The Good Life

in Asia's Digital 21st Century

DIGITAL ASIA HUB

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Digital Asia Hub
www.digitalasiahub.org
Email: info@digitalasiahub.org

Contents

5 Onward

Foreword

It would be hard to overstate the importance of the contents of this book. The 21st century is rewriting the history of the future thanks to persistent bursts of technological innovation. What is so significant about this book, in particular, is that it captures a regional perspective on the benefits that may accrue from further progress in digital and electronic technology. Moreover, it helps us to understand the social, economic, and personal impact that these new technologies can have. We are often surprised by the emergent properties of new technology, especially those that affect our society in ways we might not be able to predict. People use new technology in ways the designers and inventors may not have intended or imagined. The impact of smartphones with video/still cameras and Internet communication capabilities has changed awareness of global events. The immediacy of information distributed through social media sharing sites has changed the meaning of news, but puts great demands on users looking for context to understand what they are seeing and hearing.

I highly commend the formation of the Digital Asia Internet and Society Research Hub and its aim to allow researchers in the wider Asian region to learn from each other and build on each other's work. We need trans-disciplinary and intercultural research that is informed by the expertise of all stakeholders - academics as well as experts from civil society, the private sector, and governments. I see the Digital Asia Hub well positioned to facilitate and form synergies between Asian researchers distilling insights about how to exploit and shape digital technologies to serve socio-economic progress on the individual, communal, national, and transnational level. Importantly the

products of the Digital Asia Hub must not only address academic audiences but should be refactored to inform the general public (i.e. media), industry, and policy makers.

The papers in this publication reconfirm what we have known for all of history: there is no limit to human innovation and creative capacity. New technology begets new applications which, in turn, generate new ideas. The online environment is triggering a tidal wave of invention based on a sort of intellectual "jamming" as new users see what others have done and are inspired to explore further into unknown territory. Like explorers of old, these writers are taking us on a journey of discovery, giving us vicarious glimpses of the real and imagined future.

Loosely organized into five topic areas, the chapters offer us fresh and refreshing glimpses into the ways in which our lives and societies are being redefined by the generation, analysis, and sharing of digital information. We can see the possibilities all the more clearly thanks to these word portraits from diverse perspectives. While we cannot know for sure where the future will take us, this book gives us insight into what has happened and what may be possible. Armed with this information, we will be better prepared to make choices and pursue objectives in the unfolding adventure we call the 21st Century.

Vint Cerf
Internet Pioneer

About this Book

The Internet with its three billion users - and digital technology more broadly - have fundamentally changed the ways in which we as individuals communicate and collaborate with each other, how entrepreneurs and businesses operate and innovate, how young people express themselves and engage with the world's knowledge, and how governments interact with their citizens. As we begin the 21st century, the digital ecosystem continues to change and evolve globally, regionally, and locally, as more and more people around the world become connected, next generation technologies and business models emerge, and the lines between the online and offline increasingly blur.

In many respects, Asia is at the forefront of the next wave of digital transformations, whether we look at the massive growth in connectivity, innovative use of digital technologies to build smart cities and infrastructures, or Asia's cultural diversity as we reimagine and rebuild the future of education, commerce, or healthcare. With the imaginative power that comes from the wealth of diverse people and cultures, Asia is expected to significantly shape the future direction of digital technology and the evolution of society over the decades to come, not only regionally but also globally in today's interconnected world.

Against this backdrop and in order to inform decision-makers in the private and public sector about these transformations, a diverse group of academic, civil society, and private sector partners from Asia and beyond have come together to launch the Digital Asia Hub as an independent, non-profit Internet and Society research think tank based in Hong Kong (www.digitalasiahub.org). Initially incubated by the Berkman Center for Internet & Society at Harvard University with its regional partners, the Digital Asia Hub will serve as a non-partisan, open, and collaborative platform for research, knowledge sharing, and capacity building related to Internet and society issues with a focus on digital Asia. The Hub, led by an Executive Director, Management Board, and Steering Committee, also aims to strengthen effective multistakeholder discourse, with both local and regional activities, and will contribute to - and itself serve as a node of - a larger network of academic organizations: the Global Network of Internet & Society Centers (www.networkofcenters.net).

The essays collected in this book are intended as an initial contribution by an emerging and open interdisciplinary research network consisting of students, researchers, entrepreneurs, and many other collaborators who share a deep interest in digital technologies and their role in improving life in Asia's digital 21st century. Based on an open call for participation and to celebrate the launch of the Digital Asia Hub, this book brings together a series of reflection pieces written for a broader audience in form of short essays that address some of the key research topics the Hub may explore in the future, including digital

rights, governance and infrastructure, innovation, open manufacturing, digital trade, trending technologies and technology spaces, mobile technology and its impact on access, education, entrepreneurship, and the use of ICT for development and civic engagement.

The selected essays - written by twenty-six researchers (including student authors) and other stakeholders from across Asia - offer kaleidoscopic reflections on the guiding topic "The Digital Good Life in Asia's 21st Century," and are grouped into five broad chapters: "Connecting the Unconnected," "Being Online," "Digital Economy," "Governance, Rights, and Policy," and future perspectives ("Onward"). The contributions in this book reflect the diversity of insights, ideas, and perspectives that we hope will form the core and spirit of the Digital Asia Hub. Some of the reflection pieces are closely connected to the research topics of the Digital Asia Hub, others reflect more generally on personal observations and opinions, or highlight and discuss insights and learning from specific case studies or concrete projects.

By making these reflection pieces available as we celebrate the launch of the Digital Asia Hub research network, we hope to stimulate independent and interdisciplinary research exploring both the opportunities and challenges related to digital technology, innovation, and society in Asia. Additionally, we hope to work towards a robust community that shares a deep interest in and commitment to Internet and society research as the Digital Asia Hub seeks to engage in and support cross-cultural, sectoral, and interdisciplinary dialogues and collaborations.

About the Digital Asia Hub

The Digital Asia Hub is an independent, non-profit Internet and society research think tank based in Hong Kong, led by an Executive Director, Management Board, and Steering Committee. Its funding is provided through individual, institutional, and corporate donations.

Incubated by the Berkman Center for Internet and Society at Harvard University and launched in November 2015 by a diverse group of academic, civil society, and private sector partners, the Hub provides a non-partisan, open, and collaborative platform for research, knowledge sharing and capacity building related to Internet and Society issues with focus on digital Asia.

The Hub also aims to strengthen effective multi-stakeholder discourse, with both local and regional activities, and will contribute to - and itself serve as a node of - a larger network of academic organizations: The Global Network of Internet and Society Centers.

