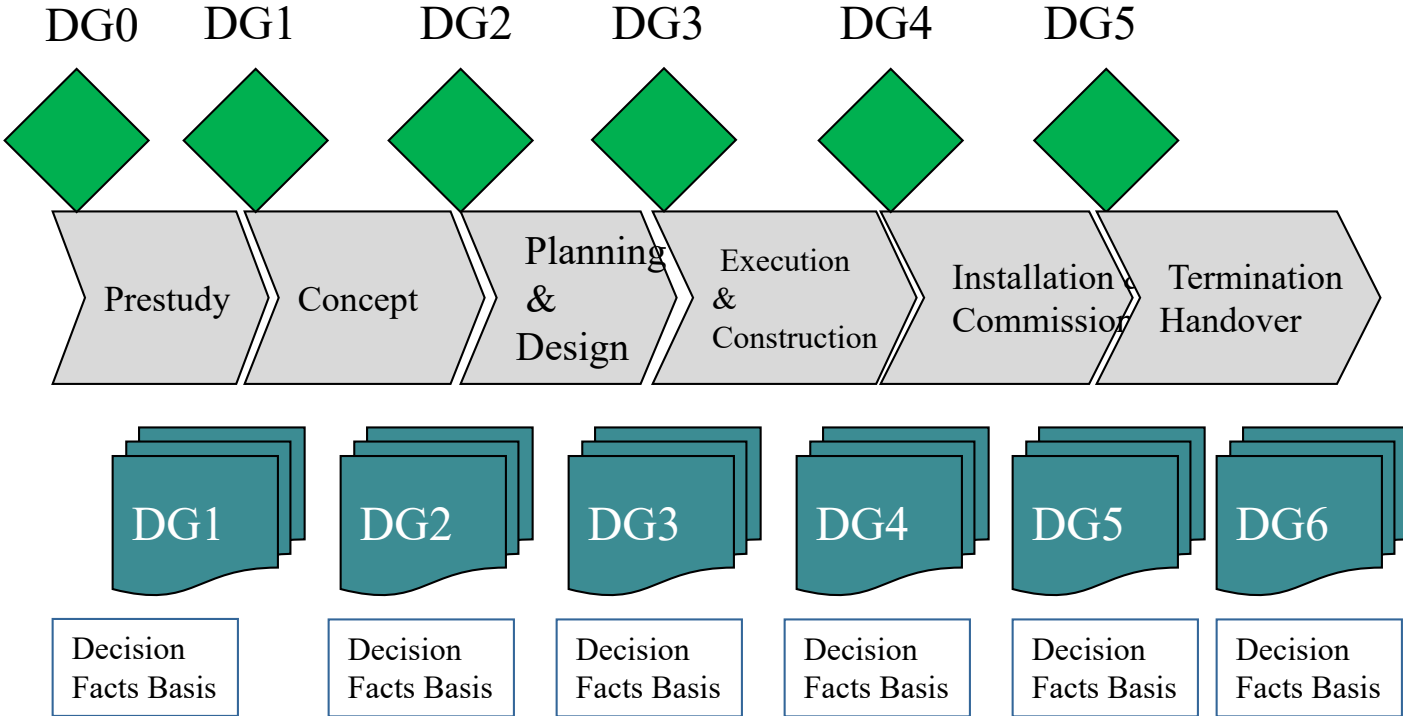
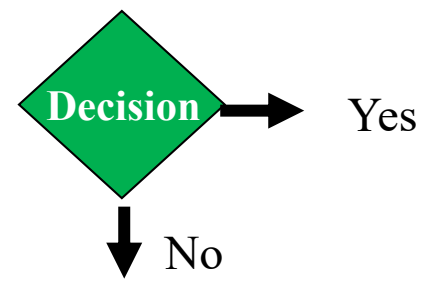
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# The classic approach

DG, Decision Gate:



# The present & future business environment

Present & future business environments are to a large extent characterized by the following features:

