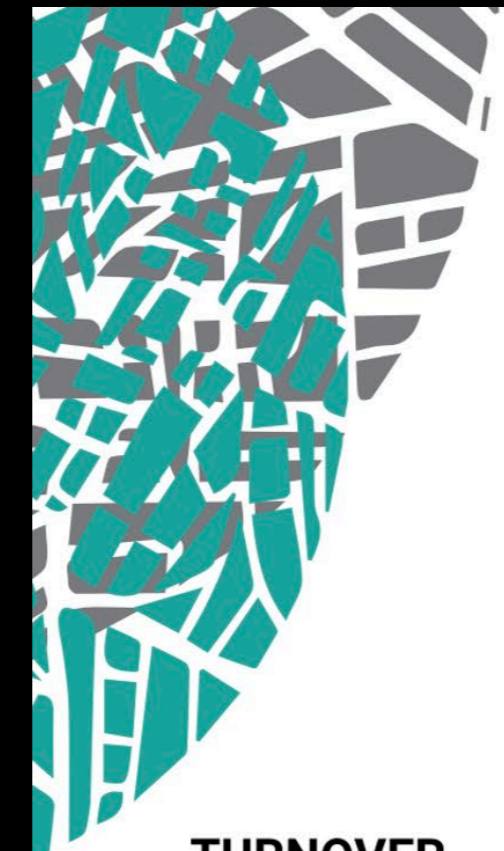




AI Driven Digital Supply Chains in Shipbuilding

Ari Viitanen, Carinafour

Carinafour

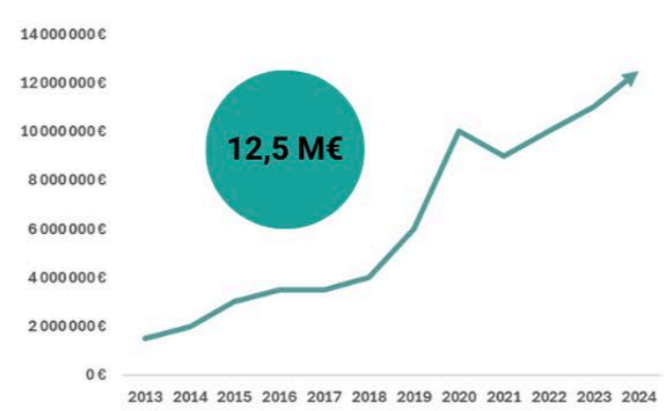


CARINAFOUR

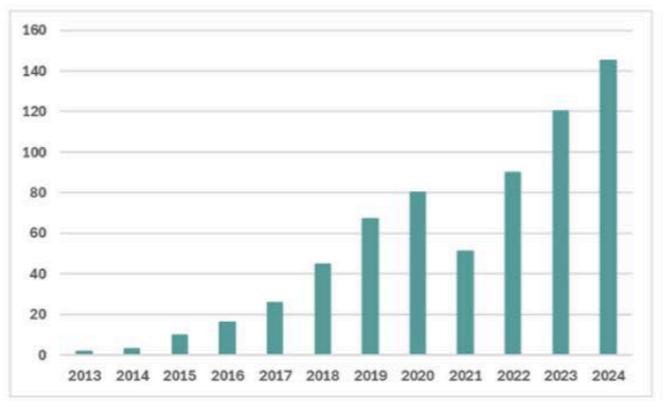
INTEGRATING
TECHNOLOGY
PROCESSES
PEOPLE

- Established 2012
- Focus on digital supply chain and material management solutions
- Wide customer portfolio in Marine, Construction and Industrial investment businesses
- Strong knowhow, experienced and recognized player in the market
- Wide service portfolio for supply chain digitalization, supply chain and material management and site logistics
- Own digital solution CALS for supply chain and material management