Steering Committee

The Digital Asia Hub's Steering Committee provides strategic, high-level guidance on the Hub's governance structure, research direction, and other activities. Its current members include the following (all individuals, unless indicated otherwise, serve in their personal capacity, and affiliations are provided for identification purpose only):

- Michael Best, Director, UNU Institute on Computing and Society, Macao, China
- Herbert Burkert, President, Research Center for Information Law; University of St. Gallen, Switzerland
- Allen Chan, LGT Bank of Liechtenstein; Fudan University, Senior Financial Consultant to the President of Fudan University; Honorary Attaché to the University of Hong Kong, Hong Kong
- Sandra Cortesi, Director, Youth and Media Project, Berkman Center for Internet & Society, Harvard University; UNICEF technical advisor Digitally Connected Network, USA
- Donnie Dong, Attorney at Law, Baker & McKenzie, Hong Kong
- Richard Hsu, Professor, Tongji University Graduate School of Design, Shanghai, China
- Ang Peng Hwa, Professor, Nanyang Technological University, Singapore; President-Elect of the International Communication Association
- Nathan Kaiser, Eiger, Taiwan
- David Li, co-founder, Hacked Matter, China

- Eugene Liu, Investor, Shanghai, China
- Barbara Navarro, Director of Strategy and Operations APAC, Middle East, Africa, and Russia, Google Inc., Hong Kong (institutional capacity, non-voting member)
- Isaac Mao, Chinese venture capitalist, software architect, and social media researcher, Hong Kong
- Catharina Maracke, Professor, Keio University International Center for the Internet & Society (KICIS), Tokyo, Japan
- K.S. Park, Professor, Korea University Law School, Seoul, South Korea
- Pirongrong Ramasoota, Director, Media Policy Center, Chulalongkorn University, Bangkok, Thailand
- Julian Thomas, Director, Swinburne Institute for Social Research, Swinburne University of Technology, Australia
- Albert K. Ting, CX Technology Corporation and Lawrence S. Ting Memorial Foundation, Taiwan
- Pindar Wong, Internet Pioneer, Digital 21 Strategic Advisory Committee, Government of Hong Kong, Hong Kong
- Tsui-Fang Wu, Ministry of Justice, Taiwan

Additional members to the Steering Committee will be considered periodically and based on nominations by the members of Steering Committee, the Board of Management, and other key stakeholders.

Contact

The Digital Asia Hub is in the start-up phase and looking forward to making new connections, and incubating research projects and collaborations across Asia. Please connect via the following channels – thank you:

Web: www.digitalasiahub.org
Email: info@digitalasiahub.org
Twitter: @digitalasiahub, #digitalasiahub

Acknowledgments

This book is the result of a concerted effort by an extraordinary team of authors and collaborations from around the globe. First and foremost, we wish to express our gratitude to all the authors who have contributed essays to this collection, as well as all the other colleagues who submitted their thoughtful contributions to the open call for papers.

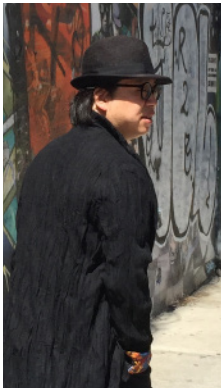
Special thanks are due to Annie Pruitt, Program Coordinator at the Berkman Center, for spearheading the collection of all contributions, as well as leading the editorial and production process. Further thanks to Briggs DeLoach, Melody V Ha, Eric Liao, and Amy Zhang for their excellent editorial work, and Paulina Haduong, David Cruz, and Daniel Oyolu for additional support. We are also grateful to Daniel Dennis Jones on the Berkman team for the design of this book, and to Youth and Media Director Sandra Cortesi, without whose experience, advice, and help this publication would not have been possible. We would also like to thank Amar Ashar, Jon Murley, Gretchen Weber, and the other members of the Berkman team for their contributions.

We are deeply grateful to the great artist Chen Dongfan for contributing the amazing artwork to this book, and to Inna Xu for her friendship and support.

Finally, we would like to acknowledge a generous, unrestricted gift from Google, which has made this publication possible - special thanks are due to Barbara Navarro and Max Senges for their support.

Urs Gasser, Chinmayi Arun, Lokman Tsui
On behalf of the Digital Asia Hub

About the Artist



Chen Dongfan was born in 1982, and graduated from China Academy of Art in 2008. He now lives and works in Hangzhou and New York. Dongfan's artwork often extends from painting to installation and moving image. Through a spectrum of colors, he attempts to bring out the shapes of his thoughts and search for balance amid disorder. For Dongfan, to create is to explore and depict the unknown, the process of which is like nurturing plants and waiting for them to mature of their own accord. Therefore, artwork is not representations of the artist, instead, the role of artist resembles a particular medium that summons mutual refraction between the artist and his or her works.

Chapter 1

Connecting the Unconnected

Empowering the Marginalized: Tales of the Digital Good Life

Chinmayi Arun and Siddharth Manohar
Center for Communications Governance, National Law University, Delhi

In the eighties, Lila wrote letters to her daughter who was at a university in a distant city. She included family recipes and little labeled samples of different kinds of lentils. These letters were the only way for her daughter to receive this information. The right books were difficult to find, and long distance calls were expensive and inconvenient. Lila and her daughter were lucky enough to be among the privileged few able to read and write in India. Unlike them, most people in India were completely cut off from their families, communities, and cultures once they traveled to other places in search of opportunities. Even today, vast geographical distances and literacy problems remain a barrier to communication.

The Internet, and perhaps more so the mobile phone, may be among the most transformative developments in India. Parents like Lila are able to call and videoconference with their children regularly no matter how far they travel. Long distance communication is no longer a luxury available only to the very privileged. Thanks to cheap mobile phones and pay-as-you-go plans (known as 'prepaid' plans in India), migrant workers, like the man who left his village to drive a three-wheeled auto-rickshaw in the city, are able to call their faraway families. These plans are also able to give customers a way to directly contact the service providers, and therefore provide a means to leverage the market better. Now that illiteracy is no longer an impediment to long-distance communication, the digital revolution offers marginalized groups more possibilities than ever.

In this essay, we discuss how the digital revolution has changed access to the public sphere in India. The narrative here begins with a discussion of how access to information and the public sphere have changed. It then moves on to the stories of platforms that have successfully leveraged modern digital

technology to offer marginalized communities access to the public sphere. Having established the potential that this technology offers to bring even the most marginalized people online, we go on to discuss some of the barriers to access and the ways in which digital technology can be used to attack vulnerable people. In conclusion, we discuss the pursuit of the digital good life in a cautious manner that tries to accommodate different kinds of vulnerable people and empowers them once they are online.

