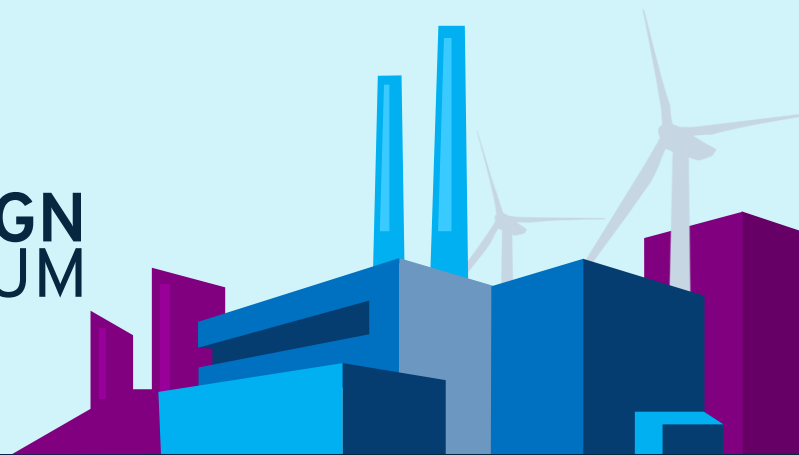




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Fra vandfaldsdata til simultane processer

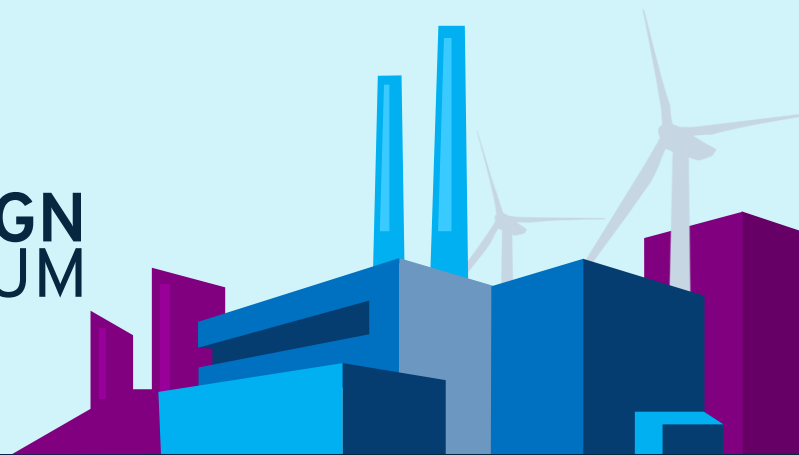
SMART Technology Management



Jesper Brandt



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FORUM



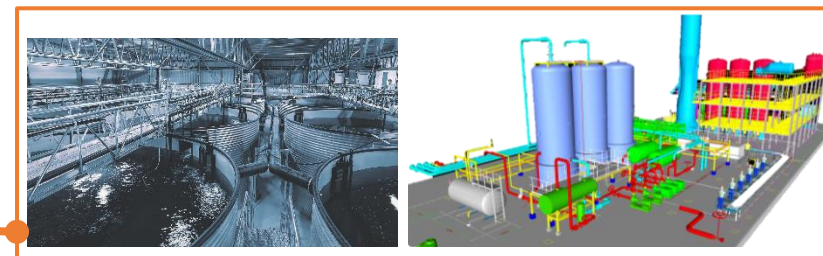
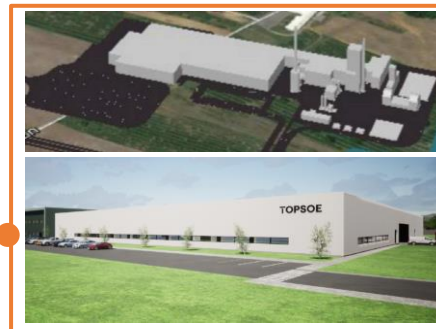
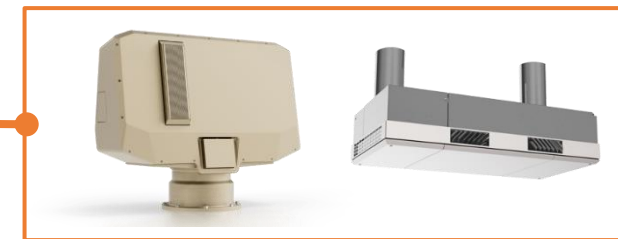
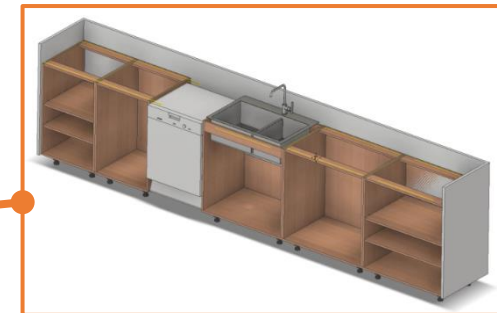
Det gi'r mening at bruge PLM

Lidt af et udsagn 😊

Kundetyper

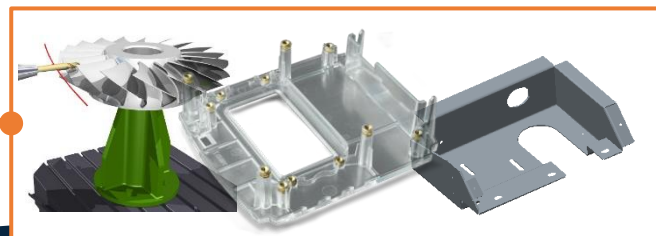
■ Produktleverance

- Byggevarer
- Møbel
- Udstyr/Maskiner
- HighTech
- Consumer



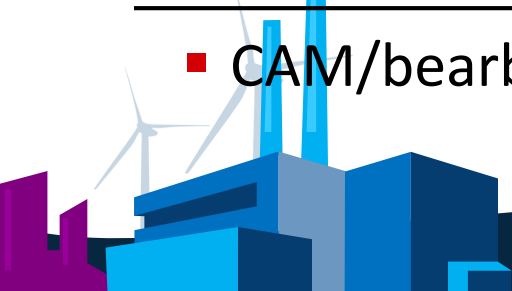
■ Projektleverance

- Egne Procesanlæg
- Solgte Procesanlæg
- Industrianlæg



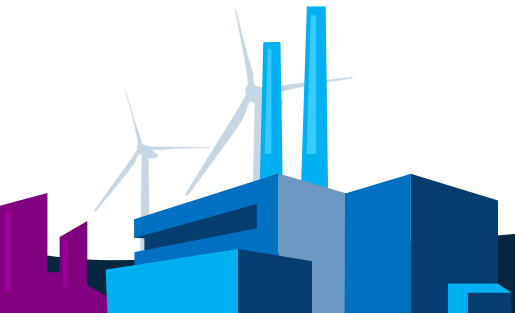
■ Underleverance

- CAM/bearbejdning



Forretnings Know-How

PROCESS
PLANNING
CUSTOMER
OPERATION
ORGANIZATIONS
OPTIMIZATION
ROADMAP
TECHNOLOGY
STRATEGY
FORECASTING
DEVELOPMENT
MANAGEMENT
DESIGN
RESEARCH
SERVICES
MANAGE
PRODUCTS
PROJECT
CONTROL



Forretningens evne til at tjene penge

Ressourceoptimering

Fleksibilitet

Sikkerhed

Overholdelse af lovkrav og regulativer

Håndtering af ændringer

Kompleksitet i produkter

Omkostning/Indtjening

Leveringstider

Effektiv energihåndtering

Nøjagtige og hurtige tilbud

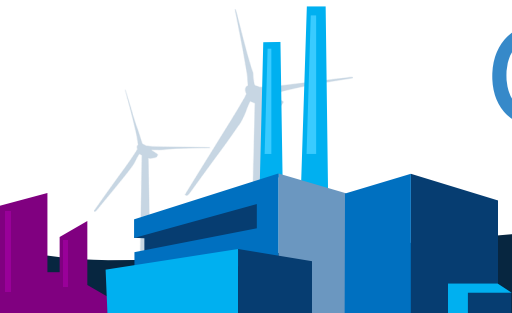
Data genbrug

Leverandør samarbejde

Kvalitet og dokumentation

Garanti & pålidelighed

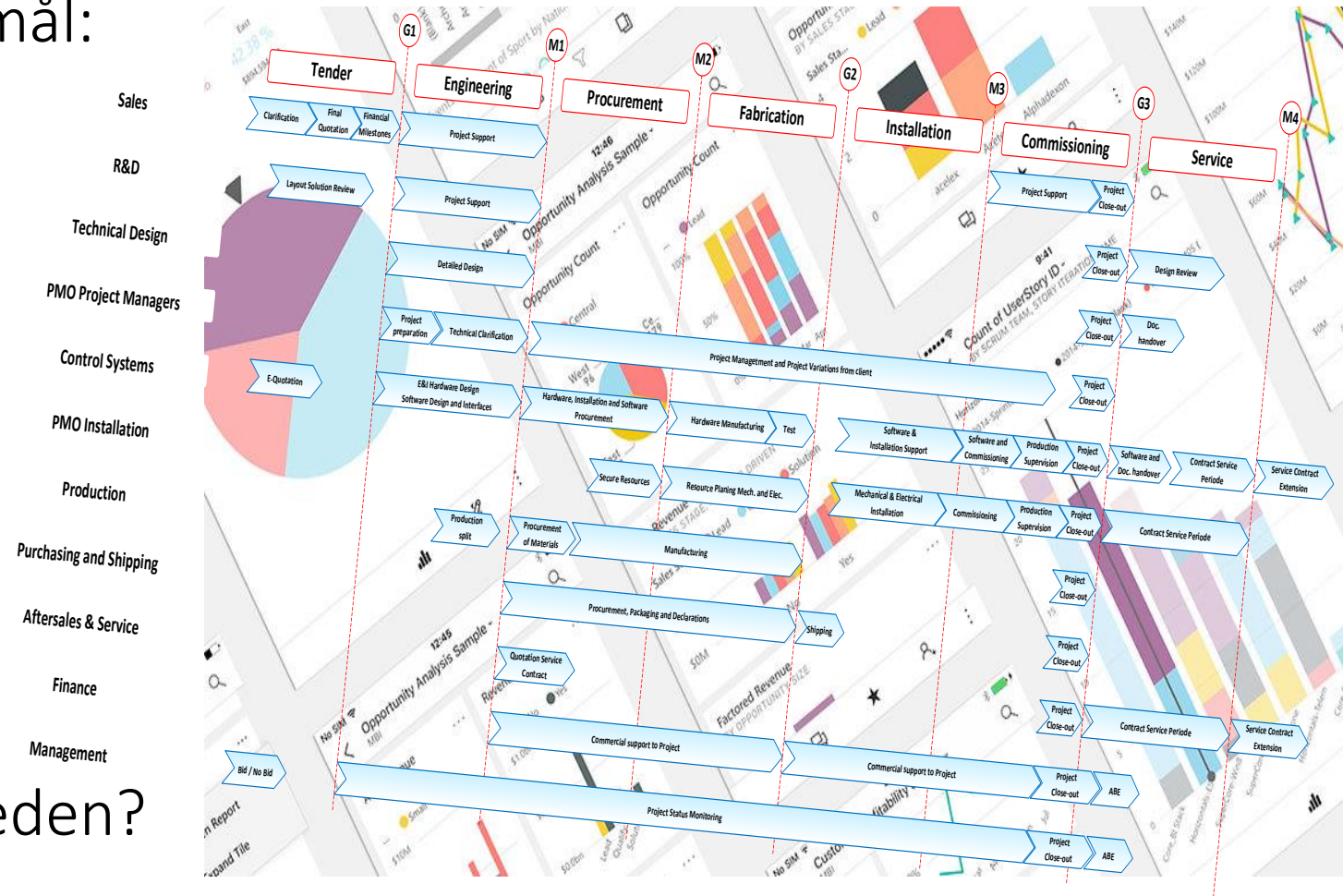
Global konkurrence



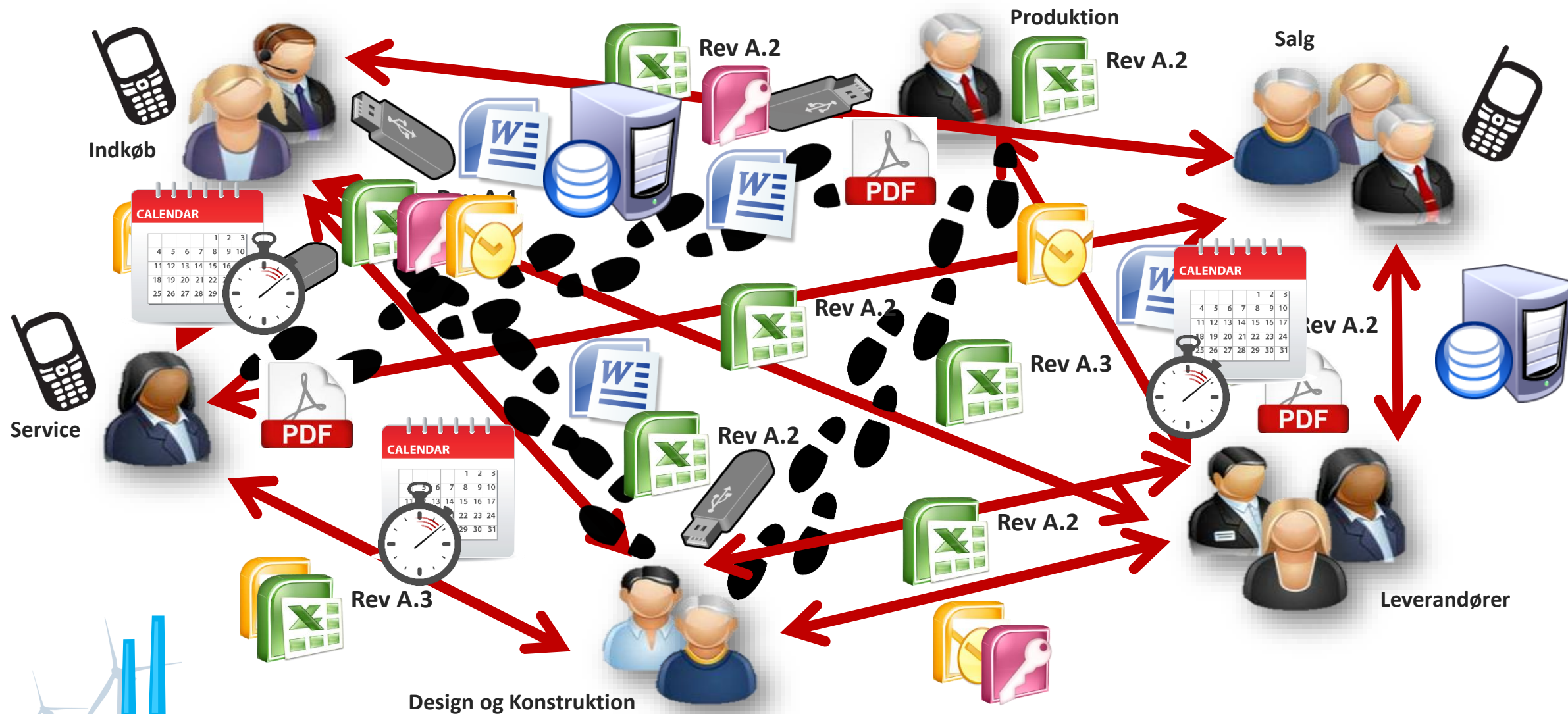
Forretningens process og overblik

Lidt eksempler på daglige spørgsmål:

- Er vi i tide efter plan?
- Hvad arbejder teamet på?
- Hvad skal vi fokusere på?
- Hvor forventer vi forsinkelser?
- Er dette det seneste design?
- Hvor har han det fra?
- Er dette allerede gjort?
- Delte vi dette med forsyningskæden?



Forretningens styringsredskaber (Vi ser ofte vandfaldsprocesser)

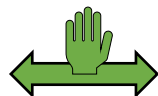


Typiske behov i forskellige afdelinger

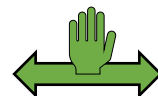
Kost/Pris
Portfolio
Koncept
Muligheder
Lead Time
Visualiseringer
...