TURNOVER



PEOPLE



MARKET AREA



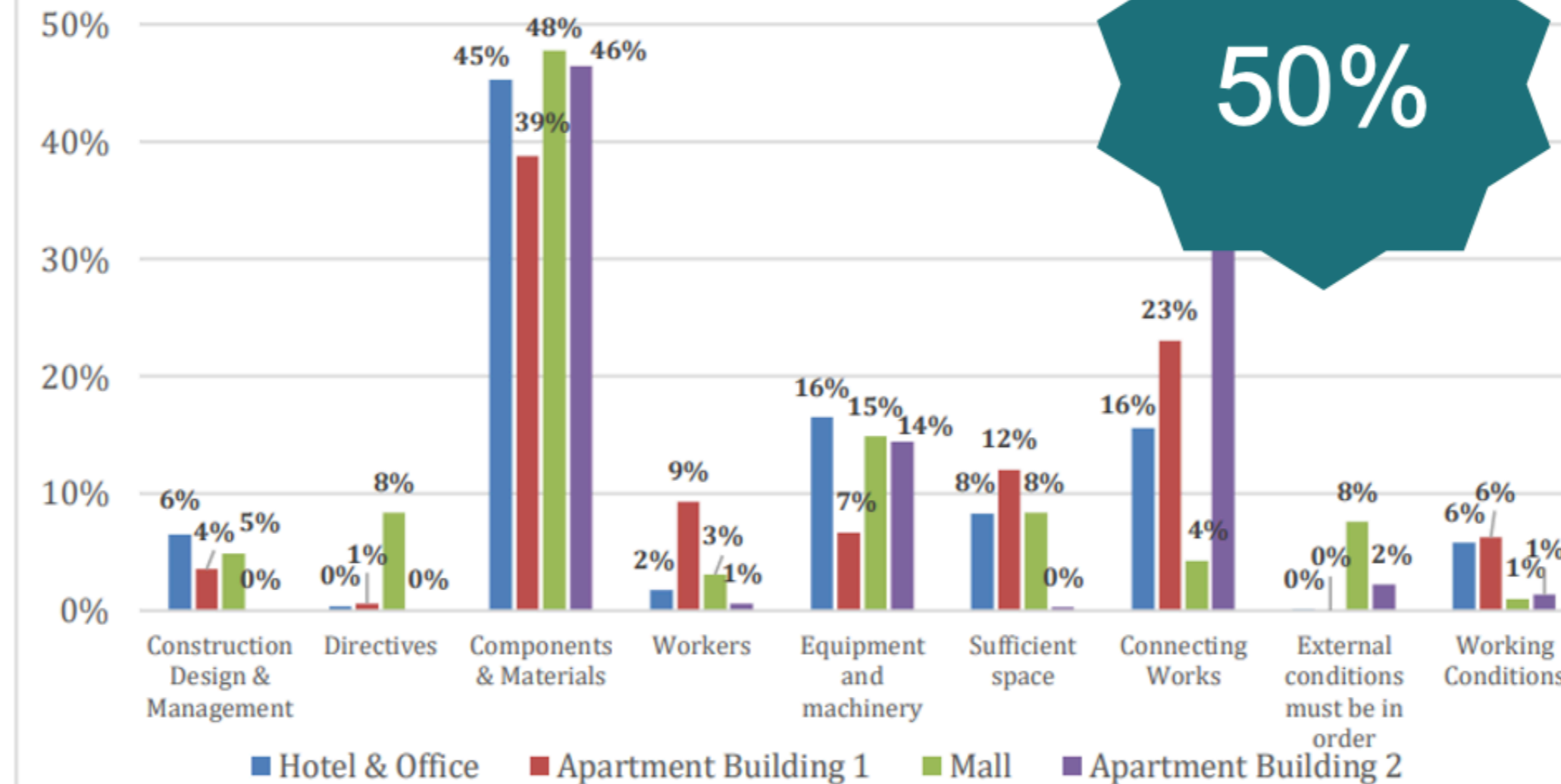
HEADQUARTER:
TURKU, FINLAND
GLOBAL OPERATIONS

STEPS FOR TAKING YOUR MATERIAL MANAGEMENT TO THE NEXT LEVEL



Digital supply chain: Material management from design information to material availability in assembler's hand

Root causes for work interruptions



Source: Seppänen O. & Görsch, C. (2022). Decreasing Waste in Mechanical, Electrical and Plumbing Work. Proceedings of the 30th Annual Conference of the International Group for Lean Construction (IGLC30), 84–94. doi.org/10.24928/2022/0111

Yes, it is information management

Direct impact on:

