FACULTY OF LAW, UNIVERSITY OF MALAYA
CELEST
CENTRE FOR LAW AND ETHICS IN SCIENCE AND TECHNOLOGY

Welcome to CELEST Newsletter!

In this issue, Dr Izura Masdina writes on bridging the digital divide. She explores the three different aspects of the digital divide and focuses on an aspect which is not adequately acknowledged and addressed: the empowerment divide. She argues that the Malaysian government's initiatives to bridge the digital divide and address inequality within society are unlikely to succeed unless policies are put in place to bridge the empowerment divide as well.

NEWS:

➢ Congratulations to our members on their publications:
  o Dr Chinyere Mary Rose Ezeoke. (2019). 'Integrating under the ASEAN Economic Community: Malaysia's Approach in Intellectual Property and Competition Law'. In *Malaysian Perspectives on ASEAN Regionalism*, Azirah Hashim and Anthony Milner (Eds.), 69-84. Kuala Lumpur: UM Press.
  o Dr Md Ershadul Karim, et al. (2019). Understanding, Knowledge and Perception of Nanotechnology among Private Universities' Students in Malaysia. *Journal of Advanced Research in Social and Behavioural Science*, Vol. 15, Issue 1, 85-103.
  o Dr Mohammad Firdaus Abdul Aziz & Dr Aimi Nadia Mohd Yusof. (2019). Can dynamic consent facilitate the protection of biomedical big data in biobanking in Malaysia?. *Asian Bioethics Review*, 1-14, https://doi.org/10.1007/s41649-019-00086-2,

➢ Dr Pardis Moslemzadeh Tehrani, Associate Professor Dr Tay Pek San, Dr Saaidal Razalli Bin Azzuhri (Faculty of Computer Science and Information Technology, UM) and Dr Muhammad Reza Bin Z'aba (Faculty of Computer Science and Information Technology, UM) were awarded a research grant by QRC plc and IBH Ltd for a research entitled 'The Regulatory Challenges of Smart Contracts on Blockchains in the Supply Chain Industry'.

➢ Dr Mohammad Firdaus Abdul Aziz was a Global Bioethics Fellow at Johns Hopkins University, Baltimore, USA from 3 June 2019 to 30 June 2019.

➢ Dr Pardis Moslemzadeh Tehrani was appointed Chair of the mini track entitled 'The double-edged sword of Artificial Intelligence in Cyber Warfare' and will be running the track at the 15th International Conference on Cyber Warfare and Security 2020.

EVENTS:

- 9 May 2019: Dr Md Ershadul Karim delivered a keynote paper entitled 'Online Privacy and Protection of Personal Data for a Secured Cyberspace: Global Legal Responses and Lessons for Bangladesh' at the Law Seminar, Department of Law, Bangladesh University of Professionals.

- 14 May 2019: Associate Professor Dr Chan Chee Seng, Faculty of Computer Science and Information Technology, UM delivered a lecture entitled 'Artificial Intelligence and Banking' to students of the Faculty of Law, UM who are enrolled in the Banking Law elective.

- 16 June 2019: Dr Sharon Kaur presented a paper entitled 'Medical Decision-Making, Dependent Relationships and Spousal Consent' at the 16th ASLI Conference in Singapore.

- 4 July 2019 at 10-11am at Bilik Persidangan, Faculty of Law, UM: Dr Chai Lay Ching from the Institute of Biological Science, Faculty of Science, UM will be speaking on 'Promoting and Ensuring Integrity and Responsible Conduct of Research in Malaysia'.

Figure 1 **Promoting and Ensuring Integrity and Responsible Conduct of Research in Malaysia**

- 4-5 July 2019: Dr Pardis Moslemzadeh Tehrani will be presenting a paper entitled 'Cyber Resilience Strategy and Attribution under the Context of International Law' at the 18th European Conference on Cyber Warfare and Security (ECCW 2019), Coimbra University, Portugal.

UPCOMING EVENTS:

- 6 August 2019 at 10-11am at Bilik Persidangan, Faculty of Law, UM: Puan Ainul Azlinda bte Inon Shaharuddin, General Manager, Department of Legal Strategy & Intellectual Property, Telekom Malaysia Berhad will be sharing the experience of the telco industry in implementing the Personal Data Protection Act 2010.

- CELEST is organizing an essay competition in collaboration with Messrs Lee Hishammuddin Allen & Gledhill on the theme 'Artificial Intelligence and Data Protection Law in Malaysia'. It is open to all law undergraduate students who are Malaysian citizens. The closing date is 30 November 2019. Further details are available at CELEST's webpage at law.um.edu.my/celest-essay2019

Dr Izura Masdina Zakri is a senior lecturer at the Faculty of Law, University of Malaya. She teaches the Law of Contract and Cyberlaw. Her research interests revolve around cyberlaw, focusing on issues pertaining to the internet which affect the public in general. Izura's current project is on achieving an equitable society in which she researches on the area of 'The Role of the Law in Bridging the Digital Divide'. The article in this newsletter is a summary of the research that has been conducted.