Old Information Barriers and the New Media

Up to the nineties, aspirational young people were scouring magazines and newspapers to understand which universities and careers might suit them. Those with privileged access to silos of information were better able to find their way to universities, mentors, and scholarships that worked well for them. However, people's ambitions and imagination were often limited to the worlds that they already inhabited.

Even the legendary Ramanujan, a mathematician famous for developing cutting-edge research in isolation from the world's great universities, had access to books by Loney and Carr at critical points in his development (Kanigel, 1991). He was also a Brahmin, and his dominant caste background offered him access to education and encouragement from his community. For people from other castes or a different gender, there are persistent social barriers to information. This is apparent from the story of B.R. Ambedkar, iconic Dalit social reformer and draftsperson of the Indian Constitution. Ambedkar accessed education with difficulty and was subject to extensive humiliation in the process because of his caste. He ultimately managed to acquire a good education and scholarships through the support of influential members of the dominant communities who took an interest in him (Omvedt, 2008).

This historical marginalization continues to be visible well over fifty years after India became a democracy. Marginalized groups tend to be excluded from platforms controlled by the mass media. The mass media's owners and editors performed a gatekeeper function in the public sphere prior to the Internet. The owners and editors were mostly men from dominant communities, which meant that marginalized voices had very little space to speak, and that the public narrative excluded the perspectives of whole communities and gender groups (Jeffrey, 2010). Additional barriers to the traditional media were created because the language and style of communication expected within these spaces were those of the dominant communities and could often be inaccessible to Dalit content-creators (Thirumal, 2008).

The Internet has changed this in many ways. It has removed several of the access barriers to the public sphere that exist in the print and broadcast media, especially barriers created by owners and editors – online platforms

play a far more limited gatekeeper function. The restrictive language and style norms have also been circumvented by the fact that the Internet has informal communication spaces in which content-creators may use familiar, everyday language instead of having to adopt the communication style of dominant groups. This means that different kinds of marginalized people are able to engage in public dialogue without altering their style of communication (Thirumal, 2008).

Leveraging the Digital Revolution

With the availability of the Internet in India, several innovative platforms have been designed using a combination of media such as mobile, Internet, and sometimes even radio to offer marginalized groups access to the public sphere. These platforms have developed ways to include people who have not been allowed access to school, books, or newspapers. Their architecture makes it possible to include groups who are so marginalized that there are not even news sources published in their language. Some of these platforms are described below.

Gramvani is a radio-over-phone platform aimed at bringing social change to rural areas in Bihar and Jharkhand. It enables other organizations to bring content seeking social change, such as material advocating against child marriage, to marginalized communities. Gramvani allows the audience to call and leave a message about a community issue or listen to messages left by others. This offers access to communities that have traditionally lacked such access.

Similarly, CGNet Swara is a voice-based platform that enables citizen journalists to report or listen to audio news bytes using their mobile phones. Callers are able to call the portal number and hang up, and the server then returns the call, ensuring that the cost of calls does not make the platform inaccessible to marginalized groups. The nature of the platform eliminates literacy and language barriers as exemplified by how the indigenous people of the Gondwana region are able to use this platform in their own language (Ghosh, 2014). The news recorded by CGNet Swara callers is accessible to a wider universe than just the other callers. It is also filtered, checked for accuracy, translated, and published on the platform's website so that it is then available to mainstream journalists and to other governmental and non-governmental organizations that may wish to extend support in response to the citizen-reporters.

Dalit Camera is slightly different. It is a film-sharing platform that focuses on Dalit lives, experiences, and expression, offering them a way to reach a larger audience. The channel offers an academic discussion of critical contemporary issues dealing with Dalit rights and caste discrimination from a larger societal standpoint. A number of experts whose work would not otherwise reach the

public have been featured by the channel (Thirumal, 2008). The first film uploaded on this platform was in response to an attack on a female Dalit Panchayat President, which is the sort of issue that is rarely even featured in the mainstream mass media. Dalit Camera has steadily gained local as well as some international traction over time by virtue of being one of the very few independent media voices available that focuses on Dalit issues.

The Digital Revolution and Social Barriers to Information

The Indian government is determined to bridge the digital divide. It has invested substantially in its new Digital India Initiative, through which it hopes to bring over fifty-five thousand villages online by 2018 (Rai, 2014). The Initiative is also supposed to set up Common Service Centers for Internet access. It will also be leveraging existing infrastructure; one hundred and fifty thousand post offices scattered around India are to be converted to centers that offer online public services (DEITY, 2014). Embedded in this ambitious project is the effort to move India over to e-governance platforms, and the project therefore also targets local governance bodies and aims to bring them online.

Bridging the digital divide in India will not be easy. Public spaces are not equally accessible to members from all groups. People from certain communities or of certain genders may be prevented from freely accessing common service centers. Similarly, computers in homes are very likely to be controlled by powerful men within families that continue to observe patriarchal norms. These norms can affect access even if personal devices like mobile phones with subsidized data connections are distributed freely. For example, a local governance body in a village once passed an order that forbid women from carrying mobile phones (PTI, 2014). Unsurprisingly, a report published by an Indian non-profit in 2013 states that 88% of Internet users in India are male (IAMAI, 2013).

Although there is limited data on how social norms can be barriers to marginalized groups' access to the Internet, a few studies have already shown that women have trouble accessing the Internet within their homes. According to a 2012 Intel report on "Women and the Web", there is on an average a 25% gap in Internet usage rates between men and women worldwide, with up to a difference of about 45% in some countries (Kaker, 2012).

The Violence Within Uninhibited Communication

As we discuss ways in which we can bring more people online, it is important to acknowledge other looming dangers. Digital spaces and technology can be used to attack, control, and disempower people from vulnerable groups. For

example, an infamous Delhi rape case led to several companies producing what we term 'stalker apps'. This is technology that would enable partners, spouses, or close family members – statistically much more likely than a stranger to be violent towards women (Department of Economic and Social Affairs, UN, 2010) - to monitor women's movements through the GPS on their mobile phones.

Information technology is also used to intimidate marginalized communities in ways that were not possible before mobile phones became ubiquitous. No television channel would have aired the pictures and text that frightened large numbers of north-east Indian origin people in Bangalore enough for them to leave the city in droves (Reuters, 2012). Rapists are sharing videos of their victims. Facebook pages are being set up to slut-shame women who are out having a drink in the city ("The Hindu", 2013). Revenge-pornography is widespread and the strict social norms applicable to most women in India leaves them with very little support once they are victimized.

