The German Mittelstand and Digital Transformation

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a new culture of work

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A Whitepaper Based on a Metastudy by Kantar TNS and Interviews with Experts

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Introduction

In 2015 the first metastudy, also commissioned from Kantar TNS by the Bertelsmann Stiftung, showed that the German Mittelstand (or small and medium-sized enterprise sector) still hadn't recognised the full potential of digitisation and thus was still very far from actually realising it (see the 2015 Meta-Studie at: https://www.zukunft-derarbeit.de/2015/06/02/arbeiten-4-0-digitalisierdigitalisierung-im-mittelstand-ein-studienueberblick/). In the next few weeks the new version of this study will be published dealing with changes since 2015. This is flanked by a series of in-depth interviews with management (primarily) from the Mittelstand.

The metastudy examines close to 40 publications which have published since 2015 with a view to gleaning new findings on the impact and challenges of digitisation on the organisation of work in the German Mittelstand. In over 30 interviews, from which the quotes highlighted in colour are drawn, the views of Mittelstand management in various industries in Germany are systematically collated to give information about the state of digitisation in their companies and, in particular, about the practical experiences they have made in the implementation of digitisation-related projects. This whitepaper summarises the main findings from both works and sharpens them into theses which should prompt decision-makers in government and industry to further discussions in this field which we hold to be both essential and urgently needed.

A look at the key takeaways from these two reference works one thing in particular shows plainly – that a great deal remains to be done if the Mittelstand is to master the challenges of digitisation and successfully use and shape them as opportunities.

The Theses at a Glance

1. Digitisation of the Mittelstand is making progress – only far too slowly.
Even though in terms of digitisation the Mittelstand has caught up with the major corporations since 2015, a great deal remains to be done. On the one hand, for instance, there is often a lack of will and conviction, and on the other a lack of trust in the workforce.

2. Digitisation calls for a new way of thinking away from the logic of industrial linear production.
All too frequently digitisation is still understood as a new way of increasing efficiency, saving costs and introducing incremental innovation or new customer interfaces. Actually, however, digitisation doesn't just challenge the traditional rules and principles of economic management and work but, as a result of its qualitative development leaps, turns them upside down to a large extent. Thus it calls for a fundamentally new way of thinking away from industrial logic to a new "digital logic".

3. Upper management has to take ownership of digitisation with a comprehensive strategy.
No major progress will be made as long as digitisation remains a matter of stand-alone initiatives which frequently encounter resistance, especially among middle management. Successful transformation needs clear positioning and digitally competent senior management if the whole business is to be tailored to a digital world with the help of an overarching strategy.

4. Digitisation requires and enables a new culture of work and learning.
Digitisation requires a different attitude to work – a digital mindset which goes hand in hand with the new culture of work characterised by decentralisation, the breakdown of hierarchies, and flexibility. Moreover, new cultures of work, and particularly new kinds of business models, call for different and increasingly informally acquired skills that are brought into the company or that need to be developed in the workplace with the aid of new kinds of learning.

Four Theses on the Future of Work in the Mittelstand

Thesis 1: Digitisation of the Mittelstand is making progress – only far too slowly.

"For the first time we're dealing with a technical revolution that's taken a reverse direction. Digitisation comes from the private sector not the professional classes as is usually the case. For young people it's an essential part of their lives and they're familiar with how it works. They're the competitors, workers and bosses of tomorrow's world. It's useless not to accept this. Digitisation is irreversible."

"We have to be very clear that never again will things be as calm as they are today. Instead, the pace of transformation will only go on increasing. So we should really make the best use of the "calm!"

In 2017, as before, the Mittelstand continues to trail big business in terms of digitisation. SMEs have made progress in comparison to the findings of the 2015 study, yet such progress has been slow – too slow to keep pace with the speed of technological evolution. For instance, only one fifth of the companies reviewed could show an overarching digitisation strategy. And even though many companies have made progress in fields such as cloud technologies, networked value–added chains and products, and automation, a great deal still remains to be done in other areas such as the question of digital skills among the workforce, issues of data protection and security, communication skills and insufficient internet speed. There are various reasons for such shortcomings.

