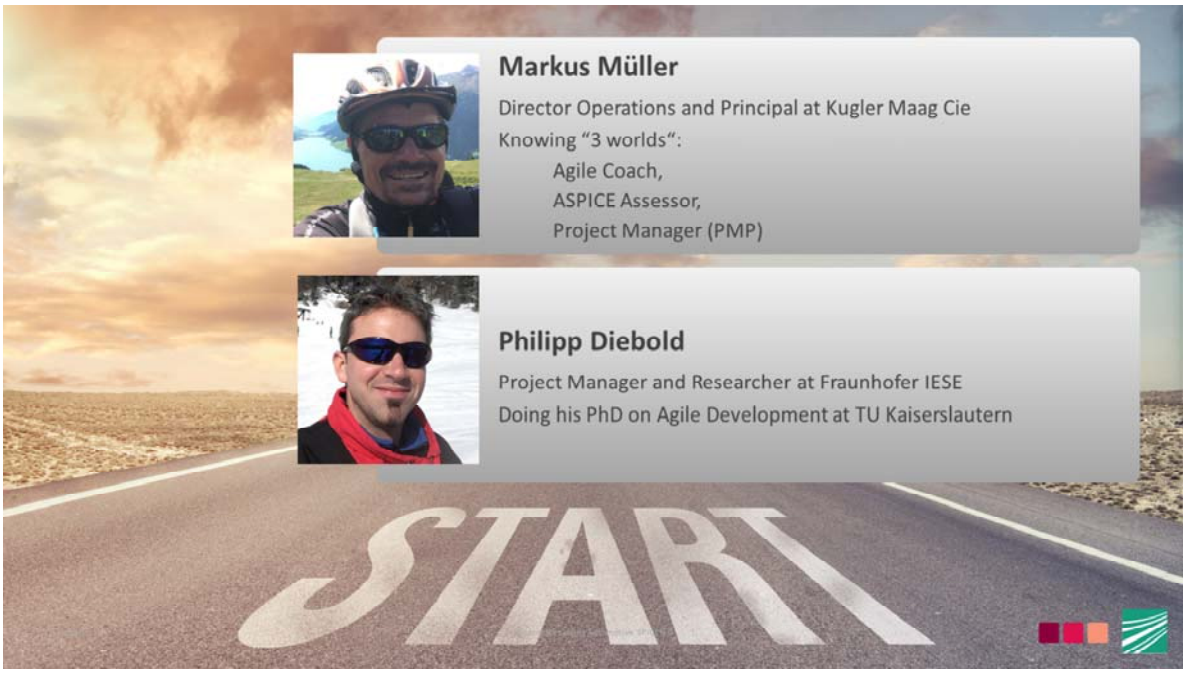
Kennen Sie die Forderung ihres Managers nach einem Gantt-Diagramm? Wird das Budget bei Ihnen auf der Jahresscheibe und sehr frühzeitig geplant? In Ihrer Firma ist immer noch unklar, was der Unterschied zwischen einem Product Owner und einem Projektleiter ist? Dies sind nur einige Beispiele für Probleme die an der Schnittstelle von Agile zu Nicht-Agiler Umgebung gängige Praxis sind.

Eine Agile Transition wird oft Bottom-Up von einzelnen Teams initiiert und kann über ganze Projekte bis hin zur kompletten Organisation reichen. Dies bedeutet allerdings auch, dass auf diesem Weg immer wieder interne und extern Schnittstellen der Agilen Einheiten mit der nicht-agilen Umgebung vorkommen, z.B. ein Agile Team in einem Nicht-Agilen Projekt, ein Agiles Projekt in einer traditionellen Abteilung bzw. Management, oder zu Lieferanten bzw. Kunden. Wir haben basierend auf langjährigen Erfahrungen problematische Schnittstellen näher untersucht.

Diese Schnittstellen reichen vom Planung und Vision, Quality Gates, Reporting, Marketing und Butgetplanung, Rollen und Teamschnitte, Werkzeugunterstützung bis hin zum Vertragswesen. Hören Sie in unserem Vortrag mehr über unsere Erfahrungen bezüglich drängender Probleme und passenden Lösungen an diesen Schnittstellen und diskutieren Sie mit uns. Neben den eigenen Erfahrungen basieren die Erkenntnisse auf einer Interview-Reihe mit Schlüsselpersonen führender Unternehmen aus der Embedded Branche wie zum Beispiel Continental, John Deere oder Iav.

Picture Source: https://c.pxhere.com/photos/eb/8f/puzzle_ball_globe_puzzle_play_tricky_patience_games_toys_puzzle_piece-448970.jpg!d



Who are we ?

Dipl.-Ing. Markus Müller ist Director Operations und Partner bei KUGLER MAAG CIE GmbH und verantwortlich für den operativen Betrieb. Er berät seit vielen Jahren namhafte Unternehmen sehr erfolgreich in Prozessverbesserung und agiler Entwicklung, überwiegend in der Automobilindustrie. Markus Müller ist auch PMI »Project Management Professional« sowie Scrum Master, SAFe und LeSS Consultant. Außerdem ist er intacs ISO/IEC 15504 Principal Assessor sowie Co-Autor mehrerer Bücher und Vortragender auf Konferenzen und Veranstaltungen.

M.Sc. Philipp Diebold ist wissenschaftlicher Mitarbeiter und Projektleiter am Fraunhofer IESE hauptsächlich für Projekte rund um Agilität. In diesem Umfeld arbeitet er seit Jahren in Forschungs- wie auch direkten Industrieprojekten mit namhaften Unternehmen zusammen und ist zertifizierter Scrum Master. Außerdem promoviert er an der Technischen Universität Kaiserslautern mit Ziel- und Kontext gerichteter Prozessverbesserung durch Einsatz Agiler Praktiken.