Krav og aftaler
Leveringstid
Plan
Opgaver
Udfordringer
Ændringer
...



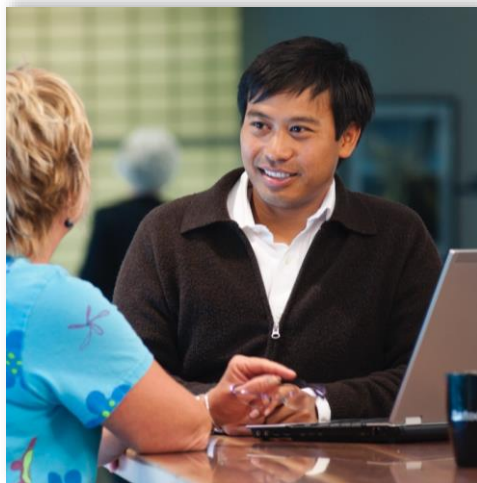
BOM
Nye dele
Indkøbte varer
Tegninger
Kvalitet
Lagerbeholdning
...



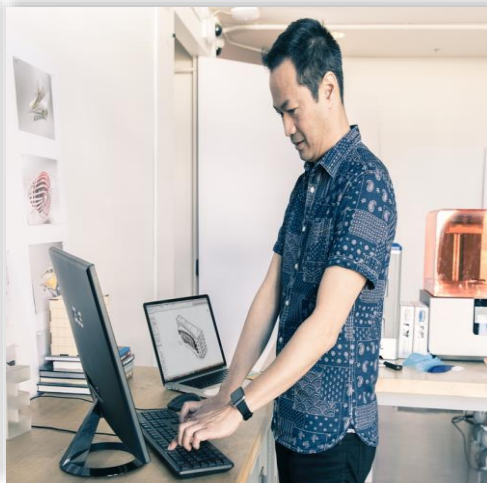
Tegninger
MBOM
Værktøjer
Instruktioner
Plan
Design ændringer
...



Spare Parts
Tegninger
Dokumentation
Service plan
Vedligeholdelse
Instruktioner
...



Salg



Design/Konstruktion



Indkøb



Produktion



Service

CRM

Customer Relationship
Management

PDM

Product Data Management

ERP

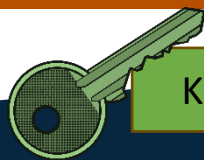
Enterprise Resource & Planning

MES

Manufacturing Execution System

SMS

Service Management System



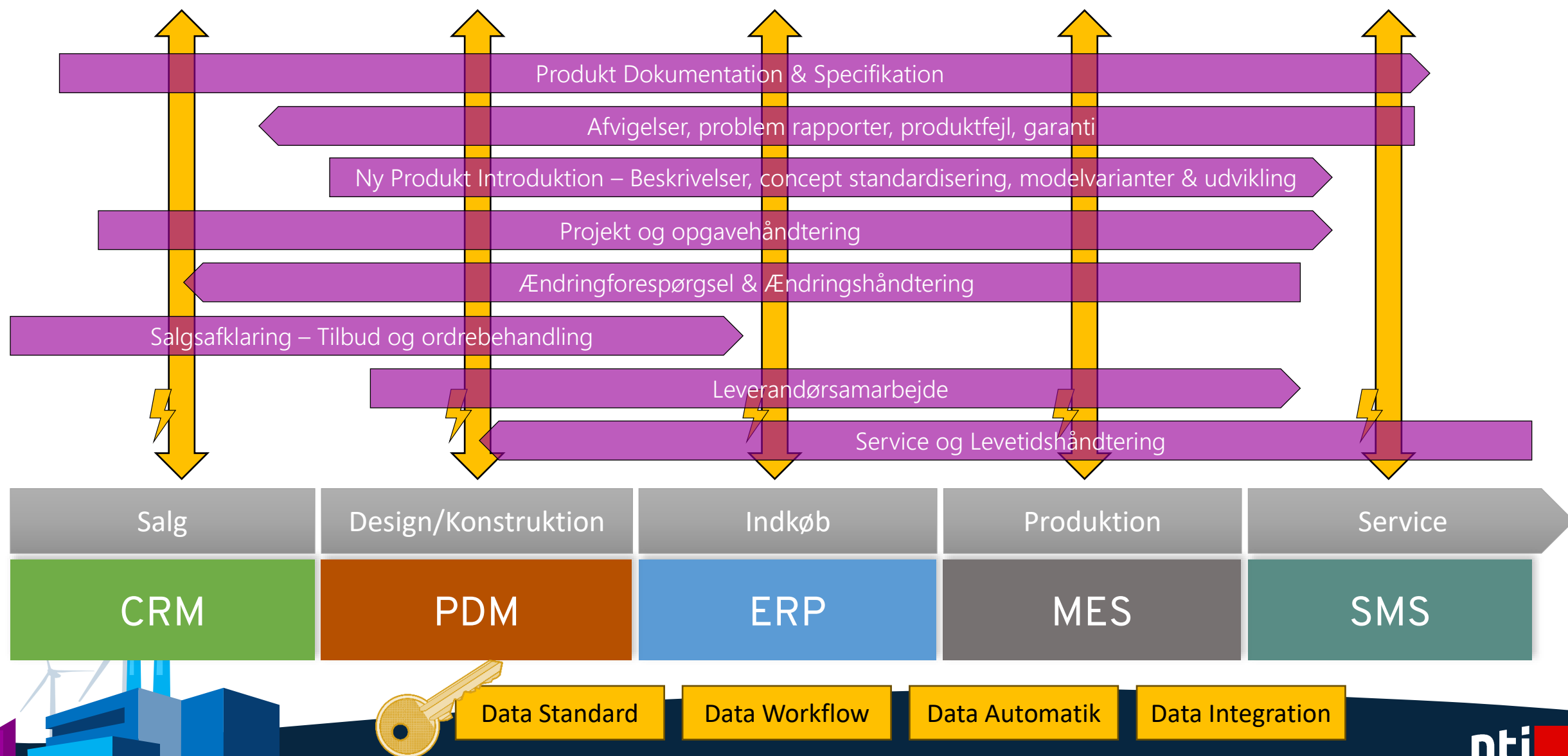
Kompleksitet

Formater

Styklister

Ændringer

Forretningens styringsredskaber (Med PLM som 'Proces koordinator')



Fordele ved simultan data styring



Sparet **Tid**

“Vi har **reduceret vores produktudviklingstid med 50%**”

Roulunds Braking



Forbedret **Kvalitet**

“Vi har **reduceret vores spild med 84 %** på månedsbasis

*Brian Hunter
NovaCentrix*



Reduceret **Kost**

“Før sendte vi forkerte revisioner og forældede oplysninger, som **kostede os over 1.5M om året.**”

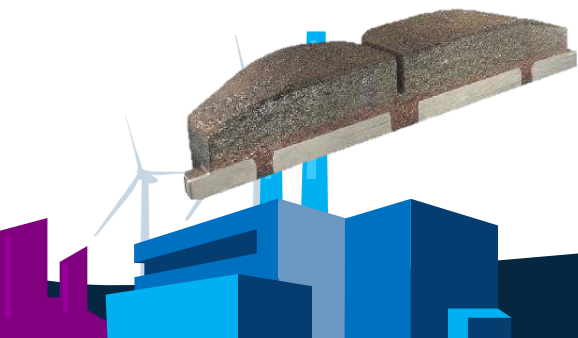
*Rob Heyworth
Chamberlain Group*



Øget **Effektivitet**

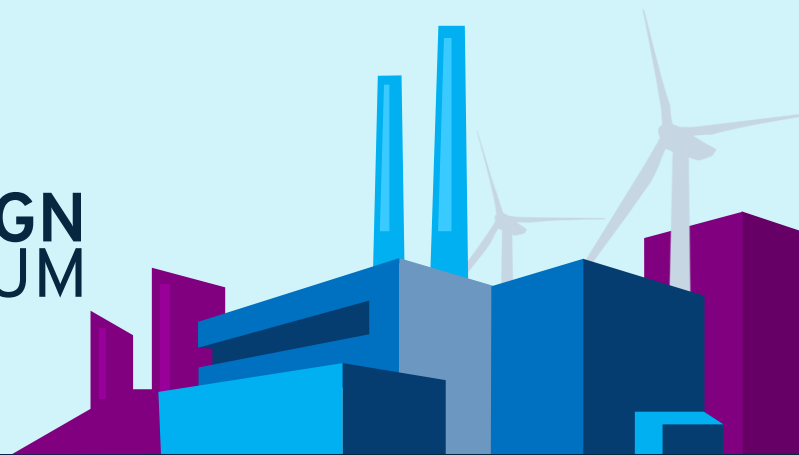
“Den tid, det tager at behandle en ændringsordre, er blevet dramatisk reduceret **fra to uger til to dage**”

*Gary Alcala
Mesa Labs*





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Hvorfor ændre noget det 'virker' jo !!!

Der er et par fundamentale ting der betyder noget

Drivere for ændring af nuværende tilgang

Ændringer kan være begrundet i forskellige forretningstilgange

- der måske er identificeret eller nødvendige
- viden om at der skal ske forandring, f.eks. grøn omstilling
- krav fra kunder/myndigheder/ejere ...



Her er et par eksempler

- **Datastruktur**
Hvis der er udfordringer med datahåndtering, flaskehalse og overblik
- **Optimering**
Hvis der er ønske om bedre styring og kontrol af projekter/produkter (NPI/NPD)
- **Krav**
Hvis der er krav til certificeringer, kvalitet, dokumentation eller sporbarhed
- **Forbedre, udbygge og iværksætte nye forretningsområder**
Hvis der er ønskes nye produktområder, mere aftersales, opkøb eller nye afdelinger



En SMART data tilgang

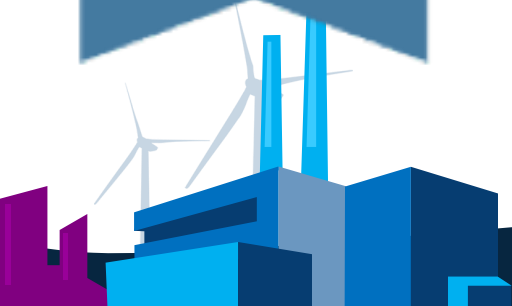
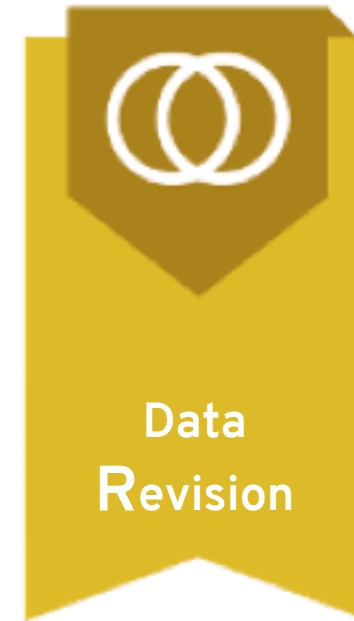
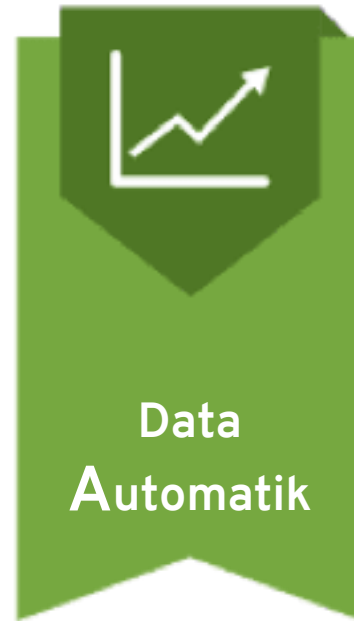
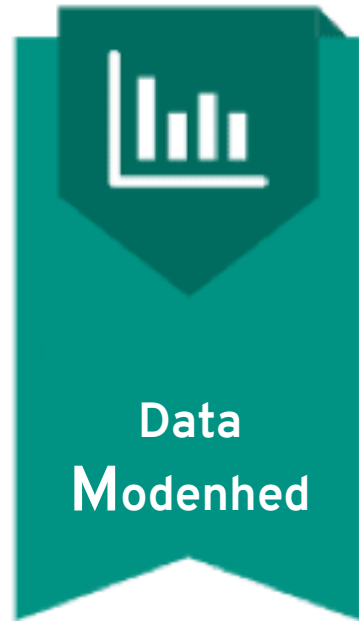
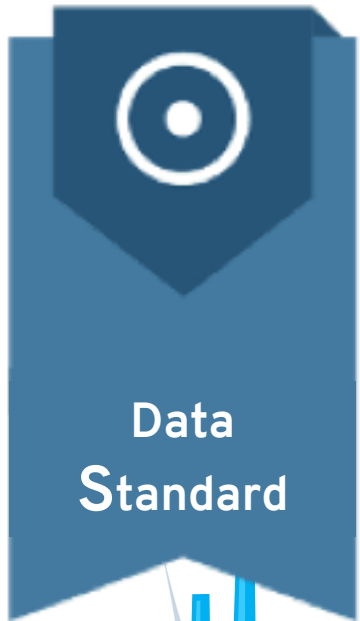
S

M

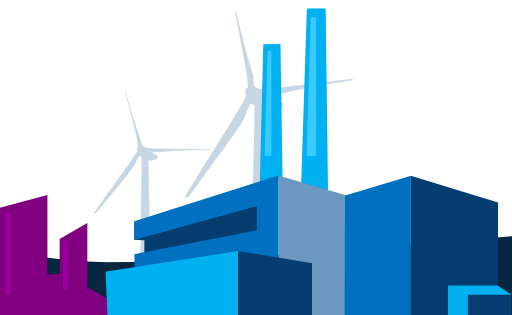
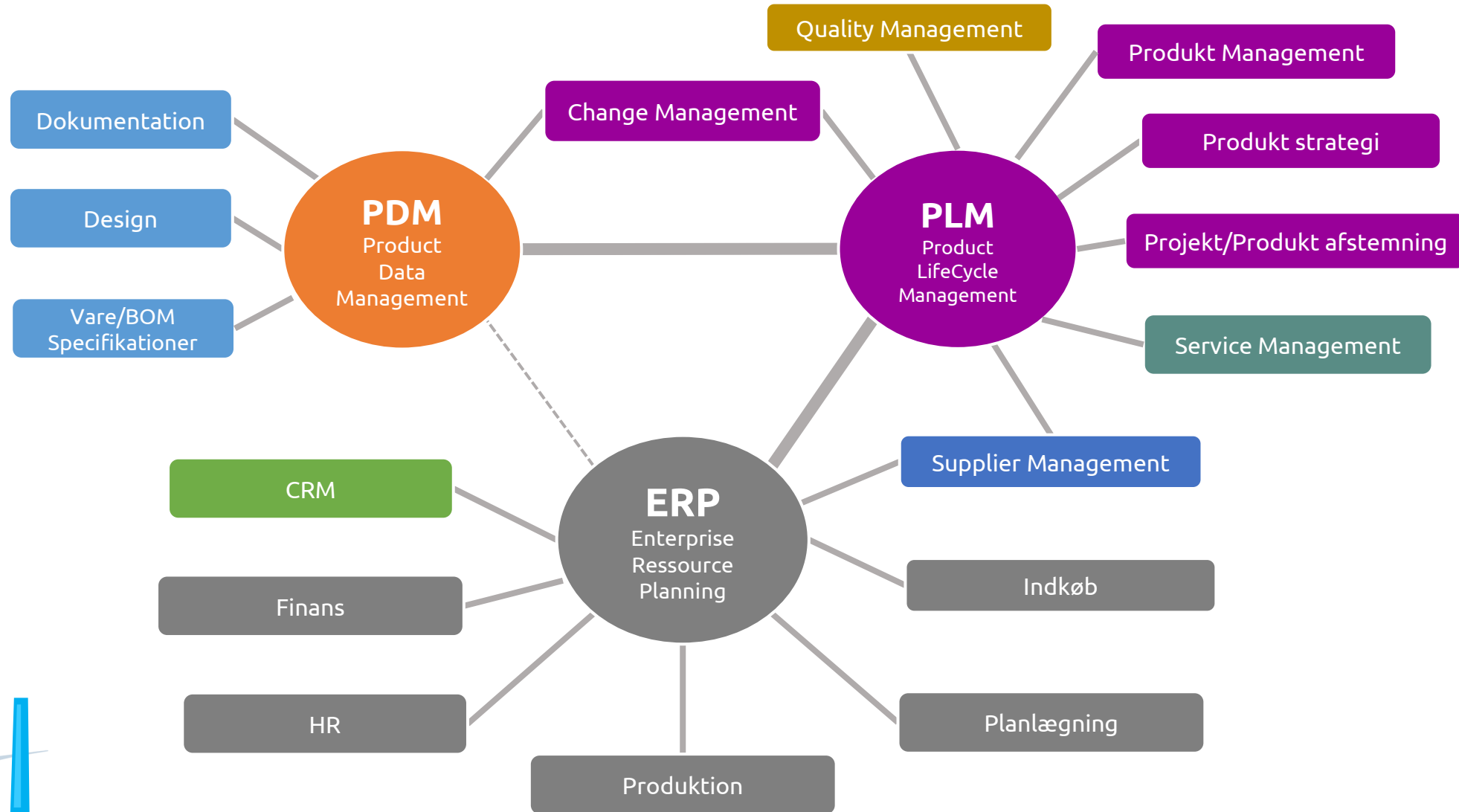
A

