SMECluster Event 4
C2NET Project

Bridgend, United Kingdom

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Company in brief

World Class Provider for Intelligent, Environmentally Sustainable Hydraulic and Lubrication Solutions

- Component supplier & independent system integrator

- Over 40 years' experience in fluid automation solutions

- Own modular platforms
    - Hydraulic and Oil lubrication systems
    - Control and monitoring

- Employees ~30

- Turnover 2015: ~5,5 m €

- Ownership: Operative management and person investors

- 🟡 **Production unit**
- 🟡 Sales office
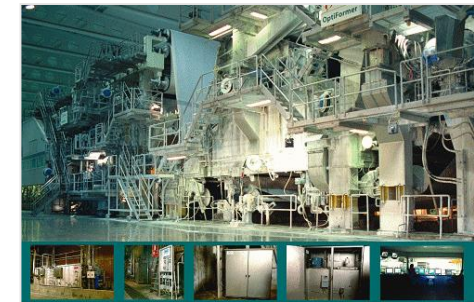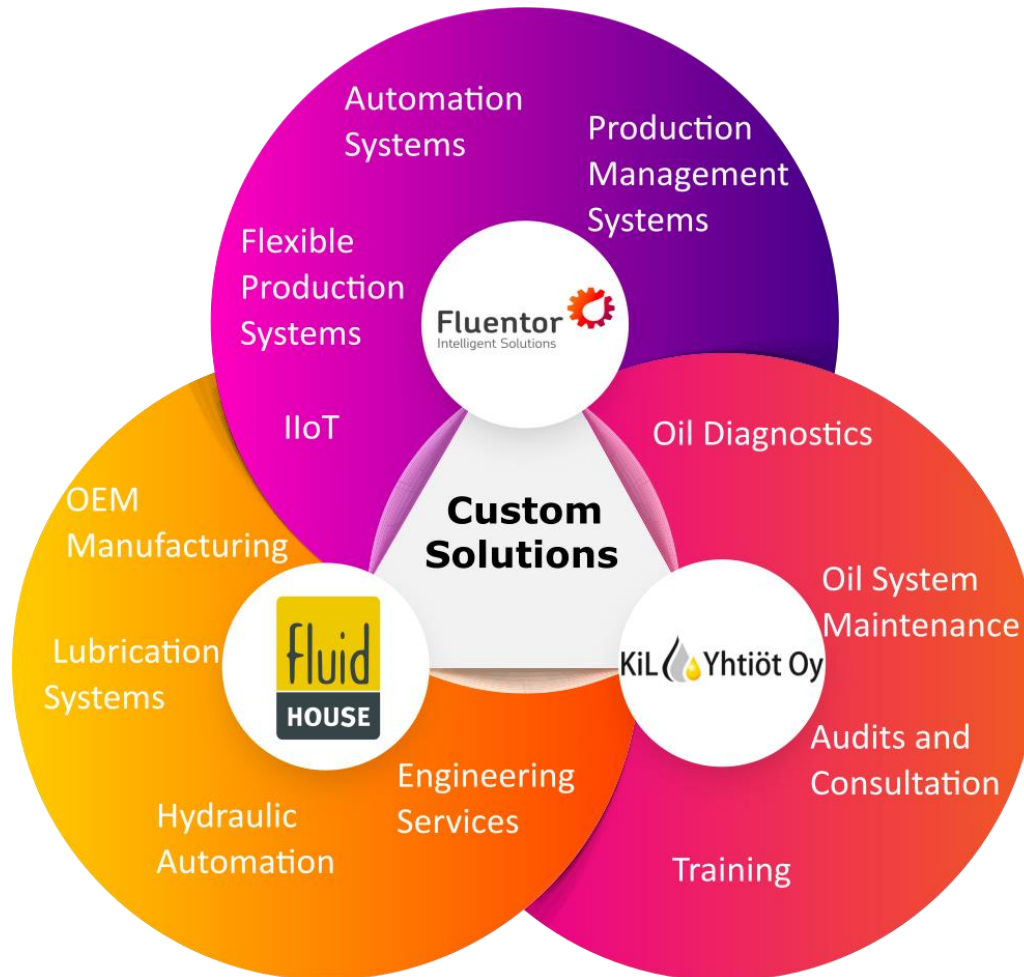- 🟡 **Representative office**