Conclusion: Carving Out the Digital Good Life

Technology is neutral, but it is clear that digital technology has transformed the public sphere in India. It is difficult to ignore the benefits of a world in which people who cannot obtain a traditional newspaper can still become citizen reporters and hear the news that matters to them. It is difficult to continue to control historical narratives and reporting of critical news when the digital media offers free access to anyone who cares to look.

At the same time, ensuring that everyone has equal access to the good life will mean battling social norms. It will mean ensuring support for platforms that permit marginalized people to communicate in their own language. It will mean finding architecture within which vulnerable groups can access the digital media freely, privately, and safely, regardless of efforts to control them and the information they access. It will mean developing ways in which the vulnerable can fight back so that a transgendered journalist will not be subject to a tidal wave of threats over social media or so that a teenage girl will not be slut-shamed online, or so that traditionally marginalized ethnic communities can find safe online environments.

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ICT4D: Empowering Transformation in Asia – Reaching the Unreached

Ritika Shekhar and Gaurav Shah
Students, Narsee Monjee Institute of Management Studies, Mumbai

The information revolution and the astounding uptick in information derived from data have given birth to a new epoch of enlightened communication that affects cultural, economic, political, and social environments in Asia. It provides openings for countries to leapfrog the industrialization stage and transform into knowledge-based economies. Countries can leverage Information and Communication Technologies for Development (ICT4D or ICTs) by setting up policies and strategies designed to transform their economy by bringing in reforms that lead to wealth creation, generation of high-quality employment, and improvement of quality of life, knowledge, and international competitiveness.

Marginalization, a plague emerging in Asia, can be defined as the lack of social capital to partake in the benefits of a society, usually affecting communities in underserved areas (Eid & Blog, 2011). "Digital Divide," a gulf between information "haves" and "have-nots," is the commonly used expression connecting underdevelopment and deficiency of access to ICT and data (Eid & Blog, 2011). ICTs have the potential to help the underprivileged acquire new literacies and other marketable skills, thus putting countries in strong positions to flourish in the new economy, by extensive access to communication systems, presence of a literate labour-force, customers, and the availability of institutes that endorse knowledge creation and propagation. This process of intensifying human competencies and access to openings in economic, social, and political areas leads to improvements in quality of life. Innovative networking will quicken development, including creating increased economic competitiveness, more effective educational, healthcare, and public governance systems, and a chance to cultivate social capital.

Social Inclusion

Social inclusion is the liberty to contribute to the social, political, and economic activities of civilization and the ability to control one's destiny by virtue of the competencies available (DESA, 2013). Social inclusion as a strategic goal for ICT is the capability to access, understand, and generate new knowledge using ICT.

ICT is significant because information is imperative for sustainable economic growth. ICT makes data accessible in real time across the globe using a small number of clicks and a networked computer system. ICT-based connectivity is being touted as the best opportunity to level up the emerging and developing economies (Nath, 2014). India has used ICT to develop and enforce health services, education, business, and administration by bridging the Digital Divide. ICT can thus help to create positive social impact, and enhance quality of life for marginalized individuals and support their social integration.

Digital Literacy and Employment

Nearly 24 percent of employed youth in Asia are living in poverty, and the International Labor Organization (ILO) approximates that 70 percent of those underprivileged youth who employed are involved in the agricultural industry (International Labour Office, 2013). Jobs in this area are typically informal, with no welfare or security, and workers can be subject to exploitation.

In China, rural-urban inequalities occur in terms of access to education. 17 percent of urban youngsters in China attend universities, compared to 5 percent of rural youth (International Youth Foundation, 2012). In underdeveloped countries, for example India and China, youth get seven years of schooling while in developed countries they get up to twelve years (You et al., 2005). Furthermore, traditional models of education in India are rife with gender, class, and caste disparities (Hickey & Stratton, 2007).

ICT offers a comprehensive assortment of potent tools to augment education, reduce poverty, provide opportunity, empower users, and create security in many parts of Asia by facilitating the expansion of underprivileged people's assets. Community access points are cost-effective in the realization of socio-economic development objectives where information dissemination is important by means of empowering disadvantaged communities through networking and sharing of relevant information and knowledge (ESCWA, 2009).

Education is of utmost importance for competitiveness and prosperity in the era of globalization. Educational participants, i.e. public school administrators

and higher educational bodies, must recognize ICTs' potential as a vital enabler of innovation and imagination in learning. Investing in skills that allow individuals to improve their socioeconomic status requires increasing the use of ICTs in learning and teaching. However, there is a disparity between what the market demands in terms of ICT skills and what institutions of learning can provide. Schools are challenged to incorporate technology as quickly as possible, yet many are trapped in ancient approaches of teaching that are hostile to the ways in which ICT abilities can be learned, primarily since the teaching staff usually finds itself grappling to understand new technology and accept it (Semenov, 2005). Mobile learning, flipped classrooms, and open courseware are changing classroom dynamics, creating a learning revolution that has the potential to impact a large proportion of Asia's youth, especially in India and China.

ICT has unlocked numerous novel avenues for employment, and through ICT we can unleash an ecosphere of digital employment. ICT literacy not only improves employment prospects for individuals seeking traditional work, but also provides new opportunities for developing markets, such as micro-work and business process outsourcing. Youth, through access to technology, are emerging as digital citizens and timely adopters of ICTs, and they are better positioned than the previous generation to harness the power of ICTs.

Healthcare Inclusion

Uneven access to affordable and excellent health facilities remains a serious challenge for many low and mid-income families in Asian countries. Ineffective distribution of scarce resources and dearth of coordination among crucial participants has resulted in replication of efforts, resource waste, and overlapping duties as shared and troublesome complications. Consequently, officials in countries like India and China seek novel solutions to eradicate the physical and monetary barriers to health facilities. ICTs can potentially change the face of healthcare for the marginalized by:

> **Increasing the spread of geographic access**: Singapore is pioneering telemedicine for remote rehabilitation removing the need to visit a physical clinic (Senthilingam & Stevens, 2015)
>
> **Aiding in patient communication**: technology can be used to simplify the flow of data amongst medical practitioners and patients outside regular conventional facilities.
>
> **Improving the quality of diagnosis and treatment**: technology can improve medical performance, permitting real-time aid during clinical diagnosis and decision-making.

Streamlining monetary relations: mobile phone applications can be used for expediting financial dealings between patients and physicians (Lewis, Lagomarsino, & Schweitzer, 2012).

Financial Inclusion

Financial inclusion is the delivery of financial services at affordable costs to sections of disadvantaged and low-income segments of society (Muzigiti & Schmidt, 2013). Pioneering technology being developed by societies endorsing financial inclusion is an influential armament in the battle against poverty. Financial inclusion is a cross-cutting instrument that will empower progress within virtually every sector, from education to healthcare and beyond. The Asia-Pacific Regional Forum for Telecommunication of Malaysia has developed a platform that allows information and communication regulators to leverage technology to champion the cause of financial inclusion (Senthilingam & Stevens, 2015).

