

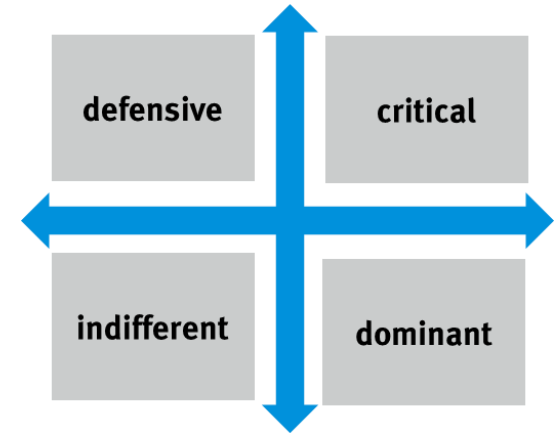
GCDA – Project dependencies, 20. Januar 2017, Steinbeis IT PM >>>



Content developed together with the **xm:institute** >>>

Content:

- (Short) Introduction Festo AG & Co. KG
- **GCDA – Goal and Content Dependency Analyse**
 - Method & implementation steps
 - Workshop concept
 - Existing example and integration at Festo
 - Lessons Learned
- Q&A and Feedback



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- **IT-PMO**
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Festo in public perception – Bionic Learning Network



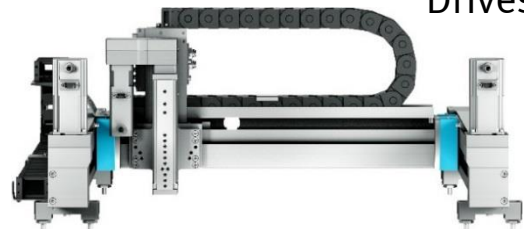
Core business – factory automation and didactic



Pneumatic Drives



Valve Terminal



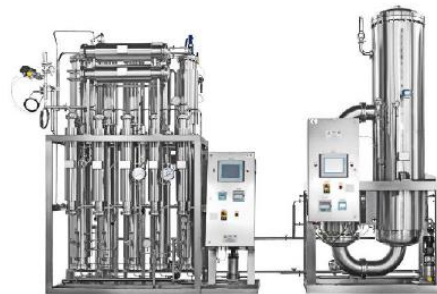
Electric Drives



Tubes



Air preparation









Process Automation



Didactic

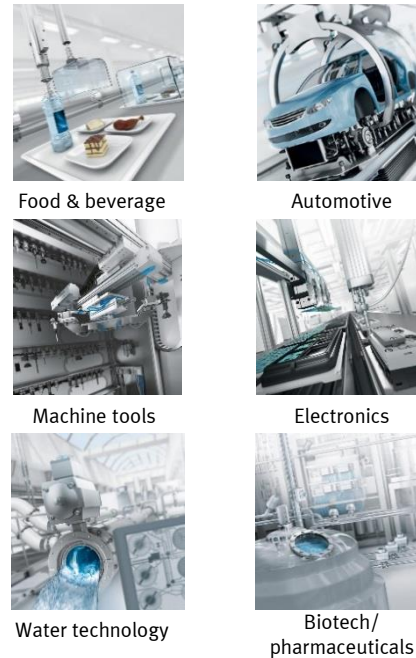
Festo – an independent privately owned company

Products

| | Factory Automation | | Process Automation |
|------------|--|--|---|
| | Pneumatic | Electric | Pneumatic |
| Components |  |  |  |
| Solutions |  |  |  |

› 30.000 Products

Industries (Example)