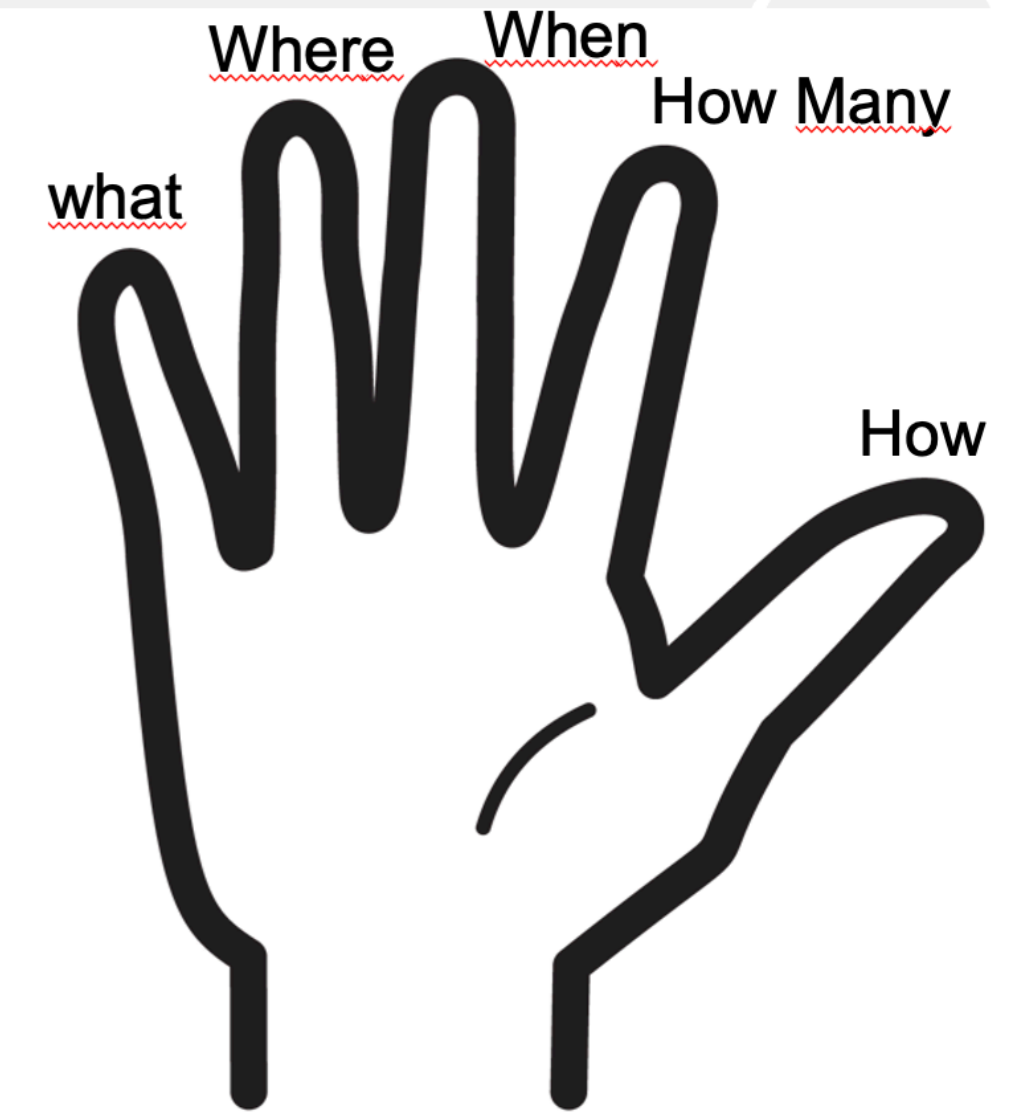
Through-put time

Productivity

