

DISCUSSION PAPER



Fit for the future – A corporate culture of learning

Working Group “Work and Training” of the Plattform Industrie 4.0

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Fit for the future – A company culture of learning



Executive Summary

New technologies and organisational forms open up space for creativity, economic success and innovation. At the same time, however, many companies and employees are faced with uncertainty and new challenges. Continuing education and a strong culture of learning play a key role in addressing these challenges and in ensuring companies' success on the market. This is why working group 5 (Work and Training) of Plattform Industrie 4.0 focused on the question: "How to promote a future-proof company culture of learning and training?" In a bid to come closer to answering this question, this paper sketches out a reference model that sets out recommendations grouped into three categories: "company and management culture"; "organisation and structure"; and "individual ownership and responsibility". In addition to these specific recommendations, we would like to also express our conviction that any collective culture of learning must be guided by the principles of cooperation and participation, communication, agility, and forward-looking action. Only in this way will it be possible to steer the transition towards digitalisation sustainably and in the best interests of all involved.



Background and initial remarks

Life-long learning is a necessity in times of over-arching transformation processes such as digitalisation, demographic change, decarbonisation, and globalisation. Young people, in particular, will not be able to build their entire careers on their initial training, and even those who are in the midst of their careers will have to acquire new qualifications. Further training must become *continuing* education that is available and taken up at all stages of a person's career.

Change must be managed in a way that reflects the best interests of the workforce, the companies, and society at large. A well-designed legal framework, a forward-looking corporate policy, and positive cooperation between the social partners representing the two sides of industry all help to foster a culture of continuing education that meets both the needs of employees and the company. Continuing education is key to overcoming the challenges that result from ever-changing professional profiles and qualifications. Qualified professionals can be recruited and acquire additional qualifications and expertise throughout their working lives. As a corollary, continuing education fosters competitiveness and ensures employees' employability.

Change is a constant and familiar companion in life and in the world of work. But there is a growing number of people who are missing out on a fair share in this progress. Change always means uncertainty. All that is new is unfamiliar to us. But new technologies and forms of organisation come with fresh opportunities for creativity, economic success and positive working conditions.

It is important to put in place an agile and collaborative culture of learning which helps employees master new levels of complexity. By 'culture of learning' we mean the totality of shared social norms and values that shape employees' thinking and their action, and which are often implicit. For a culture of learning to be forward-looking and future-proof, it will have to focus on developing and maintaining skill levels at work, and include employees and social partners in shaping the process of change.

Working group 5 (Work and Training) of Plattform Industrie 4.0 has identified important factors for successful continuing education in the digitalised manufacturing

industries, and these factors also make it possible to make inferences as to how education and qualifications ought to be organised. The insights shared in this document and the recommendations made are meant as a step towards developing a culture of learning and training which is fit for the future. This paper is based on the experiences of members of the working group in corporate practice, as well as on interviews conducted with representatives of various companies. The members of working group 5 have extensive practical experience in HR, works councils, and the design of training and continuing education and corporate change in cooperation between the social partners. The different concepts and methods they describe here have all been developed by practitioners for practitioners. By no means, however, is this document intended to be exhaustive. It is merely a first draft for a future Reference Blueprint Model 'Training 4.0'.

In its deliberations, working group 5 has taken an inclusive approach to both the interests of companies and all employees working in Industrie 4.0, taking into account industrial workers, those with few (formal) qualifications and the highly skilled.

The focus is on continuing vocational education – meaning training designed in line with the needs arising from the value chain and taking into account the skills and qualifications required by employees. Traditional teaching in formal educational institutions, much of which takes place prior to the start of a person's career, is still fundamentally important, as it lays the basis for future continuing education. The skills and responsibilities elaborated upon by the working group here are, by contrast, based within the companies. This is where we see skill sets that are used and further developed in an agile way through learning at work. This can be achieved successfully in a variety of contexts: informally, in practice and in teams.

Continuing vocational education and training happens within a specific legal framework that is largely set by the German Federal Government, the *Länder* and municipalities, industry chambers, and the social partners. However, our focus is on continuing education *within* the companies participating in Industrie 4.0, not on the legal or institutional frameworks. We accept the legal framework as a given, although we intend to make recommendations to policy-makers and other stakeholders at a later point in time.

What is a ‘culture of learning’?