ICTs have played a key part in financial inclusion by fueling the mobile finance revolution, which has unlocked gates to inclusive finance provided by NGOs, governments, and entrepreneurs across Asia. Mobile money's advantages for progress go beyond the capacity to receive and send money effortlessly through 'M-Pesa' systems (Cobert, Helms, & Parker 2012). Over SMS, individuals who do not have bank accounts are able to transfer money to another individual's cell phone. This mobile cash recipient can then redeem electronic cash in conventional cash form from an M-Pesa agent. Thailand's 'True Money', a SMS based mechanism to transfer money similar to 'M-Pesa', has played a vital role in mobile banking and has significantly improved financial inclusion in the hinterlands of Thailand (Donovan, 2012).

For example, pay-as-you-go choices aided by mobile money are assisting in making solar energy accessible to people in Asia. Solar energy is inexpensive and healthier but has high upfront charges that make it too expensive for many low-income families. Pay-as-you-go corporations such as Simpa Networks (Simpa Networks, n.d.) in Bangladesh permit clients to access energy when desired and pay off the primary outlay gradually. In this way, ICTs and financial inclusion improve both finances as well as society broadly.

Using big data in credit guaranteeing via individuals' social media and mobile transaction histories has unlocked the door to novel financing possibilities for micro-entrepreneurs and other people in developing countries. Demyst Data, for example, formed its credit-scoring prototype especially for micro-businesses in Asia by using the company's online track record and proprietors' social networks (Attributes as a Service, 2015).

Conclusion

ICTs hold the promise for a sustainable future by encouraging structural economic transformation, particularly in terms of including the traditionally underrepresented. ICT-enabled community empowerment shows how the appropriate application of ICTs can strengthen several basic community processes, potentially resulting in positive outcomes. Capabilities strengthened may include access to information and informational capabilities, organizational capabilities, access to basic social services, promotion of economic opportunities, transparency and participation within the political system, environmental monitoring, mitigation and management, and strengthening cultural identities. ICT touches almost every aspect of life and every part of the society, and is thus the key to an empowered future in emerging Asia.

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Finally Plugged Into the Network: Technology That Is Changing Lives in India's Slums

Abhimanyu Roy
Community Tracks

The man in this picture is Raman. He lives in Rampir No Tekro, a slum of over 100,000 people right in the heart of Ahmedabad, India. Raman is 27 years old, has two daughters, and supports his niece who lost her mother. He also works for anywhere between 12 to 16 hours a day, 6 days a week, except for Sundays, which he spends with his family. Raman is a healthcare worker at Manav Sadhna, an NGO in Ahmedabad, India. Every day he wakes up at 5am and is out the door by 6. He admits ill people from the slums into the hospital, helps their families find funds required for treatment, and helps run the NGO's free clinic.

As ordinary as all this may seem, it's a life he could scarcely imagine 15 years ago. Growing up in the slums of Ahmedabad, Raman's father had left his mother when he was only a child. At an age when most of us are still watching cartoons, Raman worked multiple jobs to support his three siblings. He made up for his lack of formal education through hard work and grit. He facilitated the implementation of various NGO projects in his neighborhood and was paid a daily wage for his work until one of them saw him fit for a permanent job. The most remarkable thing about Raman, however, are the odds that he has overcome, which makes him exceptional by every possible metric.

The Cycle

According to 2013 census data, there are 65 million people living in city slums throughout India (Rukmini, 2013). They are seen, yet not noticed. They are heard, yet not acknowledged. Life in the slums of India is tough. Right from birth, the odds are against you. The national mortality rate for children under the age of five for the poorest 20% of the population is 92 deaths per 1000 children compared with 33 for the top 20% (Chamberlain, 2009).

If you do survive childhood in the slums, you won't be afforded the same opportunities as others. A 2009 survey among slum-dwellers in India's capital of New Delhi found that only 20% of inhabitants had completed elementary education (Chauhan, 2009). As a result, slum-dwellers are faced with crippling unemployment; a study in Delhi found unemployment rates as high as 22% among males and 91% among females in the slum population (Kumar & Aggarwal, 2003).

The high unemployment rate for women especially underpins deep-seated societal pressures. A UNICEF project in 2012 revealed that 47% of Indian women had married before the age of 18 (UNICEF, 2013). Furthermore, these marriages were often difficult: in 2013, a study in Mumbai showed a 37% incidence rate of spousal violence (Shrivastava & Shrivastava, 2013).

Additionally, women in Indian slums experience a higher fertility rate than women elsewhere in the country. A study conducted among married women in Ahmedabad slums in 2013 demonstrated an average fertility rate of 2.89 births for women under the age of 29 (Puwar, Puwar, & Trivedi, 2008), compared with a national rate of 2.3 (for all women of all ages) (Vardhan, 2014). This was partly compounded by a lack of contraceptive use, which a 2011 Princeton study suggests is only 50% across slums in Kolkata, Mumbai, Delhi, and Chennai (Narayan, 2011).

These factors paint a bleak picture of life in India's slums. If individuals survive past childhood despite the high infant mortality rate, they aren't given the opportunity to gain skills that make them employable. As a result, many end up unemployed. Additionally, societal pressures dictate that slum inhabitants, like individuals throughout India, marry early. Though this marriage is not a happy one, it produces children due to low contraceptive usage. These children then follow the same path in a process that MIT economists Esther Duflo and Abhijit Banerjee term the "vicious cycle" in their 2011 book "Poor Economics" (Cox, 2012). Yet, thanks to the Internet and a few innovative organizations, there is hope that Raman and other slum inhabitants may be able to break this cycle.

Hope

In 2014, the Chennai Municipal Corporation announced plans to set up 15 community health centers to provide healthcare services to the urban poor (Philip, 2014). It was a vote of confidence in the abilities of the National Urban Health Mission's Accredited Social Health Activists (ASHA; the abbreviation translates into the Hindi word for hope) program. ASHAs are primarily women between 25 and 45 years of age who reside in a particular slum/vulnerable cluster and assist in maternal and neonatal healthcare (National Health Mission, n.d.).

In order to provide the best possible care, ASHAs use the Datamation Foundation's Maternal Health Services on Mobile (MSHM) kit. MSHM disseminates critical information regarding reproductive and infant health to pregnant women, new mothers, and healthcare workers using localized SMSs in Hindi (Datamation Foundation, n.d.). The messages cover numerous subject relating to maternal healthcare - from government norms about safe pregnancies to nutritional requirements for newborns (MSBC, n.d.).

