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The Future of Academic Libraries: Vision 2040
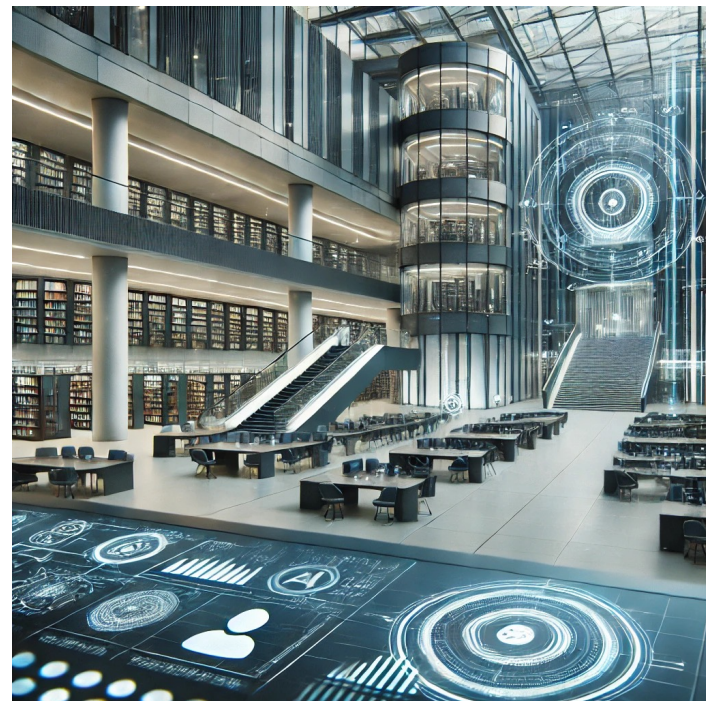
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Introduction

– Overview of societal and technological transformations by 2040.

– Objective: Explore how these changes will impact academic libraries.

– Current state of developments at University Library Zurich

Illustrations generated using AI-supported tools by ChatGPT

Technological Advancements

- **AI: Starting with Large Language Models (LLMs), AI has evolved to play a critical role in society.**

- Robotics: Automation of both simple and complex tasks.

- Quantum computing: Advances that revolutionize data processing and problem-solving.

- Digital communication: Ubiquitous and seamless global connectivity.

- Changes in transportation: In response to the climate crisis, drastic reductions in emissions and energy consumption are necessary, leading to innovations in sustainable transportation.

Societal Changes by 2040

– Unconditional basic income: As traditional jobs diminish, people require a basic income to sustain themselves.

– Shift in work motivation: Work driven by purpose and societal value, with a particular emphasis on the rising importance and respect for care work.

– **Increased personal time:** More time for personal development and leisure.

– **The rise of lifelong learning:** Continuous education becomes central in a rapidly evolving society.

– The challenge to reduce emissions and to save energy has a big impact on behaviour – not only on mobility

Impact on Higher Education

– University education as self-realization: A shift from career-driven to self-fulfillment and societal contribution.

– Growth in psychology and environmental sciences: Reflecting the importance of mental health and sustainability.

– **Importance of lifelong learning:** Continuous skill development is essential in a rapidly changing world.

– **Digital sovereignty:** Empowering individuals and institutions to control their digital identity, data, and learning processes -> digital literacy

Evolution of University Libraries

– Rebranding as "learning centers": Libraries become central to teaching and learning activities

– Digital learning spaces: Virtual environments that complement physical spaces.

– Social and academic integration: Fostering communities within the university (like public libraries for the whole society).

– Control over published content: Universities gain authority over the publication and curation of academic content (publications and research data) – and this is managed by the libraries

– Data collections: Libraries manage extensive datasets for research and societal use, supporting data-driven decisions.

Digital Media and Exploration

– Shift from search to exploration: Users navigate vast digital landscapes to discover content.

– «3DD Information Hub»: An immersive platform that allows multi-layered access to information using AI.

– AI-generated insights: Personalized recommendations and dynamic content navigation.

– After the launch of ChatGPT: users will get used to „prompting" instead of formulating a search and they will expect answers, not a list of search results

Open Science and Education

– Open access to all published content: Democratisation of knowledge.

– Impact on continuing education: Open access materials become a cornerstone of lifelong learning.

– Open Research Data: Data are published in a FAIR manner, enabling reuse by humans and AI.

– Role of libraries: Filtering relevant content and offering guided learning experiences and user friendly discovery tools (see slide 7)

– Algorithms and AI tools must be open: transparent and reliable

Training Programs and Lifelong Learning

– Collaboration between alumni and libraries: Ongoing education and skill refreshment.

– Certification of refresher courses: Value of updated credentials in the job market.

– Active credits: Importance of participation in teaching and learning activities.

– Support for learning communities: Libraries as hubs for communal learning and engagement.

– Collaboration between university and public libraries: Sharing resources and platforms for greater impact.

Changing Roles of Library Staff

– Focus on didactics: Teaching skills become central for librarians.

– Community management: Building and maintaining learning communities.

– IT knowledge: Essential for managing modern library systems and tools. AI literacy as an important skill

– Role of liaison librarians (LLs): Connecting users with resources/services and supporting research, providing digital literacy

– roles such as digital librarian (working with digital libraries), data librarian (working with data), maybe also AI librarian?

