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Gerard Smyth MSc has been with Intel for 6 years and presently works as a Senior Technologist with IT Innovation. He has been predominantly engaged in research and development of innovative technologies in the area of wireless computing and also in the provision eLearning and mLearning. He was a key contributor to the development of the highly-acclaimed educational portal, ScoilNet and has also worked extensively on the award-winning skool™ initiative. Currently, he is working on various international wireless initiatives and specializes in Wi-Fi and WiMAX technologies.



Wireless Technologies Bridging the Digital Divide in Education

The objective of this paper is to demonstrate how the latest wireless standards and technologies may overcome the digital divide in education in the developed and developing worlds.

The concept of the digital divide is discussed in the traditional socio-economic sense and expanded in terms of the learner's location, age, culture and background. It is important that we understand the full extent and complexities of this division if we are to effectively bridge it. Why and how the digital divide may be bridged is examined. Apart from the inherent inequalities that need to be addressed from an ethical perspective, it is very much in the interests of governments and citizens globally that Information and Communications Technology (ICT) is made available to all as quickly and cost-effectively as possible.

New forms of wireless protocols are overcoming challenges of terrain, infrastructure and finance. It is proposed that, by leveraging open broadband wireless standards, like Wireless Fidelity (Wi-Fi*) and Worldwide Interoperability for Microwave Access (WiMAX*), and implementing Mobile Computing architecture, it is now possible to make dramatic strides in this direction. The paper continues with a general overview of these wireless standards and technologies followed by an in-depth look at Wi-Fi and WiMAX. The paper goes on to give examples of IT Innovation's involvement in delivering solutions and new usage models for eLearning that utilize the latest wireless standards and technologies. The challenges and successes of these projects are outlined and metrics are presented where available.