



New Trends in Project Management

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Transition from Waterfall to Agile – A Success Story

Beata Szyda,
PMP, M. Sc. in Computer Science

Walter Epple,
Certified Projects Director IPMA Level A,
M. Sc. in Engineering ETH

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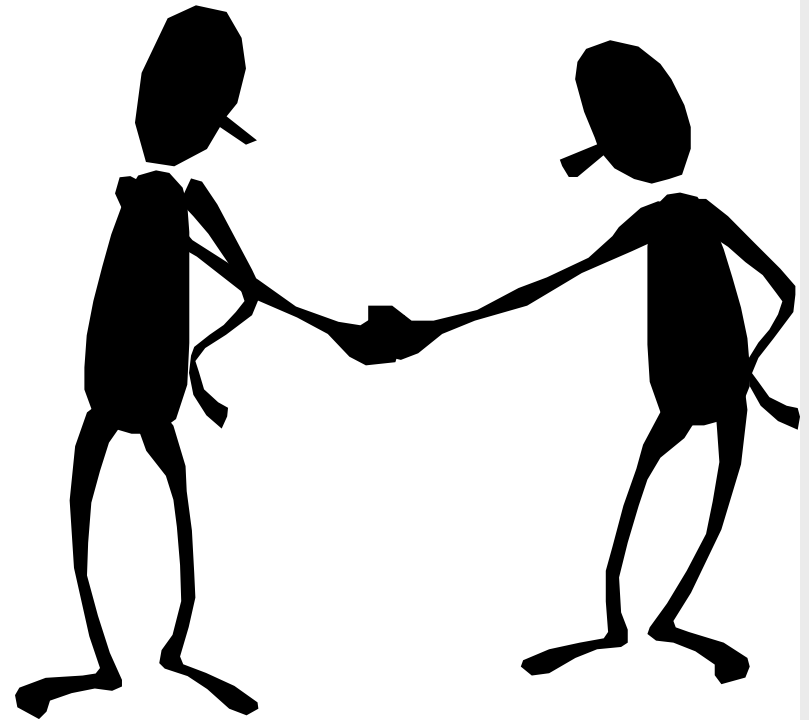
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PART I. International consulting company places an order for a new ERP system

The Order

- 2007 a Swiss consulting and software sales company ordered the development of a complete new version of their old fashioned ERP system.
- The investment budget was about 6 Mio Euro.
- The old software was used by more than 16'000 users worldwide and should be replaced by the modern solution, based on newest technology, as easy as possible.



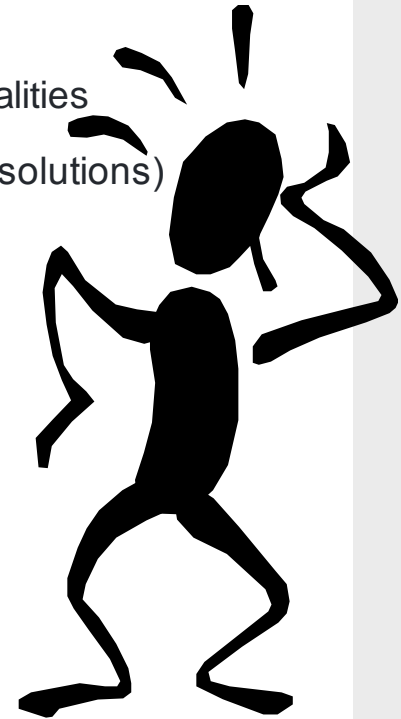
PART I. International consulting company places an order for a new ERP system

Problems – View of customer

- At the time the development started the specifications of the whole system were available in conceptual form only.
- The customer struggled in providing the developers with exact specifications.
- The main problem was that nobody was really able to imagine how the product would look like and behave with newest technology available in for example 3 years.
 - ▶ A big amount of time was spent only for creating documents
 - ▶ Long period without any feedback from really produced parts of software
 - ▶ Lessons learned available very late → time consuming loops → a lot of change orders
 - ▶ Time, cost, scope and quality control extremely difficult → High risks and project in danger

