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INTRODUCTION

SDI was established on 2 November 1995. It is registered as a company limited by guarantee and not having a share capital under the Companies Act, 1965, Malaysia. As an autonomous non-profit research institute, it is entrusted to undertake inter-disciplinary research on pertinent development issues related to the state and nation for policy inputs to the government and private organisations/clients.

VISION

To be a leading research institution in the region

MISSION

- To offer comprehensive professional research services that provide valuable inputs to planners and policy makers
- To offer professional management services for conferences/seminars and generate reports and recommendations for public policy input and knowledge oriented publications
- To contribute to and complement the policy and decision making process in Sarawak

OBJECTIVES

The principal objective of SDI is to provide independent and objective inputs to complement the policy and decision making process in Sarawak.

Its specific objectives are to :

- Undertake interdisciplinary research for policy inputs to the government and other clients;
- Provide an avenue for professionals and other practitioners to discuss, exchange views and opinions facing the state and nation through conferences, seminars, workshops, dialogues and lectures;
- Disseminate information, knowledge and findings to the public through both formal and informal channels; and
- Network with other institutions with similar interests, in and outside Malaysia to facilitate the flow of information and knowledge.

The priority focus area are:

- Public Policy
- Development Studies
- Socio-economic Studies

CHAIRMAN'S STATEMENT

The year 2022 marked a period of recovery for all sectors worldwide as they emerged from the shadow of the Covid-19 pandemic. SDI was no exception to this trend, witnessing a number of events being organised and a promising start of our research activities.

On a momentous note, I find it my honour to set a new precedent for SDI. Post my retirement from the civil service, I was entrusted by the Premier of Sarawak and the State Secretary to continue to lead SDI as its Chairman. In my current capacity as the Advisor in the Office of the Premier of Sarawak, I look forward to continuing guiding SDI towards establishing itself as a renowned research institute.

It is with great pleasure that I report the substantial progress of our research projects in 2022. Notably, we completed one survey and have four ongoing projects. These projects were conducted in collaboration with universities, government agencies, and private consultants. The survey on "Assessing Local Population Needs in Relation to Services provided by the Digital Community Centres (DCCs) in Sarawak," which was completed in 2022, is worth highlighting. The survey findings underlined a number of DCCs limitations, such as space constraints, outdated equipment, and its limited human resources. These issues, though not new, have impeded the DCCs' ability to fully serve the local community. I hope the relevant authority is able to address the limitations highlighted in the survey.

I am delighted to acknowledge that our ongoing research projects encompass a mix of internal and commissioned efforts. Projects like the "Baseline Study on Sago Production and Its Downstream Activities in Betong and Mukah Divisions" and the "Master Plan for Community Development in the Resettlement Areas 2050" are comissioned research projects. On the other hand, the publication on "Sarawak Civil Service and Its Role in Nation Building: Reflections and Reminiscences of Sarawak Civil Servants'" and the project on "Cultural Resource Mapping: Exploratory Project for Kuching Division" are self-initiated research projects, supported by funding from the State Government. These projects will provide much needed information and insights on the subject matters covered.

One of the positive outcomes of the pandemic is the availability of online platforms to conduct our events and to reach a wider audience throughout Sarawak. Under our online the Digital Transformation Talks Series, we highlighted the latest developments in digital technology, including digital health research, digital connectivity, smart cities, artificial intelligence, and augmented and virtual reality technology. In line with PCDS 2030, digital transformation is one of the seven enablers poised to empower Sarawak's economic sectors, enhancing efficiency and productivity. These talks highlighted the ongoing innovations and developments in the state as well as the challenges surrounding the digital connectivity and inclusion in suburban and rural areas across the state.

We also had the privilege of exploring the potential presented by the latest digital innovation in Europe, particularly in the application of augmented and virtual reality within cultural institutions. While technological progress brings remarkable benefits, it must be managed prudently to mitigate adverse impacts. My heartfelt appreciation goes out to all the members and speakers who shared their knowledge and research findings in these talk series.

SDI also continued to support the local partners and stakeholders in organizing events addressing pertinent development issues, including Industry 4.0. Despite numerous postponements due to the Covid-19 pandemic, AAEC 2022 was successfully held in July 2022, adopting a hybrid format. The event provided valuable insights into the challenges and breakthroughs happening both locally and globally in fields such as engineering, smart cities, digital twins, and other aspects of digital transformation. Malaysia, especially Sarawak has yet to see many such initiatives; however, the potential is vast with strong support from the government and universities to address the technological gaps.

Another significant and commendable project involved the publication of the booklet "Buku Panduan Ketua Kaum Negeri Sarawak" for community leaders. This resource booklet serves as a quick reference guide on topics related to their duties and responsibilities, encompassing areas including birth and death registration, probate, welfare assistance, and government initiatives like the Kenyalang Gold card and Sarawak ID. The booklet will be distributed to KMKK by the Administration Unit, Department of the Premier of Sarawak.

As I mentioned earlier, my vision for SDI is to transform into a reputable research organization, especially in supporting the Sarawak Government's aspiration to become a developed state by 2030 through the PCDS 2030 transformation plan. I see this as an opportunity for SDI to support the government to ensure better coordination and implementation of PCDS 2030 initiatives.