R

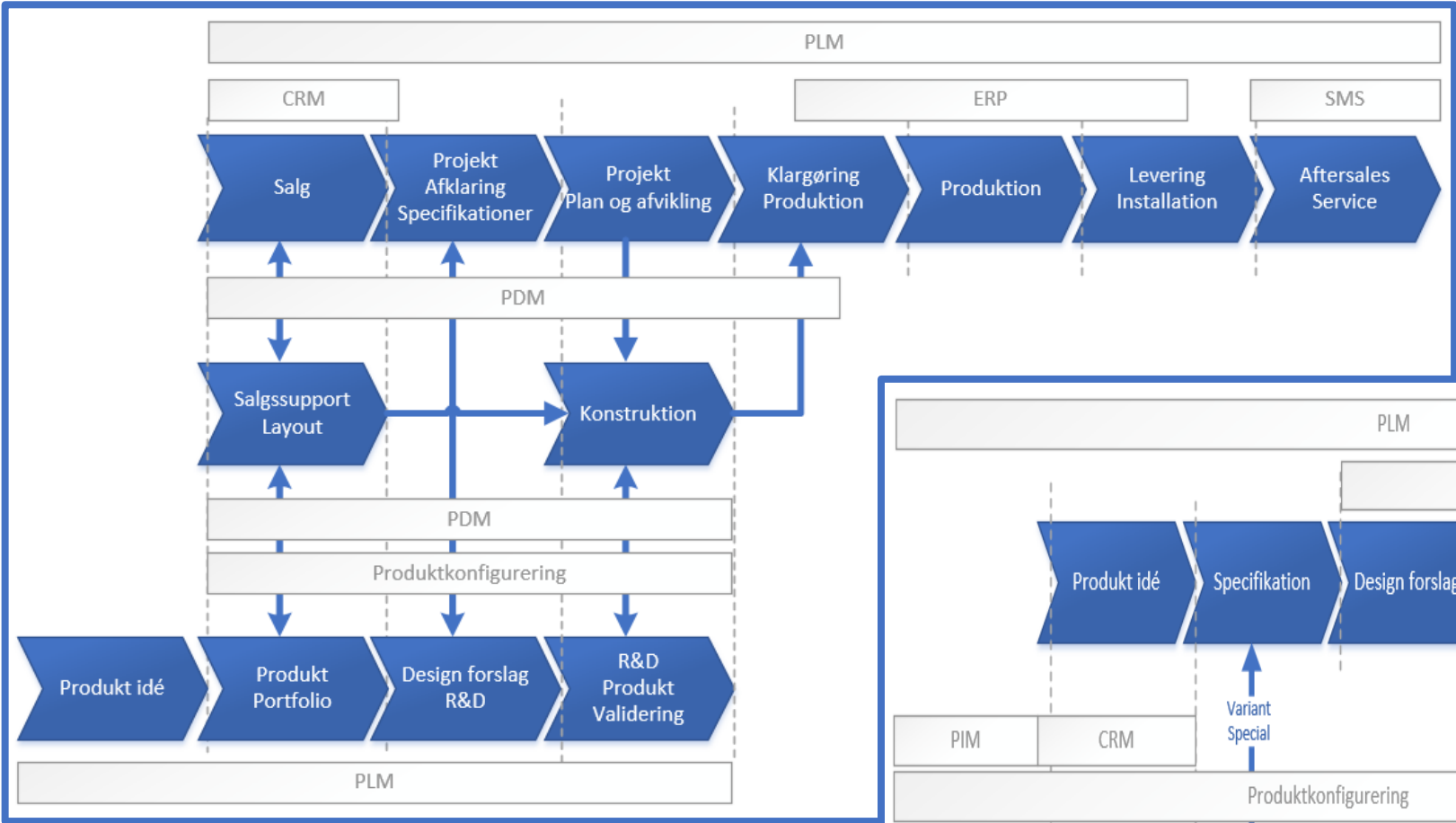
T



System- og data integration

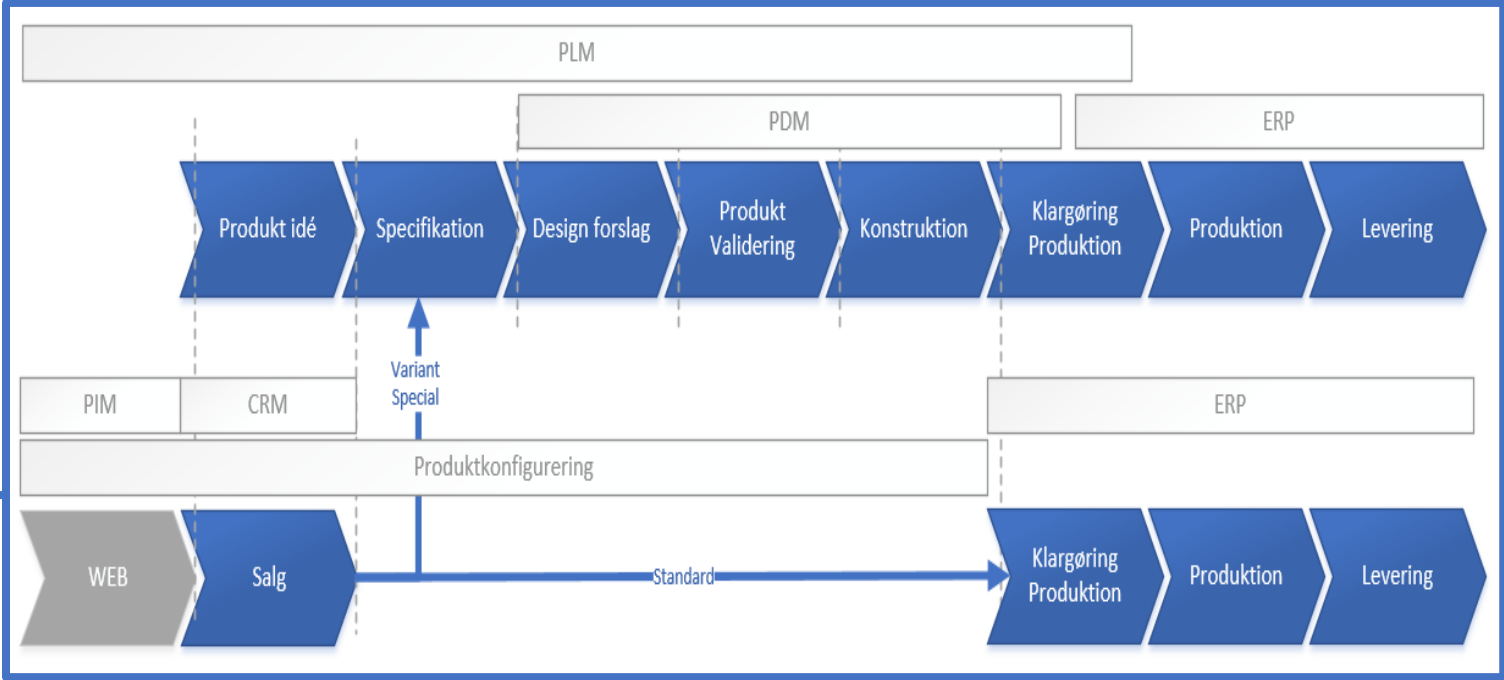


Forretningsproces



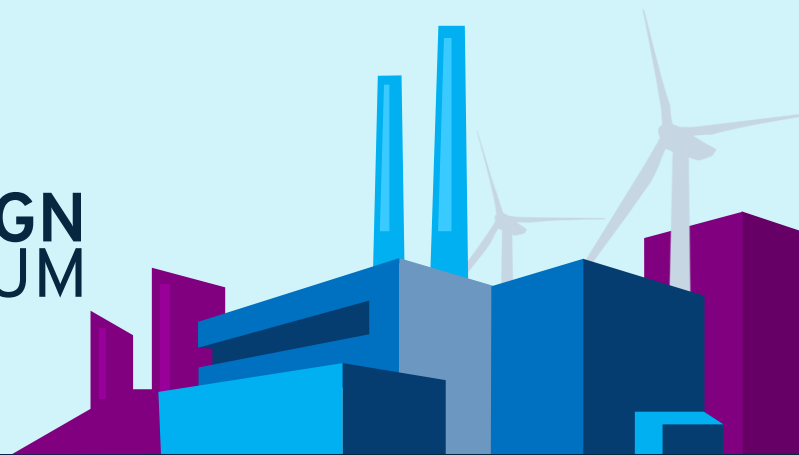
Produkt virksomhed

Projekt virksomhed





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PDM, PLM, ERP

Sådan ser det ud

Forbundne Data, f.eks. disse

Detaljer

MH-21-000001 - Twin Roller Conveyor

Product Selection Workflow actions

Product Attachments (3) Lifecycle Relationships (1)

Basic (1 of 9)

Number MH-21-000001

Title Twin Roller Conveyor

Description roller conveyor available in standard & custom sizes for packaging. Ideal for long distance conveying.

Features

- Complete solution with incline & decline belt conveyors, product lifts and sorting stations
- Ideal for long distance conveying
- Modular sections for cartons, crates boxes and other SKUs
- Driven or gravity conveyors
- Stainless steel conveyor execution with galvanized or plastic rollers
- Ideal for long distance conveying
- Optional Discharge Unit

Product Year 21

Process Template PL-003 - Material Handling

Product Category PC-003 - Industrial

Image

Proces/Gate

PRD1091 - BAC Mono MK1 Steering Wheel

Project Details Requirements Tools & Components

Process Flow Diagram

Ændringer

001-ASY-0001 - EMBER Printer

Locked 04/06/2022 Production

Item	Files (0 2)	Bill of Materials	Components (15)	Related Changes
Workflow Item				
Item	Workspace	Current State	Last Action	Date
DR-000001 - 1 - Initial review of design update	Design Reviews	Planning	Initiate	05/07/
DR-000002 - 1 - Init review	Design Reviews	Planning	Initiate	05/17/
QR-000200 - Release All Printer	Quick Releases	Completed	Approve	04/06/

Dokumenter

001-ASY-0006 - Base Moulding Assembly (with inserts) [REV B]

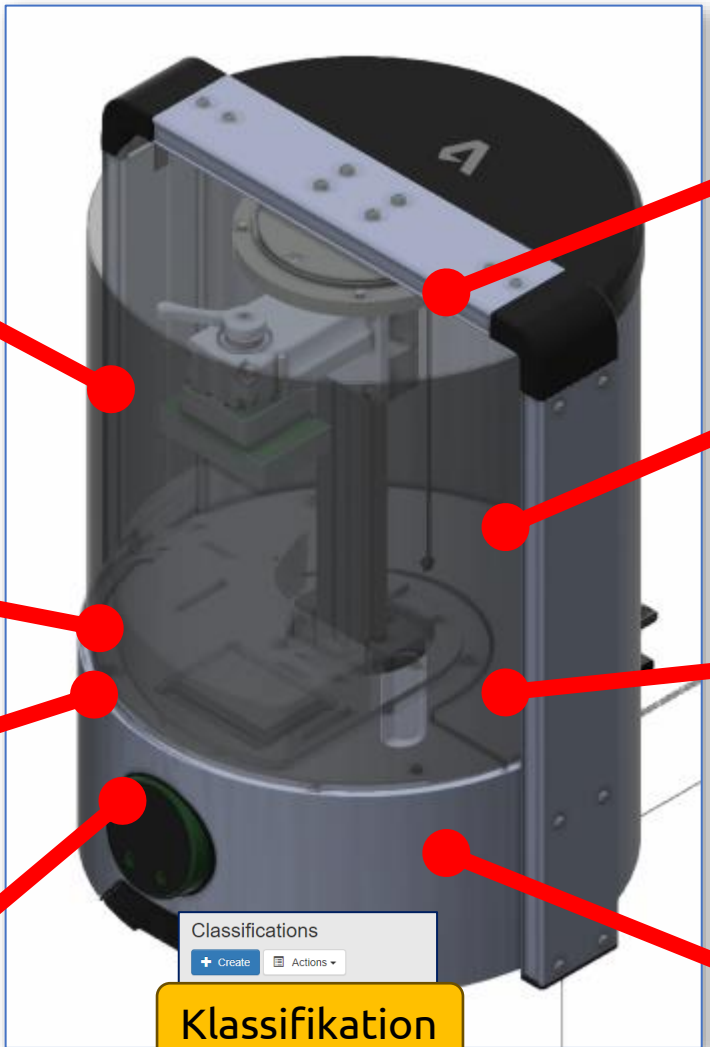
Locked 04/06/2022 Production

Direct Attachments

File Name	Title	Ver.	Type
001-ASY-0006 - Base Moulding Assembly (with inserts).iam.dwg	001-ASY-0006 - Base Moulding Assembly (with inserts).iam.dwg	2	DWG File

Related Attachments

File Name	Title	Ver.	Type	Size	MB
001-PS1-0001 - M4 Brass Insert.ipt.dwg	001-PS1-0001 - M4 Brass Insert.ipt.dwg	1	DWG File	15.8 KB	
001-PS1-0007 - M3 Brass Insert.ipt.dwg	001-PS1-0007 - M3 Brass Insert.ipt.dwg	1	DWG File	36.1 KB	
001-STR-0003 - Base Moulding.ipt.dwg	001-STR-0003 - Base Moulding.ipt.dwg	1	DWG File	4373 KB	



Klassifikation

Classifications

+ Create Actions

- Manuals
- Operating Procedures
- Work Instructions
- Items and BOMs
- Products
 - Automotive
 - Consumer High Tech
 - Industrial Machinery
 - Medical Device
- Supplier

Items/BOM

AUTODESK FUSION Lifecycle

Home CAD Items

BEB2003 - Pressure Test Jig [REV A]

01/10/2012 Engineering Release

Item Details Bill of Materials

#	Descriptor	Number	Revision	Lifecycle	Quantity	Units
0.0	BEB2003 - Pressure Test Jig [REV A]	D621804	A	Engineering Release	0.0	
1.1	BEB2006 - E & E ENG - FLOATING JOINT [REV A]	LAC-1000	A	Engineering Release	1.0	EA
1.2	BEB2003 - GUIDE ROD [REV A]	D-621-008	A	Engineering Release	4.0	EA
1.3	BEB2006 - SEAL HOLDER [REV A]	D-621-046	A	Engineering Release	1.0	EA
1.4	BEB2047 - [REV A]	D-621-009	A	Engineering Release	1.0	EA
1.5	BEB2043 - SLIDE SUPPORT [REV A]	D621008	A	Engineering Release	1.0	EA
1.6	BEB2002 - HOUSING [REV A]	D-621-035	A	Engineering Release	3.0	EA

