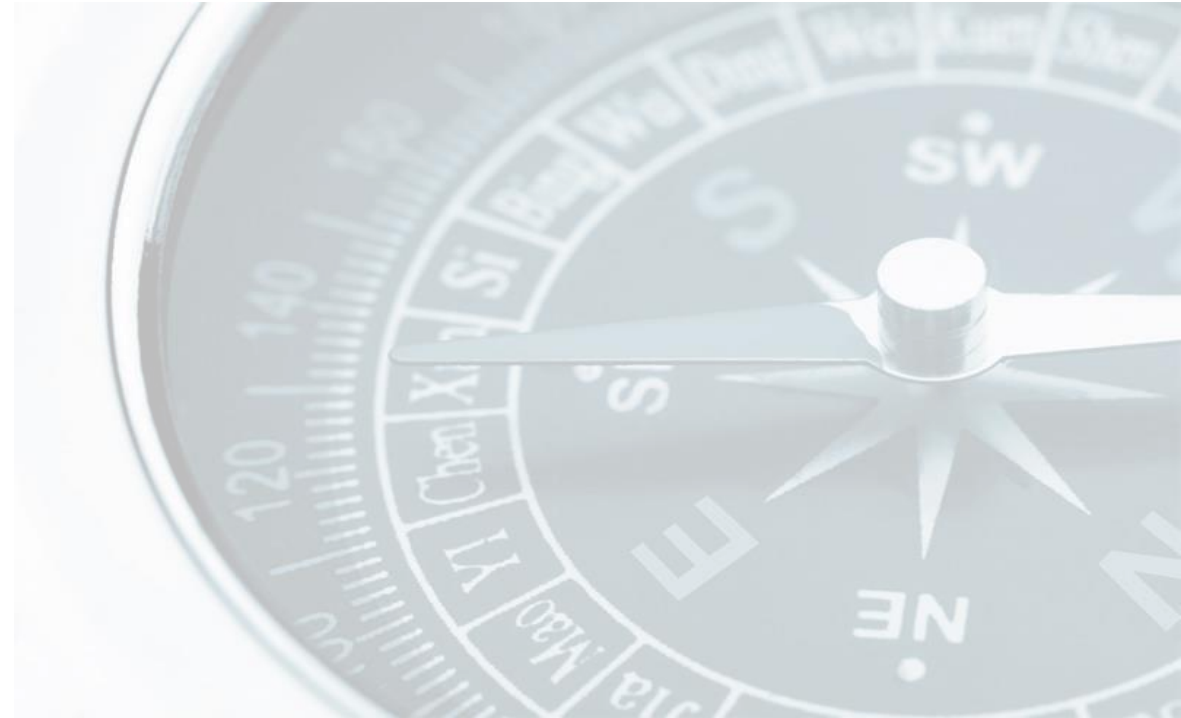


EARLY VALUE IDEATION®

FINDING IDEAS
with DFMA...
...and then?





DFMA Motivation – Why...



Let's talk about – Management...

Management/Stakeholders



What is the role of the management?

- They take the risk
- They invest money for development (also invest money for education and training)
- They invest money for prototypes and qualification
- They spend a lot of time for controlling and monitoring

What does the management get in return?...



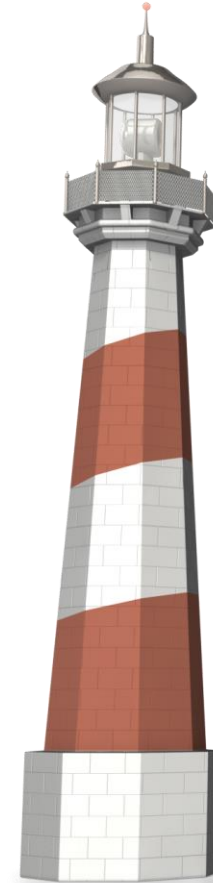
What gets Management back...?