SDI will need the right resources, especially financial support to scale up its operations to be able to support the State Government in all its new initiatives under PCDS 2030. We hope to seek this financial support from the Government in the coming years.

Members will play a pivotal role in providing SDI with the expertise and insights needed for our research initiatives. We welcome all active members to propose research ideas and areas for discussion. While our internal research fund is limited, by pooling our resources, we can explore research opportunities together both locally and internationally.

> In closing, I would like to extend my heartfelt gratitude to the secretariat for their hard work and perseverance during these challenging times. Also my highest appreciation to the Sarawak Government, Board members, corporate members, members, international partners, collaborators, institutions of higher learning, civil society entities, and the local media for their commendable support. We look forward to achieving new heights with your support in the coming years.

> > Thank you.

Datuk Amar Jaul Samion Chairman Sarawak Development Institute



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BOARD OF DIRECTORS

CHAIRMAN

YBhg. Datuk Amar Jaul Samion

Advisor in the Office of the Premier of Sarawak

DEPUTY CHAIRMAN

YBhg. Datu Dr. Muhammad Abdullah Haji Zaidel Deputy State Secretary of Sarawak (Economic Planning & Development)

DIRECTORS

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YBhg. Datu Buckland Bangik Deputy State Secretary of Sarawak (Administration)

YBhg. Datu Sr Zaidi

Bin Haji Mahdi

Permanent Secretary

Urban Development

YBhg. Datu Hii Chang Kee

Permanent Secretary Ministry of Tourism, Creative Industry and Performing Arts (Currently Deputy State Secretary (Operation))

YBhg. Datu lk Pahon Joyik

Special Administrative Officer

Greater Kuching Coordinated

Development Authority (GKCDA)

YBhg. Datu Haji Abdul Hadi Bin

Datuk Haji Abdul Kadir General Manager Sarawak Economic Development Corporation (SEDC)

YBhg. Datu Antonio Kahti Galis

Permanent Secretary Ministry of Public Health, Housing and Local Government Sarawak (Retired as of 20th March 2023)

Professor Dr. Patrick Then

Director, Centre for Digital Futures Head, School of Information and Communication Technologies Faculty of Engineering, Computer & Science Swinburne University of Technology Sarawak





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SECRETARIAT



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Back row from Leff:

Rosalind Wong Deputy General Manager Patricia Nayoi Senior Administrative Assistant Lelia Sim Chief Executive Officer

Evelette Robin Conference/ Events Executive Nur Hadisha Graphic Designer

Abdul Khalik Putit Administrative Assistant Tang Tze Lee Senior Research Officer Ralph Balan Langet Communication Officer, Sarawak Communication for Development (SCD) Centre Alan Teo Administrative & Finance Officer

Khairul Anam Accounts & Events Assistant Dr. Yuen Kok Leong Senior Research Officer Kamaruddin Sajeli Head, Research Division



PROGRAMMES & ACTIVITIES



Digital Health Research in Sarawak 23rd March 2022 via Zoom application

By Professor Dr. Patrick Then, Director, Centre for Digital Futures, Swinburne University of Technology Sarawak Campus

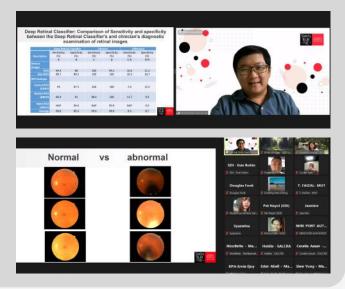


The talk highlighted the research collaboration work on digital health, conducted since 2008, which aims to support and improve the efficiency of hospital care, health screening and diagnosis of illnesses. Professor Dr. Patrick presented five of such research works which include the award-winning health screening using AI to discover unknown risk factors among the healthy population who have developed diabetes; AI and data science algorithms for detecting heart abnormalities; Eye for the Future that encompasses stateof-the-art AI algorithms which can detect retinal vein occlusion diseases at more than 90% accuracy; AI algorithms to detect Covid-19 from cough sounds; and AI Geo-fencing techniques embedded in a fully automated Stay-Home-Notice surveillance system to monitor the conditions (blood pressure and body temperature) of Covid-19 patients.

These research projects have managed to provide additional support to the hospital management, doctors and nurses to monitor the health conditions of sick and healthy individuals. In the landmark project on Cardiac Al Hospital Care, the project has improved the efficiency of hospital care and was one of the papers presented at the European Society of Cardiology Summit at Tallinn, Estonia in 2019. Future development on the project includes expanding the partnership (collaboration with other hospitals), mobility (implementation of the technology in mobile apps) and learning pipeline(dataprocessing,modelling,prediction) and multi-modality (support for other medical imaging modalities).

Another project mentioned is the Cough Sound Artificial Intelligence which detects and identifies lung related diseases including Covid-19. The project is still at an early stage of research combining datasets from Malaysia and Cambridge. The discussion that followed was on analysing the risk factors of transmission and identifying the potential areas of infection especially with CCTV installation in public places.

All the projects presented gave interesting insights on how technology is being used to improve the current medical processes in the respective areas. The discussion after the talk raised questions on the feedback and usage of the technology developed by the hospital management.It was indicated that the research team will not be monitoring the usage of the application once it is completed. On the way forward, there is further research and development on remote monitoring platforms, grooming and assisting technology start-ups from Sarawak, and this will further strengthen the academiaindustry-government partnership to boost the growth of the digital economy.



