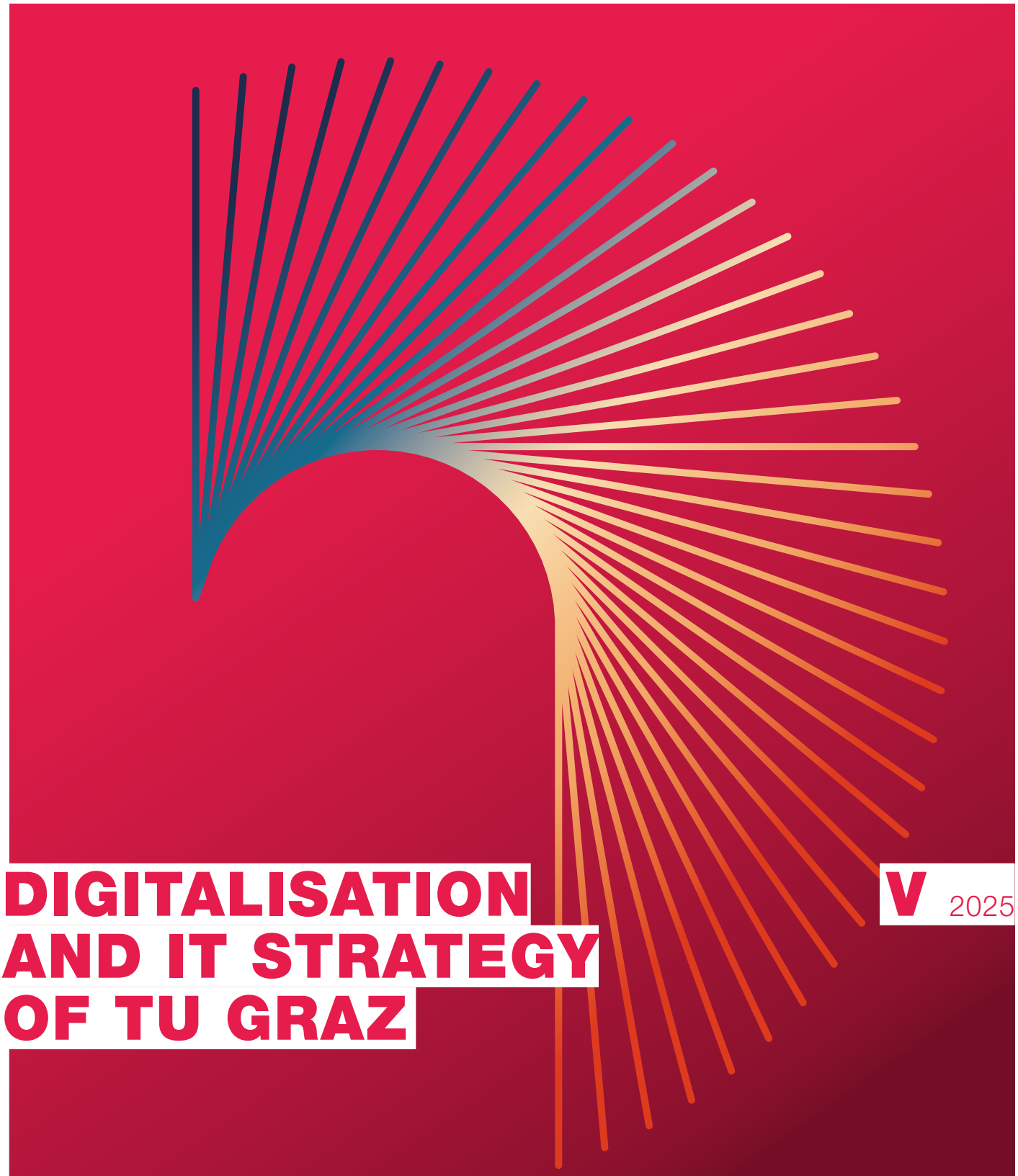

DIGITALISATION AND IT STRATEGY OF TU GRAZ

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PREAMBLE

Graz University of Technology has positioned itself as a pioneer of digital transformation in the Austrian university landscape through a Digitalisation and IT Strategy that paves the way for sustainable innovation in research, teaching and administration

PREAMBLE

Graz University of Technology's (TU Graz´s) vision is to play a pioneering role in the digital transformation of the university landscape. Digitalisation is to be used sensibly and sustainably to improve the quality of education, promote teaching and research excellence and increase the efficiency and effectiveness of administrative processes through comprehensive digital workflows.