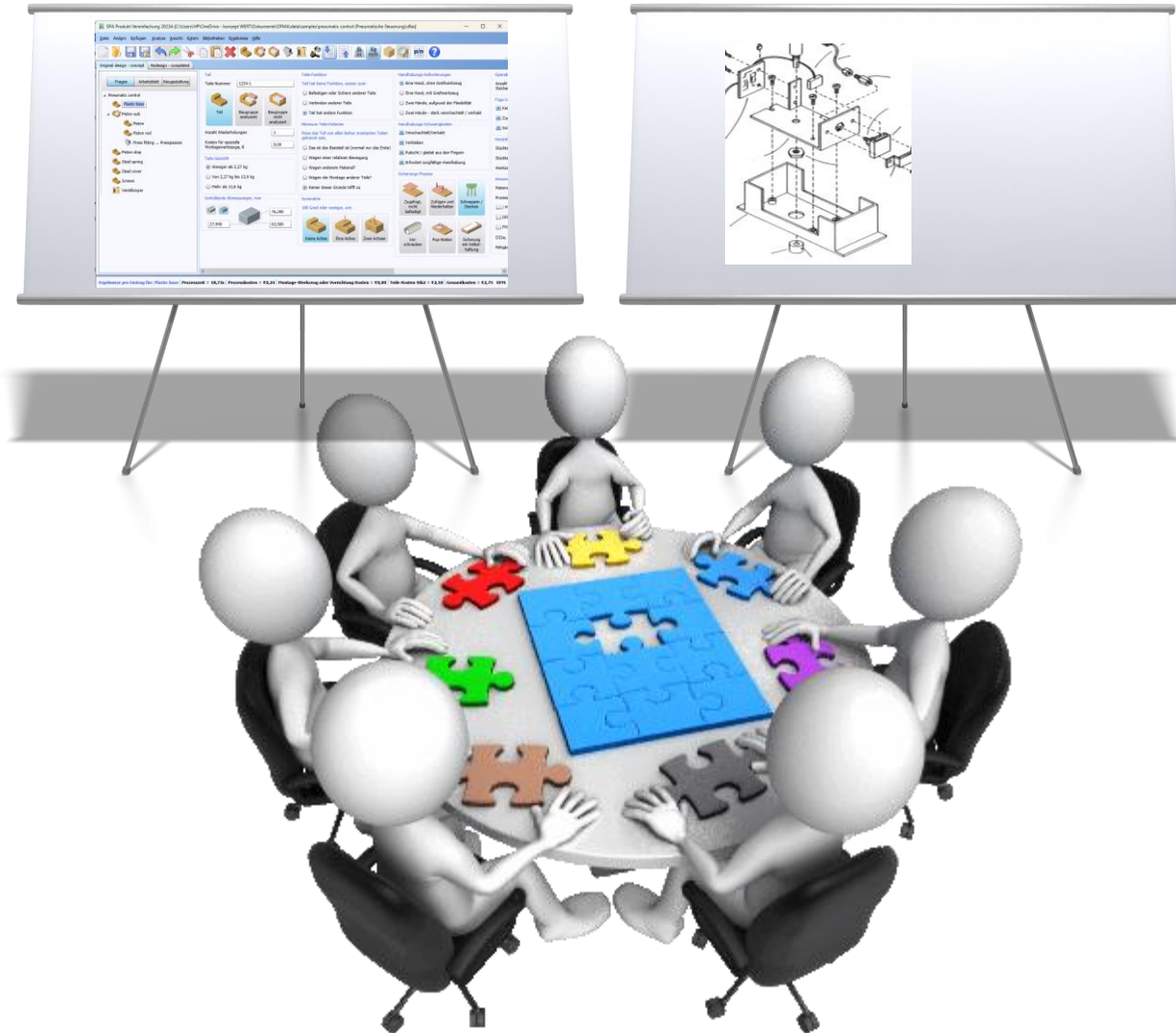
FOKUS DFMA

The gold standard in cost estimation...

In combination with EVI®
(Early Value Ideation)



DFMA as a team-event



Moderated project environment

To conduct different workshop-sequences:

- A) Analyzing a given concept to generate ideas**
- B) Assess the ideas against different aspects**
- C) Decide, which ideas are applicable and to achieve**

Ideally in the early development phase



IDEAS – the first „get back“



How to manage these ideas?

This question leads to the development of **evi:One® - Early Value Ideation** – the Project Management Office tool for (DFMA-) Projects.

But - How does it work?

And – Whats the benefit for you?

EVI® - EARLY VALUE IDEATION



How does it work?

After the determination

The screenshot displays the EVI software interface for 'Project 1 - Pneumatic control'. It includes several panels:

- Project details:** Shows project ID, description, DFA file, manufacturing quantity, and shift model.
- Product variations:** Lists 'Variant A' and 'Variant B'.
- Team / gates:** Lists employees: Erin Mair, Finn Isch, Helge Müller, Jona Than, Josh Rum, and Rene Machrecht.
- Meeting schedule table:**

Date	Meeting title
10.12.2022	Concept Optimization
15.01.2023	Loop 1 - Konzept
31.01.2023	Brief review
15.02.2023	Loop 2 - Concept
28.04.2023	Brief review
02.03.2024	Kurzmeeting
15.05.2024	Manufacturing Review

Additional interface elements include a 'Taktzeit - Auswahl' section with radio buttons for 'Min', 'Max', and 'Manuell', and a footer with a 'Close' button and copyright information.

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How does it work?

After the determination of the project scope, team and timeline the first step is to conduct an DFMA workshop

but with one requirement:

No discussion.... Only questions.. And ideas....

Idea – brain dump 😊

Write it down.. Make a sketch..
Sign it..

