



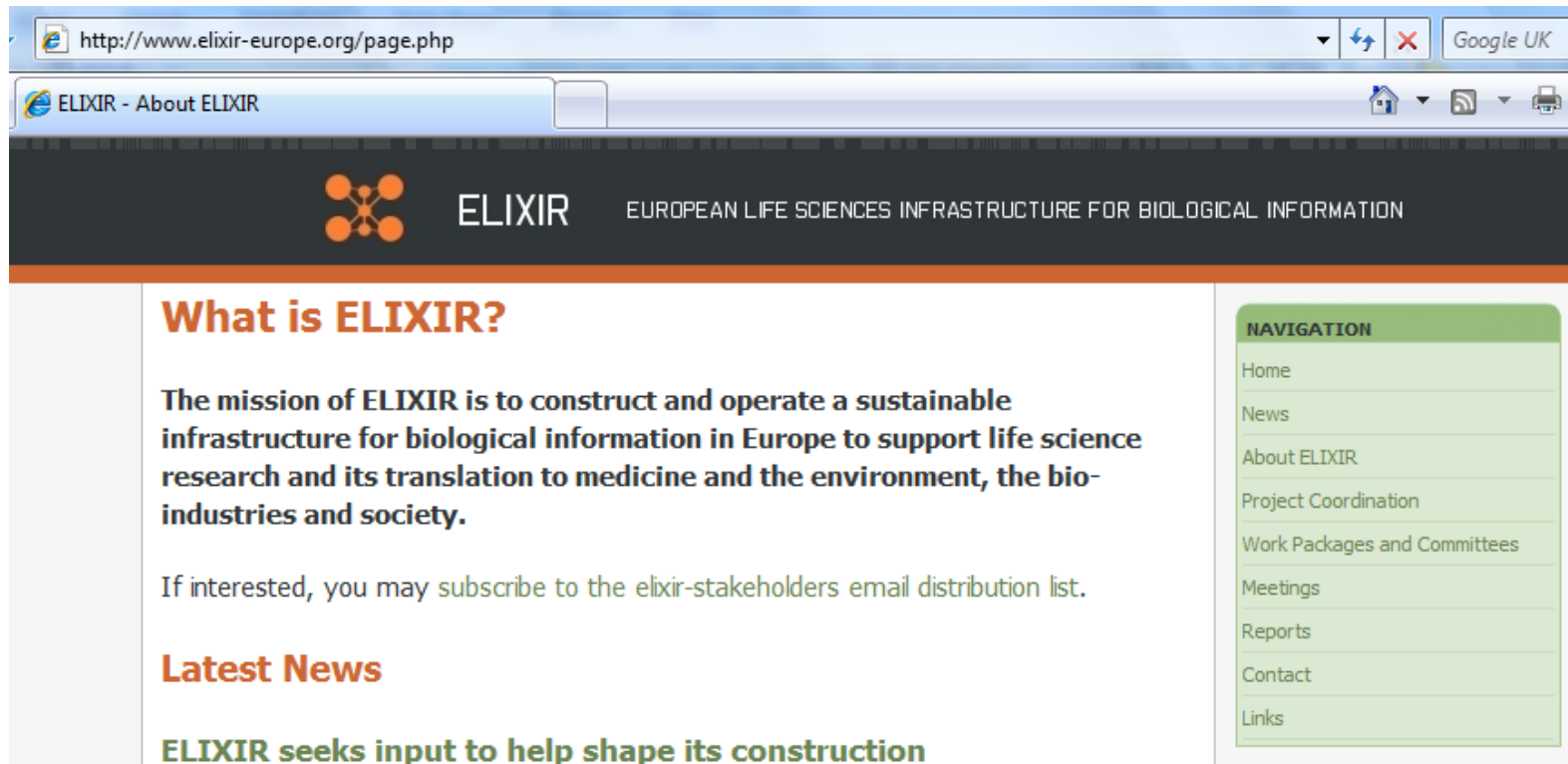
Elixir – Evolution of the European public life science information infrastructure.

Mark Forster
Syngenta RDIS

December 2011

Classification: PUBLIC

What is ELIXIR?