Human behaviour within organisations and social groupings greatly depends on the culture in which it is taking place. By culture we mean an underlying system of informal rules, standards and values that are shared by the people within an organisation. This system renders our complex world less complicated and serves to stabilise the organisation. The type and scope of the learning and training that takes place within a given company will depend on these values, standards and informal rules. This ‘culture of learning’ can be fostered and shaped: the focus must be on creating a space that is conducive to continuing education and helps each individual and the company as a whole to navigate a changing world. A change of culture will both depend on the working environment and require each individual employee to adapt their own expectations.

Key aspects here are continuing education in the workplace, self-directed and self-guided learning, and the use of media and networks for obtaining qualifications.

Formal continuing education will continue to play its role. However, it will no longer centre on the development of course programmes, but on how learning processes should be organised and a positive framework for working and learning maintained – one that fosters skills development and innovative workplaces.

In the dynamic structural change brought about by digitalisation, a future-proof culture of learning is based on an agile and skilled workforce, a willingness to embrace change, and cooperation between the social partners. For this, it is essential that employees are aware of the company’s visions, targets and strategies, and that they identify with them. A culture of learning must also be embedded in an innovative company culture guiding interactions between employees and managers, attitudes towards their own tasks, and the image of the company.

Over-arching principle – within the context of Plattform Industrie 4.0

The thoughts of working group 5 pertaining to the culture of learning in companies are being fed into the ‘2030 Vision for Industry 4.0: Shaping digital ecosystems globally’. In the context of this vision, Plattform Industrie 4.0 has identified three key fields of action: **Sovereignty, interoperability, and sustainability**. All three fields of action have to do with continuing education and a future-proof culture of learning.

A company will only be able to act autonomously in the market if its employees have excellent qualifications. Interoperability between companies is much more easily achieved where their respective employees’ skill sets are comparable and harmonised. Most importantly, however, a strong culture of learning will also serve the principle of sustainability. Under this principle, not only ecological,

but also economic and social aspects must be reconciled. Economic growth, good quality education and decent work feature among the 17 Sustainable Development Goals of the United Nations. A future-proof culture of learning requires us to act with foresight. We are convinced that our recommendations, if put into practice, will make a contribution towards these goals.

The following guiding principles are derived from our specific recommendations for action:

Guiding principles

- **Cooperation and participation:** Participation and co-design are crucial features of any successful change management. Germany has a tried and tested system of social partnership between both sides of industry. Be it with or without formal representation, the social partners are also key to a successful digital transformation that serves the best interests of employees and compa-

nies. This cooperation can help identify the right balance between top-down and bottom-up processes, specific needs, and the correct mix of obligatory and voluntary elements.

- **Communication:** For a company to be able to respond well to unforeseen developments, it should aim to establish a frank and cooperative form of communication characterised by flat hierarchies. This is essential for making change work for everyone involved.
- **Agility:** A one-size-fits-all approach to expanding employees' skill sets will not work, given the speed and the complexity of the change. This particularly applies to the long term. Instead, gradual steps and modifications are the way forward.
- **Looking ahead:** Change is unpredictable and often causes social upheaval. Foresight and proactive behaviour can help future-proof companies and society at large.

Types and forms of training

The need for expanding employees' skill sets will vary vastly between different groups of employees. Consequently, different types and forms of training will be required, ranging from individual seminars, to courses that are several weeks long and/or lead up to additional formal qualifications, to complete career changes. We estimate that the largest share of corporate learning is happening and will continue to happen *within* the workplace. Structured interaction with colleagues and other experts plays an important role in this. Opportunities for formal learning are and will continue to be important. But at the same time, there is a growing role for non-formal and informal continuing education, which happens **within the workplace** and is **managed by each employee themselves**. Learning in the workplace is specific to each employee and their tasks. It is centred on company activities. Experience, skills and methods are all fed into this process. There is a special focus on skills that enable employees to take targeted action. Learning takes place in the context of actual company processes and projects. The skills acquired by employees can and should be recorded, documented, and, potentially, be rewarded – all in line with data protection rules.

Reference model for recommendations for action

The recommendations for action described by the working group are organised into the following groups, which form part of a three-dimensional reference model:

- **Corporate and management culture**
- **Organisation and structure**
- **Ownership and responsibility**

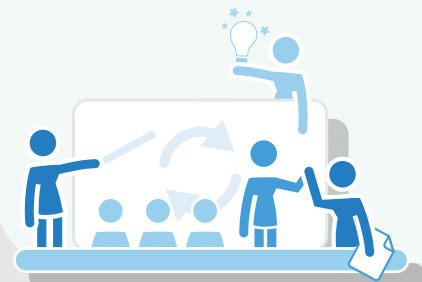
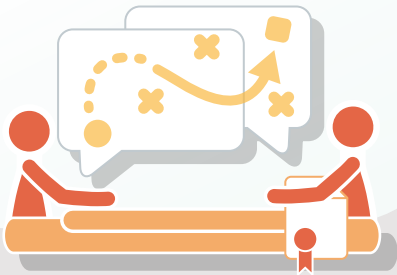
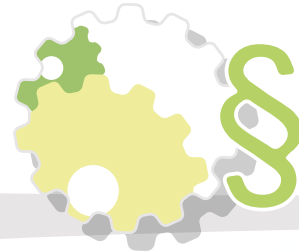
The reference model thus serves as a framework for action and binds together the 19 recommendations for action.