Background and history

R&D
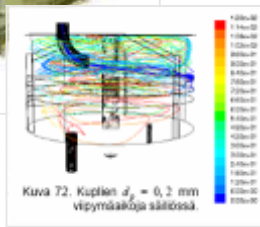
2004

2005

metso paper **Automation workshop Savela**

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2007

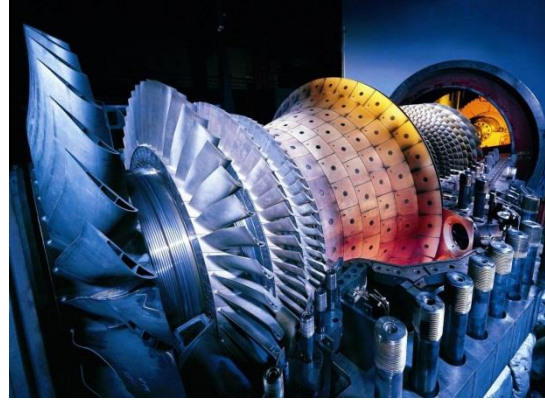Prodatec

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Currently

- Fluentor Oy is our parent company.

- Kil Yhtiöt Oy is our sister company.

- We provide solutions independently or together as it becomes necessary.

Typical applications for our solutions

Pulp & Paper machines

Turbines

Steel making machines
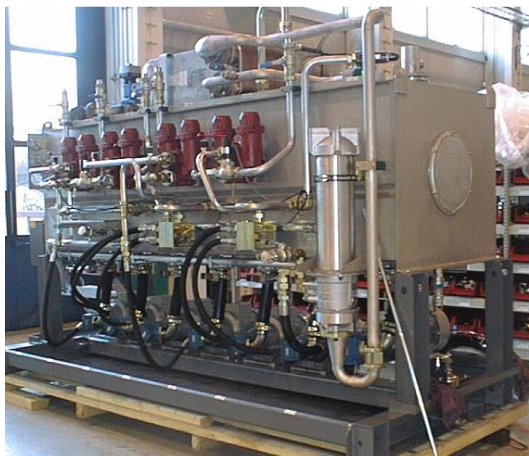

Motors, generators and gearboxes

Ramps & Bridges

Deck machinery

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Hydraulic and lubrication systems

Key customers and market sectors

Pulp & Paper	Marine	Oil & Gas Offshore	Energy	Infrastructure
Valmet	Rolls-Royce		moventas	PEAB
VOITH	SIEMENS			PORT OF HELSINKI YOUR PORT OF EXCELLENCE
ANDRITZ	ABB			RANTALA
PMP GROUP / PMT			Santasalo	KESÄLAHDEN MAANSIIRTO OY
BELLMER Gegr. 1842				
UPM / mondi				

