



**European Theoretical
Spectroscopy Facility**

BUSINESS PLAN

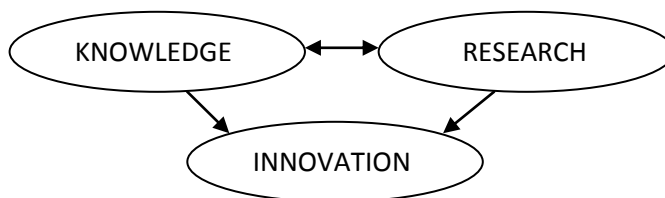
Mission Statement:

Serve as a global leader in the field of theoretical spectroscopy. Assist experimentalists, commercial enterprises, and governments in areas such as materials science, chemistry, biology, and nanoelectronics to enable revolutionary technologies of the future.

Organizational Description:

The European Theoretical Spectroscopy Facility (ETSF) is a distributed knowledge network that provides theoretical expertise to further the understanding of the properties of materials, chemicals, and biological processes for applications across both public and private sectors.

Comprised of 10 core groups across Europe and associated groups worldwide, the ETSF is an e-infrastructure for theoretical spectroscopy carrying out state-of-the-art research on theoretical and computational methods for studying electronic and optical properties of materials. The ETSF gathers the experience and know-how of more than 200 researchers in Europe and the United States, facilitating innovation and rapid knowledge transfer. The ETSF is a consortium headquartered in Louvain-la-Neuve, Belgium.



History:

The idea for creating the ETSF stemmed from 15 years of expanding collaborations between a number of European groups specializing in the theoretical calculations and simulations of materials systems. Researchers in both the public sector and private companies constantly were challenging theorists to provide methods and computer programs to explain experimental findings and properties of materials. From 2004 to 2008, a Nanoquanta Network of Excellence was started with European Union funding to create a virtual facility that could provide answers to these constant queries. The ETSF was established and became operational during this time.

Organizational Goals:

- Create brand awareness through publicity and events
- Partner with experimental facilities/resources to strengthen appeal to users
- Attain financial stability by attracting paying customers and governmental support
- Maintain cutting-edge scientific software code and develop new codes for new user communities

Key Assets:

The ETSF has developed a variety of powerful and efficient computational software programs, libraries, and tools for modeling of materials based on quantum mechanics. The ETSF has the expertise of over 200 scientists who are experts in theoretical calculations of materials systems.

Products & Services Description:

The European Theoretical Spectroscopy Facility provides open-source software codes, background knowledge, customized support, training, and collaborators to acquire fundamental knowledge of matter at the quantum-mechanical level and to transfer this detailed understanding to the future design of groundbreaking technologies in areas such as photovoltaics, light emitting diodes, optical data storage, nanoelectronics, and chemical and biological processes.



Services include:

Theoretical research collaborations and training projects.

Open-source software development.

Organization of tutorials and hands-on training events as well as online training modules.

How Does the ETSF Work?

The ETSF works in close collaboration with researchers, companies, or governments to determine the best course for employing ETSF computational resources and software to solve scientific/technological problems. ETSF services are adapted to accommodate the customer's particular needs. They range from providing complete calculations and analysis for a scientific/technological issue for clients who are not experts in the field to providing training courses on ETSF open-source software for the most sophisticated clients.

Competition:

There is no competition. Individual theory groups and software developers exist, but the ETSF is the only organization worldwide that offers the service of matching the software code to the customer's need and offers full theoretical calculations or customized training to meet the customer's requirements.

How Does One Work With the ETSF?

If you believe that the ETSF may be useful to your enterprise, please do not hesitate to contact any of the Managerial or Scientific Officers mentioned at the end of this document. We are always looking to adapt our software to new customers and new technologies.

Marketing:

The ETSF is dedicated to providing support and services for research in industrial, governmental, and academic laboratories. Any organization that has a need for knowledge of physical or chemical properties of electronic materials, chemical or biological processes, or nanoelectronics is an initial target market for the ETSF.

