New Ways of Working in Science

ICIC

Nîmes, October 2005

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President & CEO

FIZ KARLSRUHE

AGENDA

- FIZ Karlsruhe and STN International
- New Ways? New Challenges …
- … and how to meet them!

FIZ KARLSRUHE

Ways in Karlsruhe...

FIZ Karlsruhe

FIZ Karlsruhe – Some Facts

- Founded in 1977 by the German Federal Government
- Shareholders:
  - Federal Republic of Germany
  - 14 Federal States of Germany
  - 6 renowned Scientific Societies, e.g. German Physical Society and Max-Planck-Society
- Members of the Supervisory Board:
  - Representatives of the Shareholders
- Staff: about 350 employees
- 3 sites: Karlsruhe, Berlin and Bonn
- FIZ Karlsruhe is a not-for-profit organization. Three quarters of its business is commercial business

FIZ Karlsruhe´s Strategic Positioning

- **Our Mission:** We provide and develop solutions in information as well as in knowledge transfer and management.
  - Strategic partnerships and co-operations
- **Our Vision:** To be the premier supplier of sci-tech information and services in Germany and Europe
- **Our USP:** To be a neutral platform
  - for the supply of information offers from competing producers (providers and publishers)
  - for the development of solutions for scientific communities
- **Dual Strategy:** Through our services, we target scientists in Industry and in Science


STN

STN International – A Story of Success. (Yet Fashion has changed ...)

Success - Based on the Customers

Mission

STN's mission is to be the world's leader in meeting the needs of sci-tech information professionals in scientific research institutions, in industry, and in patent offices.

Vision

STN is the world's leading sci-tech information solution for information professionals – adding value by innovative integration of content and technologies.

STN – a worldwide successful player in scientific communication and information

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Current Challenges

We have to face several challenges, such as

- the “explosion” of vast amounts of information
- web technology
- mergers & acquisitions in the sector of scientific publishing
- free patent information provided by the patent offices
- Open Access movement

Impact on how scientists do their work

Working in Science

Characteristics of scientific work → **Strategy** → **Aim**

- obtain information
- use information
- edit and evaluate information
- disseminate and store information
- scientific work in laboratories and at the desktop
- scientific work carried out by individuals or in groups
- interdisciplinarity

To consistently make use of new possibilities (Internet, digitalisation, electronic communication, Open Access)

To develop new methods of scientific working and to significantly improve the efficiency of scientists and institutes

Scientists are interested in ...

- Access to all scientific information without any technical, political or organizational barriers
- Fair pricing
- Long-term availability of all information
- Reliable information as well as verified and reviewed content
- Efficient handling of vast amounts of data
  - Tools for analysis and visualization
  - Standardized tools
- Global collaboration
- Customized solutions

