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# GÉANT Value Added Services


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**Abstract**

This document provides analysis of the user relationships involved in the selection, procurement and management of GÉANT products and services. It assesses the optimum pathways and modes for effective communications support for the project.

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# Executive Summary

**In order to meet the demands of a changing competitive environment and the increased ability of users to select services from a range of suppliers, it is essential that GÉANT ensures that its development focus is targeted on the supply of demand-led value added products and services.**

**This will ensure that GÉANT is best placed to continue to support the needs of the R&E community towards Horizon2020 and provide effective differentiation from commercial suppliers of networking services.**

**The focus on value add will be determined by the ability of GÉANT to develop compelling user differentiation in the areas of;**

- **Gap Reduction – reducing the gap between the service boundary and the requirements of the user**
- **Service Uniqueness – offering services that commercial suppliers cannot or will not provide to the R&E marketplace**
- **Economies of Scale/Geography – exploiting the economies of scale that the R&E community offers**
- **Localisation – giving the opportunity for NRENs to customise and localise services to support particular needs within their communities.**

**This activity will require a coordinated approach through Business Development, Product Management and Product Marketing to ensure effective delivery.**

# 1 GÉANT's Need to Manage and Develop Value Added Services

Since its inception, GÉANT has always had a strong focus on the delivery of innovative networking solutions to the R&E community. This focus has delivered networking capacity and services to the community significantly in advance of those available from commercial providers.

By leveraging skills and expertise from across Europe and with its unique position as a truly pan-European network provider, GEANT has been able to clearly differentiate itself from commercial providers. The value GÉANT has added to the community has, during the early phases of the project, primarily been focused on harmonising network connectivity and reducing the barriers to cross-border collaboration. GEANT's position as a non-profit, co-owned network has allowed it to approach services in a more flexible manner than a commercial, profit centred, organisation would be able to do.

The ubiquity of TCP/IP networking and the development of standards has been and major competitive advantage. This has allowed GÉANT to benefit from developments in internet technologies (particularly hardware) without the burden of bespoke development. However this commonality has increased the pressure on GÉANT for the future.

## 1.1 The Drivers for Value Added Services

GÉANT, the NRENs and other regional R&E networks have helped drive the development of networking technologies. At the inception of GÉANT, the commercial Internet marketplace was in its infancy with little coordination or investment. In particular cross border coordination was minimal. For the last 4-5 years the balance of investment and development power has shifted with large national and multinational networking providers offering connectivity services that are broadly in line with NREN offerings. At the same time real-terms investment by NRENs is static.

There are three key drivers which will affect the strategy of GÉANT and the NRENs in the medium term;

- **Increased Competition and Reduced Differentiation** - The increased commonality between commercial services and NREN/GÉANT provided services will increase commercial pressure. Now that services are more directly comparable third parties can begin to offer competing services
- **Technology Changes** – The rapid rise of BYOD (Bring Your Own Device) and Cloud Services reduces the "lock-in" campuses have on IT services. This has a knock-on effect on NRENs and GÉANT. NRENs and GÉANT are no longer the only or default choice.
- **User Education** - Alongside the growth of BYOD comes greater user awareness of ICT services and increased confidence in selecting them. Users are no longer "satisfied with what they're given" but are more demanding.

With increased competition and the continued pressure on funding, it is vital that GÉANT and its NREN partners differentiate their offerings from commercial services. Strong customer-focused products are essential to drive increased network usage and service uptake by current and new communities.

Within the pure connectivity marketplace – typified by GÉANT IP and GÉANT Plus/Lambda services the value added by GÉANT and the NRENs has been primarily those of cost and capacity. Commercial providers have previously either not been able to offer equivalent capacity or if the capacity is available it has been unaffordable.

Now that STM1 (155Mbit/s) capacity services are becoming relatively commonplace and Gigabit services are beginning to enter the marketplace, lack of commercial capacity is a limitation for an diminishing minority of R&E users. The costs of these services is also falling rapidly. Fibre to the cabinet (FTTC) and Fibre to the Desk (FTTD) services are becoming mainstream and are offering "fast enough" and "good enough" services to support the majority of users.