Inspektion/test

AUTODESK FUSION Lifecycle

Home Inspections

IN000071 - BEB2034 - 22n

Locked 04/06/2022 Production

Inspection Activities

Activity	Critical Dimension	Criteria	Evaluation	Result	Flag
Critical Dimension A	266.7	266.7	Pass		
Critical Dimension B	363.5	363.5	Pass		
Weight	320g	320g	Failed		

Kritiske Komponenter

001-ASY-0001 - EMBER Printer

Locked 04/06/2022 Production

Item	Files (0 2)	Bill of Materials	Long Lead Time	Spare Part	Make or Buy	Service Category
001-ASY-0002 - Resin Tray Assembly [REV B]			Yes	Yes	Predicted	
001-00C-0003 - Resin Tray Assembly Procedure [REV B]			Yes			
001-ASY-0034 - CRL - Z Endstop [REV B]			Yes		Make	
001-STR-0025 - Build Head Magnet Adhesive [REV B]			Yes	Yes	Buy	
001-PS1-0036 - M4 Washer DIN125 [REV A]			Yes	Yes	Buy	
001-ASY-0052 - Overmolded PEMS Window Assembly [REV B]				Yes	Make	
001-PS1-0060 - Resin Tray Plastic Bag [REV A]				Yes		
001-ASY-0005 - Base Sub Assembly [REV B]			Yes		Make	Recommended

Opgaver/Tidsplaner

AUTODESK FUSION Lifecycle

Home New Product Development

PR000014 - SLK 250 CDI Fuel Cell Pressure Test

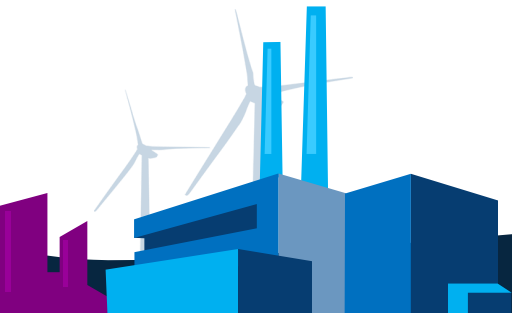
01/01/2013 Project Execution Workflow Actions Available

Project Details Tasks & Deliverables Requirements & Feedback Linked Documents Cloud Documents Bill of Materials Project Milestones

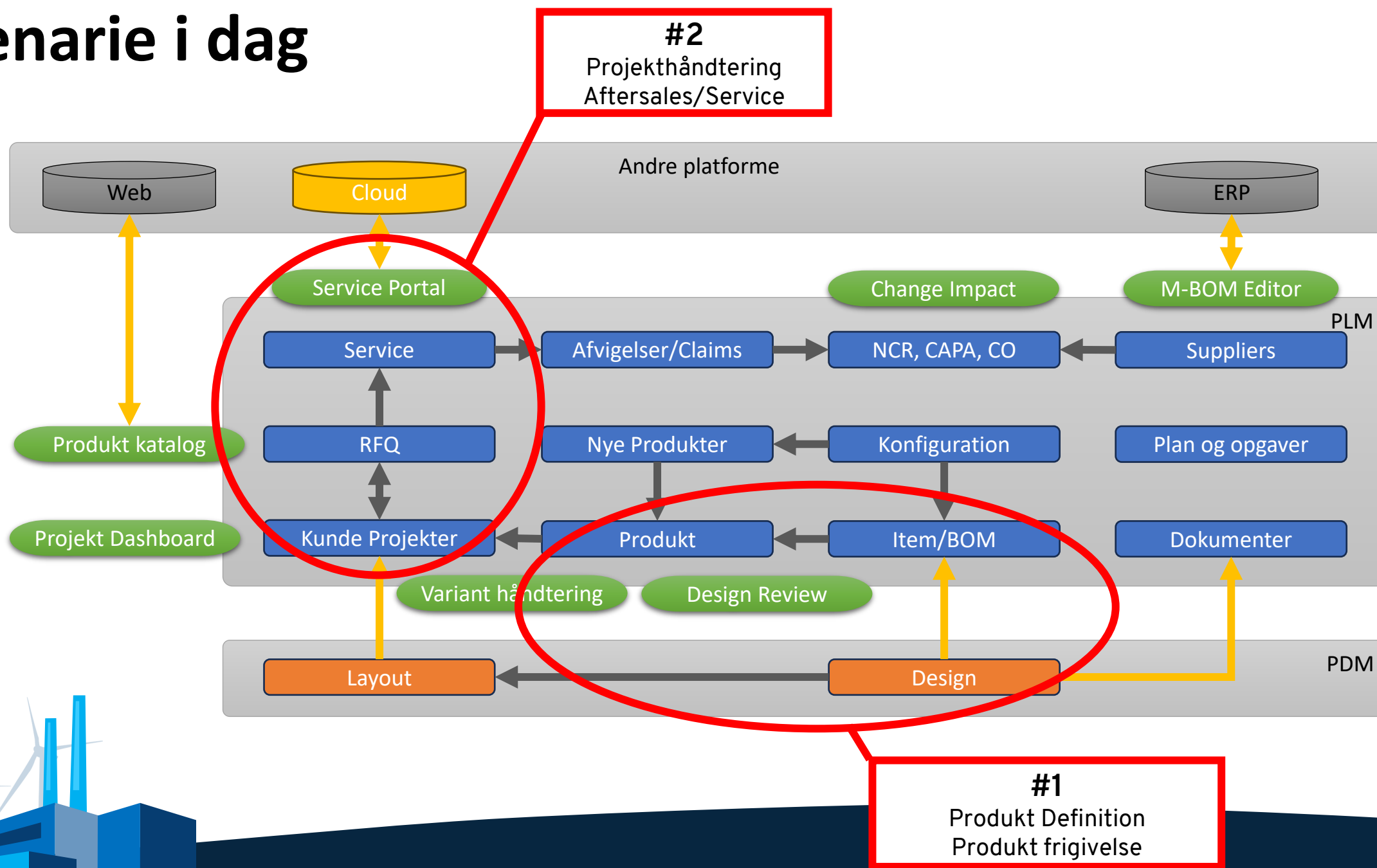
Task Chart

Task	Start Date	End Date	Duration	Progress %	Status
Task 1	08/03/2013	15/03/2013	7 days	100	Task Complete
Task 2			33 days	50	Task Assigned
Task 3			17 days	50	Task Assigned
Task 4			4 days	100	Task Complete

Autodesk Fusion 360 Manage PLM

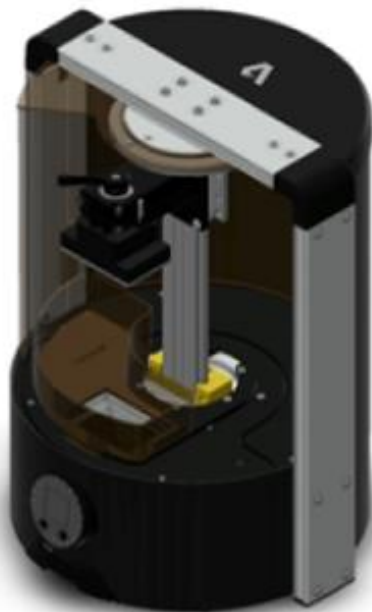
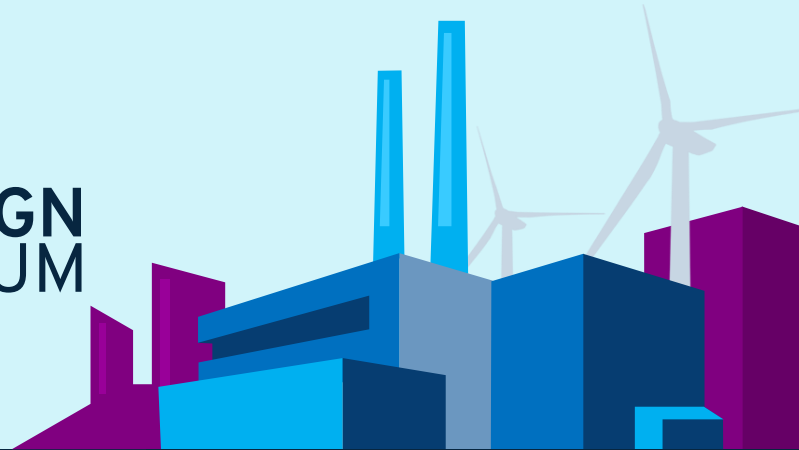


Scenarie i dag





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Scenarie #1

Produkt Definition

Produkt freigivelse

Udgangspunkt Scenarie #1

- Produktdata styring
 - Varelister, Styklister
 - Mechatronic(Mekanisk, EI, SW...)
- Gate checklister
 - Proces og opgaver
- Produktbeskrivelser
- Sproghåndtering
- Produkt evaluering
- Osv. Osv. Osv.



The screenshot displays the AUTOCAD software interface with several overlapping windows and data tables. The main window shows a project management table with columns for Line no, Function, Size, Voltage, Temp, ATEX, Manufacture, Type, Plug type, Caidan item no., No. Needed, and Packed. The table lists various sensors and components, including Pepperl-Fuchs sensors and various plug types.

Other windows include:

- General Projekt Manager:** A table with columns for Number, Level, Document Number, Title, Descriptive Unit, Qty, Revision, Date, State, Part Type, and Wear Part Spare Part. It lists various components like Scanner tool, Scanner Optics, and various screws.
- Product evaluation before accepting an order:** A table with columns for Customer, Complete evaluation, Cooperation level, Branch, automobile, agriculture, etc., and a row for Competence of supplier. It includes a rating system from 1 to 5.
- STRAMMESTATIONER:** A table with columns for Strammestation, manual, P&F, indhold, Strammestation, pneumatisk - P&F, Best, manometer, Indl. sensor for yderstyring, and Oplægssystem for strammestation, indl. Endlægsensor.
- DRIVSTATIONER:** A table with columns for Drive station, manual, P&F, indhold, Drive station, pneumatisk - P&F, Best, manometer, Indl. sensor for yderstyring, and Oplægssystem for strammestation, indl. Endlægsensor.

PDM/PLM Integration

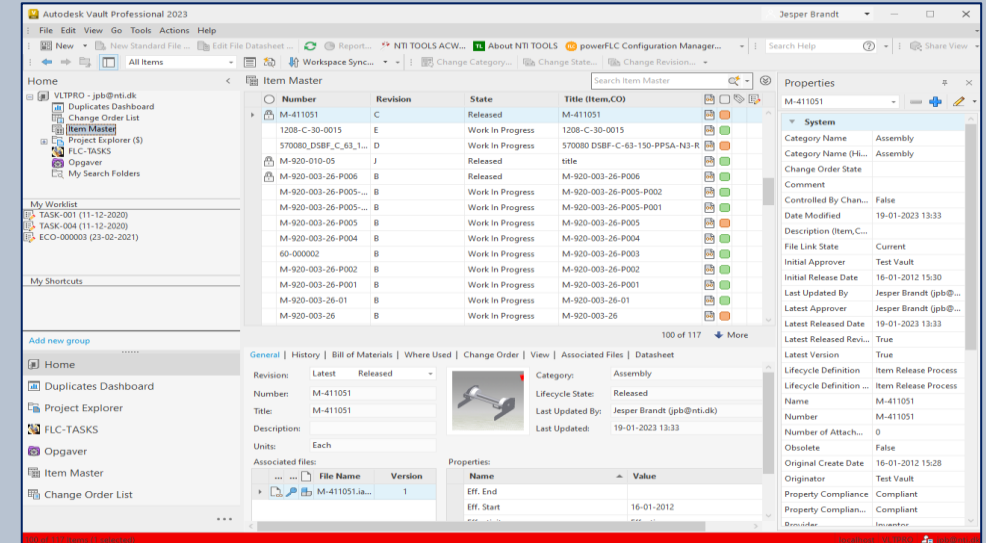
Muligheder

- Vault Integration
- Automatisk vare-nummering
- Automaatisk revisions kontrol
- Automaatisk document publish
- Rettigheder og adgangs kontrol

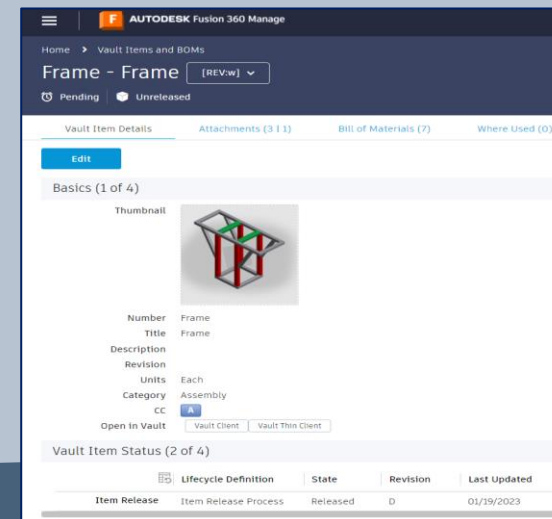
Fordele

- Dataintegritet – administrer CAD-filstruktur og relaterede emner
- Dataarkiv – sikker og kontrolleret datahåndtering
- Visuelle indikatorer for ændringer, versioner, nye varer
- Enkelt lager for alle designdata

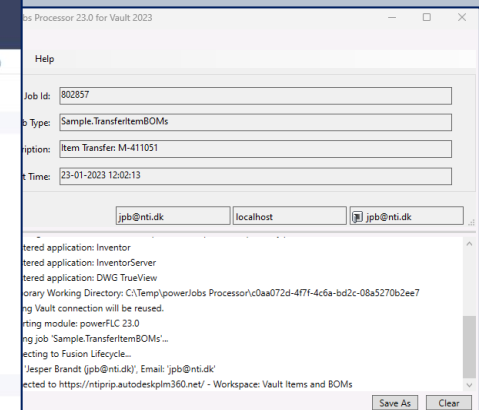
CAD/PDM integreret data management



Relation til CAD/PDM



Automatik via Process & Jobhandler



Vault/PLM integration

The screenshot displays the Autodesk Vault Professional 2023 interface. The main window shows the 'Item Master' for 'Clamp_top'. A 'Change State' dialog is open, allowing the user to select a new lifecycle state. The 'Next State' dropdown is set to 'Released', and the 'Item Release Process' is selected. The dialog lists 48 objects, including 'Clamp_top' and various ISO 4762 - M8 x 45 and ISO 4762 - M6 x 45 items. The 'Properties' panel on the right shows details for 'Clamp_top', including Category Name (Assembly), Change Order State, Comment, Controlled By Chan..., Date Modified (17-03-2023 13:38), Description (Item,C...), File Link State (Current), Initial Approver, Initial Release Date, Last Updated By (Jesper Brandt (jpb@...)), Latest Approver, Latest Released Date, Latest Released Revi... (False), Latest Version (True), Lifecycle Definition (Item Release Process), Lifecycle Definition ... (Item Release Process), Name (Clamp_top), Number (Clamp_top), Number of Attach... (2), Obsolete (False), Original Create Date (17-03-2023 13:35), Originator (Jesper Brandt (jpb@...)), Property Compliance (Compliant), Property Complian... (Compliant), Provider (Inventor), Released Revision (False), Revision (A), and Revision Scheme (Standard Alphabetic...).

Change State - 'Clamp_top'

Select a new lifecycle state:

Item Release Process

Work In Progress
Work In Progress
In Review
Released
Obsolete
Prototype
Item Release Process

Name	Next State
Clamp_top	Work In Pro...
210-000m	Work In Pro...
210-100	Work In Pro...
210-101	Work In Pro...
210-102	Work In Pro...
ISO 4762 - M8 x 45	Work In Pro...
ISO 7089 - 10 - 140 HV	Work In Pro...
ISO 4762 - M8 x 65	Work In Pro...
210-103	Work In Pro...
210-104	Work In Pro...
210-105	Work In Pro...
ISO 7089 - 6 - 140 HV	Work In Pro...
ISO 4762 - M6 x 45	Work In Pro...
210-000-001	Work In Pro...