MSHM, which is backed by Microsoft (Microsoft, n.d.), has significantly reduced costs and manpower requirements for delivering maternal healthcare. It has also widened stakeholder engagement from just the mother to include her husband and other family members. Most importantly, it has saved lives; it has been estimated that over 1000 newborns have been saved through MSHM-enabled preventive healthcare (Digital Empowerment Foundation & UNICEF, 2013).

Current plans call for extending the reach of MSHM to more regions and eventually eliminating preventable child deaths altogether. ASHAs and MSHM can indeed bring hope to millions of families by reducing infant mortality, but merely surviving is not enough. One must also be given the chance to prosper.

Games

Eleven years ago, Matthew Kam was a doctoral researcher at the University of California Berkeley in the United States. For his dissertation, he wanted to choose a topic that went beyond the bounds of computer science, development economics, and literacy studies. The result was a groundbreaking mobile learning project called Mobile and Immersive Learning for Emerging Economies (MILLEE) (Human Development Lab, n.d.).

MILLEE marks a paradigm shift in educating underprivileged children. It takes a human-centered approach to learning that makes the experience enjoyable for the student by modeling the learning process after traditional children's games (Berkeley Computer Science, 2015). By leveraging the ubiquity

of cellphones (India had 349 million unique mobile phone users and almost 70% of the population had access to a cell phone (Srivastava, 2014)), MILLEE overcomes the infrastructural challenges that hamper education delivery via classrooms and desktop computers.

In addition to MILLEE's scalability and cost reductions, MILLEE is also effective. Despite several government initiatives and nearly 100% enrollment for children aged 6-14 (Sahni, 2015), the quality of Indian education outside of MILLEE, especially for children from lower income families, remains poor. In January 2015, it was found that roughly 50% of fifth-graders in India were unable to read at the second grade level (IBNLive, 2015). At the same time, 75% of third-graders were unable to perform subtraction of two digit numbers (IBNLive, 2015). This is where MILLEE makes the greatest impact. Students tested before and after using MILLEE exhibited significant gains in their education levels.

A cheap and effective solution with a wide reach, MILLEE can bring a lasting change in elementary education in India. However, education is not the only solution to fixing the "vicious cycle". After all, it must be complemented with employment opportunities in order to create a sustainable improvement in the lives of the underprivileged.

An Easy Job

To understand employment related problems faced by the underprivileged in an emerging economy like India, one must first make a fundamental admission - the urban poor are not employed in regular 9-to-5 jobs. The economist W. Arthur Lewis first used the term 'informal sector' to describe this type of unregulated labor (Lewis, 1954). Various sociological studies have pointed to the information asymmetry that exists in the informal sector - employers are wary of hiring individuals from underprivileged communities; as a result, information about job opportunities is only shared with a few trusted associates. This selective sharing of information is termed the "neighborhood effect" (Wilson, 1997; Sampson, 2012).While this research primarily took place in American cities, the results are applicable to Indian cities as well.

The neighborhood effect leads to information about employment opportunities being isolated only among a chosen few. The problem this causes is that perfectly qualified candidates that are outside these social networks might never get to hear about potential employment opportunities. This is where Saral Rozgar comes in.

Started in 2011 by Indian conglomerate the Mahindra Group, Saral Rozgar (Hindi for 'Easy Employment') uses an interactive voice response system to register candidate résumés and thereafter matches them against existing

job opportunities (provided by Mahindra partner companies or other client organizations) (Mahindra Group, 2014). An SMS broadcast system notifies suitable candidates, and then an interview time is coordinated between the two parties (Rise Team, 2011). The simplicity of this system belies the massive effect it has on the informal sector. By breaking up information silos and distributing previously private knowledge, Saral Rozgar grants public access to a system that used to be closed.

The backing of the Mahindra Group has allowed Saral Rozgar to expand at an incredible rate - it had a candidate database of 2 million individuals and 100,000 job postings in March 2014 (Mahindra Group, 2014). By the end of 2016, the Mahindra Group expects the system to be active in over 100,000 locations, offering opportunities from households looking for a maid to factories looking for contract labor (Mahindra Group, 2014).

While mobile learning platforms like MILLEE and employment systems such as Saral Rozgar facilitate the economic revival and financial awakening for the underprivileged, social barriers still prevent a large portion of individuals from the slums, especially women, from realizing their true potential.

Equality

At the end of 2013, the Child in Need Institute (CINI), an NGO that focuses on healthcare and educational development of underprivileged children and women in India, conducted to a survey to assess the condition of education programs in West Bengal. A surprising revelation of that survey was the prevalence of child marriage among adolescent girls (Pareek, 2015). This prevalence, combined with a high rate of trafficking girls, indicates problems for the education of young girls. CINI saw the need for a tool that could stop this problem. The outcome was a collaboration between CINI and multi-national consulting firm Accenture to launch GPower - an app that could identify at-risk girls and enable preventive action (Pareek, 2015).

Bypassing the conflicts that would occur with parents and family members, GPower engages another key stakeholder - teachers. Teachers and community facilitators are trained and provided with tablets installed with GPower. They, then proceed to register details of girls in the region. State-of-the-art analytics identify girls who are vulnerable to child marriage or trafficking. CINI then decides how best to take action to tackle the situation. To date, GPower has helped protect 200 girls in 20 locations, and CINI hopes to expand the system to include over 100 villages over the next three years (India Today, 2015).

While GPower helps prevent child marriage, Breakthrough strives to protect those who are already married. Breakthrough is a human rights organization that is best known for its media campaigns to prevent gender-based violence

("Breakthrough," n.d.). In 2013, it launched a digital toolkit to prevent spousal violence. The system features media content, such as audio-visual material, that provides information about laws pertaining to domestic violence, strategies to prevent this violence, tools that facilitate experiential learning, and means of mobilizing community leaders to take action in order to prevent spousal violence (Breakthrough, n.d.). Breakthrough's digital toolkit was nominated for a Google Impact Challenge award (Brindaalakshmi, 2013), and, by 2018, it hopes to reach over 5 million women in need of assistance against abuse (Pai, 2014). Apps such as GPower and Breakthrough's digital toolkit aim to bridge the gender divide prevalent among the underprivileged – an often overlooked aspect of life in this environment.

These two apps - GPower and Breakthrough - improve the lives of millions of women in need and ensure that future generations do not have to face the struggles of those who have come before.