With this change in delivery technologies, access to capacity is now commoditised and is no longer a unique value add.

International interconnectivity (particularly for high bandwidth or high capacity applications) was limited and so the ability for GÉANT and the NRENs to provide high capacity international services was a strong value add. Now the supply of cross border connectivity (particularly in mainland Europe) is no longer such a major constraint and so the strength of this value proposition is also weakening.

# 2 Where can GÉANT and the NRENs add value

GÉANT and the NRENs have a number of unique attributes that any commercial organisation would have difficulty replicating. These attributes can be used to identify where value add can be retained and strengthened in our products and services.

- **Closeness to Customer** - Both physical and physiological. NRENs are often physically close to their users and tend to have staff who are either active or recently active in the R&E environment. This provides a level of customer focus that is not available to commercial organisations

- **Service and Support Focus** – Commercial organisations have a strong profit focus. This leads to efforts to minimise customer interaction, to shift responsibility for failures to other parties (particularly within international networking) and to seek to minimise costs rather than maximise value

- **Focus** – The R&E market is relatively small compared to the domestic or business markets and is typified by a high degree of customisation and uniqueness. Commercial providers focus on satisfying the majority of users. NRENs and GÉANT can focus on a tighter market and tailor packages to best suit them.

- **Localisation and Globalisation** – Due to its unique structure, GÉANT and the NRENs can be both local and global. Localisation of products is available via the NRENs whilst the global reach of GÉANT can support globally important initiatives such as eduGAIN and eduroam

These four attributes identify those areas of the marketplace where GÉANT and the NRENs can maintain good competitive positioning through offering value added services.

This can be summarised as

***"GÉANT and the NRENs can add value by offering products, services and features that the commercial community cannot or will not provide"***

This model can already be seen as GEANT transitions towards more end user value added services such as eduGAIN, eduroam, BoD, Multi-domain VPNs and cloud services. To support this transition further, an understanding of the channel (or "value chain"), the target audiences we seek to reach, and the marketplace in which we compete are all necessary to ensure relevancy of service.

# 3 Adding Value Across The Service Portfolio

The GÉANT portfolio of services and products can be broadly separated into three key areas

- Connectivity Services - Promoted under the GÉANT name
- End User Services – Primarily promoted under the edu name
- Tools and Management Services – a mixture of product/service/functional names

Of these three groupings the third (tools and management services) are primarily internal or adjunct services that support the “user” facing services within the Connectivity and End User groupings. Therefore this document will focus on the first two groups.

## 3.1 Connectivity Services and Value Add

The overall Connectivity services portfolio is shown below

| Service | Summary | Benefits |
|---|---|---|
| IP | Core IP connectivity between NRENs | Cost Effective, Reliable, Open, Independent |
| Lambda | Layer2 ultra-high capacity point-to-point connections | High capacity assured connectivity for demanding applications |
| Plus | Layer2 point-to-point connections | Assured bandwidth, secure |
| L3VPN | More secure, logical IP networking between researchers | Open yet secure, ideal for “one-to-many” and “many-to-many” connectivity |
| BoD | Layer2 “on-demand” connectivity | Ad-hoc connections to support flexible applications |
| Open | Flexible, open layer2 interconnections | Offers layer 2 interconnectivity between organisations |
| MD VPN | Highly flexible VPNs | Easy to configure, use and support |

Moving down this table broadly indicates a move from NREN internal use to end user/third party use.

### 3.1.1 Should GÉANT continue building connectivity services?

The focus on Value Add does not imply that the core networking services should not continue. In fact the continued maintenance and enhancement of these services is essential to providing the basis for adding value. The value add features allow a commodity service (such as wholesale IP transit) to maintain competitiveness in the marketplace.

Therefore there is a need to continually assess and reference GÉANT and NREN services against their commercial counterparts.

Market scoring (like that undertaken with lambda pricing) is essential to maintain competitiveness and to ensure GÉANT and its partners are not only adding value but are seen to be adding value.

