

EARNEST **GN2 Foresight Study**

Organisational and Governance Study Issues

An example: UK Governance and Organisational Structures

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Introduction

The EARNEST study has several strands including a study into the organisational and governance issues associated with European research and education networking. Part of this study involves understanding some of the existing governance and organisational models used in different parts of Europe. This paper provides a brief overview of the governance and organisational structures used in the UK for UK wide education and research networking.

The Structure of the UK NREN

The UK NREN, called JANET (Joint Academic Network) is managed by the JNT Association trading as JANET (UK), a not for profit company limited by guarantee. However JANET itself comprises a national backbone network, which links several regional networks. These regional networks are each managed and run by a Regional Network Operator (RNO), which is generally made up of a collection of regional universities and colleges. Some of the RNOs are companies and others are consortia with a lead institution. The RNOs have their own independent boards of management with some degree of accountability to the universities and colleges connected to the regional network.

JANET also connects the regional schools networks together via the JANET backbone and also connects the major publicly funded research centres and organisations to JANET via the nearest regional network.

The way the key organisations interact is complex because of the different stakeholders involved and the way that the funding and policy making is carried out.

Funding Arrangements

The UK NREN is primarily funded by the UK higher and further education funding councils, by "top sliced" funding which is given to JANET (UK) to develop and run JANET. The funding is taken of the top of the funding received from the government before it is distributed to the universities and colleges, hence the term "top slicing" is used.

The top sliced funding provided to JANET (UK) is used to develop and run the JANET backbone, but is also used to provide some funds to develop and run regional networks. Other funding to develop and run regional networks is provided by the regional universities and colleges, which develop and manage their regional networks.

In addition JANET (UK) charges for some services, such as for connecting other organisations which are not funded to be connected to JANET by the UK higher and further education funding councils. Organisations connected to JANET were some years ago charged a proportion of the total cost of the network based upon their usage of international bandwidth. However this scheme was dropped as it failed to provide a predictable charging scheme for organisational budget setting, and because the concept of usage charging ran counter to organisational strategies which encouraged innovative and increased use of the network. Today, the higher education section of the overall JANET community still meets a proportion, ca. 10%, of the overall cost of JANET, but this is apportioned according to organisation income. This mechanism relates the charge to ability to pay, and also provides predictability in the charges from year to year. A diagram in the Appendix shows the flow of funding.

Organisations Involved and Governance

A diagram in the appendix gives an overview of the interaction of the different organisations involved in the governance of the UK NREN, JANET. The follow sections describe the part that the key organisations play in the governance of JANET.

JANET (UK)

The main organisation involved in managing and developing the NREN is JANET (UK) a company limited by guarantee with members representing the stakeholders in UK education and research networking and a board of directors which is formally responsible for the corporate governance of JANET (UK). Some of the board of directors are appointed by the UK higher and further education funding councils and research councils and others are elected from the key stakeholders, which are the universities and colleges which use the JANET network. In practice, the elected members are general senior IT personnel (normally IT directors) who manage and run university or college IT services. The JANET (UK) board discusses and agrees policies for the company and monitors the operation and performance of the company at a high level. The board does generally not get involved in developing national network policies. This is done via a committee of the higher and further education funding councils called the JISC (Joint Information Systems Committee).

JISC

The JISC has the remit, on behalf of the education funding councils of discussing and setting policies for the development and deployment and operation of national information system initiatives, which includes the NREN, JANET. The JISC has several sub-committees and the JISC Committee for Networking (JCN) discusses and agrees policies for the development and operation of JANET. The JISC also acts as the body that negotiates, agrees and monitors service level agreements (SLAs) with JANET (UK) on behalf of the funding councils. Formally the main SLA agreed with the JISC defines service levels delivered to all the institutions connected to JANET and funded through the higher and further education funding councils.