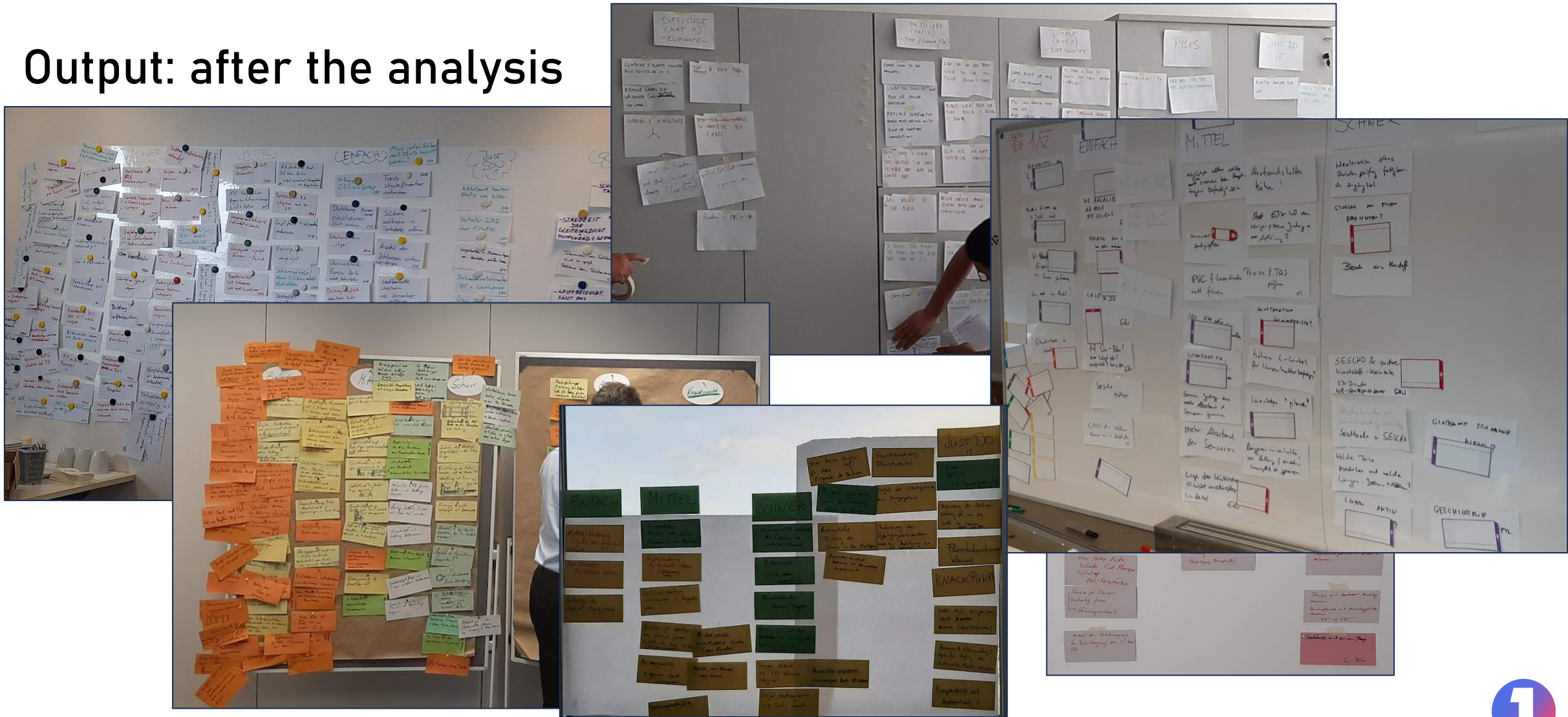
Years	Manu quantity p.a.	Total quantity	Increase	Takt time
2024	85.000	85.000	85.000	
2025	85.000	170.000	85.000	
2026	85.000	255.000	85.000	
2027	85.000	340.000	85.000	
2028	85.000	425.000	85.000	
2029	85.000	510.000	85.000	
2030	85.000	595.000	85.000	
2031	85.000	680.000	85.000	
2032	85.000	765.000	85.000	
2033	85.000	850.000	85.000	

IDEA – Description
To improve something
BH 2024

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Output: after the analysis



EVI® - EARLY VALUE IDEATION



OK.. Ideas are great... and now?

005 -

Content Tasks Effects Description

Pre condition (sales planning at baseline)

Paste from template

Description	Comment	Part number	Labor costs	Part costs	Quantity	Manu. invest	Assembly inv	Part weight

Post condition (cost planning at baseline)

Adopt actual situation

Description	Comment	n/a	Part numbe	Labor costs	Part costs	Quantity	Manu. inves	Assembly in	Part weight
		<input type="checkbox"/>							

Cost balance incl. changes and invest

per part over time

Amortisation 0,00 € 0,00 €

Lifecycle 0,00 € 0,00 €

Risk estimation

Weight Time Cost Function Decision

A

Close Print idea User manual

every idea will be listed
But how to assess?

Open the Evaluation form
for ideas..
And then?..
Where do we get data
from?

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Perfect situation... we have the current situation from DFA

The screenshot shows the 'Worksheet' tab of the DFA software. The table below represents the data shown in the interface:

	Part number	Process cost per product, €	Piece part cost per item, €	Piece part cost per product, €	Repeat count	Manufacturing tooling investment, €	Assembly fixture cost, €
Pneumatic control	1234	0,901		5,562		24000,000	7000,000
Plastic base	1234-1	0,040	2,350	2,350	1	18000,000	0,000
Piston sub	1234-2	0,063	0,000	0,000	1	0,000	0,000
Piston Part 1		0,040	0,847	0,847	1	0,000	0,000
Piston Part 2		0,040	0,605	0,605	1	0,000	0,000
Piston shaft		0,065	1,000	1,000	1	0,000	0,000
Pressing		0,092			1	0,000	0,000
Piston stop	1234-3	0,056	0,350	0,350	1	5000,000	3500,000
Steel spring	1234-4	0,172	0,250	0,250	1	0,000	0,000
Steel cover	1234-5	0,124	0,100	0,100	1	0,000	0,000
Screws	1234-6	0,207	0,030	0,060	2	0,000	0,000

At the bottom of the interface, there are three panels:

- Cost balance incl. changes and invest:** Shows 'per part' and 'over time' values for Amortisation and Lifecycle.
- Risk estimation:** A table with columns for Weight, Time, Cost, Function, and Decision, each with a dropdown menu.
- Sketch finished:** A panel with a 'Zoom' button.

Just take the data from DFA worksheet

And take it as DFA situation

What is the post-condition?