Audi
BMW Group
DAIMLER
PORSCHE
Ford
GM
BOSCH
Continental
DENSO
Infineon
MAGNETI MARELLI
Valeo
Kugler Maag Cie – Improving together.
Operational excellence.
Business improvement.
Effective process definition and appropriate organizational change.
Continually improving your organization.
KUGLER MAAG CIE
besser mit uns

Fraunhofer IESE – Software & Systems Engineering
Scalable System Engineering: Processes, Architecture, Requirements.
Guaranteed Quality: Safety, Security, UX.
Software-Enabled Innovation: Smart Ecosystems.
Einbettung von Agilität in klassische Organisationen

What we did ?

- Interview Study with 6 different companies (mainly from embedded, focusing on the Automotive domain)
- Interviews were conducted on the basis of a structured interview guideline guiding through defined topics and detailed supporting questions
- All the interview result were extended by our experiences in many different agile projects
- All these results were aggregated
- Worked out the TOP challenged and observations
- If available, solutions were identified and discussed for these challenges and observations

Topic: Reporting

We evaluated the following:

- Wie passt die agile Transparenz in traditionelles Reporting?

- Wie werden aus agilen "Reports" (z.B. BurnCharts, Velocity, etc.) "traditionelle" Statusberichte für das Management erstellt?

- Müssen zusätzliche Berichte mit redundanten Infos erstellt werden?

- Bietet die "agile" Kommunikation einen (zumindest teilweise) Ersatz für Reporting) ?

Subtopic : Agile Transparency, Metrics and data foster Reporting

Selected observations, statements and problems:

O1: Eigene Reporting Veranstaltung vs. Pull-Prinzip durch Management.

Possible solution patterns:

L: Management kann selbst entscheiden ob er an Meetings teilnimmt "Go-See„

Conclusion:

Agile Transparency, Metrics and data foster Reporting.

Subtopic : Managements Reporting

Selected observations, statements and problems:

P1.1: Wie befülle ich ein Management-"Ampel"-Chart, dass es richtig verstanden bzw. gelesen wird?

P1.2: Management fordert trad. Reporting, z.B. Gantt

P1.3: 2 Reports

P3: Zu viel Meetings-Overhead bei Management, wenn er sich in alle Reportings setzt?

P6: Stundenbuchung in externem Tool (Doppelarbeit; gilt aber nicht nur für Agile)

Possible solution patterns:

L: 'Automatisches generieren der Ampel-Charts aus BurnChart und Co (P1.1), z.B. JIRA-PlugIns für Gantt-Chart (P1.2)

Conclusion:

Management erfordert nach wie vor traditionales Reporting. Daten von Agilität helfen diese Ampel fürs Management zu füllen. Keine Probleme, wenn das Management agile denkt

Topic: agile roles , Gaps and overlaps

We evaluated the following:

- Are additional roles necessary or do (classical) roles cease to exist?
- How do Product Owner, Scrum Master and classical roles (e.g., project leaders) fit together?
- Where do overlaps / gaps regarding the tasks exist?
- How do the interfaces to the line management look like?

Picture source: Fotolia

Subtopic : roles descriptions

Selected observations, statements and problems:

„Additional roles are added (Scrum Master and Agile Coach); Project and Quality still exist;“

„What sometimes bars / barred the way: the old HR roles ; This is a matter of mind set as well; Concerning this matter thinking has changed; Sometimes there are reflexes (People are still in there old roles) ; it has become better;“

Possible solution patterns:

Standard roles are repurposed (an adapted PO role was a specific solution witch worked for one organization)

„Now there are role descriptions for agile roles as well; These have been differentiated from existing roles (PL / SPL) and in the course of the differentiation existing roles have been adapted.“

Conclusion:

Often agile roles are introduced on top of existing roles. In this case its important to differentiate new role descriptions for agile roles from existing roles (PL). That not always happens.

Picture Source: Fotolia

Subtopic : SM / PO ⇔ PL / PM (classical role)

Selected observations, statements and problems:

O: The role Function Owner is introduced as an additional role.

O: Sometimes the PO is the line manager; in case of development across multiple locations „shadow PO´s/ proxy PO´s“; exist.

O: PL changed into Delivery Lead in one case;

O: The problem is usually that the PL tasks are divided over two roles (PO, SM). The current PL have to cope with that.

O: No fixed coupling between team leader and PO --> This does not cause problems; PO needs technical product knowledge;

O: „In Agile projects there isn’t a project leader any longer."

O:“ There still is a project leader for the overall project; Additionally there is a Function Delivery Owner and a Component Owner; The PO is SW project leader at the same time.“

Possible solution patterns:

L: PO is PL towards the customer at the same time; At present the Chief Product Owner role is introduced by the customer (this was mentioned in two cases) ;

Conclusion:

Some organizations still have the project leader role (towards the customer). In this cases this person is often project PO towards the team as well.

Picture Source: Fotolia

Topic: Marketing, Sales & Finance

We evaluated the following:

- Wie passt Agile (fixed time slots, aber nicht fixed scope) in traditionell festgelegten Budgets ?
- Wie passt Agile zu eher traditionellem Marketing und Sales?
- Welche Probleme treten an diesen Schnittstellen auf?