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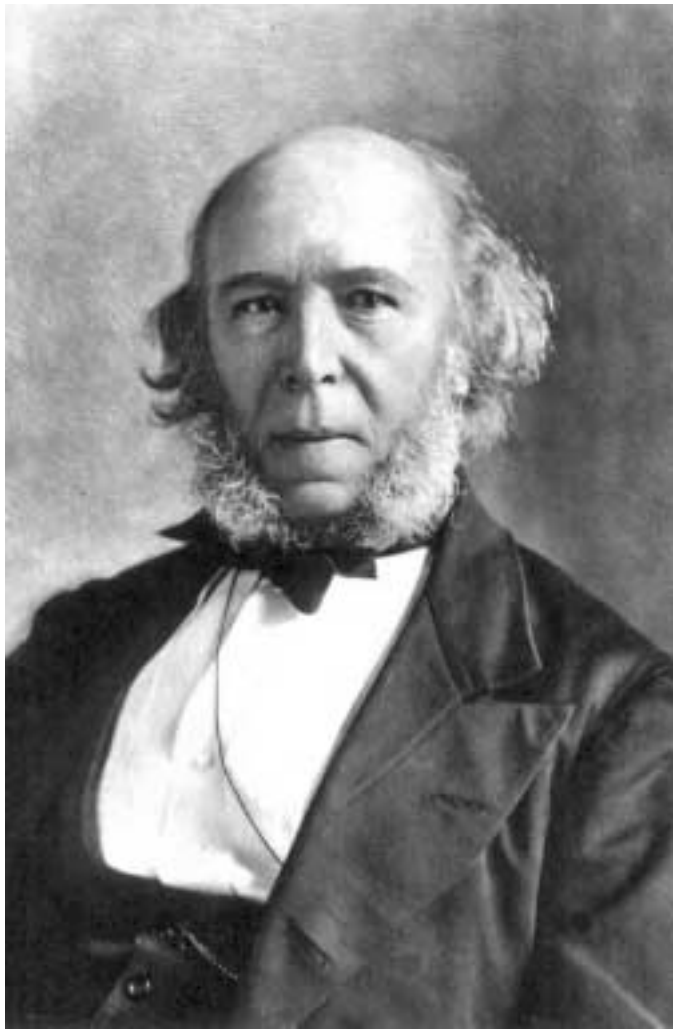