› 300.000 Customers

Service

› 10.000 customer specific solutions per year

› 24 h delivery service

› 176 countries

› 100 patents per year

› 18.000 Employees

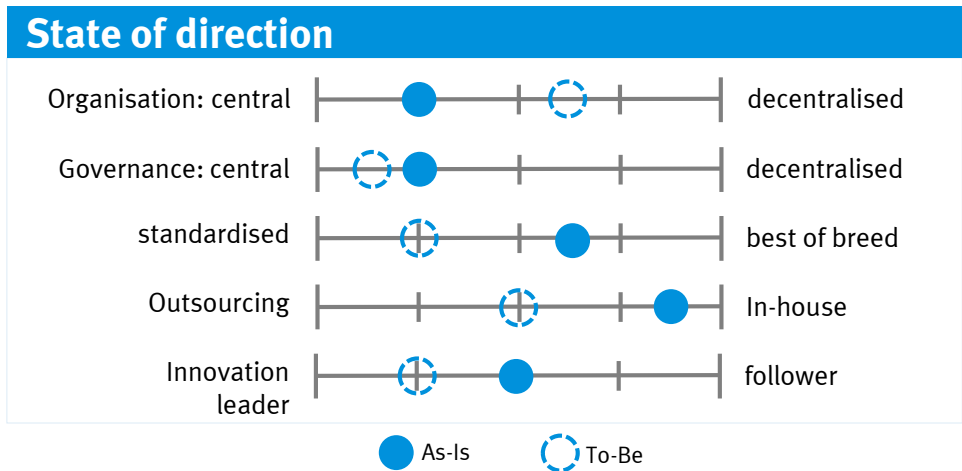
2,6 Mrd. Euro Revenue in 2015

Festo Global IT – Market comparable full service organisation

Festo Global IT

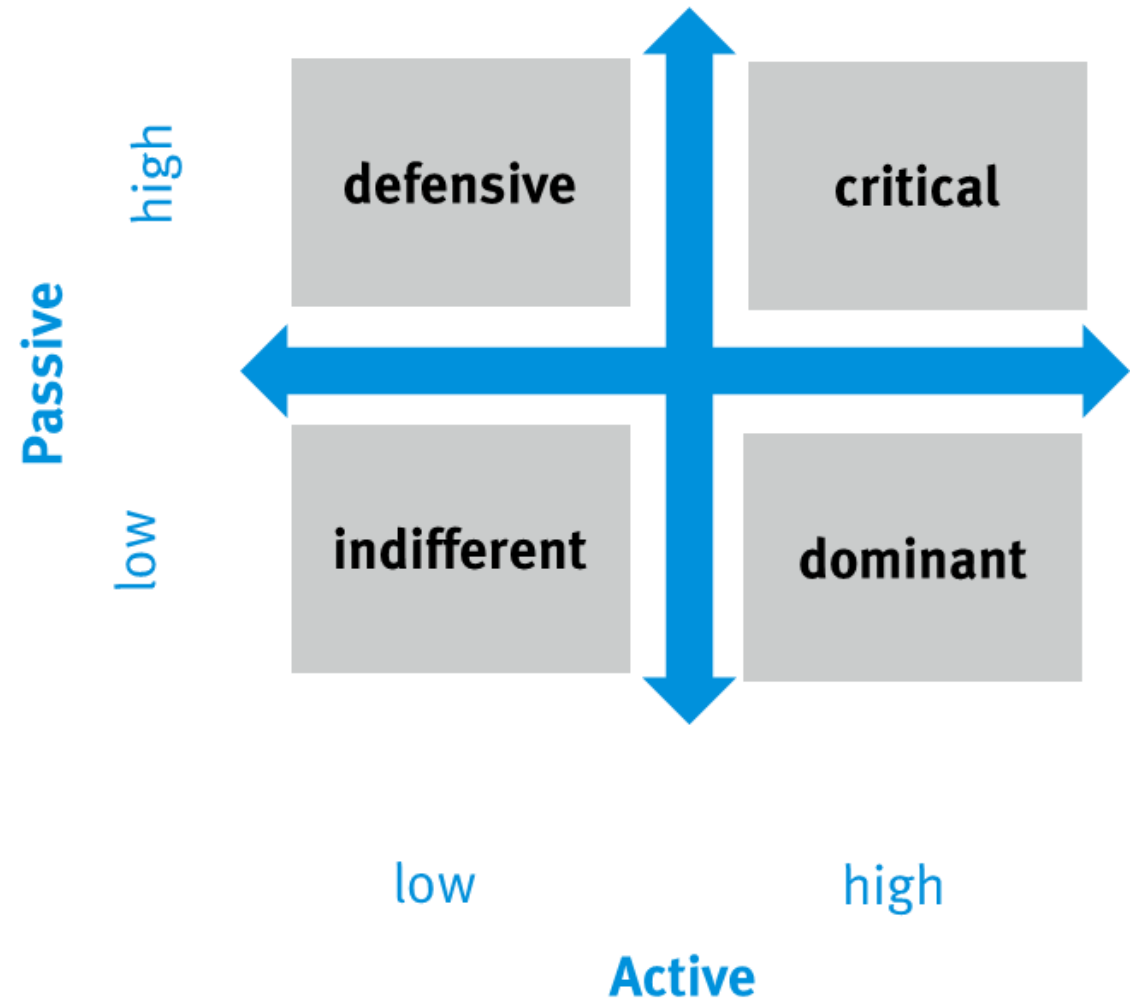
- IT Employees 425
- Person Days IT delivery 85.000
- SAP Users 11.200
- Client Workplaces 16.000
- Mobile Devices 4.100
- Servers 1.700
- Locations 10

Demand > Implement > Operate



GCDA – Goal and Content Dependency Analysis*

Helps to identify dependencies and their impacts on the portfolio based on active or passive behavior



*Based on the “effect matrix” by Prof. Vester, Gomez & Probst

Why?

| Initial situation and reason to act | Target | How? Who is involved? |
|---|---|---|
| <p>Open questions by the executive management regarding strategy projects:</p> <ul style="list-style-type: none"> • How can the cross-functional alignment be ensured? • How to consider interdependencies between (sub-) projects? • Do we have goal and/or content overlaps? • ... <p>➔ High IT involvement in every project!</p> | <p>Clear picture of</p> <ul style="list-style-type: none"> • Project dependencies • Effected IT applications • Data flow • Processes <p>➔ Derive clear responsibilities</p> | <p>Covered by different roles @ Festo</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Dependencies by GCDA ➔ IT-PMO <input checked="" type="checkbox"/> IT applications ➔ EAM* <input checked="" type="checkbox"/> Data flow ➔ EAM* <input type="checkbox"/> Processes ➔ GPM*...not in place yet <p>* EAM: Enterprise Architecture Management GPM: Global Process Management</p> |

General types of dependencies

| Type | Description |
|------------------------------|--|
| • Goal dependency | Goal conflict, goal support, goal neutrality |
| • Result dependency | The result of project A depends on the result of project B |
| • Time dependency | Project B can only start / continue when project A is ready |
| • Resource dependency | Project A and B use the same resources |
| • Content dependency | Project A partly does the same things as project B (Overlap) |
| ... etc. | |

Analysing this in detail and keep up to date???

➔ **We need the information one level higher !!!**

...mmmh, that's the job of the project manager....

