Internet Governance: Strengthening the Voice of SMEs

Focus Topics of Digitisation
Observations and Key Points

by

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About the Project

Content

Introduction

Small and medium-sized enterprises (SMEs) work digitally and networked in many areas. Their focus is usually no longer on the question of "whether" but rather on the "how" of digital transformation. And many companies are already so skilled that their question is more like "How do we get to the next level?" They have implemented digital technologies and know their benefits for customer engagement, process optimization, product innovation and business development. They know that digitisation is an ongoing process and want to actively shape it.

Relevant studies back these observations with figures: According to the latest KfW Digitisation Report, 40 percent of SMEs successfully completed digitisation projects in the period 2016-2018. This corresponds to around 1.5 million companies and an increase of ten percentage points compared to the previous period. This development "continues to be driven by companies of all sizes and in all sectors of the economy".[1]

Nevertheless, the voice of SMEs is often missing when it comes to shaping the framework conditions for digitisation. Practical obstacles prevent SMEs from getting involved in the discussion, not least of which is the notorious lack of time and resources.

The project "Internet Governance: Strengthening the Voice of SMEs" aims to identify practical approaches for corporate participation based on specific topics.[2] SMEs need know-how and knowledge exchange, they need easy access to digital resources and platforms that fit their business models. These aspects are highlighted in a total of four fields of work in the project. This text reports on the results from the first field of work, which deals with key issues in the digitisation of small and medium-sized enterprises. These examples will be used to discuss what support is needed to enable SMEs to fully exploit the potential of new technologies and to help shape the conditions of their use within the framework of Internet governance processes.

Examined will be digital platforms (acting as intermediaries connecting two or more market players or groups of users in the B2C or B2B sectors) and cloud services. These two key topics emerged as particularly relevant in initial research as well as in exploratory interviews on the importance of Internet governance for SMEs. They are also widely used already, in the entrepreneurial context as well as in the everyday lives of many users (often unnoticed in the case of cloud). In the present context, the status quo of use by SMEs as demanders and providers was investigated for the two topics, what specific circumstances and framework conditions make implementation in SMEs difficult, and how remedial action could be taken.

To this end, 16 interviews were conducted with entrepreneurs and representatives of associations and competence centres, relevant current studies were evaluated and two two-hour focus sessions were held, each with around 20 participants. The present text summarizes the results of the focus sessions as well as the further research.

Structural findings for the two topics are expressed in the form of key points. Challenges for SMEs are described, related to governance aspects, and possible options for action are put up for

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[1] KfW-Digitalisierungsbericht Mittelstand 2019. Digitalisierungsprojekte zunehmend im Mittelstand verbreitet, Digitalisierungsausgaben jedoch seit Jahren unverändert niedrig. Frankfurt a.M., Mai 2020.

[2] Internet governance is understood in the project as the sum of rules relevant to the Internet. This includes all principles, standards, decision-making procedures and programmes for the further development of the Internet, regardless of whether they are developed by national governments, intergovernmental agreements, the private sector or civil society actors, or by all of them together.

discussion. Finally, overarching observations are shared that do not necessarily address governance issues, but are of importance for the further digital transformation of SMEs.

Note for the English edition: This text reports findings from Germany where more than 99 percent of all firms are SMEs, almost all of them being owner-managed. In addition, some 97 percent of German exporting firms are SMEs. Based on these and related indicators a particular economic landscape has emerged which might differ from that of other countries. It would be highly informative to learn more about the specifics of SMEs' role in Internet Governance in other national contexts.

I.   Key points: Digital platforms

Preliminary remarks

The platform economy with its numerous facets is one of the drivers of digital transformation. In the public discussion, however, the term digital platform is predominantly associated with business-to-consumer (B2C) platforms that act as intermediaries between commercial providers of goods and services and mostly private consumers. Amazon is the most prominent example of such a platform. However, there are several other platforms with other functions, such as specialized business-to-business (B2B) platforms.