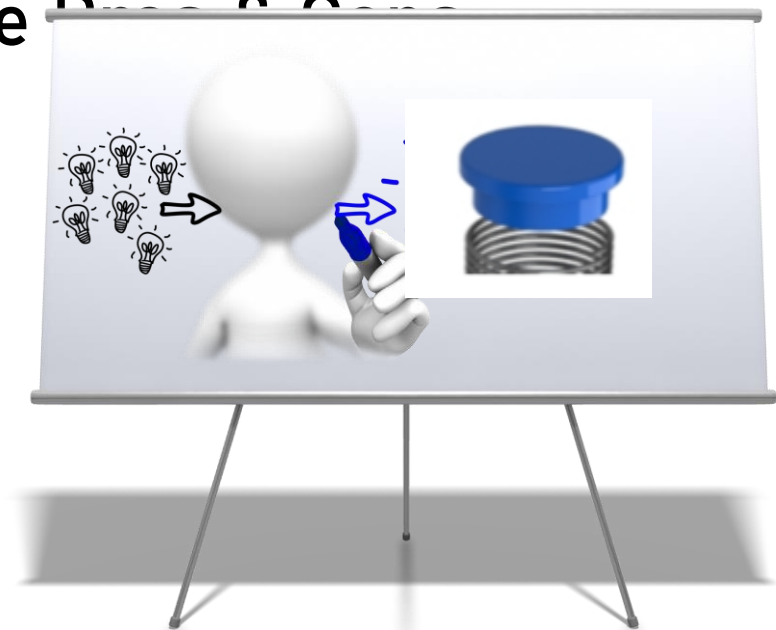
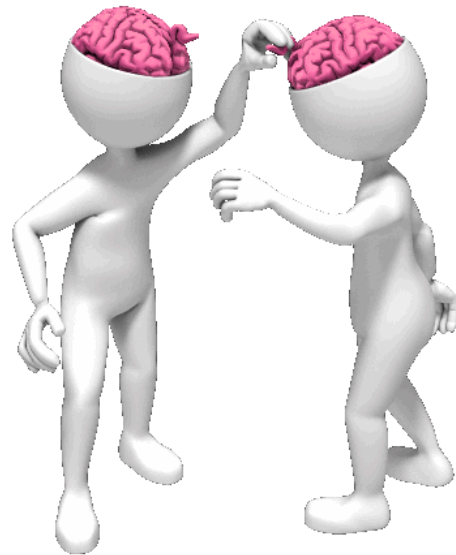
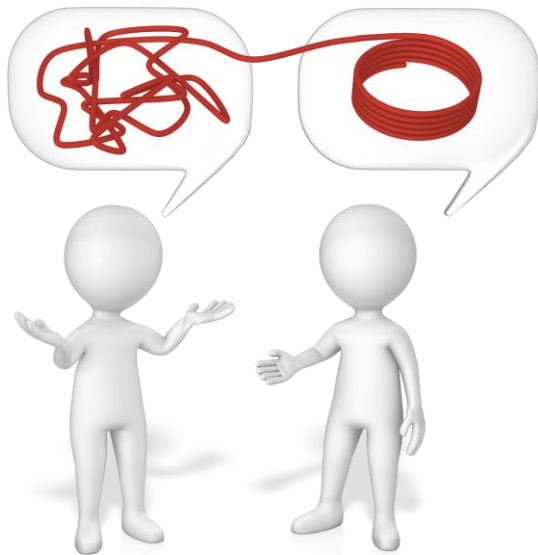
EVI® - EARLY VALUE IDEATION



Post condition: work out the idea!!

This is a second creative process

Now it is time to discuss and clarify the **Process Concept**



The objective is a description and a sketch of a target situation...

EVI® - EARLY VALUE IDEATION



Then... Convert the elaboration into figures... .. - On the **cost** side

002 - Piston Stop

Content | Tasks | Effects | Description

Pre condition (sales planning at baseline)

Piston will be stopped by an seperate part Paste from template

Description	Comment	Part number	Labor costs	Part costs	Quantity	Manu. invest	Assembly inv	Part weight
Steel cover		1234-5	0,14 €	0,10 €	1	1.000 €	0 €	0,00000
Screws		1234-6	0,24 €	0,03 €	2	0 €	0 €	0,00000
Piston stop		1234-3	0,06 €	0,35 €	1	5.000 €	2.500 €	0,00000

Post condition (cost planning at baseline)

Cost balance incl. changes and invest

	per part	over time
Amortisation	-0,33 €	-55.800,00 €
Lifecycle	-0,34 €	-287.000,00 €

Risk estimation

Weight	Time	Cost	Function	Decision
1	2	2	1	B

Close | Print idea | User manual

EVI® - EARLY VALUE IDEATION



Then... Convert the elaboration into figures... - On the **cost** side

002 - Piston Stop

Content | Tasks | Effects | Description

Pre condition (sales planning at baseline)
Piston will be stopped by an separate part

Post condition (cost planning at baseline)
Piston-stop will be combined with the cover

Description	Comment	n/a	Part numbe	Labor costs	Part cost	mand. inves	Assembly in	Part weight	
Piston stop	with steel cover combined	<input type="checkbox"/>	1234-3	0,00 €	0,55 €	1	8.000 €	2.500 €	0,00000
Steel cover	work description 1	<input checked="" type="checkbox"/>	1234-5	0,00 €	0,00 €	0	0 €	0 €	0,00000
Screws	work description 2	<input checked="" type="checkbox"/>	1234-6	0,00 €	0,00 €	0	0 €	0 €	0,00000

Cost balance incl. changes and invest

	per part	over time
Amortisation	-0,33 €	-55.800,00 €
Lifecycle	-0,34 €	-287.000,00 €

Risk estimation

Weight	Time	Cost	Function	Decision
11	21	21	11	B

Cost balance, Risk estimation, and Sketch finished sections are visible at the bottom of the interface.