Picture Source: https://static.pexels.com/photos/449559/pexels-photo-449559.jpeg

Subtopic : External Stakeholders

Selected observations, statements and problems:

- [P1] Einbeziehen von externen Stakeholdern (z.B. Marketing) in Scrum (Demos) funktioniert selten
- [P4] Marketing versteht für/wider von Agile nicht
- [P4.1] Motivationsproblem, z.B. zu den häufigen Meetings wie Demos zu kommen (gilt auch für nicht-agile Sub-teams)

Possible solution patterns:

- None specific → depents on agile understanding and culture

Conclusion:

- Abwägen der Für- und Wieder über bzw. inwieweit externe Stekholder zu involvieren sind; Notwendige Vorraussetzung ist allerdings ein gemeinsames (einheitliches) Verständnis

Picture Source: https://pxhere.com/de/photo/752565

Subtopic : How to do Budgeting?

Selected observations, statements and problems:

- [P5] Budgetplanung meist auf Jahresscheiben (und dann fix)

Conclusion:

- Budgetplanung meist über Headcount und auf Jahresscheibe fix zugewiesen. Agile Budgeting ist nicht in den Firmen angekommen

Picture Source: https://pixnio.com/free-images/2017/04/10/2017-04-10-21-12-59-e1491978494740.jpg

Topic: Organization : Project house versus matrix ?

We evaluated the following:

- Are the project members taken out of the existing structure (matrix organization) and transferred to a new “agile” organization (project house)?
- If yes, how are the interfaces between the new “agile” (sub-)organization and the old organization shaped?

Picture Source: Fotolia & https://pixabay.com/de/analytik-informationen-innovation-3088958/hh

Subtopic :

Selected observations, statements and problems:

O: Project house and matrix are used both in practis; often in waves, sometimes focus on project house, then more on matrix; There is no good or bad regarding that.

O: “This wasn’t a problem at our house.”

O: “We have rather a project house organization: within the department, only agile teams existed;”

O: “A new organization has been set up (here called project house) . We gained positive experiences regarding this;”

O: Some organisations tried to change towards an agile development based on existing structures. At any case the project house approach is easier to bring about the culture change towards Agile. Dut exceedingly few are willing to do so. (Arguments: the colleagues can not be handed over full time; They still having former tasks; they are experts in and no-one else can perform these)

Possible solution patterns:

L: In established organizations I consider project house more goal-oriented: When they come back, they tell how well it has been (especially in classical organizations);

Conclusion:

Most successful transformations have pulled the teams out of the old structures and put them into a new one.

Topic: Vision and Planning

We evaluated the following:

- Wie passt kurzfristige agile Planung zu langfristigen Projekt- & Unternehmenszielen?
- Wie passt kurzfristige agile Planung zu mittelfristiger Releaseplanung?
- Wie wird mit variierendem Scope im Projektverlauf umgegangen?

Picture Source:
https://c.pxhere.com/photos/87/ca/sunset_bellingham_bay_waterfront_little_squalicum_beach-778806.jpg!d

Subtopic :

Selected observations, statements and problems:

- [P1] Abstimmung zwischen lang- und kurzzeit Planung
- [P1.1] Einspreissen neues Features alle 2 Monate (über PI) für machen zu lang
- [P1.2] Agilität auf Projekt bzw. Produktebene nicht in kompletter Organisation, sodass Roadmapping häufig noch traditionell passiert

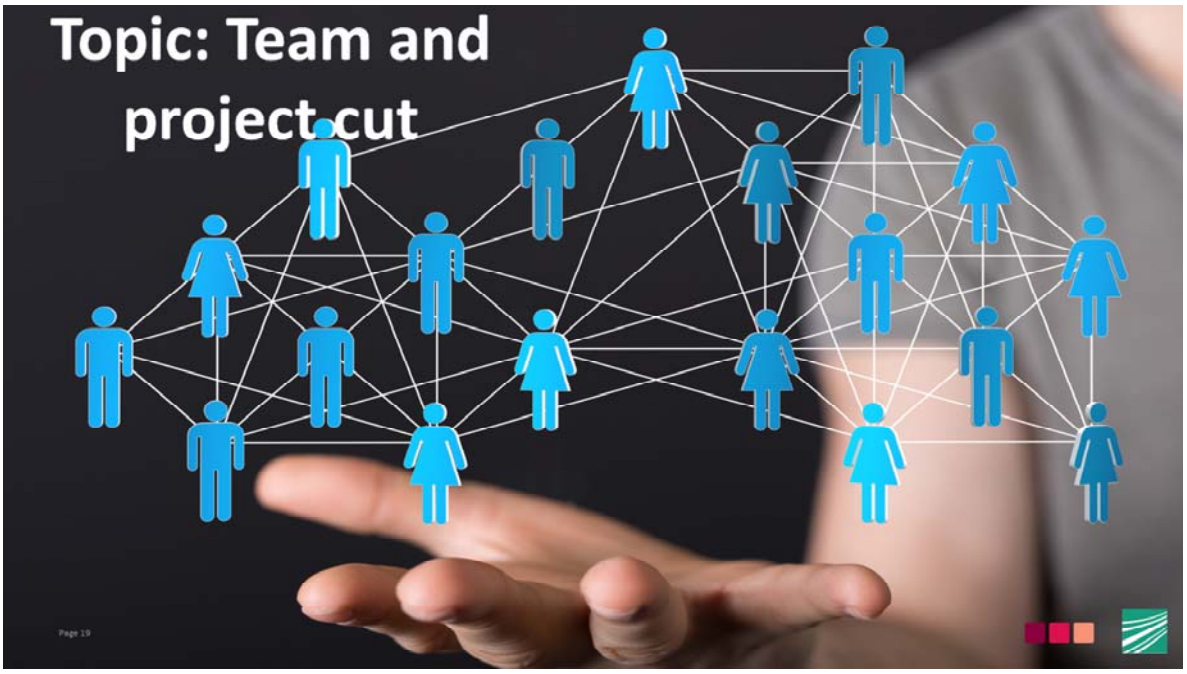
Possible solution patterns:

- BP: Vision muss jedem bekannt sein
- BP: Klares Rollenverständniss von PO, Business Owner etc. hilft diese Probleme anzugehen
- BP: Adaptive Planung erst nach der Vergabe (vorher kaum möglich)
- BP: Herunterbrechen über verschiedene Ebenen funktioniert relativ gut

Conclusion:

- Aligment zwischen langfristiger Vision und kurzfirstiger Planung ist im Agilen gut möglich. Es bedarf eines guten PO zum vermitteln bzw. herunterbrechen, dass das Team die Feinplanung machen kann.

Picture Source: https://upload.wikimedia.org/wikipedia/commons/7/73/Transfagarasan_September_2016.jpg



Topic: Team and project cut

We evaluated the following:

- Feature based vs. classic organization
- T-shaped know how (Everybody can do everything) vs. experts for specific topics
- Agile & non-agile teams in one project
- How are dependencies between (supporting) organizational units (e.g., Quality) handled?

Picture source: fotolia

Subtopic : Feature orientation

Selected observations, statements and problems:

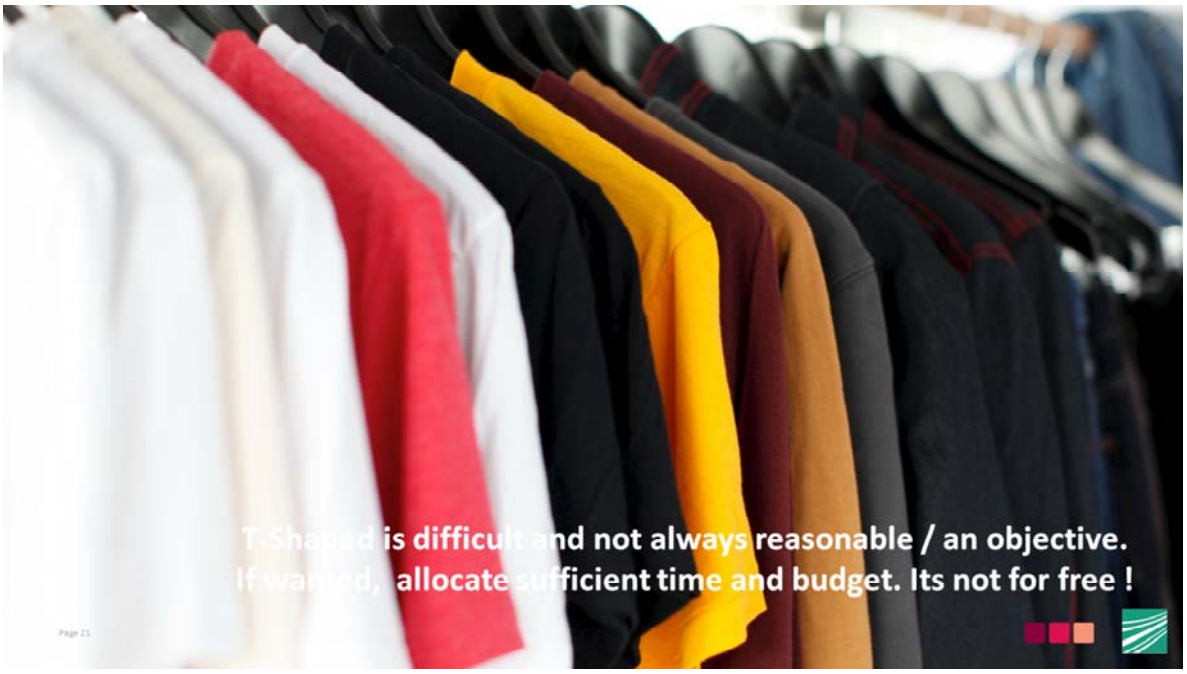
O1: Feature oriented teams / cross functional teams are rather the exception; In the embedded field the teams are set up rather architecture specific and only contingently feature specific.

Possible solution patterns:

L: Feature orientation: In the long run there should be a be combination of both (architecture and feature orientation) in the embedded development; (some areas will rather stay traditional: stable SW (e.g., Legacy); HW near SW; (O1)

Conclusion:

Feature oriented teams are rather the exception in embedded development. A combination of both (architecture and feature orientation) can work.



Subtopic : Apply T-Shaped

Selected observations, statements and problems:

P: T-Shaped implemented properly just in one case. Especially in embedded/ automotive T- Shaped is a problem and not always appropriate: There are special topics, requiring special knowledge; It's difficult to get good generalists.

