

Selecting Broadband Connectivity for your School



Summary

Introduction

This document complements the main NEN guidance document on selecting appropriate broadband connectivity for your school. Both documents are targeted at school leaders and managers and set out what to look for when considering a new broadband connection for their school or group of schools.

This summary is an overview of the main document but, being a summary, inevitably leaves out some possibly important information. Those staff most heavily involved in the procurement process, such as members of the Senior Management Team (SMT) or Technical staff, should also read the full document.

Broadband connectivity to digital applications is an essential service for schools. Decisions on the type, level of bandwidth required and supplier are critical ones that will impact the ability of a school to meet its educational and other objectives for years to come. As such it is one that the SMT must fully engage with.

The [NEN](#) guidance note provides a framework to help school managers make an informed decision. The main sections are:

- The School Development Plan
- Current usage
- What technologies are appropriate
- What to expect from a supplier
- The Government Local Full Fibre Network initiative
- Conclusion.

School development plan (SDP)

This is a crucial document for forward planning in all areas of the school including future broadband provision. In the particular area of broadband and the Internet, the SDP should consider in some detail both its use for Teaching & Learning and for School Management.

The full guidance covers in more detail what should be considered in both these areas including: (1) the current and proposed future use of Cloud technologies, (2) Online curricular tools (e.g. video editing, Mathematics software, etc), (3) Cloud (Online) storage for users and system backup, (4) the potential impact of *bring your own device* (BYOD) use, (5) off-site Management Information Systems, and (6) remote access to the network for both staff and pupils.

Current Usage

In order to benchmark what sort of connection you need in the future it is essential to have a good grasp of your current usage - it may be that the school already has an adequate connection and that no upgrade is required. Your current supplier should be able to provide historical usage data but, if not, you need to track your current usage over at least two or three weeks to understand the demands you are currently placing on your broadband link.

It is also a good idea to check the health of your local network (LAN) as bottlenecks here can affect how users perceive the broadband connection.

Finally, if you are purchasing for, or as part of, a group of schools the main document outlines some questions that are pertinent to this scenario. For example, how will the costs be allocated, who is responsible for making sure the contract is delivered to the specification, what is the dispute procedure?

The Technical Bit!

The next stage in the process is to select the best type of broadband connection available and that is suitable for your purposes. The main guidance document goes into some detail regarding various technical options available. In particular, it discusses the differences between, and pros/cons of, FLL (Fibre Leased Line), FTTC (Fibre to the cabinet), and FTTP (Fibre to the premises). If either FLL or FTTP is available in the area (see Challenges below) then these would normally be the preferred options but you should refer to the main document for detailed guidance. Further help and support may be available from your Local Authority or Regional Broadband Consortium (RBC).

Challenges

One of the main challenges for schools is, often, the lack of adequate local broadband infrastructure.

Metropolitan areas are generally better served than schools in rural areas and there is greater competition between suppliers. Fibre installation costs also tend to be lower due to the shorter distances involved. Schools in rural areas tend to be sited further from existing infrastructure making some installations prohibitively expensive even when aggregated across a local authority or region.

What to expect from a supplier

There is a distinction to be drawn here between the physical infrastructure and the services that run over it. Services can be broken into two areas: those that allow the network to be managed effectively and other (possibly optional) services.

The physical infrastructure provided by the supplier will dictate both the range of speeds they are able to support and the technologies used. The guarantees (or possible lack of) offered to cover the service should be understood. An understanding of how the bandwidth is to be delivered can help you assess the likely

reliability of the service. For example, “headline” bandwidth may not be available during peak times if the line is heavily contended (i.e. shared with other customers).

All broadband suppliers will have tools to manage their network by, for example, providing Quality of Service (QoS) which will enable better performance for voice and video. Some tools may be available to the customer via a “Dashboard” - typically bandwidth statistics should be available this way. The supplier should also alert customers to any network issues and provide a way for customers to report faults in addition to a help-desk. A Service Level Agreement (SLA) should be in place which sets the agreed service and levels of compensation. The supplier should also be GDPR compliant.

The main document outlines a range of other services which may be provided as part of the contract or could be provided by third parties. These range from Virus/Malware filtering to Remote backup and Voice over IP (VoIP). There is a fuller list in the main guidance note.

Local full fibre initiative

Full fibre coverage in the UK is still very low (3%) but the government has recognised its importance and is giving support to its development via the £200m Local Full Fibre Networks Challenge Fund ([LFFN](#)).

There is scope here for local authorities to develop projects and bid for funds to help schools access full fibre at a reasonable cost.

Schools should be aware of any bids being made by their local authority to this fund and make the case for their inclusion.

Conclusion

From a technical point of view we recommend either a Fibre Leased Line or FTTP (where available) as they both offer an upgrade path in the medium to long term with no additional “set up” costs. A FLL is capable of delivering in excess of 1Gbps, both up and downstream, which is suitable for the largest schools while FTTP’s maximum of 350Mbps is adequate, in the medium term at least, for most sites.

The exact contract a school enters into will depend on the estimated requirements at the start of the contract period but should provide an upgrade path as demand grows. Each upgrade will, of course, cost more per month but can be done “on demand” with no additional set up fees.

If a FLL is not appropriate, and FTTP is not available, then FTTC is a viable alternative but there are well known limitations to the speeds available using this technology.

Finally, note that EU compliant Framework contracts (from an RBC, Local Authority or Government Department, for example) exist which will simplify and significantly reduce the cost of the procurement process.