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Other customers

Our supply chain

Customer

New customer Order

Sales

Receives specs

Engineering

BOM

Purchasing

Planning and logistics

OEM customer order

Customer Portal

Retrieves specs

Shipping and Delivery

Delivery

Suppliers

Shipping and Delivery

Packing

Testing & Quality Control

Manufacturing

Fluidhouse

Transportation Contracts
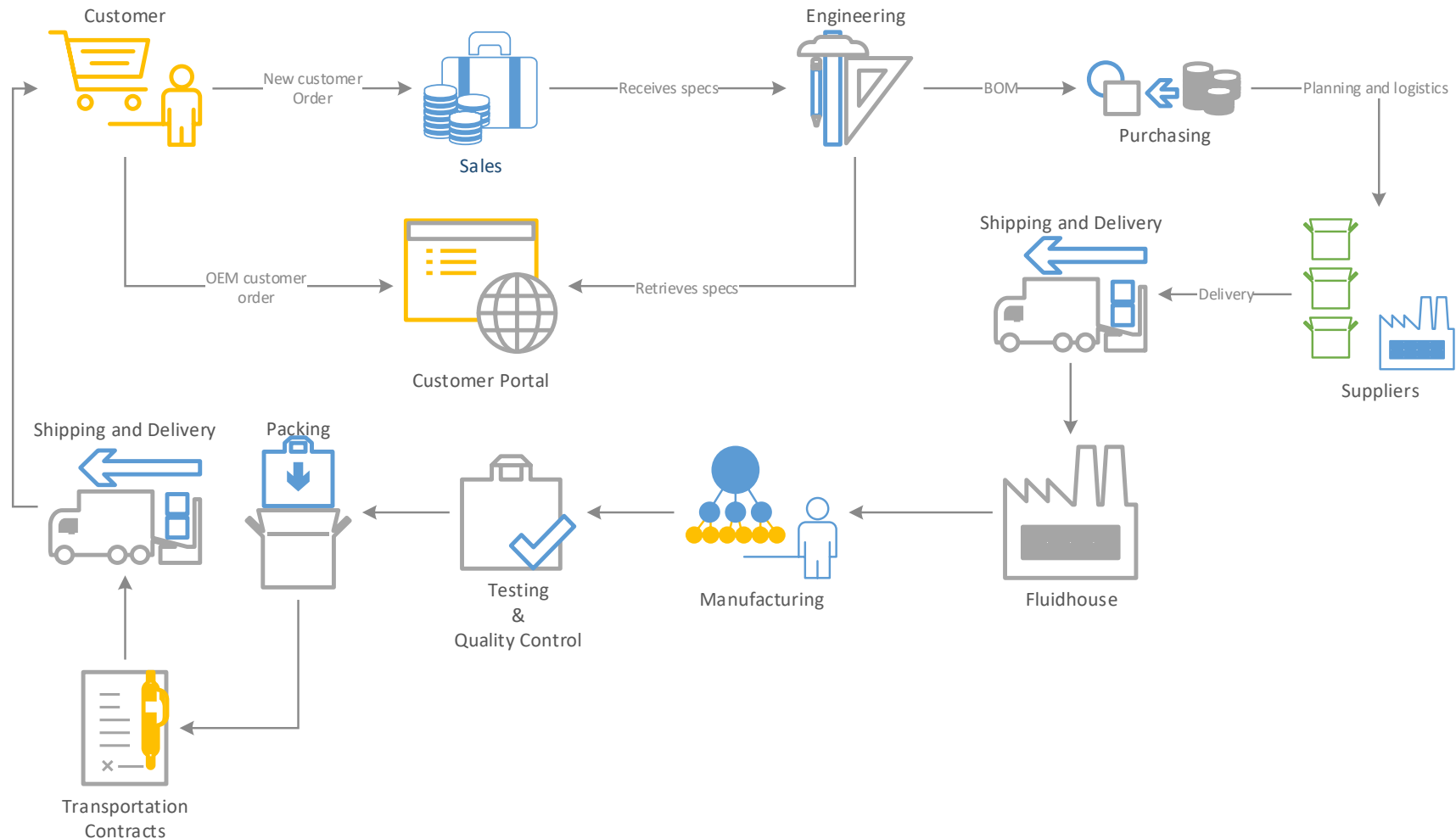
Current areas of opportunity

- Micro/Macro supplier supply chain system differences.

- Delays and problems with On Time Delivery (OTD).

- Lack of standard interface and communication systems between customers and suppliers.

- Scheduling problems due to lack of forecast capabilities.

- Internal processes rely heavily on old technologies (Excel, BAAN IV, etc.)

- Orders are managed in a personal manner depending on who the customer and the handler are.

C2NET pilot and its relevance to our work

- Secure cloud-based storage and management of critical data, such as purchasing, production plans, customer order data status, etc.

- Sharing of relevant production data with customers and suppliers

- Accesibility of production data anywhere and at anytime with strong visibility of useful data and awareness of the real-time situation

- Optimisation of planning and production activities and enhancement of data availability to Fluidhouse and its partners.