Smart City Development Initiatives in Sarawak 18th May 2022 via Zoom application



By Mr. Allen Liew Thian Ho, Director, Internet of Things (IoT) Solutions and Services, SAINS Sdn. Bhd.



In the first segment, Mr. Allen Liew presented the definitions of smart city, the different models of smart city, the driving technologies and smart city applications, and the need for smart city initiatives. He shared on the seven smart city components based on the Malaysia Smart City Framework (2018) which are Digital Infrastructure, Smart Economy, Smart Environment, Smart Living, Smart Government, Smart Mobility, and with emphasis on Smart People. It was also mentioned that the Federal Ministry of Housing and Local Government (KPKT) had announced the Malaysia Smart City Landscape in 2018 identifying five cities in Malaysia for the smart city pilot project namely Kuala Lumpur, Kulim, Johor Bahru, Kuching, and Kota Kinabalu.

In the case of Sarawak, Mr. Liew informed that the Kuching Smart City Framework is based on the Kuching Smart City Masterplan (2021) with its five strategic outcomes, namely, Smart Economy for seamless digital experience for business, digital economy engine for growth; Smart Environment for digital tools in municipal management, green environment; Smart Government for transparent and servicecentric government, unified digital services; Smart Living for aware and empowered citizens, conducive and comfortable Kuching; and Available and Agile Digital Infrastructure for digital infrastructure to facilitate socioeconomic growth, and instil openness and collaborations.

He then shared on the Miri Smart City Solution Development project covering the source of initiation, identification of needs, and development of solutions and scope. The project was funded by the Sarawak Multimedia Authority (SMA), owned by Miri City Council (MCC), and implemented by SAINS. The Miri Smart City Solution was initiated from the Sarawak Digital Economy Strategy 2018-2022 where one of the anchor sectors of Sarawak Digital Economy is smart city. Hence, the agencies involved began the Miri Smart City Proof of Concept (MSCP) process on 13th September 2019 and concluded on 12th April 2021 with a launching by the Premier of Sarawak.

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From their identification of needs workshops with stakeholders, issues like waste and flood management (27%), information sharing (3%), eCommerce (3%), city safety (3%), traffic congestion (3%), communication with MCC (25%), office automation (30%) and others (3%) were identified. Consequently, they prioritised issues like trash and solid waste management, effective dissemination of information, unlicensed hawkers and traders, snatch thefts, traffic congestion, communication with MCC, and to address document processing, registration, and management (in MCC).

Mr. Allen Liew concluded by sharing on the 10 Miri Smart City initiatives and solutions, which are to address the prioritised issues, and include Safe City, Safe Park, Miri CARES mobile application (Smart Council), Miri Tourism, Miri Smart City Command Centre, Smart Bus mobile application, Smart Truck mobile application, Digital Signage, Smart Drain, and Sarawak Smart City mobile application. Mr. Liew also touched on the success stories, data collected, and responses from public surveys done on the Miri Smart City initiatives and solutions.



Digital Inclusion Policies in Sarawak: Are we missing something? 13th April 2022 via Zoom application



By Associate Professor Dr. Tariq Zaman, Head of ASSET/Programme Coordinator, School of Computing and Creative Media University of Technology Sarawak (UTS)

Professor Zaman Associate Dr. Tariq highlighted three main challenges facing the digital inclusion policy in Sarawak which mainly arise from the aspects of demand, supply and policy. Under the aspect of demand challenges, he touched on the lack of appropriate literacy programmes that will enable consumers to better understand the quality of services that they are getting or paid for. The present tools and methods of reporting on the quality of the internet are also inadequate to provide in-depth details. As for supply-side challenges, the issue raised was on the availability and cost of digital services. Alternative solutions, apart from the current provision of free to subscriptionbased services, need to be explored. He suggested that a community-managed network is one of the potential solutions where the community can apply for a class license to operate their own network based on their needs. Under the aspect of policy challenges, he mentioned a lack of appropriate policies for digital inclusion which leads to gaps in the reporting of internet quality such as internet speed versus internet upload, download speed, and also differences in understanding the terminology used between the implementing agencies at the federal and state levels. This is apparent in the definition of populated areas where MCMC and SMA define populated areas as 80/km² and 40/km² respectively. Dr. Tariq opined that these three challenges are intertwined which can lead to and create an unfavourable ecosystem on digital inclusion in the State.

In addressing these challenges, he emphasised the need for a literacy programme under the Digital Inclusion Policy which will work in circular to address the challenges mentioned such as quality of service monitoring and reporting tools, understanding and administering digital infrastructure., consumers laws and regulations (access to internet as a utility), identify gaps in policies and programs, developing decision support digital tools for policy implementation and monitoring, and establishing model community networks as use-cases.





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He then highlighted two main studies in partnership with MCMC, Asia-Pacific Regional Internet address registry, SACOFA, Association for Progressive Communications (APC) and Datasonic Group Berhad which cover policy and impact and community networks respectively. These studies will include the analysis of digital policies at state and national levels, impact of digital access program (for 4-50 sites), construction of analytical grid, establishment of first community network in Malaysia (Bawang Assan), establishing community cooperatives to run and operate the community network, and developing a business model for sustaining the network. Under these studies, there are many opportunities for collaboration such as knowledge partners to provide training at digital community centres for the community, and develop tools to monitor the situation at the grassroots level.



