

ICTBioMed NCIP Science Gateway: A Hub for Collaborative Cancer Research

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Introduction

Cancer

- A leading cause of morbidity and mortality worldwide according to the World Health Organization
- Big challenge for the researchers and the scientific community
- Requires the collaborative efforts of multidisciplinary institutes and research labs across the countries
- Requires support of high-performance computing and databases by providing a common platform for integrated research

The National Cancer Informatics Program (NCIP)

- Launched by NIH
- Supports biomedical informatics in cancer research
- Offers the NCIP Hub, a science gateway for the cancer research community

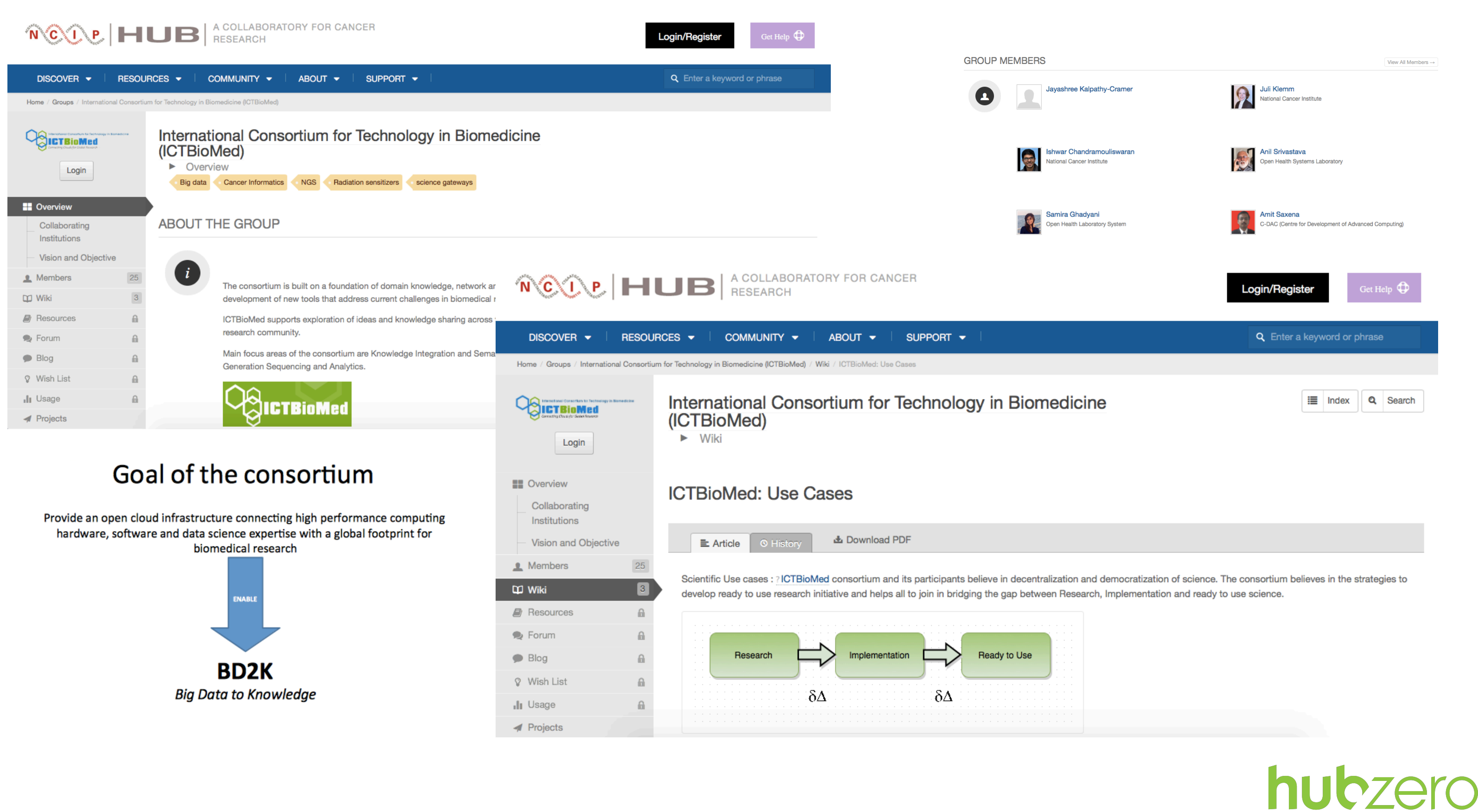
NCIP Hub

- Based on the science gateway framework HUBzero®
- Allows for creation of projects sharing data and running data analysis with different tools
- An open source software platform for medical image informatics, image processing, and three-dimensional visualization.