PP: Production Plan
DP: Demand Plan
LP: Delivery Plan
CC: Capacity Constraints
SL: Stock Levels

Micro-suppliers   Macro-suppliers
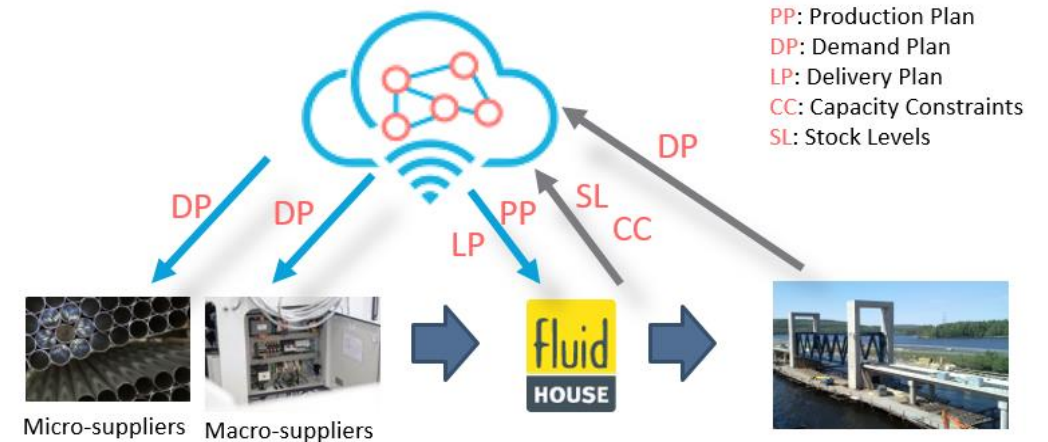
Pilot use cases as real-life situations

Fluidhouse's pilot has 3 use cases it seeks to test under the C2NET framework:

- Use case 1: Inquiry, quotation and order reception planning

  Focuses on the initial parts of the SCM process

- Use case 2: Management of production planning

  Focuses on the planning and optimization of production

- Use case 3: Optimization of information accessibility in material purchasing planning

  Focuses on the monitoring of data availability of pending purchases
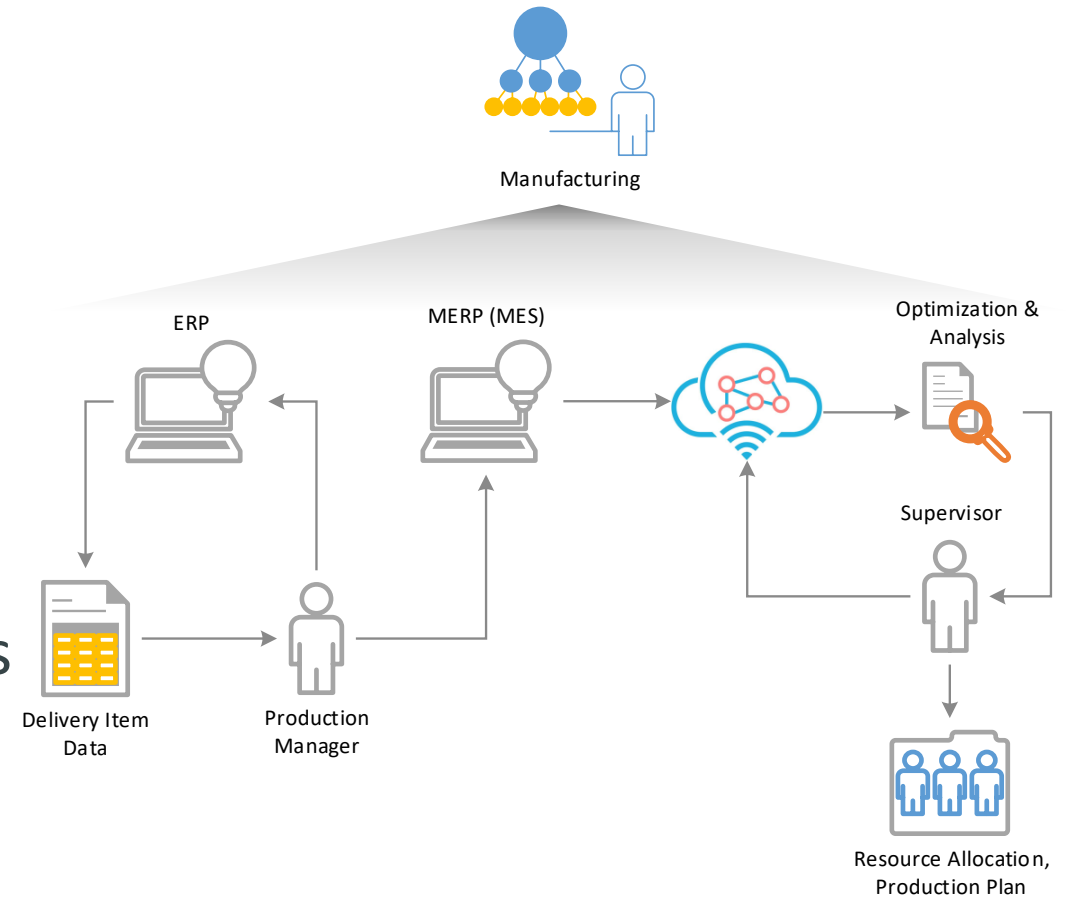
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Use case 1 – Inquiry, quotation and ordering