The final segment of the presentation covered the gaps or the missing elements in digital inclusion policies which include the development of local technology and human resource to sustain the internet connectivity in the rural areas. This covers the need to empower the local community with good quality internet access, skills and knowledge to maintain the facilities and provide policy input through the public enquiry about the service. There is also a need to focus on innovation as Sarawak is unique in Malaysia, as well as the local challenges differ from place to place. Currently, the focus is on replication which is not a sustainable practice due to the reasons mentioned. The main challenges were on maintaining the quality of service and upload speed for the wireless connection. The quality of the user experience should be a part of the design process as well, and not just an impact of the initiatives. Lastly, there should be a strategy and policy on sustainability from the service quantity to the service quality. The digital inclusion services should be planned not just to be available but also sustainable.

The discussion following the presentation sought clarification on the unavailability of data to monitor the quality of internet services and also on the mapping of users' derived map. Another issue brought up was on training the community to enable them to manage their own community network. On this issue, Dr. Tariq made reference to the lessons learned from the implementation of the mini hydro dam project where community members were trained to maintain the facilities. However, he emphasized that the most important element is to include the community in the process of setting up these digital facilities.



Toward Humanised Technology 16th November 2022 via ZOOM application

By Professor Dr. Narayanan A/L N. Kulathu Ramaiyer, Senior Lecturer, Faculty of Computer Science and Information Technology, Universiti Malaysia Sarawak (UNIMAS)



Artificial intelligence (AI) technology is defined as an artificially intelligent system which is capable of tasks that would ordinarily require human intelligence. In other words, AI is a simulation of human intelligence which learns through observing humans.

Al is transforming everything, especially the current generation, which adopts technology quickly and relies on their smartphones to answer queries and assist their demands while making decisions. The advent of conversational agents such as bots really helps, mainly for firms to answer an operator inquiry such as answering the quantity of the same question over and over again. Another example is Al assistance in Airasia, often known as Aira, that works as a chatbox. This Al assistant offers fundamental knowledge to benefit the user.



Currently, there are three categories of AI namely artificial general intelligence, artificial narrow intelligence, and artificial super intelligence. Artificial general Intelligence is a powerful AI which can mimic and make decisions like humans. A weak AI system is artificial narrow intelligence such as . AlphaGo and Sophia, while artificial super intelligence is a science fiction AI system that is sentient, emotion-driven, and self-aware, which is yet a reality for now.

The social implications of AI can be evaluated in terms of data collection capacity. Data can be extracted through social media usage, scientific instruments, mobile sensors, and technology networks. To be more specific, all digital users generate data. If AI does not evolve into a responsible system, it poses a threat to our society. Since selling data is a common outcome of data gathering, ethical data use is necessary to ensure that AI technology gathers data responsibly.

In today's new age, society has become dependent on AI technology. Even a fundamental action like thinking has grown overly dependent on AI technology. The fast adoption of AI technology has led to a technologically-obsessed and increasingly dehumanised society. It is, therefore, important for humans to learn to control technology rather than vice versa.

The development of AI technology also brings about new threats like cybercriminals. AI-related risks include cybercrime and computational errors. These threats exist at personal, national and international levels that can bring devastating impacts to the socio-economic, political and economic environments.

One of the ways to combat this rising threat is to invest in education with a soul in order to develop thinkers who are not dependent on AI superpowers. People need to understand that in order to harness the power of AI technology, we first need to understand the complexity of issues facing society. For this, people need to be taught how to think systematically, critically and creatively. The next generation needs to be problem solvers or solution providers which can create and develop new knowledge in order to produce better AI for humankind. It is suggested that the current exam-oriented education be shifted to problem-solving education to achieve this. Hopefully, this shift will help develop AI technology that will assist humans rather than dehumanise society.



PUBLIC TALKS/CONGRESS

Pre-AAEC 2022 Webinar: Education 4.0 Current Outlook in Malaysia 28th April 2022 via Webex

Education 4.0 is one of the plenary tracks in the AAEC 2022 where it looked at the new approaches in the education system to nurture and develop new and young talents to match the expectation of IR4.0 especially in the engineering sector. This webinar kicked off with a preliminary discussion on this subject matter examining the current overview and understanding of Education 4.0 in Malaysia. Ir. Dr. Choo Chung Siung, senior lecturer, Swinburne University of Technology, Sarawak Campus was the moderator for the webinar which was participated by 3 panelists namely Prof. Dr. Nor Aziah Alias, Professor of Teaching and Learning, Universiti Teknologi MARA (UiTM), Member, Malaysian Society for Higher Education Policy and Research Development (PenDaPaT), Professor Dennis Wong, Deputy Provost, Heriot-Watt University Malaysia, and Dr. Chew Yen Seng, Principal Consultant, Chumbaka Sdn. Bhd. who spoke on the current outlook in Malaysia and their thoughts on Education 4.0.



