

INPUT PAPER

KANBAN

PRODUCT  
OWNER

SCRUM  
MASTER

SCRUM

AGILE

RNDOWN  
CHART

STAKE HOLDER

FACILITATION

**Agile working**

# Imprint

## **Publisher**

Federal Ministry for Economic Affairs  
and Energy (BMWi)  
Public Relations Division  
11019 Berlin  
www.bmwi.de

## **Editorial responsibility**

Plattform Industrie 4.0  
Bülowstraße 78  
10783 Berlin  
[https://twitter.com/plattform\\_i40](https://twitter.com/plattform_i40)  
<https://www.linkedin.com/company/plattform-industrie-40/>  
<https://www.plattform-i40.de/PI40/Navigation/DE/Plattform/Newsletter/newsletter.html>

## **Design**

PRpetuum GmbH, München

## **Status**

April 2020

## **Image credits**

istock  
akinbostanci (title)  
Lise Gagne (p. 4)  
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## **Central ordering service:**

Tel.: +49 30 182722721  
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# Input: encouraging agile working

Plattform Industrie 4.0's Working Group 5 (work, education and training) wants to encourage agile working – since agility provides answers in a world of work that is undergoing rapid change and becoming ever more complex. Following the underlying principles, agile working focuses on people, taking more account of employees' individual needs, while enhancing organisations' ability to adapt and deliver products or services.

This input paper reflects the current work of the sub-WG on agile working/new ways of working of Plattform Industrie 4.0. It aims to raise awareness, make recommendations on agile working and contribute to the ongoing debate.

## Why do we need agile working? A changing world of work!

Technological change impacts on processes and results in organisational change. Off-the-shelf mass products are increasingly being replaced by tailor-made solutions which take account of the specific needs of individual customers. Digitalised industry has the following characteristics:

- ★ A single batch is possible – also at acceptable prices;
- ★ Data-based and client-orientated/customised products and services are an important part of new, digital business models;
- ★ Progress in robotics and artificial intelligence (AI) is driving business models of the future.

Worries about increasing complexity should be counteracted with elements to establish structure and the decentralisation of responsibilities to reduce employees' fears. Higher complexity thus requires new forms of work that facilitate quick decisions. In this process, employees are invited to participate actively in shaping structures and environments.

### New forms of work

Everyone is talking about agile working and the related conditions and methods (e.g. Scrum and Design Thinking) – there are numerous books, articles and guides on these issues. However, management and staff are often lacking an overview and specific recommendations on how to introduce agile working in their companies or in individual departments. They are often uncertain, as agility cannot be introduced by ticking off items on checklists, but is rather an attitude based on principles, which can and must be realised differently depending on the individual company's needs. The question also arises as to what is truly new and what is only old wine in new bottles. The sub-WG therefore wants to provide information on the many possibilities of agile working in a simple and accessible way.

## The principles

These possibilities are based on a number of key principles:

- ★ The right attitude is a prerequisite for any approach or method. Agile working is human-centred and builds on self-directed, interdisciplinary teams, iterative processes, transparency, focus, continuous improvement and a feedback culture based on openness and respect.
- ★ Products and services are developed and provided in an iterative process to meet specific client needs. Continually taking account of the feedback from customers and users at an early stage and clearly prioritising requirements are key preconditions for success, also to be able to respond to changing needs.
- ★ Industrie 4.0 is characterised by a changing environment, and agile working is a (proactive) creative response.

WG 5 has three major perspectives on agile working in the context of the above principles:

**Employees** are given more opportunities to get involved in terms of both content and organisation. In this context, self-organisation, responsibility, autonomy and trust play a key role in order to make independent work in interdisciplinary working groups possible. For this purpose, it is necessary to reconsider familiar structures and processes, including giving instructions and delegating tasks, against the temporal and spatial framework. All parties involved need to be brave and open in order to achieve a gradual

improvement by continually reconsidering and revising the current situation.

