

# Digital Field Change Management: Revolutionizing the way of managing changes in projects

*Stefan Bakker*



## Agenda

- Introduction
- How projects are managed traditionally
- The impact of field changes on projects
- The need for Digital Field Change Management
- Practical examples on the use of technology for field changes
- Q&A



## A brief introduction

- Senior VP of Business for Cleopatra Enterprise
- MSc. Business Economics
- 10+ years experience
- Advise companies in their digital transformation of project controls
- Business Development Manager for Total Cost Management solution Cleopatra Enterprise
- Passion for driving successful change processes in complex environments

Stefan Bakker

## A brief introduction to Cost Engineering Consultancy

- 25 years of experience
- Software and consultancy solutions
- Operating worldwide
- Knowledge Provider
- Empowering organizations to improve their project performance







Cleopatra Enterprise



Consultancy



Academy



CESK

## Issues encountered in traditional change management...

1. Working with poor quality of drawings
2. Limited time and/or difficulty identifying changes
3. Lack of adequate tools
4. Poor initial specification / scope definition
5. Difficulty in interpretation of standard method of measurements
6. Scope changes come in late
7. Managing a pile of administrative paperwork manually and with spreadsheet-based systems
8. Not all information is readily available for key decision making



## The traditional way of managing field changes

Use of paper forms:

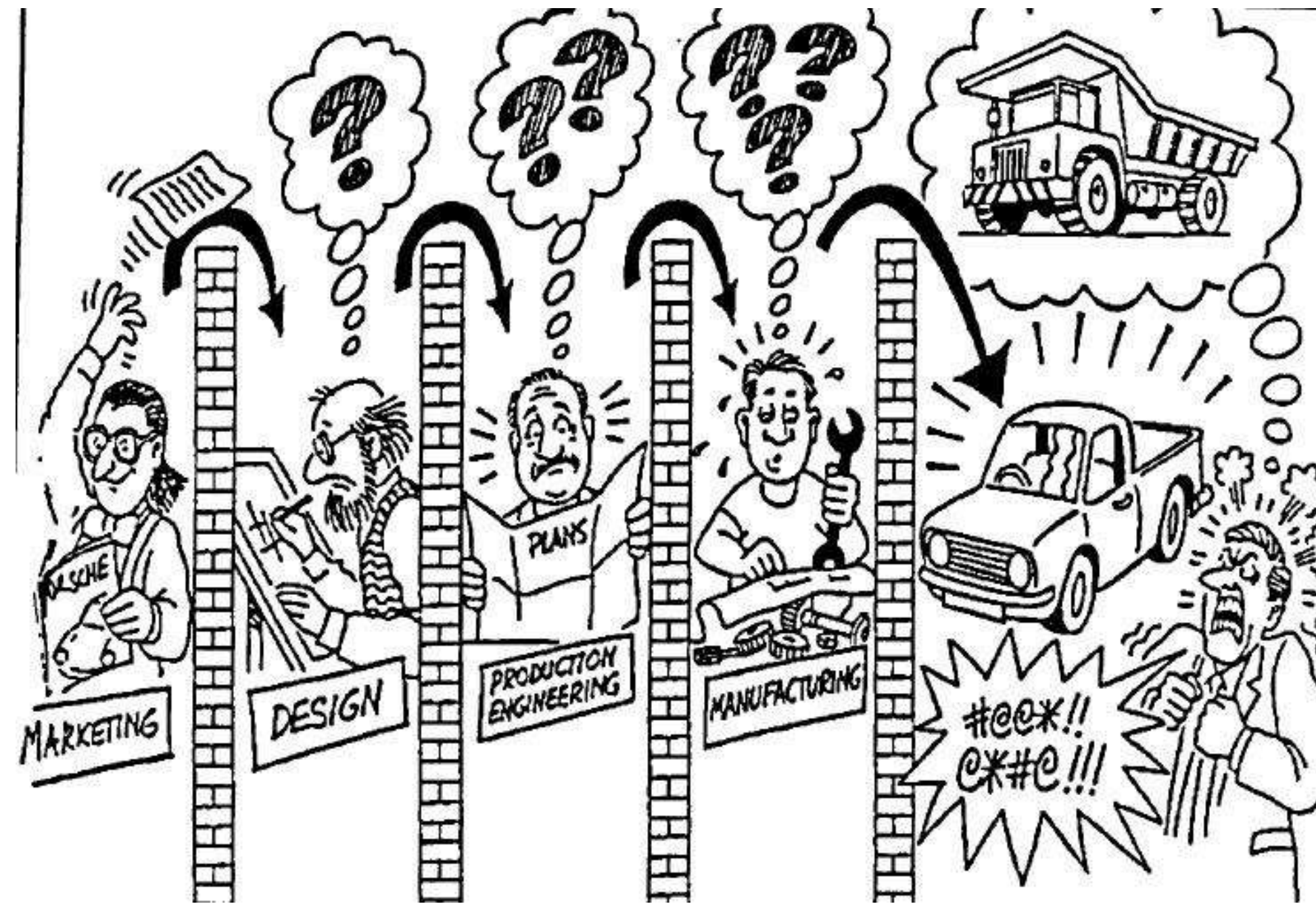
- Time consuming and inefficient
- Prone to error and omission
- Can get lost or disappear
- No dedicated system in place

[Redacted]		Field Change Order 3001	
Contractor: [Redacted]			
Supervisor: [Redacted]			
Date: 11-05-2017	Equipment: DIV		
WO no.: [Redacted]			
Instruction:  INEFFICIENCY FEB + MAR 2017 GEDURFDE OPERATIEV PROJECT			
Financial impact: YES / <input checked="" type="checkbox"/> NO		Impact on schedule: YES / NO	
Estimated costs / materials: €		Hours:	
[Redacted] approver		Contractor [Redacted]	
Name: B. Visser		Name: [Redacted]	
Signature: [Redacted]		Signature: [Redacted]	

[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]

