

Results of the 2020 ZKI IT Top Trends Survey in Germany

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1. ABSTRACT

The Working Group Strategy and Organisation of the German ZKI Association conducts an annual survey on the most important topics and focal points of the member institutions. For the year 2020, the survey was extended with an additional catalogue of questions on the focus "digitisation". In 2020, it covers the responses from 66 German universities, applied universities and research organisations for the 23 questions on topics such as management trends, compliance requirements, governance, technical endeavors and skills. The ZKI IT Top Trends Survey 2020 shows a shift of emphasis within the IT centers from rather technical topics to management, communication and digitization aspects. The paper is presenting the results with a focus on digitisation, IT governance and is also presenting examples from the management questions.

2. IT Top Trends in 2020

The IT top trends in 2020 for the German ZKI community are depicted in the following figure.

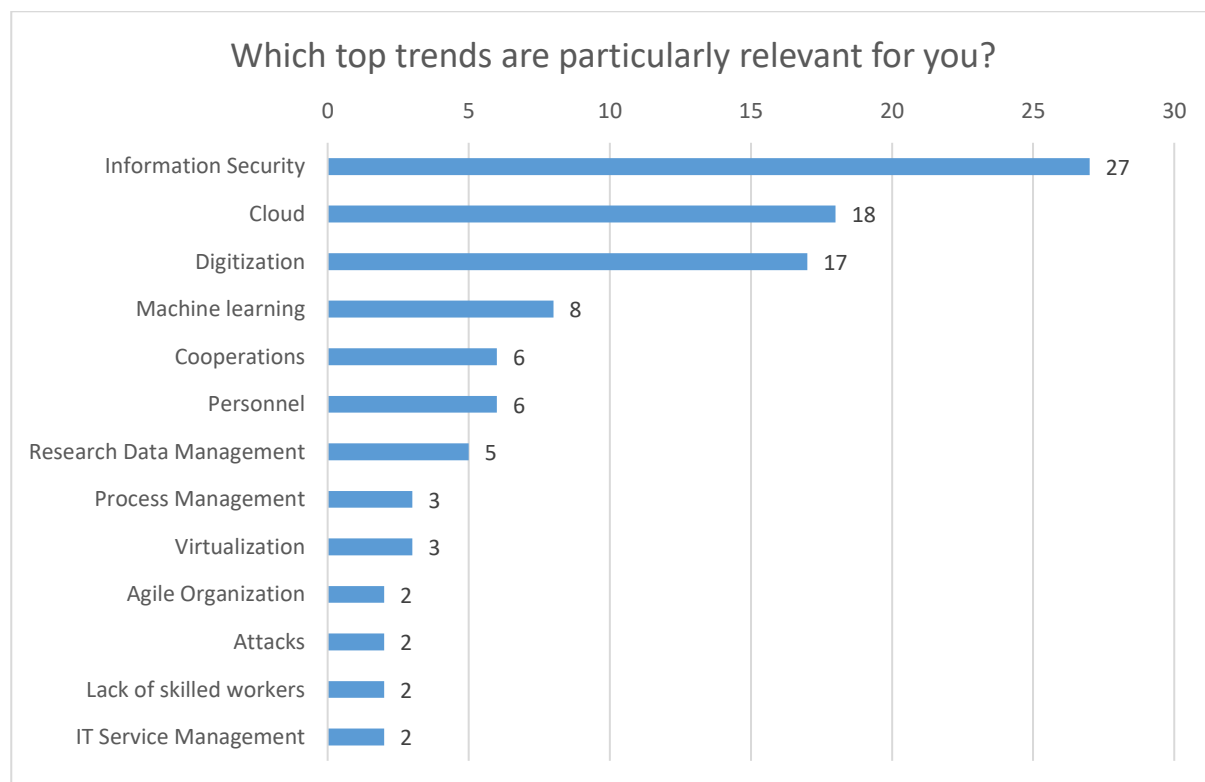


Figure 1: Relevant top trends and number of mentions

Compared to the 2019's survey, the results changed especially about the adoption of cloud scenarios and HR topics.

