



Digital Transformation Strategy

of the University of Oldenburg

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Introduction

The University of Oldenburg (UOL) is committed to transparency in academia with social responsibility in the tradition of its namesake, Nobel Peace Prize winner Carl von Ossietzky. Its vision is to foster academic dialogue and exchange, a place for creative research and teaching, a dynamic and attractive employer and a driver of innovation and transformation. It is a university that is open to all and actively pursues equal opportunities with diversity and equality. Climate action and sustainability are core concerns across the university. At the heart of its ongoing development is the vision of a vibrant academic centre enabling face-to-face dialogue and exchange.

The digital transformation process will be central to the university's development for the foreseeable future. On the one hand, this means academic engagement with the topic, for example in research on Digital Humanities or Data Science as well as in the higher education support for teaching in the field of "teaching and learning with and via digital media". On the other hand, all university departments both benefit from and actively shape digitalisation. The university understands that its digitalisation takes place in the context of a global digital transformation drive. While the German Council of Science and Humanities sees the dawn of a "new era" for society and universities, university members find themselves in the midst of a multitude of recommendations, requirements and specifications to be adhered to as well as individual ideas, expectations and hopes that emerge in the course of digital modernisation and optimisation.

The university motto "Open to New Approaches" also sets the course for dealing with the profound social change that is directly linked to digitalisation and which itself will transform all areas of the university. The widespread availability of generative artificial intelligence and its effects demonstrate how dramatic these changes already are and will continue to be. This strategy provides a framework for shaping digitalisation and digital transformation at the university under 'I. Objectives'. Digitalisation in the narrower sense encompasses several aspects, including converting information into digital formats, organising digital information, automating processes and standardising processes. On this basis, digital transformation can reshape the university as an entire organisation.

University departments can be active on several digitalisation levels at the same time, as adaptations and developments are very varied depending on the academic area, starting point and object of digitalisation. While digitalisation is often mainly about converting information from analogue to digital formats and making it available, it also focuses on the flow of and access to digitally available data. Moreover, it involves efficiently and sustainably reorganising processes using digital information and technologies and thus initially restructuring individual processes in an institution. One example of how this was achieved at the university is the launch of the electronic committee management system ALLRIS, which is continuously being rolled out to more committees throughout the university. Digital transformation involves bringing about far-reaching, coordinated changes at the university in terms of culture, technologies and employees to thus achieve the institution's strategic goals. The accompanying cultural change is reflected in opportunities such as mobile working, greater networking among employees and a more flexible study programme in terms of time and location.

At the university, digitalisation is a continuous process involving a wide range of activities. The university aims to harness the opportunities of digitalisation and continuously improve its appeal as a place for academic dialogue and exchange via digital transformation. This requires a certain overarching

contextual orientation and appropriate structures that help address digital transformation challenges. For digitalisation to be successful, however, the organisation itself must also adapt and therefore systematically engage in organisational and development processes. For all of this, the university also requires adequate infrastructure and resources (personnel, equipment, time, knowledge). This digital transformation strategy provides the necessary contextual orientation. The structures to be established and linked will be analysed and designed on behalf of the Presidential Board and in consultation with the university. The work on and with digitalisation, which benefits all areas at the respective levels, is also structured via a large number of measures in the key fields of action of Studying and Teaching, Research and Technology Transfer as well as Administration and Service. The overriding objectives are set out in the next section of this strategy paper.

The university departments will utilise the funds and the necessary resources available for the appropriate infrastructure in a targeted manner. In addition, the university requires the firm support of the State. The university will not succeed in implementing digitalisation on its own, and therefore plays a part in corresponding partnerships and alliances, such as Hochschule.digital Niedersachsen (HdN), and will also lead consortia where appropriate.

I. Objectives

The long-term objectives of this digital transformation strategy are led not by pursuing digitalisation for its own sake, but rather by intentionally developing the modern university in research, studying and teaching, further education and administration and keeping it competitive based on specific needs and identified potential. This calls for a cultural shift at the university. Digitalisation in the sense of a digital transformation does not happen by itself; it requires open-minded attitudes and approaches from all university members. This means recognising digital technologies as an opportunity and source of enrichment, whilst bearing in mind potential risks, and using it wisely to make the university more efficient and effective.

In this context, the university has set itself the following overarching goals:

1. Strengthening the digital sovereignty of all university members
2. Actively shaping digital transformation
3. Improving processes across all fields of action
4. Adapting and improving infrastructures

1. Strengthening the digital sovereignty of all university members

The university's competitiveness will, among other factors, depend upon developing the necessary skills for a (digitally) changing world: researchers, lecturers, students as well as technical and administrative staff need to be able and be enabled to keep up with the ongoing changes and develop agency. The digital skills required enable them to not only be able to cope with the latest digital changes, but also to use and reflect on these actively and in a self-determined manner, i.e. to think and act with digital sovereigntyⁱⁱ. Taking responsibility for one's own actions in the digital sphere goes hand in hand with expanding digital skills and continuously honing them. Teaching and training programmes designed to ensure that all university members are digitally capable and confident will be offered. Teaching digital skills with an awareness of gender and diversity concerns ensures the participation of all and counteracts major differences, in particular marked by age, education and type of occupation (digital gender gap and digital skills gap).