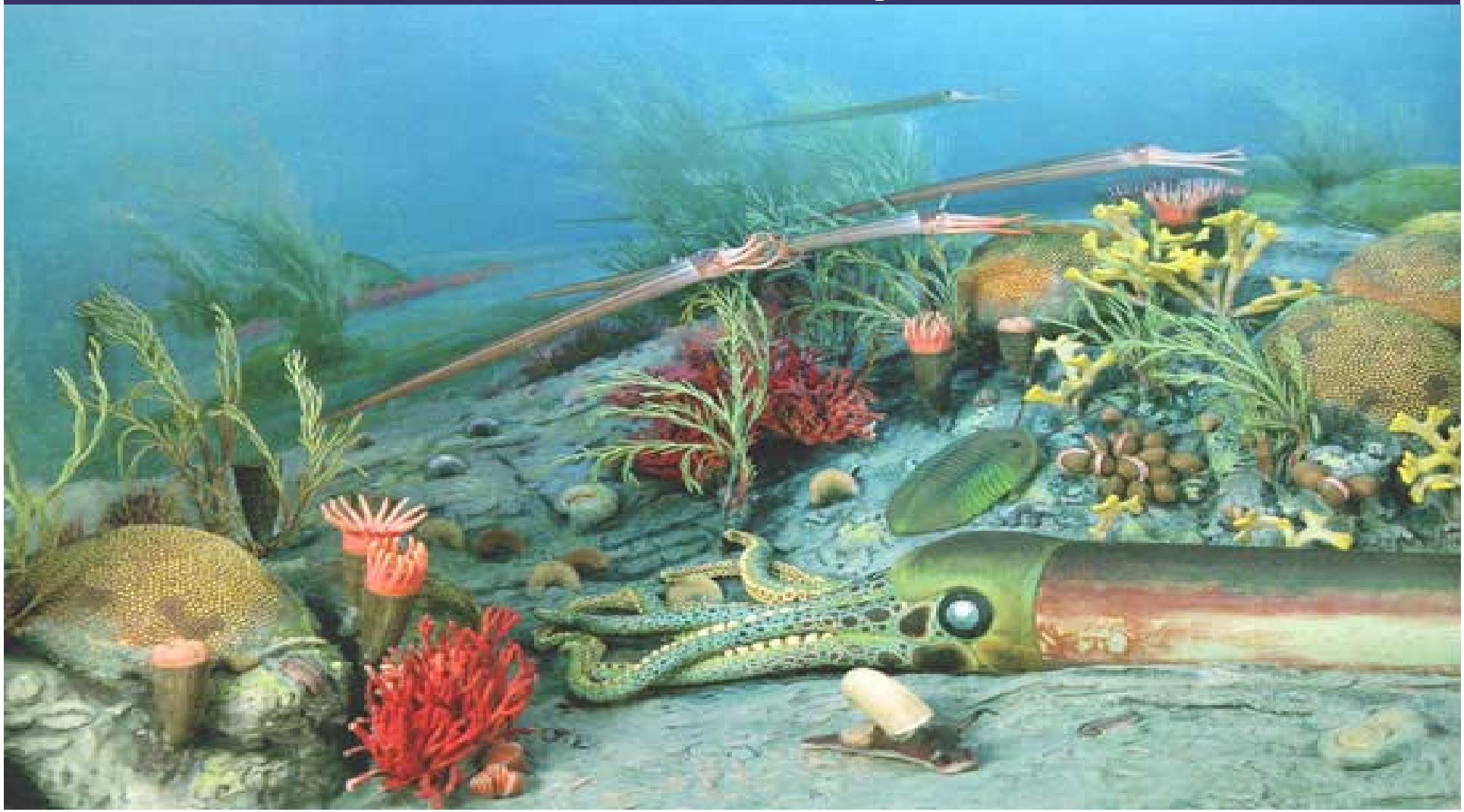
“Survival of the Fittest”...