Development team

- Only concepts available
- Not clear scope
- Endless implementation phase
- Unstable application
- Creating not used functionalities
- Low quality of code („dirty” solutions)
- Low productivity
- Low morale of employees



PART II. Change of methodology from Waterfall to Agile, in the middle of project

Introduction of Agile methodology

In 2009 the customer stopped the project. From one day to the other customer introduced agile development. First experiences with RUP (Rational Unified Process) were not satisfying.

Why Agile – why SCRUM ?

Visions and targets of the customer:

- ▶ Working parts of software as fast as possible
- ▶ Continuous adaption to changing circumstances
- ▶ Short control cycles
- ▶ Reliable project planning and increase of quality



The targets mentioned above are all covered in “[the Agile Manifest](#)” and in “[the Agile Principles](#)”

PART II. Principles of Agile methodology

The Agile Manifest

Individuals and interactions

In agile development, self-organization and motivation are important, as are interactions like co-location and pair programming.

Working software

Working software will be more useful and welcome than just presenting documents to clients in meetings.

Customer collaboration

Requirements cannot be fully collected at the beginning of the software development cycle, therefore continuous customer or stakeholder involvement is very important.

Responding to change

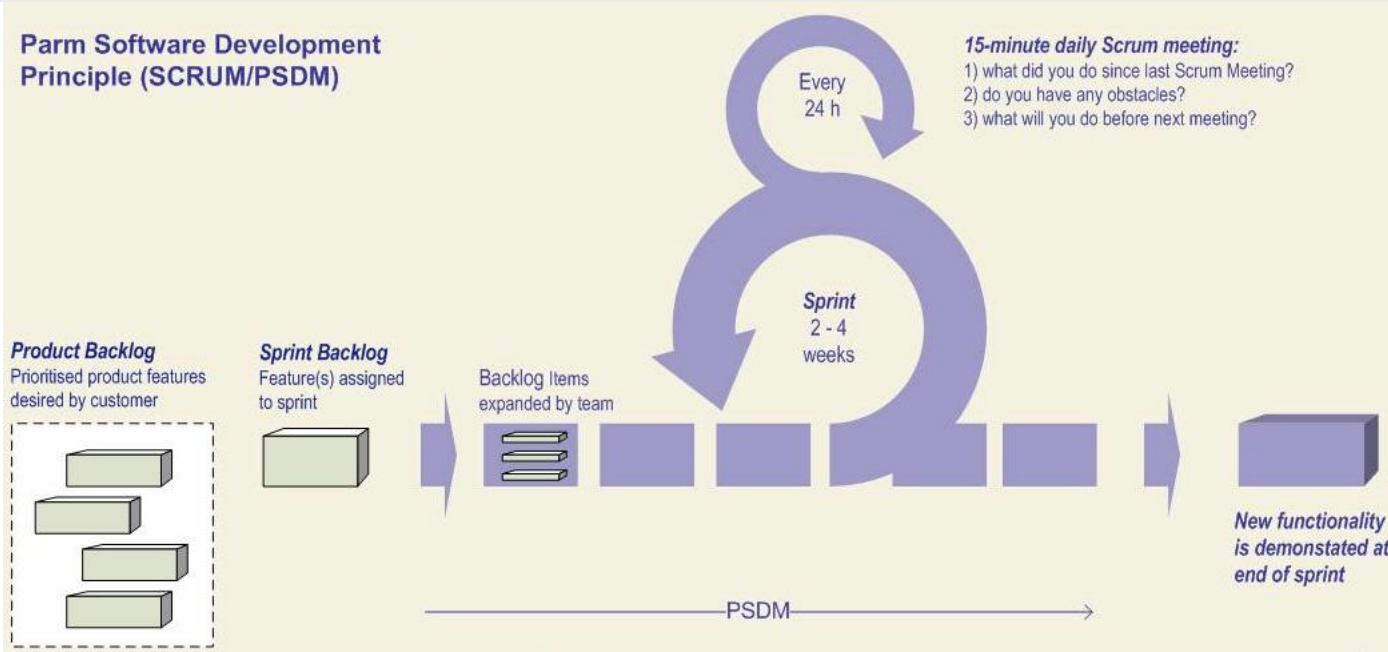
Agile development is focused on quick responses to change and continuous development.