1) Insert the sketch

2) Describe the changes of the Target Situation.

3) Estimate the new situation per item (use DFM if nec.)

4) Result: Potenzial of the Idea...

EVI® - EARLY VALUE IDEATION



Then... Convert the elaboration into numbers... - On the **risk** side

⚡ Edit and evaluate idea

002 - Piston Stop

Content | Tasks | Effects | Description

Pre condition (sales planning at baseline)

Piston will be stopped by an separate part Paste from template Sketch pre Zoom

Post condition (cost planning at baseline)

Piston-stop will be combined with the cover Adopt actual situation Sketch post Zoom

Description	Comment	n/a	Part numbe	Labor costs	Part costs	Quantity	Manu. inves	Assembly in	Part weight
Piston stop	with steel cover combined	<input type="checkbox"/>	1234-3	0,06 €	0,55 €	1	8.000 €	2.500 €	0,00000
Steel cover	work description 1	<input checked="" type="checkbox"/>	1234-5	0,00 €	0,00 €	0	0 €	0 €	0,00000
Screws	work description 2	<input checked="" type="checkbox"/>	1234-6	0,00 €	0,00 €	0	0 €	0 €	0,00000
		<input type="checkbox"/>							

Cost balance incl. changes and invest

	per part	over time
Amortisation	-0,33 €	-55.800,00 €
Lifecycle	-0,34 €	-287.000,00 €

Risk estimation

Weight	Time	Cost	Function	Decision
1	2	2	1	B

Sketch finished Zoom

Close | Print idea | User manu

1) Assess the risk regarding diff. aspects

2) Result: Team decision

EVI® - EARLY VALUE IDEATION



Last: Define responsibilities

Edit and evaluate idea

002 - Piston Stop

Content Tasks Effects Description

Description	Responsible	Due date	Loop / Sprint	State	Priority	Capacity (h)
Make a sketch	Rene Machrecht	01.07.2024	15.02.2023 Loop	open	medium	4
produce prototypes	Helge Müller	01.07.2024	15.01.2023 Loop	open	medium	24
RFQ for Piston stop	Jona Than	01.07.2024	15.02.2023 Loop	open	medium	16
Testergebnisse liegen vor	Jona Than	01.07.2024	15.02.2023 Loop	open	medium	33

