

The Role of NUS in Establishing the Samoa Knowledge Society Initiative (SKSI): Empowering Samoans through Access to Quality Information

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Abstract

The Samoa Knowledge Society Initiative (SKSI) is based on the premise that access to information and knowledge is a prerequisite for building inclusive knowledge societies. SKSI is a national project with multiple partners funded by UN agencies and the India Development fund. The aim of SKSI is to promote equity and inclusion with the establishment of a Knowledge Society Platform with three components: the Samoa Digital Library (SADIL), Lifelong Learning Lab and an Open access Research Repository. The initiative is planned to be implemented in two phases and implementation is now at the end of the first phase. The paper describes the components of SKSI and outlines the role of the National University of Samoa in the establishment of the SKSI platforms. The paper also outlines the benefits of the SKSI project as well as issues and challenges. Benefits include open access to reliable credible information; provision of lifelong learning; access to research of national significance; establishing Samoa as a regional information hub. The establishment of SKSI is also deemed timely with the heavy reliance on technology during the COVID era. A consequence of the heavy reliance on technology in the pandemic era has been its effect on worsening the digital divide and the exclusion of already marginalized communities (UNICEF, 2020), (World Economic Forum, 2020). Hence the drive for inclusive education is paramount and SKSI fulfils this by offering of these three (3) platforms, providing access to information and learning.

Keywords: Digital Library, Lifelong Learning, Open Access Research Repository, Knowledge Based Society

Introduction

Samoa's 2nd Voluntary National Review Report for Implementation of Sustainable Development Goals (Government of Samoa, 2020) indicates that issues of inequality and hardship continue to emerge in Samoan society. This is evident among those unemployed in both the rural and urban areas not having access to basic services and opportunities. This inequality cuts across sectors. In communication despite 86% mobile penetration, access and affordability are issues affecting universal access. In education the need for better access to quality educational resources and in research the lack of access to scientific journals and research products have been identified (United Nations Regional Coordinators Office, 2019). There is also disparity and inequity in access to information between urban and rural as well as those with disabilities.

Interventions to reduce inequality and provide better access to information is then a priority, and one such intervention is the Samoa Knowledge society initiative (SKSI). The Samoa Knowledge Society Initiative (SKSI) is based on the premise that access to information and knowledge is a prerequisite for building inclusive knowledge societies. The initiative bridges the digital divide by establishing an accessible localized knowledge platform, to serve the information needs of specific user groups such as professional communities, students, researchers, those with disabilities, and those in rural areas.

The paper outlines the establishment of SKSI and the role of the National University of Samoa in this project through the development of the three (3) platforms. Secondly, it also outlines the potential benefits and challenges of the SKSI project and future projections and recommendations.

Establishment of SKSI and the Role of NUS

SKSI is a national project with multiple partners funded by UN agencies and the India Development fund. The aim of SKSI is to promote equity and inclusion with the establishment of a Knowledge Society Platform with three components: the Samoa Digital Library (SADIL), Lifelong Learning Lab, and an Open access Research Repository.

In preparation for SKSI, stakeholder consultations to gather information needs of the various sectors of society were carried out as well as a preliminary survey and survey of the status of digitization of ministries and corporations. This was to ensure the content of the platforms meets the information needs of the users and citizens of Samoa (UNRC, 2019).

The preliminary survey of government ministries conducted by NUS in December 2018, indicated that several ministries were already in the process of digitization of documents and other artefacts, and were at varying stages of implementation (National University of Samoa, forthcoming). The preliminary survey also confirmed that NUS is well positioned to be the centralized hub for the National digital library initiative due to its extensive library collection both digital and physical collections of books, graphical material, videos, and digitized documents as well as extensive links to external digital collections such as Hinari, TEAL, Ebscohost, Sage online. These collections are housed in the NUS library as well as the NUS Centre of Samoan Studies (CSS). Resources include rare books, and ethnographies, Samoan and Pacific collections, Samoan Archaeology and heritage database. The university has invested in hardware storage such as the three (3) computer servers (Library server, CSS server, DSpace server) as well as digital library software such as DSpace, Data crowd catalogue and Docfetcher software.

A second survey conducted in 2019 by Makeki online¹ consultants on 35 ministries, corporations revealed that first, 60% of the offices that responded already have digitization processes in place. Second, 19% of the offices with digitization processes have digitization policies. Third, within these ministries, digitization began 10 years ago and mainly carried out by ICT personnel, and forth, the top reasons for digitization were to increase access to information and for saving space (Mose, 2019)

The SKSI project was designed to be implemented in two phases, with Phase 1 of the SKSI initiative funded from the UN-India Partnership fund as well as the UN agencies (UNRC, UNDP, UNESCO, FAO). The next sections will detail the three components of SKSI.

