interdisciplinary
transformation
university austria

IT:U Strategic Development

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Global Context: A World in Transformation

As a global community, the world is facing increasingly complex and interrelated challenges. The rapid acceleration of climate change and unsolved social problems are among the most obvious and urgent examples of a wide range of intensive or disruptive changes. These pressing issues share underlying commonalities:

- All of them require interdisciplinary efforts instead of advances in a single discipline to provide viable and sustainable solutions.
- Digital Technologies, co-evolving with the human condition, provide unprecedented potentials to contribute to scalable solutions.

The EU commission has accounted for these trends by declaring Europe's efforts to establish its green transformation to be implicitly linked to digitalization in a twin green and digital transformation. The complex, interdisciplinary nature of the big problems faced by humanity means that science and higher education must adapt to meet the challenge and prepare our students to be the interdisciplinary, computationally empowered transformers of tomorrow.

Implications for Science

Some of the biggest scientific challenges today are cross-disciplinary in nature and will require interdisciplinary collaboration to solve. The persistence of isolated islands of knowledge will risk slowing scientific progress. As a higher education institution, we must foster interdisciplinary research and the convergence of computational methods with other disciplines (Computational X) to ensure that rapid advances in technology, specifically AI, can benefit other fields as much as possible. The OECD exhaustively lists ways in which AI will aid and transform science and research, including the use of statistical natural language processing models, artificially intelligent robots or virtual interfaces enabling hundreds of researchers to collaborate remotely. Still a lot of basic research is needed, and our work will focus on building an interdisciplinary community of Computational X researchers and to nurture an interdisciplinary research ecosystem, contributing to the necessary groundwork. **At IT:U, we must advance AI in the context of other disciplines, to truly shape interdisciplinary sciences.**

Implications for Education

Today's students increasingly express a desire to contribute to solving big societal problems. Real mission orientation in higher education has become an important factor and instead of teaching technology as a means in itself, we will teach technology as a means to work on things that matter. Our students will work with digital technologies to solve real world problems, not just regarding its theoretical fundamentals. **At IT:U, we must teach digital technologies embedded within real-world challenges.**

New generations, who are used to personalization in all communication, are eager for new ways of learning. This aligns with findings that the personalized learning models provide a more effective, inclusive and accessible learning experience. Digitalization and AI provide the tools to scale personalized learning experiences to an unseen number of learners. With this mindset, we will be able

to globally attract diverse students who would not typically study a technical program. **At IT:U, we must adopt personalized learning models in higher education.**

Society currently leaves an incredible source of potential untapped by creating an environment in which some groups are less likely to seek careers in technical studies and IT:U will actively encourage underrepresented groups - in particular women - to apply for its programs. Our interdisciplinary, personalized and project-oriented design of study programs will be a core part of this strategy. Our mission-driven and diversity-oriented culture will also contribute, by creating an education environment that feels purposeful, inclusive and accessible to all. **At IT:U, we must make equity and inclusion matter.**

Implications for Austria

In a globalized world with its multiplicity of challenges, Austria needs to take charge of shaping transformation processes within its sphere of influence. Digital technology plays a key role in these processes and changes all aspects of society, ranging from businesses, education and public life. To (re)gain control over this ongoing transformation a forward-thinking mindset is required and a culture that embraces agility and adaptability. Thus, we need to educate a new generation that is skilled in taking on challenges that are complex, interwoven and defy simple answers - **Austria needs interdisciplinary thinkers and makers**.

To this end, **Austria established IT:U as a completely new and different university (New Model)** with the mandate to transform higher-education and to support digital transformation processes in Austria. IT:U received its own law (as opposed to be operating within the same law framework as the other universities) with a novel governance structure, a relationship to its students based on private law, and more freedom to design its own organization and processes. It is now the task of IT:U to fill this new governance framework with life and chart a new path in educating these interdisciplinary thinkers and makers.

IT:U Positioning

IT:U Vision

IT:U Transforms Futures by creating experimental spaces to shape the desirable co-evolution of humans and digital technology. To this end, IT:U aspires to become a place where science, design, engineering, and art integrate.

IT:U Mission

IT:U stands for excellence in education, research, and innovation, fostering passion for creating impact in the real world. We cherish dialogue with society to explore desirable pathways of co-evolution. For our fields of action this means:

- **#students** IT:U attracts international students from all disciplines and train them in computational and 21st century skills, along projects with a mission, and prepare them to digitally transform their disciplines, application areas, businesses, and societies. **IT:U educates transformers.**
- **#scientists** IT:U attracts leading international researchers driving digital transformation beyond their fields, creating interdisciplinary research collaborations centered around computation. **IT:U drives convergence.**
- **#austria** IT:U creates an inspiring, inclusive, and international environment which serves to enrich society and strengthen the economy. **IT:U empowers ecosystems.**

IT:U Strategy

Our strategy for creating impact is to view Science, Education, and the Third Mission not as separate pillars but as interconnected and interdependent facets of a modern university (impact model):

- ### IT:U Interdisciplinary Scientific Model

  The core objective of our scientific model is to foster and facilitate disciplinary convergence while maintaining the highest standards of scientific excellence. By bringing Interdisciplinary Computing professors and scientists together to research specific interdisciplinary key challenges collaboratively, IT:U will create a melting pot of different disciplines – with computer science as the lingua franca between the different perspectives. Our approach is to hire young high-potential professors and scientists who work on the intersection between Computer Science and another discipline X, people who are willing to experiment with approaches from other disciplines as their own and willing to learn the “language” of others, to overcome the “symmetry of ignorance” between the disciplines. By doing so we will open new opportunities for research and the emergence of new research approaches, new topics, and even new communities. To ensure the highest scientific quality, we base our research on the **DORA principles and embrace the COARA initiative**.