The Future

> *Our human compassion binds us the one to the other - not in pity or patronizingly, but as human beings who have learnt how to turn our common suffering into hope for the future.*
>
> Nelson Mandela

Turning suffering into hope for the future – perhaps no other quality defines human beings as much as this one. Life in the slums is hard, but through targeted interventions at critical stages of an individual's life, one can find their way to a better life. Apps, cell phones, and the Internet have given children better opportunities for survival, education, employment, and happy family lives.

While Raman's life appears to perpetuate the vicious cycle, technology is changing the prospects for his daughters. Seven-year-old Hetal and five-year-old Hely both regularly attend school. Raman wants them both to go to college and not marry early. Hetal wants to be a doctor and Hely aspires to be an actress (in her own words – "I want to be like Kareena Kapoor"). They will both have opportunities that their father did not, and thanks to innovative systems like MSHM, MILLEE, Saral Rozgar, GPower, and Breakthrough's digital toolkit, so will millions of young people in the future.

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Securing Development For Everyone: Increasing the Efficiency of ICT4D Projects in India, Indonesia, and Malaysia

Harsh Ghildiyal
Student, National Law University, Visakhapatnam, India

(Sonar, 2005)

India, Indonesia, and Malaysia are three emerging Asian countries where a multitude of information and communication technologies for development (ICT4D) projects have been implemented. Given their similar social and economic conditions, we can learn from projects in these countries by examining the reasons for their success and pitfalls. While doing so, we must examine how effective the projects are and what the reasons are for their effectiveness (or lack thereof). ICT4D projects are typically well thought-through and, once implemented, are usually effective. But the use of ICT for development is only fruitful if the targets of the initiatives are open to and comfortable with the technology. In India, Indonesia, and Malaysia, there are a few urban areas that one might term developed, while the majority of these countries is largely underdeveloped. While projects aimed at rural areas have convincing models that might prove highly beneficial for individuals, they often forget to consider two things. First, the technologies' target individuals are seldom open to change, which is why they first need to be convinced of the importance of technology and/or explained the potential benefits the projects can have on their living conditions. Second, there is an absence of basic knowledge required to use technology in rural areas. Both these issues boil down to one overarching issue - the lack of e-literacy. This is a common hindrance to effective implementation of ICT4D projects in rural areas in all three countries.

ICT4D projects in developed areas do not face this problem, but it is imperative that ICT4D projects aimed at underdeveloped areas take into account the lack of e-literacy before being enacted. An effective solution to this problem is e-literacy programs in collaboration with governments. E-literacy is a prerequisite for a successful ICT4D program, so organizations and governments will both benefit from the implementation of e-literacy programs. The overall efficiency of ICT4D programs will increase while individuals who learn to use technology will have greater access to online resources if they are comfortable with a computer. India, Indonesia, and Malaysia, all have administrative divisions (districts), and the easiest way to implement the e-literacy programs would be to start from these districts and spread until a whole state/higher administrative division is covered. This will ensure the involvement of local bodies in the implementation of the project, thereby facilitating implementation. By looking at projects in all three countries, one can identify important lessons in three stages of the process: (1) initiating, structuring, and promulgating the project (Akshaya, India), (2) Achieving greater e-literacy and promoting corporate social responsibility (Sekolah Guru, Indonesia), and (3) Implementing the project, especially when faced with obstacles (eBario, Malaysia). These projects are detailed below.

Kerala, India

Kerala is a state along the Southern coast of India. The Government of Kerala's "Akshaya Project," which began over a decade ago in one small district with the goal of creating one e-literate member per family in the Malappuram district, is now a state-wide e-literacy project (Mohanan, 2004). In addition to succeeding in its goal (Malappuram became India's first e-literate district), it has also provided over 4 million residents of the district with online solutions to numerous services such as E-pay (electronic payment of bills), E-Krishi (a platform for farmers to trade produce), and E-Vidya (a platform that provides advanced IT learning to encourage education and employment) (Shukla, Philip, Bose, Singh & Banerjee, 2007). The Akshaya project is a public-private partnership and organisations and individuals are invited to invest in Akshaya e-centres (computers, webcams, printers, scanners...etc). The government provides investors with e-literacy funds and gives the centres the required content for facilitating e-learning: CDs and software, Internet connectivity, communication, and other services (Gurumurthy, Singh & Kasinathan, 2005). The project consists of two phases: the first phase involves ensuring that participants learn about technology, computers, and the Internet. Investors are also provided with funds, termed e-literacy funds - otherwise known as reimbursement funds - that allow investors to recover a major share of their investment in the first phase of the project itself. In the second service delivery phase (after most individuals become familiar with computers and the Internet), the centre becomes an establishment that offers e-learning (certificate courses, etc.), e-commerce, e-governance, and communication services, which enables

investors to earn a steady income. This model of inviting individuals to set up such centres and the two-phase implementation of the project has proved to be very successful, and will help Kerala become India's first fully IT-literate state (Press Trust of India, 2015).

Bario, Malaysia

Bario is a rural, remote, and underdeveloped community in Borneo, Malaysia. For over a decade, the Centre of Excellence for Rural Informatics, and Institute of Social Informatics and Technological Innovations, University Malaysia Sarawak (UNIMAS) in partnership with the local community in Bario have been running eBario, an ICT4D project to bring technology to remote areas (Zen, Hamid, Songan, Yeo and Gnaniah, 2004). Uniquely, the targeted areas of the eBario project were isolated, making implementation of the program difficult. To teach locals how to use technology for their businesses, the program established computer laboratories and a community telecentre in Bario, thus empowering the local community by boosting Bario's economy and improving quality of life (Harris, Bala, Songan, Lien & Trang, 2000). The project started out with the following objectives: (1) teach Borneo's local community how to communicate with the world and promote interaction both within and outside the community; (2) provide increased access to information about health, agriculture, education, government, culture...etc; (3) promote the local culture on the Internet to encourage tourism; and (4) identify new opportunities to use information and communication technologies for development of rural communities (Harris, Bala, Songan, Lien & Trang, 2000). Though the project faced a number of issues because of Bario's remote location, involving the local community helped the project become a huge success. Now, tourism contributes significantly to the local economy with an increase in the number of restaurants, lodges, and hotels in Bario as local lodge and hotel owners have started using the telecentre to communicate with potential clients by means of email and also promote their tourist services online (Yeo, Songan & Hamid, 2007). The number of flights to Bario has doubled (Yap, 2010). Both the computer laboratories and the community telecentres set-up by the eBario project have played crucial roles. In 2010, the local clinic in Bario became the first rural clinic with Internet access in the state (Yap, 2010). The medical technician utilised the facilities provided by the telecentre to share medical information with doctors located in towns, which helped obtain more information about ailments, drugs, and their usage. The telecentre and computer laboratories have also helped the community preserve their cultural heritage online, creating a digital library featuring Kelabit writings and enabling the local Kelabit community stay in touch with Kelabits that have moved out of Bario (Yap, 2010). The Ministry of Science, Technology, and Innovation of Malaysia was so pleased with the success of the project that the UNIMAS team was granted RM4 million to replicate the same model in five other remote areas in Malaysia (Mohamad, 2007).