In detail, TU Graz is pursuing the following basic objectives:

Promotion of research

- Use of digital tools and services throughout the research process, such as in hypothesis generation, data analysis, visualisation, management and presentation of results, as well as provision of appropriate infrastructures for sustainable research data management.
- Promoting interdisciplinary collaboration (intra- and inter-university) and knowledge exchange by providing infrastructures and virtual research environments, such as collaborative high-performance computing centres and joint AI research initiatives, to make efficient use of resources and strengthen development- and innovation-driven research.

Support for university teaching

- Support for teaching at TU Graz is provided along the student life cycle with a focus on educational responsibility at all stages of students' and lecturers' lives in the sense of lifelong learning.
- The strategic fields of action in teaching, which focus on Graz University of Technology as an excellent and innovative educational institution, are supplemented and methodically optimised by digital technologies.
- In addition to the focus on promoting STEM subjects, the internationalisation and diversification of teaching and the "Guided Start" for students, there is a particular focus on the design of motivating teaching and learning environments and the systematic further development of "Professional Continuing Education".

Societal Engagement / 3rd mission

- Development of advanced digitalisation and IT solutions to strengthen the transfer of knowledge between university and industry and to promote practical cooperation.
- Targeted technology assessment for digitalisation and IT projects as the key to a sustainable digital future.
- Interdisciplinary reflection on the risks and potential of new technologies in research, teaching and decision-making processes

Strengthening competitiveness and attractiveness as an employer

- Creating a modern, attractive working environment for students, employees and specialists through innovative digital offerings.
- A culture of innovation is strengthened in order to position TU Graz as a future-oriented and attractive employer.

Optimisation of administrative processes

- Establishment of modern, digitally supported work processes to efficiently support employees in administrative activities, including by reducing throughput times, avoiding redundant activities and noticeably reducing administrative costs.
- Digital archiving and document management for process simplification, avoidance of media disruptions, rapid access to relevant information, legally compliant storage and seamless integration into existing processes.
- User-centred self-service portals and services enable tasks to be completed independently, reduce the administrative workload for employees and management and rely on intuitive, accessible solutions and a modern user experience (UX).
- Promoting networked collaboration through integrated IT solutions for cross-divisional communication and collaboration.

Promotion of digital competences

- Promoting critical reflection skills in the creation, evaluation and use of digital information resources. Provision of high-quality online teaching and learning modules for the development of digital skills, particularly in the areas of IT security, artificial intelligence, open science and other future-relevant qualifications.
- Promoting critical reflection skills in the creation, evaluation and use of digital information resources.

1 DIGITALISATION AND IT STRATEGY

Graz University of Technology's Digitisation and IT Strategy provides the basis for a common picture of digitisation projects and aims to overcome silo structures, optimise resources and streamline administration in order to provide the best possible support for research and teaching.

1.1. VISION

The basis for the digital transformation is a modern and dynamically evolving IT landscape that encompasses all areas of TU Graz.

TU Graz's Digitalisation and IT Strategy aims to create a stable, secure and integrative digital environment that optimally supports teaching, research and the everyday university life of students and staff. With a focus on resource efficiency, benefit orientation and innovation, we strive for an IT environment (technology, people and processes) that is recognised as a leader in the higher education sector and strengthens the competitiveness of our university both nationally and internationally. In addition, the Digitalisation and IT Strategy serves the university's mission of providing easy and broad access to knowledge and education that extends beyond the boundaries of TU Graz.

TU Graz's Digitalisation and IT Strategy is not an end in itself, but is based on the strategic goals and core tasks of the university. It picks up national and international trends in education and technology and makes a significant contribution to the competitiveness of the TU Graz.

1.2. OBJECTIVES OF THE DIGITALISATION AND IT STRATEGY

This Digitalisation and IT Strategy serves as a guide for the future development and use of the digital transformation. It forms the foundation for targeted measures to further develop and expand our existing IT systems and services. The measures are designed to achieve the strategic goals of TU Graz while creating an agile and future-orientated IT landscape. The strategy acts as a link between the overarching strategic goals and the IT projects of TU Graz.

The Digitalisation and IT Strategy is aimed at all members of TU Graz and also offers specific points of reference for the following IT-related target groups: IT service units (central IT) and IT specialists and managers at decentralised units as well as IT suppliers. A key objective of the Digitalisation and IT Strategy is the sustainable and secure use of the entire IT infrastructure. Corresponding quality assurance measures ensure that the objectives are achieved.