GCDA – Introduction: Concept

| Effect on \ Effect From | Project 1 | Project 2 | Project 3 | Project 4 | Project 5 | Project 6 | Total Influenced (Active) |
|--------------------------|-----------|-----------|----------------------|-----------|-----------|-----------|---------------------------|
| Project 1 | | | e.g. 9 strong effect | | | | |
| Project 2 | | | | | | | |
| Project 3 | | | | | | | |
| Project 4 | | | | | | | |
| Project 5 | | | | | | | |
| Project 6 | | | | | | | |
| Total Impacted (passive) | | | | | | | |

Effect could be any dependency

- Goal
- Result
- Time
- Resource
- Content
- ...etc.

Points:

- **0** = no effect
- **1** = small effect
- **3** = middle effect
- **9** = strong effect

Project 1 strong effects on Project 3 ↑
 =
 Project 3 is highly effected by Project 1 ↓

GCDA – Introduction: 1st step - Self-perception, example “Project 3”

| Effect on / Effect From | Project 1 | Project 2 | Project 3 | Project 4 | Project 5 | Project 6 | Total Influenced (Active) |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|
| Project 1 | | | 9 | | | | |
| Project 2 | | | 6 | | | | |
| Project 3 | 3 | 9 | | 3 | 1 | 3 | |
| Project 4 | | | 3 | | | | |
| Project 5 | | | 1 | | | | |
| Project 6 | | | 1 | | | | |
| Total Impacted (passive) | | | | | | | |

Project 1 strong effects on Project 3
 =
 Project 3 is highly effected by Project 1

- 1st step:
- Each Project manager do a self-perception how his project
- effects/influences other projects (horizontal)
 - how his projects is effected/impacted by other projects (vertical)

- Points:**
- 0 = no effect
 - 1 = small effect
 - 3 = middle effect
 - 9 = strong effect

GCDA – Introduction: 2nd step - Consolidated result

| Effect From | Project 1 | Project 2 | Project 3 | Project 4 | Project 5 | Project 6 | Total Influenced (Active) |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|
| Project 1 | | 3; 9 | 9; 9 | 9; 1 | 0; 0 | 0; 0 | 40 |
| Project 2 | 9; 9 | | 3; 9 | 9; 9 | 0; 1 | 1; 1 | 51 |
| Project 3 | 3; 3 | 9; 9 | | 3; 3 | 1; 1 | 3; 3 | 38 |
| Project 4 | 1; 1 | 3; 3 | 3; 3 | | 0; 1 | 0; 1 | 15 |
| Project 5 | 0; 0 | 0; 1 | 1; 1 | 1; 1 | | 0; 0 | 2 |
| Project 6 | 0; 0 | 0; 0 | 1; 1 | 0; 1 | 0; 0 | | 3 |
| Total Impacted (passiv) | 26 | 37 | 39 | 35 | 3 | 9 | |

Example, different self perceptions, detail analysis needed

2nd step:

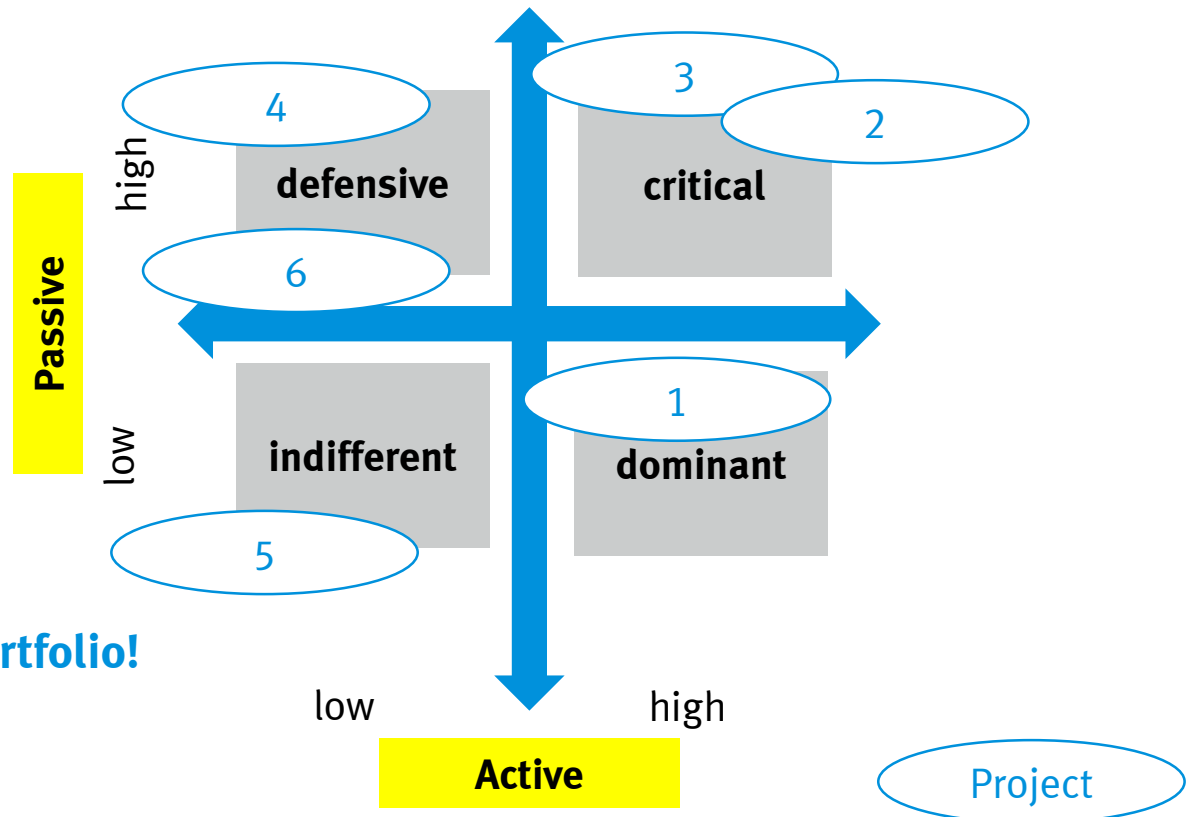
- Consolidate all self-perception in one chart
- Calculate the active and passive sums
- Check conflicts, in case of conflicts initiate bilateral discussion between project manager to solve with target to get a common view (...focus on the conflicts with strong effects, “9”...)