Dev. / Change costs

Hours to spend

Hourly rate **100,00 €**

Add. expenses

Dev. costs **0,00 €**

Dev. costs / part **0,00 €**

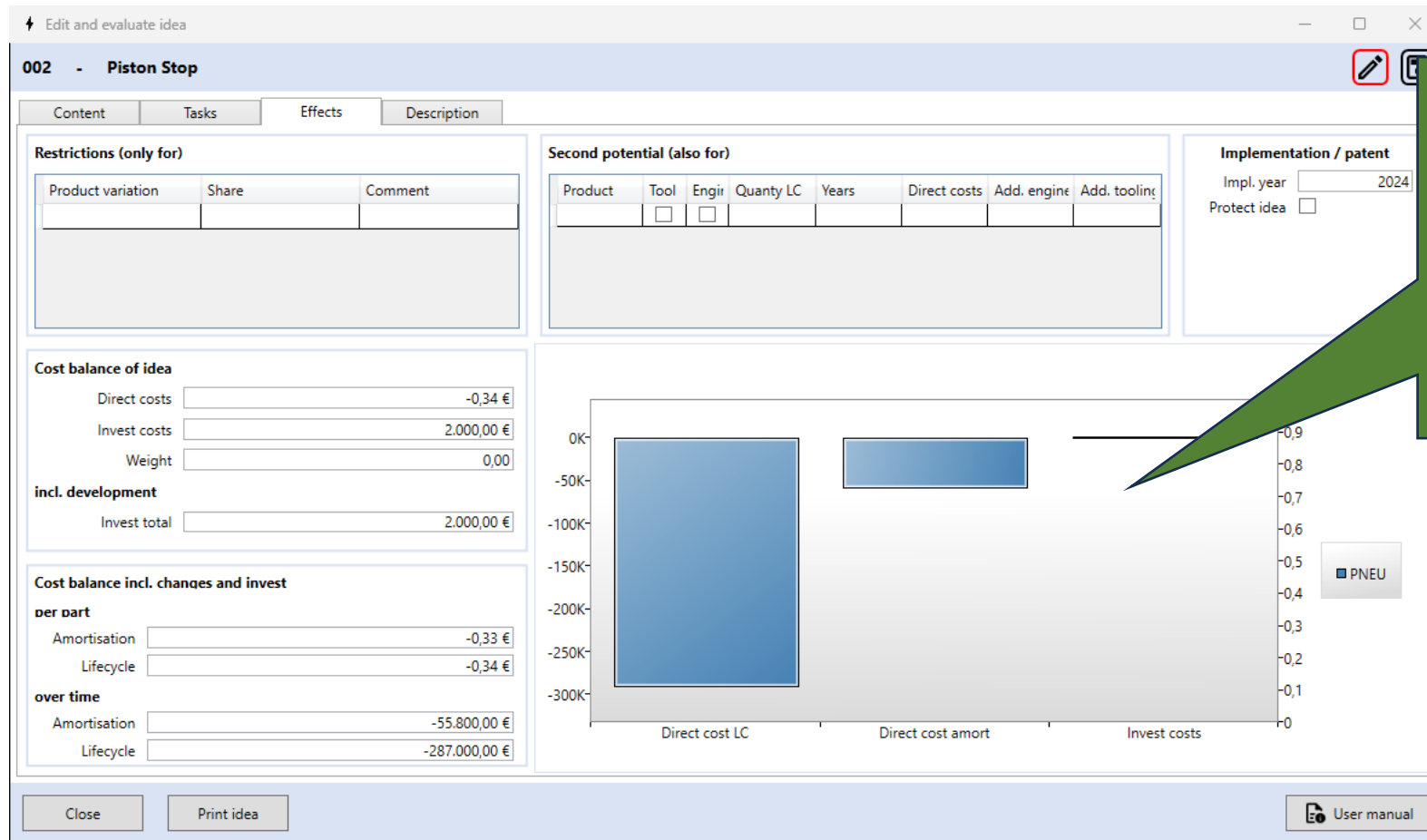
Close Print idea User manual

4) Tasks related to next milestones/loop/sprint/meeting

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What get the management back? (1)

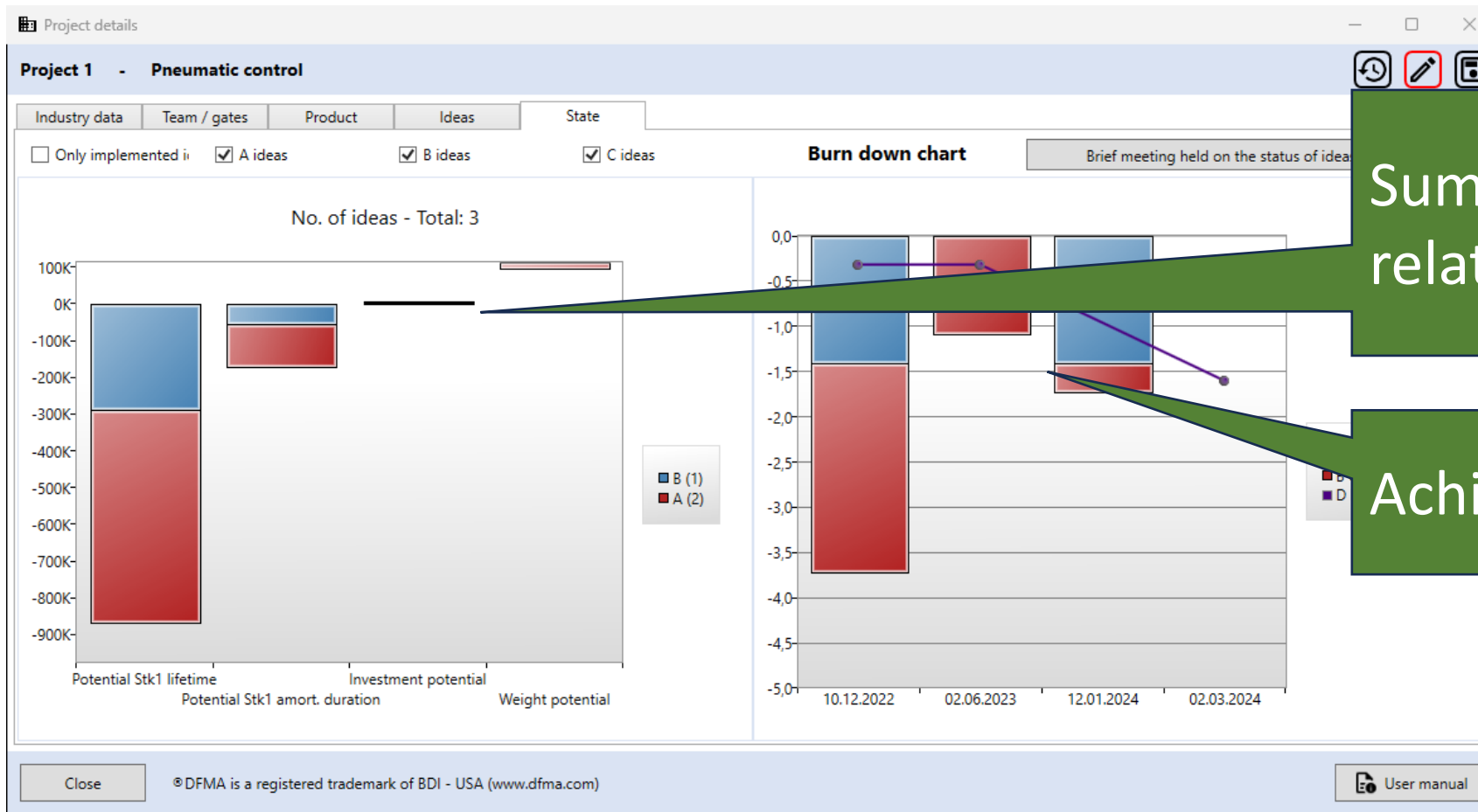


Assessed idea:
Potenzials
Risks
Necessary tasks

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What get the management back? - (2)