In fact, the platform economy is already as diverse as it is differentiated, opening up new opportunities for SMEs in particular to develop digital business models. For example, hundreds of thousands of online retailers[3] in Germany reach a large audience via B2C platforms. The use of B2B platforms is also growing steadily: almost 70 percent of small and medium-sized enterprises in industry-related sectors already use digital platforms for purchasing (47 percent) or for sales to corporate customers (49 percent)[4]. Accordingly, the number of SMEs acting as providers of B2B platforms is growing.[5]

In the following section, we look at trading platforms for products and services (marketplaces, retail and manufacturing platforms), logistics platforms and networking platforms (e. g. for matching).[6] The focus is on both the B2C and B2B sectors, because regardless of their common core - a digital platform brings two or more market sides together for a specific purpose - a differentiated look at the different manifestations of the platforms and their respective markets is necessary.

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[3] The Händlerbund alone has 80,000 members. There are also other associations, such as the Bundesverband E-Commerce und Versandhandel (bevh) with 500 member companies, and retailer networks.

[4] Lundborg, M. & I. Gull: Digitale Plattformen als Chance für den Mittelstand. Eine Erhebung der Mittelstand-Digital Begleitforschung. October 2019

[5] The BDI, for example, presented 78 selected B2B platforms from various categories (Bundesverband der deutschen Industrie (BDI): Deutsche digitale B2B-Plattformen. June 2020), while another study counted 66 B2B platforms in NRW alone (17 "data-centric", i.e. IoT platforms, and 49 "transaction-centric", i.e. online marketplaces, manufacturing and logistics platforms; cf. Haucap, J.; Kehder, C. & I. Loebert: B2B-Plattformen in Nordrhein-Westfalen: Potenziale, Hemmnisse und Handlungsoptionen. December 2020

[6] This is based on the classification in: Federation of German Industries (BDI): German digital B2B platforms. June 2020; similarly Haucap et al. (2020). On the platform definition, see also: Federal Ministry for Economic Affairs and Energy: Ein neuer Wettbewerbsrahmen für die Digitalwirtschaft. September 2019

Key point 1

The network and scale effects typical of digital platforms favour the emergence of oligopolistic market structures. These are more pronounced in the B2C area than in the B2B area, with the result that small and medium-sized companies are becoming increasingly dependent on dominant B2C platform operators.

Digital platforms enable small and medium-sized retailers and providers of products or services to achieve a previously unknown reach and corresponding growth opportunities. The platform economy allows many companies to compensate for any loss of sales in stationary retail. Due to the increasing relevance of digital platforms for consumer behaviour, but also for companies, few SMEs will be able to afford not to engage in the platform market in the long term. Against this background, most SMEs use digital platforms in the B2C and B2B sectors as demanders of corresponding intermediary services. In this context, SMEs perceive a pronounced dependence on the digital platforms through which they conduct transactions with their customers. This is exemplified by the interim findings of an ongoing consultation by the Federal Network Agency (BNetzA) on the experiences of commercial customers with digital platforms.[7] According to these findings, digital platforms are of great importance to numerous SMEs, and for many they have even become indispensable.

From this situation a pressure to adapt arises which is expressed with some unease. Retailers and providers, especially in the B2C sector, see themselves as poorly positioned in the (possible) confrontation with platforms that are perceived as overpowering. Small and medium-sized retailers and manufacturers are not in the role of an equal negotiating partner who has sufficient influence on the conditions under which the offers are placed, advertised, paid for and, if necessary, the transactions are reversed. This is particularly true vis-à-vis very large platforms, but smaller platforms can also develop considerable market power, particularly in specialized areas.

One fundamental deficit described by SMEs is that digital platforms can unilaterally define standards and rules to which the players in a marketplace must adhere.[8] The larger the reach of a platform and the more dominant its market position, the more difficult it is for SMEs to successfully assert their interests and information needs.

The resulting dependence on a few large platforms is particularly criticized in the consumer business, where different competitive or power relationships prevail than in the B2B sector. Digital platforms for business customers, on the other hand, are usually smaller and more specialized than in the B2C market, so the economies of scale for the platform providers are lower.