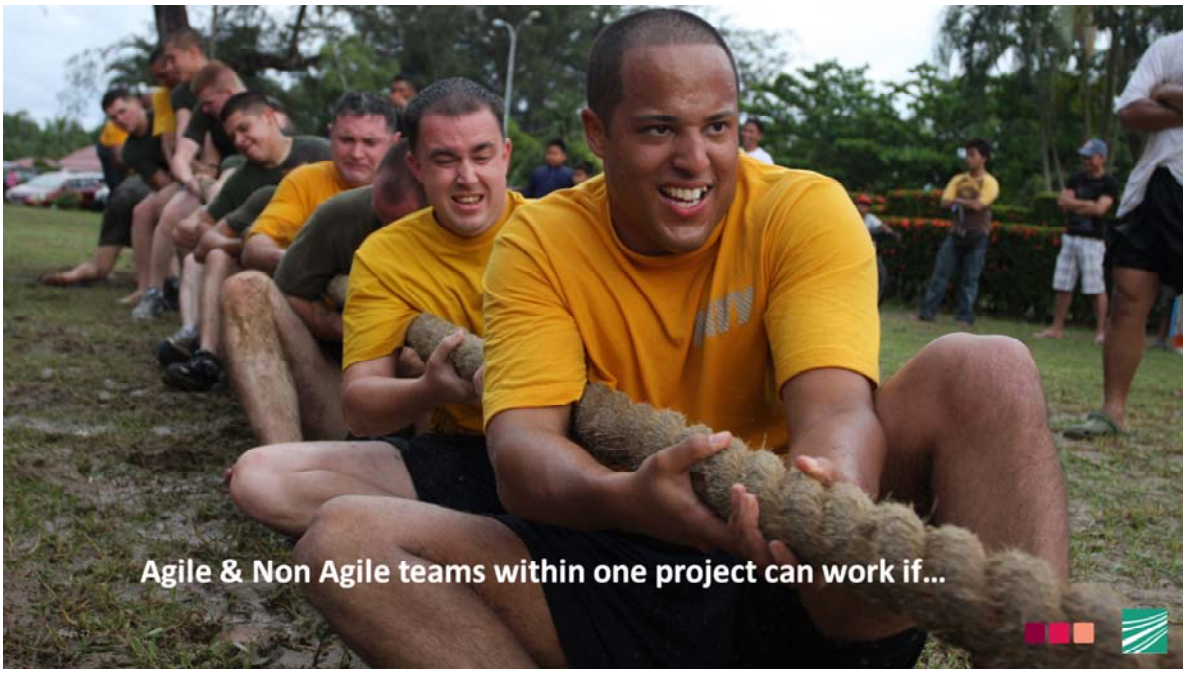
Possible solution patterns:

L: If T-Shaped is a goal, then you must rotate more often to facilitate being a generalist and to establish knowledge transfer measures. In practice that's difficult, because of a lack of time and budget.

Conclusion:

…T-shaped is difficult and cannot always be implemented adequately. If T-shaped teams is a target, this requires enough time and budget and should be planned.

https://c.pxhere.com/photos/cb/f4/clothing_shirt_retail_tee_shirt_tee-1395800.jpg!d



Subtopic : Agile and Non Agile within one project

Selected observations, statements and problems:

Agile and non-agile in one project isn't problem, whilst you sick with the same principles. Dependencies to "external" non agile organizational units simply remain.

Another approach is to simply incorporate roles from the traditional organization (with defined responsibilities) into the agile team, e.g., RE, Tester,...

P: Problems can occur, if there are strong dependencies between the agile and non-agile teams;

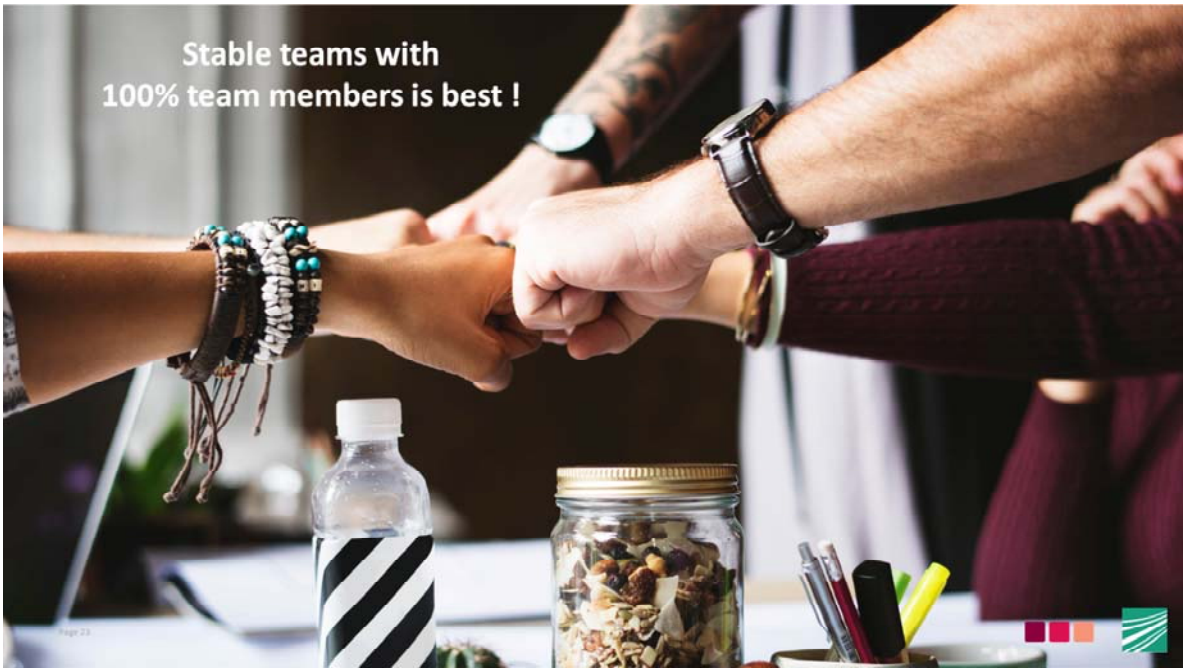
Possible solution patterns:

L: Agree on agile organization, processes and especially DoR and DoD (with focus on quality) early;

Conclusion:

…Agile and non-agile teams in one project can work well if not too many dependencies exist, the same principles are used and the agile organization, processes and especially DoR and DoD (with focus on quality) has been agreed on early.