The JISC Committee for Networking has on it representatives from institutions, which connect to JANET and use services provided by JANET (UK). The committee is normally chaired by a senior member of a university or college who has an interest in national networking policy development. This person is appointed by the funding councils.

Regional Network Operators

The regional network operators all have their own independent management boards, which set and agree regional networking policies. However these policies are not set independently as representatives of the regional network operators meet to discuss policy and operations and also meet with JANET (UK) to discuss and agree policies, standards, etc. The majority of the funding for regional networks is provided by or through JANET (UK) to the regional network operators, on the basis of nationally agreed service levels being met by the regional network operators. JANET (UK) therefore has a good deal of influence on the setting of policies and the agreement of service levels adopted by regional networks. The members of regional network operators' boards are normally university IT directors or other university senior managers who are responsible for delivering services within their own universities, so it is in their interests to ensure that high levels of service are delivered in line with nationally agreed policies and service levels.

Universities, Colleges and Research Institutions

The UK universities, colleges and research institutions are all users of JANET and are therefore stakeholders in the NREN. Representatives from these bodies are involved in all senior levels of organisation and governance, on the JANET (UK) board, on the JISC sub-committees, on Regional Network Operator boards and in various other groups. JANET (UK) has the job of drawing together all the stakeholders and facilitating co-operation on a national scale. This is done through the formal structures which are in place, but also through informal networking and through holding conferences, workshops, seminars and setting up working groups to discuss policies at a strategic level and at an operational level. This only works if active participation of the stakeholders is achieved.

UK Higher and Further Education Funding Councils

JANET (UK) maintains links with representatives of the funding councils to ensure that key issues are brought to the attention of the people who influence decisions made on funding network developments and ongoing operations.

Practical Issues

The management of a multi-domain NREN is complex if high levels of service and reliability are to be delivered. Good links with institutions are needed when resolving issues of policy and operational issues. In practice when operational issues need to be resolved the institution connected to JANET reports the problem to the regional network operator who aims to resolve the problem, getting JANET (UK) staff or their sub-contractors involved if necessary. The level and speed of response often depends on the individual regional network operator, who obviously has a stake in ensuring that service levels are maintained to the institutions connected to the regional network. Methods of operating, including fault resolution are in place but are constantly being reviewed. The setting of standards, both technical and managerial has become ever more important, as users expectations and service level requirements increase. As end to end services with guarantees rollout it will be even more critical to agree national and international policies and methods of operation. This is being done by working with stakeholders at all levels and getting stakeholders involved in decision making about the practical issues in developing and operating networks at a campus, regional and national level.

On the whole the method of governance and organisation, although complex, works reasonably well as surveys carried out by the JISC show that the stakeholders are generally happy with service levels and performance of the network and JANET (UK).

One issue that has arisen from time to time has been the lack of funding to carry out upgrades at the time when required. This has resulted in service levels dropping to some

institutions, because of bandwidth bottlenecks, mainly in local links, but in some cases because of bottlenecks in parts of the backbone. On the whole this issue has been resolved in recent years by over provisioning of the national and regional network backbones. Some smaller further education institutions that have not been funded for the provision of high bandwidth links have complained of poor service due to bandwidth limitations on their local links, but upgrade paths have been offered at a cost, which is a decision to be made by the senior management team of the college that wishes to upgrade.