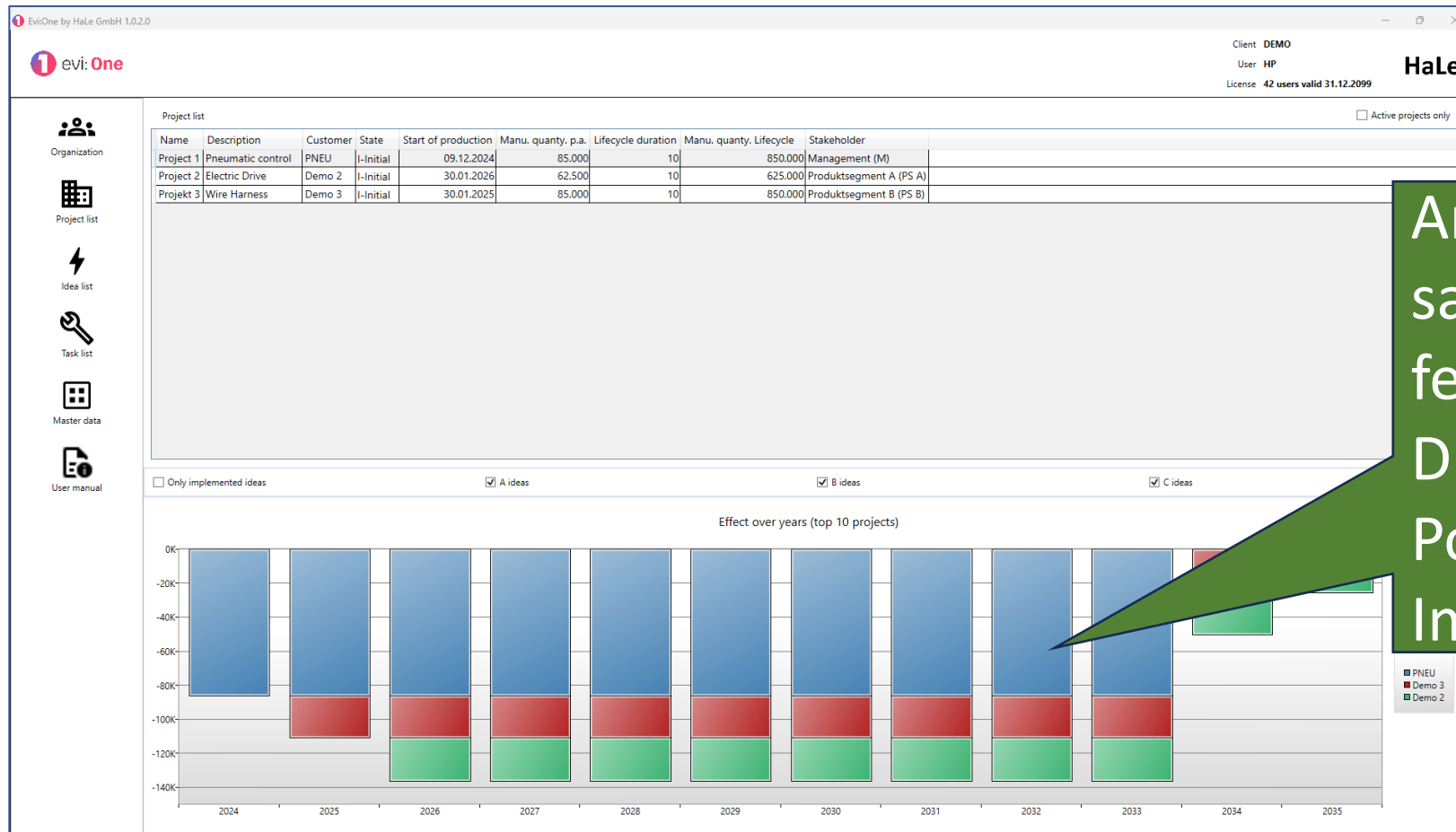
Sum of all ideas related to the project

Achievement over time

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What get the management back? – (3)



An outlook for project savings over the next few years
Divided in Potenzials and Implemented ideas..