▮ Given their currently packed order books, many companies accord digitisation a low priority – 20 percent of all firms view it as of little consequence.

▮ A lack of commitment on the management level combined with "a persisting 'old industry' mentality" impedes development and makes catching up more difficult with each lost moment. Many digitisation projects are basically limited to optimising efficiency which is too short sighted a remit.

▮ Initiatives for fundamental change coming from the ranks of the workforce are either not taken seriously or thwarted by the "old guard" with their lack of understanding, recognition and support. What's more, it frequently happens that company employees lacking basic digital skills, are not prop-

erly "brought on board" which means that the whole catching up process cannot operate at the required speed due to the lack of requisite skills.

▮ As in enterprise, policy-makers and legislators too can hardly keep pace with the speed of technological development and cultural change. The interviews in particular highlight the obstacles raised by a failure to readjust framework conditions to a changed world of work.

Thesis 2: Digitisation requires a new way of thinking away from the logic of industrial linear production.

"Digitisation means rethinking business models. In our case this means that added value shifts over to the customer side. When our executive board understood this (and you can't do that sitting behind your desk!) things really started to move – and by now practically everybody has understood the huge amount of change involved and that we now have to do nearly everything differently from how we did it before. However, none of this would have been possible if it hadn't been for the digital expertise of our executive board."

The reason why digitisation in the Mittelstand is dragging its feet has nothing to do with a failure to grasp the opportunities it offers – this is very evidently not the case, at least with parts of the small and medium-sized enterprise sector. The reason rather appears to have more to do with the frequent lack of a basic understanding of digitisation as much more than a technology-related issue. At the same time, not only has the pace of transformation accelerated so that a "catching up process" must be much quicker than it used to be, but experts are also anticipating a further acceleration driven by synergies with and between other rapidly developing technologies such as artificial intelligence, robotics and 3D printing. In other words, if you want to catch up, you now have to be quicker than ever. At the same time, a holistic and fundamentally new understanding is required of how your company does business, and how work is organised. A pessimistic perspective would call this a "digital survival of the fittest" among companies and men, more positively speaking, however, we see that good ideas and improvements to traditional products and services are increasingly coming to the fore.

According to this view digitisation means a new paradigm, a different kind of logic and new principles for work and business. It changes the "rules of the game" and wherever this is not understood and internalised, any measure introduced will remain half-hearted and limited solely to the perspective of technological possibilities. Instead of this, what is needed is a critical review of all the foundations on which the enterprise thus far has been built, and the courage to invent them anew.

"One central barrier lies in people's minds. Most people still think in terms of optimisation models- which means they continually strive to make products better and better. With this kind of thinking we would never have progressed from the horse-drawn car-

Characteristics of industrial versus digital logic of work and production

Aspects	Industrial Logic	Digital Logic
Form and type of development and perception of insecurity	Security of a more linear path-dependent development	Insecurity of digital disruptive, sometimes exponential, development
Planability	(In comparison) High	Low
Dynamic	(In comparison) Low	Very high, accelerating through synergies with other technologies
Innovation cycles and time for new products to penetrate the market	(In comparison) Long	Short
Key Resources	Capital Means of production	Direct access to customers Platform control
Industry sector perspective	Status quo fixation through and in industry sectors	Business opportunities through collaboration over and beyond sectoral boundaries
Company boundaries	Stable, difficult to penetrate	(semi-)permeable
Principles of spatial organisation	Centralised Physical material	Decentralised Virtual immaterial
Management Principle	Taylorism and Fordism	Still unclear – could be Kilpiism* and / or Osterwaldism**
Leadership (for the question of work culture see the separate table in Chapter 4)	Hierarchical	From flat to no hierarchy at all (sociocratic)
Decisions	Underpinned, resulting from (rather long and winding) processes	Quickly made, need continual review
Collaboration	If necessary Only common practice in a handful of industries	Basic cooperative attitude Common practice in many industries

* Esko Kilpi is a pioneering Finnish thinker on post-industrial work and leadership or corporate management who propagates the "end of control" by management.