Pre-AAEC 2022 Webinar: System Assurance and Scheduling Tool within Kuching Urban Transportation System (KUTS) Project 17th June 2022 via Webex

The webinar covered two of the crucial components under the implementation of Kuching Urban Transportation System which are on System Assurance and the Use of Scheduling Tool for Project Planning. The presentation was shared by Ts. Khairul Shahrir Hashim, Senior Project Manager - System Assurance & Requirements, and Mr. Prabu Ganesh, Head of Planning Department,

Sarawak Metro Sdn. Bhd. Under System Assurance, Khairul shared on the Safety System including hazard management, management of reliability, availability, and maintainability (RAM), requirements management and electromagnetic compatibility (EMC). Subsequently, Prabu Ganesh shared on the evaluation criteria for choosing the right scheduling tool for the KUTS project.



The hybrid ASEAN Australian Engineering Congress 2022 (AAEC 2022) was organised by Engineers Australia Malaysia Chapter (EAMC), Swinburne University of Technology Sarawak Campus (SUTS), and Sarawak Digital Economy Corporation (SDEC), in partnership with SDI. AAEC 2022, held from 12th -14th July 2022, was officiated by The Right Honourable Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari Bin Tun Datuk Abang Haji Openg, Premier of Sarawak. The Right Honourable Premier emphasized the need to go digital as digital transformation is the key to higher productivity and increased efficiency. He also stressed the urgent need to enhance productivity to remain competitive and create a clean, healthy, and resilient environment that would last for generations. He also believed that engineers will play a key role to apply digital technologies to maximise the economic value in the global business environment that is dynamic and volatile.

Attended by more than 250 attendees in a hybrid mode over the three days, the AAEC 2022 congress covered key thematic areas namely IR4.0 and 5G in Malaysia, IR4.0 and Future Technologies, IoT, Network Communication and Cybersecurity, AI and Automation, Smart Energy, Cities and



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Factories, Digital Construction and Education 4.0 with more than 20 speakers from the industry sharing their insights and knowledge. Being in a hybrid mode allowed participants, both local and abroad, to exchange ideas of a digital future, encourage collaborations through networking sessions between industry leaders, academicians, engineers, experts and companies.

Amongst the programme line-up was the Thought Leadership Forum on IR4.0 and 5G in Malaysia by Digital Nasional Berhad (DNB), Malaysian Communications & Multimedia Commission (MCMC) and Sarawak Digital Economy Corporation (SDEC) where they shared their ideas and experiences on implementing 5th generation mobile network (5G) as the critical enabler for Industry 4.0 (IR4). The discussion covered the key prospects, challenges and issues, and feasibility of 5G in Malaysia and Sarawak. Other plenary topics were Future Technologies, IoT, Network Communication & Cybersecurity, Artificial Intelligence & Automation in IR4.0, Smart Energy, Cities & Factories, Digital Construction, and Education 4.0.



ience in the Face of Disasters for Disaster Risk Reduc



Besides plenary presentations, there were technical papers under the same thematic areas with presenters from Engineers Australia Universiti Malaysia Sarawak (UNIMAS), Monash University Malaysia, Sarawak Metro Sdn. Bhd., Swinburne University of Technology Sarawak Campus, Consulting Engineers Sdn. Bhd., OSD Alliance @ OSD Consultants (M) Sdn. Bhd., Donanim Haber Turkey, HWT Engineering and Construction Consulting, Coimbatore Institute of Technology India, Newcastle University Institute of Higher Education Pte. Ltd. Singapore and RMIT University Melbourne. The publication of the congress proceedings will be Scopus-indexed under the Springer's Lecture Notes series.

The congress also had table top and virtual exhibitions at the TEGAS Digital Village featuring the partners namely Digital Nasional Berhad (DNB), Sarawak Metro Sdn. Bhd., Ministry of Education, Innovation and Talent Development Sarawak (MEITD), Gamuda Berhad, Sarawak Energy Berhad (SEB), SAINS Sdn. Bhd., Swinburne Innovation Malaysia Sdn. Bhd. (SWIM), Sarawak Digital Economy Corporation Berhad (SDEC), Tabung Ekonomi Gagasan Anak Sarawak (TEGAS) and Malaysia Digital Economy Corporation (MDEC).

The congress was closed by YB Datuk Roland Sagah Wee Inn, Minister of Education. Innovation and Talent Development Sarawak where in his closing speech, he emphasized the importance of digital readiness as the key step for Sarawak in attaining digital social inclusivity and economic prosperity towards a high-income and developed state by 2030. It is also crucial in Sarawak's strategy for a sustainable and resilient future, amidst an increasingly volatile, uncertain, complex and ambiguous world. Developing skilled futureready talents is one of the priorities and the Ministry will be working closely with the industry players especially through conferences like AAEC2022.

Leaving No Child Behind After Covid-19 School Lockdown – Addressing the Challenges in Sarawak 14th October 2022 via ZOOM application

By Madam Gill Raja, Sarawak Women for Women Society (SWWS)

Many studies have shown that children suffer varying degrees of learning loss during the school lockdown during the Covid-19 pandemic. Malaysia is one of the Asian developing countries that has had the highest learning loss. The schools in Malaysia were closed down for a total of 35 weeks which were among the longest in the world.

