

TIB's Strategic Action Areas 2030

The profound digital transformation of society and the world, and the future of the democratic knowledge society, are the great **challenges** of our time. As a national specialised library and digital information centre, TIB operates at the very heart of the digital revolution in scientific research and work.

TIB's **strengths** as a modern library and research infrastructure, as an innovative service developer and as an internationally networked player are a **unique selling point** and of strategic and national importance for the science system. Acting with responsibility, creativity and expertise, TIB continues to develop its role as Germany's information centre for the digitalisation of science and technology.

As a research infrastructure facility, TIB's **mission** is to ensure the supraregional provision of literature and information for all areas of technology and its underlying sciences – mathematics, physics, chemistry, computer science and architecture. TIB continues to perform the essential **library tasks** of collecting, indexing, providing and archiving resources at a high level. As the world's largest specialised library for science and technology, TIB supports its diverse **target groups** in research and teaching with quality-assured scientific content, digital services, and the transfer of expertise and knowledge – always tailored to the respective needs.

The globalisation and digitalisation of information and communication requires a new approach to existing mechanisms and processes. Seeking to improve scientific communication, TIB focuses on the **research and development** of innovative, open, persistent and robust systems for the structured, semantic linking of scholarly information. This opens up new perspectives for the search, exploration and comprehensive integration of scientific findings.

As an open research and service infrastructure and through its involvement in numerous interdisciplinary collaborative projects and initiatives, TIB has **strong national and international networks**.

The **six priorities of the strategy**, which are closely interlinked, describe TIB's main areas of action for the coming years:

- 1 | **OPEN SCIENCE** – making knowledge open and permanently accessible
- 2 | **RESEARCH** – shaping knowledge and facilitating innovation
- 3 | **COLLABORATION** – networking knowledge nationally and internationally
- 4 | **TRANSFER** – conveying knowledge and making it permanently available
- 5 | **WORK ENVIRONMENTS** – inspiring and organising knowledge
- 6 | **ORGANISATIONAL DEVELOPMENT** – promoting and sharing knowledge

Each priority has strategic objectives that form the basis for preparing the annual programme budget, including the measures to be planned. Overarching values provide a framework for action.

1 | OPEN SCIENCE – making knowledge open and permanently accessible

An overview of the strategic objectives:

- **Support the technological shift towards open science:** make knowledge discoverable, freely accessible, shareable and reusable
- **Digital infrastructures:** initiate, promote and operate scientific research infrastructures
- **Open access:** help drive the transformation of scholarly publishing to open access
- **Open data, open source, open educational resources:** make information, research data, media and resources available in a transparent and reusable form
- **Preserve knowledge:** digital preservation for future generations

The flood of scientific information and data makes it difficult for users and researchers to navigate quickly within their fields. TIB helps them identify and understand relevant information – and turn it into knowledge quickly and efficiently. TIB plays a **leading role** in this area: the library is continuously improving access to high-quality information and making it sustainable, low-threshold and intuitive to use. It shares and preserves knowledge and safeguards cultural heritage. TIB responds to the needs of its specialist communities by maintaining and developing its valuable collections, both in analogue and especially in digital form. TIB actively shapes the digital transformation in the provision of literature and information through the targeted further development of its services.

TIB leads the way by performing essential **library tasks** at the highest level: the collection, indexing, provision and archiving of information are carried out on the basis of innovative services and technologies, (inter)national cooperation and copyright frameworks. Metadata management enables metadata to become a logical “map” in an open science world, allowing unexpected or unknown future users to navigate its information. The mission of a holding library is still guaranteed, regardless of the type of media. This includes digital and printed works, non-textual material, objects and research data.

By developing forward-looking consortium and licensing models, TIB ensures access to scientific resources, regardless of their physical form. The main priority is to provide access to content in the most cost-effective way: users get the access they need now and in the future.

Ensuring the supraregional provision of literature and information remains a central task – despite the advance of digital services, changing market structures and science policy decisions. Enabling access to restricted content and the procurement and provision of grey literature remains a unique selling point of the library.

TIB initiates, promotes and operates demand-driven **scientific infrastructures**, combining them with excellent research and practical relevance. This creates a new quality in its application-oriented subject areas and makes TIB an indispensable partner in the system of national and international information provision.