The three branches of company learning culture

Organisation and structure

A strategic and agile approach, combined with modern technological infrastructure.



Company and management culture

Open, cooperative communication, characterised by a flat hierarchy between management, works councils and employees.

Individual ownership and responsibility

The active and involved role of the employees in their continuing education and training is achieved primarily through direct participation in decision-making.

Company and management culture

1. **Strategic HR planning: A clear corporate strategy** forms the basis for **forward-looking and coherent HR management and is essential for identifying those areas where there is a need for continuing education.**

Modern and forward-looking approaches to management focus on competitiveness and innovation, and on motivating employees. They recognise the role education and training can play in corporate and in employees' development. Any needs-based, targeted continuing education will require a strategic approach by the company with regard to its employees'

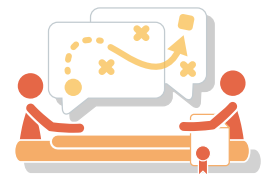
individual skill sets and also with regard to future changes in the workplace.



2. **Management must lead by example.** It is key for management to recognise employees' interests and their intrinsic motivation. Management must therefore lead by example through engaging in their own lifelong learning and fostering skills development among the workforce as part of the company's regular operations. This will only work if line managers themselves are also supported by their managers – another characteristic feature of a future-proof culture of learning.
3. In addition to these efforts at the individual level, there must also be a strong contribution **from the works councils.** The German system of co-determination gives works councils an important role in promoting employees' interests within the company, including in the field of continuing education and training. By the same token, companies can use the instrument of corporate agreements (*“Betriebsvereinbarungen”*) to put in place binding targets for continuing education.
4. It is important that individual business units and departments be given sufficient **scope to act**, so that the process can be dynamic. This has to do with the fact that forecasting the skill sets that will be required in the future is easier said than done. Every decision pertaining to continuing education will therefore be subject to uncertainty. It is important to avoid any gaps and shortfalls whenever possible. Employees will often be the

first to recognise areas where forward-looking training is needed. **Trust** and sufficient **scope for decision-making** are required for individual stakeholders so that they can take responsibility and make decisions about their own development.

5. **Appraisals** form the basis for targeted skills development. They are the place where skill sets can be compared to the company's requirements and that steps can be agreed as to how to close any delta between the two. Discussions should not be limited to training that is urgent, but also focus on the long term. Employees and management will both benefit from shared **thinking about the future world of work** and what this could look like in the company. Also, this approach means that employees take responsibility for key input they receive. This makes it possible to identify needs and possibilities for training far in advance, which makes it easier to set the right framework for successful implementation.
6. **Mentoring** is a tested approach that also lends itself to continuing education. Management can take on the role of a mentor, but the role need not be exclusive to them. Mentors give advice, encouragement, and guidance.
7. Continuing education can be even more successful if **supplemented by coaching.** A coach offers advice on technical and horizontal questions and support to individual employees or teams. The advantage here is that the approach is tailored to individuals and their specific questions.
8. Good quality HR planning must clearly identify and formulate **skills requirements** for new and vacant positions and this helps with finding better matches in the recruitment process.



Organisation and structure

1. **A link between HR and the operational level** is needed to ensure that both sides work well together and create the best possible working environment. The work should be strategically planned – i.e., HR ought to be involved in processes taking place at the operational level.

2. If most of the learning process takes place on the job, care should be taken to ensure that the **content on offer and the method used fits the work process**. Increasingly, this will require technical infrastructure to be in place. Both hardware and software are needed, ranging from **tablets to digital assistants, to learning labs designed for a particular workplace**. Access to digital solutions and the relevant hardware must be given to those working in manufacturing in particular. Modern learning platforms come with AI components that make it easier for each user's individual learning experiences to be better taken into account. However, this must be combined with the right teaching methods. New technical equipment requires changes in the workplace. These will only work successfully if employees and their representatives are taken on board.