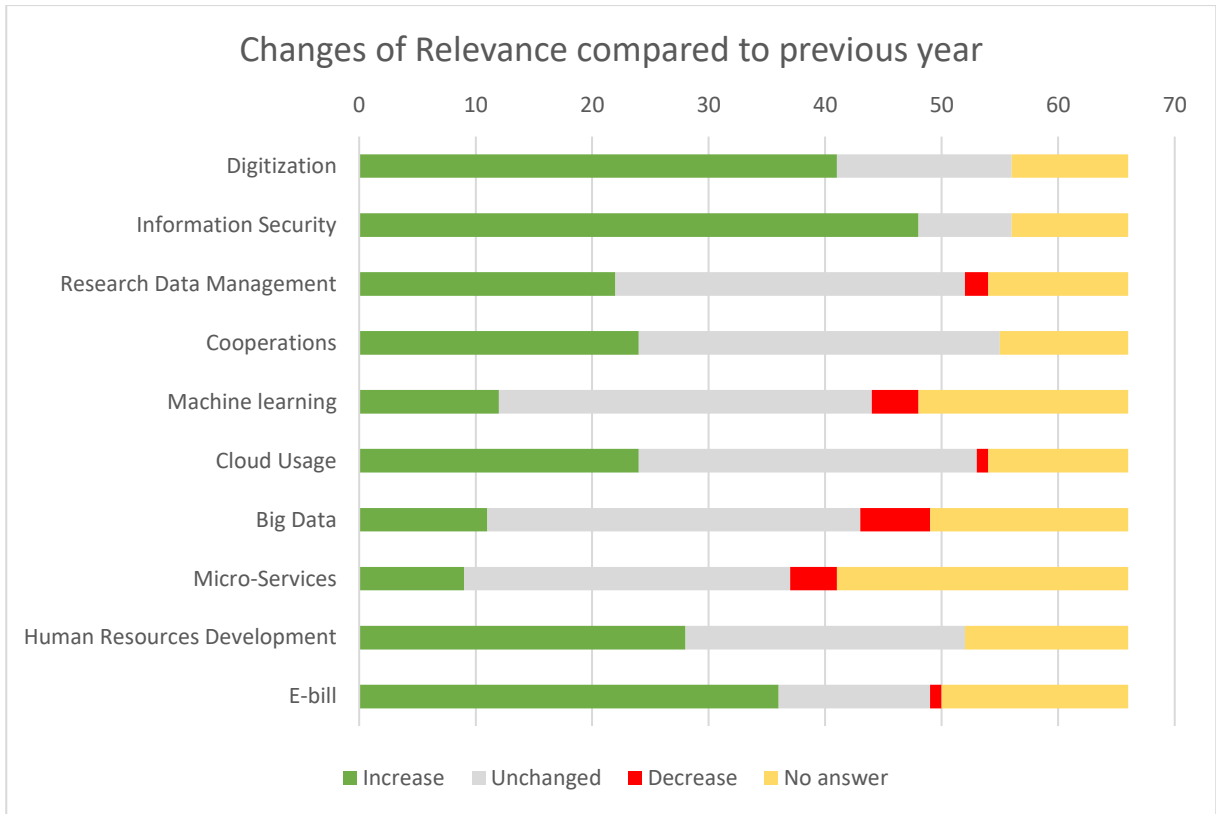


Figure 2: Change in the relevance of top trends compared to the previous year

This figure also includes the number of responses that did not answer the question. This allows speculating, for which topics there might be a broad interest and which topics seem more specialized.

The next question relates to the IT governance model chosen in the institution.

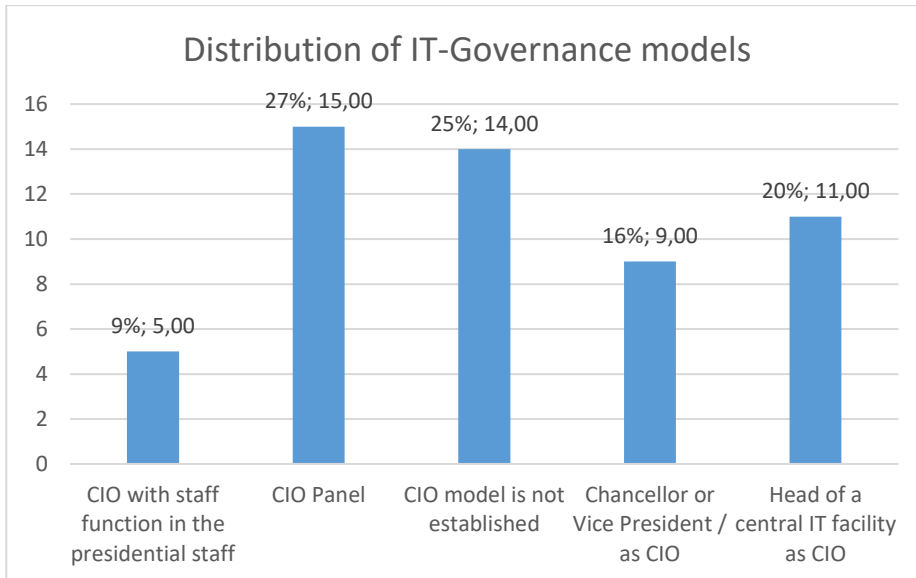


Figure 3: Model of IT governance at the institution of the survey participants; n=54