PART II. Principles of Agile methodology

The Agile Principles - The agile manifest is based on twelve principles:

- 1. Customer satisfaction by rapid delivery of useful software**
- 2. Welcome changing requirements, even late in development**
- 3. Working software is delivered frequently (weeks rather than months)**
- 4. Working software is the principal measure of progress**
- 5. Sustainable development, able to maintain a constant pace*
- 6. Close, daily cooperation between business people and developers*
- 7. Face-to-face conversation is the best form of communication (co-location)*
- 8. Projects are built around motivated individuals, who should be trusted*
- 9. Continuous attention to technical excellence and good design**
- 10. Simplicity - the art of maximizing the amount of work not done - is essential*
- 11. Self-organizing teams*
- 12. Regular adaptation to changing circumstances**

PART II. Implementation of Agile, Process, Organization, Roles



Main advantages of SCRUM Process

- ▶ Whole project (product) is broken down into backlog items, which are assigned to development releases and by this to the timeline of the project
- ▶ Detail specifications concentrated on backlog items, which will be produced in upcoming sprint(s)
- ▶ Provable and verifiable parts of product every two weeks
- ▶ Results and Lessons learned of finished sprints can be considered immediately in planning of future releases and in detail specification of next parts of product to be developed

PART II. Change of methodology from Waterfall to Agile, in the middle of project

Benefits for the development team

- ▶ Quick effects
- ▶ Only required functionalities implemented
- ▶ Clearer scope
- ▶ Higher quality
- ▶ Responsibility
- ▶ Administration cut down to minimum.
- ▶ Cross-functional work
- ▶ Demos



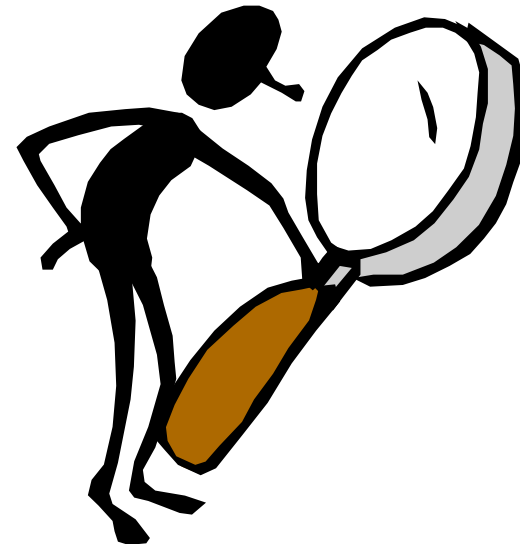
PART II. Challenges, Change of mind-sets, Problems

Problems inside of the development team

- Team work – employees accustomed to working alone
- Communication – team members didn't interact
- Team initiative – waiting for a leader to tell them what to do
- Incremental approach
 - ▶ Developers want to finish whole functionality before passing it to tests
 - ▶ Items available for testing at the end of the sprint
 - ▶ No time to test – value not delivered at the end of sprint

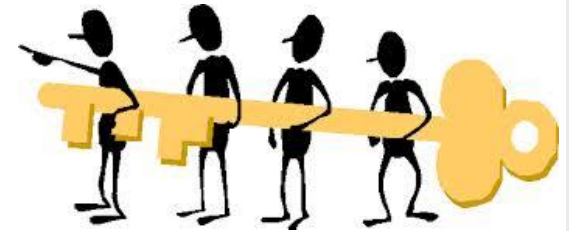
Cooperation with customer

- Complex specification delivered „up-front”
- „All or nothing” attitude
- PO not available during sprints
- Initial strong need to control the team
- Insufficient velocity for the customer



PART II. Challenges, Change of mind-sets, Problems

During the first months all had to change their mind-set. There was a huge uncertainty and the project was in real danger.