GCDA – Introduction: 3rd step - Categorize projects by active and passive value from the matrix

Active = influence on other elements

Passive = impacted by other elements

| Category | Impact |
|---------------|---|
| • Critical | Key elements, changes initiate chain-reaction |
| • Dominant | Influences significant other elements |
| • Defensive | are influenced by other elements |
| • Indifferent | closed, autarkic, self-sufficient |



→ Change on projects have different effects on the total portfolio!

Result is not an holistic view, just one piece of the puzzle!!

Also indifferent projects can have a high benefit!!

GCDA – Introduction: 4th step - Main important interfaces between projects

| Effect From | Project 1 | Project 2 | Project 3 | Project 4 | Project 5 | Project 6 | Total Influenced (Active) |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|
| Project 1 | | 3 9 | 9 9 | 9 1 | 0 0 | 0 0 | 40 |
| Project 2 | 9 9 | | 3 9 | 9 9 | 0 1 | 1 1? | 51 |
| Project 3 | 3 3 | 9 9 | | 3 3 | 1 1 | 3 3 | 38 |
| Project 4 | 1 1 | 3 3 | 3 3 | | 0 0 | 0 0 | 15 |
| Project 5 | 0 0 | 0 1 | 1 0 | | | | 2 |
| Project 6 | 0 0 | 0 0? | 1 1 | 0 1 | 0 0 | | 3 |
| Total Impacted (passive) | 26 | 37 | 39 | 35 | 3 | 9 | |

Example, relations with strong effects (= 9 points)

- 4th step:
- Identify all relations with a strong effect (“9”)
 - ➔ This are the main interfaces that must be professional managed
 - Write down the interfaces, e.g. in this example
 - Project 1- Project 2
 - Project 1- Project 3
 - Project 1- Project 4
 - Project 2- Project 4
 - ...
 - Of course the other interfaces are also important....

GCDA – Introduction: 5th step - Maturity Level of main important interfaces

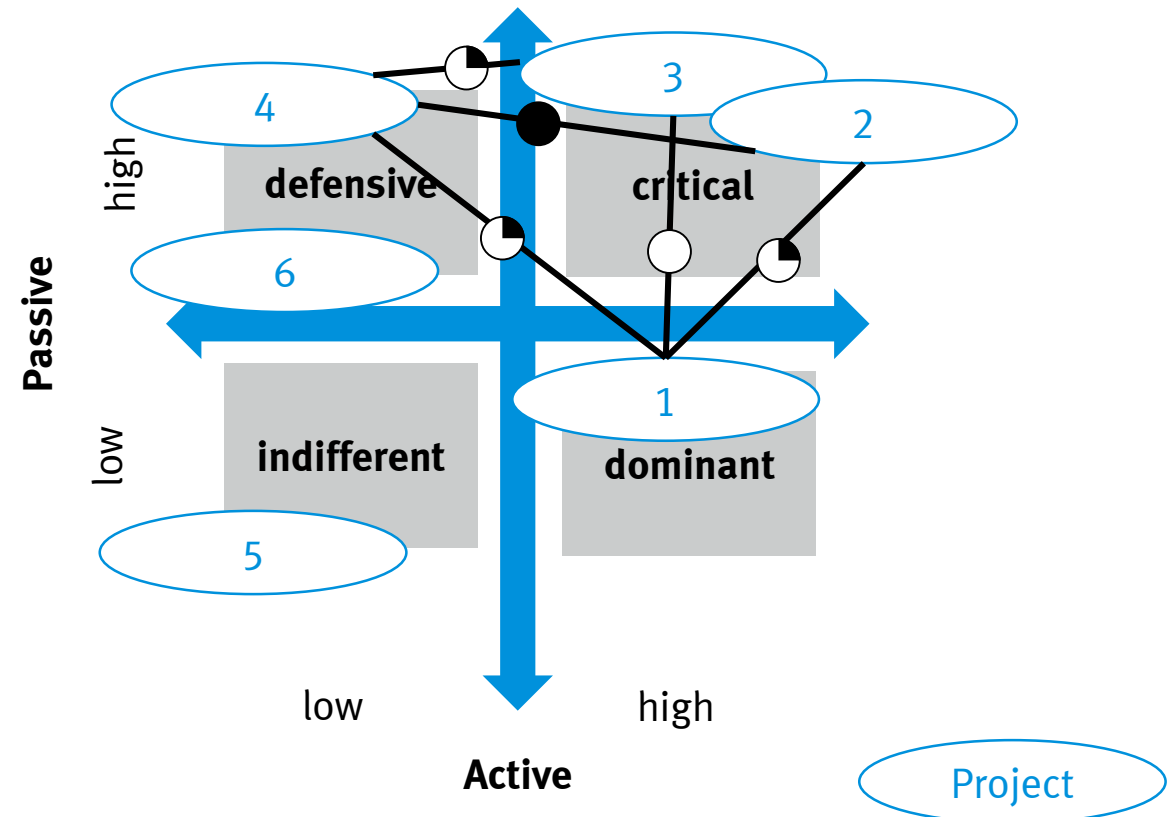
Are all main important interfaces already managed professionally? Have both Project Manager the same opinion? → Discuss!