Figure 1. Main portal of the SKSI platforms (adapted from SKSI website)



Samoa Digital Library (SADIL)

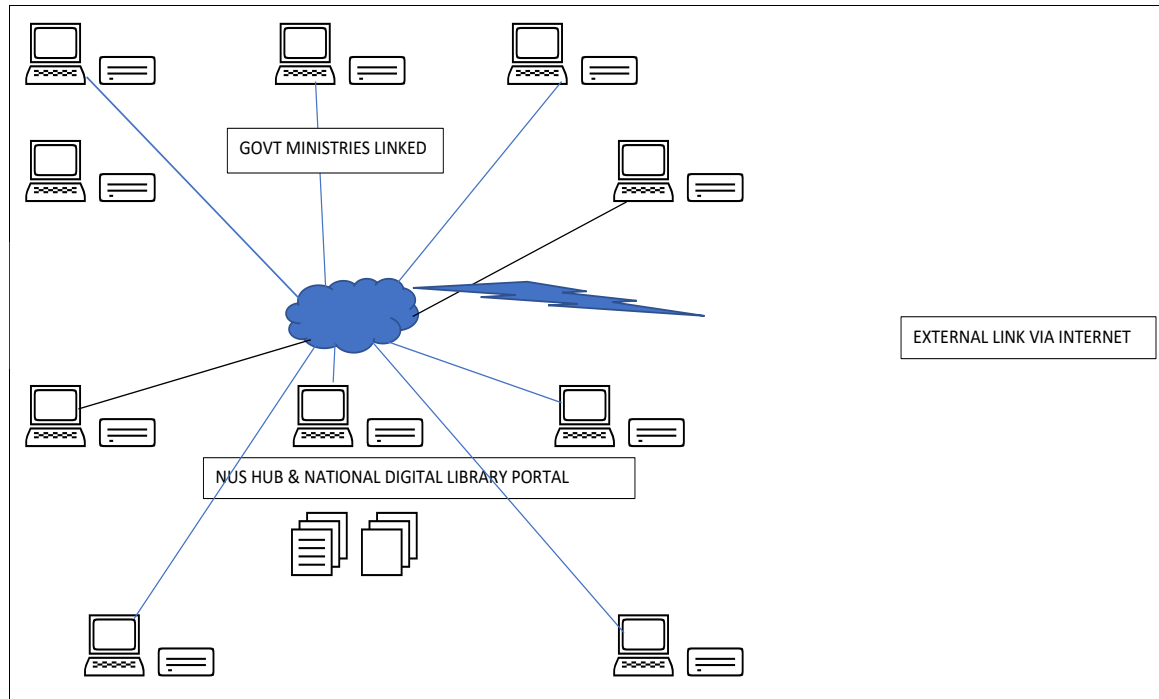
The Samoa Digital library has 2 components or sources. There are links to the external libraries to secure open access to external knowledge products. Examples include HINARI, the UN Sustainable development library, and the Library of Congress. The second source is digitized local content that includes books, studies, maps, and documentaries from the education sector and the ministries. Hence the Samoa digital library enables access to text, and bibliographical information, from Samoa and international sources. Currently, local contents are mostly donations from the collections from the NUS library as well as the Centre of Samoan Studies with documents on Samoa and the Pacific. As mentioned earlier, these documents are either historical or heritage documents or on all subjects past and current in Samoa and the Pacific.

An important aspect of implementation is the establishment of hardware, software, and connectivity infrastructure for the Knowledge Platforms. Assessments for hardware, software, and connectivity were implemented by the NUS SKSI team along with installation. For quality assurance, this assessment was peer-reviewed by the ICT division of Victoria University Wellington as well as the Centre of excellence in IT (CEIT) academy of NUS. To ensure sustainability, the platform uses open-source software solutions such as DSpace for its repositories and Moodle for the learner management system.

Because of its distributed nature, connectivity is important. The Samoa digital library when fully implemented, will use a distributed model where each ministry will host its own digital library, and all these library nodes connected centrally to NUS via a network. The prototype of this is now operational. It is the intention that these nodes of the National digital library be connected internally via the Samoa

National Broadband highway (SNBH) ² and linked externally to overseas via the Tui Samoa Cable. (Refer diagram in Figure 2)

Figure 2. Proposed Model Samoa digital library: distributed model (adapted from NUS Digital library Concept paper for SKSI, 2018)



Now external links to resources require internet access and are accommodated under zero data educational sim cards¹ donated by Vodafone and Digicel. To reduce access costs through the use of caching facilities, there are also plans to negotiate for the use of the internet exchange point IXP at the Samoa National data centre, for this purpose. Since a major barrier to access is internet access, to ensure no one is left behind, the SKSI platforms will be multimodal providing digital knowledge through the various media of TV, radio², online, and offline access.