- Order data becomes available for visualization to all relevant parties via C2NET.

- Status changes, issues and anything that may arise can trigger notifications.

- With future developments eligible customers the inquiry, quotation and ordering process will eventually be possible via C2NET.

C2NET

Customer

New customer Order

Sales

OEM customer order

Customer Portal

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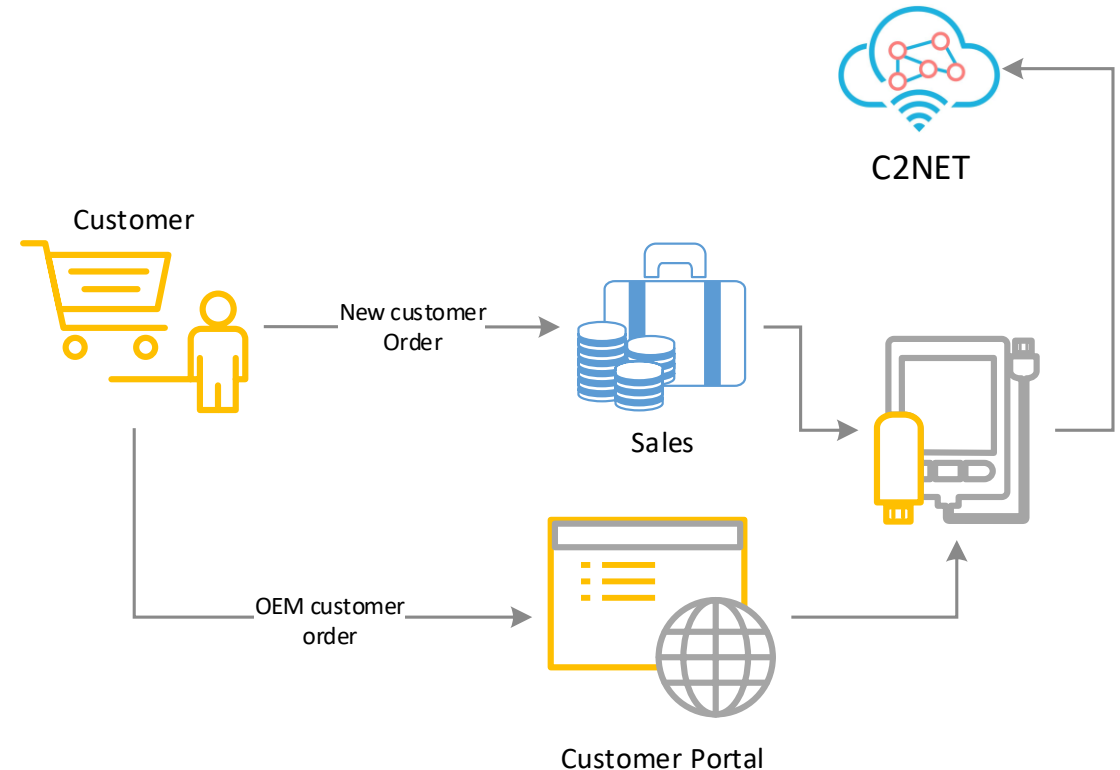
Use case 2 – Production planning (1)