48 objects

Enter comments:

OK Cancel Help

Properties

Clamp_top

System

Category Name	Assembly
Category Name (Hi...	Assembly
Change Order State	
Comment	
Controlled By Chan...	False
Date Modified	17-03-2023 13:38
Description (Item,C...	
File Link State	Current
Initial Approver	
Initial Release Date	
Last Updated By	Jesper Brandt (jpb@...
Latest Approver	
Latest Released Date	
Latest Released Revi...	False
Latest Version	True
Lifecycle Definition	Item Release Process
Lifecycle Definition ...	Item Release Process
Name	Clamp_top
Number	Clamp_top
Number of Attach...	2
Obsolete	False
Original Create Date	17-03-2023 13:35
Originator	Jesper Brandt (jpb@...
Property Compliance	Compliant
Property Complian...	Compliant
Provider	Inventor
Released Revision	False
Revision	A
Revision Scheme	Standard Alphabetic...

Mecatronic – Items & BOMs

Home > Items and BOMs

001-ASY-0001 - EMBER Printer [REV:B] v

🔒 Locked |
 🕒 04/06/2022 |
 🏭 Production

[Item](#) |
 [Files \(0 | 2\)](#) |
 [Bill of Materials \(15\)](#) |
 [Where Used \(2\)](#) |
 [Critical Components \(15\)](#) |
 [Related Changes \(3\)](#)









































[Edit](#) |
 [Add](#) |
 [Remove](#) |
 [-](#) |
 [+](#) |
 [...](#)




#	Descriptor		
0.0	001-ASY-0001 - EMBER Printer [REV:B]		
> 1.0	001-ASY-0002 - Resin Tray Assembly [REV:B]		
> 1.1	001-ASY-0004 - Assembled Printer [REV:B]		
1.2	001-DOC-0001 - Packaging Assembly Document [R...		
1.3	001-PKG-0002 - Packing Tape [REV:A]		
1.4	001-ELC-0056 - Power Supply [REV:A]		
1.5	001-ELC-0058 - USB Cable [REV:A]		
1.6	001-PKG-0008 - Printer Bag [REV:A]	PG	A
1.7	001-PKG-0012 - Desiccant [REV:A]	PG	A
1.8	001-PKG-0013 - Rotating Window Shipping Tape [R...	PG	A
1.9	001-PKG-0016 - Serial Number Label [REV:B]	PG	B

Basic |
 Export |
 Basic |
 Technical Details |
 Compliance |
 Sourcing |
 Service

#	Number	Description	Quantity	Unit of M...	Revision	Lifecycle	Release Date	Effectivity Date	Ref Des	RoHS	REACH	Conflict Minerals
0.0	001-ASY-0001	Top level printer		Each	B	Production	04/06/2022	04/06/2022		Compliant	Not Compliant	Not Required
1.0	001-ASY-0002			Each	B	Production	04/06/2022	04/06/2022		Compliant	Not Validated	Not Validated
1.1	001-ASY-0004		1.0	Each	B	Production	04/06/2022	04/06/2022		Not Validated	Not Validated	Not Validated
1.2	001-D0C-0001		0.0	Each	B	Production	04/06/2022	04/06/2022		Not Required	Not Validated	Not Validated
1.3	001-PKG-0002		6.0	Foot	A	Production	03/02/2015	03/02/2015		Not Required	Not Validated	Not Validated
1.4	001-ELC-0056		1.0	Each	A	Production	12/12/2014	12/12/2014		Compliant	Not Validated	Not Validated
1.5	001-ELC-0058	USB 3.0 connect	1.0	Each	A	Production	12/12/2014	12/12/2014		Compliant	Compliant	Compliant
1.6	001-PKG-0008		1.0	Each	A	Production	03/02/2015	03/02/2015		Not Required	Not Validated	Not Validated


[illegible]

#	Descriptor	Icon	 	Lifecycle	Make or Buy	Component type	Total Cost	Lead Time	Manufacturer P/N	Manufacturer	Vendor	Quantity
0.0	001-ASY-0001 - EMBER Printe...			Production	Make	  	0.90	4	001-ASY-0001			
1.0	001-ASY-0002 - Resin Tray AS...			Production		  			001-ASY-0002			
2.1	001-D0C-0003 - Resin Tray AS...			Production		  			-			0.0
2.2	001-STR-0001 - Resin Tray [R...		 	Production	Make	  			001-STR-0001			1.0
2.3	001-ASY-0035 - PDMS Windo...		 	Production	Make	  			001-ASY-0035			1.0
2.5	001-FST-0060 - Resin Tray Pla...			Production		  			1959T32			1.0
2.6	001-D0C-0151 - Resin Tray Ser...			Production		  			Identicco: TTL145-423-25			1.0
11	001-ASY-0004 - Assembled Pr...		 	Production	Make	  			001-ASY-0004			1.0
Production		1.0	Foot									

	Manufacturer PN	Manufacturer	Preference	Description	Cost	Datasheet	Link	Octopart ImageView
1	1R2110PBF-ND	Digi...	Approved		0.0000 (\$)			
2	146179-0001		Approved	Antenna Wireless 3dBi/4.2dBi Gain 2483.5MHz/5... Chip T/R	0.6781 (\$)	Datasheet >>	Link >>	
3	BCR321UE632...		Approved	BCR321UE6327 Series 16 V 25 mA 10 MHz Surface Mount LED Driver - SC74-6	0.2474 (\$)	Datasheet >>	Link >>	
4	DPP301Z000		Approved	TE Connectivity DPP301Z000, HTU21 Temperature &	13.3000 (\$)	Datasheet >>	Link >>	

The screenshot shows the Octopart website interface. At the top, there is a search bar with the text "Search by keywords, tech specs, or part number". Below the search bar, the product name "146175-0001" is displayed, along with the description "Integrated Circuits (ICs) - RF Semiconductors and Devices - RF Antennas". A red arrow points to the "All Products" tab in the navigation bar. Below the navigation bar, there are two boxes: "RF Components" and "1 year trend +11.01% Inventory History". The main content area shows the product name "146175-0001" and the description "Integrated Circuits (ICs) - RF Semiconductors and Devices - RF Antennas". Below this, there are tabs for "Price & Stock", "Inventory History", "CAD Models", and "Tech Specs". The "Price & Stock" tab is selected, showing a table of authorized distributors.

Seller	SKU	Stock x	Unit Price	Unit	Lead Time
Acme Electronics	146175-0001	20,356	USD	1,556	1
RS Components	2132062	11,490	USD	1,367	1

Item Information				
Article Number	Item Description	FOCUSING UNIT		
Part No.				
				
Item Name	Status	Lifecycle	Quantity	Units
1	--- 6- ring 73x115 NBR 70 (REV.0)	Production	1.0	
2	--- 1-13x115-100 4- ARMED NBR-70 (REV.0)	Working	1.11	
3	--- AD 000330 1.00 (REV.0)	Working	1.01	
4	AD 001374 0.00 (REV.0)	Working	1.0	
5	--- HRT 012100 0.0 Pcs (REV.0)	Working	1.01	
6	--- (REV.0)	Working	1.11	
7	HRT 012101 0.0 Pcs (REV.0)	Working	2.0	
8	HRT 012100 0.0 Pcs (REV.0)	Working	1.0	
9	--- ARMED NBR-70 (REV.0)	Working	1.11	
10	--- AD 000330 1.00 (REV.0)	Working	1.0	
11	AD 000330 1.00 (REV.0)	Working	1.0	

Produkthåndtering (information/status/plan)

Home > Products

0038 - Twin Roller Conveyor - B

Product Development

Workflow actions

Details

Attachments (4)

Configuration Options (4)

Lifecycle

Milestones (4)

Schedule (5)

Change Log

Edit

Summary (1 of 9)

Primary Image (2 of 9)

Timeline (3 of 9)

	Development Start	Product Launch	Maintenance	End Of Life
Planned Date	01/13/2020	11/21/2020	06/30/2026	12/20/2031
Actual Date	01/13/2020	08/13/2020		
Status set by	Eagle, Eric	Eagle, Eric		

Product Images (4 of 9)

	#1	#2	#3	#4
Image				
Title	Project Image	Project Image	Line	Bend

Product Specification (5 of 9) (Conveyors)

Length	2.500 mm - 10.000 mm
Width	600 mm - 1.600 mm
Min Length	2.500 mm
Max Length	10.000 mm
Max Load	1.500 kg
Roller Widths	100, 150, 200, 250
Options	Optional Discharge Unit

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FUSION LIFECYCLE

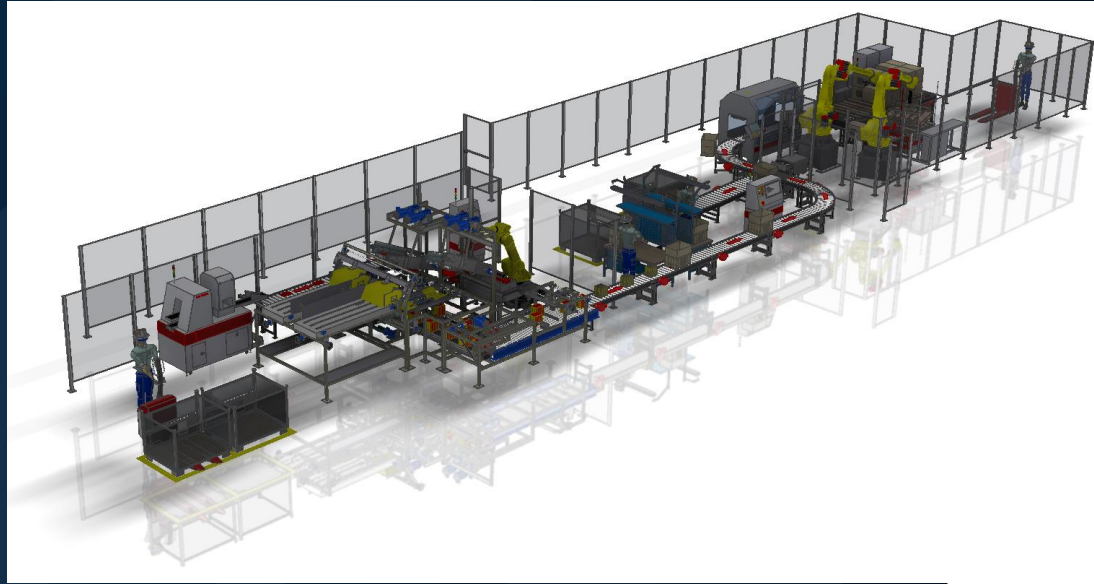
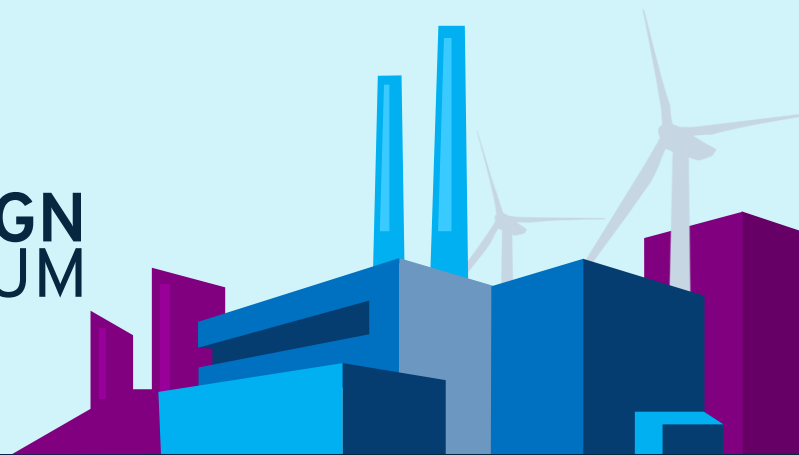
Produkt Data Explorer

The screenshot displays a software interface for product data management. At the top, a dark header bar contains the "Product Data Explorer" logo and the identifier "002771 - EMBER Printer". To the right are navigation tabs: "Dashboard", "BOM", "Files", "Details", and "Processes", each with a corresponding icon. A user profile picture is visible in the top right corner.

The main workspace is divided into three vertical sections:
1. **Dashboard**: Located on the left, it features several summary cards. The first card, "Responsible Designer", has a checkbox. The second, "Spare Part", includes three sub-cards: "Wear Part" (0) and "Spare Part" (4), both with colored progress bars. The third, "Has Pending Packages", also has a checkbox and three sub-cards: "Yes" (1), "-" (0), and "No" (178). Below these is a "Material" section with a horizontal bar chart listing materials and their counts: ABS Plastic (45), Stainless Steel (40), "-" (29), Aluminum 6061 (21), Steel, Alloy (11), Generic (10), Rubber Silicone (7), Brass, Soft Yellow (5), Steel, Carbon (4), Steel, Cast (2), Polycarbonate, Smoke (2), and Polycarbonate, Clear (2). A note at the bottom states "21 matches".
2. **Bill of Materials (BOM)**: The central section shows a hierarchical tree view of components. It starts with a root item "7.4 002951 - MHDMI-19-02-X-TH-L-SH11-X_ANY_2 [REV:1]". This branches into several sub-items, including "2.2 002804 - Stepper Motor with Connector Assembly - XY Axis v2 [REV:A]", "2.4 002811 - XY Timing Pulley - HDT5 Profile - 32 Teeth - 9mm Belt v2 [REV:A]", "2.5 002796 - Z-Axis Motor Timing Pulley - XL Profile - 15 Teeth - 6 v2 [REV:A]", "2.6 002808 - XY Axis Bearing - Slewing Ring Bearing with HDT5 Tooth Profile v3", "2.8 002793 - Linear Drive Mounting Plate [REV:A]", "4.3 002914 - SWX-104001AL [REV:A]", "3.3 002870 - KRM-TR10x2 [REV:A]", "4.1 002916 - SWX-104005 [REV:A]", "2.11 002792 - Z-Axis Timing Pulley - XL Profile - 15 Teeth - 10mm Bore v2 [REV:A]", "2.14 002803 - Peel Plate Mounting Ring [REV:A]", "3.1 002856 - Mounting Plate [REV:A]", "3.6 002849 - Build Plate [REV:A]", "3.7 002838 - Shaft Sleeve [REV:A]", "3.10 002843 - Release arm [REV:A]", "3.1 002868 - Mid Plate [REV:A]", "5.1 002926 - SOLID_1 [REV:A]", "3.2 002837 - Top Extrusion [REV:w]", "3.4 002831 - Window Bearing Spacer Plate [REV:w]", "2.7 002786 - Vertical Extrusion - Left [REV:w]", and "2.8 002779 - Vertical Extrusion - Right [REV:w]". Each item has a play button icon next to its name.
3. **3D Model Viewport**: On the right side, there is a large 3D rendering of the printer assembly. The model is shown in a semi-transparent cutaway view, revealing internal components like the motor, pulleys, and structural frame. Below the viewport is a toolbar with icons for various functions: selection tools (point, lasso, pan), manipulation tools (move, rotate, scale), and visualization options (hide/show, wireframe, etc.).