BRIDGING THE DIGITAL DIVIDE

Izura Masdina Mohamed Zakri

The term 'digital divide' refers to the discrepancy that often exists between those who can benefit from digital technology, and those who cannot.[1] This gap can be attributed to a number of factors, though the most commonly quoted reasons would be the unequal access to technology due to economic reasons.[2] Thus, most efforts in bridging this digital divide have been focused towards improving the economic situation of the lower income group, to provide opportunities to obtain the technology and training on how to use the technology.[3]

However, there is an aspect of the digital divide that has not been adequately acknowledged and addressed: the soft skills required when using technology, that is, an 'empowerment divide'. One can be taught how to use the computer and the internet, but one may not necessarily know how to fully utilise it. This write-up posits that the digital divide extends beyond the economic divide to encompass the often-forgotten aspect of being empowered to utilise digital technology properly.

The Malaysian government has invested in a number of initiatives to address the digital divide, particularly in respect to the bottom 40% (B40) of the country's population. If these initiatives are to have real impact, it is important that they move beyond providing merely access to digital technology, but also the means to empower users to engage meaningfully with technology. It is therefore essential for the State to have in place meaningful policies that address issues of empowerment.

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Overview of the Digital Divide

There are several definitions and views on what is the 'digital divide'. According to Jakob Nielsen,[4] there are three stages to the digital divide: economic, usability and empowerment. The economic divide refers to the ability of an individual to obtain the necessary ICT equipment; the usability divide refers to the literacy skills of an individual in using the said equipment and the empowerment divide refers to the actual utilization of the opportunities given when using the technology.

In other words, the three aspects of the digital divide are:

1. Between those who can afford a computer and access to the internet, and those who cannot (economic divide),

2. Between those who know how to use the computer and the internet, and those who do not (usability divide), and

3. Between those who know how to utilize or navigate the internet in order to achieve the best or optimum results, and those who do not (empowerment divide).

Pippa Norris[5] offers a somewhat similar take on the idea of the digital divide from the perspective of industrialised versus developing societies.

> The digital divide is understood as a multidimensional phenomenon encompassing three distinct aspects. The global divide refers to the divergence of internet access between industrialised and developing societies. The social divide concerns the gap between information rich and information poor in each nation. And finally, within the online community, the democratic divide signifies the difference between those who do, and do not, use the panoply of digital resources to engage, mobilize, and participate in public life.[6]

The global divide is similar to the economic divide as industrialised societies have higher spending power compared to developing countries. This, in turn, would mean that the former has more people who would have access to the internet compared to the latter. The social divide relates to the usability divide as those who are information-rich would be better equipped with knowledge on how to use the technology and navigate the internet compared to one who lacks the information.

Democratic divide is a reflection of the empowerment divide as those who use digital resources to engage in, mobilize, and participate in public life are those who are fully able to utilise the computer and internet.

This write-up explores in greater detail the third aspect, namely, the empowerment divide. The empowerment divide is an often-neglected area which should be addressed in bridging the digital divide. Having a computer and knowing how to use the internet does not necessarily equate to being able to utilise digital technology properly. A person

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can be taught how to use 'google' but if he does not know the proper keywords to input into the search bar, he may spend hours going through the numerous hits. Additionally, being able to identify which are 'outdated' or reliable news items is important as well. The impact of the empowerment divide is demonstrated in the next section.

Digital Literacy: Empowerment Divide

A study conducted in 2016 by the Organisation for Economic Co-operation and Development (OECD)[7] which looked at the differences between how advantaged and disadvantaged students used the internet is instructive. The data for the study was collected as part of the OECD's Programme for International Assessment (PISA), a worldwide study of 15-year-old students' performance in mathematics, science and reading.

The results of the study indicated that the socio-academic differences of young people affected how they use the Internet and that this is closely related

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to their digital skills and academic performances. Advantaged students were more likely than disadvantaged students to search for information or read news online. The report firmly stated that 'equal access does not imply equal opportunities

It concluded that:

> "Disadvantaged students in low-and middle-income countries have fewer opportunities to access the Internet than advantaged students. Reducing this gap is important, but the experience of high-income countries shows that inequalities in the ability to learn using digital tools persist even when all students have easy access to the Internet. Ensuring that every child attains a baseline level of proficiency in reading will do more to create equal opportunities in a digital world than will expanding or subsidising access to high-tech devices and services."

Significantly, the report was based on data from more than 40 countries,[8] which clearly showed that even when there is equal access to the internet, there is a digital divide as to how the technology was actually used. Students who had digital skills were empowered to make the most of the opportunities provided by digital technology, whereas students who were afforded access but not the skills, failed to maximise the use of this technology to improve their academic performances.