The key elements of the Digitalisation and IT Strategy are as follows:

Joint big picture and roadmap

The Digitalisation and IT Strategy enables a jointly aligned view of digitalisation and IT projects that extend across research, teaching and administration. A uniform database for data-driven analysis and optimisation of teaching, research and administrative processes is established.

Avoidance of silo solutions

The aim of the Digitalisation and IT Strategy is to promote cross-departmental collaboration, break down isolated silo structures and create a coordinated IT landscape at TU Graz.

Optimising resources and reducing redundancies

The Digitalisation and IT Strategy aims to identify and integrate centralised and decentralised IT and eliminate redundancies while optimising the use of resources.

Digitalisation and IT Strategy governance

A clearly defined governance model ensures the continuous development and adaptation of the Digitalisation and IT Strategy in line with the changing requirements of TU Graz and the technical framework conditions.

Focus on teaching and research and streamlining administration

In all aspects of the strategic orientation and operationalisation of the Digitalisation and IT Strategy, particular attention is paid to providing the best possible support for the core tasks of research and teaching, simplifying administration and thereby reducing workload and costs. •

2 STRATEGIC GUIDELINES

The strategic decision-making premises define a clear framework for the development and operationalisation of the Digitalisation and IT Strategy and enable focused decisions to be made in everyday university life.

2 PREMISES AND GUIDELINES FOR DECISION-MAKING

The following decision-making premises were used as a basis for the development of the strategic guidelines for individual priority topics and the operationalisation derived from them. These should be taken into account in all decisions and, if prioritisation is necessary, should be applied according to their weighted ranking.

1. Stability and availability

The IT infrastructure is designed to be highly available, fail-safe and scalable in order to ensure smooth university operations.

2. Consistent user experience and benefits

IT solutions are developed to be user-friendly, intuitive and needs-orientated in order to create the greatest possible added value for students, teaching staff and employees..

3. IT security

IT systems are continuously protected by modern, state-of-the-art security standards and preventive measures in order to recognise threats at an early stage and avoid damage.

4. Economic efficiency

IT investments, infrastructure and services are evaluated according to clear economic criteria in order to realise cost-efficient and sustainable solutions in the long term.

5. Technical leadership

New technologies are actively researched and introduced in order to ensure a future-orientated IT environment and innovative capacity and thus further strengthen the claim to leadership in the Austrian university landscape.

6. Green IT (sustainability)

Resource-saving IT solutions, energy-efficient systems and sustainable procurement processes are consistently promoted.

7. Digital sovereignty

Data and systems are kept under our own control or in Europe with a balanced consideration of quality, costs and benefit orientation in order to minimise dependencies on external providers in critical cases.

8. Digital accessibility and diversity

IT systems are designed to be accessible and inclusive in order to provide access for all users, regardless of individual limitations.

9. Data protection

Data protection is organised and ensured in accordance with legal requirements. Additional data protection measures are proactively taken into account if they do not contradict the other higher-ranking premises.

3 STRATEGIC FOCUS TOPICS

Ten strategic focus areas form the foundation for the targeted design and implementation of Graz University of Technology's Digitalisation and IT Strategy. These are supplemented by specific sub-strategies for selected topics.

The development and implementation of the Digitalisation and IT Strategy is designed taking into account the key topics described in more detail below. Separate sub-strategies are defined for selected, important focal points and supplemented on an ongoing basis.

3.1. IT DEMAND AND PORTFOLIO MANAGEMENT

We prioritise IT requirements according to their benefits for TU Graz, with a particular focus on operational security, availability and economic added value. Using clear procedures and standardised evaluation methods, we make transparent and comprehensible decisions that take functional, security-relevant and technological aspects into account in a balanced manner. A transparent process controls the evaluation, results in strategic recommendations and integrates technological, ecological and organisational aspects. Make-or-buy decisions and prioritisation are supported by the exchange of experience and the involvement of partner universities. Our lifecycle management includes the needs assessment, planning, decision on the IT demand management process, implementation, operation and withdrawal of IT solutions. The process is regularly reviewed in order to integrate technological trends, security standards and sustainable solutions at an early stage.

3.2. DATA AND APPLICATION ARCHITECTURE

We manage our data and application architecture centrally to ensure an optimised and redundancy-free system landscape. Clear criteria define which systems are desired, tolerated or replaced.