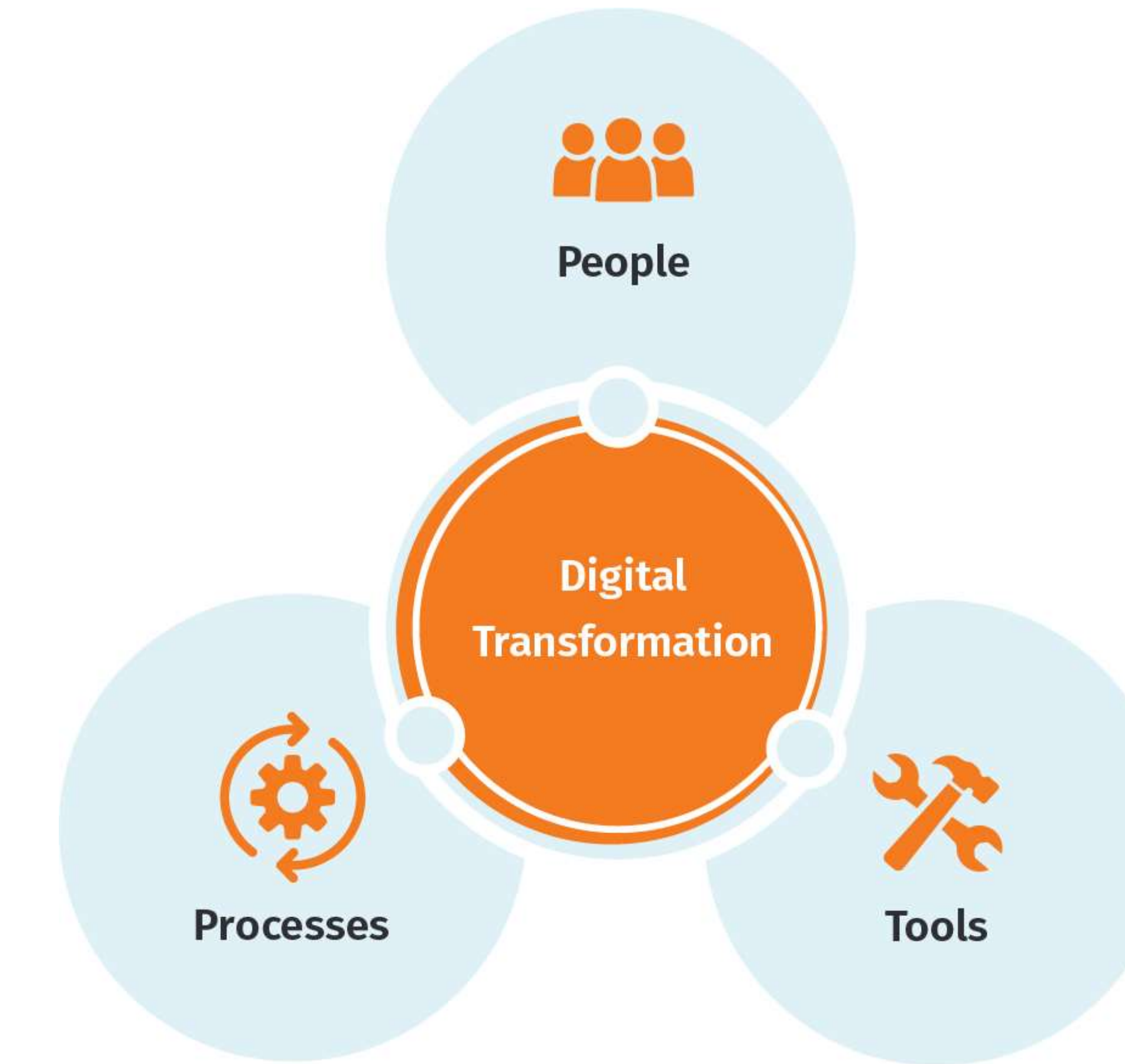


## The impact of paper-based change management



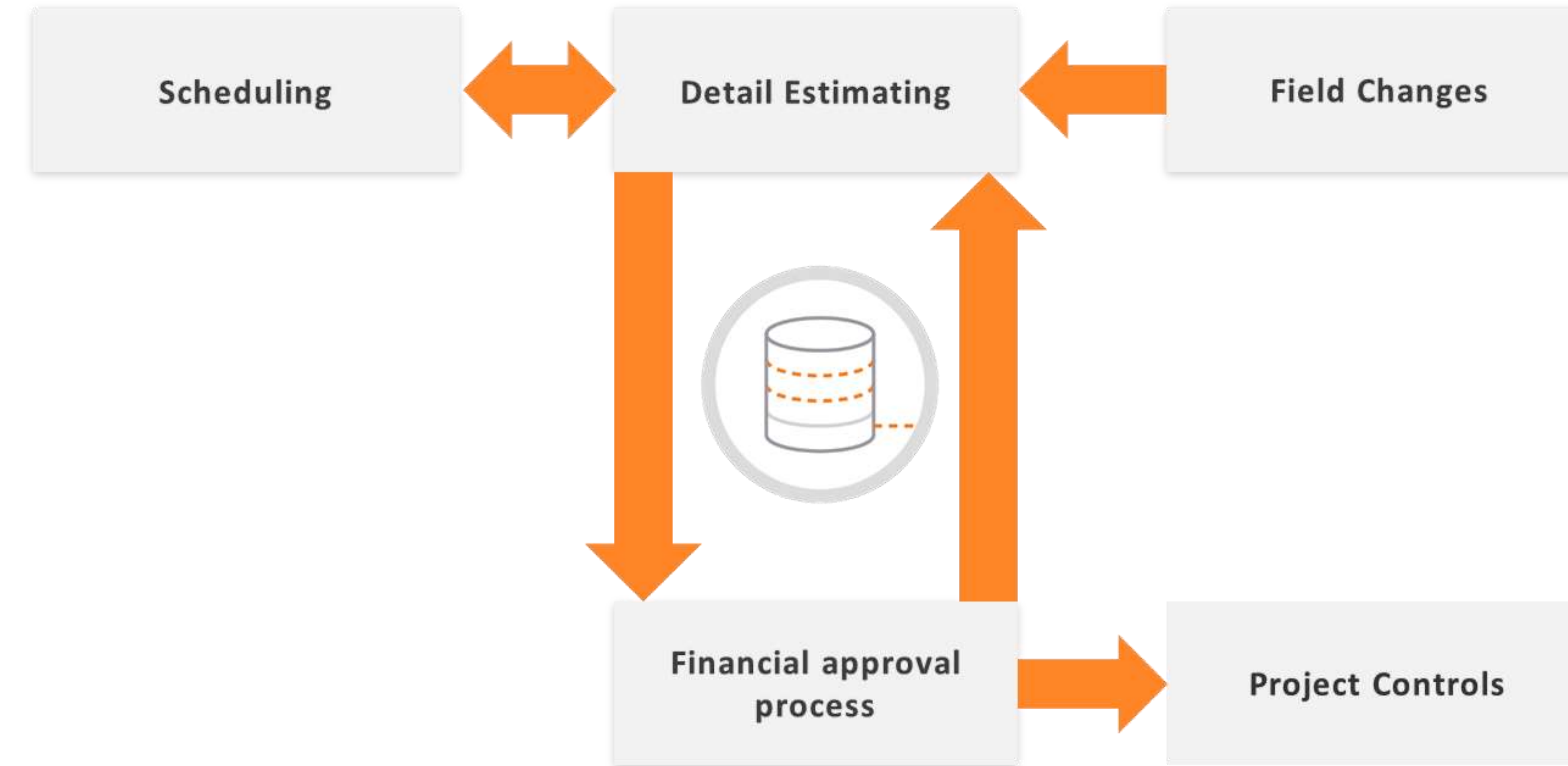


# The new way of controlling projects





## Work Process: Integrated Progress & Cost Control





## Digital technologies as a solution? 3 facts.

- Digital technologies, when applied comprehensively and efficiently, can reduce overall project costs by **45%**
- 10% increased data accessibility and quality can result in: productivity improvements from **20% - 50%**
- The technology helped some companies boost maintenance-labour productivity by **30%**

### Sources

1. Navigating the digital future: The disruption of capital projects, Steffen Fuchs, James Nowicke & Gernot Strube, McKinsey