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[7] Federal Network Agency: Erfahrungen von gewerblichen Kunden bei Marketing- und Vertriebsaktivitäten über digitale Plattformen in Deutschland. Public consultation, since March 2020. Current figures: Gemeinhardt-Brenk, D.: Public consultation on digital platforms - interim results. Impulse at the Focus Session "Digital Platforms," project "Internet Governance: Strengthening the Voice of SMEs" on January 19, 2021.
[8] Cf. e. g. Busch, C.: Der Mittelstand in der Plattformökonomie. August 2019

Key point 2

Transparency about the rules of digital platforms which is as far-reaching as possible as well as timely information about any changes is necessary. Only when these needs are met will SMEs be able to participate in the benefits of the platform economy to the desired extent.

For small and medium-sized retailers and manufacturers transparency about the conditions for trading (commissions, fees) and visibility in the marketplace (ranking, recommendations, display requirements) is of particular relevance. In addition, timely information about changes with regard to the specifications and standards of digital platforms on the conditions of accessibility of SME offers as well as the design of complaint management procedures is necessary from the point of view of SMEs and is definitely in need of improvement.

Deficits related to this are described above all for the B2C area. Amazon, as the world's largest e-commerce platform, seems to have become the standard with its extensive orientation toward consumer interests. In contrast, the interests of other market participants, i.e., retailers, suppliers and manufacturers, are apparently given far less consideration, also in terms of transparency, flexibility and information policy. Retailers complain about non-transparent rankings, changes to their visibility and to technical or design specifications (e. g., in the description of a product), a lack of contact persons, poor support[9] and, last but not least, the handling of returns. All this makes it very difficult for them to adequately represent their commercial interests to platform operators. This is supported by the results of the BNetzA consultation, which, up to and including December 2020, refer to statements from 317 companies about almost 50 platforms predominantly from the B2C sector.

However, an improvement in the transparency of rules and standards on digital platforms is not only urged in the B2C area, but is also expected from B2B platform providers, here above all with regard to the conditions for price determination. In B2B platforms, price determination is often carried out algorithm-based or with the help of artificial intelligence (AI), which learns from the behaviour of market partners. For small and medium-sized suppliers and retailers, such processes can appear as a black box into which they do not have the desired insights.

Such transparency regarding the conditions under which retailers/manufacturers are accepted onto the platform, with a view to pricing and the use of data generated during transactions, is entirely possible. There are already respective examples put in practice, especially by medium-sized, often specialized, platform providers.[10]

Another strategy to create more transparency is being pursued by numerous independent providers of service tools that have developed around Amazon's trading platform. They analyse products, prices and portfolios and make the results available to retailers. The latter can thus optimize their offers and quickly become aware of competitors and, if applicable, plagiarism. These services, for which Amazon even allows advertising, expand the retailers' entrepreneurial scope.

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[9] Remark during Focus Session, "As a retailer on Amazon, you have to wait an average of ten days for a response if you have a problem."

[10] e. g. the logistics platform "Carrypicker". Cf. Karanas, A.: Impulse at the Focus Session "Digital Platforms", project "Internet Governance: Strengthening the Voice of SMEs" on January 19, 2021.

Key point 3

A possible loss of contact with the end customer affects retailers and manufacturers on B2C and on B2B platforms. As a consequence, the flow of information between SMEs and their customers is also impaired: The absence of direct feedback from the customer makes product improvements and innovations by manufacturers more difficult.

In the kind of platform economy analysed here, an intermediary steps between the market partners, usually preventing direct contact between them. For retailers, this often means that no customer relationship can be established and that the data generated in the interaction with customers is not available to them. At any rate, this is the practice that has become established, which is complained about not only by retailers but also by manufacturers with regard to data use.