- Project 1- Project 2
- Project 1- Project 3
- Project 1- Project 4
- Project 2- Project 4
- Project 3- Project 4

Use Harvey balls to document and describe the method with 1-2 sentences

Options to manage – finding a suitable method for each interface

- 1 dedicated person in each project team, bilateral clarification
- Interface meetings within the teams
- Project manager level
- Standard agenda point in every project meeting
-

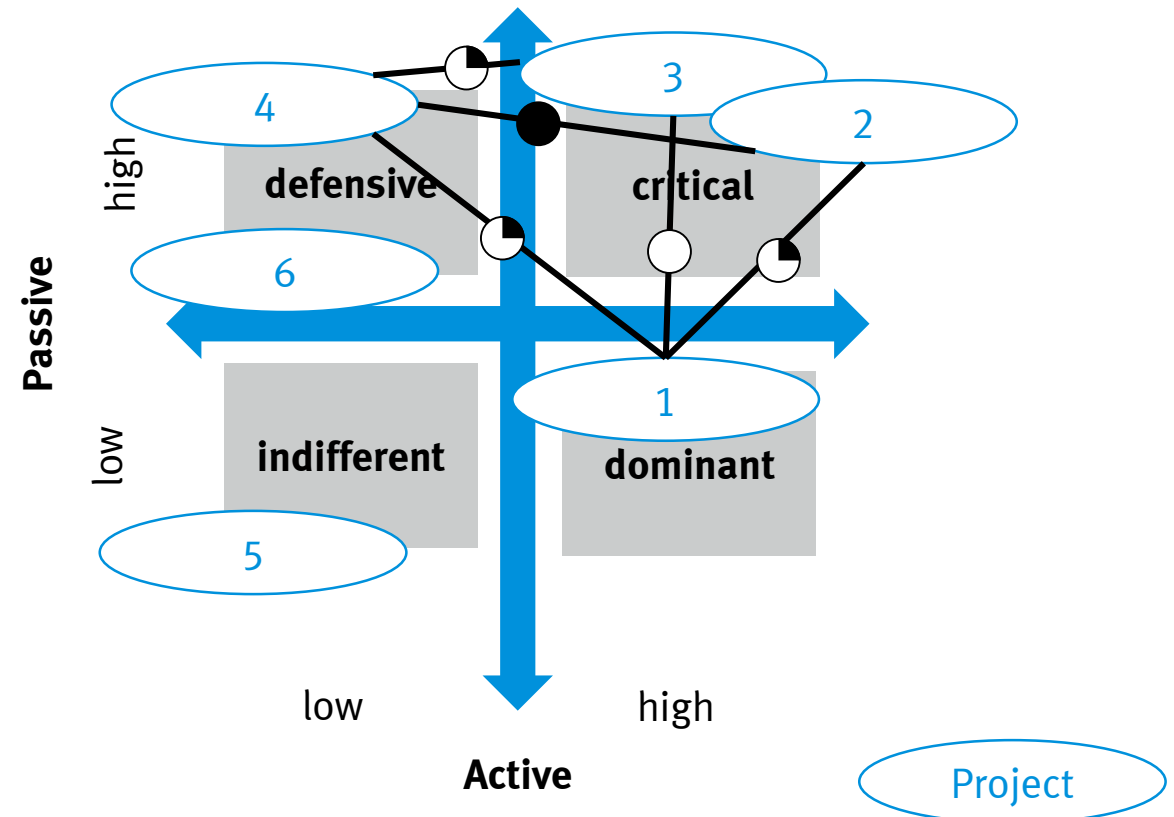


GCDA – Introduction: 6th step - Initiate regular meeting on Project Manager level

...just to bring the topics in place, not to solve them immediately

Target of the meetings:

- Unique communication to upper management
- Ensure communication, e.g. major updates from the projects and upcoming topics
- **Which topics are not covered? Identify “White spots”, e.g. out of scope in all projects**
- Are there other topics to be managed in a generic way
- Are there topics relevant for all projects
- ...



GCDA Workshop Concept – in a nutshell

Existing workshop concept could be used as a reference model for other (sub-) projects

| Phase | Topic |
|--------------------------|---|
| Preparation | Identifying relevant projects and brief the Project Manager |
| 1 st Workshop | Short presentation 15min for each project <ul style="list-style-type: none"> • Project Overview – OnePager • Project Organization • Project dependencies Self assessment by Project manager - OnePager (High Level statements regarding goal, result, time, resource and content dependencies) |
| | Fill out GCDA – matrix and consolidate (1 st -3 rd step) |
| | Identify conflicts and main interfaces (4 th -6 th step) |
| | Create and commit to a common picture as communication base for everyone |
| ...follow up workshops | Monthly/regular meeting for knowledge exchange and recommendations for the steering committees <ul style="list-style-type: none"> -upcoming topics -topics not covered |