2. Measuring the Business Impacts of Effective Data, Barau, Mani & Mukherjee, University of Texas
3. Beyond gadgetry: Changing the game in maintenance, Phil Long, Andy Luse & Joël Thibert, McKinsey

# Digital Form Management



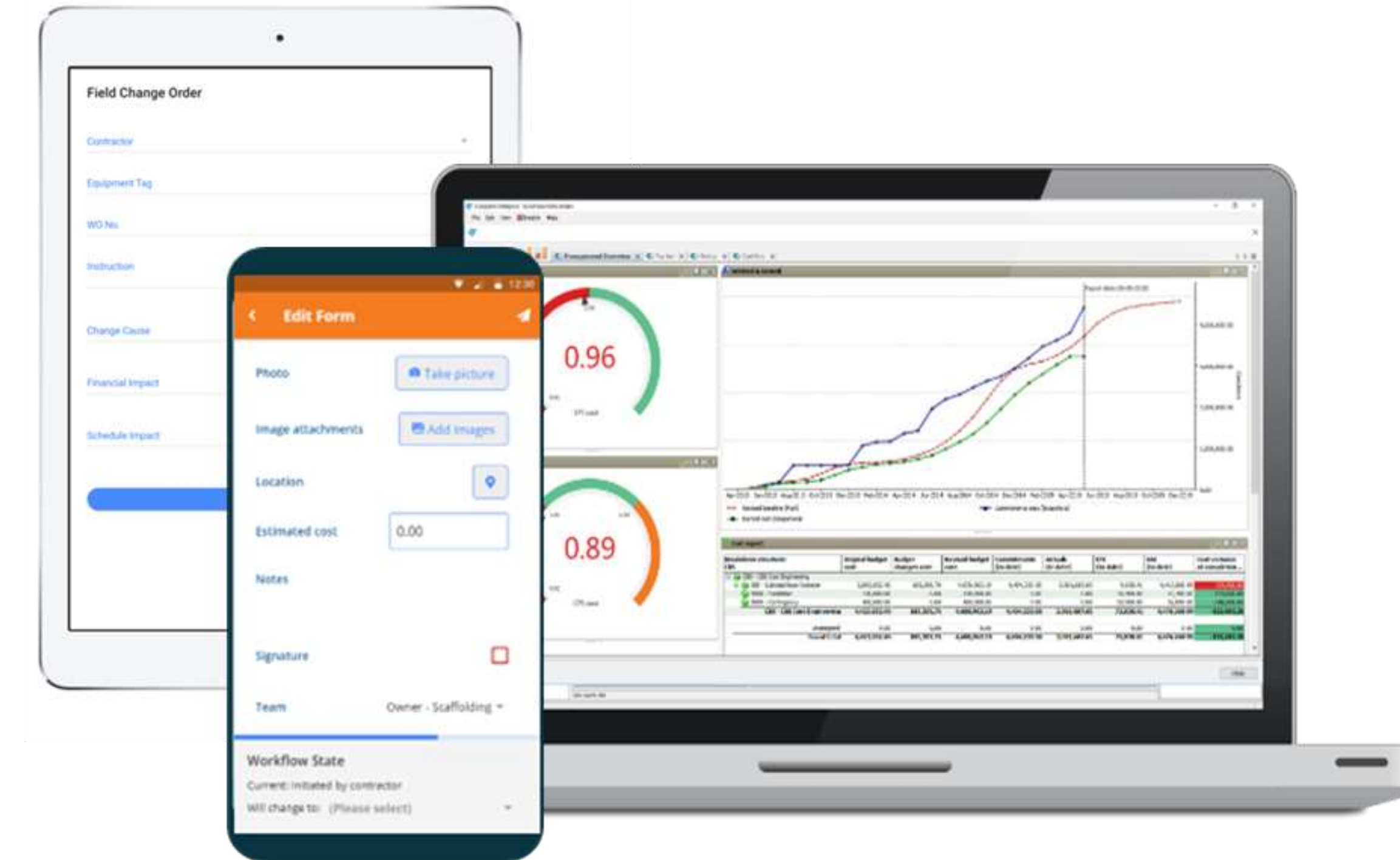


# Form Tracking Solution

Integrated digital solution  
for all form tracking  
procedures

Field Change Order 3001	
Contractor: [REDACTED]	
Supervisor: [REDACTED]	
Date: 11-05-2017	Equipment: DIV
WO no.: [REDACTED]	
Instruction: INEFFICIENCY FES + MRE 2017 GEDURANDE OPMERKING PROJECT	
Financial impact: YES / <input checked="" type="checkbox"/> NO	Impact on schedule: YES / NO
Estimated costs / materials: €	Hours:
Approver: [REDACTED]	Contractor: [REDACTED]
Name: B. Visser	Name: [REDACTED]
Signature: [REDACTED]	Signature: [REDACTED]