The increased number of responses in 2020 will make it easier to investigate in which type of higher education institution and for which size of institution the models are preferably used.

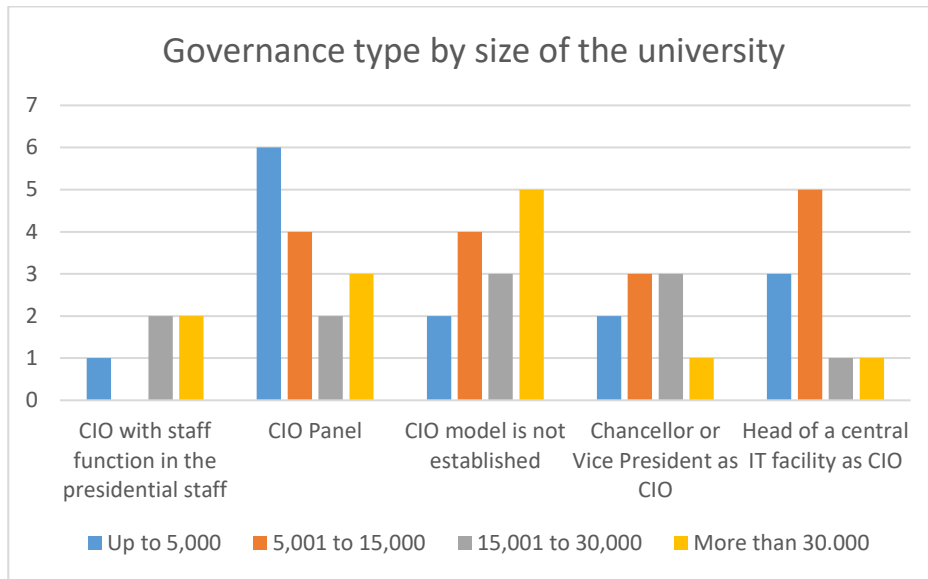


Figure 4: IT governance by size grouped by governance model

The following figures show the model of IT governance in relation to the type of institution.