Through targeted analysis and aggregated evaluation, our structured data storage enables the creation of well-founded bases for decision-making on central issues of university organisation.

The IT infrastructure is based on a hybrid cloud/on-premise approach that guarantees flexibility and future viability. Supplemented by systematic risk management, we ensure the availability, efficiency and security of our systems. Active lifecycle management of the application landscape, as well as the continuous maintenance and recording of all systems and interfaces, ensure that IT operations remain efficient and sustainable.

3.3. PROCESS MAP AND PROCESS DIGITALISATION

We are developing the process map as a strategic management tool in order to map our central business processes at an aggregated level and at the same time transparently present the coverage by IT systems. The process map is recorded and maintained in a balanced and necessary level of detail. On the one hand, it provides a clear overview, while on the other, the process map and its systematic analysis of system breaks and IT support gaps can be used to identify specific areas of action for the digital transformation. This analysis provides a sound, fact-based decision-making basis for IT investments and thus supports the TU Graz´s strategic orientation in the digital transformation. We define uniform framework conditions for how processes are digitalised with regard to standardised procedures, process optimisation and simplification, as well as process descriptions and the use of supporting tools.

3.4. IT/CYBERSECURITY & NETWORK MANAGEMENT

We strengthen IT security and network management by systematically setting up an Information Security Management System (ISMS) and a Security Operations Centre (SOC). Technical and organisational measures are coordinated in a targeted manner to ensure a uniform and effective security infrastructure. Regular central and decentralised maturity level and risk analyses form the basis for targeted improvement measures. With a TU Graz-wide security awareness programme and mandatory training courses, we are establishing a sustainable security culture that actively involves all employees in the implementation of the security strategy. Network security is controlled and monitored centrally using standardised guidelines and processes that apply to all central service and decentralised organisational units.

3.5. IT SERVICE PORTFOLIO

We establish a clearly defined IT service portfolio with transparent service level agreements (SLAs) and comprehensible cost structures to ensure the efficient provision of (shared) services. In order to maintain a balance between central control and decentralised flexibility, we strive for close cooperation with all service and organisational units and promote the conscious management of decentralised IT. Our IT service management framework covers the entire IT area - from support and application development to overarching services. We sustainably improve service quality through continuous optimisation and structured process, quality and risk management.

3.6. IT SOURCING & SUPPLIER MANAGEMENT

We focus on balanced IT sourcing with clearly defined award processes and standardised procurement channels and products. We achieve efficiency and cost savings by implementing a “procurement toolbox” for IT sourcing and bundled purchasing strategies. At the same time, we rely on strategic supplier management and active market observation in order to build long-term partnerships and guarantee security of supply and high quality standards. In the university sector, we utilise purchasing groups to create synergies and strengthen our procurement. When procuring IT components, we consistently apply the “80/20 principle”, which comprises a portfolio of standardised hardware (80%) and flexible special solutions (20%). These measures are implemented in close cooperation with the purchasing service to ensure compliance with all legal requirements and smooth processes. This allows us to benefit from economies of scale in service, maintenance and purchasing conditions, while significantly reducing administrative costs and still allowing sufficient freedom for innovative applications.

3.7. DIGITAL DEVICES & DIGITAL WORKPLACES, CLASSROOMS AND LABORATORIES

We are establishing modern, integrated “digital workplaces” that are optimised for different persona groups such as research, teaching, students and administration through standardised hardware and software bundles. An 80/20 rule ensures the necessary flexibility to cover special requirements. We place a clear focus on the cost-benefit ratio and the seamless integration of all components to ensure an efficient and location-independent way of working (“Seamless Workplace Experience”). In the core areas, we are establishing strategic partnerships with flexible procurement channels for special requirements. By continuously monitoring the market, we ensure that both the quality and innovative capacity of the technologies used remain permanently high while keeping costs as low as possible.

3.8. INNOVATION & TECHNOLOGY

We focus on the systematic identification and integration of innovative technologies through active trend monitoring and dialogue with research partners. The main focus is on supporting core university tasks, whereby commercial utilisation is not ruled out.
We promote new projects and AI-supported solutions in the areas of teaching, research and administration through the targeted creation of spaces for experimentation and innovation as well as the provision of the necessary resources. This is accompanied by strategic advice and technological support in the development of new business models in the areas of lifelong learning, third-party funded projects and partnerships. This strengthens TU Graz's position as an innovative education partner.