Solution





# Digital Form Tracking



Used to track field changes, internal changes, progress, field quantities



Tailored to any form tracking scenario, project or structure



Form templates can be designed to suit any needs



User permissions can be set to control information shown to end-users



Keep track of the approval process and form status



Bulk approval of forms



Users receive notifications when form is awaiting approval



Compiles all results for detailed analysis

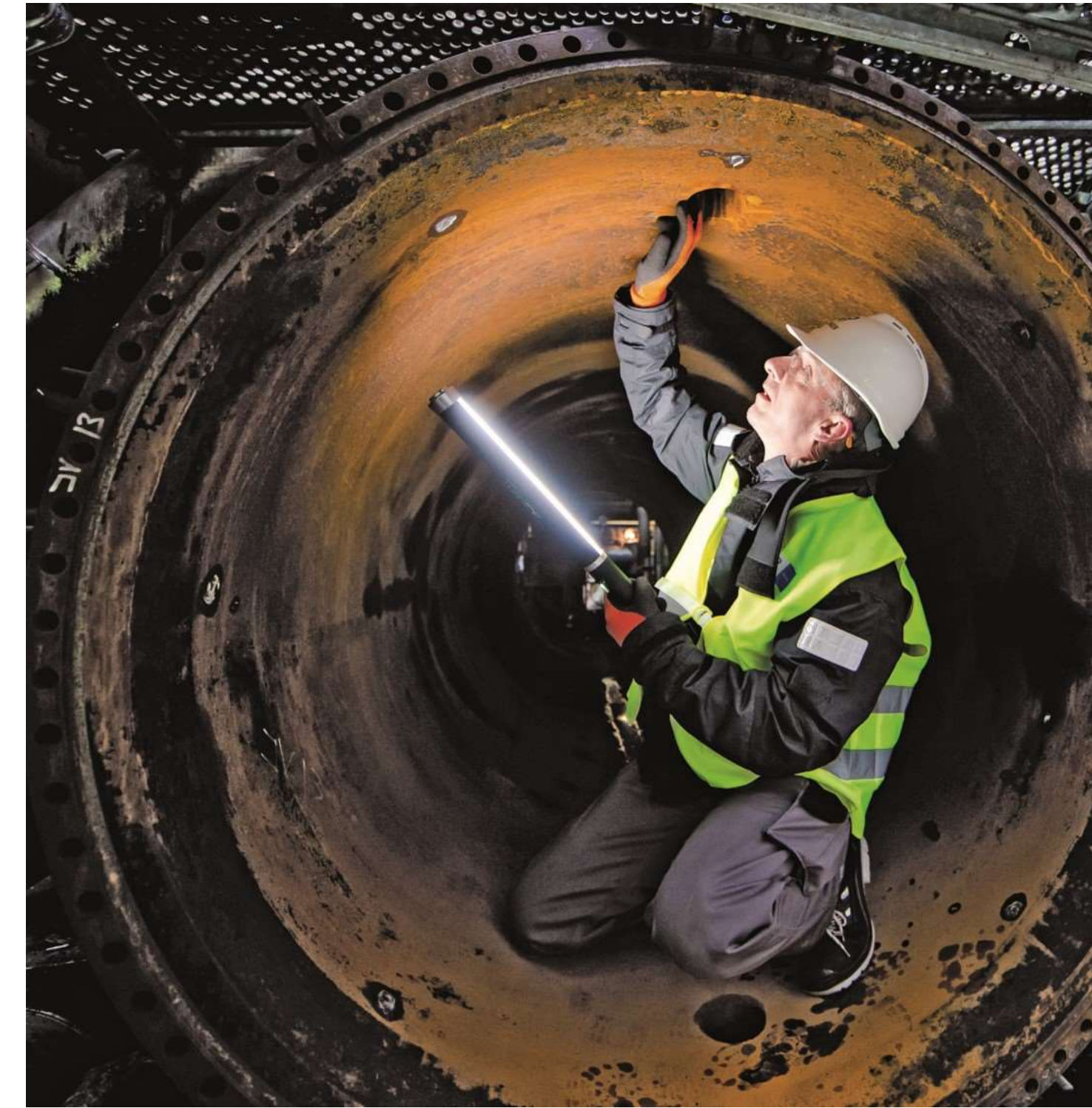


Enables more accurate forecasting



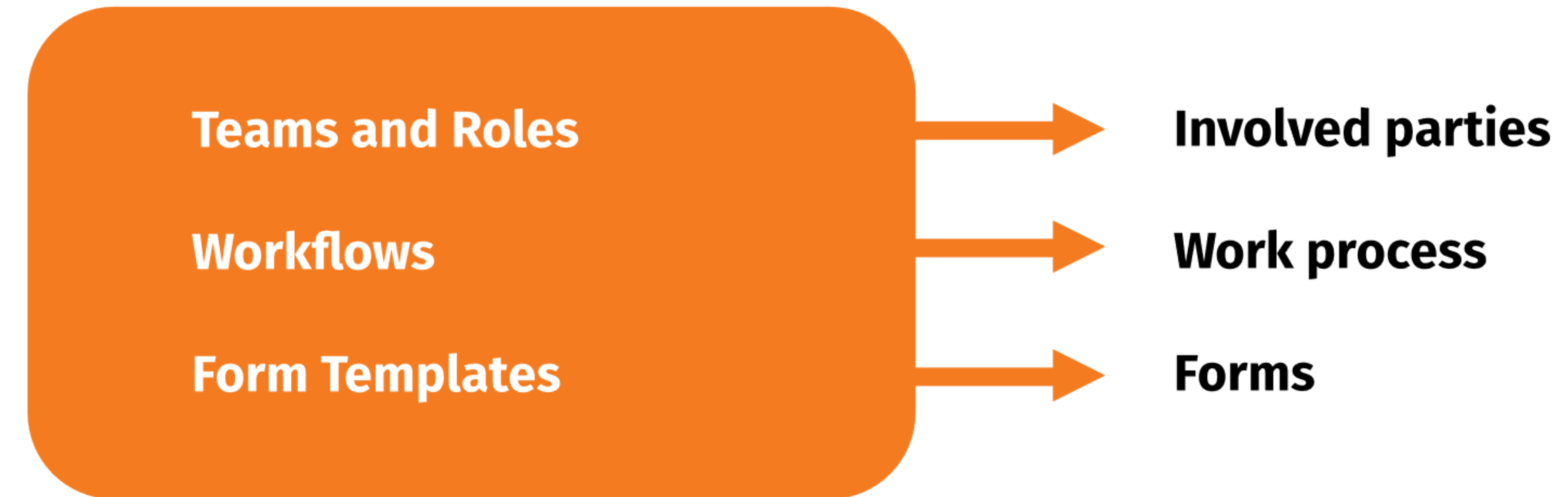
## What to track?