**Alexander Osterwalder, renowned for the "Canvas business model" he invented, is a Swiss business theorist author and consultant

riage to the automobile – and at the moment nearly all our products are horse-drawn carriages which we have to turn into cars. For this to succeed we have to be quick off the mark and act totally differently to how we used to: Think big, start small, scale fast."

There is currently no agreement about how this will work out in detail either among those interviewed or in the studies. However, some frequently cited features of the new digital logic are now coming to the fore which we have collected in the table on page 10 in order to present the "poles" of the respective logics – obviously in a simplified form.

Thesis 3: Upper management has to take ownership of digitisation with a comprehensive strategy.

"The key requirement for digitisation is a certain technological savviness of the executive board. In our company the board always gets hold of the latest apps and gadgets which attracts the interest of the whole team. In this sense whipping up enthusiasm for change is a management task."

The data of the megastudies show what the interviews have underscored as a fundamental trait: only a handful of Mittelstand companies are fully digitised. Only 19 percent of these SMEs would describe themselves as pioneers even though at the same time 80 percent of people questioned in the studies viewed the effects of digitisation as positive for their company. And the obvious conclusion is supported both by the studies and the interviews – that in order to drive forward digitisation that embraces the whole of the Mittelstand what is needed are not stand-alone measures and the types of initiatives now seen which are often efficiency-oriented and technology-focused but a holistic strategy that covers all parts of the company. However, to be successful this calls, once again, for a high level of digital skills and abilities. And this in turn makes clear that while the digital competence of management accelerates the configurable process of adjustment, a lack of digital skills not only damages the company's qualification profile but poses a potential and massive threat to the whole company.

"We measure the level of digital maturity among our staff and management. If this does not meet our requirements, we offer appropriate kinds of further training. If, after such training programmes, a pronounced digital attitude is still not apparent, we regretfully must take the appropriate consequences. And in doing so we make no distinction between members of management and members of staff."

Such a holistic strategy is needed to implement the new way of digital-logic thinking in processes and projects as outlined above. Accordingly, companies must ask themselves how they can (or should) use digital technology to improve or reconfigure their business model. Which new products or services

could they offer, which existing products and services could be made more customer-friendly, and be marketed more rapidly and on a more efficient basis? What's more, in which fields are these companies moving and where not? Are there any extraneous disruptors who could pose a threat to their own industry sector? The interviews in particular underscore that the selection of key fields of business activity (which also implies the exclusion of other activities) is a central criterion for the success of the undertaking. Yet this requires a systematic view of the opportunities and challenges involved for the company which only a holistic strategy can deliver that recognises potential not only in terms of technology and efficiency but also in completely new business models. At the same time the interviews emphasise that such a strategy must be designed to be at once structured and flexible, pointing in the right direction whilst giving enough leeway to (re)act flexibly and allow for new developments and insights.

"Anxiety is the first reaction to change. Each company first has to cross through the valley of tears."

One thing should be very clear: such a holistic strategy can only come about when it's possible to fundamentally challenge the "rules of the game" – the assumptions and suppositions on which one's own business rests. It should also be equally clear that to do so is a venture fraught with great anxiety. This is why the role of the upper management echelons is of such vital importance. On the one hand, it must ensure that fundamental challenge to the "business as usual" meme can take place while on the other its reactions, its way of embracing and living out the new digital reality must provide a role model for the entire company. Inversely, however, this also means that should the upper management echelons not be active and aggressive in embracing the new digital culture, this will impede the progress of digitisation in every kind of company activity.

"Employees go through digitisation at different times and at various speeds. We have to pay special attention to the particular phases people find themselves in so that we can pick up with them where they are and don't expect too much of them. The first matter of concern for us at this juncture is the human factor."

