

Chapter 15

Leveraging Satellite Communication for Digital Healthcare Provisioning in Australia

Sasan Adibi

Deakin University, Australia

Nilmini Wickramasinghe

La Trobe University, Australia

ABSTRACT

Australia's vast remote areas create challenges in healthcare delivery. This chapter explores how satellite communication can bridge this gap. It analyzes its strengths (global reach, reliability) and weaknesses (cost, latency) and showcases its potential in chronic disease management, telehealth, and even smart car health services. A SWOT analysis highlights opportunities like telemedicine expansion and collaboration with government agencies. While facing competition and needing technological advancements, satellite communication offers a promising solution. The chapter concludes by emphasizing the importance of partnerships, innovation, policy changes, and public perception management to solidify satellite communication as a key tool for equitable healthcare access across Australia.

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INTRODUCTION

Access to quality healthcare remains a significant challenge for many Australians, particularly those residing in remote and rural areas. The vast geographical expanse of the country, coupled with its dispersed population distribution, makes it increasingly difficult to provide equitable healthcare services through traditional means. As the demand for digital healthcare solutions continues to escalate, there is an urgent need for reliable and efficient communication networks capable of bridging the gaps in healthcare access, (Janjua, Duranay, & Arslan, 2020).

Satellite communication technology presents a compelling opportunity to revolutionize digital healthcare delivery in Australia. By leveraging the unique capabilities of satellite networks, healthcare providers can overcome the limitations imposed by terrestrial infrastructure, particularly in remote and underserved regions. Optus Communications, a leading Australian telecommunications company, is well-positioned to guide the integration of satellite communication into the nation's healthcare landscape, (Optus, 2024).

This chapter delves into the transformative potential of satellite communication in enhancing digital healthcare provisioning across various scenarios. We explore the benefits and applications of this technology in remote chronic condition management, healthcare delivery to indigenous communities, public health initiatives, emergency and disaster response, and the integration of digital health services in smart vehicles. Through a comprehensive SWOT analysis, we evaluate the strengths, weaknesses, opportunities, and threats associated with satellite communication in the context of digital healthcare.

Furthermore, we analyze the advantages and limitations of satellite communication compared to other communication systems, considering factors such as global coverage, reliability, latency, cost, and bandwidth constraints. By examining these factors, we aim to provide a holistic understanding of the suitability and feasibility of satellite communication for different healthcare scenarios.

As Australia continues to grapple with the challenges of providing accessible and equitable healthcare, satellite communication emerges as a powerful tool with the potential to bridge the gap between urban and rural areas, connecting healthcare providers and patients seamlessly. By harnessing the capabilities of this technology, Australia can pave the way for innovative digital healthcare solutions, ensuring that no one is left behind, regardless of their geographical location.

In this chapter, we explore the key next steps required to capitalize on the strengths of satellite communication and facilitate its successful integration into the Australian healthcare landscape. This includes fostering strategic partnerships, driving technological innovation, advocating for supportive regulatory frameworks,

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