2. Actively shaping digital transformation

Digital transformation is jointly being shaped by all university members and is set as a strategic goal in the university development and structural planning. Digital transformations affect all disciplines and change research practices and gains in scientific knowledge. Developing and applying digital technologies and engaging academically with the opportunities and risks of the digital transformation in an interdisciplinary manner are key tasks for the university. University stakeholders can and must successfully create a network of different disciplines as well as a corresponding digital research infrastructure by

targeted development and structural planning, in particular through corresponding orientation and creation of new professorships, research profiles and specialisations

3. Improving processes across all fields of action

The digital transformation strategy aims to optimise processes in the three fields of action – Research and Technology Transfer, Studying and Teaching, and Administration and Service – with a view to digitalisation and digital transformation. Using digital tools, media and methods responsibly offers an opportunity to render work processes in the respective fields of action more efficient, effective, flexible and participatory for the entire university. This also includes the willingness to record, standardise and simplify work processes, both within a single field of action and across all fields of action, as well as individuals' openness to agreeing on changes and supporting them organisationally.

4. Adapting and improving infrastructures

In order to further enhance the university's appeal as an institution for research, studying and teaching, it requires modern, accessible and user-oriented IT infrastructure. Contemporary digital technologies and systems promote and drive innovation and good working conditions as well as the networking and participation of all. Spatial concepts that contribute to the digital transformation and thus also promote the cultural shift at the university are also part of adapting infrastructure. Infrastructure development is driven in particular by the activities in the fields of action and the digitalisation goals specified there. All systems must also meet IT security requirements.

In order to implement these overarching objectives, strategic goals for the following years are set out below in relation to the fields of action of Studying and Teaching, Research and Technology Transfer and Administration and Service. These are linked to short- to medium-term projects and measures, their realisation being regularly reported in the University Senate. In addition, digitalisation and its opportunities and risks must be reflected upon and operationalised in the strategic considerations on cross-cutting issues (sustainability and climate action, internationalisation, equal opportunities / gender equality, family friendliness and diversity, academic career paths). Ultimately, digitalisation at the university is always intertwined with the strategic objectives in other cross-sectional areas – the high energy requirements of digital technologies and digital infrastructure requires the expansion of renewable energies combined with constant improvements in energy efficiency. Digitalisation can also be harnessed, for example, to increase opportunities for participation by making studying and teaching more flexible and providing open, more inclusive educational opportunities. Risks from digitalisation, such as the inclusion of (unconsciously) discriminatory patterns in digital systems or the creation of new barriers and the exacerbation of existing inequalities (digital gender gap) are reflected upon and countered in the respective fields of action.

II. Fields in action

Studying and Teaching

The digital transformation strategy is the University of Oldenburg's response to the challenges of the societal transformation process brought about by the development of digital technologies. The University of Oldenburg is at heart a traditional university that facilitates face-to-face interactions and fosters an active, specialised discourse between lecturers and students, where in-person teaching is supported and further developed by digital teaching and examination programmes, content, formats, and tools that are methodologically, didactically, and curriculum-appropriate, contemporary, and appealing. Digital support can be provided for courses, modules and degree programmes and is implemented through coordinated teaching, learning and support strategies as well as their examination frameworks. Digitally enhanced in-person teaching is not an end in itself; rather, it aims to improve the quality of studying and teaching as well as to promote students' skills and outcomes in an increasingly digital world. The appropriateness of concepts and implementation of digital support is accompanied by recommendations, statements and decisions of the study programme committees, academic committees, dean's offices and school councils.

The following objectives were developed for the field of Studying and Teaching as part of an extensive, in-house discussion with the schools and central institutions of the university. They are also based on the recommendations of the German Council of Science and Humanities on digitalisation in teaching and learning (2022)ⁱⁱⁱ, the recommendations for action of the Standing Scientific Commission (2022)^{iv} on digitalisation in the education system, the recommendations on digitalisation in university teaching of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder (2019)^v and the recommendations of the peer-to-peer consultation of the University of Oldenburg by the Hochschulforum Digitalisierung (2022). This strategy is not considered complete upon adoption, but rather constitutes the start of a discourse-based process in the digitalisation of Studying and Teaching.