The loss of customer contacts in the course of using digital platforms can be observed in both B2C and B2B businesses. For manufacturers in craft and industry whose products target business customers, the loss of customer relationships can even mean a fundamental change in their work. Many small and medium-sized companies have assembled a solid customer base over long periods of time, in some cases with highly specialized products. The relationships are characterized by reliability and trust. Having to give up this relationship due to a (partial) switch to selling products via digital platforms can represent a break with the entrepreneurial self-image. This can have broader implications for SMEs, as direct feedback from the customer drives innovation processes, if nothing else.

With increasing use of digital platforms, the fundamentals of business also tend to change: platform users appreciate the speed of receiving an offer and the high level of market and price transparency. Other criteria, such as the supplier's reputation, its ability to manufacture customized products or to work out a solution as a competent contact partner in the event of unexpected difficulties, are taking a back seat. Small and medium-sized companies therefore fear that instead of expertise and trustworthiness, in the future only price will be the deciding factor in awarding a contract. The distinctiveness that characterizes many SMEs could be lost - in exchange for gaining market access in a situation of disruptive industrial development.

Another shortcoming from the SME perspective is that the data obtained from customer interactions usually remains with the platforms and is not shared with the manufacturers or retailers. The resulting information asymmetries can have a negative impact on the business of SMEs as well, especially in cases where platform operators themselves become providers of products (on their own platform).

Key point 4

Small and medium-sized platform providers face different challenges in the B2C and B2B sectors, for example with regard to rules and standards and to the characteristics of the markets themselves. These differences have far-reaching consequences for market access, competition and customer relationships.

The B2C sector is characterized by the strong position of a few, large platform providers. The prominent importance of Amazon has already been mentioned; it also applies with regard to the rules and standards with which the platform brings its market partners into an interaction. The normative structures of the consumer market are therefore already established and, as a

consequence, competing platform providers must also recognize these de facto standards. This makes market entry considerably more difficult for potential platform providers, even if they have been operating in a local market for a long time or are larger companies.

Given this market situation, anyone who wants to present an alternative to the market leader will have to go to great lengths to clearly set themselves apart. For example, this could mean developing their own standards, such as improving conditions for the retailer side, providing additional services for customers or meeting socially desirable standards (such as environmental friendliness, social commitment or the like). Special transparency efforts could also serve to differentiate (e. g., response times to retailers and customers).

The situation is different in the B2B sector, where economies of scale play a lesser role. According to studies by the Federation of German Industries (BDI), no single provider has dominated the market in Germany to date. Rather, there is lively competition between platforms with similar offerings, and between platforms and non-platform-based solutions for brokering services and trading products. Highly specialized platforms operate in specific fields of application or industries.[11] Finally, the asymmetries to the detriment of retailers and manufacturers are much less pronounced on B2B platforms than on B2C platforms; in some cases, even contacts between customers and producers are enabled.

Even if no standards or fewer standards than usual have yet been established in the B2B sector, setting up a platform of one's own is challenging.[12] SMEs that want to operate a platform as a business model must approach this project more like start-ups. They need access to special (start-up) know-how, financing options, suitable software and tools. Both new and established SME platform providers in the B2C and B2B sectors need high visibility vis-à-vis their market partners, i.e., they must undertake particularly extensive marketing efforts in order to be successful.

Conclusions and options for action

For many SMEs, it is essential to use digital platforms for selling products and services or to develop their own platform offerings in order to survive successfully on the market. However, since network effects promote the emergence of oligopolistic market structures, especially in the B2C sector, SMEs are faced with a few dominant platforms. These can define the rules and standards applicable to their marketplaces without taking sufficient account of the needs of SMEs. Existing regulations (e. g., P2B Regulation EU, GWB Digitisation Act Germany) and planned legislation (e. g., Digital Markets Act EU) are considered helpful by the experts surveyed, but not yet sufficient to address SMEs' problems in practice. Based on the project research to date, the following options for action are put forward for discussion:

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[11] Bundesverband der deutschen Industrie (BDI): Deutsche digitale B2B-Plattformen. Juni 2020
[12] It should be noted, however, that the company in question must first decide whether or when it makes sense to establish its own platform. Cf. Bender, B., Habib, N. & N. Gronau: Digitale Plattformen: Strategien für KMU. In: Wirtschaftsinformatik & Management. Vol. 13, pp. 68-76 (2021). https://doi.org/10.1365/s35764-020-00292-w. Or, as guests at the Focus Session put the alternatives: "do it yourself," "go to other platforms," or just use the tools of a suitable, existing platform.