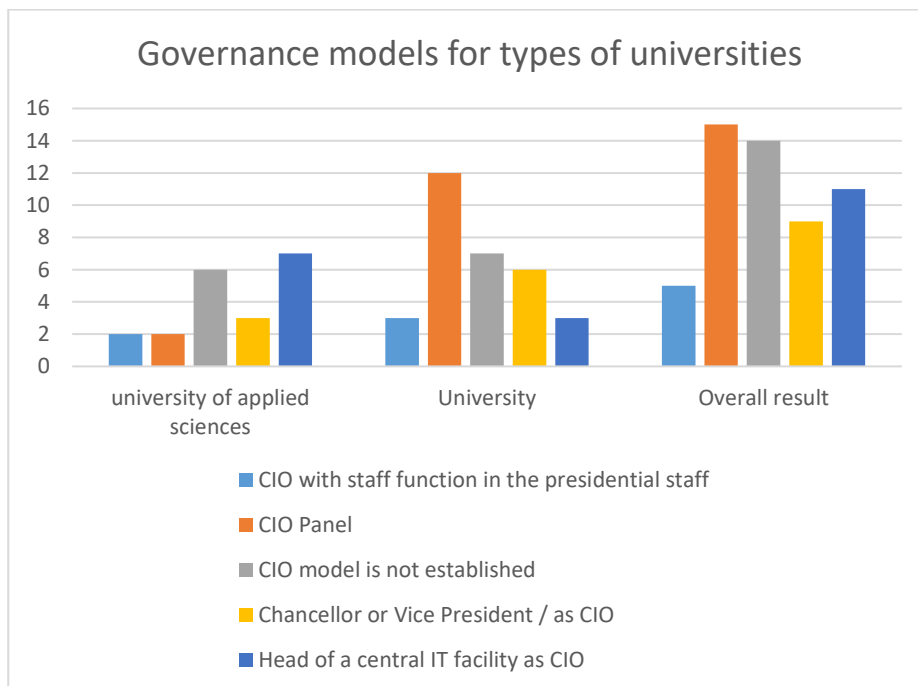


Figure 5: IT governance of institution grouped by institution type

In general, the most established model for IT governance is the CIO panel followed by individual approaches, followed by the head of a central IT related organisation as the CIO. Smaller institutions tend to implement IT governance by assigning the CIO role to single persons. Slight differences between universities and universities of applied sciences can be identified, where universities tend to

delegate the IT governance to a panel or board, while universities of applied sciences tend to delegate this role to single persons.

3. Focus 2020: Digitisation

For the year 2020, the focus topic was "digitalisation".

The textual answers in particular contain many interesting references, which is why some of them are reproduced here in extracts. For the complete overview of the responses, please refer to the data annex, which will be published on Zenodo.

3.1. What are the strongest effects of digitisation on the IT centre of your institution?

Selection from the free text answers (for full details see data appendix):

- *Requirements for IT security and data protection continue to increase*
- *Participation in university-wide process development and process implementation*
- *Increased expectations of service quality*
- *Increased need for consulting and support*
- *Increased complexity of tasks*
- *Greater specialisation of professionals required*
- *More services, while the same staffing levels remains the same*
- *More project business*
- *Higher workload for employees*
- *Nebulous expectations regarding (new) IT services for digitisation*
- *Faster accumulation of technical debts*
- *Rising staffing needs and task overflow*

3.2. Is there an overarching digitisation strategy at your institution?

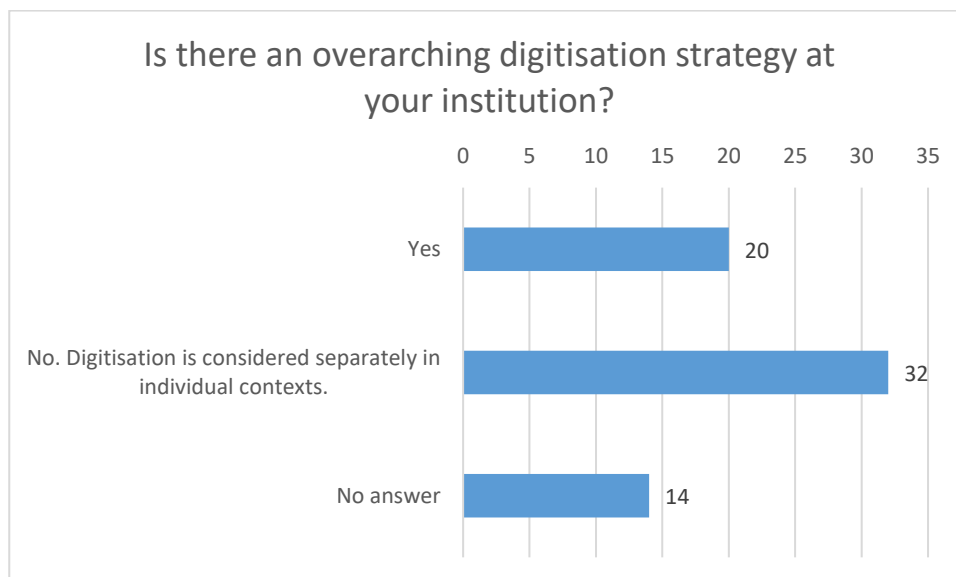


Figure 1: Digitization strategy created; n=66

Of the 32 responses for which no digitisation strategy has yet been submitted, 16 comments indicated that this strategy is currently being developed and widely discussed or that the measures are coordinated by the Presidential Board.

3.3. Do university management or the management of the research institution, faculties, administration and IT centre share a common view on digitisation?

