Satellite Technology in Schools

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INTRODUCTION

SchoolSat\textsuperscript{1} was an initiative to utilise advances in satellite technology to improve access to the Internet for Irish schools. It was partially funded by the European Space Agency under the ARTES 3 Multimedia Programme and ran from December 2001 until January 2003. The purpose of SchoolSat was to set up, manage and evaluate a pre-operational, satellite-based service for compulsory schools in Ireland. It had as a clear objective and expected outcome: the establishment of a business and deployment plan for a fully operational and sustainable service for the Irish compulsory school sector based on a strategic mix of unicast and multicast services.

BACKGROUND

In most countries, the Internet is seen as a central component of an educational ICT strategy. It is seen as important for a variety of reasons. In part, the Web can be seen as a vast library of resources, some of which can be used by both teachers and students to enrich teaching and learning. There is also an equality dimension to the resource view of the Web, as the smallest and most isolated schools with no library can access exactly the same online material as the biggest urban schools.

The Internet may also be a conduit for a new generation of educational software. For decades specialist software aimed at schools has been produced however, despite the success of the educational software sector in the home and training markets, little of it is in use in schools. The use of software in schools may have been constrained by logistical difficulties including licensing, installing the software, etc. Many of these difficulties can be avoided if educational material is available online, providing an easier solution in school, one that students can continue at home, and teachers can explore in advance with ease.\textsuperscript{2}

The need for Internet access in school also goes beyond the content of the World Wide Web. In part, “the medium is the message,” as it becomes important for learners to develop information literacy. Negroponte, in his seminal book Being Digital, describes a “post information age,” where individuals have much greater control of the information they receive and send, where they can communicate with agencies in a “place without space,” and where they can control more of the information they receive.\textsuperscript{3} This vision of a society with empowered individuals finding information as they need it and managing their own learning and information needs is an attractive one, but it is dependent on learners having the skills to deal with the vast amounts of material available to them.

THE SchoolSat PROJECT

The SchoolSat Pre-operational Pilot project used Internet via DVB (Digital Video Broadcasting) satellite technology with the Ku band return channel for the establishment of the interactive channel. The aim of the trial was to investigate how far this technology could offer a solution to connect schools to the Internet, to build school networks and to transmit large files of information, be it data, video, audio, or graphics.

The planned service was based on the Digital Video Broadcasting (DVB) standard which is deployed Europe-wide (and is becoming accepted as a worldwide standard) for digital television. It allows the user to receive Internet services with a relatively small antenna (less than 1 metre diameter) and a PC (personal computer) equipped with a satellite modem anywhere within the footprint of the Eutelsat W3 satellite (used by the technology provider, Web-Sat\textsuperscript{4}). This PC can be used as a gateway to connect multiple PCs to the Internet.

The 14-month project included the following phases:

- **Phase 1:** Set-up and orientation of end-users: December 2001-February 2002
- **Phase 2:** Pre-operational pilot phase: March 2002-December 2002
- **Phase 3:** Evaluation: March 2002-January 2003
- **Phase 4:** Business planning and deployment: September 2002-January 2003

The following schools took part:

- Gairmscoil Mhic Diarmada, a vocational school on the Irish speaking Arrain Mor island
- Gairm Scoil Chu Uladh, Bellanamore Secondary School
- Carrick Vocational School

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