- Demand more transparency and information obligations from platforms towards commercial customers:
    - The conditions for commercial customers (retailers or manufacturers) to access a platform should be clear and binding and must be made correspondingly transparent.
    - Platforms should communicate changes in the formal conditions for the findability (ranking) or accessibility of their products in a timely and understandable manner so that SMEs can react appropriately.
    - Platforms should provide detailed information on their complaints management and, where applicable, details on complaints.
    - Compliance with certain transparency requirements could be made a prerequisite for platform providers to be allowed to act as retailers on their own platform.
    - Transparency requirements should apply to all digital platforms regardless of size.
    - Some of the requirements mentioned could also be laid down in codes of practice beyond the legal requirements. A discussion should be initiated on what incentives could be created for platform operators to participate in such codes of practice.

- Enable feedback between customers and retailers/manufacturers:
    - Platforms should provide procedures to inform SMEs about their customers' feedback. Such mechanisms can also serve quality management in e-commerce, from which not least the platform providers would benefit. Here, too, codes of practice could be a suitable governance instrument.
    - Incentives for platform providers should be considered to promote the exchange of information between end customers and retailers/manufacturers. Such incentives are missing so far.
    - In the B2B sector, the exchange of experience should be promoted on the question of how the relationship with platform providers can be designed in such a way that customer contact is maintained for suppliers and manufacturers.

- Allow access to data generated by commerce on platforms:
    - Small and medium-sized companies should be able to share fairly in the data obtained through the intermediation and sale of their products and services. A corresponding data access right for customer and transaction data should be introduced at European level.
    - Pilot projects could be suited to find out which procedures and specifications would help to reduce information asymmetries: Exactly what data do SMEs need? What should interfaces look like? Who can claim access to data - retailers, manufacturers, third parties?
    - Incentives for platform providers are also lacking with regard to data use, although they would also benefit from more customer data leading to better sales strategies and thus more turnover. Suitable incentives could be identified within the framework of the pilot projects mentioned above.

- Disclose criteria for price determination on B2B platforms:
  This could strengthen the confidence of SMEs that the technology used does not aim to lower prices as much as possible, but serves to determine fair prices, also with regard to the livelihood of all market partners. Criteria for best practice should be developed together with

providers and customers of B2B platforms, but also with AI trainers and users. Corresponding handouts could be developed on this basis.

- Use the opportunities offered by B2B marketplaces to improve the platform economy: Core problems of the platform economy could be well researched in B2B marketplaces, as they operate on a sector-specific or regional basis. Appropriate solutions could be systematically developed and tested. Insights could also be derived from research results for larger and possibly also for B2C market places.

- Monitor the development of SMEs in the platform economy: The extent to which the suggestions and proposals for improvement identified through research and discussions are implemented could be made comprehensible by a continuous monitoring. This could establish an important prerequisite for graduated reactions if the development does not go as desired, and it could help clarify, for example, where legal regulations are needed, where other forms of governance seem more sensible and how SMEs can be promoted and supported in other ways.

II. Key points: Cloud Services

Preliminary remarks

While the potential of digital platforms has become relevant for most SMEs by now, cloud services seem to be less prominent in SMEs perceptions. To put it more pointedly: concrete expectations are connected with platforms, whereas the benefits of cloud applications have so far remained rather abstract. One reason for the latter might be that they can be used for very different processes in the company. Despite a certain feeling of uncertainty about the cloud issue, it is stressed in many places that cloud solutions are particularly relevant for SMEs: They can improve the company's offerings and they can help to overcome the lack of time and resources typical of SMEs. However, SMEs are still in the early stages of exploring the advantages associated with cloud services for business development.