Picture Source: https://upload.wikimedia.org/wikipedia/commons/f/ff/US_Navy_100509-N-7699S-002_Sailors_and_Marines_play_tug-o-war_during_liberty_against_members_of_the_Royal_Brunei_Navy.jpg



Subtopic : 100 % team members

Selected observations, statements and problems:

P:It’s rarely the case that one team member works just in on project hundred percent → This complicates agile working.

Possible solution patterns:

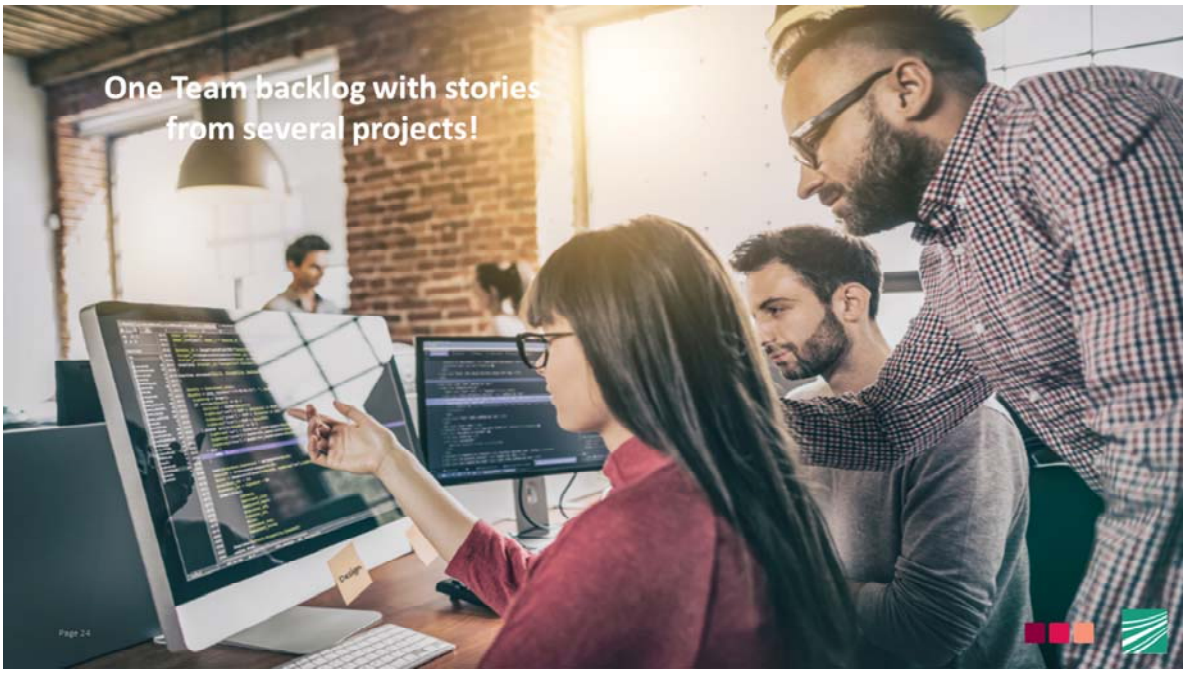
L: fixed teams; keep teams stable; teams should serve various projects / customers (instead of one team for one project)

L: Projects are administered in the tools as different projects (backlogs). The team is stable.

Conclusion:

Stable teams with 100% team members is best ! One Team backlog with stories from several projects!

Fotoquelle:



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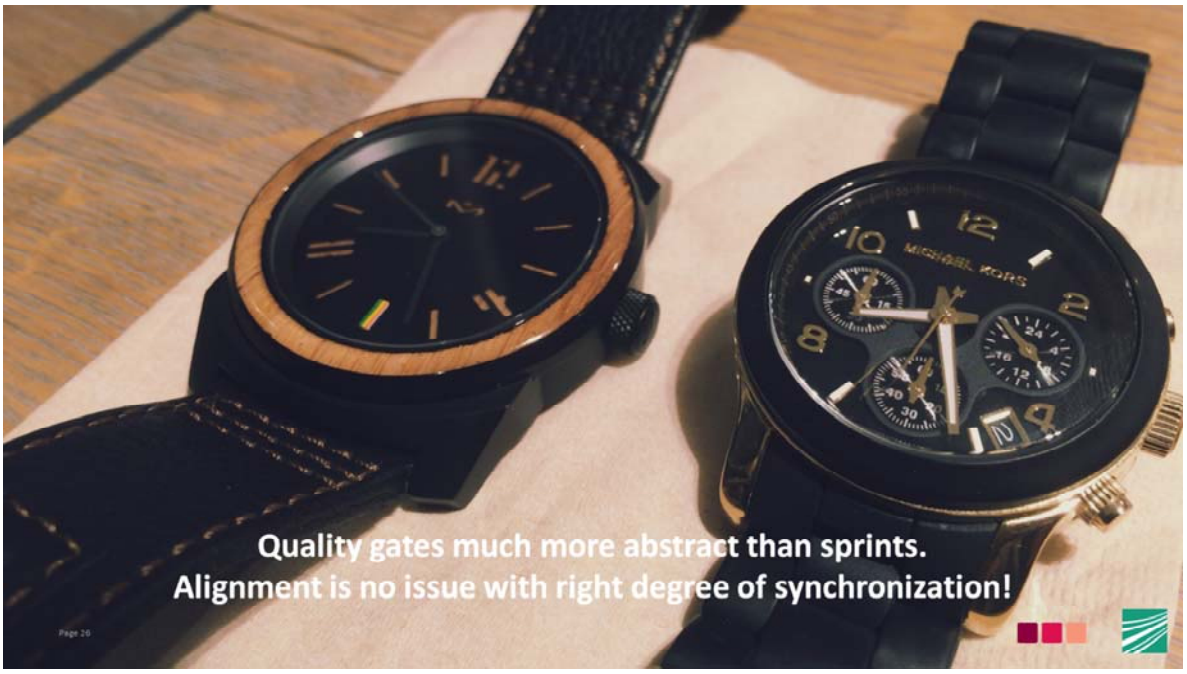
Picture source: fotolia