Herbert Spencer, Social Statics (1851)

In Terms of Survival, Ecosystems …



... and Economic Systems have some Rules in common

To be the “fittest“ is an active process involving

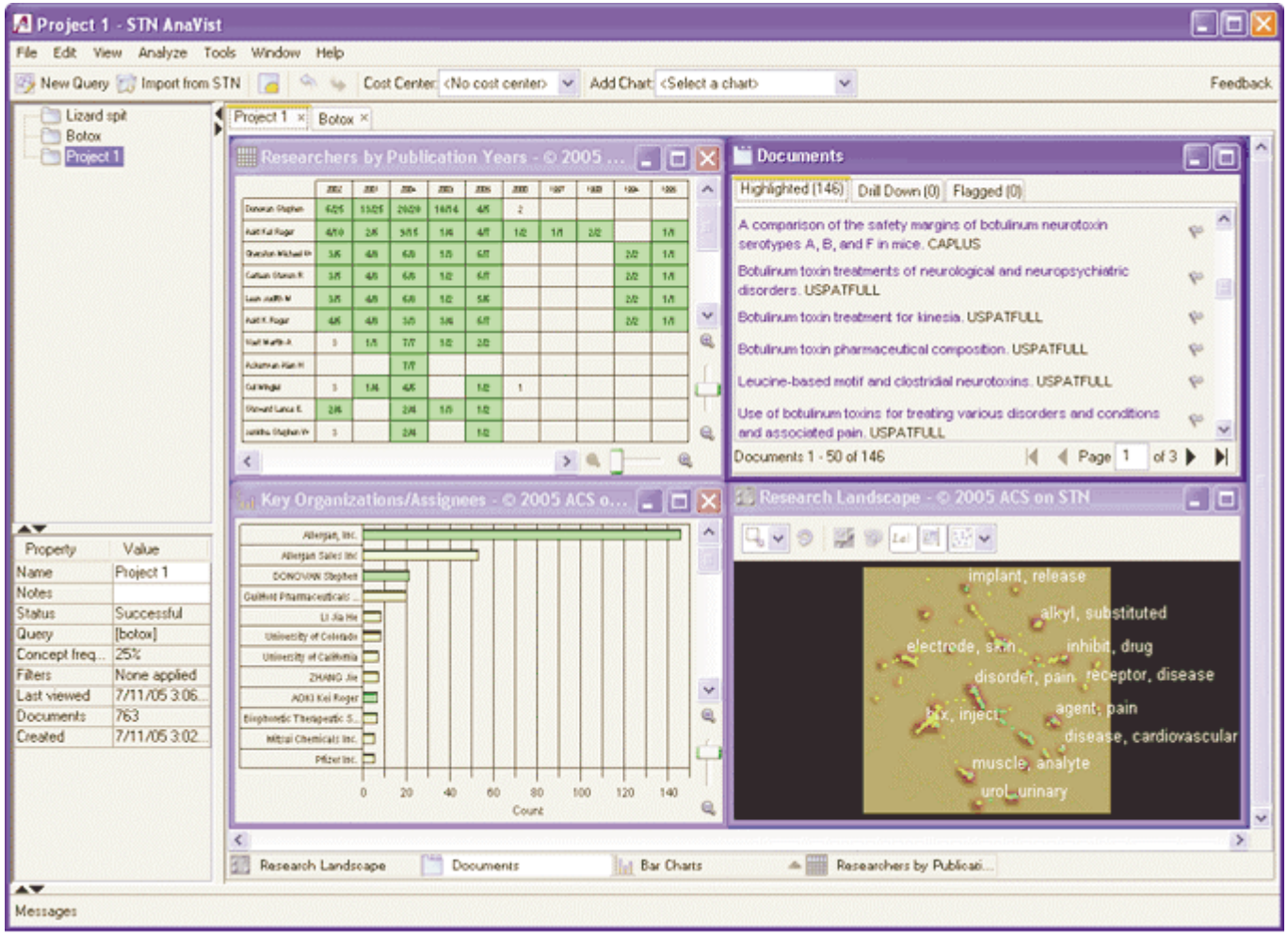
- carefully watching the environment (=*market*) and anticipating changes
- intelligently responding to changes in the environment (=*market*), e.g., new *competitors* (or *business models*)
- adopting the latest developments (=*technologies*)
- collaborating and partnering