Market Size:

To date, the ETSF has received over 150 proposals for projects and has more than 1000 users of ETSF software. The size of the potential market for the ETSF is enormous, as most companies could profit from an increased understanding of materials, chemical, or biological properties and processes, and there are a large number of experimental researchers at both governmental and academic laboratories who could benefit from ETSF theoretical collaborations and open-source software training on ETSF software codes.

ETSF research topics are innumerable and varied. For example, the ETSF has already tackled projects in areas in biological markers for medicine, new materials for solar cells, nanoelectronics, optical data storage, rewritable DVDs, and light emitting diodes.

Market Strategy:

The ETSF has a user-friendly website and publicity materials to advertise ETSF support and services. We offer contract services to commercial companies. We are currently funded by an European Union (EU) e-Infrastructure grant and continue to try to attract further EU funding. The ETSF is actively seeking to form alliances with large experimental facilities/resources to enable us to offer a complete package of theoretical plus experimental resource support to our customers.

Strategic Alliances:

The ETSF is forming a partnership with the SOLEIL synchrotron light source in Paris serving thousands of customers in areas such as materials science, chemistry, physics of materials, nanoelectronics, life sciences, and environmental sciences. We are also looking to partner with facilities such as high performance computing centers to create a framework for deploying the ETSF infrastructure to a much wider range of users, through user training and projects supported by ETSF scientists. Under the current ETSF e-Infrastructure grant, the ETSF is partnering with the Barcelona Supercomputing Centre and is forming a partnership with the Leibniz Supercomputing Centre.

Finances:

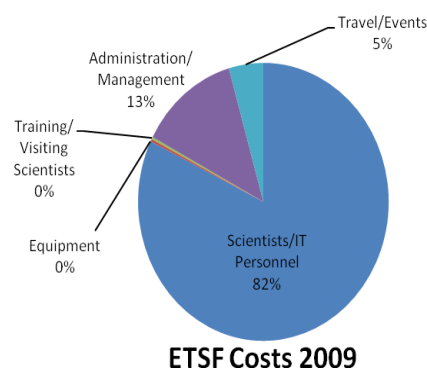
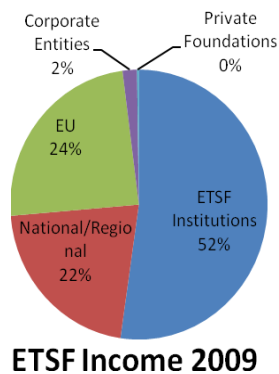
The ETSF is currently funded by a 3.8 million euro European Union e-infrastructure grant. Additionally, approximately 200 scientists across Europe and the United States contribute their time to the operation of the ETSF. All of these costs are taken into account in the tables below.

The income to meet ETSF activity, shown in the ETSF Income Table below comes from various sources: to a significant extent from participating institutions, from regional and national sources, from the EU Framework Programme, and more and more through income directly from private foundations and industrial users of the ETSF (together with sponsorship).

The ETSF has seen major growth between 2008 and 2009 with a 10 percent growth in the contribution from participating institutions and strong growth in EU contributions. We expect continued growth in 2010 but at a lower level from these two sources, 5 percent growth for contributions from the ETSF institutions, and we expect the EU contributions to stabilize. The contribution from ETSF nodes will reach a plateau as the ETSF reaches its full size and becomes more successful in attracting companies and other paying users, probably around 2013.

ETSF Income(kEuros)	2008	2009	2010	2011	2012	2013
ETSF Institutions	5186	5720	6006	6306	6621	6621
National/Regional	2490	2338	2420	2540	2860	3140
EU	1424	2657	2657	2657	2657	2657
Private Sector	200	323	370	500	600	700
TOTAL	9300	11038	11453	12003	12738	13118

ETSF Costs (kEuros)	2008	2009	2010	2011	2012	2013
Scientists & IT Personnel	7710	9071	9351	9756	10384	10705
Equipment	29	31	33	35	38	40
Training/Visiting Scientists	28	30	32	34	36	40
Administration/Management	1157	1415	1522	1588	1690	1743
Travel/Events	376	491	515	590	590	590
TOTAL	9300	11038	11453	12003	12738	13118



Management & Key Scientific Officers:

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