Topic: Superior Quality-gate based (System Engineering) Process

We evaluated the following:

- Wie passen Quality-Gates / Meilensteine zur agilen Vorgehensweisen (z.B. Planungen in Sprints)?
- Wie baue ich meine Sprints in bzw. zwischen die Gates/Meilensteine ein?
- Wie lassen sich unterschiedlichen Geschwindigkeiten zwischen Teams/Teilprojekten abstimmen?

Picture Source: Own Picture



Subtopic:

Selected observations, statements and problems:

- [P1] Synchronisation verschiedener Prozesse (inkl. Andocken an Quality-Gates/Meilensteine)
- [P1.1] Zur Anknüpfung könnten ggf. unterschiedliche Sprintlängen notwendig sein --> Widerspruch zu Agile?
- [P2] Gewissen Rahmebbedingungen (z.B. Preis und grobes Produkt) zu einem gewissen Zeitpunkt wird es immer geben, z.B. Konferenzen zur präsentation

Possible solution patterns:

- BP: Quality nicht an Gates gebunden sein sondern eher integriert/knotinuierlich
- BP: Agile hat (wenn richtig angewendet) sogar häufiger und mehr Q-Gates, z.B. über DoR/DoD
- BP: Unterschiedliche Geschwindigkeiten sind nicht das Problem --> Abstimmungen müssen passen

Conclusion:

- Q-Gates meist deutlich über Sprints (eher alle 6 Monate); Mit der passenden Abstimmung ist die Synchronisation kein großes Problem, Agil fördert die Synchronisation, z.B. durch DoD oder DoR

Picture Source: https://c.pxhere.com/photos/31/6b/clock_time_watches-766477.jpg!d

Topic: Infrastructure

We evaluated the following:

- Physical boards vs. classic project planning tools (e.g., MS-Project)
- Where are redundancies between agile and classic tool world?
- Are there breaches between agile and classic tool world?

Fotoquelle: ??? (Philipp)

Subtopic : Interface Agile ⇔ Non agile Tools

Selected observations, statements and problems:

P: 'There are breaches, e.g., regarding MS Project, even if there are plug-ins; the interface from JIRA to the overarching PM tools (MS Project, XLS schedules) poses a problem. The trend is towards JIRA plug-ins (Portfolio, Big Picture)"

P: Sync between tools can be a source of error; especially if the data is edited on both sides.

P: In the traditional world transparency is missing (MS project is not updated daily);

O: Cross-company collaboration on one infrastructure is always difficult.

O: "Interface to SAP was not such a problem, different level of abstraction is the key"

O: The interface regarding requirements poses a problem, e.g., requirements in Doors or Rhapsody in contrast to Stories and Confluence and JIRA.

P: An additional problem is, that there is no REQ Baselining in JIRA / Confluence.

Possible solution patterns:

L: Interfaces work, if the cut is done at the right level.

- e.g., planning & tracking : Features / EPIC´s and milestones superordinate, user stories & tasks in JIRA
- e.g., requirements in Doors or Rhapsody, in contrast to Stories und Confluence und JIRA;

Conclusion:

It comes down to the right cut (“Schnitt”). (see solution pattern) The trend is towards JIRA plug-ins (Portfolio, Big Picture); Sync between tools can be a source of error; especially if the data is edited on both sides.

Example of Interfaces Agile ⇔ Non Agile and the write “cut”
Backlog Structure and Breakdown, Release Planning

- Requirements are specified and clustered in DOORS (Platform Spec)
- Epics (in JIRA) are linked to Sub Features (in DOORS & Feature Release plan)

Source: Agility and Automotive SPICE, Agile in Automotive 2016
Andreas Hornberger, Volkswagen AG, Markus Müller Kugler Maag Cie

Subtopic : Agile Infrastructure

Selected observations, statements and problems:

O: Test automation and CI/Build is required pre condition for agility !

O: Physical Boards are rarely used;

O: „It was a tough year ! => but now the agile tool world works ☺“Es war ein hartes Jahr " ; the change towards an agile tool infrastructure needed a lot of effort; (Alligmment, Identify tools, automate interfaces, discussions with IT, mind set change, …)

Possible solution patterns:

L: Our agile tool world is highly integrated and automated; Wa are using; JIRA for electronic boards, planning and tracking, Jenkins, Git & Gerrit;

L: Objective is to provide a one click environment to install the agile devleopment environment on a machine;

Conclusio:

A mature and integrated Agile Infrastructure incl. CI is key !