- Field Changes
- Scope Changes
- Project Changes
- Progress
- Field quantities



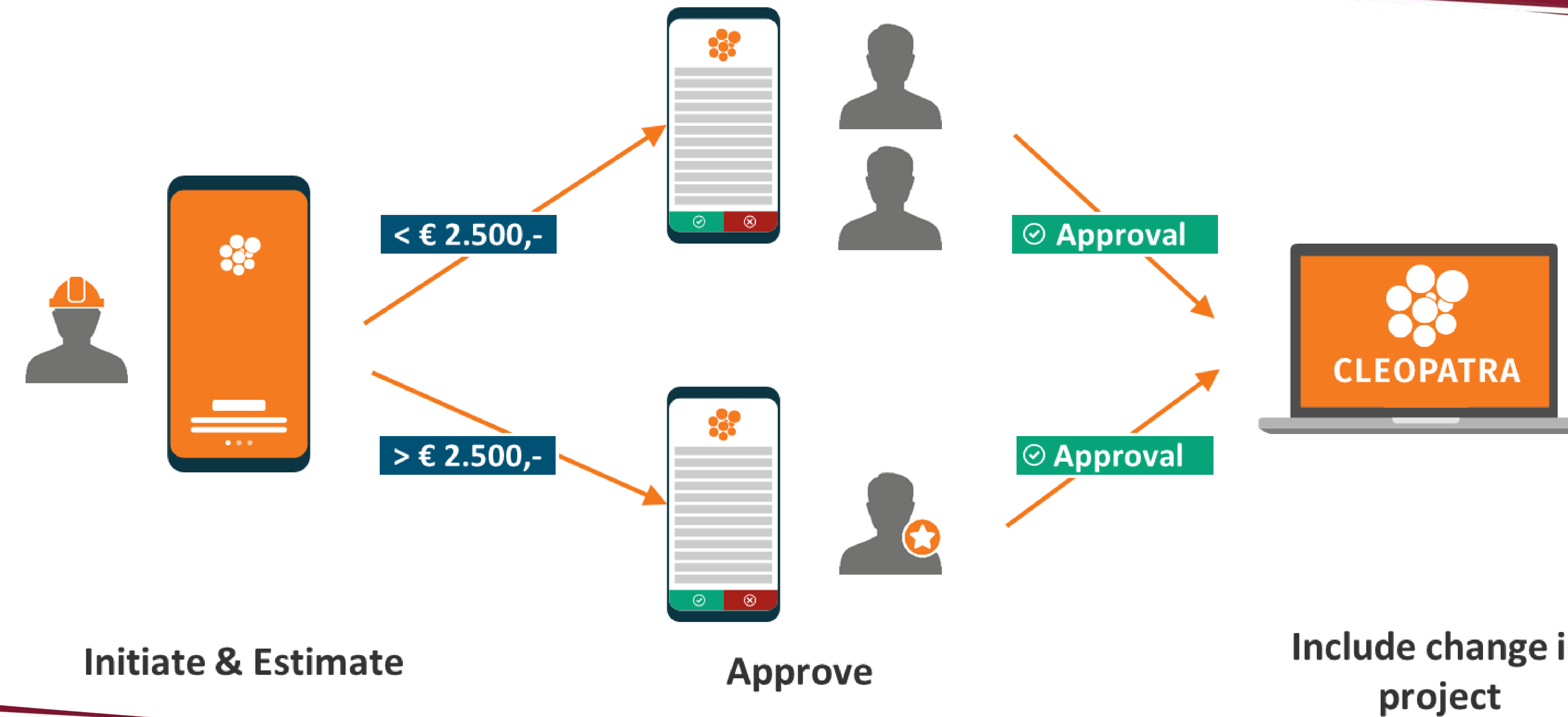


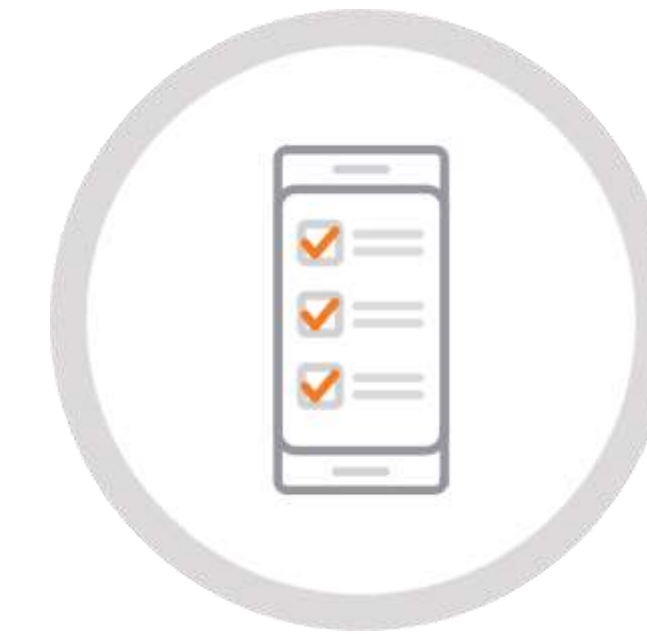
## How it works: 3 Pillars





## People & Processes





# Practical Example

## Field Change Tracking



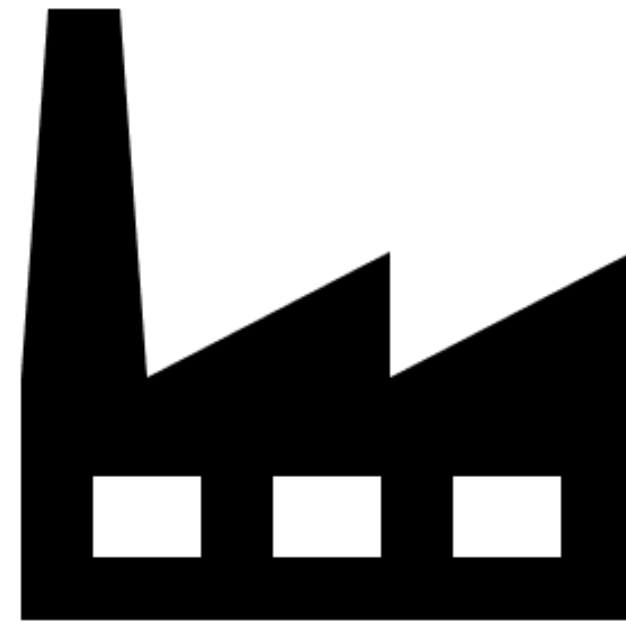
## Change Tracking

- Clear overview of changes and corresponding impact on project
- Up-to-date project status and finance systems
- Avoiding budget overruns and costly delays
- Increased productivity



## Scenario

- Additional work: pump repair



Addition to scope

Field Change Order Form



## The 3 Pillars

Teams and Roles

Workflows

Form Templates

Form details

Details Workflow history Related forms Images Attachments

All fields

Filters: [v] [Q]

Field	Value
<b>General</b>	
Form id	FCF49
Form title	ST-22
Work package ID	12C-3
Description	Pump Repair
Master Team	Showcase Team
<b>Cost Estimation</b>	
Impact on Schedule	<input checked="" type="checkbox"/>
Financial impact	<input checked="" type="checkbox"/>
Estimated Cost	50,000.00
	200.00
<b>Workflow</b>	