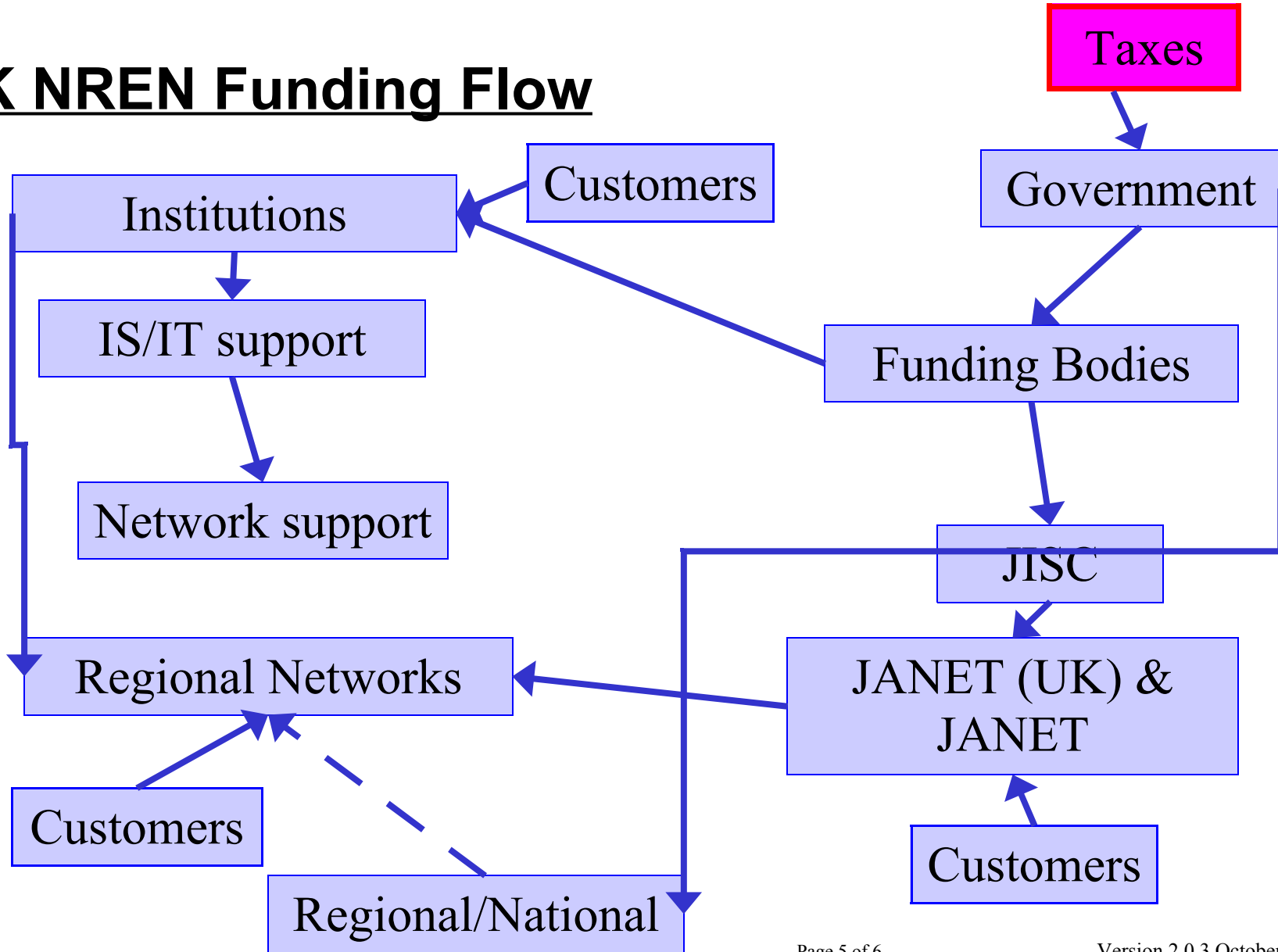
Another significant issue is the time taken to develop and agree policies because of the necessity to discuss and agree significant issues using the committees, which meet infrequently. This can lead to problems where the decisions need to be taken more quickly but formally it is only the committee that can make the decision. There are ways round this by using informal methods and in some cases by canvassing committee members between meetings using email.

Summary

The governance and organisation of the UK NREN is complex, but on the whole works. There are several other simpler models that could be adopted such as a more centralist approach, but this could disenfranchise the various stakeholders. The UK higher and further education funding councils have always operated in a consultative manner, through committees and working groups and it would take a significant change in culture to move away from this method of working.

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UK NREN Funding Flow



Strategy Flow