Key point 5

GAIA-X is a flagship project with great potential to make cloud services attractive for small and medium-sized enterprises and to prepare the ground for increased use in practice. This impetus can encourage the implementation of cloud services as well as an increase in the number of small and medium-sized cloud providers.

The GAIA-X project already attracted a lot of attention in its launch phase in 2019. Since then, it has been growing with the involvement of more partners and with each project step towards practical implementation. In particular, the workstream "user ecosystems and requirements", which includes the development and implementation of use cases, promises impetus for large as well as small and medium-sized companies. SMEs are explicitly included in the current funding competition, for example, in which only project networks in which at least one SME or start-up is involved can apply.

This momentum should be maintained with regard to SMEs and, if possible, strengthened, e. g. by continuing the extensive communication on the project itself by the Federal Ministry of Economic Affairs, the partners of the initiative and the members of the GAIA-X Association. It would seem helpful if associations, chambers, cluster management and "Mittelstand 4.0-Kompetenzzentren" (SME 4.0-competence centres, set up to promote the digitisation of SMEs across Germany) continue to specifically draw the attention of companies particularly suited to GAIA-X and the potential of cloud solutions.

Key point 6

Data security remains one of the most important issues when it comes to the use of cloud applications. Above all, there is a strong fear that sensitive company data cannot be protected from unauthorised access.[13]

Various regulatory elements must interlock in order to guarantee security and create trust among SMEs, which, at the same time, have to build their own expertise in IT security issues. The General Data Protection Regulation (GDPR) is of fundamental importance in this respect: it is a benchmark for practically all companies surveyed for the Cloud Monitor when evaluating cloud providers[14]. Equally important is a trustworthy assessment of the features and performance of cloud providers.[15] In the context of this project special attention was given to a tool developed by the German Federal Office for Information Security (BSI), the "Criteria Catalogue C5 (Cloud Computing Compliance Criteria Catalogue)"[16]. This catalogue of criteria specifies the security requirements that a cloud service provider should take into account. Providers examined under the catalogue receive a test certificate and a test report which creates transparency about the information security of the cloud provider and which potential customers can have presented to them. The BSI offers a guideline for evaluating the test reports to potential customers of a cloud provider. This procedure enables SMEs to decide for themselves on the quality of the provider's information security. In addition, the C5 test certificate obliges the provider to explain exactly what the customers have to contribute in order to guarantee the security of the service used. However, while medium-sized companies are likely to have basic IT security systems in place, for small companies even these requirements may be too challenging.

Key point 7

The integration of cloud applications sooner or later confronts companies with classic tasks of organisational development that go beyond human resources planning and training. A typical example is the changed role of the IT department.

For SMEs that have not yet had any reason to deal with their entrepreneurial activities from the perspective of organisational development, corresponding tasks can come as a surprise, especially when using complex technologies such as cloud services. As soon as IT services are purchased from external companies, the role of in-house IT professionals changes. Ideally, they become important

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[13] Cloud-Monitor 2020 (short version). A study by Bitkom Research on behalf of KPMG. 2. Juni, 2020
[14] ibid.
[15] A list of trustworthy providers is maintained, for example, by the Trusted Cloud e.V. competence network which is supported by the Federal Ministry of Economic Affairs and numerous other business partners.
[16] Federal Office for Information Security (BSI): https://www.bsi.bund.de/C5

advisors to the management and can use their expertise to search for suitable solutions in the market and equip other company divisions with the necessary technical tools and corresponding application knowledge. In any case the IT department becomes a cost factor in its own right and thus joins other important areas such as purchasing or marketing. Typical for SMEs, however, is a specification of business processes that often requires a corresponding partial specification of IT, which in turn makes cloud integration more difficult.[17]

Only if the management actively accompanies the change that the use of cloud applications triggers will it become clear internally and externally that the digital transformation as a task affects the entire company. Strengthening the IT department can also prevent a proliferation of multi-cloud applications or parallel software that is booked by other departments without the knowledge of the IT department.[18]

Key point 8

The implementation of cloud applications often proves to be much more complex than other digital projects.