A key impact of the learning loss is the children missed pre-school before entering Primary 1 where they are supposed to learn to read and write, but due to the fact that they miss pre-school they are not able to learn it before they enter Primary 1. Another impact is that inequality increases especially when connectivity becomes an issue where there are no online opportunities available for the children. In addition the children will feel inferior as they are falling behind their peers as they may not be able to catch up on their studies. Moving to the next grade will also have another impact, as since they are not able to catch up fast enough for their current grade, it will be difficult for them to move to the next grade. Because they are not able to catch up, many children drop out of school, they lose interest in studying and they face different struggles to catch-up. Special needs children also face the same impact of dropping out of school and are not able to adapt to the school environment due to the closure of schools during the pandemic. Other impacts include children missing out on playing and interacting among their friends, and they are bereaved when they have to be relocated which may cause trauma to the children.



Among the recommendations put forth by Mdm. Gill include the following:

- Have rapid assessments on the current situation whereby it is important to understand each child's situation and status;
- Maintain their attendance in school by reaching out to those school dropouts and those who are 'lost' during the transition;
- Identify and support each of the vulnerable children. It is also important to institute staggered terms and years for them to catch up on lost education. The progress of each student needs to be monitored as well, i.e. to adopt individual education plans;
- Pursue special initiatives to support the Standard 1 entry and other key years;
- Move downstream to support the pre-school services and to continue to use digital means of learning to reinforce education;
- Be aware of and address the mental health needs
 of the students and teachers and provide support to help them; and
- Give the teachers the support required to meet
 these unique challenges and to ensure that no child is left behind. This is to ensure that attention is given more to help at-risk children.

Suggested follow up actions are to form a State Task Force, to support teachers, to reach out, to collaborate at all levels, swiftly gather and share local information, to develop youth work at community level, to support pre-schools and Early Intervention Programme (EIP), and to be creative in finding the right people to assist.

From Berlin to Sarawak: Augmented and Virtual Reality in Art and Culture Institutions 5th December 2022 | Borneo Cultures Museum Auditorium

By Associate Professor Dr. Tariq Zaman, School of Computing and Creative Media, University of Technology Sarawak (UTS), Professor Christian Kassung, Humboldt University of Berlin and Professor Jürgen Sieck, HTW-Berlin

Assoc. Prof. Dr. Tariq Zaman started the presentation with a background on the collaboration works with Dr. Jürgen Sieck and Dr. Christian Kassung on the Fuzhou Gallery in Sibu, and his involvement in the Oro sign language project. He also shared that the UTS technical team is seeking advice from Dr. Jürgen for the Cultural Resource Mapping research project which is a collaborative project with SDI.

Prof. Dr. Christian Kassung presented on the Cube of Physics project, which aims to show the interrelation between the design process and content, and how they influence each other. The project involves mapping physical knowledge into a three-dimensional cube, with three fundamental constants spread across it. The design process is focused on the interrelation between the cube and its dual model; and an interactive digital display/app was developed to visualize and explore the cube.

Prof. Dr. Jürgen Sieck presented on several projects that revolve around the digitalization of culture. He talked about the importance of storytelling and design in integrating digital infrastructure in exhibits and showed examples of good user interface. His projects include an interactive digital token in the shape of a spoon for the Jewish Museum in Berlin, a six-sided cube for the Pergamon Museum that can be shaken to listen to different stories, and AR tear-out cards for the Konzerthaus Berlin. He also talked about collaborations with individual artists for developing AR content and creating 360degree VR concerts for the Konzerthaus Berlin





The discussion following the presentations covered questions related to AR in education and cultural appreciation in the future with The speakers highlighted that technology. for AR to be useful and effective in education, there is a need for trained teachers or experts. Therefore, it requires committed financial resources and an enabling ecosystem to explore and think outside the box. As for cultural appreciation, digital technology is a new medium and undeniably, it is impacting and changing the human lifestyle. However, the speakers believed it will still take time and is too early to predict the lifestyle of the future with the fast paced changing technology.

PROJECTS UNDER SCD CENTRE

BIJAK (BERSAMA INTU JAGA KAMPUNG) Project



The Bersama Intu Jaga Kampung (BIJAK) is a resource tool for the reference of the Village Security and Development Committees (JKKK) around Sarawak to carry out their duties. The contents focus on easy to understand infographics, videos and documents covering guidelines on JKKK structure, roles of members, categories of bureaus, and more. Additionally, the BIJAK also contains skills development content and relevant information for the JKKK.

The secretariat conducted two presentations to the General Administration Unit (UP), Department of the Premier of Sarawak for their feedback and there is interest to supply the BIJAK RPi to the JKKK in Sarawak for capacity building and knowledge sharing and a proposal was submitted to them in October 2022. In a meeting with UP in April 2023, it was indicated that a decision on the project was still pending.

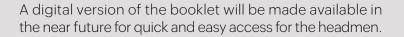


*SCD Centre refers to Sarawak Communication for Development Centre

Booklet for Ketua Kaum - 'Buku Panduan untuk KK'

This project which began in 2019 aimed to produce a resource material that would support the village/area headmen (*ketua kaum*) in Sarawak to undertake their duties. Such resource material was found to be a necessity after three feedback exploratory sessions were conducted in 2017 with community leaders; and the most common concern raised was the lack of up-to-date information required by the village/area headmen.