Strategic Collaborations and Partnerships

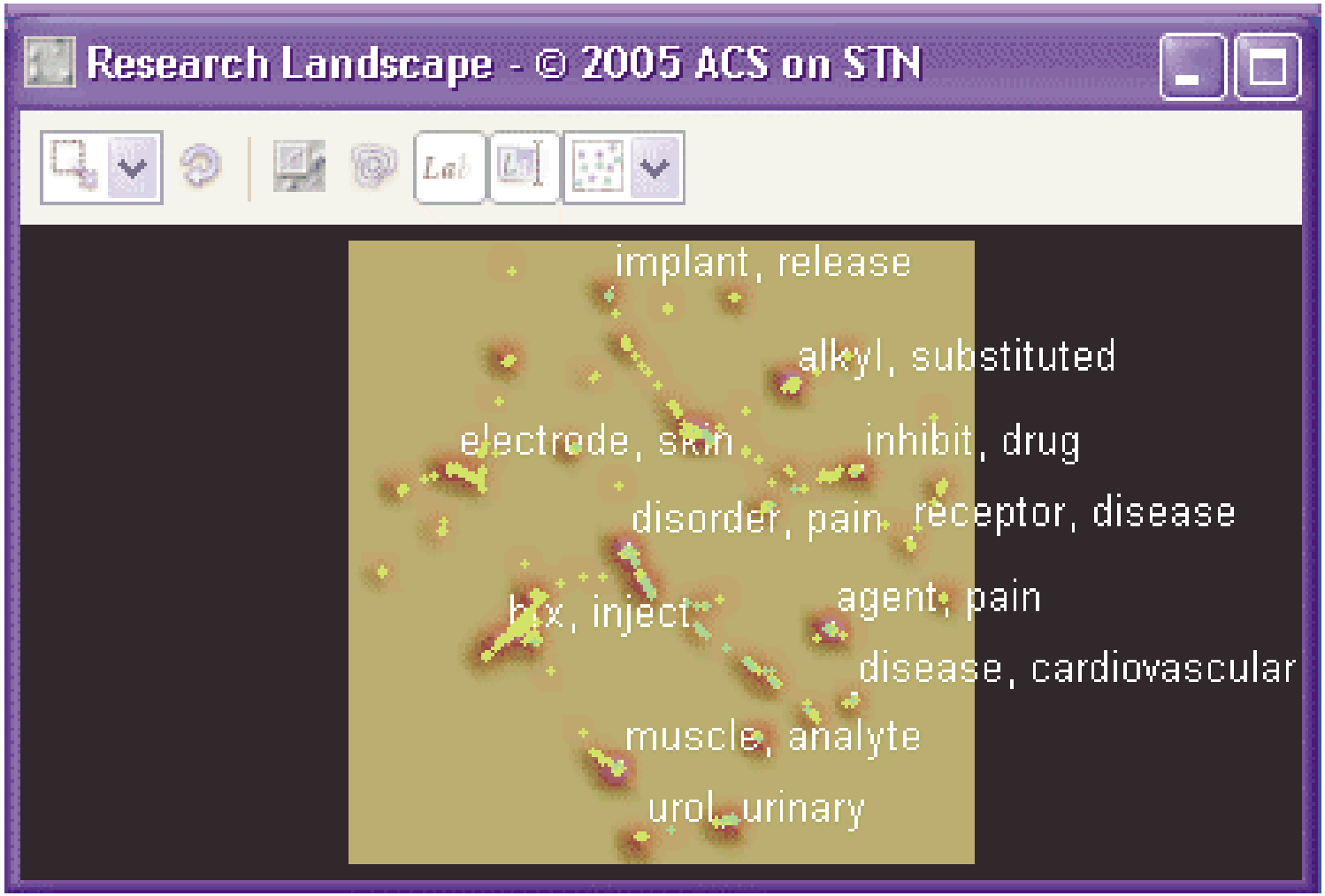
Collaborating and Partnering are successful strategies in both nature and economy.
Collaborations aiming at a win-win situation give advantages to all partners involved – and also to the customers!