Existing example and integration at Festo

Reason to act and situation in Summer 2015

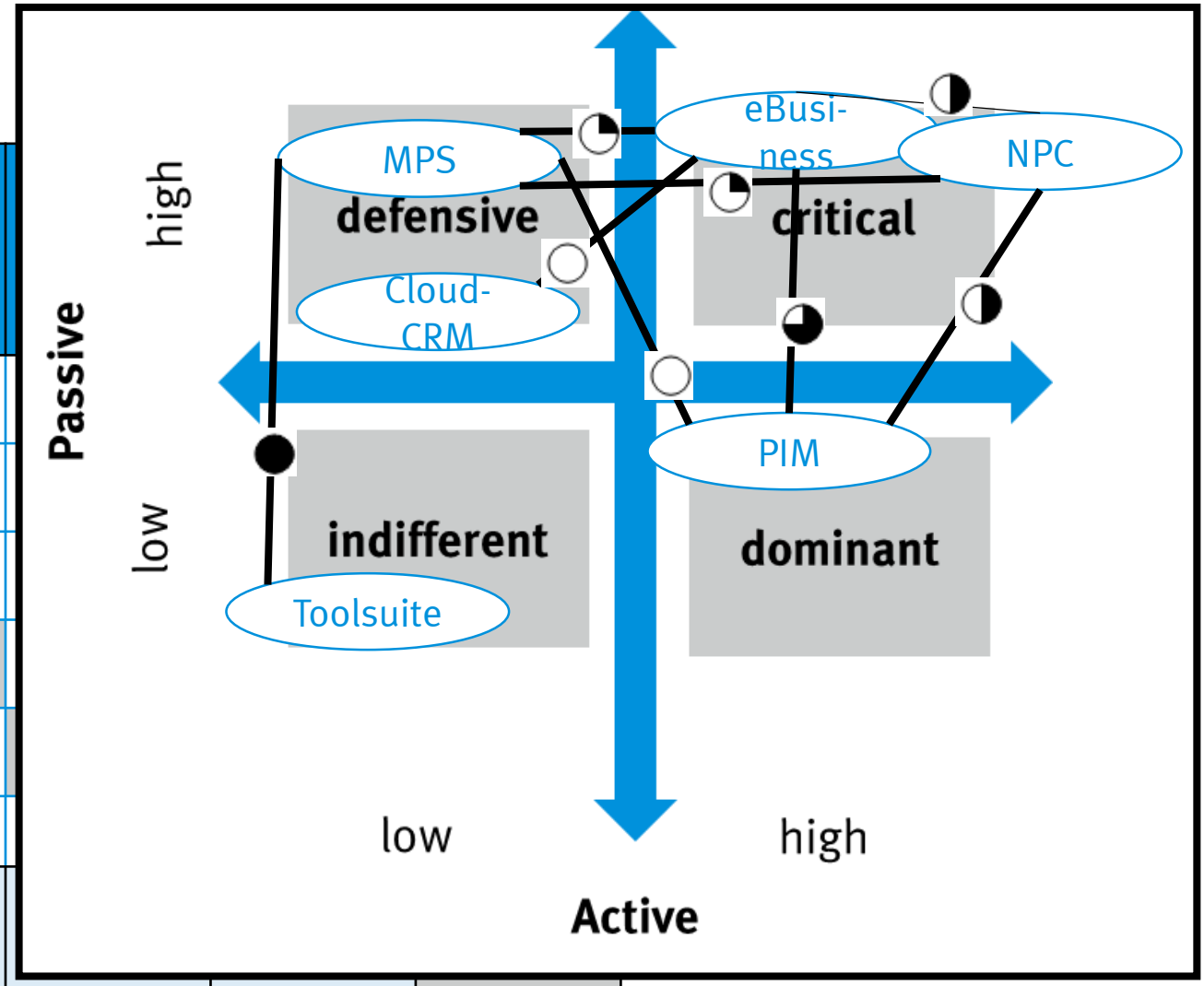
Assumption from the management:

The interfaces and dependencies from projects derived by the Strategy are not managed professionally and content overlaps!



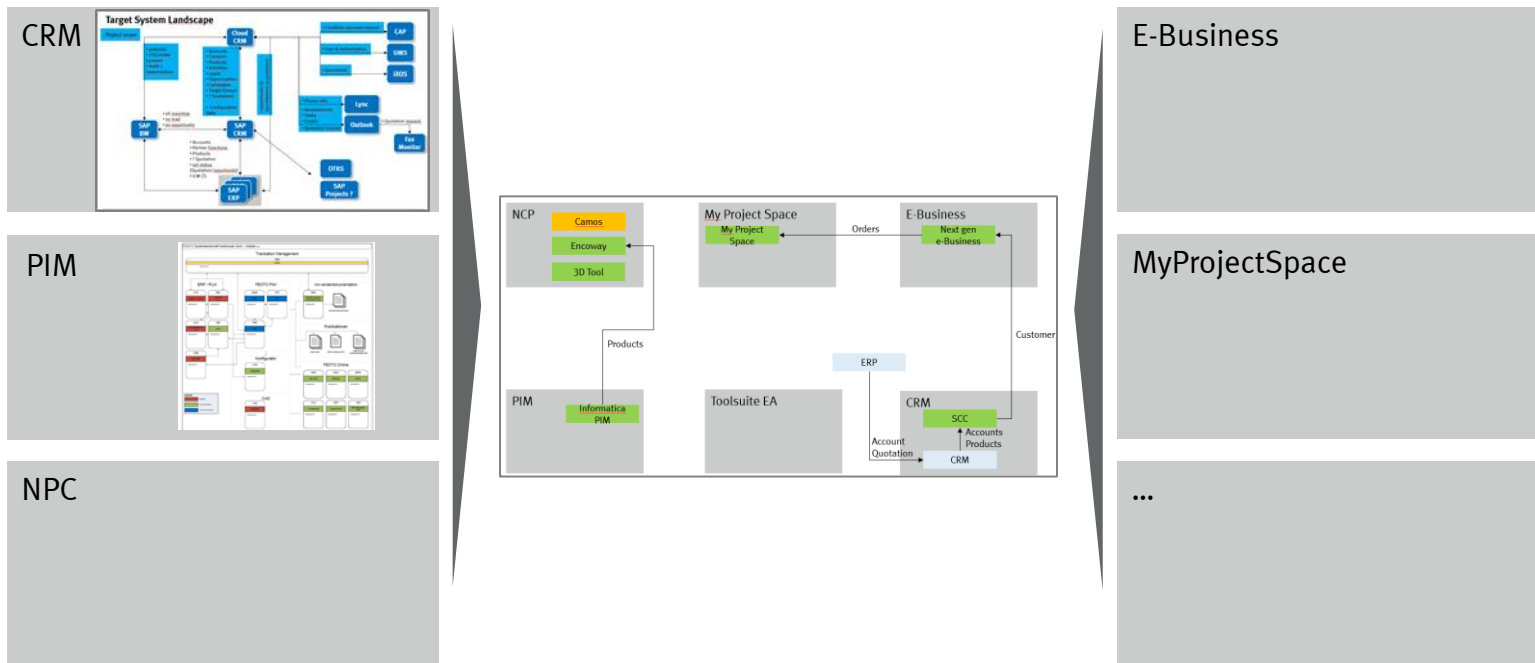
GCDA – Matrix and result, committed by all