- This scenario focuses more on internal processes.

- C2NET provides schedule optimization to guarantee latest start date, and acceptable OTD.

- Production status information is made available to customers.

- The constant monitoring and notification of status changes enables better response times.

- General increase in visibility and transparency.

Manufacturing

ERP

MERP (MES)

Optimization & Analysis

Supervisor

Delivery Item Data

Production Manager

Resource Allocation, Production Plan
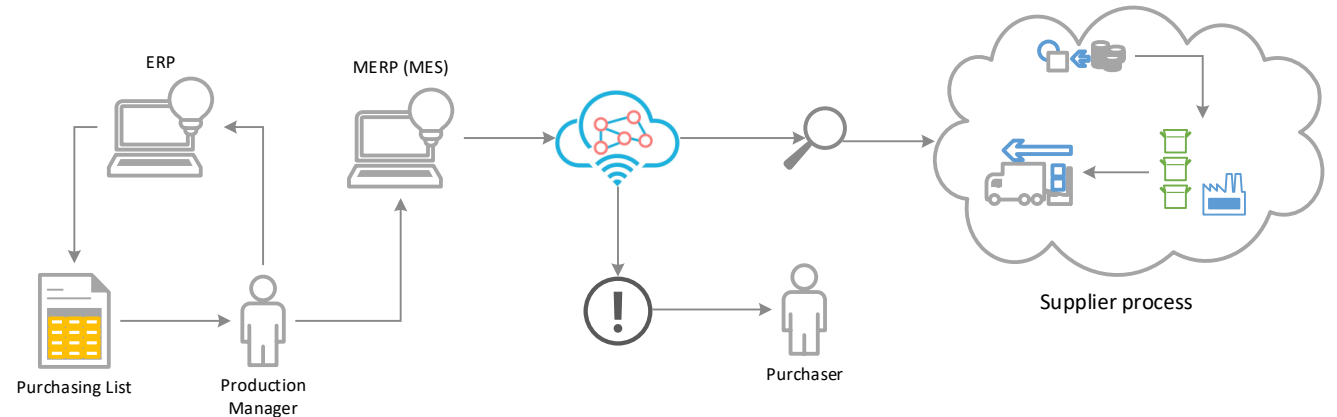
Use case 2 – Production planning (2)

- Mixed-Integer Linear Programming (MILP) model for the scheduling of production and human resource.

- Distributes the work load of production operations among available workers, matching their skills.

- Model features:
  - It treats delivery dates as hard constraints, no late deliveries are allowed.
  - It allows overtime / hiring temporary external workers
  - As the primary sub-objective, it minimizes such overtime/external hire cost.