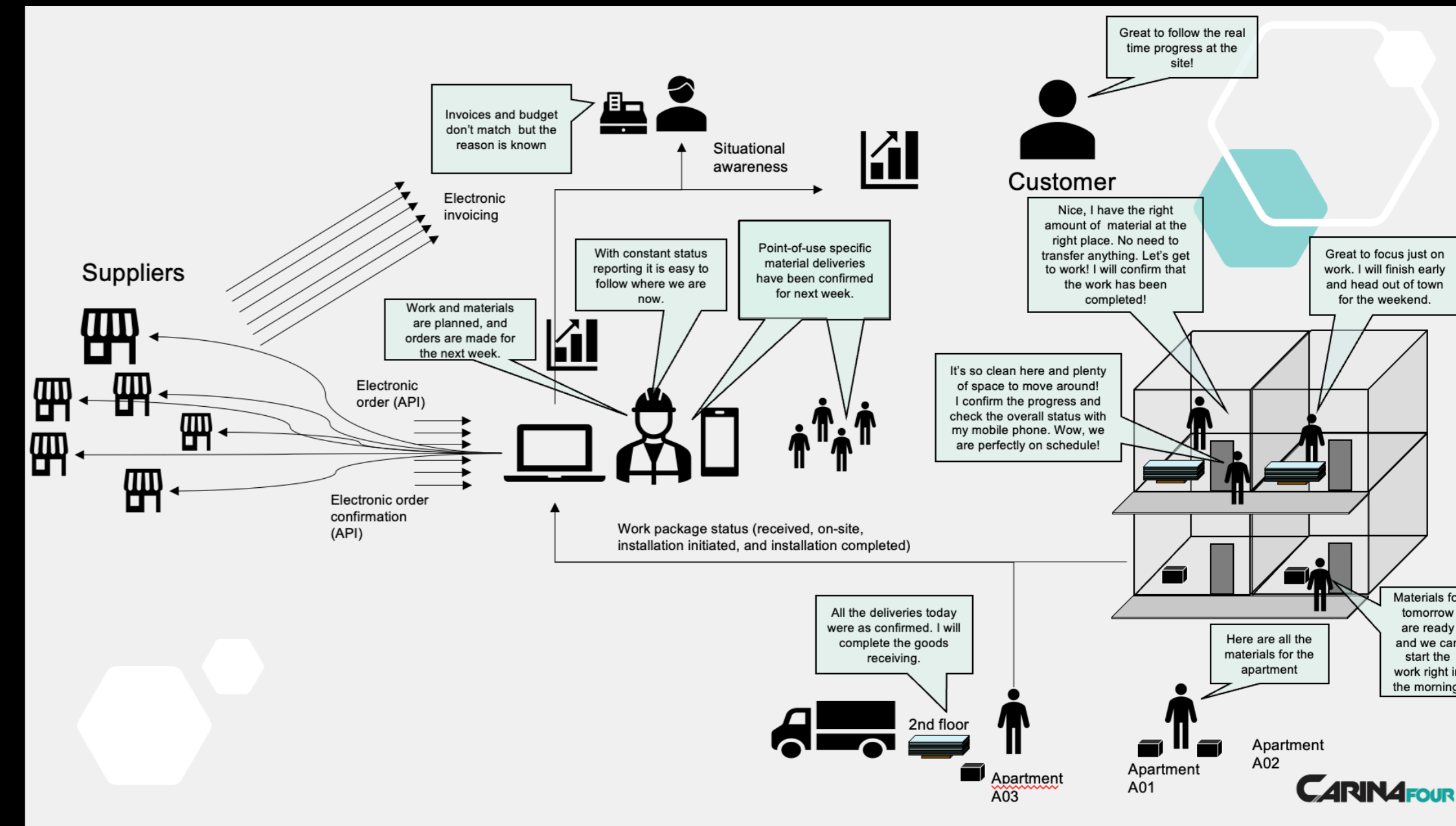
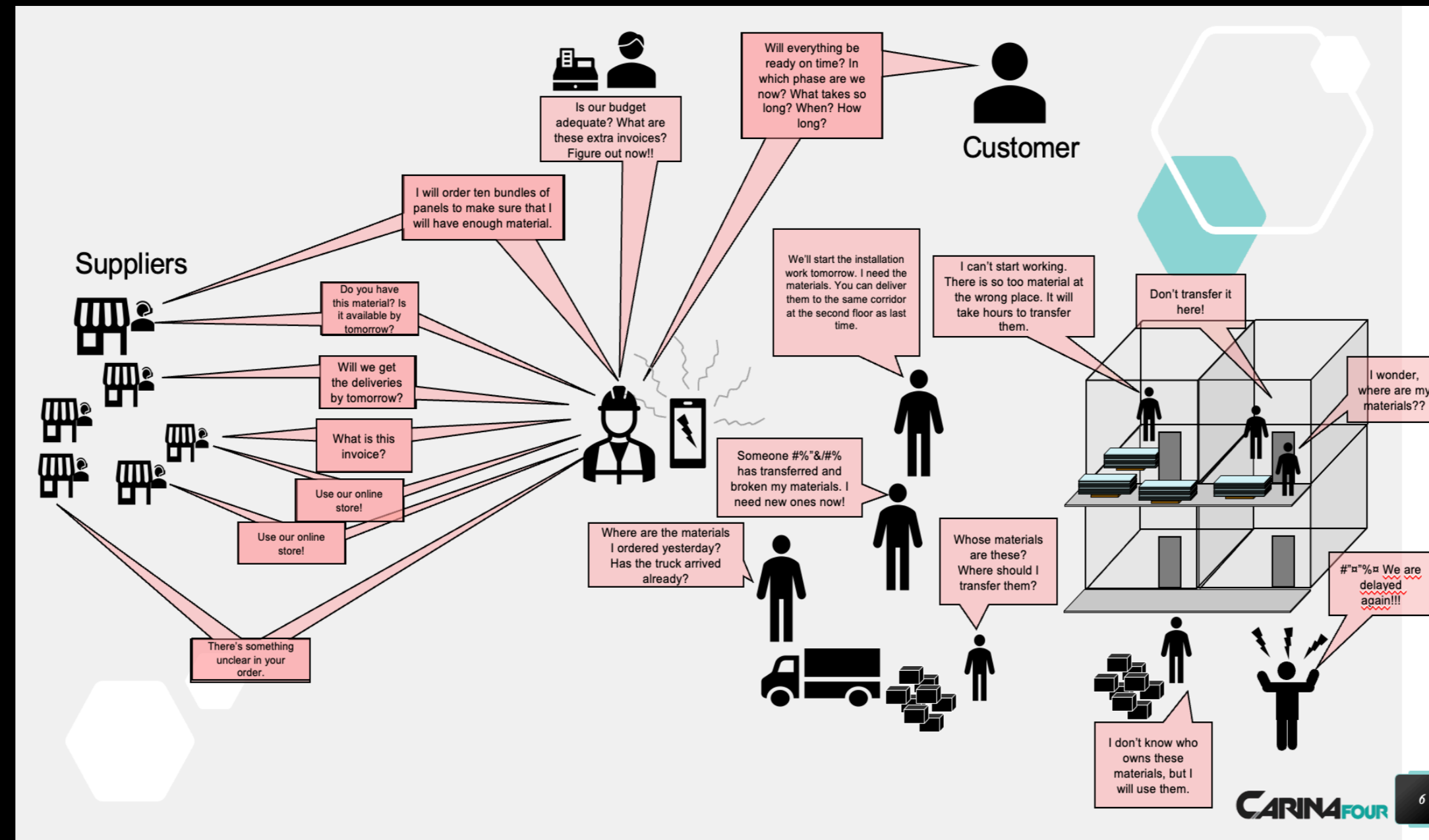
Material waste