- Collaboration with CAS: STN AnaVist
- Collaboration with the Max-Planck-Society: eSciDoc

STN AnaVist - a new Analysis and Visualization Tool



STN AnaVist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implant, release
alkyl, substituted
electrode, skin
inhibit, drug
disorder, pain
receptor, disease
agent, pain
disease, cardiovascular
muscle, analyte
urol, urinary

Excellent Tools need Excellent Data. Otherwise they are useless.

Business and legal decisions are becoming increasingly important.

- The consequences of decisions made with poor or incomplete data carry an unacceptably high risk.
- Traditional patent search tools, namely those based on Boolean search technology, applied to poor quality patent data, produce poor results.
- Even newer technology tools applied to poor quality patent data, and older technology search tools applied to very high quality patent data, still produce poor results.

(excerpts from a paper by Andy Gibbs and S. Lata Setty, PatentCafe.com, Inc., 2003)

No Visualization without Standardization – the Basis for Excellent Data

- To efficiently analyse and edit data and to improve poorly structured, inconsistent information are crucial factors.
- When consolidating data from heterogeneous sources, serious problems may occur, e.g., semantic problems, if different names are used for the same content.
- To standardize heterogeneous data (with respect to their structure and format) improves their quality – or their “fitness“.

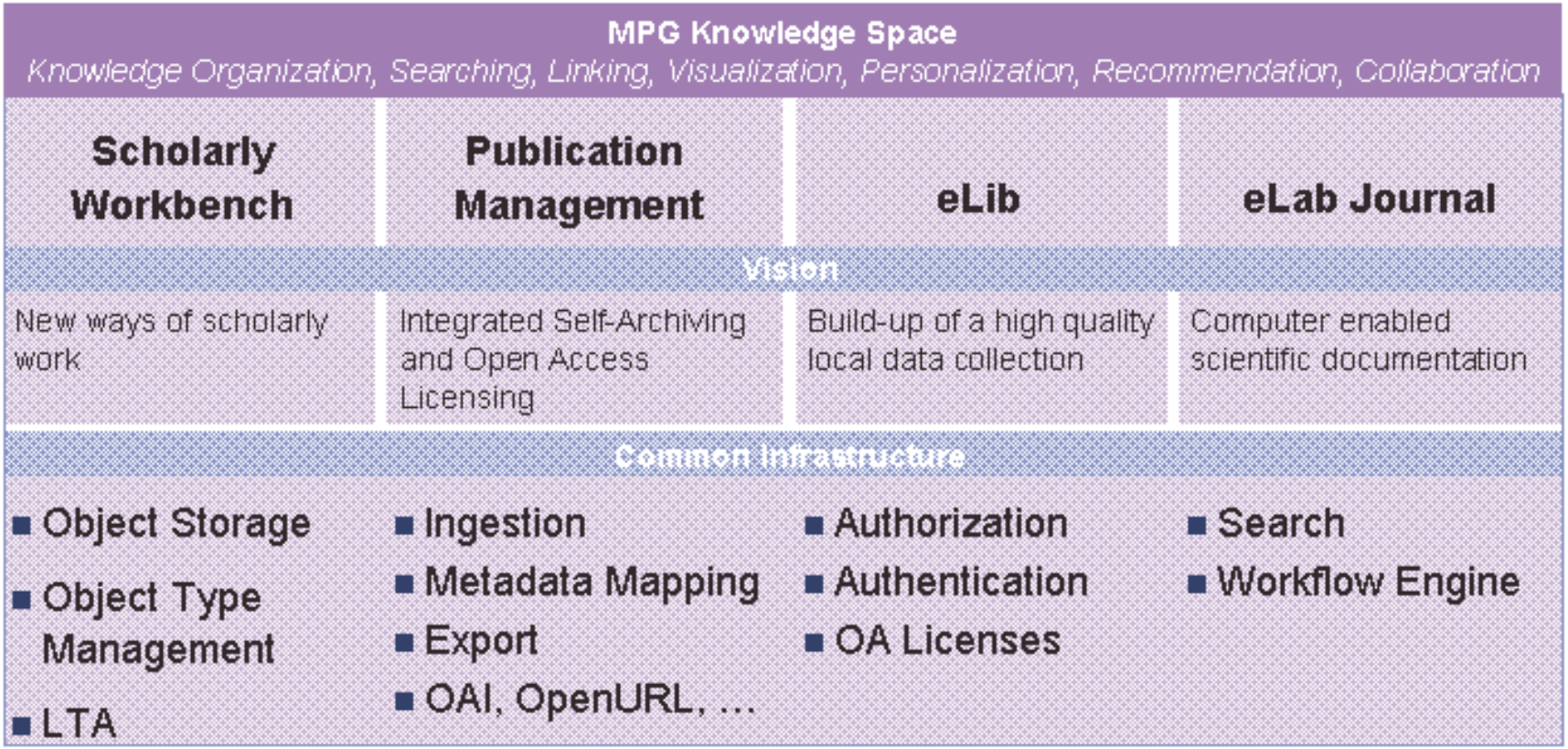
Together with the Max-Planck-Society …

… we cooperate in developing new methods of scientific working.

To an increasing extent, science and research take place within networks.

- We work on eSciDoc, a joint project which is part of the German Government's eScience initiative.
  - The eScience Initiative aims at building a service infrastructure using information technologies designed for web-based scientific work .
- We create an integrated, web-based information, communication and publishing platform.
- FIZ Karlsruhe realizes the technical infrastructure within this strategic partnership
- We will make it available to other scientific institutions and to researchers in industry as well.

eSciDoc - Applications and Infrastructure



eSciDoc – Innovative Application Scenarios

- **Scholarly Workbench** will enable institutes to easily create digital collections online, to share them with colleagues and to work on them with research-specific tools (e.g., sophisticated visualisation environments or language analysis tools).
- **Publication Management** supports scientists and institutes in managing, archiving and disseminating their scientific output, including supplementary material, via Open Access
- **eLib** ensures that scientists and institutes will have sustainable access to electronic journals and databases, thus establishing the basis for value-add services.
- **eLab Journal** allows an integrated administration of results, methods and publications, thus supporting scientists and institutes in documenting their experiments