Lifelong Learning Platform

SADIL will be complemented by the Lifelong Learning platform to support digital learning giving access to users to a wide range of learning material, online courses, and certifications. These resources will be available initially to the education sector but extended later to ministries to upgrade the labour market and support skills development.

The Lifelong Learning platform aims to establish a digital learning platform curated with Open Educational Resources from locally produced and external resources. At NUS the Moodle platform is already in place with the network infrastructure upgraded for COVID lockdown. There is now free Wi-Fi across all campuses and with all NUS courses are now online on Moodle. The NUS Moodle team has been established with Moodle trainers, administrators and instructional designers and with ongoing training of all NUS teachers. A second component of the NUS lifelong learning services is the Workforce recovery initiative in which NUS is in collaboration with the Commonwealth of learning, Coursera, Google and Udemy to offer free online learning opportunities for Samoan citizens. The

ministry of education is also developing its own lifelong learning platform with assistance from UNESCO and this will coexist with the NUS lifelong learning platform to form the basis of the national lifelong learning platform.

Along with local OER resources from NUS and MESC³, COVID- 19 donations of Open Educational Resources (OER) from COL, Otago Open Polytechnic, Merlot and OER Commons have all contributed to populating the OER repositories of the Samoa Digital Library as well as the lifelong learning platform.

A steering committee to manage the SKSI platforms has already been established with key stakeholder representatives from key government ministries.

Open Access Research Repository

The third component of the SKSI platform is the open access research repository. It is apparent that Samoan researchers, students, public servants have limited access to quality academic journals and research findings (UNRC, 2019). An Open access research repository has been established and hosted in Dspace with crosslinks to SADIL and Lifelong learning platforms. It is expected that data from research on key priority areas will be stored in the repository to provide access to inform decision making, best practice, and policy. The first such research was on Water quality and was a joint study between NUS, NYU, Abu Dhabi. The first report along with 2 publications of this water quality research has been shared on the research repository. Any future research at the university have been encouraged to share findings and data using this open access repository. It is expected that there will be further refinement of the Open access research repository in Phase 2 of the project.

Potential Benefits

The potential benefits from this initiative are manifold. The project provides access to reliable credible information from credible curated sources as well as a rich source of digitised documents, video through its three (3) components. Access to credible and reliable information is vital particularly within the current climate of the prevalence of misinformation and disinformation from online sources.

A valuable contribution is the provision of access to quality information so students, the workforce, and leaders can make informed decisions thereby facilitating improvements in the efficiency and working of government and ultimately the wider community.

The establishment of the national digital library has enabled the digitization and preservation of historical and heritage documents in Samoa. Donations from the Samoa and Pacific collections of NUS have ensured the preservation of these valuable national assets as well as the preservation of traditional knowledge, customs, and culture for posterity.

The establishment of an open access research repository is to ensure academics, researchers, and policymakers have access to research findings in areas of national interest and priority. When populated, the open access research repository will provide a rich source of research data to inform policy, strategic direction, and further research in areas of national interest and priority.

The last two years have been one of the unprecedented events as we battle with the covid pandemic. Pandemic lockdowns have intensified the need and heavy reliance on technology and e-government services to provide some form of business, work, and learning continuity (De et al. 2020). We make the assertion that technology is the means by which to build resilience in order to “adjust and recover from these changes” – in what we now call “the new normal” (World Economic Forum, 2021). In short, these platforms could not have come at a better time. To ease the disruptions to work and learning due to pandemic lockdown and closures, the 3 online platforms ensure access to valuable educational resources, to access online learning, and to access an open-access research repository. Hence in this sense, these platforms also play an integral role in the use of technology in building resilience against disruptions due to pandemics and also other natural disasters.

The Samoa Knowledge Society initiative also necessitated and provided the need for capacity development in establishing protocols and standards. To facilitate the assembly of distributed digital libraries and ensure interoperability across the nodes of a digital library there is a need to establish standardized formats and protocols. This is because the stored artefacts are usually in diverse formats and protocols. Standardised formats and protocols are important for storing, indexing and retrieving digital objects (Cleveland, 1998). Within a coordinated digital library scheme, some common standards will be needed to allow digital libraries to interoperate and share resources. To ensure interoperability NUS developed its editorial and digitization guidelines which then became the precursor of the development of national editorial and digitization guidelines. As well the initiative promoted open access to information and hence necessitated the need to develop an open access policy for NUS which would then provide valuable input to the development of the National Open access policy for Samoa.