Major challenges for the customer

- Break down of whole product into meaningful backlog items and identify the dependencies
- Concentration on upcoming backlog items regarding details – but never lose the conceptual overview of the final product
- Establish a feasible release plan
 - ▶ Optimistic performance expectations of customer vs. team estimations with safety factor
 - ▶ Targets of releases and sprints have to be challenging – BUT REALIZABLE
- Definition of acceptance criteria for each backlog item (work package)
- Clear definition of roles and explicit assignment of responsibilities and duties
- Definition of a clear and effective communication plan
- Definition of clear processes for exception handling and change management
- Customer should not disturb the development team during a sprint

PART III. Lessons learned



- Never underestimate the time needed for the change of methodology
 - ▶ Agile methodology cannot be switched on – it has to be built up
 - ▶ Invest enough time to clearly define the processes and rules, build up the teams and especially find the best persons for the different roles
 - ▶ People need time to adjust to new situation



- The implementation of Agile methodology is NEVER finished
 - ▶ Be ready for changes and continuously search for possible improvements
 - ▶ Don't stick to the defined rules no matter what
 - ▶ As soon as methods and processes are defined, the need for improvements has started
 - ▶ Prepare time for technological change (continuous integration, automated tests etc)



- All stakeholders have to be involved
 - ▶ Agile methodologies must be lived by all involved persons day by day
 - ▶ Everybody needs to know and understand his role – and the roles of the others – in the team
 - ▶ Customer/management has to give the team trust, competence, authority and responsibility
 - ▶ Communication and commitment is the key



- Education in project management skills
 - ▶ All involved people (customer and development side) are educated and certified in project management (PMP, PRINCE2, IPMA, SCRUM etc.)
 - ▶ The existing knowledge about different project management methodologies is an additional factor for a successful implementation

PART III. Transformation to general project management

PMBOK vs. SCRUM

PMBOK ≠ WATERFALL

- Not a methodology
- A standard, a set of guidelines in project management
- Consists of 5 process groups (not 5 phases!): Initiating, Planning, Executing, Monitoring and Controlling, Closing
- May contain various project phases

PMBOK project life cycles

- Predictive (also known as fully plan-driven)
- Iterative and Incremental
- Adaptive (also known as change-driven or agile)

PART III. Transformation to general project management

PRINCE2 vs. SCRUM

The generic form and the basic elements of PRINCE2 support agile methodologies like SCRUM in ideal way. Core elements of both methodologies can be compared directly.