Employee skills

Employee schedule

Employee type

Order/Projects

Production Plan
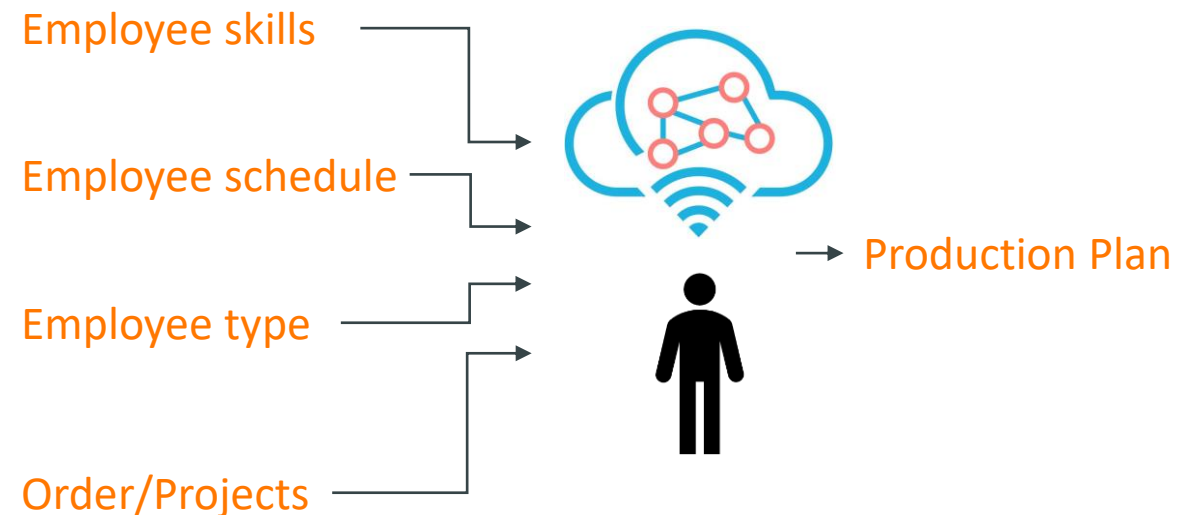
Use case 3 – Purchasing planning

- C2NET functions as a monitoring support for delayed deliveries.

- Powerful tool for the purchasing personnel.

- Future iterations may include inquiry management and negotiation of deliveries.

ERP

MERP (MES)

Purchasing List

Production Manager

Purchaser

Supplier process

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Dataset view on C2NET platform

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Customer orders (use case 1)