| Effect From | PIM | NPC – Configurator | eBusiness | myProject Space |
|--------------------------------|-----|--------------------|-----------|-----------------|
| PIM | | 69 | 99 | 91 |
| NPC-Configurator | 99 | | 69 | 99 |
| eBusiness | 33 | 99 | | 33 |
| MyProject Space | 11 | 33 | 33 | |
| Toolsuite EA | 00 | 01 | 10 | // |
| CloudCRM | 00 | 00 | 11 | 01 |
| Total Impacted (passiv) | 26 | 40 | 42 | 35 |



Integration of all IT application and data flow landscapes to one picture → One model necessary!

Target: Clear picture of project dependencies, effected IT applications and data flow



How? Who is involved?

Covered by different roles @ Festo

- Dependencies → IT-PMO**
- IT applications → EAM***
- Data flow → EAM***
- Processes → GPM***

...GPM in place @Festo ...

*

EAM: Enterprise Architecture Management
GPM: Global Process Management

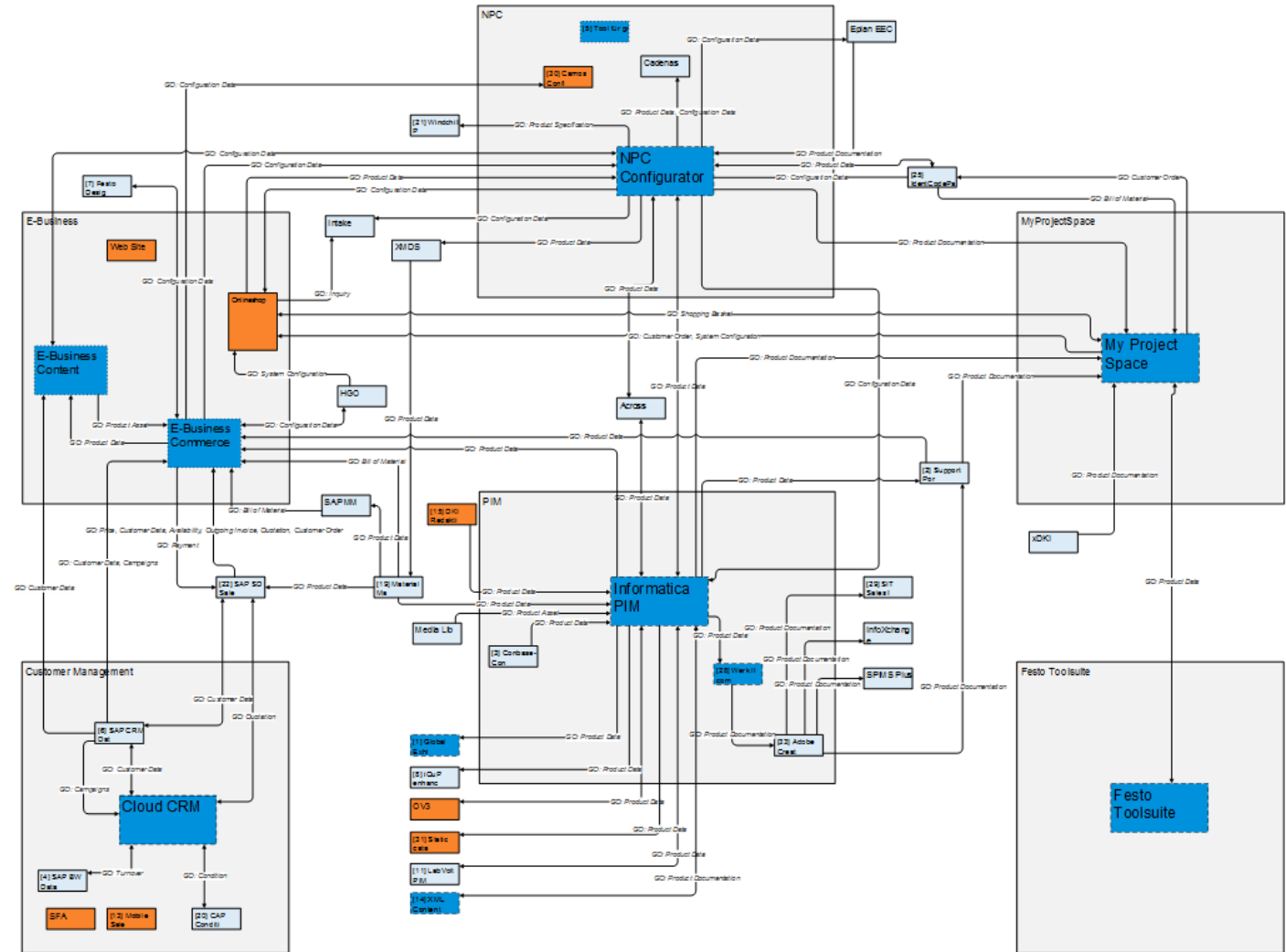
→ **IT Enterprise Architecture Management involvement necessary!!!**
@Festo supported with the tool **iteraplan**