- The speed of change increases steadily
- High degree of turbulence in the markets
- The complexity issues increase
- Entrance of digital technology contributes to an industrial revolution in the energy sector
- Likelihood of presence of unpredictable rapid and sudden changes
- Crises may appear frequently
- Steady state is uncertainty

**How to achieve superior  
business & project performance  
under such conditions?**

**The brutal reality**

# Agile or Lean?

## Let's simplify to two dimensions



Handling  
uncertainty,  
complexity  
and change

(*Agile  
strength*)

Process excellence,  
fast value creation with  
minimal waste

We need **both** Agile and Lean  
on our journey towards  
Mastering the complex &  
turbulent future environment



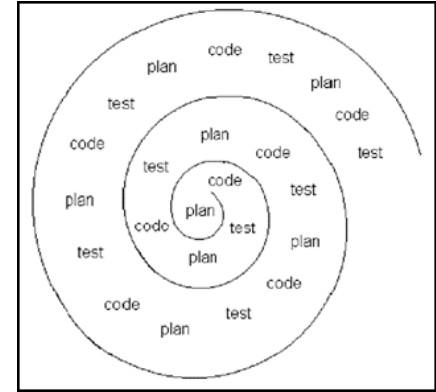
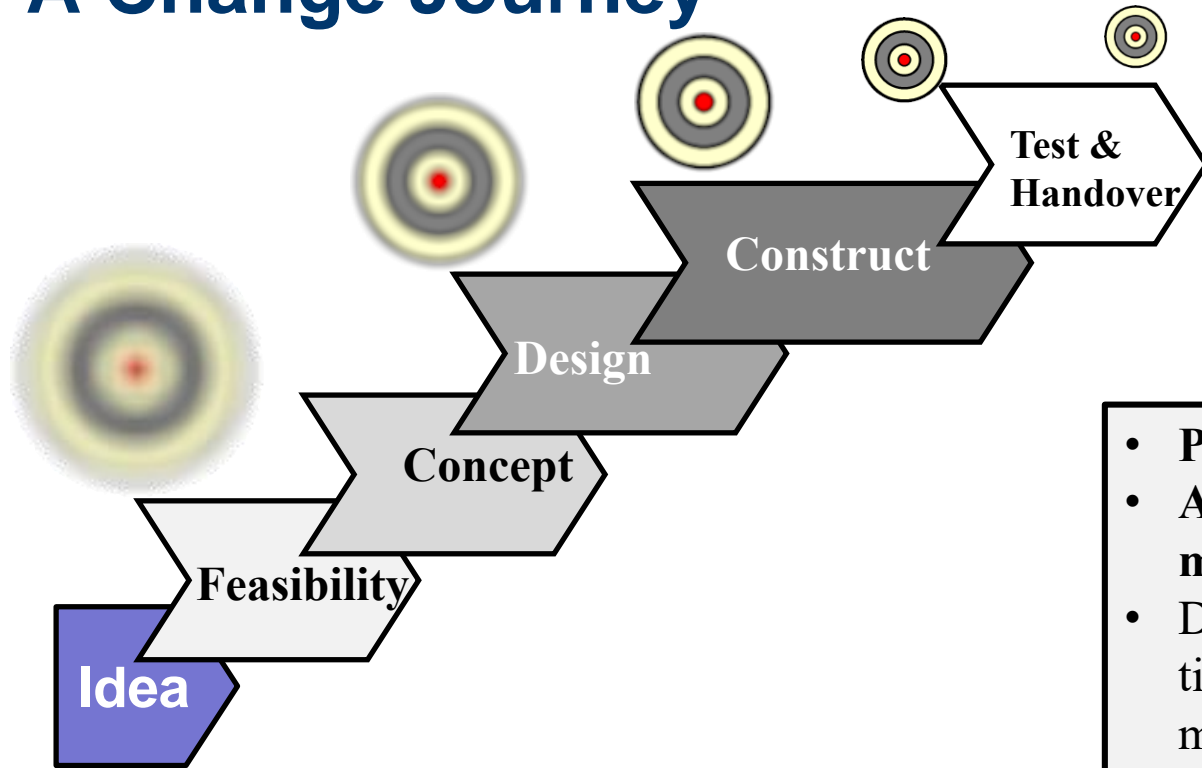
# Business Systems in Action