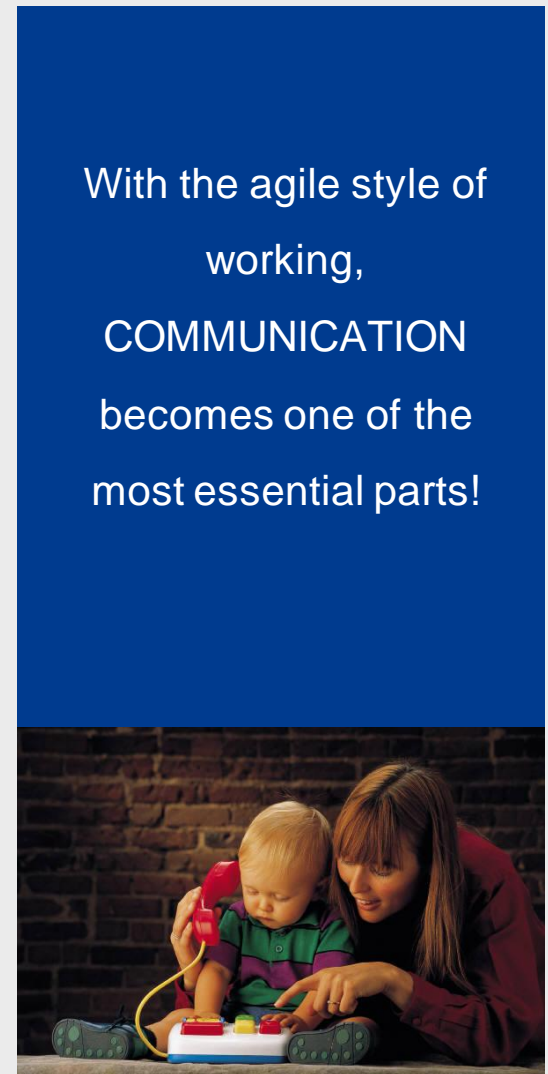
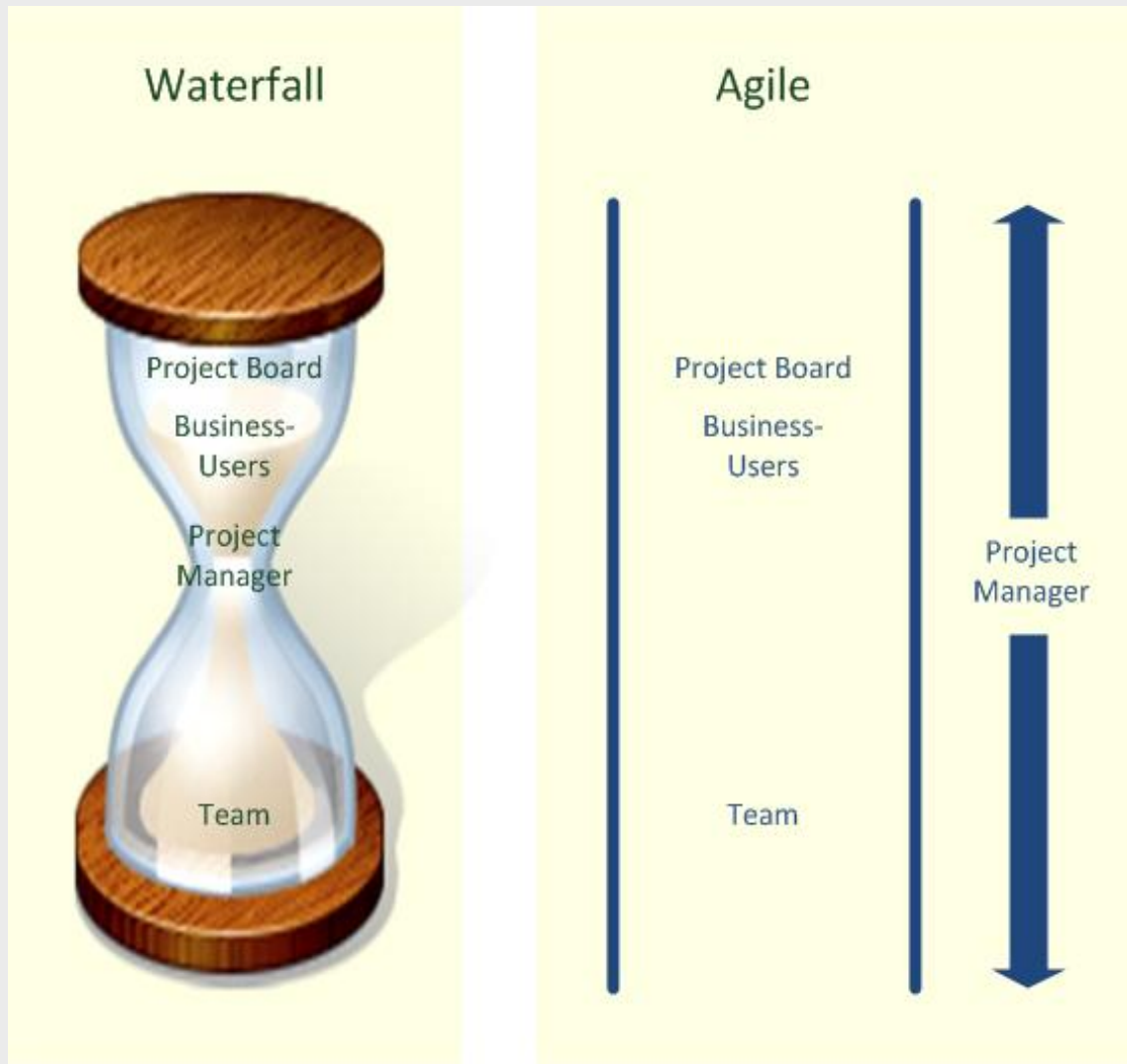
PRINCE2