## 3.2 User Based Service Portfolio

| Service | Summary | Benefits |
|---|---|---|
| eduroam | Roaming wi-fi access | Secure, simple, global, free |
| eduCONF | Certification and directory services for Video Conferencing | Assurance, ease of use |
| eduGAIN | Federated AAI service | Single-sign on, assurance, simplicity |
| Cloud Services | | |

Within this portfolio it is clear that the chief value added features focus on coordination and global cooperation. The value that GÉANT and the NRENs are offering are being able to link the needs of multiple user groups and supply services that meet their needs at a cost lower than locally developed services would. The value here is primarily economy of scale and development of critical mass.

# 4 Types of Value Add that can be offered

Within the overall goal of providing services that the commercial sector cannot or will not provide, the types of value add that can be offered can be delineated as follows;

- Gap Reduction
- Service Uniqueness
- Economies of Scale/Geography
- Localisation

## 4.1 Gap Reduction

The trend towards Value Added connectivity services can be seen by the developments through GN3 and GN3plus of Bandwidth on Demand, L3VPN and GÉANT Open. These services offer greater opportunities for users to select and operate the service.

In these circumstances the "Value Add" can be measured in terms of reducing the gap between the boundary of the connectivity service and the end user requirement. This reduction in the distance between the service and the requirement adds value to the end user (who has to undertake less work) and adds value to the NREN (who are able to support more users using standard products and services.

This gap reduction form of value add represents a key opportunity for GÉANT and NREN cooperative development. By being closer to the end users and having a more specific customer profile, NRENs and GÉANT have an advantage over commercial providers who have a wider range of customers and a need to either provide more generic services or to focus development efforts on services with a more immediate financial return.

## 4.2 Service Uniqueness

Within this grouping are the types of value add that are needed by a very small subset of users. Large commercial organisations have to develop services that are suitable for the bulk of customers as to offer custom facilities would be prohibitively expensive. It is within this niche that GÉANT can offer unique value add through a consultative approach to service development. This extends the service and client-centric focus of GÉANT into an explicit consultative approach.

Other areas of uniqueness focus on the specific nature of the GÉANT marketplace. It will be necessary to identify, document and analyse the specific market requirements that we have as part of the product management process.

## 4.3 Economies of Scale/ Geography

With 50 million users in 10,000 institutions across more than 30 countries, the GÉANT project has large economies of scale for the development of user focused services. In particular the combined buying power offered through brokerage systems and the development of services targeted at an increasingly mobile and connected user base would offer opportunities in this field.

## 4.4 Localisation

With its unique global/local organisation, GÉANT has the structure to offer NRENs the ability to flexibly localise services and products to support the needs of users. These localisations can then be disseminated through the organisation to other regions. For this to be effective there needs to be consideration for this facility to be included within the product specification and design. The ability to create modular structures needed for localisation and reuse is an important consideration.

# 5 Demand Led vs Supply Led Value Add

It is important to note that in order for value add to be of benefit, any service developments need to be “Demand Led” rather than “Supply Led”. It is vital to understand the market needs and how to meet them. Features developed without a clear user demand do not necessarily generate value add to the end user but can potentially result in “feature bloat” which increases costs and can cause developmental delays

Equally a degree of commercial focus needs to be used to prevent large scale developments of value added features to support minority needs.

This implies the need for effective user research and market scoping as part of the process of product definition. This research is essential to demonstrate that product/service developments and investment is properly justified based on real user need.