<b>System Flexibility</b> High	<ul style="list-style-type: none"> <li>•High System Solution Flexibility</li> <li>•Low efficiency</li> </ul>	<b>Future Business System Excellence</b> <ul style="list-style-type: none"> <li>•Agile Performance</li> <li>•High Effectiveness</li> </ul>
	Low <b>Dead End.</b>	<b>Lean Thinking &amp; Lean Manufacturing</b> <ul style="list-style-type: none"> <li>•High efficiency</li> <li>•Rigid Systems</li> </ul>
	Low	High
<b>Degree of Component Standardization</b>		

Lereim: «Kvalitetsledelse i prosjekter», Akademika, 2013, Kap. 6.6 & 6.7

# Concurrent Solution Development & Maturation

## A Change Journey



- **Planned for dynamics & change**
- **Actual Performance is mastering moving targets**
- Decisions on available facts at time of decisions; decision making under uncertainty

- Digital delivery model with optimized dataflow with 3D models
- Facilitate seamless work processes and work flow
- System flexibility & standardised building blocks

# Use of the digital twin in projects

## **New opportunities appear through extensive use of the digital twin:**

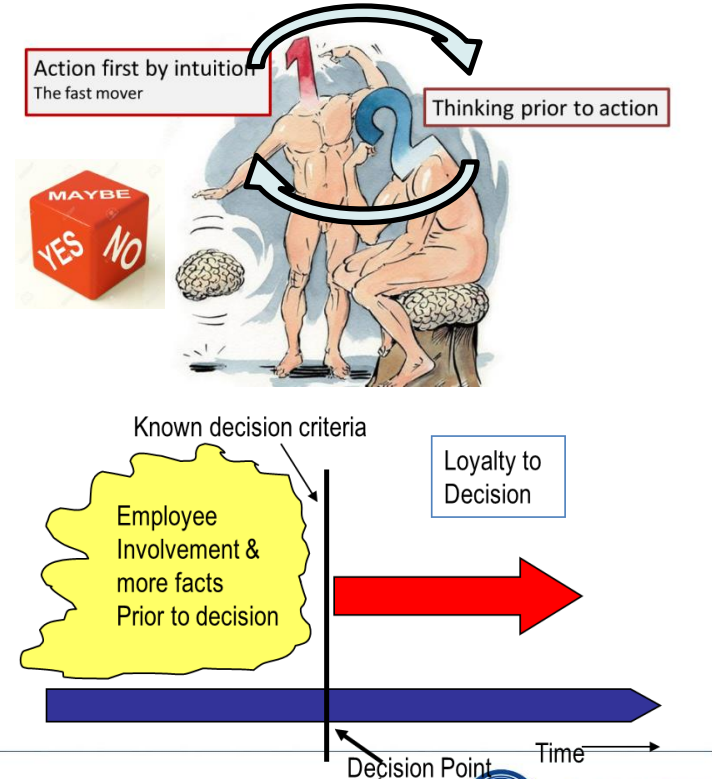
- In concept development & design;
  - Testing of alternative Concepts
- In the construction phase
  - Constructability
  - Robustness
- During assembly phase
  - Simulations on dimensional tolerances
- During Commissioning
- During start-up of operation
- Simulations of scenarios during operations on maintenance & upgrades critical issues



# Decision making & Impact of digitalization

Likely benefits of digitalisation, internet of things & Big Data:

- Real time facts & figures
- More reliable and precise data
- A range of data sources integrated
- The data facts are more consistent and better distributed
- Ensure consistent and accessible evaluation criteria prior to the start up of the decision making process
- Faster and better evidence based decisions





# Energy Eco System

Resource Management

Energy Business System

Energy Technology solutions & systems

Markets

Leadership

Business System flexibility

Solution System flexibility

Business models

Organisation

Business Organisation Standardisation

Component standardisation

Clusters

Value networks

HRM

HSE

Impact of Big Data, IOT, Digitalisation