Malaysia

In Malaysia, the onus to rebalance the digital divide falls on the government, specifically the Malaysian Communication and Multimedia Commission (MCMC) which in 2002, established regulations for Universal Service Provision (USP). To date, the MCMC is focused on fulfilling its mandate by building infrastructure.

In the Eleventh Malaysia Plan (2016-2020), the government dedicated a section towards the digital divide, focusing on the following:

P1   Strengthen Government Onlne Service (GOS) Gateway with sufficient digital inclusion initiatives on vulnerable group

P2   Increase digital literacy for vulnerable group

P3   Expand access and connectivity

P4   Create and/or enhance online services for the elderly, youth, women, poor, disabled, and immigrants

P5   Strengthen Public Private Partnership Initiatives

While P2 directly addresses the issue of digital literacy, particularly in relation to vulnerable groups, this has not been adequately translated into actionable policy.

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Index (DAI) notes that Malaysia's digital adoption level is higher than any other country in the region with the exception of Singapore and comparable to advance economies. However, actual digital adoption by businesses remains low and that of a lower middle-income country. Business people are not making the most of the opportunities of digital technology. A 2017 MCMC Internet Users Survey reported that a quarter of the population were not internet users and they cited 'lack of confidence' and lack of interest' as reasons for not using the internet. The issue here again is not that people do not have access to digital technology, but that they do not feel able to engage with the technology.

Based on the goal P5 of the Eleventh Malaysian Plan, specific policies need to be drawn up to address the issue of digital literacy in order to address the problem of the empowerment divide.

Conclusion and Reflections

It is quite apparent that there is awareness about the digital divide, and that the Malaysian government has made concentrated efforts towards bridging this divide. These efforts while various and numerous, typically involve initiatives and programmes that provide access to technology and also provide the necessary basic services to upgrade skill sets. Unfortunately, there does not appear to be sufficient effort or recognition of the need to enable users to meaningfully navigate digital technology (empowerment divide). There is some evidence that the impact of the empowerment divide is most keenly felt by economically disadvantaged groups. Failure to address this divide will inevitably lead to greater inequality within Malaysian.

Meeting the needs of all sections of society and working towards reducing inequality is essentially a matter of social justice. John Rawls posits that the legitimacy of social arrangements within a State must be based on an objective notion of justice. His idea of justice as fairness is grounded in two principles, first, that all persons have the same claim to equal basic liberties and second, that social and economic inequalities should be arranged to the greatest benefit of the least advantaged members of society. Issues surrounding the digital divide would typically engage Rawls' second principle. In Malaysia, at present, there is insufficient focus on tackling the empowerment divide and this will over time create more inequality. It is therefore incumbent on the government to put in place policies that address all three aspects of the digital divide.

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[1] According to US Legal definition found at https://definitions.uslegal.com/d/digital-divide/4, the discrepancies between people (a) who have access to and the resources to use new information and communication tools, such as the Internet, and people who do not have the resources and access to the technology; and (b) who have the skills, knowledge and abilities to use the technologies and those who do not. It also added that the digital divide can exist between many; between people living in rural areas and those living in urban areas, between the educated and uneducated, between economic classes, and between more and less industrially developed nations.

[2] Mark Lloyd, *The Digital Divide and Equal Access to Justice*, 24 Hastings Comm. & Ent. L.J.505, 522-524 (2002).

[3] One such research was the e-Bario project in Malaysia, which was undertaken by researchers from University Malaysia Sarawak (UNIMAS), which was essentially a project on the impact and benefits of how information and communication technology would help develop remote and rural communities: as per identified in Peter Songan *et al, Community Informatics:*

Challenges in Bridging the Digital Divide, Work with Computing Systems, 267-270 (2004).

[4] Nielson, Jakob. Digital Divide: The 3 Stages. *Evidence-Based User Experience Research, Training and Consulting.* 20 November 2006.

[5] Norris P 2001. *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide.* Cambridge: Cambridge University Press.

[6] Norris P 2001. *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide.* Cambridge: Cambridge University Press, at p4.

[7] OECD (2016), "Are there differences in how advantaged and disadvantaged students use the Internet?", PISA in Focus, No. 64, OECD Publishing, Paris, Accessed on 24 June 2019 at https://doi.org/10.1787/5jlv8zq6hw43-en.

[8] Finland, Iceland, Estonia, Norway, Slovenia, Denmark, Czech Republic, Latvia, Israel, Liechtenstein, Italy, Hong Kong-China, Poland, Sweden, Switzerland, Slovak Republic, Croatia, Hungary, Austria, Germany, Singapore, Russian Federation, Korea, Macao-China, Belgium, Greece, Portugal, Spain, Chinese Taipei, Australia, Netherlands, Serbia, New Zealand, Japan, Uruguay, Shanghai-China, Ireland, Turkey, Chile, Jordan, Mexico and Costa Rica.