Automation and AI in Libraries

– AI-supported cataloging (formal and subject): Automation of traditional library tasks.

– Integration of university sources: Seamless integration of academic content into digital platforms.

– Evolution of scientific publishing formats: Transition to micropublications and interactive data publications (all linked together).

– Shift to university-managed publications (wishful thinking?)

– Role of university libraries: Maintaining standards, metadata, and infrastructure for publishing and archiving

What we do at UB Zurich: Open Science, Liaison services

– Focus on Open Science Services: OA platforms, communication, support, advocacy; mainly support of researchers

  – Botom-up service development

  – Internal «OA network» involves also liaison librarians

– LLs as new role model with community management (branch oriented): contacts, communication) as a major task

  – Information literacy, data literacy, ai literacy

  – specialization in data curation (research data management)

  – -> high requirements on librarians

Data Stewards @UZH

- Project funded by swissuniversities 2023-2024

- Coordination by the university library, extra funding by UZH starting 2025

- Data stewards are mainly junior researchers

- After one year the network involves already 30 data stewards from all disciplines

    - Close cooperation with our data librarian/data curator

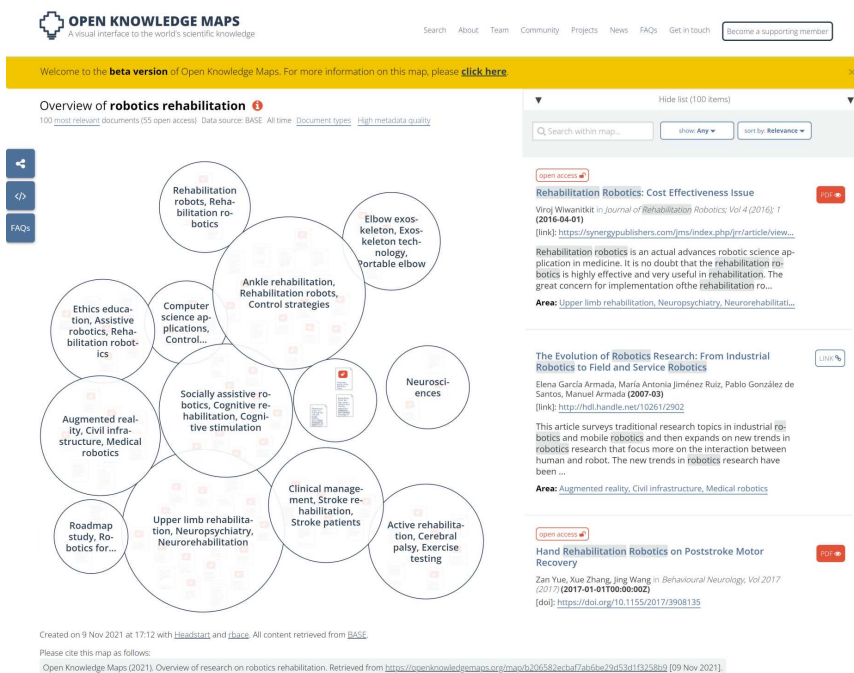   - University of Zurich – Data Stewards Network @ UZH

University libraries as community centers

- Still a long way ahead @UZH…

- At UZH a new main building with space for the library is planned for 2030

  - The library space follows classical ideas of libraries

- The library cooperates with the departement for learning space development

  - The concept for EDUspace is in line with the discussions in the library community

  - Need for flexible spaces, community spaces, makerspaces, coworking spaces

  - We experiment in one smaller space

  - Maybe we will be there in 2040…

AI enhanced search instruments

– Early adaption of AI supported searching: Open Knowledge Maps

  – Integrated in the discovery tool at ETH library

  – Beta version with AI-supported semantic search @ETH library (retrieval augmented generation RAG)
  https://eth.swisscovery.slsp.ch/

– Development of discovery system: Swiss libraries use Primo (ExLibris/Clarivate) – and depend on its development
https://swisscovery.slsp.ch/

  – Current: Primo Research Assistant

  – Experiments planned with AI supported search in our repository (ZORA)

Conclusion

– Libraries as active learning spaces: Central to education and community building.

– Evolution of media usage: Shift to digital and AI-driven exploration.

– Importance of open science: Ensuring access to knowledge for all.

– New role in scientific publishing: Libraries leading the way in the digital era.

Discussion

- If you agree with the assumptions – what can we and what should we do?
- In the fields:
  - Learning spaces (physical and virtual) for communities
    - Flexible settings, hybrid infrastructure, makerspaces, community spaces -> what else?
  - Control over data, publications, media etc.
    - full text and data repositories with the right to use them for scientific non-commercial purposes (especially adaption of AI technologies); legal basis; rise awareness among scientists
    - National and international cooperation / interoperability; prevent commercial partners to take over this business (again)
  - Open Science support (FAIR data, OA publication, archiving) -> what else?
  - AI in discovery, AI in cataloging
    - What we need: Open and transparent AI tools, run and controled by universities

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Thank you for your attention!

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https://blog.degruyter.com/the-future-of-academic-libraries-a-utopian-vision-for-2040-and-beyond (24.4.2023)