A glance at the way digitisation projects are implemented shows that all the enthusiasm and advocacy for these new forms of work culture doesn't hide the challenges and difficulties that digitisation brings with it. Take, for instance, the regulatory framework which impedes realisation of that free choice of place of work and working hours which is at least theoretically possible for a majority of knowledge workers. And then there are the issues of how to deal with the heavier toll taken on workers by the breakdown of barriers between working and private life and the new autonomy. Even though introduction of a new culture of work will not immediately change the entire work process for all employees, there is still a need for comprehensive measures that make clear to the entire workforce the necessity of the new paths taken and the personal advantages it can bring for them, and which above all else empower them to meet the new requirements. Once more, along with the acquisition of skills, particular emphasis is placed on the leverage the role of

management can exert as pioneers and exemplifiers of the new digital culture which is not to disparage the role played by pioneers in the ranks of the workforce. Here, a key role is played by the (usually younger) "digital natives" who are often more digitised in their private lives than they are at work and who are thus able to win over their colleagues and contribute a wide range of informally acquired skills.

Thesis 4: Digitisation requires and enables a new culture of work and learning.

"Digitisation means transformation of our whole culture. The pace of technology has long outstripped that of the law-makers and in some areas of labour law we've been straining at our limits for some time now because such laws were made for taylorist enterprise and not for the new digital reality. I am certain that we, like many other companies, have set a great deal in motion and are really doing a lot – and equally that far too often we are straining against our limits or those of the regulatory framework."

Decentralisation, the breakdown of hierarchies, flexibilisation and the increasing importance of informally acquired digital skills are central aspects of the new cultures of work and learning. In specific terms this means that change must be effected on three levels. Firstly, a digital mindset, a new attitude to work is required. At the end of the day, this means a new way of thinking geared to digital logic as outlined above. Secondly, a new culture of work must be developed, one which is quicker, more agile and more flexible than the kind of work typified by the industrial age. Thirdly, the new cultures of work – and in particular the new business models – call for new skills and abilities – for instance in working with Blockchain and other technologies and new forms of work like SCRUM and agile project management – which must be brought into the company or developed in-house. For in addition to technological and legal factors, the companies themselves cite "lack of digital skills" on the employee level as the central challenge of digital transformation.

The new culture of work: agile, rapid, flexible and cooperative, not hierarchical and rigid

"I would like to see technological digital transformation and the change of culture at long last viewed as a single unit – because this is what is needed. Basically, cultural change determines a company's future opportunities – without cultural change no "old school" company really has any future."

From the standpoint of experts charged with the practical realisation of digital projects, a new culture of work is a particularly central factor in enabling genuine change. The "old forms" of work (and leadership) neither correspond to the new realities nor can they enable the necessary catching up process. This means that companies that wish to keep pace with digitisation must realise a

new culture of work which the interviews show to be characterised by three particular aspects:

- A high level of collaboration and the ability and will to collaborate.
- New, more flexibilised forms of work, such as those characterised by a free (or freer) choice of place of work and working hours.
- A high degree of freedom, codetermination and autonomy for company employees.

Accordingly, the following table collates some of the – once more simplified – poles of the "old" and new digital cultures of work. What it shows is that digitisation has brought about a switch of paradigm in the role of employees. No longer are they exchangeable workers viewed as an inexhaustible supply of human resources but a group of empowered highly autonomous individuals who support the company in achieving its goals with their personal skill sets. The defining image here is that of the "responsible and self-aware employee".

"I've often heard employees say – Do you really mean this seriously? Can I really do all this by myself and make my own decisions? And at the same time management says – What will become of me? Who am I if I no longer have any form of control?"