- Break down of project into “Stages”, “Work packages”, “Products”, “Subproducts”
- Processes, e.g. “Controlling a stage” and “Managing product delivery”
- Definition of acceptance criteria and tolerances for products
- Clear definition of roles and explicit assignment of responsibilities and duties
- Definition of a clear and effective communication plan
- Definition of clear processes for exception handling and change management

SCRUM

- Break down of product into “Releases”, “Products”, “Sprints”, “Backlog items”
- Processes, e.g. “Planning/controlling/accepting a release” and “Sprint planning and acceptance”
- Definition of acceptance criteria for each backlog item (work package)
- Clear definition of roles and explicit assignment of responsibilities and duties
- Definition of a clear and effective communication plan
- Definition of clear processes for exception handling and change management

Agile Project Management & Communication



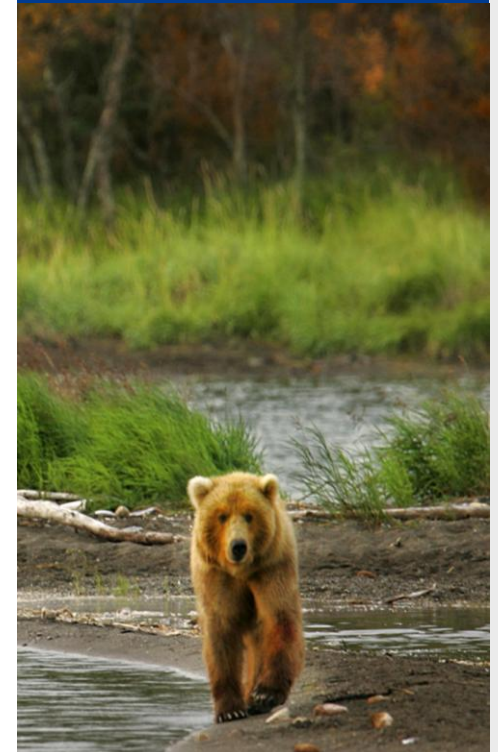
PART III. Guidelines to set-up a successful project

To be “Agile” is one of the key factors for a successful project.

During the setup of a project it is important to consider and ensure the following key values of agile management:

- Direct *communication* between all stakeholders
- As *simple* (less complexity) as possible on all levels
- *Feedback* by early and frequent delivery of product parts
- *Courage* to discuss and decide timely
- *Respect and discipline* between all stakeholders
- Ready for regular adaptation to *changing circumstances*

How to set-up
a successful project





More information

parm ltd.
successful projects
Scheffelstrasse 3
CH-9000 St.Gallen
Phone: +41 71 243 10 00

info@parm.com
www.parm.com

parm Polska sp. z o.o.
ul. Unruga 30B
52-212 Wrocław
Phone: +48 71 791 8010

info@parm.pl
www.parm.pl