ICTBioMed (International Consortium for Technology in Biomedicine)

- A consortium of domain researchers, experts in high-performance computing centers and organizations concerned with applications in health informatics
- Collaborates with the HUBzero® team for implementing a Docker execution host model, which integrates into the HUBzero® platform.

ICTBioMed NCIP Hub



Goal of the consortium

Provide an open cloud infrastructure connecting high performance computing hardware, software and data science expertise with a global footprint for biomedical research

BD2K
Big Data to Knowledge

ICTBioMed Use Cases

Scientific Use cases : ICTBioMed consortium and its participants believe in decentralization and democratization of science. The consortium believes in the strategies to develop ready to use research initiative and helps all to join in bridging the gap between Research, Implementation and ready to use science.

Research → Implementation → Ready to Use

hubzero

ICTBioMed Partners



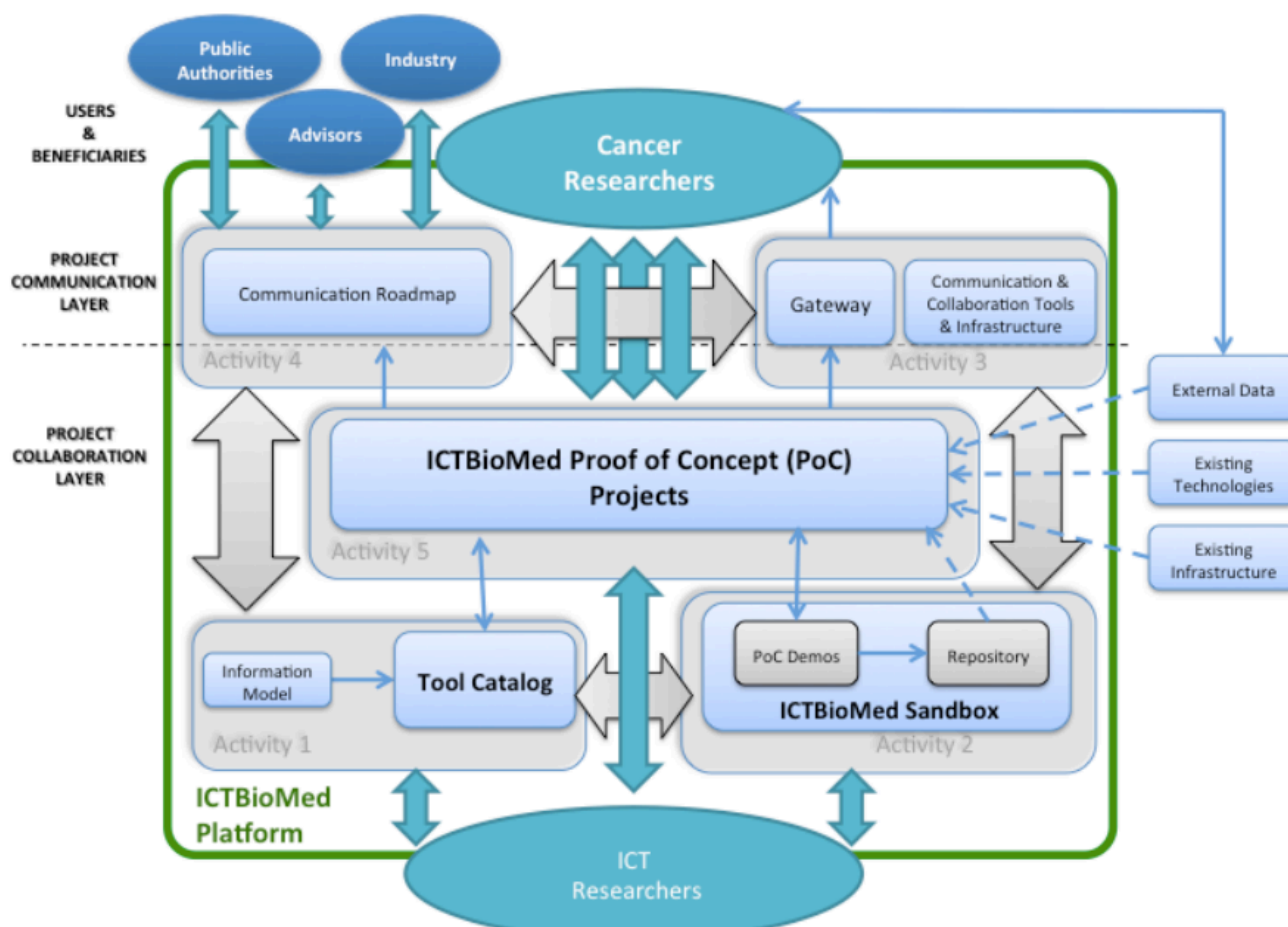
ICTBioMed Goals

To identify, adapt and integrate the wide range of globally available informatics tools to deliver a comprehensive ecosystem for cancer researchers