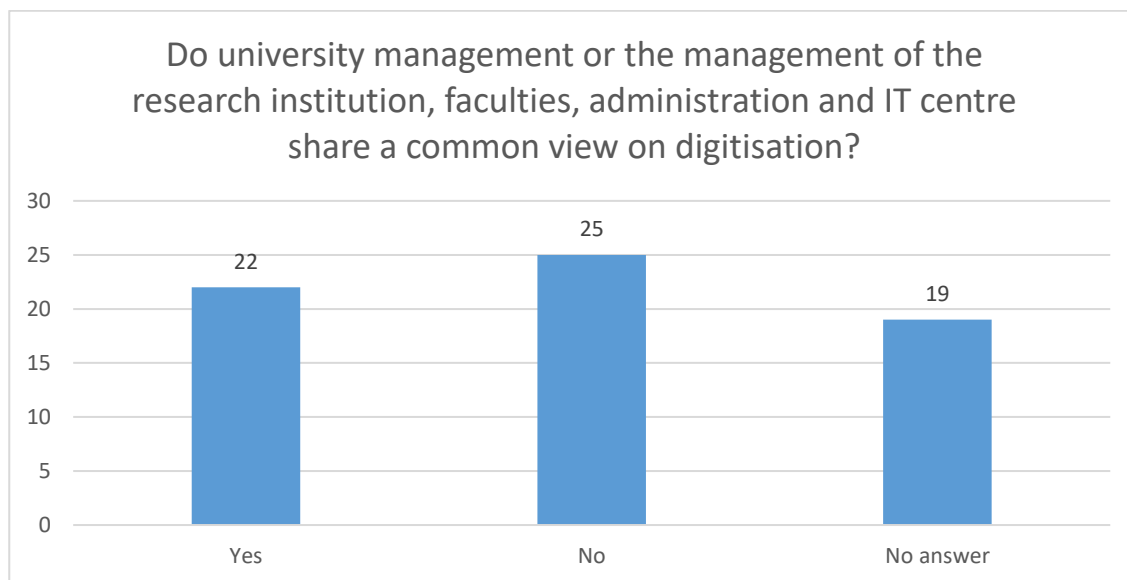


Figure 2: Common view on digitisation; n=66

The comments illustrate, that in most organisations, the strategy and approach to digitisation is ill under development. The process is supported by intense discussions across all stakeholders and departments. Most

3.4. Was the IT centre of the university or research institution involved in digitisation projects?

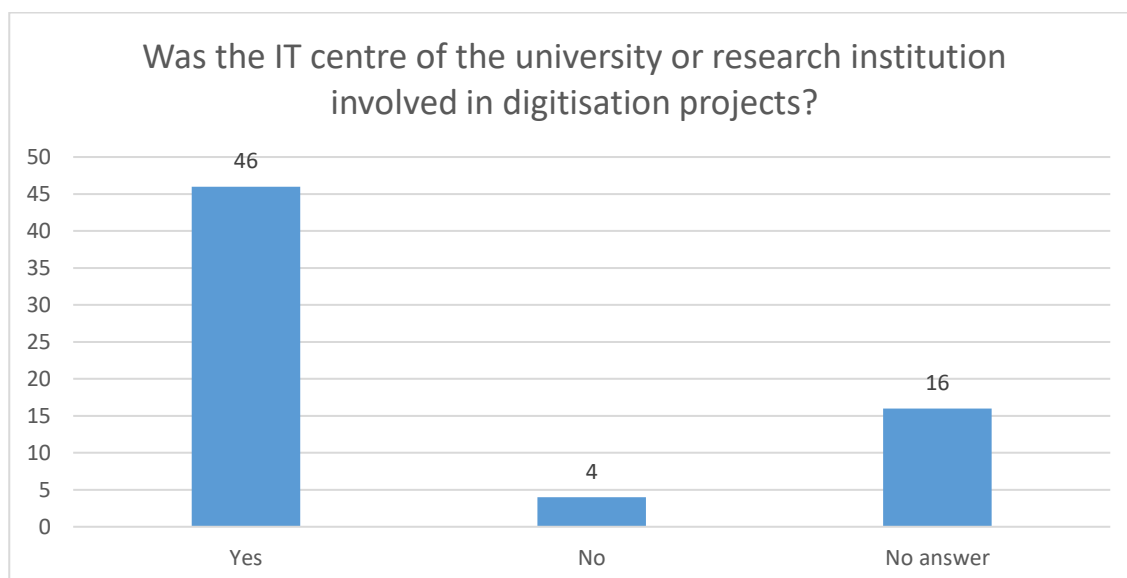


Figure 3: Involvement of IT centre; n=66

The IT centres were mainly involved in the digitisation projects. Nevertheless, there were 11 comments on this question, which further explained the nature of the involvement.