After a process of curating and verifying the content for the booklet with numerous departments and agencies such as the Ministry of Women, Early Childhood and Community Wellbeing Development Sarawak, National Registration Department, Resident and District Offices, State Attorney-General's Office, Sarawak Native Courts, Land and Survey Department Sarawak, and many more, the project was completed with the printing of 7,900 copies of the booklet at the end of 2022 and handed over to the General Administration Unit (UP), Department of the Premier of Sarawak, for dissemination to all the headmen (*ketua kaum*) across Sarawak.





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RESEARCH

Assessing Local Population Needs in Relation to Services Provided by the Digital Community Centres (DCCs) in Sarawak

This survey aims to identify and assess the needs of the local population in relation to services provided by the digital community centres (DCCs) located in different divisions of Sarawak. These DCCs are under the management of Pustaka Negeri Sarawak and the Ministry of Public Health and Local Government, Sarawak. The survey covered 20 digital community centres (DCCs) in Kuching (9) and 11 others in Betong, Sarikei, Sibu, Kapit, Miri and Limbang. By location, 10 of the DCCs are in traditional villages, 4 in small towns, 4 in new settlements and another 2 in housing estates. A total of 1,671 respondents residing close to and around the selected DCCs were interviewed, where about half were young people aged between 20-34 years old.

The survey was completed in 2022 and the final report has been submitted and accepted by the Sarawak Multimedia Authority (SMA). Several observations and issues raised in the survey are worth noting and should be addressed. A majority of the DCCs share the premise with local libraries, especially those managed by the MPHLG. Since their establishment in 2020, the 20 DCCs have organised more than 800 programmes, but most of them were organised virtually due to the Covid-19 pandemic. The DCCs are equipped with digital facilities, which over time require repairs and replacements or have turned obsolete. The internet speed and consistency at these centres (based on one-off tests) are varied and inconsistent and should be given urgent attention.

All respondents owned a smartphone and mainly used it for social media, video calls, reading news and seeking information. Buying and selling using the smartphone see less usage, though among those who are aware of e-wallets and e-payments such as SPay, ShoppePay and Boost, have experienced them on virtual shopping via Shoppe, Lazada and Shein. Most of them are keen to enhance their skills and knowledge in digital technology, and prefer face-to-face training and instructions. However, as mentioned, a key issue faced by quite a number of the DCCs is that they are



sharing their premise with existing libraries, thus limiting the space available for organising programmes and reaching a larger group of participants, particularly for capacity building programmes. DCC managers, who were mainly recruited under GETS, need to have the appropriate qualification and training, and more permanent terms of employment to ensure programmes are properly planned and there is programme continuity for the community. Knowledge of, awareness and experience at the DCC feedback also indicated under-utilisation of the centres, perhaps due to the issues that have been mentioned. On a positive note, those who have attended training and courses at the centres have expressed satisfaction on their experiences.

A critical area to address is conducting pre-assessment planning to tailor courses and training toward the needs and requirements of the local population. This can be undertaken through more coordinated and consistent communication between the DCCs (or managing agencies) and the community where they are located.

Baseline Study on Sago Production and Its Downstream Activities in Betong and Mukah Divisions

The study was commissioned by CRAUN Research Sdn.Bhd. The main aim of the study is to compile and create baseline data on sago related entrepreneurs and sago production activities in Mukah and Betong divisions which will include upstream and downstream activities of the crop. Among the specific objectives of the study are to determine the domestic production and consumption of sago starch, as well as the domestic market of the starch and its processed end-products. The study also attempted to identify the existing technology adopted for downstream activities. The study areas covered are Mukah and Dalat in Mukah division and Debak and Pusa in Betong division.

Due to the unavailability of records on the population of the sago entrepreneurs and producers (including home-based ones), the study only covered acknowledged and established entrepreneurs/producers who were verified from the desk study, and also market players traced or found during the fieldwork. The research team completed the primary data collection (questionnaire interview, focus group discussion and field observation) in July 2022.

A total of 370 individuals who are involved directly in the sago industry, such as harvesters, repuk and wet sago producers, sago-related food producers and sellers were traced. In Mukah, the majority are food producers while in Betong most are harvesters and repuk producers. The study also found five millers in Mukah and one in Betong. 263 consumers of sago starch were also located after an extensive search where all except three, are operators of cottage industries.

A key conclusion from the study is that as the industry players are essentially traditional or cottage operators, they are unable to clearly specify in detail the quantity of raw materials





that they produce or consume, not just the amount of end products that they sell. Figures quoted are at best rough estimates based on memories or past experiences. On the other hand, bigger producers who operate mills producing sago flour are run by family businesses and all of them are not very open to outsiders and treat everything as confidential.

An important finding to note is that in all sectors of sago production, most of the players are from the elderly group or are poorly educated, which will have serious implications on the future of the sago industry unless efforts are made to open up the domestic market, enhance the range of food products and the overseas markets for raw sago starch particularly for the medical/pharmaceutical industry, and increase the cultivation of sago for higher volume production aided by incentives and the right technology to attract the younger generation to venture into the industry.

The draft final report was submitted to CRAUN in December 2022 and the study has provided a comprehensive and up-to-date profile of the sago-related entrepreneurs in Betong and Mukah divisions, and statistics on local producers as well as data on the amount and value of sago starch, and the type of end products produced and consumed.