Supplier purchase orders (use case 3)
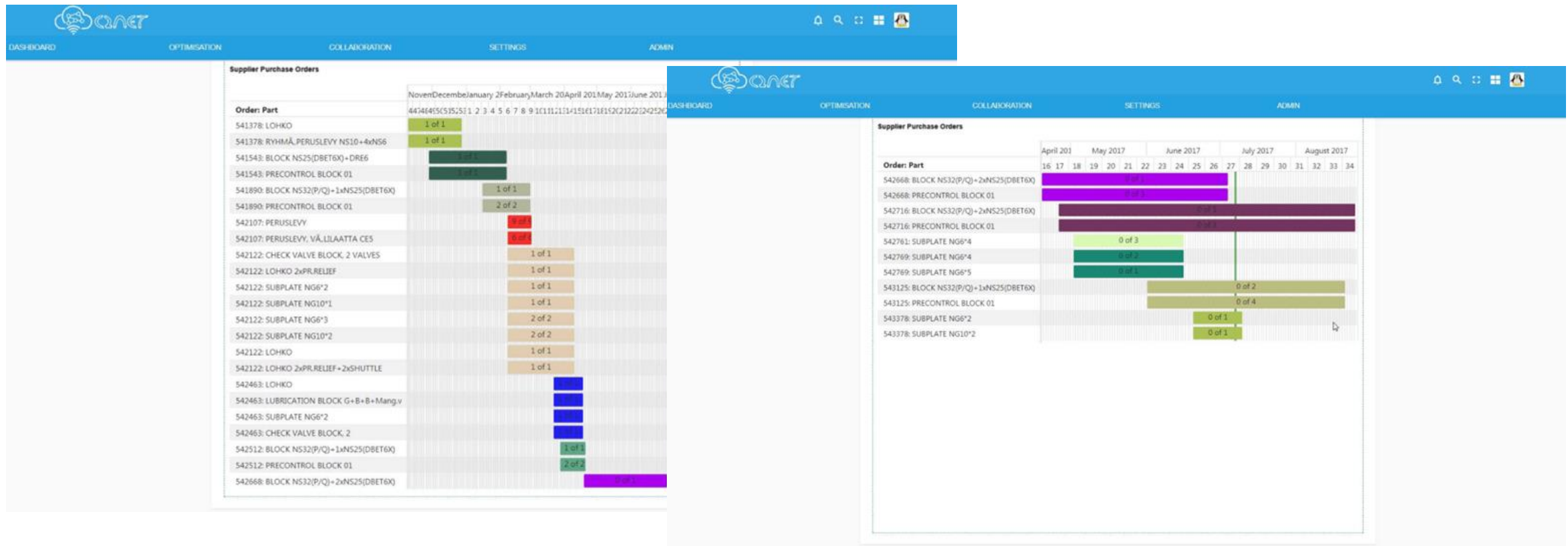
Notifications (by e-mail)
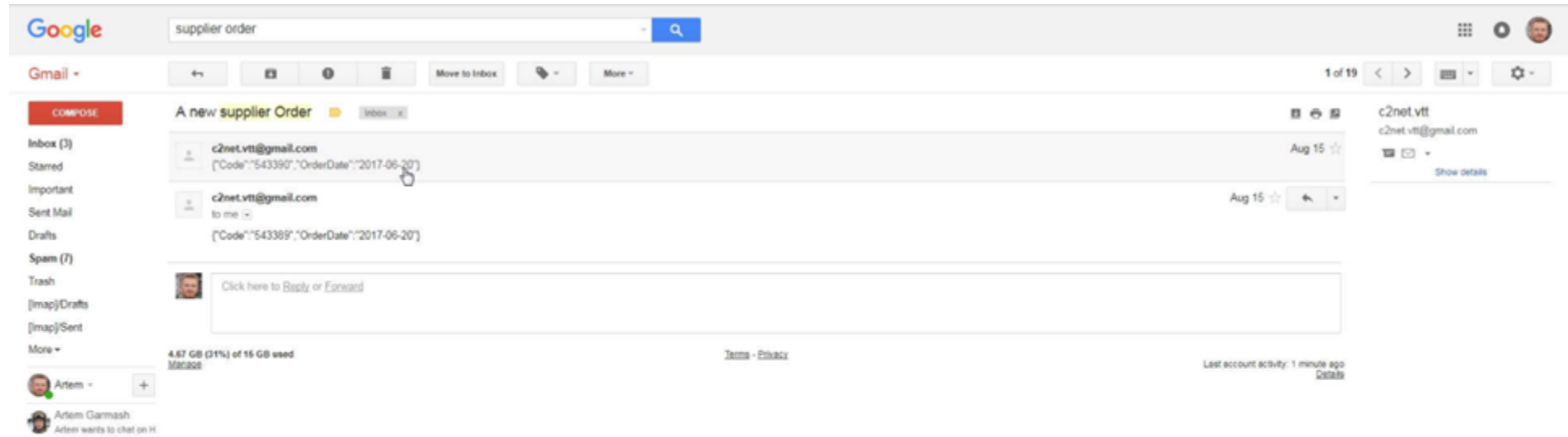
So? Does it work and is it worth it?

- In short, yes. While not yet perfect and fully functional C2NET has already helped us in the following ways:
  - The production plan optimization scenario has provided hard-data on long perceived areas of opportunity in the relationship between resources and workload.
  - The development of data imports/exports to/from our MERP system have started an analysis of our internal processes. This in turn will make it easier to integrate our PDM system and change to a new ERP in the coming years.
  - The supplier monitoring scenario has likewise provided ideas of how to approach this very real issue that needs to be addressed ASAP.
  - The UI developments made in C2NET, while currently limited, open the path to further analysis of what data needs to be shared between relevant parties in our supply chain.

The future of C2NET and what it can do for us

- Enhance and overall improve our business relationships with both customers and suppliers.

- Help us standardize and better evaluate what kind of suppliers we want to collaborate with.

- Standardize plans and datasets so that they are easier to integrate with multiple legacy systems.

- Involve customers and suppliers in the C2NET platform so we can fully benefit from the collaboration features it offers.

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Questions?

Thank you for your attention

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