The SKSI project has provided essential capacity building among national stakeholders in the areas of digitization of resources and uploading to the digital platforms; setup and the use of the online repository DSpace, the backend for the digital library; setup and use of the multiuser interface of the three (3) platforms; and for the lifelong learning platform, setup, administrative support and the use of Moodle, the learner management system.

A consequence of the heavy reliance on technology in the pandemic era has been its effect on worsening the digital divide and the exclusion of already marginalized communities (United Nations International Children's Emergency Fund, 2020) (World Economic Forum, 2020). Hence the drive for inclusive education and inclusive digitalisation is essential and SKSI fulfils this by offering these three (3) open access platforms, providing open access to information and learning for all through the use of zero data to facilitate online access.

Part of Samoa's vision in terms of digital strategy is to position Samoa as an information hub for the region and SKSI contributes to achieving this. The SKSI platform is being piloted in the education sector primarily at NUS then extended to the rest of the ministries and to the community. External connectivity via the Internet as well as local connectivity via the SNBH is expected to provide access to all ministries, schools and hospitals thus ensuring national access to these three (3) platforms. At its later stages the project is to provide access to the community via mobile apps and in fact the ministry of Agriculture have just developed a mobile app for farmers. These digital information services can then be extended to the region using Samoa's submarine connections to neighbouring islands.

Issues and Challenges

As with all projects, particularly one with multiple stakeholders in donors and implementing partners, a few challenges were encountered in the project planning and implementation. The emergence of the COVID pandemic led to considerable delays and variations to the implementation due to travel, delays in procurement and obtaining technical experts. Hence Phase One (1) of the project was extended for another year to accommodate for delays in the development of the MESC lifelong learning platform as well as the National Open access policy.

An important consideration is the sustainability of the SKSI platforms. The issue of maintenance costs, training in the setup, use, and maintenance of the platforms have to be factored in in the long-term implementation of these valuable assets. Implicit in the sustainability of the platforms is the need for monitoring and evaluation. These require the development of additional policies, regulations, and guidelines in the use and maintenance of the platforms, as well as regular reviews to ensure relevance and continued value to the community.

Current Status and Future Implementation

The UN digital library has been installed and other libraries identified (HINARI, TEEAL, World Digital library). Digitisation of book collections (heritage, Pacific and Samoan literature) is in process using defined policies, editorial guidelines and formats that were developed under the SKSI project. The establishment of National policies on access to information and lifelong learning and drafting of relevant legislation is an important part of the SKSI platform. NUS now has an Open Access to Public Information Policy and lifelong learning in place that were established with assistance from the Ministry of Commerce Industry Labour, Attorney General's Office and National Archives and Records Authority. Second, an Editorial guideline subcommittee for NUS has been established to vet editorial content and formats of publications to be uploaded to the digital library. In developing the policy and guidelines attention was given to ensure inclusiveness to accommodate for special needs, minorities and the marginalized thus ensuring inclusive digitalisation for the community. As well a multilingual interface for the SKSI platform is already in place to ensure access in both English and Samoan.

The SKSI initiative was planned to be implemented in two phases and implementation is now at the end of the first phase. The main activities completed in Phase one (1) were the development of the three (3) platforms: SADIL, the Lifelong learning lab and the research repository; development of NUS and National Open access policy; training on the use of the SKSI as well as some monitoring and evaluation. These will be scaled up in Phase two (2) with the extension of SKSI to meet the information needs of ministries as well as the larger community. Information needs of ministries and the larger community will be evaluated and dissemination of information will include the development of mobile apps for user-friendly access in areas crucial for development such as agriculture and health. Phase two (2) will also include a knowledge awareness and a training campaign on SKSI for all stakeholders.

Summary and Conclusion

In summary the following points need to be made. First the establishment of the SKSI platforms and with the aim of building a knowledge -based society could not have come at a better time. As stated in the Pathway Development for Samoa (Ministry of Finance, 2022) “..the pandemic COVID 19 affected

school attendance, highlighting the need for innovative practice and technological solutions (including improved internet connectivity) to ensure uninterrupted access to high-quality education for all.” With the heavy reliance on technology due to COVID to ensure business, work and learning continuity these platforms provide much needed support to ensure safeguards from disruptions to teaching and learning.

Endnotes

¹ Makeki online is an IT company in Samoa that offers online platforms services and consulting services in systems and network design owned by Mose Mose

² SNBH is a national network linking all ministries, schools and hospitals

³ Zero data sim cards allow free internet access to selected online sites

⁴ NUS has in place TV and radio broadcasting as part of its multimodal approach

⁵ Ministry of Education Sports and Culture

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