Safety

Sustainability



From manual information to Data

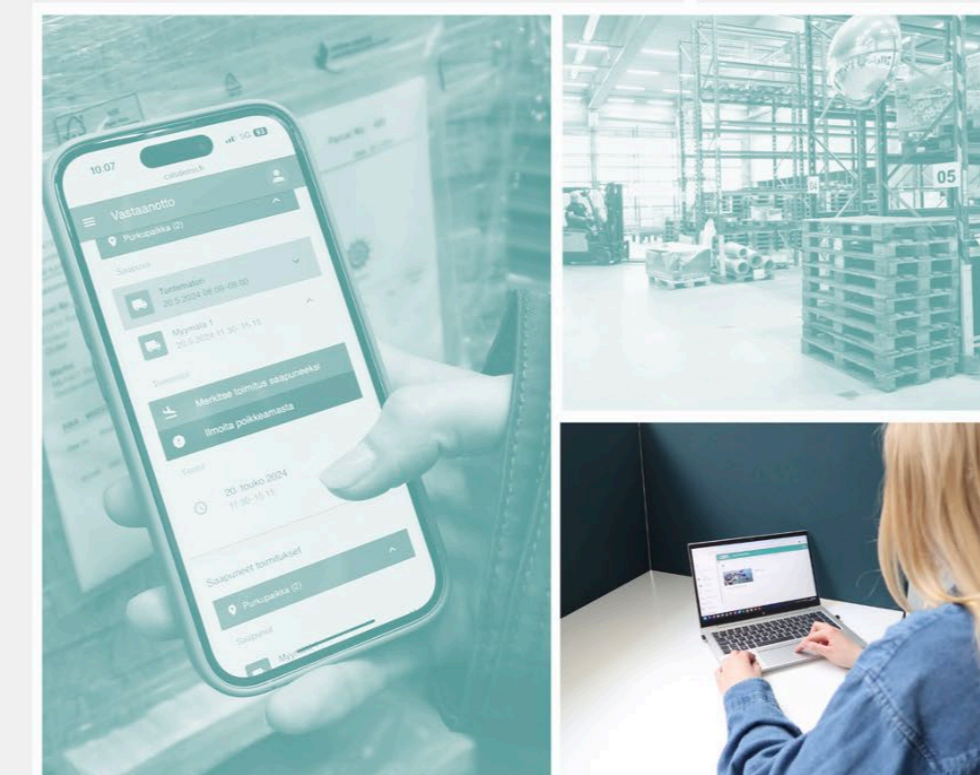


CALS technology

CALS is the solution for productivity and material management challenges



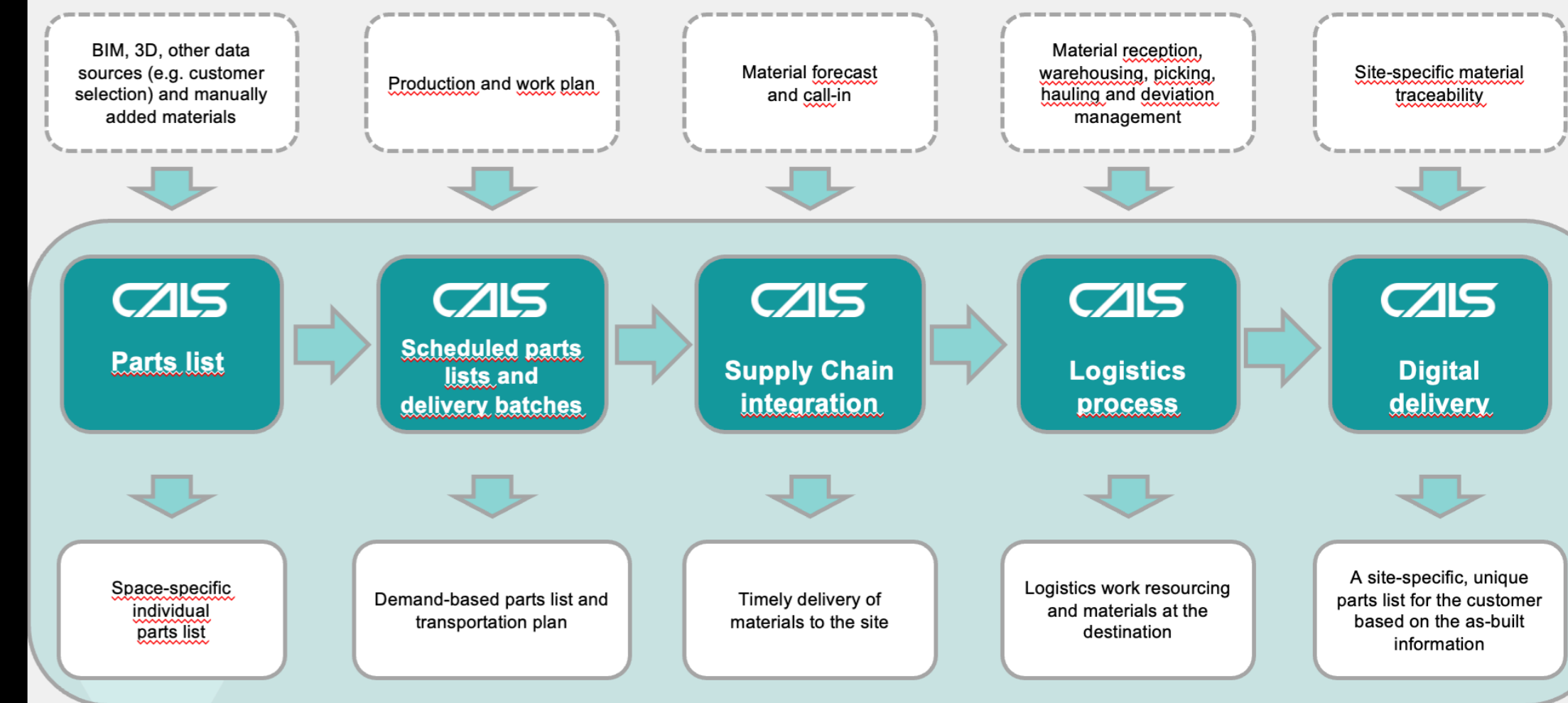
Accelerates
Material Management
Digitalization and
Automates Data Flows



