

# CHALLENGERS

## Scope

Senior executives in industry today need to foresee the medium to long term future of the ICT marketplace in order to make the right decisions for their company's needs. However, executive level decision-makers in industry face considerable challenges in following the constant and often complex changes of the technology landscape, especially in terms of powerful but still evolving technologies such as Grids and service oriented architectures.

Grids have already evolved from specialised supercomputing systems to much more general computer platforms: research now aims to develop further towards 'service-oriented knowledge utilities.' This vision, first articulated by the 'Next Generation Grid — NGG' expert group, demonstrates Grids' natural position at the forefront of the clear trend of ICT convergence. But achieving this vision requires fragmented and often incompatible technologies serving a narrow spectrum of needs to be replaced by a unified, holistic technology. In essence, ICT itself must become knowledge-oriented at the technological level, and service-oriented at the user level. Challengers explore the

landscape of these challenges taking into account the needs of real-world business environments, but also of the individual users (including home users).

Challengers is set to provide foundational and pragmatic insight for decision-

makers into such technologies and the shifting landscape that surrounds them. The project will also address relevant socio-economic and business drivers, providing an analysis of a holistic, multidimensional nature.

Such an approach considers in depth multiple facets of the technical, social and business aspects, with central elements the constant integration, consolidation and cross-fertilisation of these analyses. Within Challengers the business foresight is tempered with technological reality, technology foresight is guided by socio-economic needs, while social foresight is informed by the practical realities that influence society.

## Advances

Challengers aim to develop a vision for Grid-enabled Service Infrastructures that Europe will gainfully work towards in the coming decade and beyond. The project functions as an international forum of Grid and ICT experts, building on the ideas of NGG Group as a starting point but greatly expanding its scope.

Primarily hosting a sequence of workshops, Challengers will "think outside the box", in an effort to deconstruct the present vision, revise it by demolishing any illusions and freshen it up with a constructive set of long-term priorities.

The project uses the motto "Against Mainstream Research" which does not only apply for the outcome of the assessment performed within Challengers but also for:

- The general methodological framework adopted in order to perform an efficient holistic approach on complex systems like Grids
- The organization of the exploratory assessment process during the project's events by the participating experts

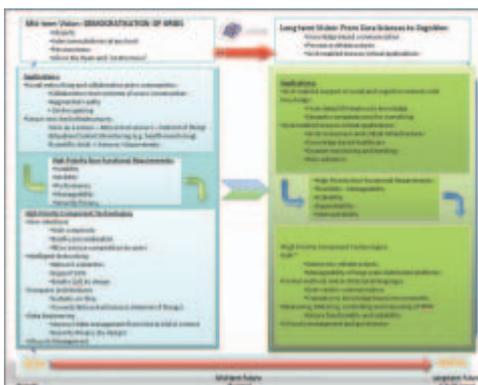
Moreover the resulted European vision for Grids, as described by Challengers is radical, in the following sense:

- It provides a break through for the future sustainability of Grids, highly based on a social visionary dimension
- The proliferation of Grids is envisioned within a "utility-based" context for masses of users
- Shows up all the capacity and capabilities of Grids without focusing on targeted sectors or communities, but keeps the vision live for all of them
- The vision is fully justified through structured and prioritised technology challenges
- The idea of assessment based on a "Killer applications" seeking approach is suppressed: Challengers suggest a vision putting in the forefront the need to improve the characteristics that render a Grid-based infrastructure useful for specific families of applications, rather than the characteristics that make an application useful for users
- To provide a software platform supporting distributed product and process developments, which respects and protects intellectual property rights

## Positioning in global context

Challengers comprise a Core Group of experts who collectively act as a think tank providing, through the assessment performed within the project's activities, consultation services to the ERA and the Business Communities as well as the EC policy instruments, in order contribute towards Europe's addressing major technological, economic and societal challenges and to stimulate more effective and efficient RTD.

The group aims to increase awareness of the next decade vision for Grids among researchers of different but complementary or converging disciplines. The ultimate goal is to "inspire" the stakeholders, organizations, researchers, SME and users in general for working towards the direction of developing interoperable and less complex Grid systems and architectures. The interacting components in such Grid based environments will be proposed in a way that will empower cost-effectiveness for the future business aspects and allowing for the emerging concept of "anywhere, anytime and by anything" mode.



## Contribution to standardization and interoperability issues

Part of Challengers' activity is devoted on identifying actions and measures that need to be taken in order to interact with the international policy-making / standards-defining groups, to understand their thinking, to offer (strongly) proposed changes for the benefit of Europe and to promote trans-national cooperation between the various initiatives and research Groups.

Part of Challengers activity is based on interaction with major standardization bodies, initiatives in national and worldwide level as well as commercial developers and development groups. Through this interaction the project aims:

- to shape a way of thinking that allows to make the move to standardisation more acceptable and more rapid
- to propose and support the wide adoption of the Grid technologies
- to assess the socio-economic impact for the next decade

## Target users / sectors in business and society

The Challengers Specific Support Action functions as a high-profile forum allowing Grid experts with diverse backgrounds to provide influential input to a varied and important audience: industry decision-makers, research leaders and European Commission policy-makers. In addition to European researchers, Challengers solicits, encourages and supports both international and industrial participation in its work towards the definition of the Research Agenda and Roadmap for the visionary evolution of Grid based infrastructures and technologies for the coming decade.

## Overall benefits for business and society

Challengers will pave the roadmap to sustainable economic models – not just for the trading of Grid resources, but also to understand how and on what basis these Grids will be financed in the first place. Part of this work will come from a consideration of how the needs of researchers may align (or not) with those of business and industry, and how far the research community can benefit from technologies developed for other purposes. The adoption of appropriate economic models is essential to promote investment in grid infrastructure across the whole community at a level that will provide significant impact for research.

At the societal level, Challengers will provide ideas of how research should go beyond purely IT-centric capabilities and include international open standards, business modelling and social research in order to address the complete end-to-end process from researcher to end user and enhance the acceptability of new services.

## Achievements

Challengers have already reached their first important milestone, through the release of an extended key document, with the following content:

- A detailed overview on the Impact of Grids in today's business, scientific and social activities
- The description of the European Vision for Grids for the coming decade, as assessed and envisioned by Challengers through work performed during the previous project's events
- The presentation of the Challengers Research Agenda where the challenging topics are presented, as a result of a simultaneous "top-down" and "bottom-up" approach, having in the middle the non-functional requirements that should be met by the future Grids towards the realisation of the described vision.
- An outline of the strategic framework for the realisation of the European vision for Grids, within a mid term (5-years) and a long term (10-15 years) context, where the topics of the Research Agenda, are prioritised separately for each of the two time windows.

The aforementioned aspects are considered as the initial consolidated contribution of Challengers to the research challenges and visionary evolution of Grid based infrastructures and technologies for the coming decade.

The project has already entered in the second and final iteration aiming to refine its Research Agenda and Roadmap that will be finally released by Challengers at the end of their lifetime.



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Support action on challenges in grids

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034128

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Specific Support Action

### contact point

Theodora Varvarigou  
INSTITUTE OF COMMUNICATION AND  
COMPUTER SYSTEMS, GR  
E-mail: dora@telecom.ntua.gr

### project website and partner list

[www.challengers-org.eu](http://www.challengers-org.eu)

### EC contribution

746 000 €

### start date

01/06/2006

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30