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**TE KUNENGA KI PŪREHUROA**  

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**UNIVERSITY OF NEW ZEALAND**

# **The Impact of Ultra-Fast Broadband on Telehealth in New Zealand**

by

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## Abstract

In recent years, many countries around the world have introduced Information and Communications Technologies (ICTs) in their healthcare industry, in a bid to improve their productivity and the effectiveness of their services, triggering the eHealth phenomenon. As a component of eHealth, telehealth– which refers to a set of expertise and methods that integrate the world of ICT with the healthcare sector, providing medical care and education over a distance– is revolutionizing the healthcare sector.

One of the most important ICTs used in the provision of telehealth is broadband internet. The bandwidth of the broadband connection determines the speed and quality of communications. Ultra-fast broadband– currently defined as connections with bandwidth greater than 100Mbps for downloads and 50Mbps for uploads– has made possible connections and communications on a scale and of a quality never before possible. The capacity to traverse geographical boundaries in real time and transfer large amounts of information has made ultra-fast broadband a sought-after tool in many businesses.

The main objective of this research is to study the impact of ultra-fast broadband internet on the development and quality of telehealth systems, especially in New Zealand. This thesis provides an overview of current broadband technologies available for running successful telehealth services, and studies the application and importance of broadband internet in the field of healthcare. It also provides a summary of the evolution of the use of ICTs, broadband technologies in particular, by health systems and a brief look at the future of these technologies in healthcare sectors, mainly in New Zealand.

This thesis will conclude the importance of broadband internet in telehealth and its related services, and that the provision of telehealth would be near to impossible without ICTs such as broadband. This thesis will also conclude the introduction of ultra-fast broadband into telehealth in New Zealand to be a significant step forward as evident in telehealth projects overseas.

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