Selection from free text answers (for full details see data appendix):

- *There are three working groups on the digitisation strategy (research, teaching, administration) and only in one (administration) is the IT centre involved*
- *occasionally*
- *It depends on the respective project or the person responsible for the project and their view of the IT service (ranging from "they take care of everything and are the central point" to "they only provide the network and the storage")*
- *There is still considerable potential for improvement in initiatives initiated by the political sector and the projects resulting from successful participation in tenders and competitions. Here, the computer centre still too often only learns about the project proposal AFTER it has been accepted.*
- *In principle yes, but mostly too late*

3.5. Which stakeholders drive digitisation projects at your university or research institution?

In this text question, the 45 answers reflect the entire spectrum of functions and facilities at a university or research institution.

Selection from free text answers (for full details see data appendix):

- *The Presidium has a staff unit for digitisation*
- *Those responsible for research and teaching*
- *Individual departments of the university administration*
- *Individual faculties*
- *University management, management of central facilities (IT, HR, BiBo)*
- *University management, rectorate, professors*
- *Chancellor for administration, vice-rectors and professors for teaching*
- *Lecturers (improvement of the teaching offers)*
- *Lecturers in their institutes*
- *Computer centre*
- *Administration (legal requirements, improvement of service offerings)*

4. The core questions of the survey in detail

Each year, 12 questions are asked in the survey, which remain the same and are answered as free text. From these texts, topics are derived and normalized, which are then grouped together for this list. Four of these questions will be presented here.

4.1. What top trends do you generally see in the IT sector?

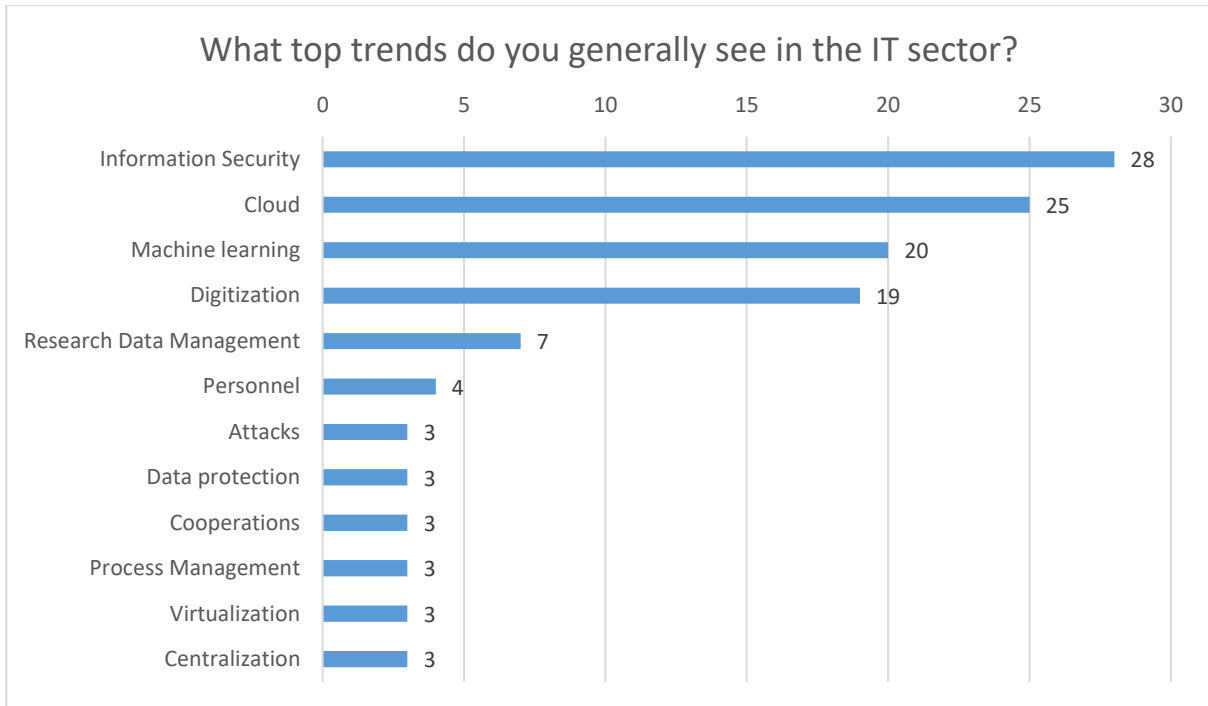


Figure 4: Top trends in general

The top trends show new topics, which didn't show up in the year before. Among them are topics like 5G, Automation, Big Data & Analytics, Edge Computing, "Lack of skilled workers" or Mobile working