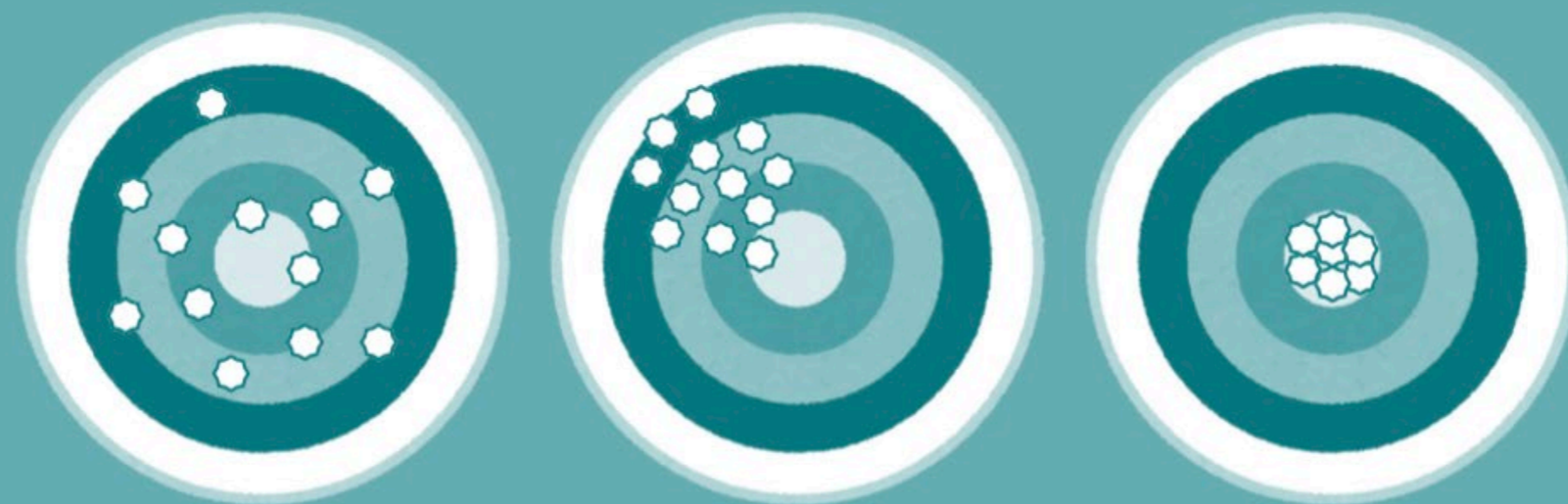
"The materials were planned and ordered with CALS, and they were delivered based on the needs of the site. The partition wall materials were stacked based on the construction order and were easily available for the installation. Work productivity increased by 40 percent."