3.9. IT PERSONNEL

We focus on the strategic training and development of IT specialists and managers in order to ensure the long-term competitiveness and innovative strength of the IT organisation. IT departments and HR departments work closely together to coordinate personnel requirements and efficiently plan resources and training measures. By creating a flexible, collaborative working environment, we promote the exchange between centralised and decentralised IT specialists. A dedicated IT salary model supports attractive remuneration and long-term talent retention.

3.10. IT COOPERATION / SALES MODELS

We rely on cooperation between universities to share knowledge and best practices through regular dialogue and joint projects. The cross-university perspective does not only apply to procurement topics. We also actively make TU Graz solutions available to other universities for mutual benefit and develop them further together.

A transparent billing model for IT infrastructure and shared services maximises synergy effects between central and decentralised units and serves as the basis for billable services to external partners and customers of TU Graz. •

4 OPERATIONAL IMPLEMENTATION AND FURTHER DEVELOPMENT

The operationalisation and continuous development of the Digitalisation and IT Strategy is carried out as part of an IT Strategy programme that defines specific work packages, which are regularly reviewed and adjusted to ensure solution-oriented and sustainable implementation.

This Digitalisation and IT Strategy, supplemented by any sub-strategies, is put into concrete terms as part of an IT Strategy programme along priority topics. Work packages (WPs) are defined for the individual focus areas and WP managers are appointed. The WP managers coordinate initiatives and projects within the work packages, monitor the project status and work together with the programme management on the roadmap. The WP managers are also involved in the overarching dialogue to ensure coherent implementation.

Specialist departments, such as service and staff units, deaneries and institutes, play a decisive role by aligning IT with the organisation's strategic plans. They address IT needs and provide support in defining requirements and implementing solutions.

IT-relevant networks and communities help to increase the permeability between the individual areas and utilise synergies. They act as multipliers and support the transfer of knowledge within the organisation.

The IT Strategy programme and the work packages derived from it are regularly reviewed at shorter intervals in accordance with the framework conditions of this Digitalisation and IT Strategy, as well as supplementary sub-strategies, and adjusted accordingly. Measures from the IT Strategy programme that are relevant to the performance agreement can be found in it as projects, including descriptive milestones, and are therefore reported as part of the annual service level agreement monitoring. •

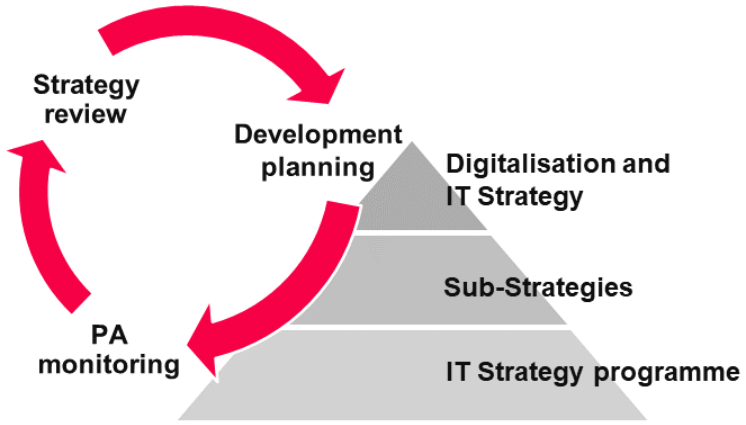

Figure 1: Operationalisation at the interface to development planning and monitoring

GLOSSARY

- Central IT: Central IT service and other IT organisational units in the central administration, which provides and manages IT services and infrastructure for the entire university.
- IT organisational unit: OUs with (but not necessarily exclusively) central IT tasks, such as CAMPUSonline, teaching and learning technologies, library IT teams, ...
- Decentralised IT: IT departments or individuals operating within individual faculties or institutes to meet the specific IT needs of these areas.

5 GOVERNANCE

The governance structure of the Digitalisation and IT Strategy is based on clear roles, transparent processes and participatory structures, with the interdisciplinary IT Strategy Board acting as the central body for strategic advice and reflection.

The governance of the IT Strategy programme is defined by various roles and responsibilities.
The responsible member of rectorate fulfils the function of the client and is the highest authority for decision-making. Programme management of the IT Strategy programme is assigned to the CIO, who in this function acts as a link between the Rectorate and the persons responsible for operationalisation. Programme coordination and project management ensure a transparent working environment and coordinate the exchange between work packages and steering bodies. The IT Strategy Board plays a central role in governance. It acts as an ideas and sounding board and strengthens inter-university cooperation. It is made up of representatives from key IT organisational units at TU Graz, key individuals and experts from decentralised IT, dean's offices, student representatives and institutes as well as central administration. The IT Strategy Board deals with key topics, prepares decisions and reflects on the high-level roadmap. The members of the board contribute their expertise, everyday perspectives and feedback from the respective stakeholder groups and act as active multipliers of the IT Strategy in the various areas of TU Graz.