4.2. Which top trends are particularly relevant for you?

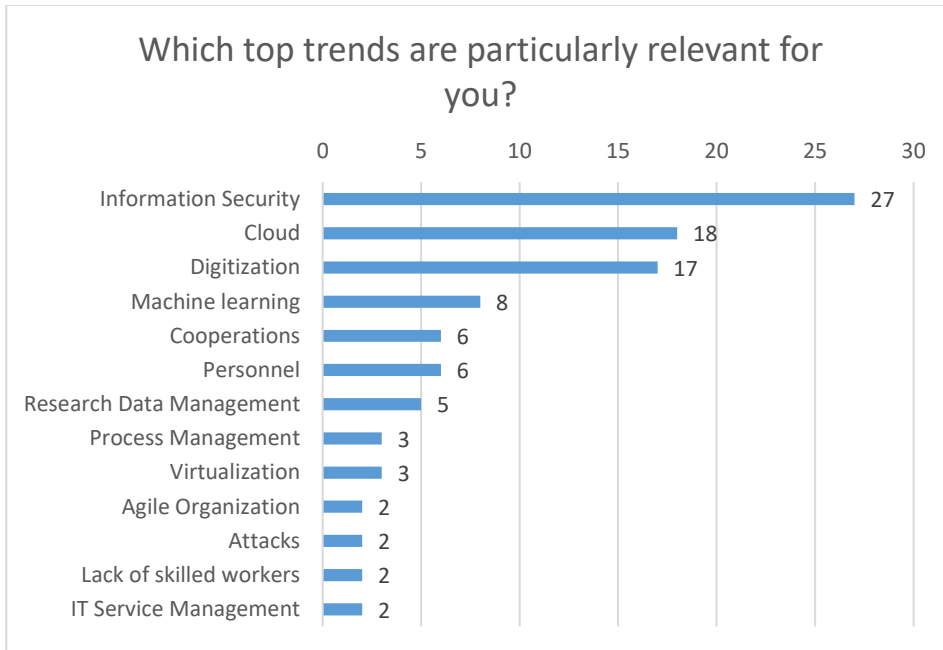


Figure 5: Top trends with particular relevance

Many new topics were introduced in the answers of the 2020 survey. Especially, more attention for security and management topics can be identified, such as Process Management, difficulties in finding qualified staff, or the defense of security threats.

4.3. Which topics are you currently working on strategically?

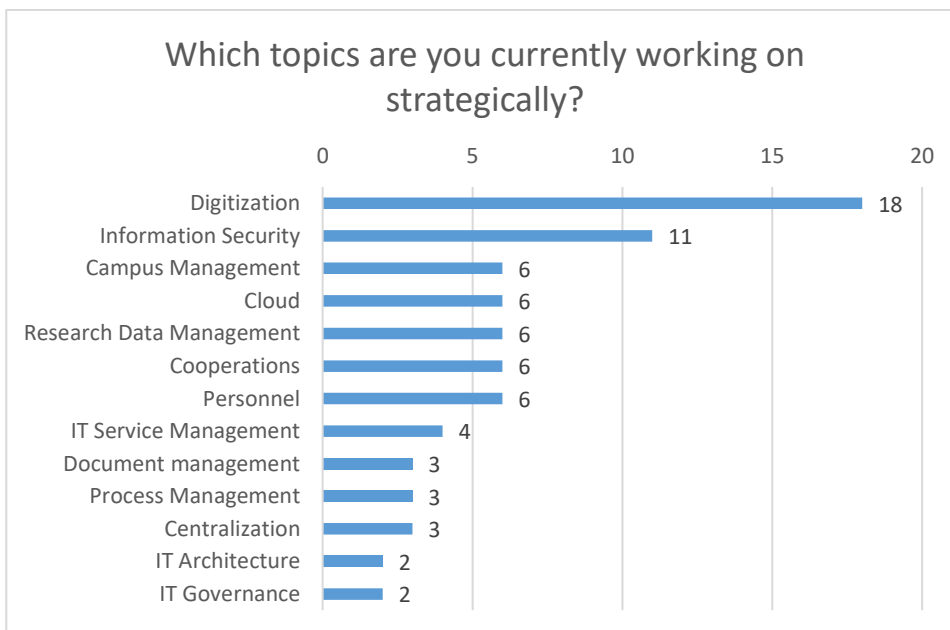


Figure 6: Strategic topics

In 2020, the topics process management and IT architecture were new to the top trends. An overall trends for mor abstract management topics can be identified in the answers.