### Practical example:

*Company A has consistently created an environment in which a large number of flexibility instruments for employees have not only been introduced, but also incorporated in the corporate culture. The aim is to significantly raise the level of staff satisfaction, highlight the employer's attractiveness and at the same time retain more flexibility for workload fluctuations. In order to guarantee equal opportunities within the company, the establishment of an inclusive culture was launched, focussing on diversity regarding all dimensions of the company. Management positions, for instance, are also advertised on a part-time basis. In addition, the company builds on working in tandems: in the context of recruiting measures, an online tool brings interested and suitable employees together. The employees get to know each other and can then jointly apply for a job. More flexible hours facilitate agile working, and the work can be shared across more shoulders. In addition, employees can work in another position and/or department for a limited period in order to broaden their (professional) horizons. Subsequently, they can choose whether to return to their former position or remain in their new position. The matching is done in a transparent way by the 'talent marketplace' tool. These measures are complemented by an awareness training for all employees: the programme is not guided by the HR department but applies throughout the company. Courses are offered for specific target groups, including managers and parents, and on specific issues such as 'use in the office' and 'use out of the office'.*



The yardstick for **organisations** will increasingly be their ability to adapt products to meet clients' needs and to deliver reliably. Structures need to be both adaptable and sound to tackle the growing complexity and changing requirements (in terms of society, technologies and clients). The focus is on meeting real needs, achieving technical excellence (high quality), a great capacity to take decisions and delegate decision-making competences and responsibilities, and avoiding 'shots in the dark' as key preconditions.

**Practical example:**

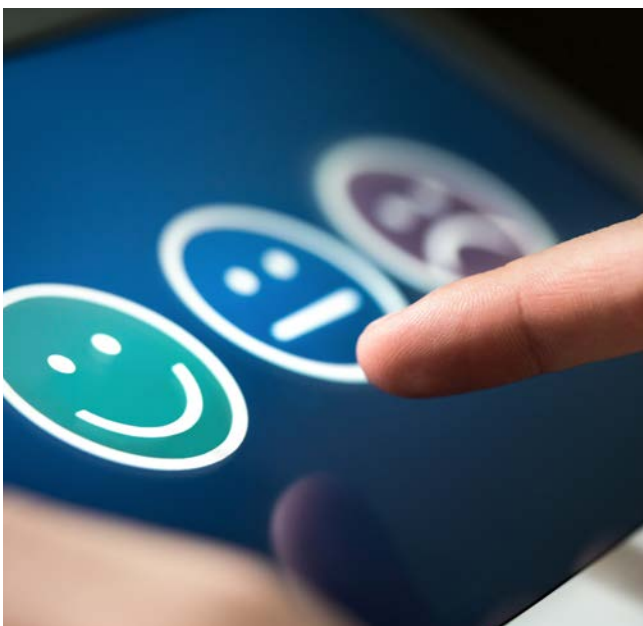
*Company B consistently relies upon agile working methods to develop new products – developing both hardware and software. The company's focus is on work on an equal footing, intra-company networking and continuously taking account of customers' views from an early stage. It is thus possible to take account of the requirements of development projects in a changing environment by perceptibly improving the way to deal with complexity and uncertainty. This is where the Scrum agile process comes in: it enables self-organised teams to develop products in an iterative way and by means of continuous feedback loops interacting with clients. Development partnerships with customers serve to bring together developers and clients so that they receive feedback on progress directly and rapidly.*



In the future, **cooperation** between organisations will play an important role when it comes to dealing with complex issues, as the expertise needed for this purpose will no longer be pooled at one location. Cooperation with partners implies the establishment of new interdisciplinary working groups whose members share and increase knowledge. Innovations can thus be generated jointly in order to strengthen Germany as an attractive location for business. Flat hierarchies and network structures are the prerequisites for providing uncomplicated links within an organisation and between organisations.

**Practical example:**

*Company C has launched what it calls a 'venture capital fund'. According to the company, this is a joint investment with other companies (competitors) in start-ups outside the core business. The aim is to find successful cooperation partners and minimise risks, while gaining access to innovative fields outside the core business and maximising profit in the long term. The investment would be too high for a single company. A pool of resources provides the opportunity to generate a greater effect.*



## Experiencing, testing and evaluating

Agility is not a method that can be learned, as may be suggested by some training courses. Agility is a mindset which can be put into practice using a number of methods and tools. Such methods and tools can, of course, be taught in the context of further training measures; agile principles, however, can only be understood by experiencing them.

In line with the 'inspect and adapt' principle based on the Scrum agile process, WG 5 also dealt with the issue of agility by trying it out: one afternoon, after a brief introduction to the agile principles, the group fulfilled different tasks by pursuing the agile working approaches described below.