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Scenarie #2

Projekthåndtering

Aftersales/Service

Projekthåndtering

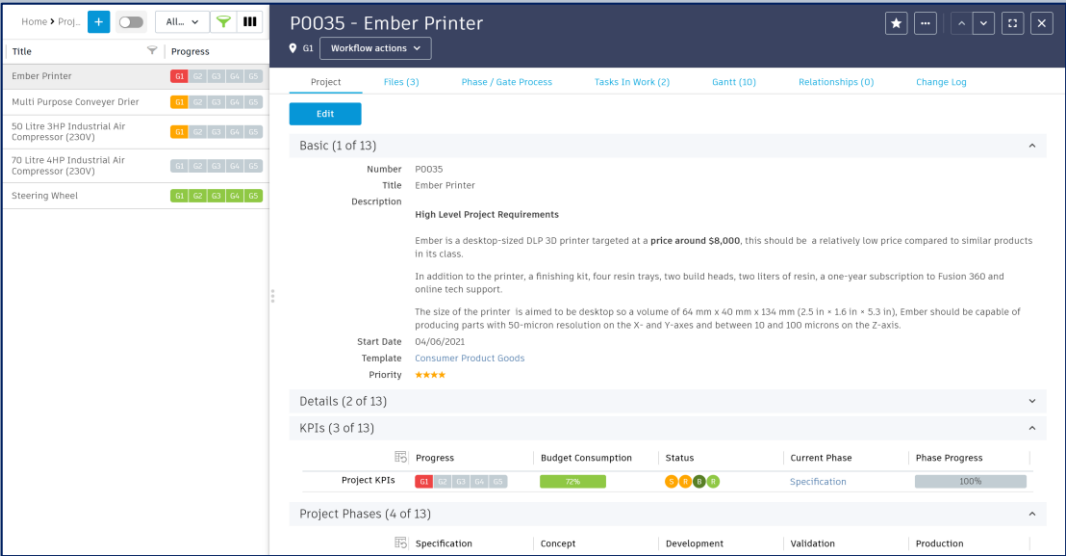
Muligheder

- Projektopgavestyring indenfor PLM miljø
- Konfigurerbare arbejds gange / fase-gate-godkendelser, opgavestyring
- Status i realtid, dashboards og rapportering
- Opgavelister, notifikationer og eskaleringer i realtid
- Forbind projekter til produktdata (styklister, tegninger, specifikationer og mere)
- Projektdokumentation, med service, vedligehold, spareparts osv..

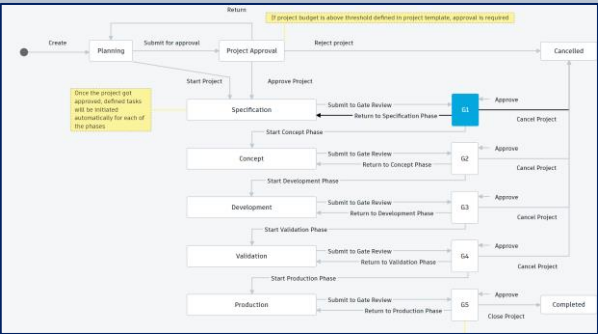
Fordele

- Automatiseret fasestyret arbejds gang med skabeloner
- Tildele og samle relaterede opgaver
- Øget synlighed og ansvarlighed for projektstatus
- Fokuser ressourcerne på de bedste ideer

NPI & Projekt synliggørelse



Konfigurerbare workflows



Opgave styring

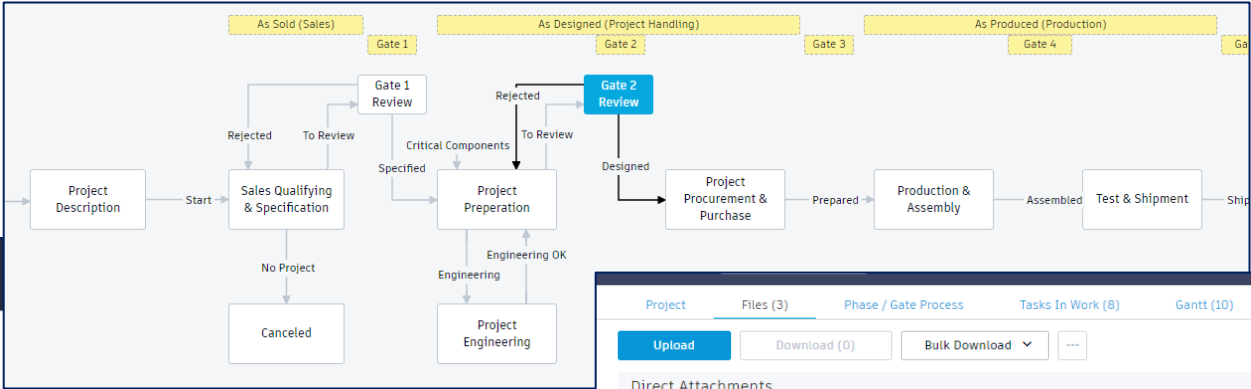
My Outstanding Work		
	Due Date	Item Name
🚩	07/06/2020	TK000215 - Customer requirements
🚩	07/08/2020	DRT0143 - Reduce Material
🚩	04/01/2020	DRT0138 - Alternate Components o...
🚩	11/21/2019	DRT0088 - Material Change to Plas...
🚩	07/19/2019	DRT0086 - Check Interference
🚩	07/04/2019	TK000086 - Get supplier quote
		C0000185 - Change supplier
🚩	05/21/2019	DRT0077 - Change Hole Diameter
		DR0053 - Concept Review

Projekt håndtering

nti SMART Technology Management

Home > NPI Projects +

Priority	Number	Title	Progress	Days to next G...	Customer	Project Status	Total
★★★	P0100	Test projekt	G1 G2 G3 G4 G5			S R B R	0
★★★	P0067	Test	G1 G2 G3 G4 G5	-650		S R B R	0
★★★★	P0035	Ember Printer	G1 G2 G3 G4 G5	-628	In House	S R B R	32
★★★★	P0005	Multi Purpose Conveyer Drier	G1 G2 G3 G4 G5	-937	Alistair Farms	S R B R	98
★★	P0004	50 Litre 3HP Industrial Air	G1 G2 G3 G4 G5	-951	Commercial	S R B R	



Project Files (3) Phase / Gate Process Tasks In Work (8) Gantt (10) More

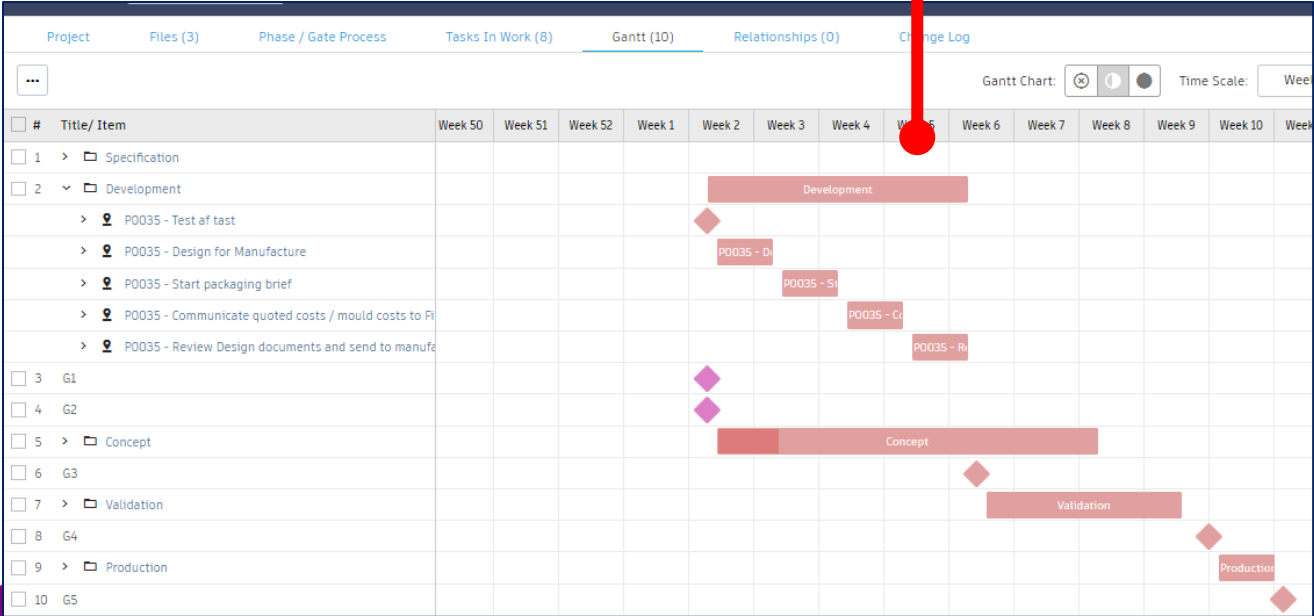
Upload Download (0) Bulk Download

Display folder

Direct Attachments

	File Name	Title	Ver.	Type
Engineering	Autodesk_Standard_Clear_PR48_Formu...	Formulation for Resin	1	Adobe PDF
	Ember-Specs.pdf	Specification Document	1	Adobe PDF
Marketing	Marketing Brochure Autodesk Ember.pdf	Marketing Brochure Autodesk Ember	1	Adobe PDF

Related Attachments



Project Files (3) Phase / Gate Process Tasks In Work (8) Gantt (10) Relationships (0) Change Log

Save Cancel

Status Report (11 of 13)

Schedule

Resources

Budget

Risks

Current Status

Comment

1 / Above Plan

2 / In Plan

3 / At Risk

4 / Critical

1 / Above Plan

2 / In Plan

3 / At Risk

4 / Critical

1 / Above Plan

2 / In Plan

3 / At Risk

4 / Critical

1 / Above Plan

2 / In Plan

3 / At Risk

4 / Critical

Paragraph

Paragraph

Paragraph

Paragraph

Project slipping due to resources allocated to another project

Resources taken off project

Deliverables (12 of 13)

Reference

Status

Specification

Select

Feasibility Study

Select

Design FMEA

DOC-000037 - Design FMEA [REV:w]

Design FMEA Holder

Bill of Materials

001-ASY-0004 - Assembled Printer [REV:sa]

Top Level Assembly MBOM

Final Design Review

Select

Services Portal + RFQ Spareparts

Services Portal |
 002952 - Car Suspension

[Menu]
[PDF]
[List]
[Print]
Pending Requests
[User Avatar]

Bill of Materials

Filter

- 002963 - front side plate r [REV:w]
- 002962 - Front Upper Arm Mount [REV:w]
- ▼ 002953 - 002953 [REV:w]
 - 002971 - Front Hub Carrier L [REV:w]
 - 002972 - Pillow Ball Retainer [REV:w]
 - 002975 - Pillow Ball Bushing [REV:w]
 - 002973 - Rear Hub Bearing [REV:w]
 - 002969 - Front Axel [REV:w]
 - 002970 - Front Hub Bearing [REV:w]
 - 002968 - 0.1875 Ball stud .375 [REV:w]
- ▼ 002974 - 002974 [REV:w]
 - 002988 - Hex Drive [REV:w]
 - 002987 - Hex Axle Pin [REV:w]
 - 002986 - Hex Retaining O-Ring [REV:w]
- ▼ 002976 - 002976 [REV:A]
 - 002989 - Wheel [REV:A]
 - 002990 - Tire [REV:A]
- ANSI B18.2.4.4M - M5 x 0.8 - Metric Hex Flange Nuts - Metric M5 x 0 [REV:]
- ▼ 002956 - 002956 [REV:w]
 - 002981 - Front Hub Carrier R [REV:w]
 - 002972 - Pillow Ball Retainer [REV:w]
 - 002975 - Pillow Ball Bushing [REV:w]
 - 002973 - Rear Hub Bearing [REV:w]
 - 002969 - Front Axel [REV:w]
 - 002970 - Front Hub Bearing [REV:w]

Spare Parts

	Problem Reports
1 002963 Stiffzel	Zoom
1 002962 Stiffzel	Zoom
1 002971 Stiffzel	Zoom
4 002972 Stainless Steel	Zoom
4 002975 Stainless Steel	Zoom
2 002973 Stainless Steel	Zoom
2 002969 Stiffzel	Zoom
2 002970 Stainless Steel	Zoom
2 002968 Stainless Steel	Zoom
2 002988 Nylon-6/6	Zoom
2 002987 Stainless Steel	Zoom
2 002986 Nylon-6/6	Zoom

Attachments

002952.iwm.dwf
Created by S...
5/5/2023, 7:0...

002952.idw.dwf
Created by S...
5/5/2023, 7:0...

002952.idw.pdf
Created by S...
5/5/2023, 7:0...

Problem Reporting

Problem Reporting Dashboard

Track Your Processes

View Processes By Progress

New

Analysis

Improvement

Completed

PR-000001 - Error Co...

Display keeps showing error cod

Created on 05/17/2021

Last update on 10/24/2023

PR-000067 - Extruder...

Service has reported that the ext

Created on 10/24/2023

Last update on 10/24/2023

Initiate New Process

You encountered an issue? Please provide a few details below and let us fix the problem. You can provide more details and also upload files in the next step.