Thus management itself undergoes fundamental change in these new cultures of work. The new forms of work and culture cannot be achieved with a style of management grounded in taylorist principles and intent on maintaining control. What is needed here is rather a new understanding of leadership which

Transformation of the culture of work through digitisation

Aspects	From ...	... To
Understanding of the management agenda	Control Guiding, Specifying	Coaching Facilitating, Empowering
Attitude to employees	Employees seen as an disposable quantity in need of leadership (and a cost driver)	Responsible workers as a pool of ideas
Attitude to information and leadership	"Dominance" through information control	Coaching through furtherance of information
Management legitimation	Qua Position: formal, "constrained"	Qua Social Skills and Abilities often (only) informal acceptance and/or selection by colleagues
Collaboration / Cooperation	Cooperation when necessary in defined roles and contexts / projects	Open and cooperation-oriented attitude Frequent and often informally organised cooperation in self-organising teams
Learning	Preset Formal Separate from work	Self-determined Informal "peer-to-peer" An integral part of work
Key Competencies	Professional Expertise	Ability to cooperate and learn Aptitude for self-organisation Ability to work in changing teams

views the leader as more of a coach who supports employees, considered as responsible members of the workforce, and empowers them to be successful in their work and to achieve their goals. In the best instance the whole development process means – if given the necessary backing – not only pressure for more flexibility from the employer side but also greater sovereignty and opportunities for more flexibility and a greater say in the design of work in close correspondence with the wishes and needs of employees.

The new competencies: towards the principle of permanent, informal and independent learning

"Thus far the fact that business models can fundamentally change has not formed part of people's education. However, it should."

One of the key ways in which the pioneer versus laggard companies identified in the studies can be differentiated is to see whether they give high priority to the furtherance of projects for the nurturing and development of skills and abilities. An overall deficit of knowledge has been identified – as when in one of the studies reviewed over half of the respondent Mittelstand companies admit that they have insufficient knowledge about access to and use of data and, generally speaking, a lack of expert know-how when it comes to key issues like big data. Specifically, this can also be illustrated with reference to Blockchain – a technology considered as one of the most vital for the future of the digital economy. Firstly, over half of the Mittelstand companies (taking part in one of the studies) had no idea what the concept meant. Secondly, even though about a third of companies believed that the German economy could radically change within the next decade, only a mere 15 percent of them had examined this issue in more depth. Such figures should make clear at what a great remove the actual state of knowledge often is from current - and admittedly very fast moving - debates and technological development.

"One key element of our packet of measures was self-learning programmes – because they embody the new principle and empower employees to keep pace with the transformation process."

To close the knowledge deficit new forms of learning and the sharing of knowledge and information are needed which go hand in hand with the new culture of work and which can only be realised with the new mindset. Under the sway of rapid change, learning no longer functions as a (purely) institutionalised activity, separated from work in formal courses for vocational and further training. What is now increasingly gaining in importance is rather informal, self-determined and peer-to-peer learning. Promoting and enabling such forms of learning will be an integral and fundamental part of the new digital culture of working and learning in which the barriers between work and learning are abolished.

Conclusions

Doubtlessly the new and soon to be published metastudy with its extensive datasets will open up further fields of action for the digitisation of the Mittelstand. However, whatever its outcome might be, if digitisation in the Mittelstand is to make the necessary headway, it must in all cases take full account of the following factors:

- A more rapid pace and greater insistence on digitisation.
- A radical change in thinking towards digital logic, as described above.
- Top levels of management have to embody and live out this logic.
- A holistic and comprehensive digitisation strategy geared to more than just technology and efficiency.
- The courage to embrace new cultures of work from which to facilitate decentralisation, breakdown of hierarchies, and new forms of learning for, and with, employees in the sense of "good digitised work".

Appendix

On the Reference Studies

This whitepaper draws on two studies. First, a metastudy on the future of work in German SMEs, commissioned by the Bertelsmann Foundation and realised by KANTAR TNS (cf. the 2015 metastudy at https://www.zukunft-derarbeit.de/2015/06/02/arbeiten-4-0-digitalisierung-im-mittelstand-ein-studienueberblick/). By analysing almost 40 publications in this area, the survey brings together the most important findings on the impact and challenges of digitisation for the organisation of work in the German Mittelstand. The new version of the 2015 study, which will be published shortly, deals with changes which have occurred since 2015.

The findings of the study were also enriched by over 30 interviews carried out by staff at the Bertelsmann Stiftung in early 2017. These guided interviews questioned decision-makers from Mittelstand companies from a range of industries in Germany.

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