Workflow	Field Change
Last modified date	24-06-2020
Workflow state	Change Request
Entered state at	24-06-2020
<b>Related files</b>	

Request for  
change by  
filling in form

Change  
Register

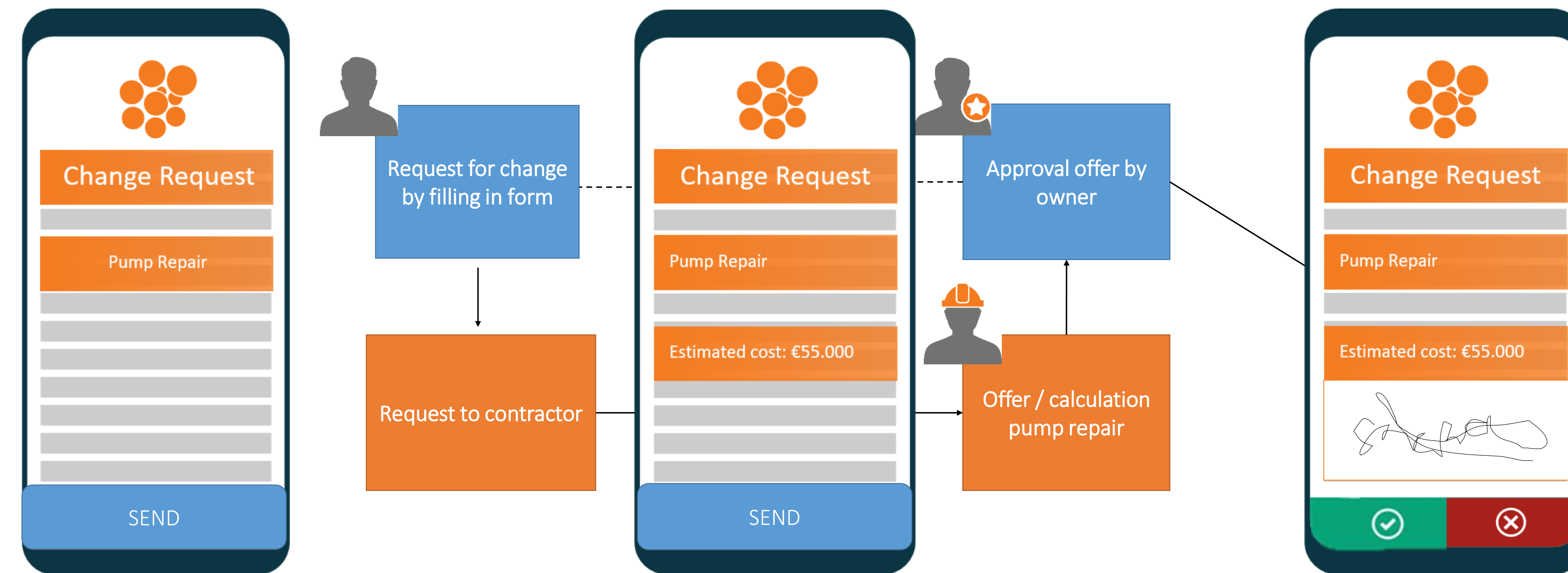
Approval offer  
by owner

Change added  
to scope

Request to  
contractor

Offer /  
calculation  
pump repair

# Work Process





Link with cost management document  
Updates automatically your change register



Components

	Description	Status	Original budget cost	Changes cost (approved)	Commitment s cost	Actuals cost	EAC cost	ETC cost	Tracost
1	P-3101, DAB supply pump, Supply	Approved	12,560.00	55,000.00	49,120.00	48,300.00	116,680.00	67,560.00	
2	P-3111, HDMA supply pump, Supply	Approved	12,400.00	0.00	12,400.00	11,575.00	24,900.00	12,400.00	
3	Condensate pump A	Approved	8,800.00	0.00					
4	Condensate pump B	Approved	8,800.00	0.00					

Details

Budget

Progress

Commitments

Actuals

Forecast

Description	Messages	Estim...
1	Revised budget	
2	Original budget	
3	P-3101, DAB supply pump, Supply	
4	Changes (approved)	
5	ST-22	
6	Pump Repair	