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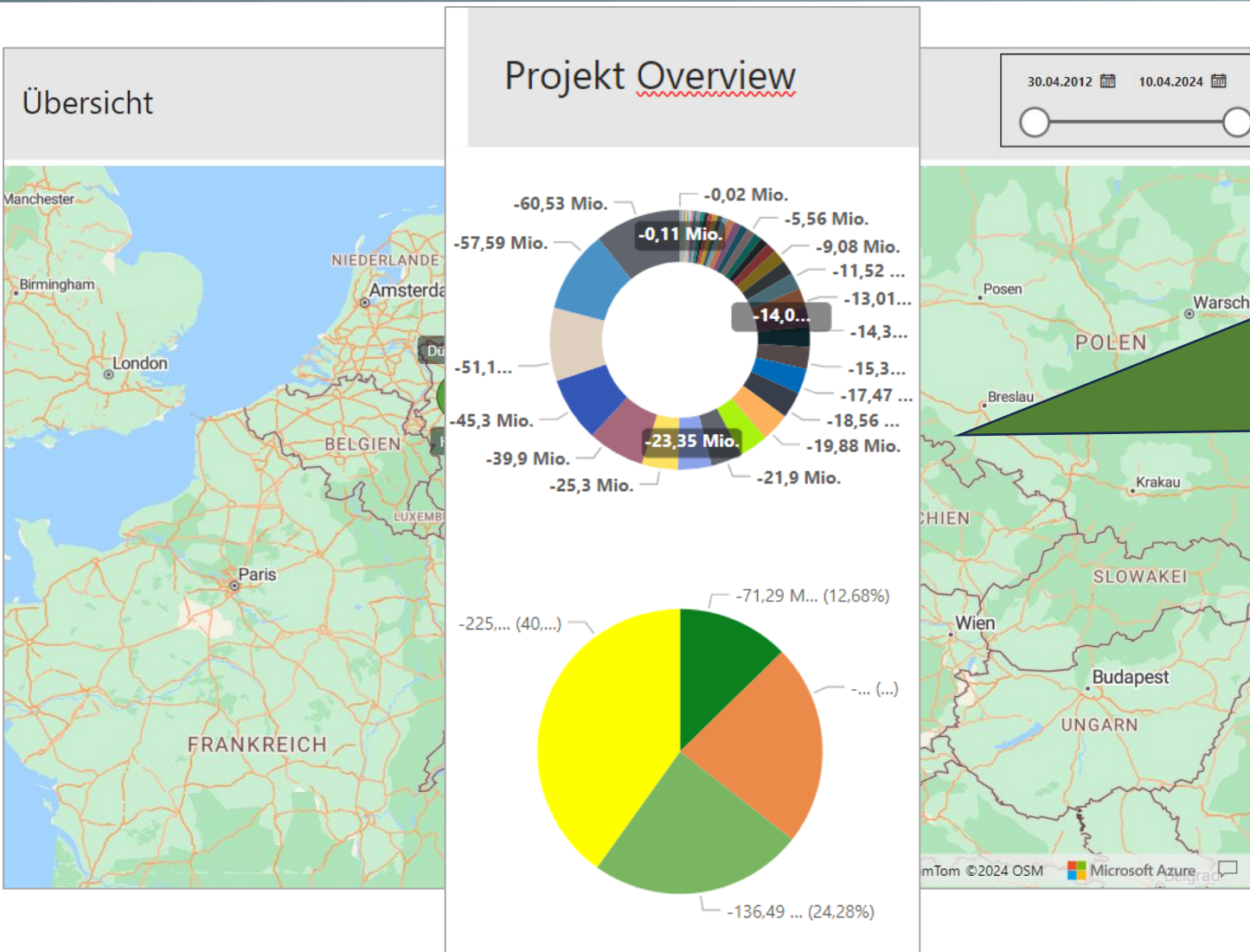


What get the management back? – (4)

Number	Description	State	Customer	Project	Total Lifecycle
000	Basic Idea	A Implement	Demo 0	Project 0	-3,50 €
01	Make Housing in one part	D Implemented	Demo 2	Project 2	-0,79 €
001	Piston	D Implemented	PNEU	Project 1	-0,72 €
004	TEST DXM	A Implement	PNEU	Project 1	-0,66 €
001	Piston	B Check	Demo 0	Project 0	-0,54 €
001	Piston (Kopie)	V Variant (not implemented)	Demo 0	Project 0	-0,54 €
003.1	Idee aus Präsentation Variante	V Variant (not implemented)	Demo 0	Project 0	-0,50 €
02	Make base with included bushings	B Check	Demo 2	Project 2	-0,41 €
004/1	Idee mit Cliff	B Check	Demo 0	Project 0	-0,38 €
002	Piston Stop	B Check	PNEU	Project 1	-0,34 €
003	Stecker verbinden / Connector combine	A Implement	Demo 3	Projekt 3	-0,29 €
001	Stecker verbinden / Connector combine (Kopie)	D Implemented	Demo 3	Projekt 3	-0,29 €
003	Idee aus Präsentation	A Implement	Demo 0	Project 0	-0,16 €
003	Piston	D Implemented	PNEU	Project 1	-0,15 €
002	Idee Nr. 2	B Check	Demo 0	Project 0	-0,01 €
		A Implement	PNEU	Project 1	0,00 €
002	Titel	A Implement	Demo 3	Projekt 3	0,00 €
004	Neue Idee	A Implement	Demo 3	Projekt 3	0,00 €
03	Idee 3	A Implement	Demo 2	Project 2	0,00 €

One repository for all ideas, all projects (with potential)
Also as a ideation source for other projects

EVI® - EARLY VALUE IDEATION



One SQL-Database for all your projects.
Access with all your office tools as
Power BI
MS Access
MS Excel
...



What gets the management back?

- They get back an extended list of opportunities
- They get back an estimated sum of savings
- They get back a position coordinated within the
- They get back higher maturity of design concepts
- They get back a clarified list of tasks with less redundancy
- They get back **Higher Profits**

The success of working with DFMA+EVI



EVI® - EARLY VALUE IDEATION



Benefit for you... if you are a responsible DFMA-User:

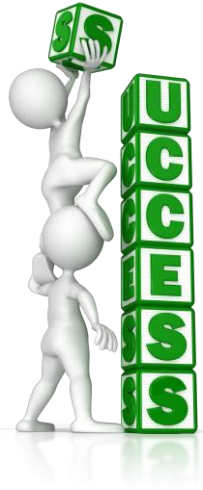
- You get potentials of every idea you want
- You can show your management the **profit increase** for the coming years
- You have a repository of ideas also for inspiration in other projects
- You can identify bottlenecks in “conversion of ideas” into money – and take countermeasures
- From/For every site you want.. globally





Benefit for you... if you are a DFMA-Reseller:

- You can show your customers the increasing of profits for the upcoming years (only by doing DFMA) – direct after the first projects
- You enable your customers to verify the ROI of their (DFMA-) invest
 - project by project
 - year by year
- You push your customers to a “structured communication” company





Thank you



Thank you for your attention

What question do you have?



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