Unlike in the platform economy, cloud technology does not yet suggest or even define a specific business model. There is a wide variety of cloud applications, and companies are faced with the task of assessing which type they want to use for which purpose. Economic efficiency and effects on the business model must be considered: Should cloud applications be used to open up a new business area or should the cloud be deployed as a prerequisite for the use of other digital applications? SMEs also need to clarify what data they are "producing" in the first place, whether this amount is sufficient for complex applications and what data can be outsourced.

The next step is to find the adequate cloud provider: It must be clarified whether a large provider is the best fit, a medium-sized one or one that is familiar with the respective industry. The implementation in turn requires special project management skills, and finally, legal consequences must be taken into account. Especially in this last area, there are often challenges that were not planned for from the beginning. The complexity of the implementation of cloud applications means that the need for external support of such processes is comparatively pronounced.

Conclusions and options for action

Cloud applications are highly relevant for SMEs, but due to their complexity and abstractness (quite different processes can be moved "to the cloud") they create correspondingly high demands on understanding and willingness to innovate. Their implementation requires an intensive examination of the goals and purposes for which they are to be used. Based on the project research to date, the following options for action are put forward for discussion:

- Intensify communication:
  - Highlighting and communicating the benefits of cloud applications for SMEs can stimulate and encourage companies to innovate accordingly. Therefore, it is necessary to develop and make available easily accessible information that can be

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[17] Hölzner, H.: Cloud-Computing im Mittelstand. Impulse on the importance and challenges of cloud computing at the Focus Session "Cloud Services", project "Internet Governance: Strengthening the Voice of SMEs", 22 January 2021.
[18] ibid. See also section "Schatten-IT" of the Cloud-Monitor 2020 (long version, KPMG-publication).

connected to SME practice. Based on this, a variety of best practice examples could demonstrate the different application possibilities.

- ○ GAIA-X is perceived as an outstanding project with great potential. It is helpful if associations, chambers of commerce, cluster management and SME 4.0-competence centres specifically draw the attention of suitable companies to GAIA-X and the potential of cloud solutions. An integrated communication strategy that takes into account the various stakeholders and their specific tasks seems helpful.

- ● Identify and address typical difficulties of SMEs:
  A systematic recording of typical difficulties in the various implementation steps of cloud applications seems to make sense. As the case may be, accompanying research on the use cases of GAIA-X could be a starting point for this.

- ● Develop and simplify the use of tailored support services:
  - ○ The strategic, practical and compliance challenges of cloud deployment should be addressed. Corresponding information can be found, for example, in guidelines[19] and other offers from competence centres. These could be further expanded, specialised and kept up to date.
  - ○ The use of cloud services could be simplified, for example, by identifying and describing typical SME use cases in templates. Based on this, appropriately configured, secure cloud service setups for SMEs could be offered by cloud service providers.[20] The templates could be combined with security requirements typical for the respective use cases in order to eliminate frequently observed sources of error in advance.

- ● Anticipate and address potential legal problems in advance:
  Potential consequences for SMEs could already be taken into account in the course of legislative processes. The experts in the ministries responsible for sector-specific laws could be made more aware of the experiences of SME cloud pioneers and the aforementioned overviews of typical implementation obstacles and thus be included in the design of the regulatory framework.

- ● Network SME cloud users:
  Practical help could be offered through the establishment of data pools, specialised clusters or even digital hubs. Such facilities could bring interested SMEs in contact with each other, communicate best practice and support them with advice, for example by explaining how to assess the security measures of cloud providers (e. g. on the basis of a C5 audit report) and how this fits in with the requirements of a specific SME.