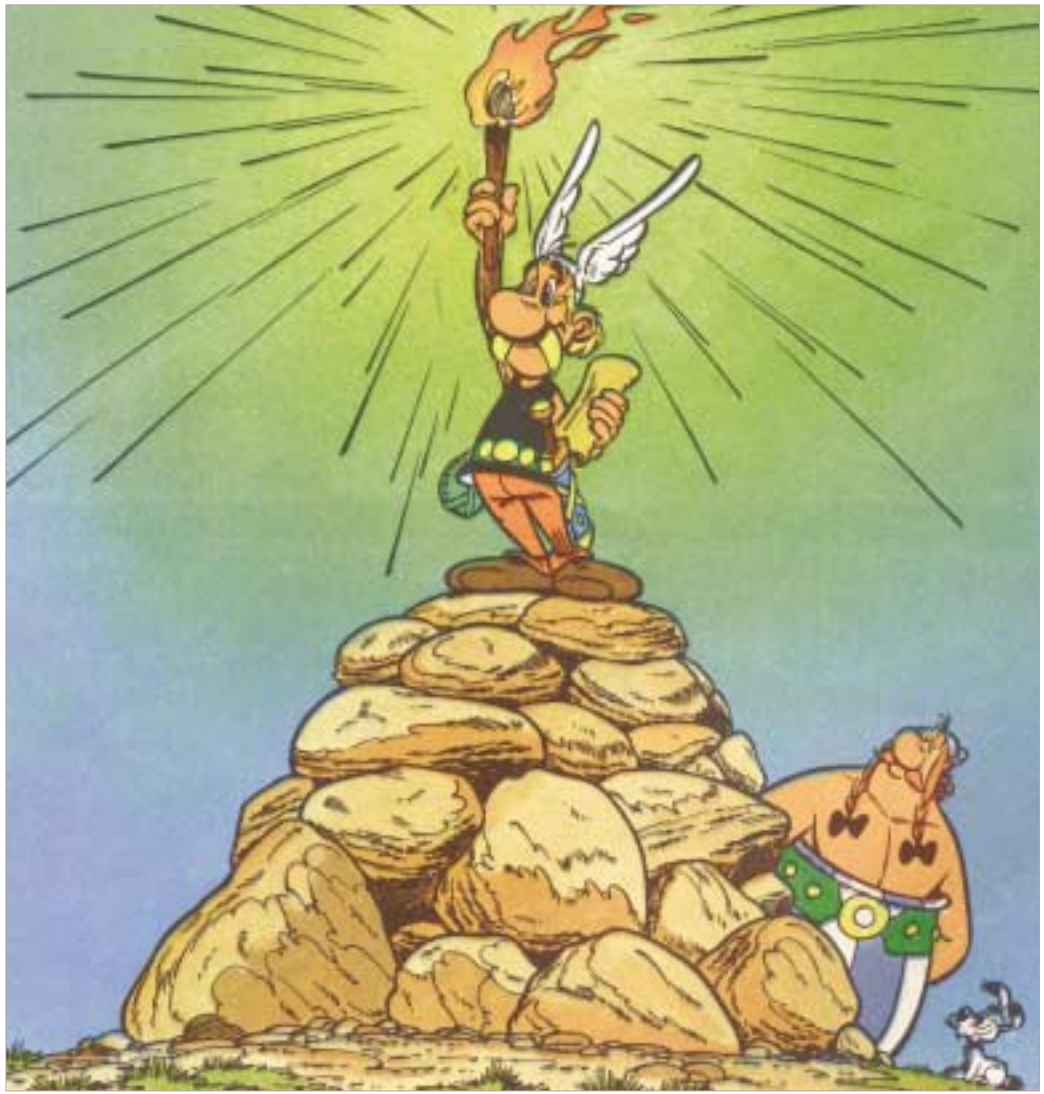
eSciDoc – Innovative Infrastructure

- The various application scenarios are based on one homogeneous technical infrastructure.
- This creates an integrated knowledge space for knowledge management within the MPS.
- This infrastructure has to
  - support the multidisciplinary services the MPS plans to provide to scientists
  - meet general requirements such as scalability, sustainability of the system, and long-term availability of the stored objects
- The infrastructure has to be open, robust and flexible
  - an open system

Answers to Important Questions

- How can I increase the impact of my publications?
- How can I reliably publish?
- How can I store digital objects in a safe and sustainable way?
- How can I process various data formats?
- How can I build new eScience applications?
- How can I integrate existing systems?

Survival of the Smartest!



Thank you!

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