The screenshot shows a web browser window with the URL <http://www.elixir-europe.org/page.php>. The page title is "ELIXIR - About ELIXIR". The header features the ELIXIR logo (a stylized orange network) and the text "ELIXIR EUROPEAN LIFE SCIENCES INFRASTRUCTURE FOR BIOLOGICAL INFORMATION".

What is ELIXIR?

The mission of ELIXIR is to construct and operate a sustainable infrastructure for biological information in Europe to support life science research and its translation to medicine and the environment, the bio-industries and society.

If interested, you may subscribe to the [elixir-stakeholders](#) email distribution list.

Latest News

ELIXIR seeks input to help shape its construction

NAVIGATION

- Home
- News
- About ELIXIR
- Project Coordination
- Work Packages and Committees
- Meetings
- Reports
- Contact
- Links

Why do we need ELIXIR?

Addressing European Grand Challenges



Healthcare for an ageing population

By linking biomedical and biological data resources, ELIXIR will facilitate understanding of diseases of old age and will drive earlier diagnosis, improved disease management and preventive strategies.



A sustainable food supply

ELIXIR will provide ready access to information on plant genomes, insect pests and plant pathogens, enabling crop researchers to develop healthier, more productive crops in the face of a rapidly growing population.



Competitive pharma and biotech industries

ELIXIR will support our pharma and biotech industries by facilitating pre-competitive collaboration and attracting more companies to Europe.



Protection of the environment

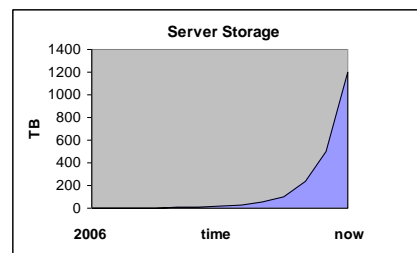
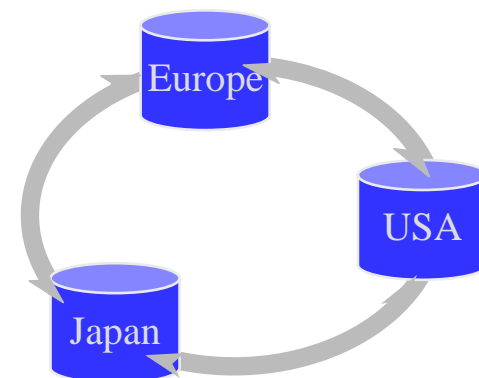
ELIXIR will help environmental scientists to monitor life in the oceans, understand the effects of climate change on species diversity and develop new methods to tackle pollution and waste.

•Data Growth

•Global context

•Very large user community:

- 3.3 m web hits/day
- 20,000 unique users per day



The Preparatory Phase project

Two phases:

- **Committee meetings of stakeholders to achieve consensus and make recommendations**

Jan 2008 – July 2009

Define scope and remit of ELIXIR

Work package reports on specified domains

Produce 'business plan' for Elixir services by end 2009

- **Documentation and negotiation phase**

- July 2009 – Dec 2011

- Develop 'International Consortium Agreement'

- Define funding and legal model

Elixir work packages

See Elixir wiki site – <http://www.elixir-europe.org>

WP 2 – Elixir strategy for data resources

WP3 - Coordination and participation (user communities, industrial)