Example of Software Development Tool Chain

Easy repository versioning

Easy support of Branching

Automatic merges (Open Source Mentality)

→ 90% less integration effort

Pre-commit code review

Automatic validation of every commit in combination with Jenkins

→ Higher quality via early feedback

Full automatic and continuously repeatable builds (only in combination with GIT)

Automatic regression and unit testing in simulation and hardware

→ Better predictability via continuous testing

Task tracker

Web based

Fast

→ Continuous planning, up-to-date project status information

Source: Kugler Maag Cie Agile in Automotive Pocket Guide

Topic: Contracting

We evaluated the following:

- Wie gestaltet sich der Umgang des klassischen "Einkaufs" mit agilen Projekten?
- Wie wird mit dem Spannungsfeld umgegangen, dass Verträge klassisch fixed scope sind, die Projekte aber mit flexiblen Backlog (Fixed time and cost, but not Scope) arbeiten?

Picture Source: https://pixnio.com/free-images/2017/09/09/2017-09-09-07-03-33.jpg

Subtopic:

Selected observations, statements and problems:

P1: Verträge haben meist einen fixen Scope

P2: "Es wird schwierig sobald Juristen im Spiel sind" --> Einkauf meist das Problem

Possible solution patterns:

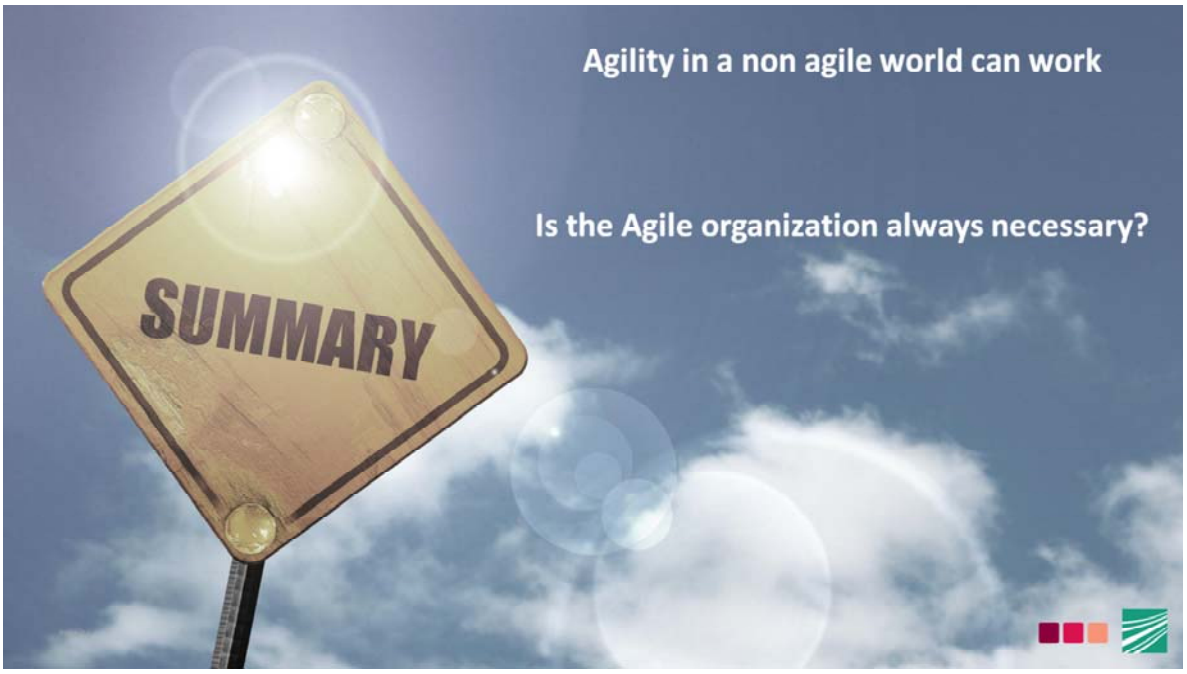
BP: Für klare Requirememts ein Festpreis, für unklare Requirements agiler Festpreis (Z.B. Fixed Budget, scope wird verhandelt)

BP: T&M mit Zulieferen funktioniert gut bei gemeinsamer Absprache und gleichem Verständnis von Agilität

Conclusio:

Agile funktioniert am besten mit Dienstleistungsverträgen. Die meisten Verträge sind allerdings fixen Preis und Scope. Einkauf hat kein Verständnis für Agile

https://c1.staticflickr.com/8/7012/6556479569_7cc9797906_b.jpg



Conclusion

Prerequisites for a successful change / differentiation is that the “management thinks Agile.”

- e.g., L “At our house there are no problems with the line management; Our management thinks Agile; “
- e.g., „The higher management preserves the PI scope, since an agile mind set is anchored there well.”

Agility in a non agile world can work if …

… the management thinks agile

… open culture in the organization

… a mature integrated agile Infrastructure exists

… willingness to change the organization

Der Zielzustand der “Agilen Organisation” ist nicht immer notwendig → Hybrid macht häufig auch Sinn (unter den ggb. Rahmenbedingungen, Embedded, Serienentwicklung, etc. die einzige die Funktioniert) → einzig machbarer Weg?

Agil und nicht agil kann funktionieren, wenn Vorraussetzungen dafür gegeben sind

Die Agile Organisation ist nicht immer das Nirwana. Unter gegebenen Rahmen bedingungen (REmbedde Serienentwicklung, Kosten effizienz) vielleicht der einzig Praktikable Weg

Picture Source: Fotolia

Picture Source: Fotolia