CALS – linking, managing and enriching operational processes and information



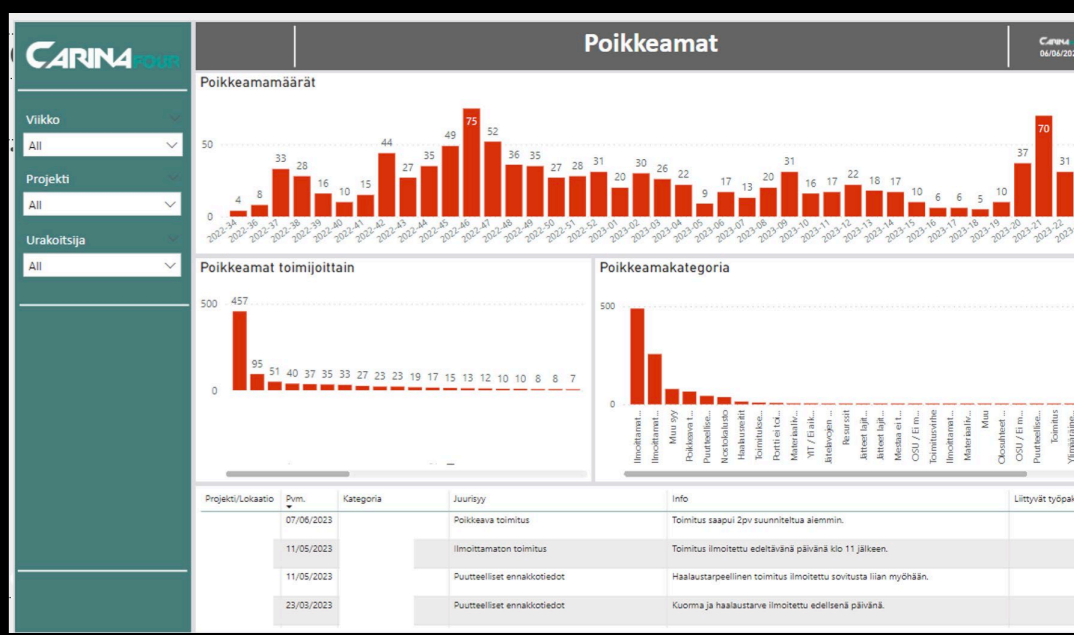
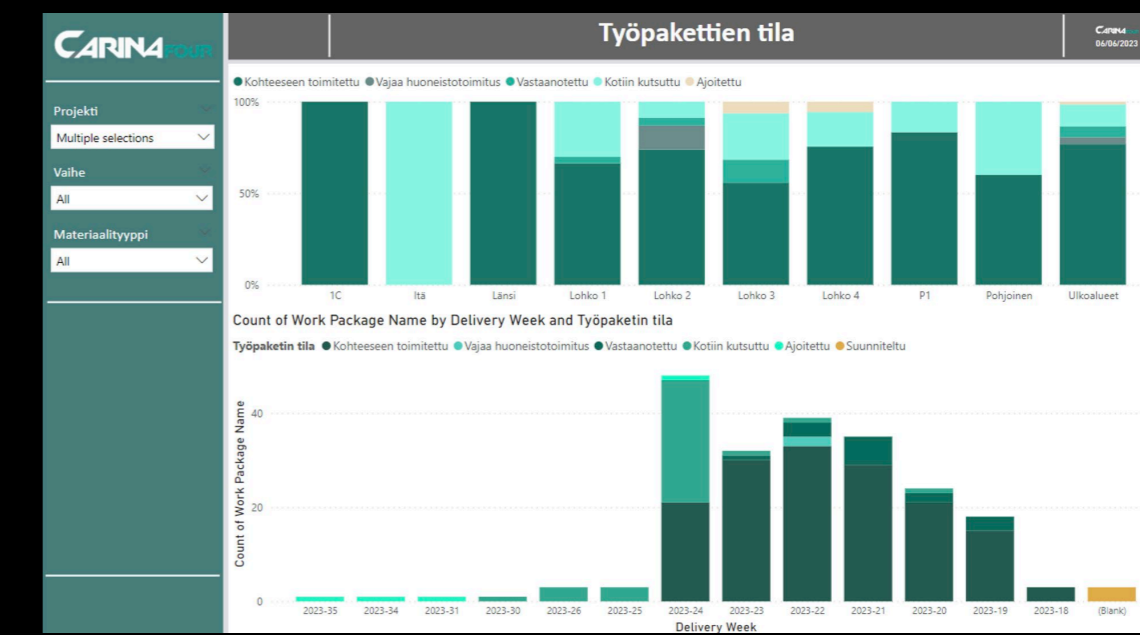
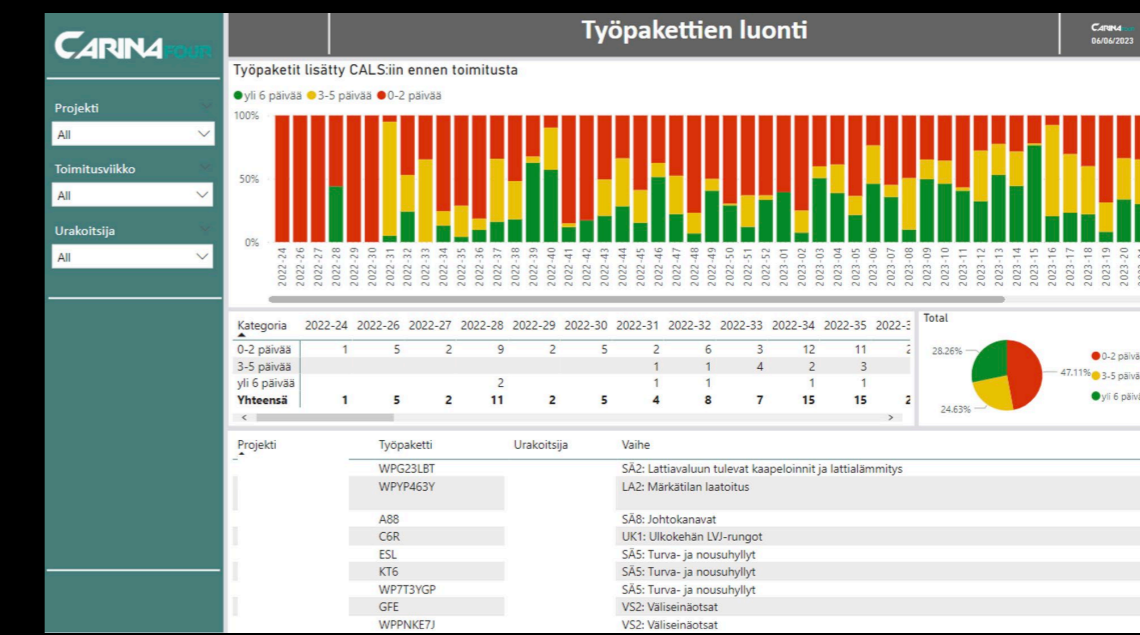
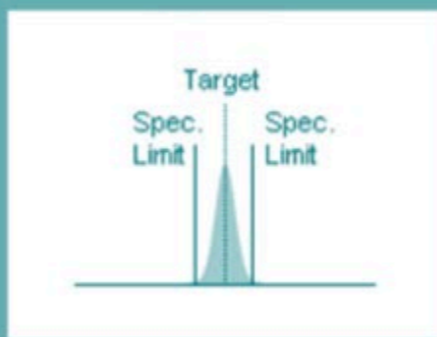
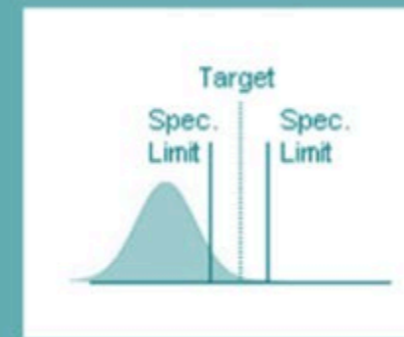
Standardize Stabilize Automize



