INVOLUTION
Evolution towards an agile development process
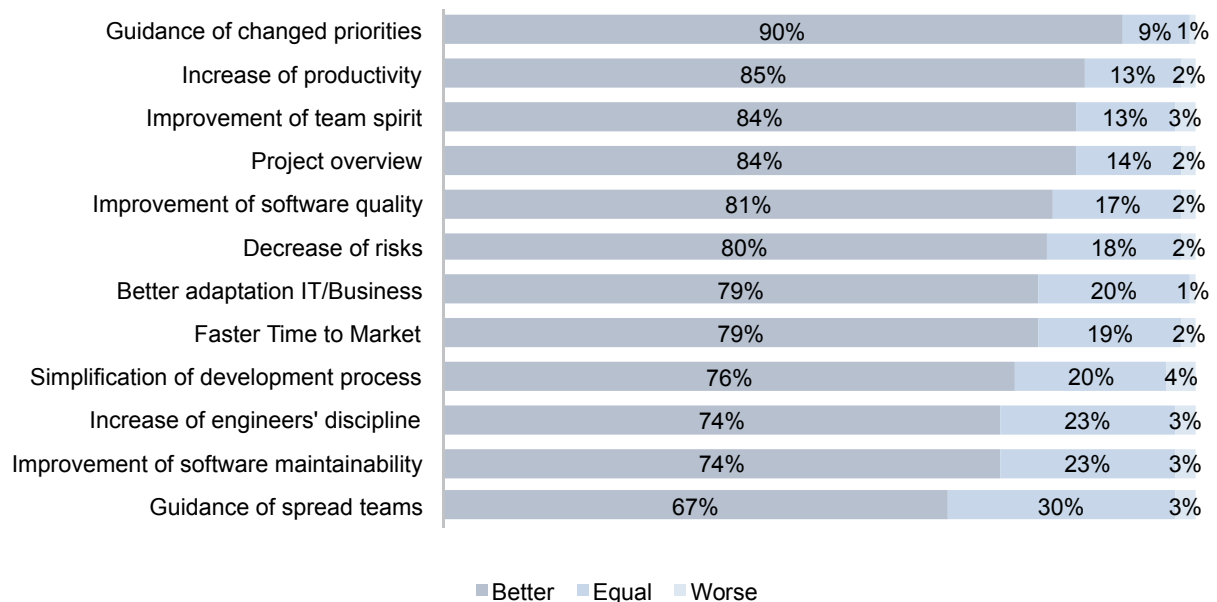
Background

Software Systems in the automotive sector are getting more and more complex, while the system life cycle is getting noticeably shorter. OEMs and suppliers are forced to rapidly launch their products due to the increasing pressure of time on the automotive market. In consequence of this fact, there is an emerging trend to step back from the classical V-Model, turning towards the agile software development.

Automotive and agile software development, how do these two go together? Are agile methods even able to fulfill the requirements of ASPICE and ISO 26262?

Frankly spoken it is not necessarily easy, e.g. mapping the ASPICE standard with an agile method, such as SCRUM – requirements are too wide-ranging, too insufficient agile methods.

So why is there this upcoming trend? By the introduction of agile methods, companies from the automotive sector are expecting a competitive advantage and furthermore an improvement of the corporate culture. Which is shown in the graph below.

Category	Better	Equal	Worse
Guidance of changed priorities	90%	9%	1%
Increase of productivity	85%	13%	2%
Improvement of team spirit	84%	13%	3%
Project overview	84%	14%	2%
Improvement of software quality	81%	17%	2%
Decrease of risks	80%	18%	2%
Better adaptation IT/Business	79%	20%	1%
Faster Time to Market	79%	19%	2%
Simplification of development process	76%	20%	4%
Increase of engineers' discipline	74%	23%	3%
Improvement of software maintainability	74%	23%	3%
Guidance of spread teams	67%	30%	3%

■ Better ■ Equal ■ Worse
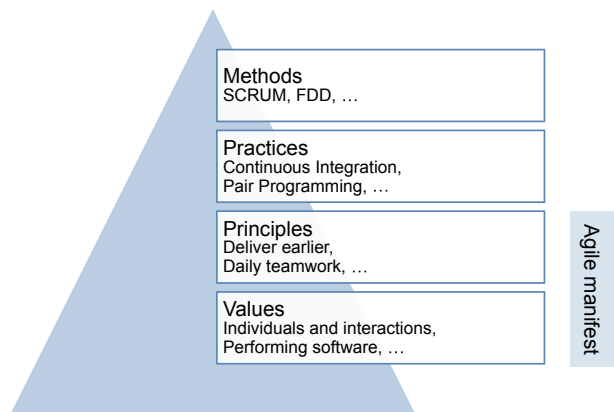
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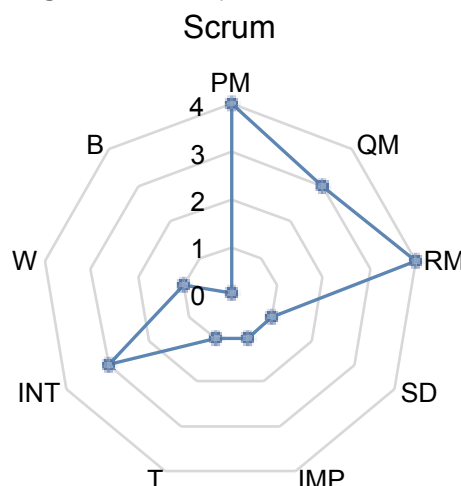
It's worth switching to agile software development

Within projects working with agile software development, the guidance of changed priorities has improved for 90% of the projects, compared to the V-model processes. Also the productivity improved for 85% of the projects. Obviously, passing to agile software development pays totally off.

How is it possible to switch from one day to another from an organization, which worked with the V-model for many years, to an organization working in this new, revolutionary and agile way? It isn't! The only possible way leads through an evolution of existing processes, culture, and bureaucracy and requires bravery as well as trust in your staff members.

This evolution is the starting point of the INVOLUTION method. Based on the agile values of each company INVOLUTION derives principles, practices and methods and aims to implement them step by step in the existing organization.

Methods
SCRUM, FDD, …

Practices
Continuous Integration,
Pair Programming, …

Principles
Deliver earlier,
Daily teamwork, …

Values
Individuals and interactions,
Performing software, …

Agile manifest

In addition, this method is able to evaluate by agile approaches, the existing sections of software development, such as project management, quality management or the implementation.

Scrum

PM — QM — RM — SD — IMP — T — INT — W — B

Out of the results of this evaluation, INVOLUTION is able to derive the appropriated method, or combination of methods for the company and to formulate a recommendation. As the tool knowledge and trainings of INVENSITY complement the implementation of agile methods, they could serve as core elements for the gradual implementation. As a matter of course INVENSTIY provides support for the execution through all sections of the process, to guarantee the effective implementation of agile methods.

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