Result: One Model!

Projects with effected IT applications and data flows

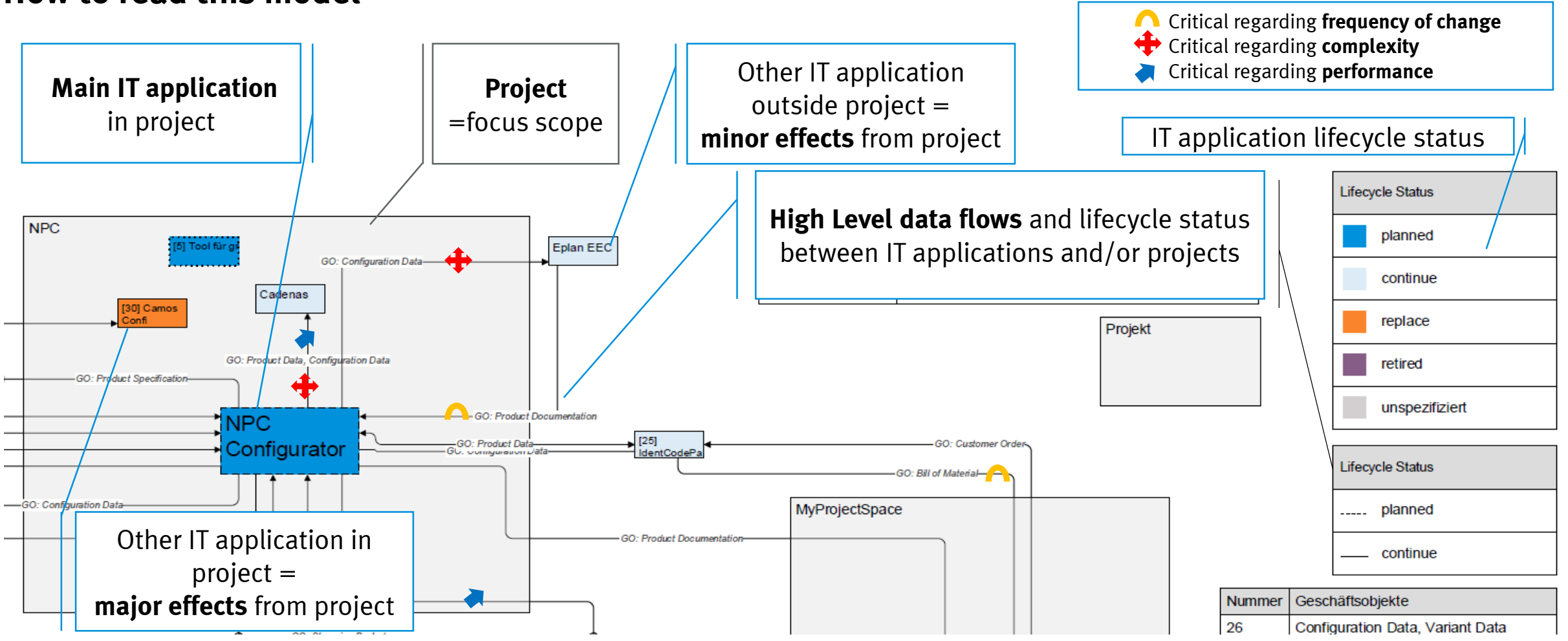
- More complex than expected
- GCDA result confirmed, e.g. main interfaces
- Useful for as-is and to-be discussions

➔ common model (and @Festo binding) for all projects



...but how to read? See next slide ☺

How to read this model



Lessons Learned

after ~1 year practicing GCDA - Goal and Content dependency analysis

General topics

- **GCDA is quit easy to use with less efforts**, but start with GCDA with max. 10 (sub-) projects... of course it works with more but step by step...
- **GCDA ensure communication** within projects on project manager level, monthly 90 min works fine
- Common picture helps, especially for communication to upper management
- **GCDA not solves problems**, just helps to identify and initiate the next steps
- Don't try to solve the problems in the meetings, just address and follow up.
- **Integrate IT Enterprise Architecture** → Win-Win for both!!! (Projects changes the IT application landscape...)

Special findings @Festo

- Some interfaces are only managed on workgroup level, especially for main interfaces this is not sufficient
- Common picture is much more complex than expected (we mean complex, not only complicated...)
- Some topics are not covered in any project yet - “White spots”

→ Will be continued!!

Questions? Just ask!

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Feedback Welcome!



Special thanks to Dr. Oliver Mack and the xm:institute >>>