Title

Please check the documentation

Priority

1 / High

2 / Medium

3 / Low

Type

Documentation Problem

Source

Customer

Engineering

Manufacturing

Other

Product Management

Quality

Sales

Services

Supplier

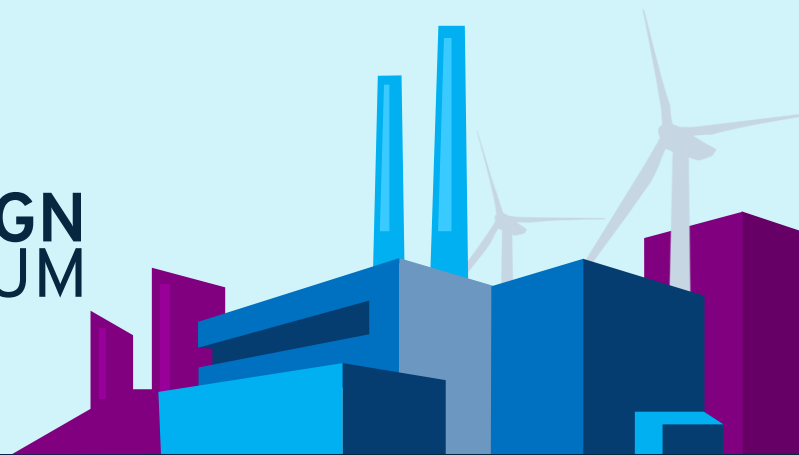
Affected Item

Continue >

nti



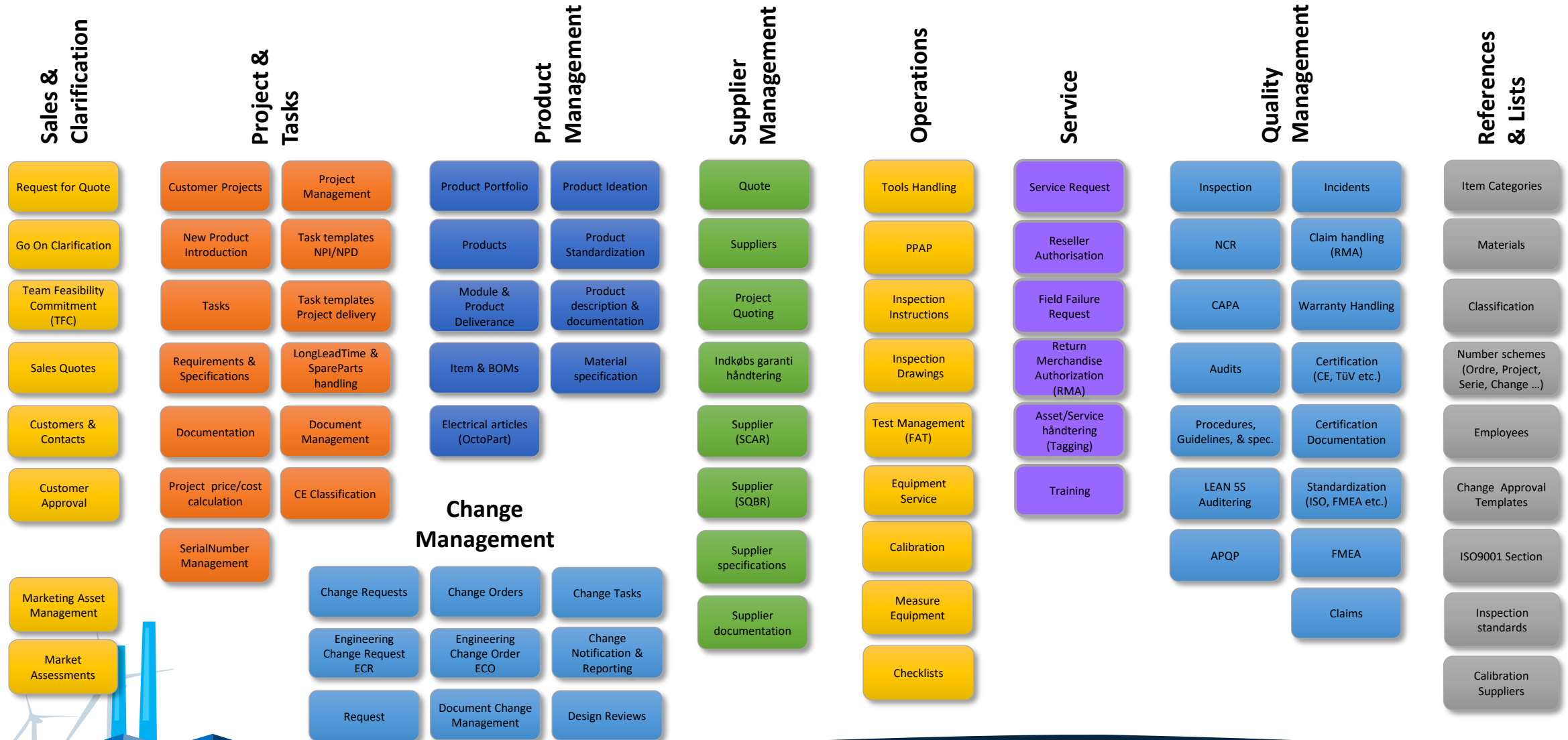
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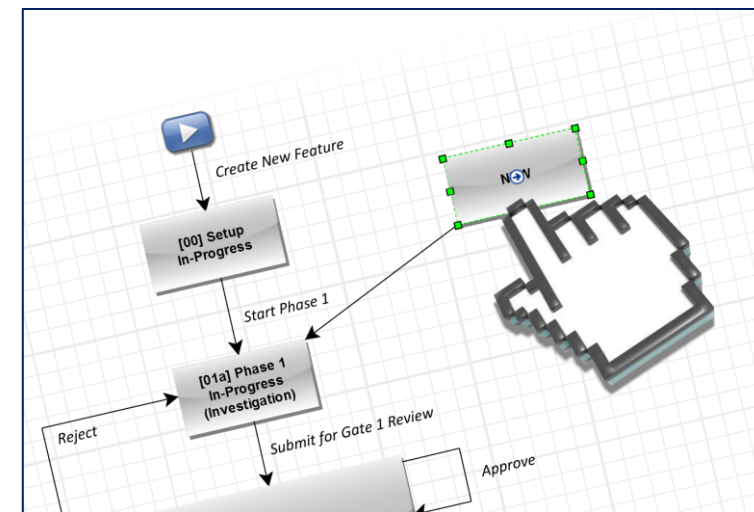
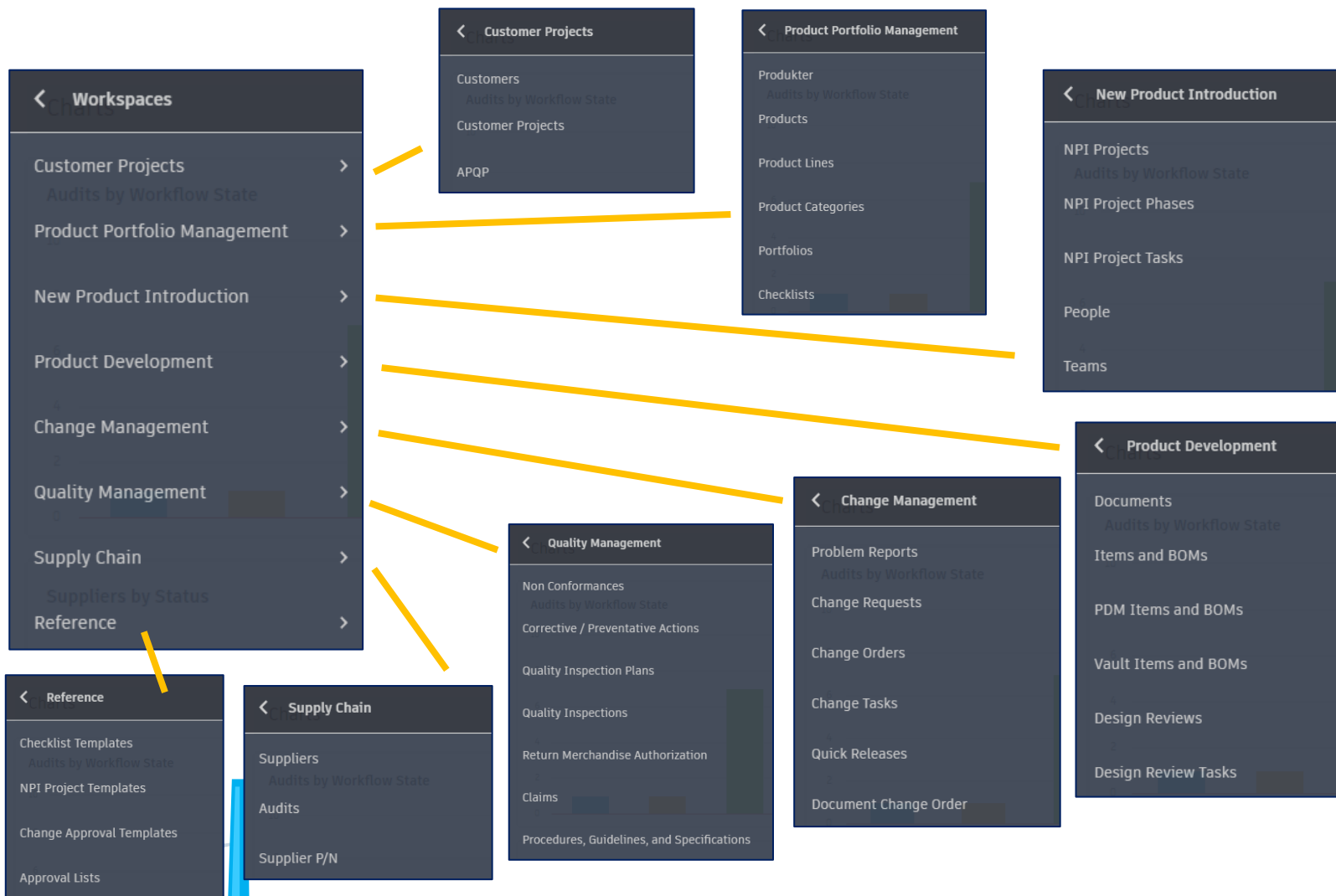
Masser af andre funktioner

Out of the box

Fusion Manage – Workspaces

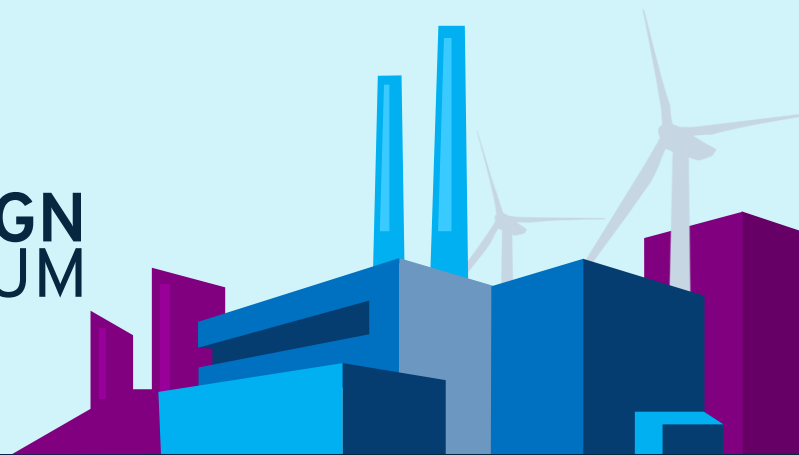


ALT er inkluderet og fleksibelt





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Et par kundeeeksempler

Kunde eksempel

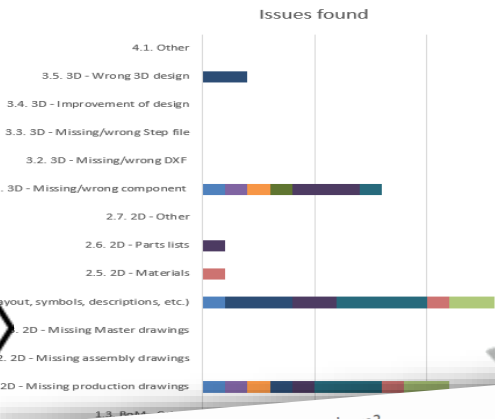
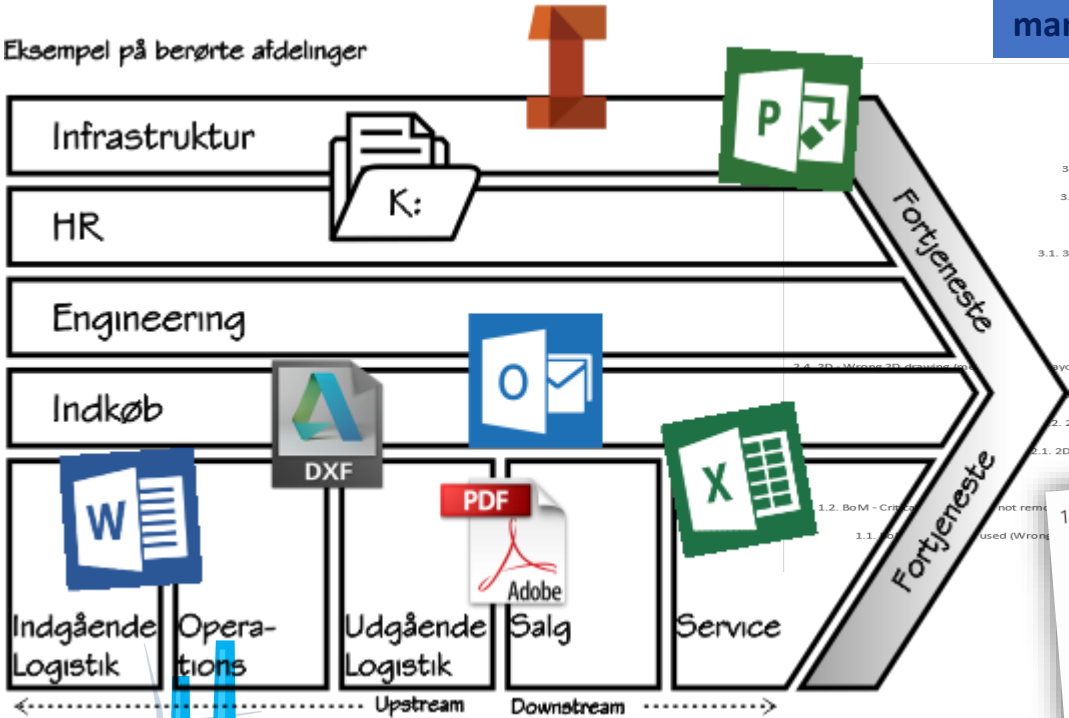
20% af tiden hos virksomhedens 10 ingeniører blev brugt på at søge information, og 5% af deres tid blev brugt på ikke planlagt arbejde.

60%-70% af planlægningstiden, brugt af produktionen på at lede efter korrekt information.

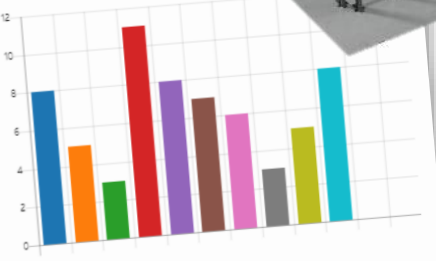
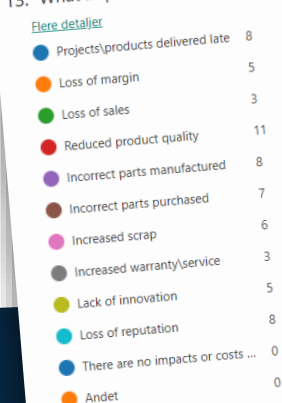
40% af tiden hos virksomhedens 9 service ingeniører blev brugt på at søge information.

30% af tiden hos virksomhedens 2 QA medarbejdere blev brugt på rettelser, genskabelse og timevis af spildt tid på manuel håndtering NCR dokumenter og processer.

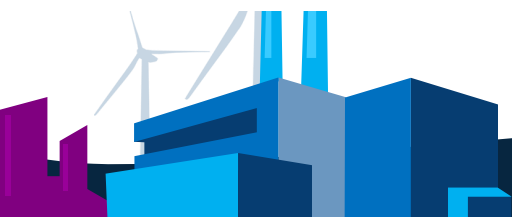
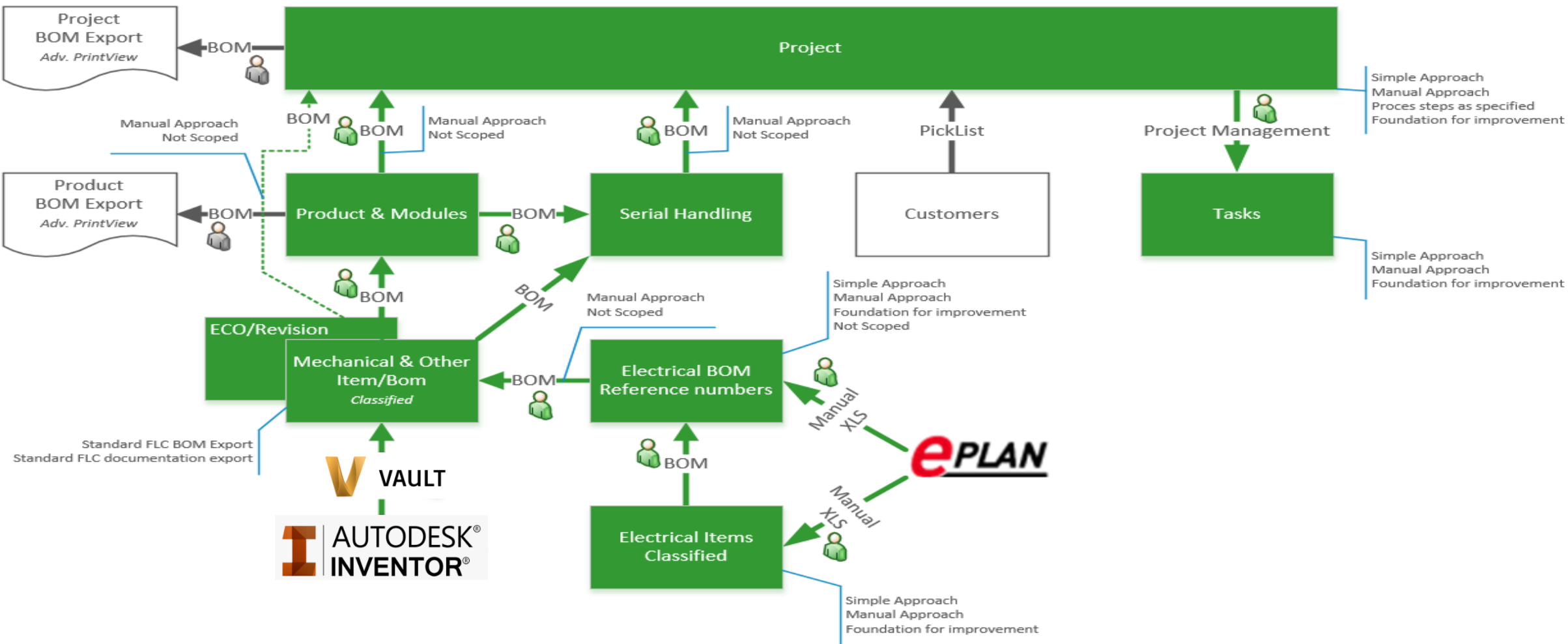
Eksempel på berørte afdelinger