- ● Ensure data and IT security in the long term:
  The development of reliable, comprehensible and easily available security solutions is an essential prerequisite for SMEs to use cloud services as a driver for their digital transformation. Existing offers should be made even better known (e. g. through increased marketing for quality initiatives and seals of approval); the development of new solutions

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[19] e. g. the guidance "Entscheidungsfrage Cloud: Ein Entscheidungsmodell für Anwender und Anbieter", which the „Mittelstand 4.0-Kompetenzzentrum" based in Lingen published in 2019.
[20] von Maltitz, M.: impulse at the Focus Session "Cloud Services", project "Internet Governance: Strengthening the Voice of SMEs", 22 January 2021.

should be additionally promoted, as is planned for GAIA-X, for example, but further funding opportunities independent of this would also be worth considering.

III.   Crosscutting observations

In conclusion, we would like to highlight a few observations that stood out in the course of the research and shed light on the current state of the digital transformation of SMEs:

- Especially those SMEs that already have extensive experience with digital tools and processes perceive a strong pressure to adapt in view of the constant speed of technical innovations. At the same time, they report not being able to use all the technologies they want to use. This may be because the digital solutions do not (yet) fit the business model, because an individual company is considered too small (to use data-based technologies, for example) - or because network bandwidth is not sufficient. In many of these situations, even digitally established companies turn to specific support services. The SME 4.0-competence centres continue to be an important point of contact for this group.

- Small and medium-sized companies that conduct product-, process- or application-related research and development (R&D) implement digitisation projects almost twice as often as those that do not (70 per cent vs. 36 per cent)[21]. The results of the present project indicate that it is beneficial for SMEs to designate employees especially to digital topics. They can keep track of current developments, maintain contact with knowledge resources and obtain external expertise in order to provide ongoing advice to the management and thereby relieve the management's workload.[22]

- Acquiring information and translating it into actionable knowledge remains challenging for small and medium-sized enterprises. There is a wealth of information on digital transformation, in the pandemic rather more than before - and yet the need for knowledge remains high. Therefore, SMEs consider it helpful if information is disseminated in as many ways as possible: from ministries, competence centres and digital agencies, from associations, chambers of commerce and regional clusters, from industry and mass media. With each source, the chance of providing SMEs with news and suggestions on digitisation increases.

- Best practice examples are a proven information tool, although they were assessed differently in the two focus sessions: helpful for cloud use, less helpful with regard to digital platforms. This could indicate that with advancing digitisation in SMEs, differentiated explanations of what is understood by "best practice" in each case are useful: What exactly does a particular example stand for, which digitisation steps can it help with and is it more suitable for digitally established SMEs or for newcomers?

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[21] KfW-Digitalisierungsbericht Mittelstand 2019. Digitisation projects increasingly widespread in SMEs, but digitisation spending has remained low for years. Frankfurt a.M., May 2020.
[22] The law on tax incentives for research and development, which has been in force since the beginning of 2020, has in any case improved the financial conditions for more R&D at SMEs.

- Another way of presenting role models may also motivate imitation, namely increasing the public visibility of digitisation in SMEs. This can be done in many ways, e. g. through a stronger presence of entrepreneurs from small and medium-sized companies at national or cross-sectoral conventions or through consistent encouragement of SME participation in projects, e. g. through corresponding specifications for calls for tenders (for example along the lines of GAIA-X). Especially in times of pandemics, such visibility can have a signalling effect.

About the authors

Grothe Medienberatung has been working as an owner-managed agency at the interface of politics, media, digital economy and science since 2005 and focuses on topics such as digitisation and media convergence, platform economy and Internet governance.

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Prof. Dr Wolfgang Schulz is Director of the Leibniz Institute for Media Research │Hans Bredow Institute (HBI). In February 2012, he was also appointed Director of the Alexander von Humboldt Institute for Internet and Society (HIIG) in Berlin. At the Faculty of Law of the University of Hamburg, he holds the university professorship "Media Law and Public Law including its Theoretical Foundations". He is a board member of the German UNESCO Commission and was chairman of the Committee of Experts on Internet Intermediaries (MSI-NET) of the Council of Europe.

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