Process varies widely

The process is standardized, but not on target

Standard process in use according to target



Arvioitu toimitusviikko	Toimituspäivä	Työpaketti	Materiaali	Suunniteltu määrä	Toimitettu määrä	Yksikkö
2022-24	14/06/2022	WP23VL3Z	ARBOX Plus C-10-150-115 Työsaumarauote	8.00	8.00	kpl
2022-24	14/06/2022	WP23VL3Z	WELDA 150x150-162 Rr Kiinnityslevy	10.00	10.00	kpl
2022-26	30/06/2022	WP7BRF44	Aluslevy AL16_PL10x100x100-KRD18_S35S12+N	100.00	100.00	kpl
2022-26	30/06/2022	WP7BRF44	HPM16P-2000 Ankkuripultti	100.00	100.00	kpl
2022-26	30/06/2022	WP7BRF44	MODIX SM25A-1760 raudotusjatkos	55.00	55.00	kpl
2022-26	28/06/2022	WP7P698	ARBOX Plus A-10-150-115 Työsaumarauote	12.00	12.00	kpl
2022-26	28/06/2022	WP7P698	ARBOX Plus C-10-150-115 Työsaumarauote	4.00	4.00	kpl
2022-26	28/06/2022	WP7P698	ARBOX Plus C-10-150-205 Työsaumarauote	10.00	10.00	kpl
2022-26	28/06/2022	WP7P698	ARBOX Plus K-10-150-205 Työsaumarauote	14.00	14.00	kpl
2022-26	29/06/2022	WP7P698	Betoniteräsvetko B500A 8-150 SX2.35	30.00	30.00	kpl
2022-26	29/06/2022	WP7P698	HAVUJANERI 3/3 PEFC 12X2400X1200	230.40	230.40	m2
2022-26	29/06/2022	WP7P698	SAHATTU HAVU PEFC 47X100 VS/VL BASIC	1,058.40	1,058.40	m
2022-26	29/06/2022	WP7P698	Fescon Juotosbetoni JB 600/3 1000KG	2.00	2.00	SSK
2022-26	29/06/2022	WP7P698	Fescon Sementtiastia S 30 1000kg	3.00	3.00	SSK
2022-26	28/06/2022	WP2NC16V	ARBOX Plus A-12-150-225 Työsaumarauote	2.00	2.00	kpl

CALS AI Strategy:

0. Data structure and data gathering

1. Human to machine interaction

2. Risks and Resilience

3. AI-assisted part list generation

The Challenge

No Data, No AI

Low level of process standardization in project industry

Low interest to invest on Digital Supply Chain solutions

Low capability to run change management in project environment