In the context of **open science**, TIB ensures and optimises the conditions for scientific research and work in the long term. The broad portfolio of digital services is constantly expanding to include solutions for open access, open data, open educational resources, open research information and open source. Enhanced collaboration will better link services nationally and internationally – making TIB part of an interconnected digital infrastructure.

TIB helps to shape key structures and processes, particularly as scholarly publishing transitions towards **open access**. As a shareholder in *Max Planck Digital Library Services gGmbH*, the library makes a significant contribution to the further development of the overall system. TIB continues to build on its many years of experience in negotiating with publishers and managing consortia in the form of open access transformation consortia. The library actively supports new types of publication and innovative funding options, and operates a specialist repository for publications from TIB's subject areas, as well as a publishing platform for open access conference proceedings and journals.

By providing a comprehensive range of **digital preservation** services, TIB ensures permanent availability for future generations. It advises libraries, research institutions, businesses and administrations, and expands established processes. TIB's digital archives have been certified several times as trustworthy archives and will continue to meet high standards of integrity, authenticity, permanence and citability. Quality control in digital preservation is essential for the long-term usability of archived information.

By providing **persistent identifier services**, TIB offers internationally relevant services that are essential for the organised and efficient management of research data. Leadership of the national DOI and ORCID consortia, close collaboration with the NFDI consortia, and integration into the European Open Science Cloud EOSC ensure the ongoing development of quality criteria, workflows and advisory services in the interests of the research community.

TIB is actively involved in a number of **global infrastructures** that enable innovative and efficient research data management for an international audience. These include DataCite, ORCID and ROR. DataCite, a not-for-profit organisation with international members for the referencing of research outputs, was initiated and established by TIB. The organisation supports research institutions in the implementation of PIDs. Data, services and infrastructure enable the implementation of the FAIR (Findable, Accessible, Interoperable, Reusable) principles and ensure sustainable research data management. The successful further development of these services and the corresponding transfer of knowledge to the research institutions are tasks with which TIB continues to ensure the shared use of excellent and established research infrastructures for digital and global science.

Through its extensive participation in the cooperative National Research Data Infrastructure (**NFDI**), TIB and its services contribute to the efficiency of the German science system. It plays a key role in making valuable data from science and research accessible. The library is an active partner in various expert consortia in its subject areas – such as chemistry, computer science, and engineering. By integrating basic services such as PID and terminology services, as well as the Open Research Knowledge Graph ORKG, TIB guarantees continuous services for the NFDI consortia and ensures interdisciplinary networking.

All of TIB's existing and new services are interlinked and offer significant added value to their users. The central platform is the **TIB Portal** – an integrative system offering convenient search, ordering and access options to the extensive holdings, as well as seamless access to numerous other library services. TIB's **AV-Portal** provides a reliable infrastructure for finding, searching and citing videos, research data, and open educational resources (OER). TIB's portals benefit greatly from its own research and development activities. The rapid and agile transfer of research results and the continuous integration of innovative infrastructures and tools are always aimed at simplifying access and improving usability for specialist communities.

In the **specialised information services (FID)**, TIB develops research support services in its subject areas. The continuous and close interaction with researchers is the basis for the further

development of services within each FID, as well as the further development of TIB's services. TIB facilitates the transfer of knowledge, the reuse of technology and the co-design of services. This ensures greater interoperability of services, thereby consolidating the overall FID structure.

One development priority is the expansion of a cross-state international infrastructure for open educational resources. Based on the Lower Saxony **OER Portal**, the infrastructure brings together interconnected digital educational services and creates an easily accessible digital learning space for learners and teachers. The OER Search Index OERSI plays a central role in this context. By joining the National Education Platform and continuing its internationalisation, TIB supports the drive to digitalisation in the education sector and makes a sustainable contribution to lifelong learning.

TIB runs the national **Centre of Competence for Open Research Information**, which aims to make information about research activities interoperable, discoverable, reusable and accessible in open infrastructures. For example, TIB works with and on open standards for describing research information and promotes open source software for processing such information. The current research information system **VIVO**, which presents the scientific output of knowledge organisations, plays an important role here.

TIB advocates independent, secure and trusted (cloud) infrastructures. For example, the library is involved in the development of a powerful and competitive **data infrastructure for Europe** within the GAIA-X initiative, contributing its national NFDI activities – also to the European Open Science Cloud. By participating in the International Data Spaces initiative, TIB is committed to creating a shared and secure global data space for science and business.