Change register

ChangesControl variancesRevenue variances

Change details

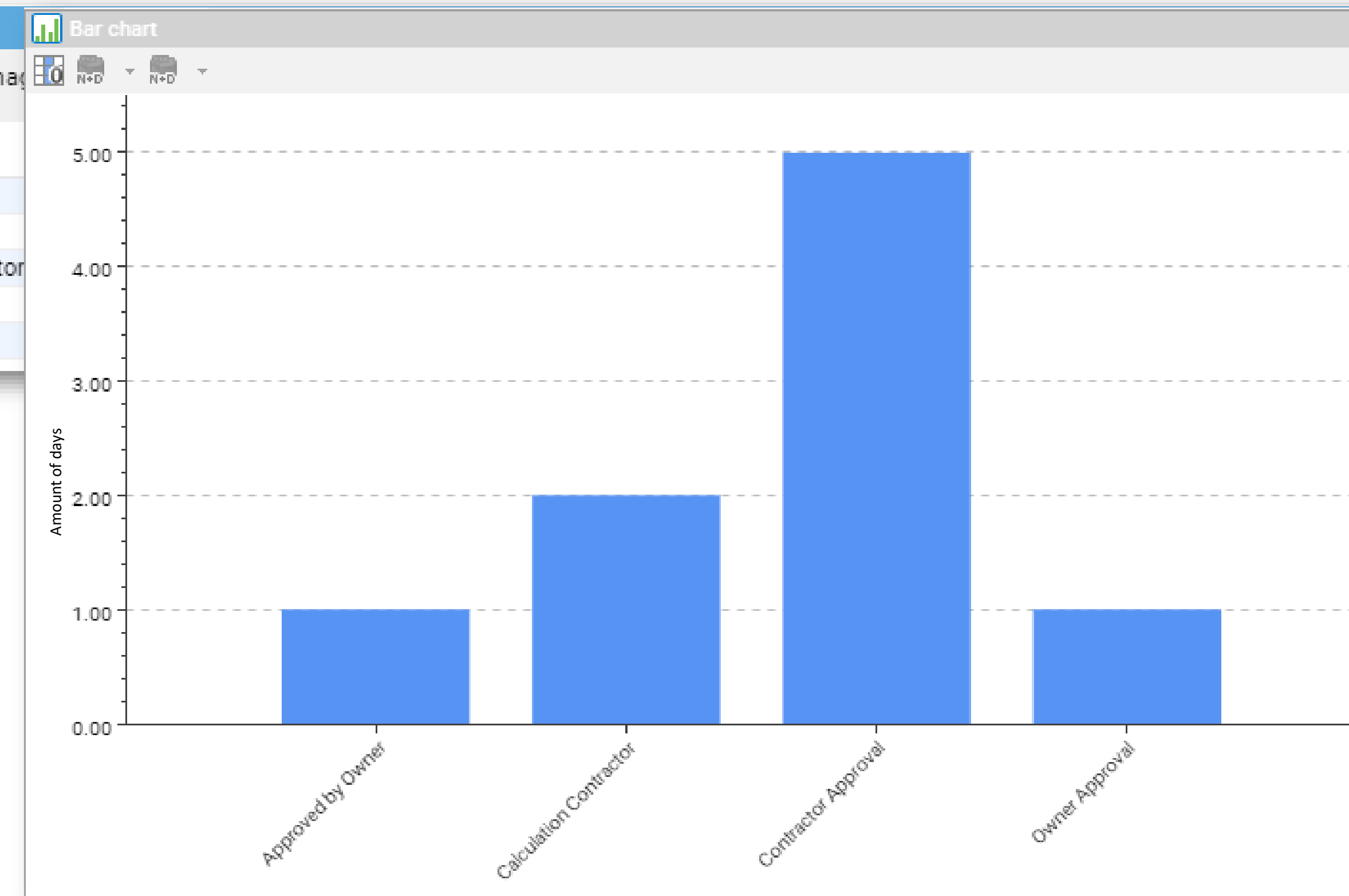
Description	Status	Cost	Lump sum cost	Approved lump sum c...	Hours	Approved hours
Pump Repair	Approved	55,000.00	55,000.00	55,000.00	200.00	200.00

# Workflow history

Form details

Details Workflow history Related forms Images

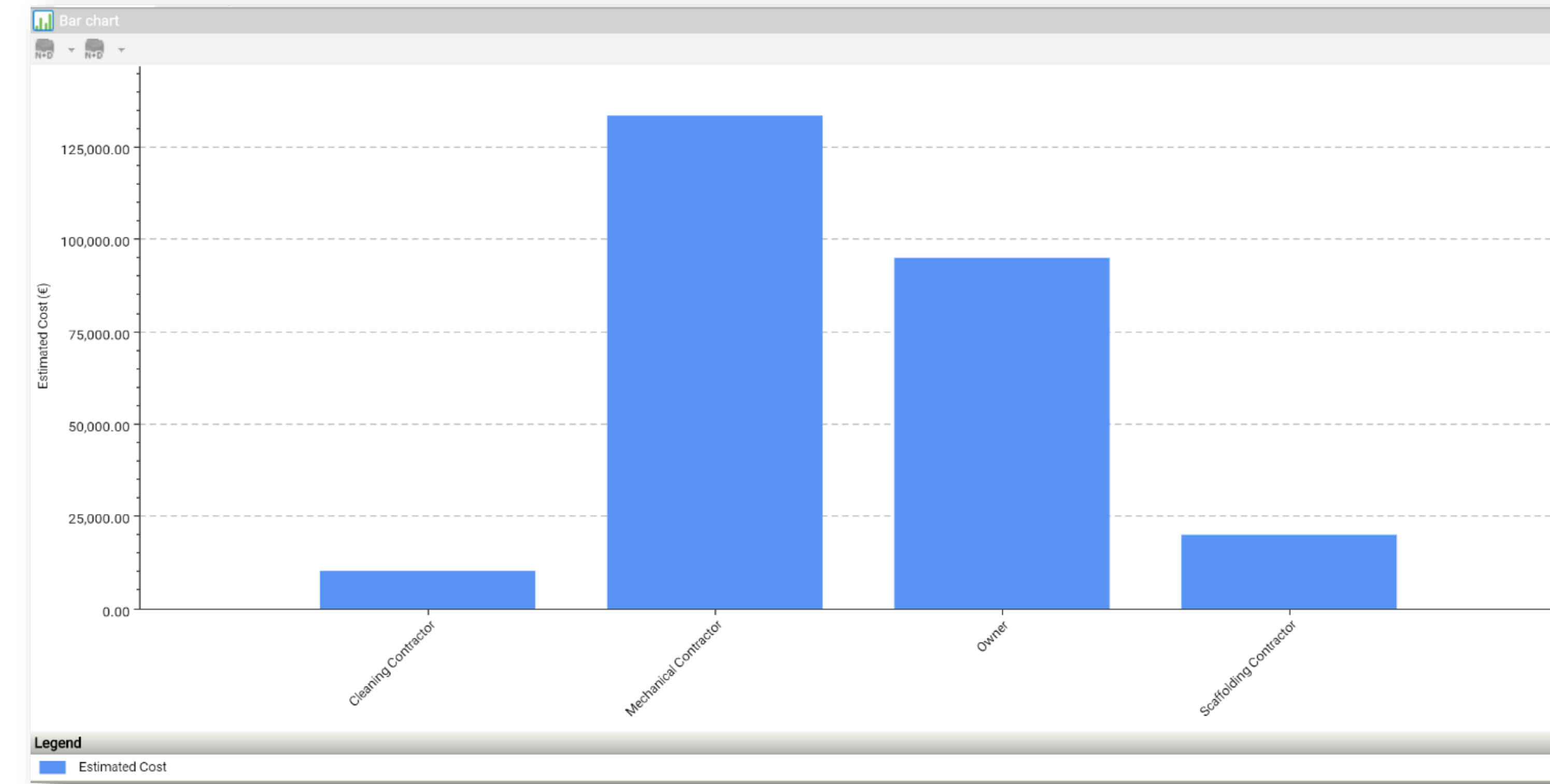
	Date and time of transition	From state
1	29-06-2020 10:13 AM	Owner Approval
2	29-06-2020 8:44 AM	Contractor Approval
3	25-06-2020 2:16 PM	Calculation Contractor
4	24-06-2020 1:16 PM	Change Request
5	24-06-2020 1:16 PM	