Master Plan for Community Development in the Resettlement Areas 2050

The project is commissioned by the Economic Planning Unit, Sarawak and led by Chemsain Konsultant Sdn. Bhd. Universiti Malaysia Sarawak (UNIMAS) and SDI are part of the research consultant team. SDI's role and tasks are to examine the socio-economic demography of the resettled population, the impact of the resettlement and provide inputs for future actions, focussing specifically on the resettlement in Batang Ai and Bengoh resettlement areas. The team from UNIMAS is tasked to focus on Bakun and Murum resettlement areas

The main objectives of the master plan study are a) to provide an up-to-date assessment of the current conditions of the existing resettlements; b) to assess the impacts and sufficiency of the compensation packages associated with the resettlement process; c) to provide an assessment of the effectiveness of the strategies and action plans implemented to improve the socio-economic status and livelihoods of the resettled people; d) to develop a holistic resettlement model-based



on sound policy guidance and using best practices (local and international); and e) to develop a catchment management plan for the Bengoh Reservoir. The study will provide a detailed analysis and examination of the resettlements that have occurred in Sarawak and the lessons learned will be incorporated into a State Resettlement Policy. The study is expected to be completed in 12 calendar months.

The team will proceed with the primary data collection in January 2023 which will take about a month to complete.

Publication on 'Sarawak Civil Service and Its Role in Nation Building: Reflections and Reminiscences of Sarawak Civil Servants'

The main aim of this publication project is to interview civil servants who served from 1963 to the present and compile their experiences and anecdotes through the years of their service. The end product is a publication to recognise and acknowledge the contributions of Sarawak civil service leaders in the process of Sarawak's growth and development. This publication will serve as an avenue for sharing of experiences and lessons learned as these civil servants fulfill their service mandate in different contexts and challenges, which will help motivate and inspire current and future generations of civil servants.

The project aims to interview around 50 experienced civil service veterans from Sarawak who are still working as well as those who have retired. Among veterans that are expected to be interviewed are YBhg. Tan Sri Datuk Amar Haji Abdul Aziz Dato Haji Husain, YBhg. Tan Sri Datuk Amar Wilson Baya Dandot, YBhg. Tan Sri Hamid Bugo, YBhg. Tan Sri Datuk Amar Haji Mohamad Morshidi Abdul Ghani, YBhg. Datuk Amar Jaul Samion and others. To ensure the project achieves its objective, SDI has established an advisory committee comprising YBhg. Datu William Nyigor (chairman), YBhg. Datu Dr. Hatta Solhi and Dr. Peter Kedit. The project is undertaken by Faradale Media-M Sdn. Bhd.

Interviews by FMM are ongoing, running concurrently with desk research into the historical components of the publication. The book will cover the historical aspects of the Sarawak Civil Service from pre-independence and the experience and reminiscences of individual interviewees through their careers. The project is expected to be completed by December 2023.

2.2

Cultural Resource Mapping: Exploratory Project for Kuching Division

The Cultural Resource Mapping project is a project that aims to collect and catalogue all the various tangible and intangible cultural heritage present in Kuching Division. It will be powered by a digital platform called the Crowd-sourced Heritage Automation Mapping Platform for Sarawak (CHAMPS) which is being developed through the project. The CRM project is funded by the Ministry of Tourism, Creative Industry & Performing Arts Sarawak, with SDI as its project manager and University of Technology Sarawak as the technical partner.



In 2022, a series of stakeholder engagements were conducted among various ethnic organisations, cultural groups, religious bodies, government entities, andtourism industry players. Its aimwas twofold – to identify potential individuals and organisations to act as Heritage Experts for the project and to seek consensus on key definitions that are to be used in the project, as well as seeking their thoughts and inputs for the project. Most of the definitions are based on legal documents such as the Sarawak Heritage Ordinance 2019, while other internationally derived definitions were adapted for local usage after consultation with diverse groups.

This was followed up with multiple prototype sessions which included focus group discussions by the technical team from UTS. They were conducted with selected individuals from various organisations and members of the public. The input gleaned from these focus group discussions was used to design elements of the CHAMPS platform in a way that incorporates local values and feedback. Similarly, the information gained was also used in designing the CHAMPS user interface and user experience. The project is expected to be completed by December 2024.

Memorandum of Agreement with University of Technology Sarawak (UTS)





A Memorandum of Agreement (MoA) was exchanged between SDI and UTS for the collaborative project on "Cultural Resource Mapping: Exploratory Project in Kuching Division". SDI was represented by Mdm Lelia Sim, Chief Executive Officer, with Professor Datuk Dr Khairuddin Abdul Hamid, Vice Chancellor of UTS for the MoA exchange ceremony at the UTS Campus, Sibu. The ceremony was witnessed by YB Datuk Dr Haji Annuar bin Rapa'ee, Deputy Minister for Higher Education and Innovation, as well as Chairman of the Board of Directors of UTS, and YB Datuk Gerawat Gala, Deputy Minister in the Premier of Sarawak's Department (Labour, Immigration and Project Monitoring). The MoA ceremony was held in conjunction with the Participatory Design Conference (PDC) Place-Malaysia which was attended by a delegation from SDI.



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