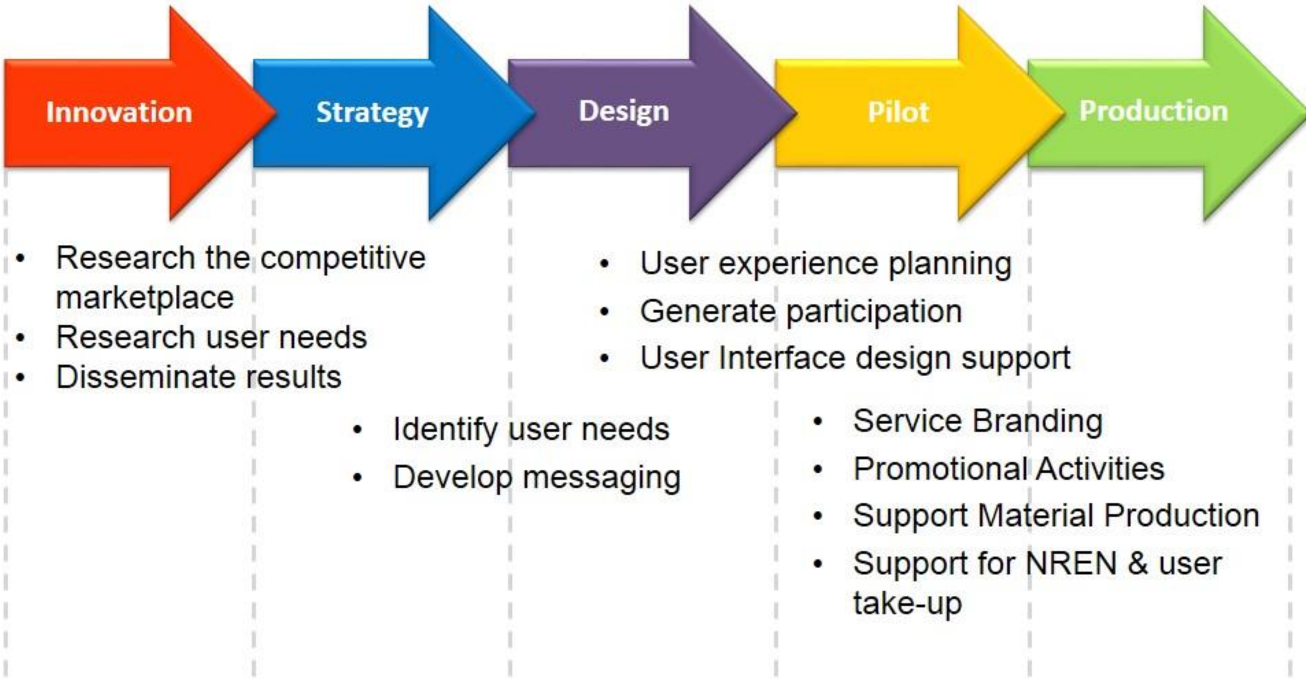
# 6 The Roles of Business Development, Product Management and Product Marketing in Delivering Value Added Services

Value Added Services within GÉANT are typified by a need for outreach deeper into the user community. This activity takes place both before development/scoping, during development and post launch.

The three stages involve Business Development, Product Management and Product Marketing in the following ways;

| | Business Development | Product Management | Product Marketing |
|---|---|---|---|
| **Scoping** | • User Surveying and identification | • Needs Identification<br>• External Market Offerings | • External Market Positioning<br>• Value Proposition<br>• Sales Channel Scoping |
| **Development** | • User/ Service Confirmation Matching (checkpoint/ gatekeeper role)<br>• Pilot User Identification | • Developing Production Ready Service<br>• Service Documentation | • User “Touch Points”<br>• Validation of support of Value Proposition<br>• User Focused Documentation/Support |
| **Launch** | • Channel Management | • Training and Support | • Awareness/Marketing<br>• Channel Marketing and Support |

The role of Product Marketing can be shown as parallel tasks alongside the Product Management Process as follows




**Interface and Relationship between Product Marketing and Product Management**

As can be seen, the two activities are closely linked and highly complementary with each having separate activities throughout the development cycle. The role of Product Marketing also encompasses the need to support a distributed delivery and sales/marketing channel approach and so requires strong channel marketing skills[1].

[1] This need was recognised by the GN3plus EU Review Team as a core requirement for the GÉANT Project in the future.

# 7 Conclusion

In order to meet the demands of the competitive environment GÉANT and the NRENs will face, it is vital to ensure GÉANT focuses clearly on delivering a range of compelling, demand led, value added services and products.

This will require effective user and market analysis and the ability to support the development of value added features through a range of processes including;

- Gap Reduction
- Service Uniqueness
- Economies of Scale/Geography
- Localisation

The developmental processes in GÉANT will need focusing to ensure cost-effective value add is incorporated within product design and development.

Value Added Services will require an integrated management and support process involving Business Development, Product Management and Product Marketing. Each team brings a different and complementary skill set to the activities and all are required in order to ensure successful delivery.