WP4 - Organisational and legal

WP5 – Elixir funding strategy

WP6 – Physical infrastructure

WP7 – Data integration and interoperability

WP8 – Scientific literature resources

WP9 – Medical health and nutrition

WP10 – Plants, agriculture, small molecules and environmental

WP11 – Training strategy

WP12 – Infrastructure for tools integration

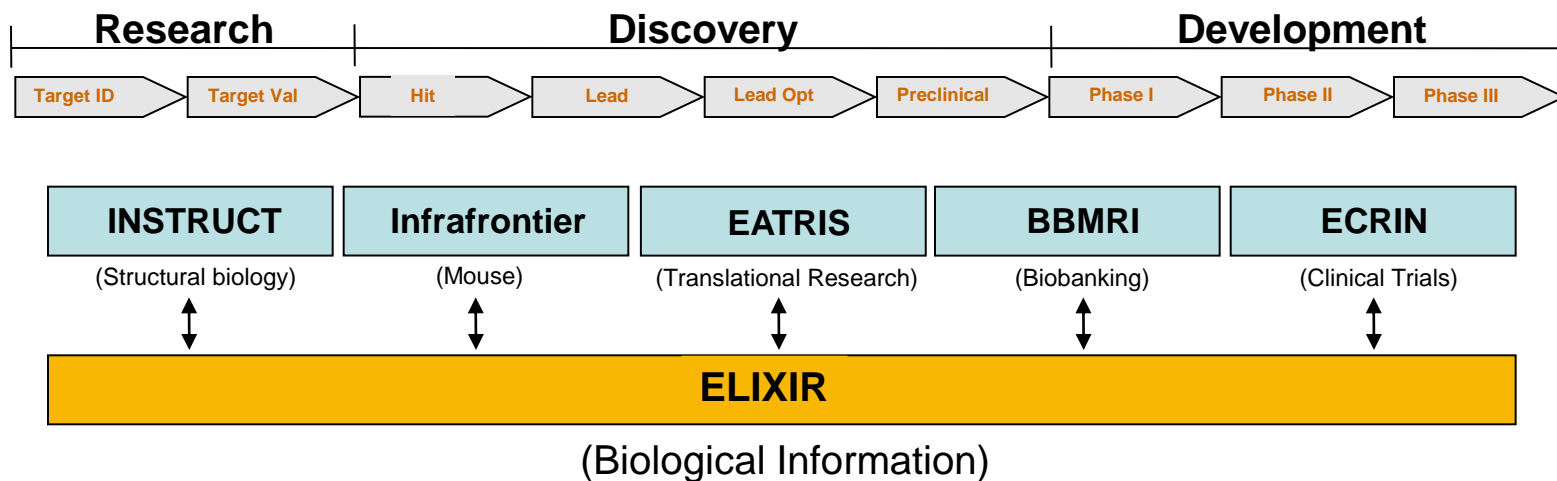
WP13 – Five pilot studies

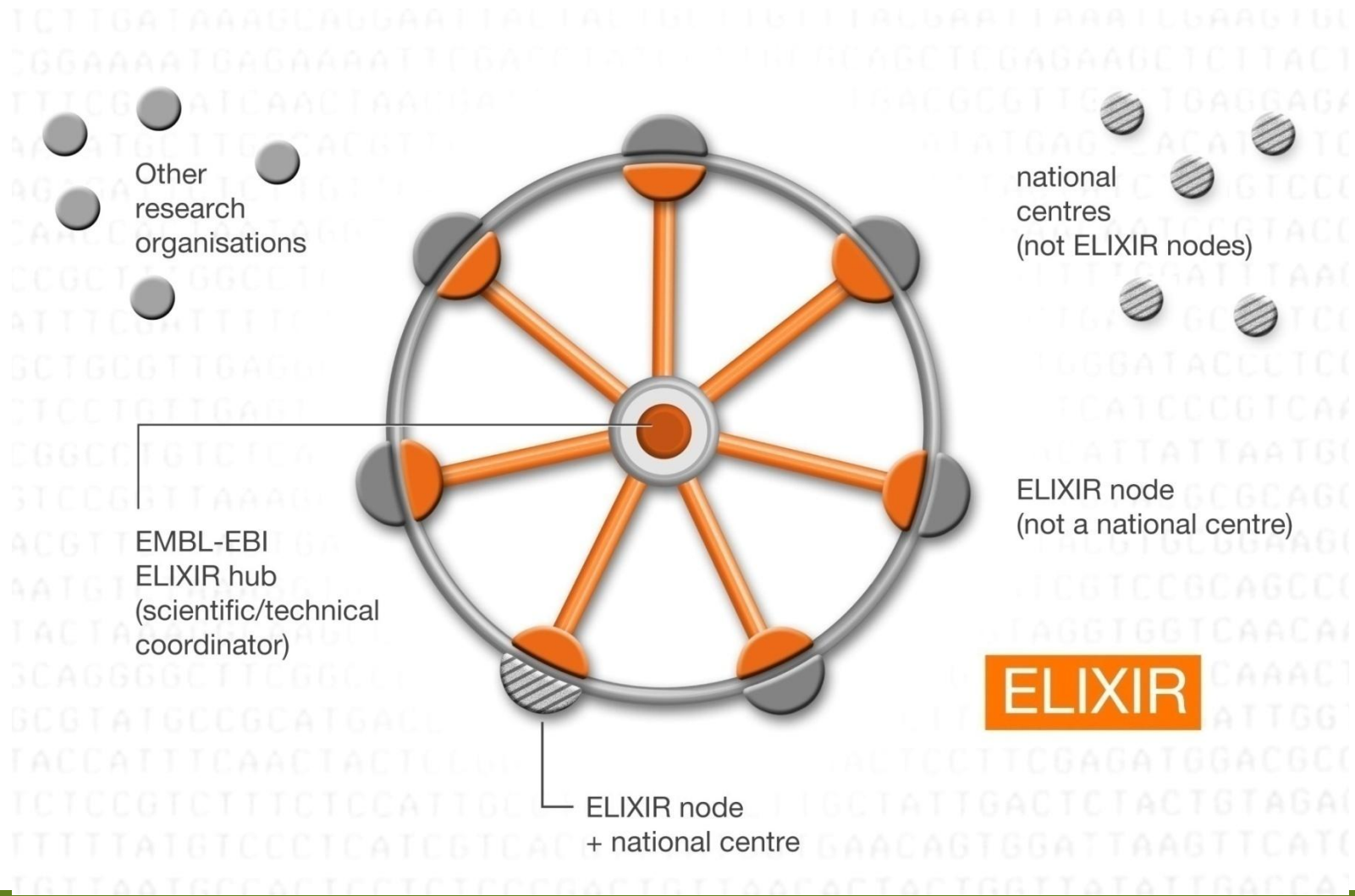
Cell phenotype imaging, Supercomputing, Systems Biology