The University of Oldenburg will pursue the following objectives in the domain of Studying and Teaching in the coming years:

- foster a culture of digital teaching and learning
- make studying and teaching more flexible
- promote digital sovereignty
- ensure curricular integration of digitality
- establish and expand needs-based support structures
- provide a contemporary digital infrastructure

For digital teaching and learning to be accepted and implemented across the university a **fostering culture** that encourages self-directed learning processes and invites teaching staff to provide support and guidance has to be established. In addition to teaching digital learning content and skills, focus will be placed on supporting individual learning processes as well as feedback for individual learning progress using digital systems. This calls for a clear presentation of expected learning outcomes or skills objectives and (further) development of digital exchange and feedback formats. The University of Oldenburg is very much aware that simply providing digital technologies does not improve the quality of teaching and learning. Establishing a digital teaching and learning culture is a major challenge.

Digitalisation opens up far-reaching opportunities to **make studying and teaching more flexible**. Flexibility provides opportunities to address many aspects of studying and teaching, such as access, time, content, learning locations, learning objectives, and assessments. This also includes the potential for digital

courses with various partners across different locations. All of these aspects are at the same time limited by legal frameworks or discipline-specific standards. To this end, the University of Oldenburg will provide more information and counselling services at both central and decentralised level and focus on the further development of the entire study process through supplementary digital formats. Studying and teaching are made flexible while maintaining the institution's identity as a traditional university and in coordination with the disciplines and their respective study objectives. Furthermore, the University will aim to increase participation in the educational processes and facilitate active involvement, for instance through co-determination or participation by both students and lecturers as well as technical and administrative staff.

Through the **promotion of digital sovereignty**, students and teaching staff will acquire and develop skills which are necessary both for work and increasingly digital society. The University of Oldenburg promotes competent and learning objective-oriented use and co-design of digital applications and technologies along with analogue techniques in studying and teaching. This includes, in particular, a reflective approach to and understanding of IT, including AI-based systems. This is achieved through information and consultation services, special modules and programmes whose goal is to enhance digital sovereignty for students and lecturers as well as for technical and administrative staff.

The University of Oldenburg's degree programmes are responding to the digital transformation by developing curricula, especially with regard to the emerging subjects and interdisciplinary requirements that arise. This also includes the related changes of modules, assessment formats and degree programme designs. In addition to these content-related considerations, quality-assured integration of digitally supported teaching and assessment formats will be promoted and the corresponding administrative and formal requirements will be established for this purpose. The University of Oldenburg strives for a **curricular integration of digitality** in all degree programmes. Furthermore, digital assessment formats will be further developed and incorporated into the relevant regulations, while the teaching profile feature related to research-based learning will be tied in with digital elements.

The digital transformation in Studying and Teaching depends on **establishing and expanding needs-based support structures**. This process can only be undertaken and continued as a joint task in cooperation with all stakeholders, i.e. students and lecturers as well as technical and administrative staff. The ability of academic and non-academic staff to use digital services responsibly is crucial in this regard and will be promoted through suitable programmes. Furthermore, a website for digitalising studying and teaching will be developed to facilitate exchange and networking among stakeholders. The University of Oldenburg's existing legal regulations will be reviewed with regard to the requirements presented by digital transformation and will be adapted and communicated as needed.

Another objective involves **providing and maintaining a contemporary digital infrastructure** which effectively supports and advances the strategic goals of the University of Oldenburg for digitalisation in Studying and Teaching. The main focus here will be placed on structural and spatial planning with the corresponding IT infrastructure and applications. In addition to determining the requirements of lecturers and students, adequate room concepts will be developed and up-to-date hardware and software provided.

Research and Technology Transfer

The University of Oldenburg is committed to the principles of open science for open communication and transparency in science with and for society. It supports its academics in making their research practice as open as possible: measures such as the establishment and promotion of a university-wide research data management system that is accessible to all disciplines, the further expansion of open-access publishing, the expansion of a medical data integration centre and a research information system create and expand a digital infrastructure that facilitates research according to the FAIR principles (findable,

accessible, interoperable, reusable) and promotes good academic practice under digital conditions. Researchers are thus prepared for the requirements of an ever more digitalised labour market inside and outside the university.

Digitalisation is changing academia and society in a variety of ways. For example, AI-based analysis methods and systems have been introduced in many areas, and collaboration and interaction are becoming increasingly digital. Shaping this change requires content-related and methodological analysis and further development in all disciplines as well as systematic reflection on digital systems to prevent, among other things, discriminating patterns from being reproduced and consolidated. There must be critical reflection on opportunities and risks, and the ongoing transformation must be shaped actively and driven by academia. To achieve this, academic study of digitalisation is necessary in all disciplines as well as in interdisciplinary exchange between the disciplines. The university supports this internal and interdisciplinary research on digitalisation in a variety of ways, for example by establishing cross-school centres.