With its expertise, TIB is visibly and strategically positioned in many relevant research data infrastructures. Particular emphasis is placed on the connectivity, networking and sustainability of infrastructure. In this way, TIB makes an important contribution to digitalisation and the promotion of innovation-oriented research.

2 | RESEARCH – shaping knowledge and facilitating innovation

An overview of the strategic objectives:

- **Enable efficient work:** organise digital information in an innovative way – structured, clear, interlinked and reusable; support solution-oriented and excellent research, contribute to key future technologies (knowledge graphs, artificial intelligence)
- **Quickly turn in-house results into applications:** optimise existing services, develop new innovative services
- **Expand research capacity:** joint professorships and collaborative activities
- **Digital infrastructures:** initiate and promote scientific research infrastructures

Increasing digitalisation and networking influences researchers' everyday work at all stages of the research cycle. At the same time, the sheer volume of disorganised and unstructured information and data makes it difficult for scientists to work efficiently and in a solution-oriented manner. TIB is committed to organising knowledge more efficiently and making it more usable – with the involvement of its specialist communities. To this end, the library is significantly expanding its research capacity and promoting excellent research in flagship projects.

Current research focuses on data science & digital libraries, visual analytics, and scientific data management in the context of open knowledge and open science. The evaluation and use of artificial intelligence (e.g. large language models (LLMs) combined with knowledge graphs) is actively promoted in the various service and innovation areas. Defined transfer processes **put research results into practice**: existing products are optimised and new innovative services are generated for TIB's target groups. These are mainly used in the fields of education, mobility, production, medicine, and climate science.

The Open Research Knowledge Graph (**ORKG**) service is changing and modifying the way we look at the digital organisation of scientific knowledge. Modern technologies are used to semantically structure information and data in an innovative way. Detailed content descriptions and the interlinking of research knowledge make complex interrelationships visible (more quickly), processable, reusable and thus the flood of information manageable – the flow of scientific information is significantly improved. This is achieved by combining human and machine intelligence. Thanks to ORKG, TIB contributes to the development of key future technologies, such as the use of artificial intelligence in digital science.

From an organisational point of view, the expansion of the institute on the basis of an extraordinary item of expenditure in 2022 allows the development of an ORKG infrastructure. By 2030, the service will be established nationally and internationally, improving the efficiency of research.

As part of its research and development activities, TIB ensures **sustainable** knowledge and technology transfer and broad connectivity to other services and initiatives – making it usable in many scientific fields. Activities are based on the principles of **openness**, sustainability and FAIR. Scientific integrity is the foundation of TIB's research, along with legal and **ethical** compliance.

3 | COLLABORATION – networking knowledge nationally and internationally

An overview of the strategic objectives:

- **Collaborate on a global scale:** interdisciplinary, sustainable, open
- **Combine strengths:** pool resources, deliver solutions faster and more effectively, increase visibility, extend reach
- **Expand strategic alliances:** universities and other higher education institutions, networks and initiatives, business and industry

It will take a concerted effort by a wide range of stakeholders to address the social challenges that lie ahead. Constructive collaboration in selected areas brings together individual strengths and resources, enabling problems to be solved more quickly and effectively. Also in the context of our internationalisation strategy, we collaborate with national and international scientific infrastructure facilities and research institutions to create innovative services and advance existing ones. The focus is always on significantly improving access to information. TIB's choice of international partner institutions is guided by a common set of values and objectives – and a shared understanding of academic freedom.

Universities and other higher education institutions

TIB works closely with higher education institutions through **Joint Labs**, which act as a nucleus for further research and innovation initiatives:

- The *Leibniz Joint Lab Data Science & Open Knowledge*, run together with the L3S Research Centre at Leibniz Universität Hannover, researches and develops new methods and systems for networking large databases and artificial intelligence as part of national and EU projects. As part of the *Excellence Strategy* funding programme, the partners participate in the *Scientific Knowledge Collider* Cluster of Excellence and conduct research in data science, scholarly communication and scientific knowledge.
- The *Joint Lab Future Libraries & Research Data*, run together with Hannover University of Applied Sciences and Arts, addresses issues related to the digitalisation of research infrastructures and libraries, and focuses on sustainable education in the information sciences.