## SCRUM

**Objective:** Scrum is an agile process with an initial emphasis on development, which is increasingly being used in other fields. When confronted with complexity and a lack of clarity, it serves to advance a project piece by piece, keeping it in view and delivering results at short intervals, in order to continually create value for the customer. Continuous, regular feedback loops serve to improve the product and the cooperation within an interdisciplinary team in order to increase the productivity and quality.

**Brief description of the method:** The Product Owner (collecting and sorting the requirements from the stakeholders), the Scrum Master (managing the process and removing hindrances) and the development team (developing the product) work together as a team in an iterative process ('sprints'). The self-defined sprint length provides a rhythm for the team to continually develop the product. At the end of each sprint, both the results and the cooperation during the sprint are analysed to be improved.





### LEGO® Serious Play (LSP)

**Objective:** LSP is a method to solve problems, communicate and be creative in a playful manner, guided by an experienced moderator. It builds on the underlying idea that each problem or project can be visualised as a three-dimensional model by using LEGO® bricks. There is no right or wrong outcome as the only aim is to visualise the participants' thoughts.

**Brief description of the method:** Specific issues and problems are dealt with in the context of a moderated process. This is done in a playful context ('play'), while the method ensures profound communication and constructive work ('serious').

### Design Thinking (DT)

**Objective:** DT is an approach to solve problems and develop new ideas. The aim is to find solutions that are convincing from the clients' views ('users' view'). It is based on three related principles.

**Brief description of the method:** DT is based on the assumption that problems can be better solved when participants from different disciplines ('team') cooperate in an environment that fosters creativity ('space'), jointly formulate an issue, take account of the needs and motivations of people and then develop concepts that are reconsidered several times ('process').







## Storytelling

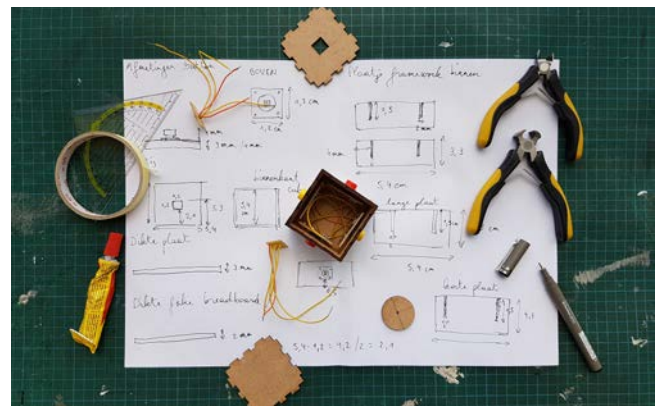
**Objective:** The aim is to present information in a simple and attractive way to ensure easy access for recipients. Knowledge, ideas, products and other information are to be forwarded to recipients by means of real or invented stories. Stories, as a means to express ideas, aim to present information in as simple a manner as possible so that it can be processed easily and be remembered for a long time.

**Brief description of the method:** Each story is characterised by the following elements: one or several protagonist(s), an incident or a problem, a solution, avoiding the problem or failure.

## Prototyping

**Objective:** The aim is to visualise ideas and explore aspects of a possible solution or test preliminary results. Prototyping therefore can also be used in Scrum and is an integral part of Design Thinking.

**Contents and brief description of the method:** Prototyping describes the process of testing envisaged results by means of inexpensive test versions that do not take much time or effort, i.e. the process of paving the way for a product or service.



## WG 5's impressions

These are some of the ways that the principles of agile working can be put into practice, experienced and evaluated. These small experiments have shown that agile working 'feels different', creates new scope and encourages participation, thus making everybody aware of the possibilities of agile working by means of testing.

In summary, it can be said that in the opinion of the sub-working group that put together this paper, agile working can contribute to

- ★ improving the ability of organisations to deliver products or services by means of an incremental and iterative process;
- ★ better meeting clients' needs by means of early and continuous feedback;
- ★ creating scope for employees for self-fulfilment, thus enhancing motivation, responsibility and ownership; and
- ★ fostering open and respectful relations among participants, creating a productive feedback culture, institutionalising continuous improvement, welcoming mistakes as possibilities to learn from and making employees more bold.