3. **Enable new forms of learning, also by providing the necessary technical infrastructure**. Modern devices enable employees to access relevant content when and where they need it. Generally, digital forms of learning can be successfully combined with classroom-based training. This makes it easier to do justice to different types of learners and content. Every specific learning instrument must be transparent and designed in a joint process, in line with the applicable protective rules.

4. Continuing professional education is an investment in the future. And it needs **resources: time and money**. The extent to which employees bring their own resources – and particularly time – to the table, will depend on the respective type of continuing education. It is important that **fair negotiations on this issue** take place. If the need for additional training results from changes in internal processes, for instance resulting from the use of new technologies, the training will be more beneficial for the company. By contrast, there are

also training courses that are just as useful for professional purposes, but are not directly related to in-house processes. Depending on the specific situation, these courses may benefit employees more than the company. Efforts made for continuing education that are made as a result of strategic decisions made by the company must count towards employees' working hours.

5. **Systematic recording and documentation of employees' skill sets** with the help of suitable software and, of course, within the limits set out in data protection law, could help determine the need for continuing education. How this documentation can be implemented in practice and in an efficient way is still being studied and will evolve as technical solutions are developed.

6. **Certification of continuing education**. For lesser skilled employees, having their **skills and training courses systematically recorded and documented can pave the way for obtaining formal vocational qualifications**. This also benefits companies as they seek to avoid a skills gap.



7. Employees' **health and safety** must be protected. The implications that digitalisation will have on continuing education in the workplace are hard to predict. It is important to avoid any negative implications, such as frequent interruption, pressure resulting from multitasking, higher dropout rates, or a lack of depth with regard to the training. For this reason, new learning methods ought to be evaluated with regard to their effectiveness. The possibility for people to learn anywhere and at any time should not be discredited by a (tacit) assumption that they should always do so.

Ownership and responsibility

1. The more **mentally** prepared employees and management are for **learning in the workplace**, the more successful it will be. Participation is the key to encouraging both sides to become actively involved in continuing education. Informal learning and debating groups are a useful tool for the evaluation and development of new formats in a way that involves all employees and takes their input on board. These groups are also a good place to decide what content should be imparted ‘on the job’ and what other content requires “dedicated learning”. It is indispensable that **employees** should increasingly be given scope to **decide for themselves which learning instrument, method and content** will help them secure and/or build the skills they need for their professional future.



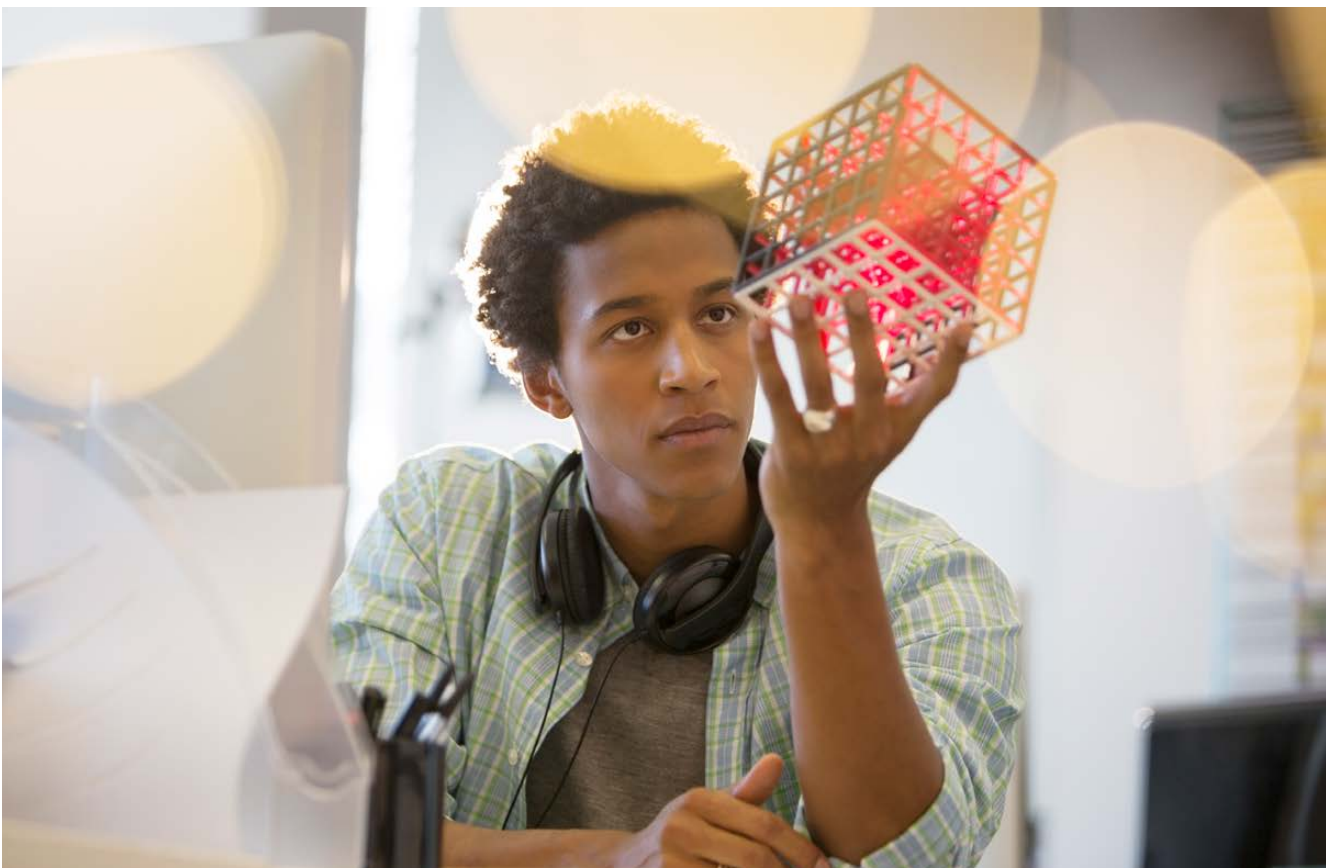
2. To learn in a work process also means **learning from one another and within networks**. It is key that