Through the close link between staff in **joint professorships**, the results of university research are efficiently translated into applications, and the range of cooperation opportunities in the field of knowledge and technology transfer is expanded in a targeted manner. At the same time, TIB's profile as a research library is strengthened and the recruitment of young talent is promoted through its links with higher education institutions.

Extensive synergies are exploited with Leibniz University IT Services, such as in the operation of networks and computer centres, and IT security.

Networks and initiatives

TIB's strong involvement in the cooperative **NFDI** and in the system of Specialised Information Services (**FIDs**) ensures the library's proximity to the specialist communities and an application and results-oriented exchange.

Within the **Leibniz Association**, TIB collaborates across disciplines with research institutes from various sections and is actively involved in research networks. TIB is particularly involved in *scientific knowledge graphs* as part of the Leibniz Roadmap for Research Infrastructures, and in the Leibniz Strategy Forum on Technological Sovereignty.

The library further intensifies its successful cooperation at **national** level with national specialist libraries, FIZ Karlsruhe – Leibniz Institute for Information Infrastructure and other partners in the context of infrastructures for research data.

Building on successful national and **international** collaborative activities – such as TU9, TechLib, arXiv and ChemRxiv – these will be continued, so that value-added services will flow into the ecosystem of TIB's services.

At the **European** level, the library considerably increases its involvement, for example in interplay with the European Open Science Cloud and the Gaia-X initiative. In the **global** context – such as within DataCite – TIB sets international standards and gains additional scientific data centres as partners.

Business and industry

By expanding collaborative research activities with companies and associations, interdisciplinary research issues are addressed efficiently and sustainable synergies are created.

There is potential for cooperation, for example, on how to strengthen the **resilience** of value chains and economic ecosystems in crisis situations. This is where TIB's expertise in the semantic integration and interlinking of data, information and knowledge in value networks comes into play.

Data sovereignty is a growing concern. Against this backdrop, the International Data Spaces initiative aims to create a secure data space that enables organisations of all sizes and from all sectors to manage their data assets with confidence. Together with the L3S Research Centre, TIB will become increasingly involved in this issue.

4 | TRANSFER – conveying knowledge and making it permanently available

An overview of the strategic objectives:

- **Create interfaces:** transfer scientific knowledge to business, politics and society; transfer to the library community; contribute to the democratisation of education, support participation in knowledge and provide access to knowledge
- **Identify and communicate needs:** develop user-centred services for specific target groups, promote the development of information, media and data skills
- **Communicate in a transparent and value-driven way:** offer open, digital and interactive communication methods and formats
- **Engage in debate:** strengthen commitment to open, sustainable science and more efficient funding policies

The transfer of scientific knowledge to business, politics and society is a central concern of TIB. The library seeks to contribute to the democratisation of education and support participation in data and information. The institutional role of Transfer Officer at TIB provides impetus for the strategic development of transfer activities and promotes internal and external networking – in the sense of comprehensive knowledge and technology transfer. The specialist and library communities are empowered to exploit and reuse TIB's own research, development and project results.

Through targeted **science communication**, TIB engages in dialogue with specialist communities, the general public, policymakers, business and the media. A wide range of dialogue, participation and exhibition formats provide interfaces for networking and contribute to the knowledge-based development of society. Open, digital and interactive formats are expanded to target specific audiences. Platforms, channels and measures are continuously evaluated and adapted to changing user behaviour. By actively participating in scientific publications, lectures and conferences, and by initiating its own events, TIB communicates its expertise to a wide (specialist) audience. The library puts its own issues on the agenda and communicates the results of its research to society.

By working closely with higher education institutions and conducting its own market analyses and monitoring, TIB gains extensive knowledge of the needs of students, faculty and researchers. On this basis, the library develops and evaluates **demand-driven services**.

Within its core competencies, TIB plays an invaluable **leading role** in the specialist and library community. Information provision, metadata management, licensing negotiations, digital preservation, research data management, non-textual material, open science – TIB sets standards in these areas, initiates strategic collaborations and is strongly committed to training the next generation of young talent.

In the **science policy** discourse, TIB contributes its expertise to national and international bodies, committees and working groups. The library is committed to open, sustainable science and a more

efficient funding policy. As an active member of networks, initiatives and alliances, TIB advises political and social groups.

Knowledge and technology transfer between science and **business** will be intensified. In addition to specific research projects on topics such as organisation, networking and the analysis of large volumes of data, a wide range of consultancy services will be established. These will focus on data security, digital preservation and research data management.