The results of scientific work differ and should be assessed accordingly when considering discipline-specific achievements. They are reflected not only in publications, but also in a variety of other discipline-specific digital forms and formats. This includes data collections, exhibits or software, for example. These research results will be made publicly accessible as far as possible. For publications, open access formats should be used that are appropriate to the discipline. In the long term, solutions must be found that do not involve any financial barriers for readers or authors.

Digitalisation is an important element in the transfer of academic knowledge to the economy and to society. The strategic transfer objectives include shaping innovations for digitalisation, increasingly engaging academia and society in dialogue via digital formats, increasing digital skills in academia and society and promoting non-university career paths related to digitalisation. The university has the necessary infrastructure with the digital laboratory located at the Innovation Campus. Central funding, advisory and interaction services in the Research and Technology Transfer Department and its transfer projects are used to promote knowledge and technology-based spin-offs for digitalisation, enrich the regional culture of innovation with specific services, open up new target groups for academic and higher education-related formats and systematically prepare early-career researchers for non-university career paths as part of their qualification.

Strategic goals in the coming years involve in particular::

- shaping the digital transformation in society
- expanding and establishing digital infrastructure for transparency and reproducibility in academia
- promoting discipline-specific and interdisciplinary academia-based engagement with digitalisation and the resulting societal transformation processes
- expanding the proportion of freely accessible publications
- expanding innovation and transfer networks in the area of digitalization

Administration and Services

The aim of administration and service centres such as the central IT services or the library system is to provide the best possible support to Research and Technology Transfer as well as Studying and Teaching. This means improving task completion and support by making processes in administration and the service centres digital. Processes and file management that are currently still paper-based will be changed over to fully digital workflows and document management systems.

In the area of administration, both structural and needs-specific individual measures are organised in line with strategic objectives, barriers are broken down and there is regular critical reflection on the

implementation of digitalisation measures including from the perspective of changing work requirements and new emerging risks (digital skills gap).

As the basis for this, central process management as well as project and portfolio management have already been introduced with the aim of establishing overriding standards for quality assurance and improvement, integrating project and process management more closely and prioritising project proposals in the categories of digitalisation, internationalisation, sustainability and service-oriented administration based on criteria. Conflicting objectives in these areas must be identified, reconciled or weighed up against each other. The objectives of this digital transformation strategy are in particular taken into account for assessing projects in the digitalisation category. Overall, numerous measures and projects are planned in the area of administration for improving service quality and simplifying administrative tasks (e.g. digital files, support tools and workflows). Many of them have an impact on the areas of Research and Technology Transfer as well as Studying and Teaching.

Administration and Service in particular can benefit from the opportunities of digitalisation and are at the same time obliged to change due to various laws and regulations or other requirements and framework conditions, for example via the implementation of the Online Access Act (OZG). High standards of data protection and IT security must be ensured, especially in the area of Administration and Service. However, the economic, efficient and long-term maintenance and resource-saving utilisation of IT products and their user-friendliness are also of particular importance. Another quality criterion for digital infrastructure and applications is accessibility and usability. These aspects must be considered when selecting, procuring and operating hardware and software – whether maintained at the university or by an outside cooperation partner or service provider (e.g. Cloud solutions), whether proprietary software or open-source software. The provision or implementation of joint or uniform or standardised, centrally managed services is generally preferable to decentralised solutions. Core elements of the campus management system also include the products of SAP and HIS as well as Stud.IP.

Staff working in Administration and Service areas are offered further training courses and programmes that teach digital sovereignty.

Strategic goals in the coming years involve in particular: Weiterentwicklung des Prozess- und Portfoliomanagements als strategisches Instrument der Organisationsentwicklung

- further development of process and portfolio management as a strategic instrument of organisational development
- establishing a digital knowledge management system as a central information platform for administrative and service issues
- support in improving the service quality of administrative processes as well as simplifying administrative tasks by expanding digital workflows, digital tools and digital files
- updating parts of the campus management systems

Footnotes

ⁱ https://www.wissenschaftsrat.de/download/2022/9848-22.pdf?__blob=publicationFile&v=12 (09/10/2024).

ⁱⁱ In line with the German Council of Science and Humanities (2023), the understanding of digital sovereignty is based on a definition that is 'the sum of all abilities and possibilities of individuals and institutions to be able to fulfil their role(s) in the digital world in an independent, self-determined and secure manner'

and focuses on the digital skills of university members: <https://www.oeffentliche-it.de/documents/10181/14412/Digitale+Souveränität> (09/10/2024).

ⁱⁱⁱ <https://www.wissenschaftsrat.de/download/2022/9848-22.html> (09/10/2024).

^{iv} https://www.kmk.org/fileadmin/Dateien/pdf/KMK/SWK/2022/SWK-2022-Gutachten_Digitalisierung.pdf (09/10/2024).

^v https://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2019/2019_03_14-Digitalisierung-Hochschullehre.pdf (09/10/2024).