The Digitalisation and IT Strategy is valid for two periods as part of the development planning process. After the first review phase, it is subjected to a review and adjusted as required. Sub-strategies that are subordinate to the Digitalisation and IT Strategy can also be iteratively supplemented or adapted within a review period. In turn, the Digitalisation and IT Strategy also provides input for the rolling development planning process. •

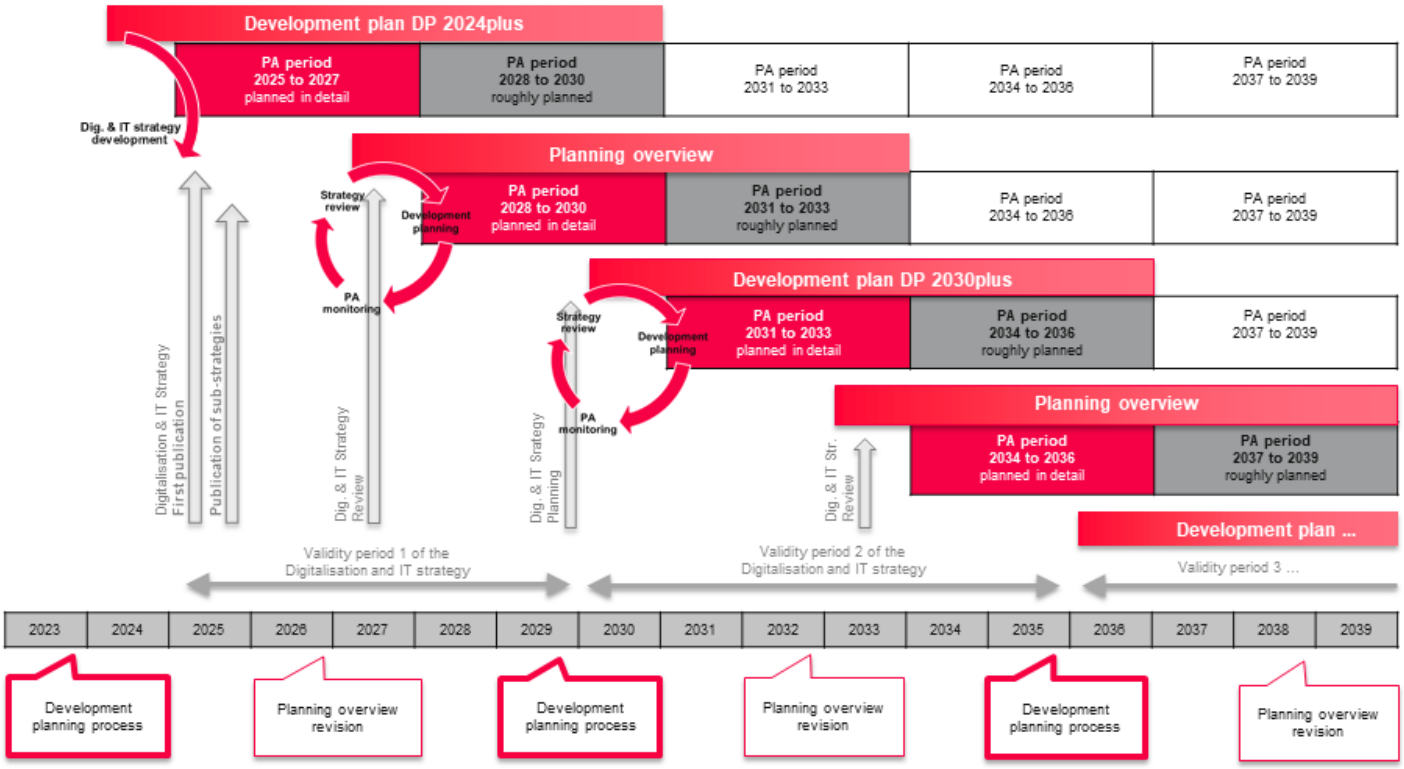

Figure 2: The Digitalisation and IT Strategy as part of rolling development planning

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