knowledge is imparted by experts, and that this process is supported by structural additions such as a series of peer-to-peer presentations, or temporary job rotations. In addition to the right organisational framework, there must also be a good learning environment, which particularly includes supportive HR communications and management.

3. **Support for voluntary learning**. Modern technologies, in particular, are a useful tool for learning tailored to the individual. Transparent agreements are needed to ensure that the boundaries between on-the-job continuing education and private learning are clear. The respective shares will depend on the content and the degree to which the person can be put in a different position.



4. A requirement for people to be able to feel that they are in the driving seat and thus can accept change is the following: they must come to the conclusion that the changes are in their own best interest.



Conclusions: Nurturing a new culture of learning

Skills development at the individual level and company learning processes are closely intertwined. A culture of learning which is fit for the future is a good step towards establishing a learning organisation.

Senior management is responsible for creating the necessary environment for this. Learning must be permanently rooted in work processes and learners must have an active role in shaping their continuing education. The role of line managers will be enhanced, as they must take responsibility for their employees' continuing education and, by extension, the long-term success of their work divisions.

Scope for learning and new solutions

Finding new ways and solutions within the company in a dynamic way that is designed to establish a new culture of learning is an innovative way of addressing challenges and questions that result from digitalisation in the workplace. This gives management and employees a chance to jointly shape the world of work and try out new approaches. Employees are experts with regard to their own work processes and the need for change in the organisation. Within their teams, they try out new practical solutions for the digital world of work. These could be the possibility for remote working, working-time models, or digital assistants. Step by step, it will become apparent which of the new features that have been tried out are working well and should be pursued, and which should be discarded. Involving the social partners within the company helps gain a joint and holistic understanding of what the specific change would mean for employees and the company. This cooperative approach ensures transparency, trust, and long-term success.

The working group is convinced that the recommendations presented in this document will foster a **corporate culture conducive to learning**, which is something that benefits not only employees and their skills, but also makes an important contribution towards turning companies into **learning organisations**. The working group is looking forward to receiving feedback and to engaging in further debate about continuing education in a bid to shape the future.

What is a learning organisation?

'Learning organisation' is a term that was coined by U.S. organisational researcher Peter Senge in *The Fifth Discipline* in the early 1990s. It describes the ability of an organisation to constantly evolve and to respond to new internal and external challenges in a way that is strategic, systematic, and future-oriented. In a learning organisation, employees have the skills they need in order to generate, acquire and apply knowledge, thus enabling the organisation to respond to change, new knowledge and insights in an agile manner. There are five hallmarks that set a learning organisation apart: systematic (data-driven) problem-solving skills, willingness to experiment, willingness to learn from past experience, willingness to learn from others, and willingness to disseminate new knowledge across the organisation. Reference: David Garvin, "Building a Learning Organization", *Harvard Business Review*, <https://hbr.org/1993/07/building-a-learning-organization>

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