EB-eye feasibility, European genotyping archive.

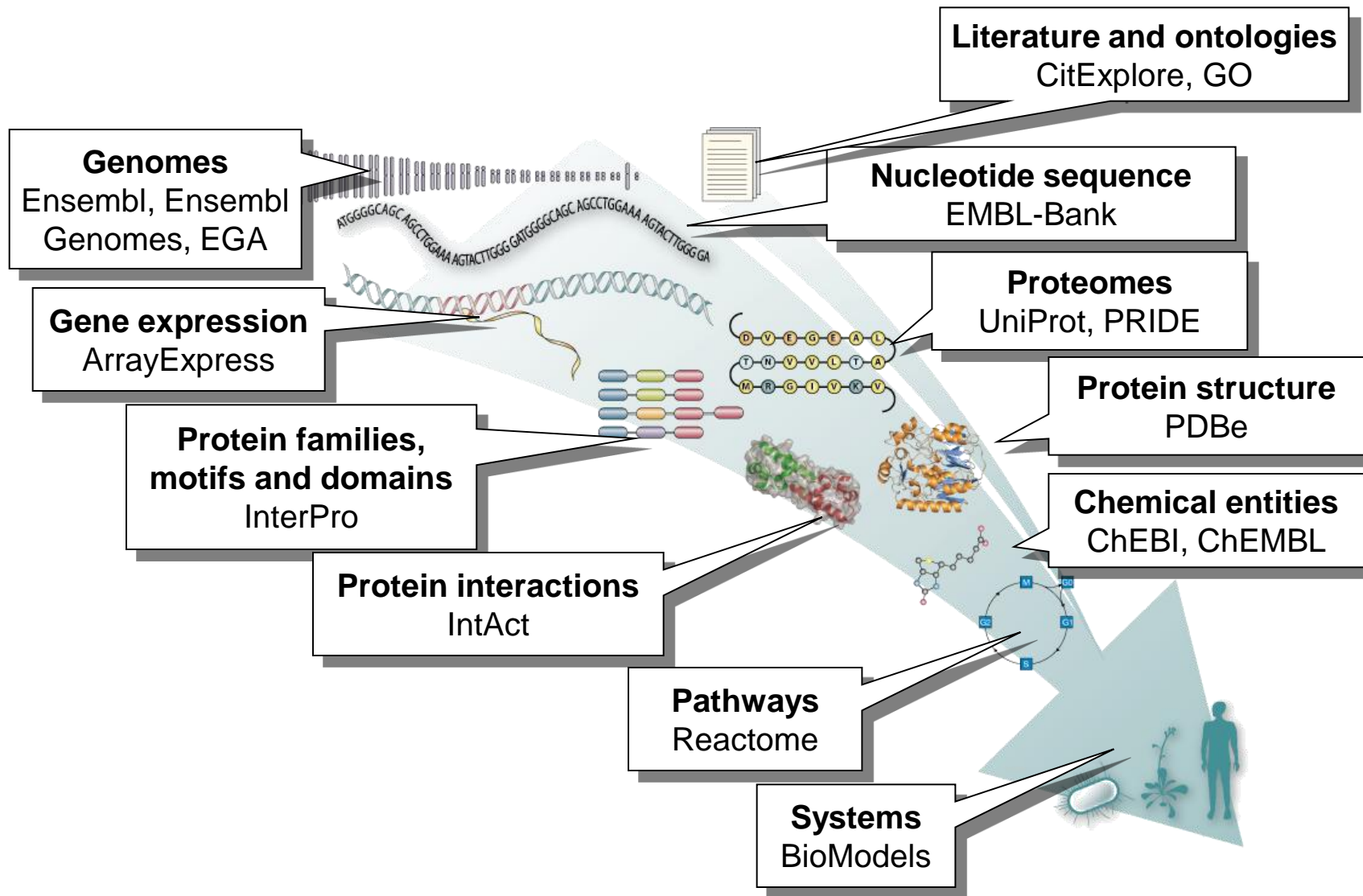
ESFRI

Biology Research Infrastructure proposals.





Databases: Molecules to systems



Elixir – Needs and applications within WP10

- Small molecules
 - Therapeutic compounds for humans, other animals
 - Metabolites in plants, animals, experimental data (NMR/MS)
 - Agrochemicals, herbicides, fungicides, insecticides.
 - Toxicology
 - Compound bioactivity, physical properties.
 - Links to other biomolecular species (Enzymes or other protein targets)

Elixir – Needs and applications within WP10

- Plant sciences / agricultural applications
 - Molecular data for crop plants (Wheat, Maize, Rice, Sorghum...)
 - Non crop plants -e.g. model such as Arabidopsis, weeds.
 - Plant pests – insects, nematodes, non pest invertebrates (e.g. bee)
 - Plant pathogens – fungi, oomycetes, viruses, bacteria
- Animal / veterinary / agriculture
 - Farm animals,
 - Aquaculture, fisheries – e.g. Cod, Salmon
 - Pet animals
 - Animal pests, parasites, bacteria (harmful and beneficial)

Elixir – Needs and applications within WP10

- Elixir - Environmental domain
 - Biomolecular data such as DNA barcodes, 16S or 18S r-RNA.
 - Meta genomic samples – soils, lakes, rivers, sea
 - =>Derived data (sequences, metabolite information, location)
 - Distribution of small molecules in environment
 - Links to environmental or sensor data (temperature, rainfall, etc)

Elixir – Industry drivers (WP3)

- Avoid duplication of effort
- Interoperability / compatibility of public / private Data
- Private access to public infrastructure
- Storage / network cost minimization

Elixir – Not just data , services ! (WP3)

- Service components
 - Data (download)
 - Query interfaces (web)
 - Application programming interfaces (Perl, Java, Semantic)
 - Core analysis tools (download)
 - Private server(s) (close to public data)
 - Cloud based servers (Disk/CPU charge, Elixir premium)
 - Service level agreements



- Elixir business case and memorandum of understanding (MoU)
 - Now available (March 2011)
 - MoU establishes Elixir as an EMBL special project
 - Came into effect September 2011, Elixir now a legal entity.

10 M GBP BBSRC funding new London data centres (Aug 2009)

Denmark, Finland, Spain, Sweden committed fund for

53 European institutes submitted proposals for 'nodes'

74M GBP BBSRC funding for Elixir Hub / Data Centres (5 Dec 2011)

<http://www.elixir-europe.org/news>