13. What impacts do the problems/issues have?



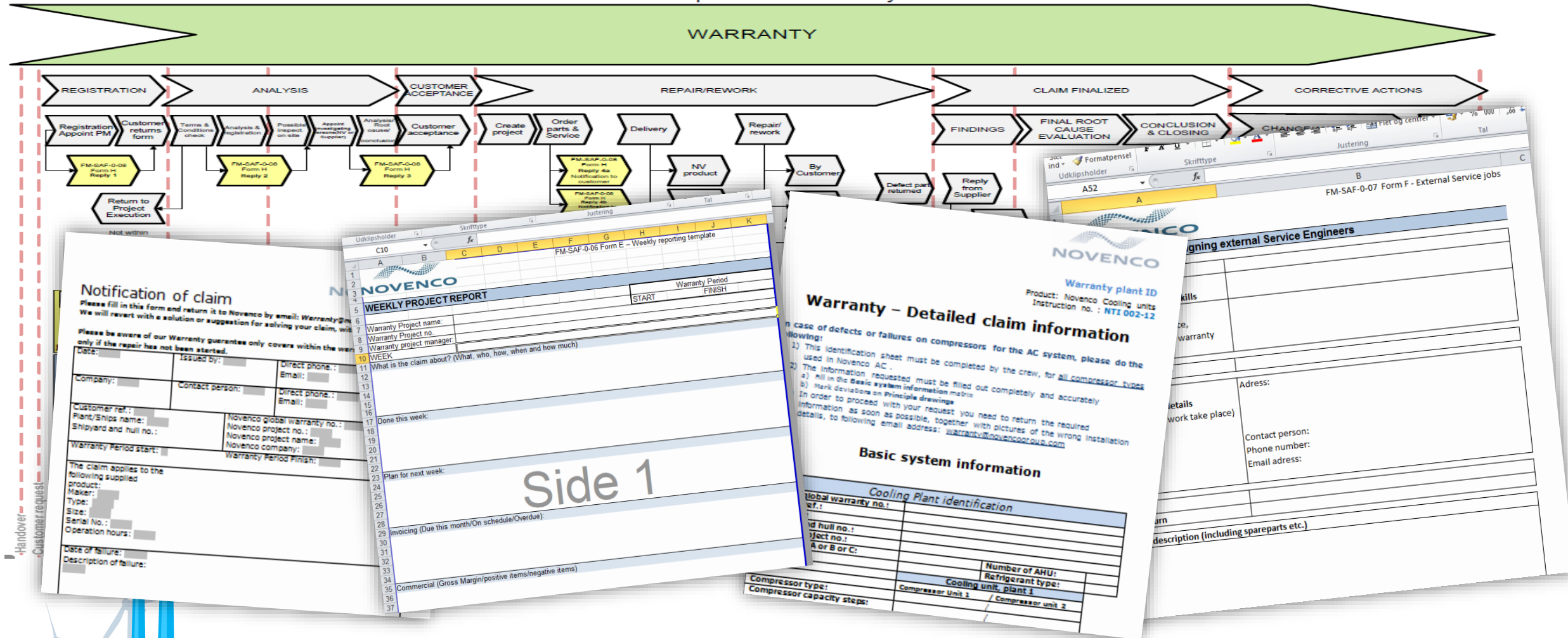
Kunde eksempel



Novenco Marine & Offshore



Novenco Group – Global Warranty Model



Novenco Marine & Offshore



Warranty Project

Project DetailsProject Timeline (5)Warranty Claims (3)Project PhasesProject Work (0)Managed Items (0)File Attachments (0)Change Log (20)

Edit

▼ Warranty Project Details (1 of 5)

Warranty Project Number

WP000416

Novenco Global Warranty Number

10055

Novenco Local project number

10030

Original Novenco PM

Rune Slatleim

Novenco Project name

Troll A

Date

Customer response mail

rpr@novencogroup.com

Person

Warranty Project Manager

Rui Pedro Rego

Costing reference

Comments to costing

▼ Customer Details (2 of 5)

Customer Reference

Anne Helene Sunde Hagem

Person

Issued By

Anne Helene Sunde Hagem.

Contact person

Hanne Dischler Boerresen

Plant/Ships Name

Troll A

Shipyard and hull number

Aibel Haugesund

Vessel IMO number

Delivery adress for parts

Coast Center Base AS , Lager V7, 5347 Ågotnes, Nor

Additional comments

Always request for the PO number before expedition

▼ Novenco Details (3 of 5)

Business segment

Offshore

Novenco site

Oslo

Warranty Period Start

Warranty Period Finish

► Warranty Claims - Basic Workspace with workflow

► Warranty Products - Basic Workspace

► Warranty Project - Basic Workspace with workflow

► Warranty Project Costing - Basic Workspace with workflow

► Warranty Project Managers - Basic Workspace

► Warranty Recovery - Basic Workspace with workflow

Workflow State

Workflow State	Milestone event	Target Date	Status	+/- days from Target Date	Warning days before	Workflow Progress (%)
[01] Registration	Enter state	10/01/2015	✓	+ 3d	0	10%
[02] Analysis	Enter state	15/01/2015	✓	+ 1d	2	15%
[03] Customer Acceptance	Enter state	20/01/2015	✓	- 4d	1	25%
[04] Repair / Rework	Enter state	21/01/2015	✓	- 5d	1	90%
[05] Finalizing	Enter state	20/02/2015	⌛	+ 276d	5	

AddEdit

Ready for Analyse

[02] Analysis

Analyse Done

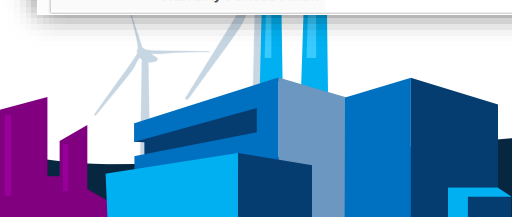
[02] Terms and Conditions

Customer Mail to PM

Request Costumer Acceptance

[03] Customer Acceptance

Customer Accepted



Enkelte nordiske referencer

Electronics & High-Tech

TOPSOE 

memjet

ARCAROMA 

SOLAIS

ELFO 

astro

SPUHR 

UNIVERSAL
ELECTRONICS
Putting You In Control of Technology

Building Products

Cibēs 

First Solar

ZURN

JELD-WEN
WINDOWS & DOORS 

NOVENCO 

NOV

SIMPSON
Strong-Tie

Automotive

VBG 

ROULUNDS
braking 

NUCAP

MENETA 

ReformTech

BRIGADE
ELECTRONICS

Consumer

TaylorMade

FERGAS 

SOUTHERN
PATIO

Lindab 

OXYGEN
DEVELOPMENT

WHOLESOME
SWEETENERS

Sportstøys

Industrial

PERMANOVA
Lasersystem ab 

POREX

AMF

voestalpine 

MesaLabs

Howden 

tpi

Aerospace

VACCO

AMSAFE

Bristow

FIREFLY
SPACE SYSTEMS

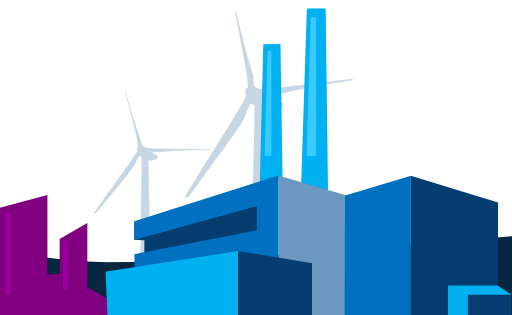


GREENPOINT
Technologies

AIP AEROSPACE

Opstart og implementering

Vurdér hvor det giver mening

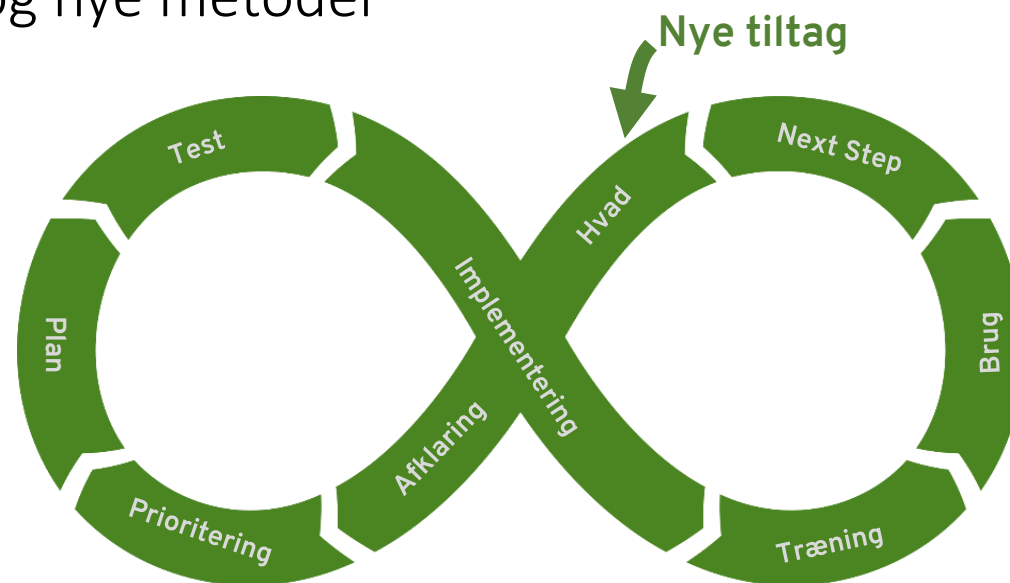


Succes kommer hvis den planlægges

Der er et par vigtige faktorer

- Afstemning af løsning og vision, så mål er for øje
- Indsatser håndteres med empati i organisationen
- Træning ift. rigtig brug og tillæring af ny teknologi og nye metoder

1. Start med det umiddelbare
2. Få masser af gevinst af det
3. Byg herefter mere på
4. Få endnu mere ud af løsningerne



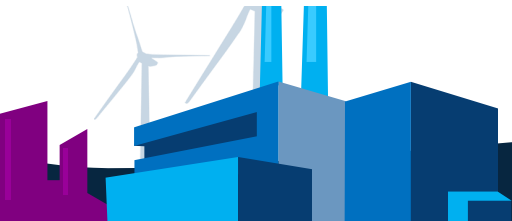
NTI Implementation packages

* StartUp pack

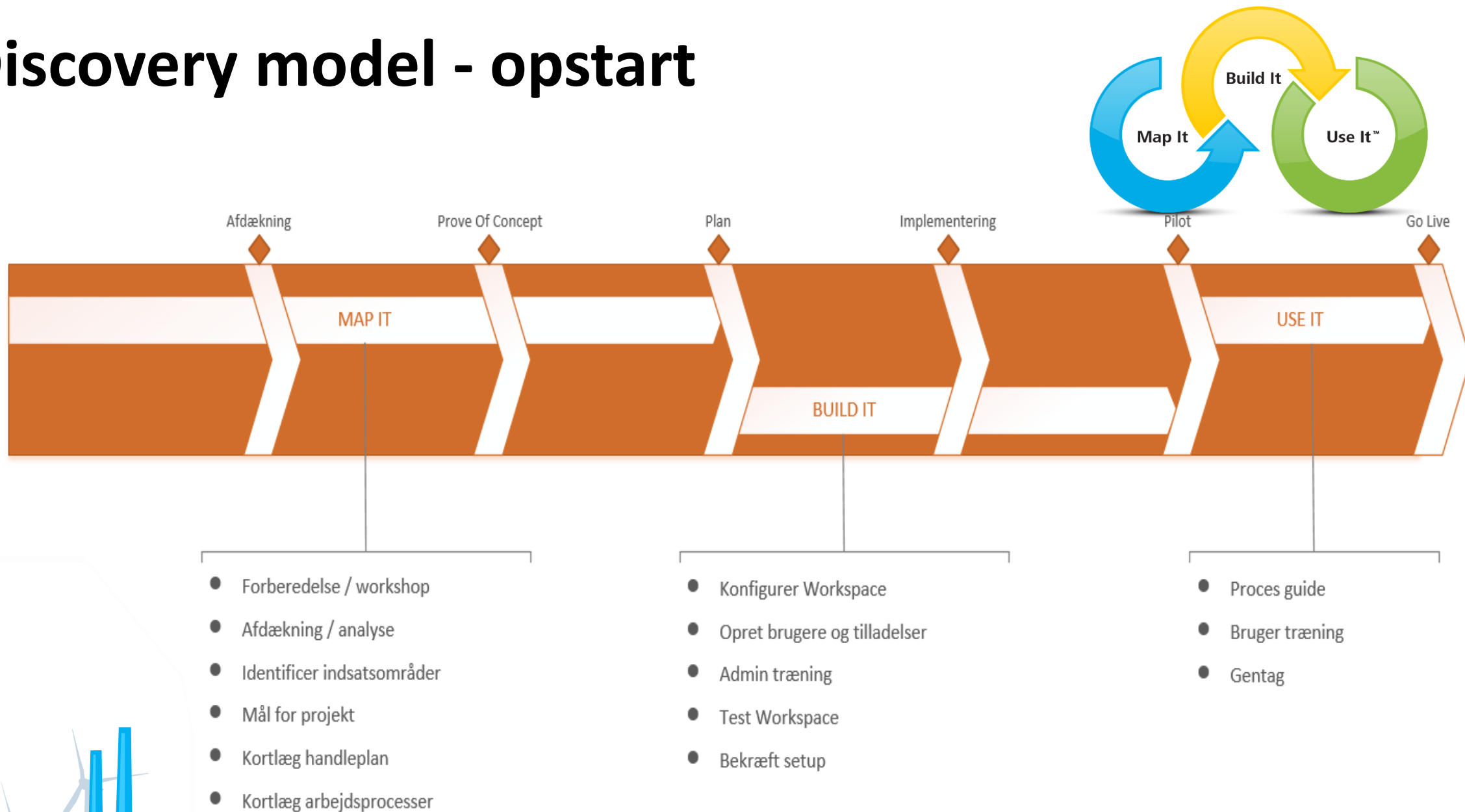
** 3-pack next step

*** Solution approach

Base content:	✓ Customer story		✓ Discovery ✓ Customer story ✓ 3 combined scenarios (options)			✓ Discovery ✓ Analysis ✓ Estimates ✓ Scope & planning
Options:	<input checked="" type="checkbox"/>	(Select 1 option)	A	B	C	
	<input type="checkbox"/> A	Products	Products Item/BOM Revision	Products Project Task	Products NPD/NPI Quality	✓ Vision, NTI knowledge ✓ Advisory services ✓ Project management ✓ Cost/benefit on current systems ✓ Develop / migration / integration ✓ Process approach ✓ Phase implementation
	<input type="checkbox"/> B	NPD/NPI				
	<input type="checkbox"/> C	Quality handling				
	<input type="checkbox"/> D	Warranty / RMA				
	<input type="checkbox"/> E	Project management / task handling				
	<input type="checkbox"/> F	Serial numbering				
	<input type="checkbox"/> G	Request for quote				
Training:	✓ User guide		✓ Administrator guide ✓ User guide ✓ 1 Skype session			✓ Map user skills ✓ Customized training ✓ Fusion Life Cycle solution ✓ Optional: custom processes
Customization:	✓ Light customization		✓ Light customization			✓ Yes – Custom setup

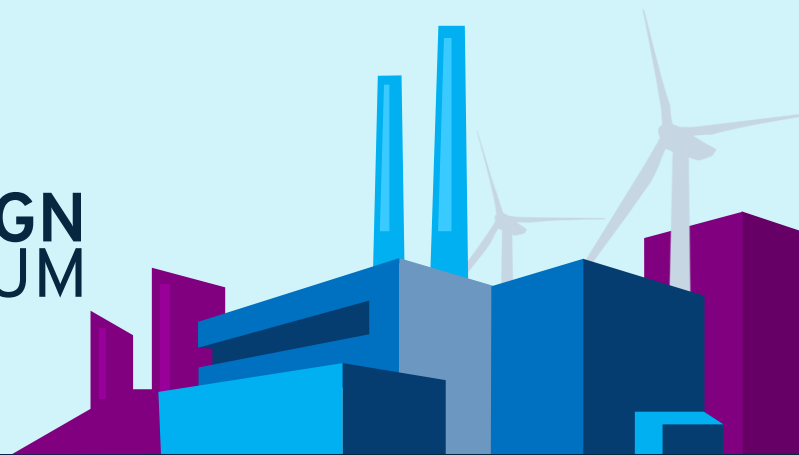


Discovery model - opstart





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Tak for besøget 😊