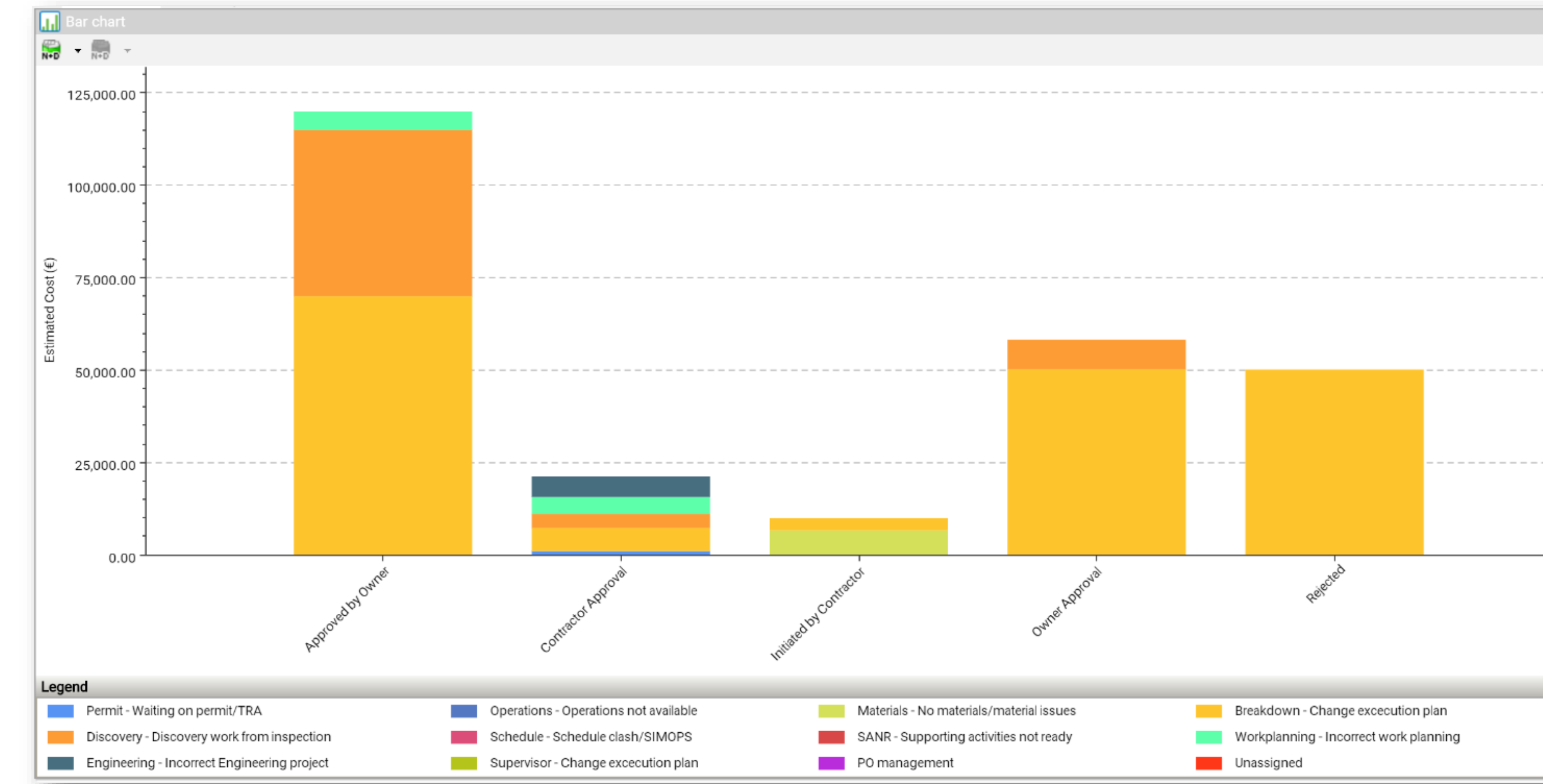
# Analysis of the change forms

How many change cost per contractor?



# Analysis of the change forms

In which state are my forms? What are the reasons for these changes?





## Main takeaways

- Digital tools are key in improving field change management but having the qualified people and right processes in place are part of the solution > 5 benefits of digitalizing field change management



Reduces level of effort



Enhances visibility and accountability



Increases speed of the process



Improves decision making quality



Makes analyses and reporting easier

- An integrated, digital way of working leads to more successful field change management

# Q & A

DO YOU WANT TO KNOW MORE?

Visit [www.costmanagement.eu](http://www.costmanagement.eu) and schedule a demo

Email me [SBakker@costengineering.eu](mailto:SBakker@costengineering.eu)