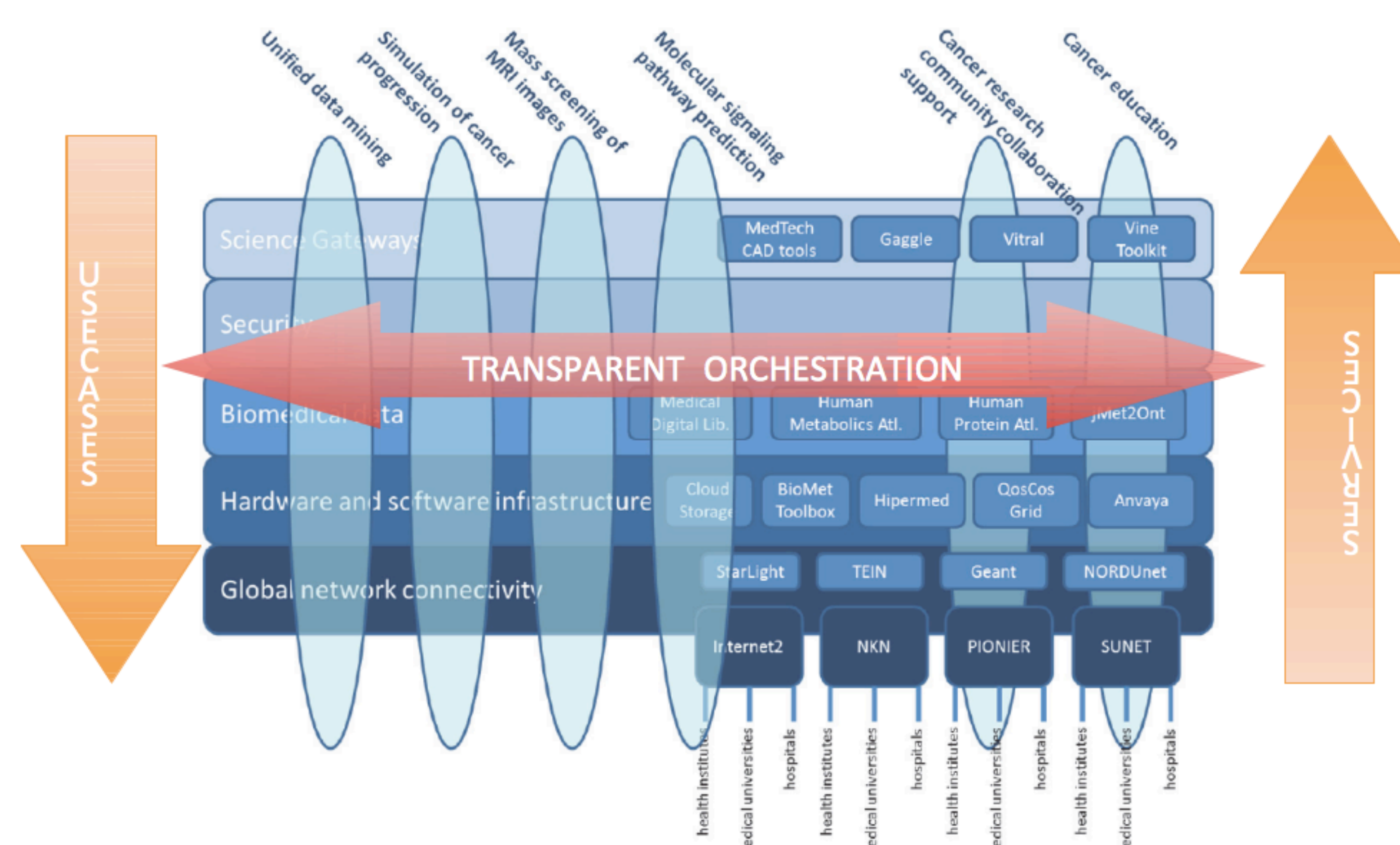
The ICTBioMed Vision

- Very broad distribution of the components deployed for use by a widespread community
- Global connectivity through international networking initiatives to National Research and Education Networks (NRENs).
- Interconnection between hardware and software infrastructures and data repositories distributed across the globe
- Adequate mechanisms for ensuring secure access to data and infrastructure with the use of advanced interaction and visualization tools

Science Gateway Platform



Cancer Hub Ecosystem



References

1. <https://cbit.cancer.gov/ncip/ncip-home>
2. <https://www.nih.gov/>
3. <https://nciphub.org/>
4. <https://hubzero.org>
5. <http://www.ictbiomed.net/>
6. <https://www.docker.com/>