Through the development and provision of innovative **methods of communication and transfer**, TIB particularly supports the development of information, media and data skills as important key transferable skills in scientific work with (digital) data.

5 | WORK ENVIRONMENTS – inspiring and organising knowledge

An overview of the strategic objectives:

- **Improve conditions:** optimal provision of information for learning and research at Leibniz Universität Hannover
- **Develop research support services:** methods and tools for creative learning and working
- **Provide support and share expertise:** advice and services for all users, both virtually and on-site

TIB operates the **University Library for Leibniz Universität Hannover (LUH)**, ensuring the comprehensive provision of literature and information for students, faculty and researchers. Its demand-driven and user-focused services add to the attractiveness of the physical university. As part of the collaboration, TIB provides comprehensive advice and services to LUH members, particularly in the areas of open access, publishing and research data management.

As a physical space, TIB offers its users modern study and work spaces that are constantly adapting to changing conditions and needs. The library's various sites provide spaces, infrastructure and services to support the best possible conditions for study, work and research. The Patents, Information and Standards Reading Room, which reopened in 2024, offers a future-oriented learning environment design in line with the new learning and working culture. The creative environment encourages collaborative, cross-community work with a lab area, for example, and provides space for inspiration, ideas and innovation, dialogue, collaborative projects and events.

In the context of promoting the construction of research buildings at higher education institutions, the German Science Council (Wissenschaftsrat) and the Joint Science Conference (GWK) decided in 2020 to build the "**Forum Wissenschaftsreflexion**" at Leibniz Universität Hannover. At the heart of the interdisciplinary collaboration is research into the current challenges facing the science system in the context of the conflicting demands of, for example, economics, politics and the media. In partnership with the German Centre for Higher Education Research and Science Studies, TIB will develop a new type of information infrastructure in the humanities and social sciences – linked to research data management and knowledge infrastructures.

Encompassing collections from TIB, Leibniz Universität Hannover and its predecessor institutions, the **TIB Archives/Hannover University Archives** maintain historic documents as a basis for scientific and private research. Further digitalisation of the archive resources will improve accessibility.

6 | ORGANISATIONAL DEVELOPMENT – promoting and sharing knowledge

An overview of the strategic objectives:

- **Seamless organisation:** library operations, research and development go hand in hand
- **Ensure transfer:** share knowledge internally and externally, transform it into needs-based services
- **Collaboration and organisational culture:** create an organisation that is open, creative, innovation-friendly, appreciative and fair
- **Build and develop skills:** training, professional development, continuing education, knowledge management, and enhancement of library, professional and digital skills
- **Attractive employer:** work-life balance, integration, diversity
- **Act sustainably:** be resourceful and proactive; ensure the safe, robust and reliable development of technologies

Library operations, research and development work closely together. Thematic **competence areas** ensure targeted cooperation between various cross-programme organisational units and the further development of services. Competence areas promote open communication and the transfer of scientific knowledge into demand-driven, innovative services. The technological direction is set by the **Chief Technology Officer (CTO)**.

Selected knowledge management methods support **internal transfer** and ensure the responsible handling of the resource knowledge. This is also supported by intensive internal communication.

As a **modern organisation**, TIB is committed to a contemporary approach to collaboration: agile methods that encourage innovation, digital tools for collaborative work, and the ongoing digitalisation of administrative processes simplify collaboration and enhance efficiency.

TIB's organisational culture is characterised by respectful interaction, equality, transparency and open communication. The library sees **diversity** as an asset.

Strategic **human resources management** enables TIB to respond to changing needs with an adapted use of staff and resources. High-quality training, a wide range of professional development opportunities, structured management development and the targeted promotion of young talent in both academic and non-academic areas ensure a high level of expertise among the workforce.

As an **attractive employer**, TIB attaches great importance to measures that promote a good work-life balance. Employees benefit from flexible working arrangements and a wide range of remote working options.

TIB acts **sustainably**, resourcefully and proactively. Several dimensions of sustainability are addressed, including green IT and open source approaches, as well as procurement and energy-saving measures.

TIB is increasingly seeking to ensure **digital sovereignty** by making greater use of free and open source software in new and existing services. Through training, the library helps its staff to strengthen their individual digital sovereignty.