4.4. Which technologies are becoming more important for you?

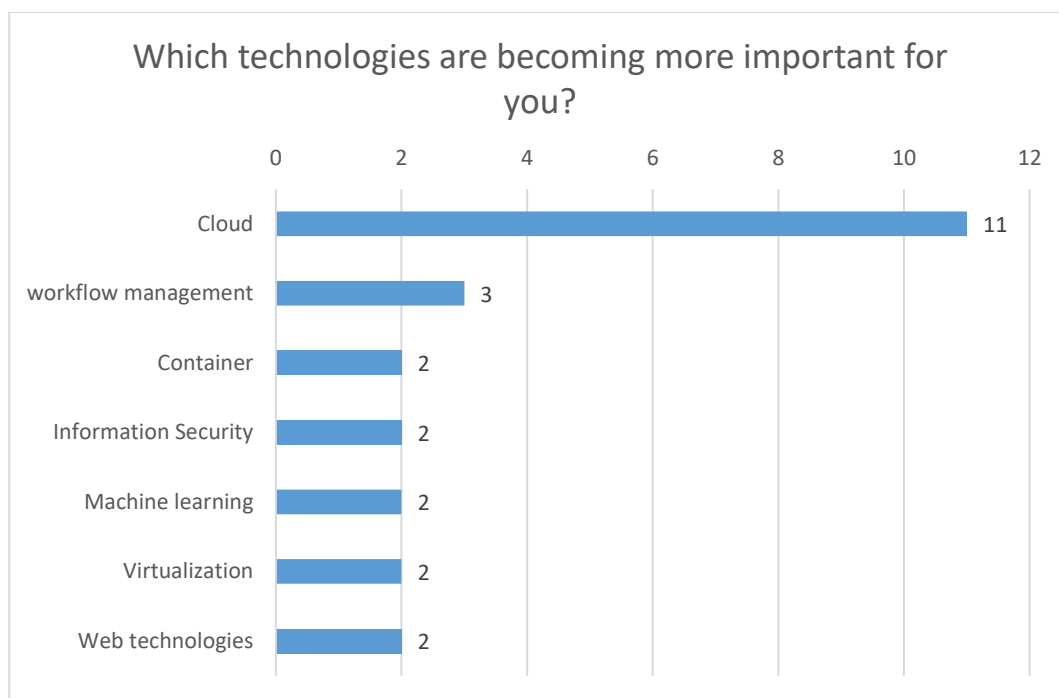


Figure 7: Technologies with increasing importance

In 2020, cloud technologies are dominating the results of the survey. Also container technologies and Kubernetes have been mentioned in responses more often. In contrast, CEPH object storage, tiered storage or Virtual Desktop Infrastructure did not make it into the top trends.

Commentary and Conclusion

As a conclusion, the ZKI IT Top Trends Survey 2020 shows a shift of emphasis within the IT centers from rather technical topics to management, communication and digitization aspects. Although many of these topics have been identified earlier, they were not mentioned so frequently in the surveys. The lack of qualified experts on the labor market due to the high employment rate means that more and more tasks are being outsourced to third-party service providers, even for tasks such as basic system administration, network administration or general operations. This is accompanied by increasing demands for outsourcing of project management, the introduction of workflow solutions and the operation of services in the cloud. This situation appears to be intensified by the requirements of digitization, as an increasing number of projects require more and more tasks to be outsourced and a higher level of governance is required for more complex procurement architectures. The transition to new sourcing architectures will be a challenge for IT centers and will require new skills within teams to manage this complexity and to derive systematic approaches.

5. REFERENCES

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6. AUTHORS' BIOGRAPHIES

Malte Dreyer is the director of the IT centre of Humboldt-Universität zu Berlin, Germany. Before he was director for the department of research and development at Max Planck Society, Max Planck Digital Library.

He designed and developed research and publication data infrastructure for the Max Planck Society's institutes, as well as many research tools. Providing advice on software and information architecture, he is a member of several technical boards.

Malte Dreyer's interests now are in the field of compliance and risk management, scalable information management architectures and infrastructures in the intersection of organizational perspectives on ICT from data centers and information management organizations. Current projects are in the fields of flexible sourcing strategies, enterprise resource management, linguistics and research services management.