- ### IT:U Personalized Educational Model

  The core aim of our educational model is to empower students in their personal learning journeys and foster active, engaged learning. To achieve this, IT:U has adopted Project-Based Learning (PBL) as its primary learning methodology. From the start, students actively participate in interdisciplinary projects built around real-world challenges sourced from industry, society, or research. The initial step of each learning project is to define the problem and analyze it within the context of the team's available skills. Professors and teachers gradually provide knowledge while coaching and guiding the teams. This hands-on approach enhances academic understanding while developing practical, real-world problem-solving skills. Students compile tangible evidence of their achievements in a qualifications portfolio, showcasing their competences and skills to prospective employers and academic institutions. Centered on the learner, IT:U's educational model empowers students as active participants in their own learning journey.

- ### IT:U Interwoven Third Mission Model

  The core objective of our third mission model is that it bridges academia with industry and society through collaboration, real-world challenges, and entrepreneurial empowerment. At IT:U, we actively engage with the world beyond research and education, embracing a comprehensive collaboration effort with industry and society. Our "third mission" model expands the university's role, fostering partnerships with external stakeholders to drive meaningful impact. By anchoring science and education in clearly defined missions, we harness the motivational power of real-world challenges. This approach not only enriches the learning experience but also strengthens the connection between academia and its applications in industry and society. IT:U encourages entrepreneurial spirit and empowers students to develop and pursue their own business ideas.

  In recognizing the critical role of digital skills and transformation in modern society, IT:U bridges academia and the public through targeted outreach initiatives. Through science communication and citizen science initiatives, we foster ongoing dialogue, thus deepening citizens' understanding of digital transformation, and reducing barriers to adopting new technologies.

IT:U itself serves as a Living Lab for digital transformation, an experimental space where organizational, educational, and scientific practices evolve through digital innovation. By embracing emerging technologies, IT:U develops digital infrastructures that act as the university's operating system, driving continuous progress.

IT:U Graduates are Digital Transformers

Our graduates are:

- **Passionate thinkers** who frame and solve complex, interdisciplinary challenges
- **Computational makers** with hands-on experience on a spectrum of key digital skills
- **Domain experts** who understand the underlying systemic properties
- **Builders and leaders** of effective, interdisciplinary teams
- **Self-directed, continuous learners** who learn effectively on-demand
- **Managers of change** who lead transformation projects with social intelligence

IT:U's DNA

The research and education portfolio of IT:U features unique aspects within Austria's university ecosystem, positioning it among a select group of emerging European universities focused on innovative project-based education and research-integrated learning. To uphold this distinctive role, we embed the following values into our practices of working, teaching, and scientific research:

#ThingsThatMatter

IT:U will conduct cutting edge interdisciplinary research addressing digital transformation challenges on the road to a sustainable future. The research goals defined by society and economy increasingly require scientific cooperation across disciplinary boundaries. We are convinced that the use of computational methods opens new research horizons for many disciplines. Researchers and students want to contribute to solutions for the 21st century challenges facing humanity. **At IT:U, we will work on things that matter.**

#EquityAndInclusion

By teaching digital technologies as tools for working on things that matter, and applying personalized learning models, we will attract a diverse student body – including more women – who would not typically study a technical program. IT:U will establish an inclusive education environment that, from the very beginning, fosters a tight-knit international community in which identities, cultures and languages can meet without prejudice and all forms of diversity are welcome and valued. **At IT:U, we embrace diversity as strength.**

#NextLearning

IT:U will conduct education within challenge-based projects, promoting project-based learning and using groundbreaking educational technology to scale up. The best way to learn new skills is to practically acquire them within projects which address challenges that engage and motivate us. While this type of project-based learning is widely considered optimal in educational sciences, it also places very high demands on the number and quality of educators and infrastructure. We will develop and apply advanced education technologies to overcome the implicit scaling challenge. **At IT:U, we explore the next level of learning.**

#TransformEverything

IT:U recognizes the demand for 21st century skills beyond technical ability implicit in the interdisciplinary nature of the transformations driven by digitalization and computational methods. Future transformers in science and industry must be adept in change management, cross-cultural communication, project organization and many other non-technical skills to roll out, scale up, integrate and ultimately, realize the value of solutions based on digital methods. Such skills are best acquired in a personalized, project-based learning experience. **At IT:U, we offer tomorrow's transformers a well-rounded education.**

#TechnologyRocks

At its core, IT:U is a technical university where students and researchers employ a rich toolbox of digital and computational methods ranging from data science and artificial intelligence to robotics and augmented reality. We will offer a broad technical education to students from a variety of backgrounds, enabling them to transform their respective fields with technology. Our researchers will employ

computation methods to explore new scientific frontiers. **At IT:U, we explore how technologies can change the world – for real.**

#NewModelUniversity

IT:U will apply a new model of university organization, including flat organization structures and agile management methods, and enhance those with a strong digital culture including “mobile first” and “data only once”. **At IT:U, we react dynamically to changing environments and needs.**