Sekolah Guru, Indonesia

Sekolah Guru Indonesia is a project by Indonesian NGO Dompet Dhuafa. Recently, Indonesian e-commerce heavy-hitter Berniaga.com (a listing website) partnered with Intel to fund Dumpet Dhuafa's Sekolah Guru Indonesia project as a part of their corporate social responsibility initiative (Cosseboom, 2014). Like the Akshaya project and the eBario project, the Sekolah Guru Indonesia project aims to increase digital literacy in Indonesia's remote and rural areas. The model adopted by the project trains young individuals to become teachers. The newly-minted teachers then visit poverty-stricken areas with recently constructed learning centres and transfer their knowledge to locals following a well-structured curriculum. After teaching them the basics about computers, the students follow a program spread over twenty eight hours that is comprised of 14 modules covering topics like word processing, Internet usage, Excel spreadsheets, e-mail and other basic software and Internet-based tools that increase the chances of employment and assist those running businesses (Cosseboom, 2014). The Sekolah Guru Indonesia project is a prime example of the benefits of corporate social responsibility to individuals in need through ICT4D, and especially e-literacy projects.

Lessons

Drawing parallels between the Akshaya Project in India, the Sekolah Guru Indonesia project in Indonesia, and the eBario project in Malaysia, we can establish that the following set of principles adopted within each of these projects (which targeted the individuals living in remote areas) can ensure success in future projects implemented in these - as well as other countries - with similar social and economic conditions.

First, the Akshaya project is a strong example of implementation. The two-phase implementation began with one small division (district) and then spread to a larger administrative division (the rest of the state) by means of a public-private partnership model. The Akshaya project also teaches the significance of government involvement (local or national) in the successful implementation of an e-literacy project (Narayan, 2013).

Second, the Sekolah Guru project sheds light on how to actually go about effectively making individuals e-literate. It has a well-structured curriculum divided into fourteen modules of two hours each and is taught by trained individuals who are interested in passing on knowledge to others (Cosseboom, 2014). The program also highlights how corporate social responsibility obligations cannot only encourage development, but also employment.

Third, the eBario project teaches us how technology can transform areas. During implementation, the project faced numerous obstacles, including Bario's remote location. But involving the local community transformed Bario into a tourist attraction where owners of hotels, lodges and tourist services use the community telecentre to communicate with clients and promote tourism in Bario (Yeo, Songan & Hamid, 2007).

The importance of e-literacy is very clear. For any ICT4D project to be effective, the targets must be open to using technology. With a major chunk of the population of Asian countries located in underdeveloped areas, organisations implementing ICT4D projects should primarily focus on implementing e-literacy projects in these areas with the above principles in mind. This will ensure two things: (1), basic computer literacy for individuals in the areas, which will increase prospects of employment, and (2) the target population of ICT4D projects will be familiar with technology and can actually benefit from ICT4D projects. This will ensure a positive impact of ICT4D projects on Asia and beyond.

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Fueling the Affordable Smartphone Revolution in India

Anubha Sinha
Centre for Internet and Society, Delhi

Smartphones have emerged as the exemplar of mankind's quest for shrinking technologies. They embody the realization of a simple premise – that computing devices would do more and cost less. This realization has been responsible for modern society's profound transformations in communication, governance, and knowledge distribution. The launch of the iPhone in 2007 is often credited with ushering in an era of smartphones. Ever since, the world's best tech R&D has focused on increasing the capabilities of these devices. And as a result, less than a decade later, we have sub-hundred dollar smartphones. The low-cost smartphone has found an enthusiastic and insatiable market in developing countries, especially Asia. India is no exception to the Asian narrative – Micromax, Spice, and Lava (low cost smartphone manufacturers) are household names in the Indian smartphone market, which accounted for 65% of internet traffic in 2014 (Meeker, 2015).

The Indian Prime Minister, carrying the twin aspirations of catalyzing the growth of indigenous manufacturing and bridging the digital divide, launched the "Digital India" and "Make in India" campaigns last year. During his US visit, Google, Apple, Microsoft, Facebook extended their support to the campaigns' vision (Guynn, 2011). The campaigns outline the government's elaborate initiatives to, inter alia, bridge the digital divide and build indigenous manufacturing capacity. While all these developments bode well for the indigenous smartphone, there remain some serious concerns affecting the growth of the industry – for instance, patent infringement litigations and the absence of clear legal and regulatory solutions.

From the state of the industry and its implications, it can be concluded that: first, growing access to smartphones has been influenced by their phenomenal affordability; second, smartphones are an excellent example of technology

for development (UNDP, 2001) and a facilitator of access to knowledge; and third, domestic smartphone production has occurred in an imprecise legal and regulatory environment.

This essay attempts to build an appreciation for the role that smartphones are playing in development, specifically, by fostering Access to Knowledge. Conversations around development by public-interest groups and emerging industries often espouse Access to Knowledge to address concerns in international development, communications, technology, education, and intellectual property policy. Whereas the principle can be regarded as in-the-works, two theories inform us about the role of mobile phones in fostering Access to Knowledge. Lea Sheaver's theory classifies mobile as an Access-to-Knowledge good. Lea enumerates the five key components of a robust Access to Knowledge framework, viz., education for information literacy, access to the global knowledge commons, access to knowledge goods, an enabling legal framework, and effective innovation systems (Sheaver, 2007). According to her, affordability of the good is the ultimate indicator of its efficacy as an access to knowledge good. Furthermore, inventions in microchip technology, electronics manufacturing, and software need to be supported by enabling legal and policy frameworks coupled with effective innovation systems.

Yochai Benkler's framework classifies mobile-devices as both information-embedded goods and information-embedded tools (Benkler, 2006). He says, "Information-embedded goods are those goods which are 'better, more plentiful or cheaper because of some technological advance embedded in them or associated with their production,' such as medicines, movies, and improved crop seed. Information-embedded tools, in turn, are those technologies necessary for research, innovation, and communication of knowledge" (Benkler, 2006). A smartphone qualifies as both because it can be used to obtain knowledge, and it depends on discoveries in microchip technology, electronics manufacturing, and software to function.

To date, there has been no formal, theoretical or evidentiary investigation on the emergence of smartphones as an Access-to-Knowledge good. In the following sections, I will attempt to explain the smartphone's dependence on an enabling legal framework and effective innovation systems (Lea's components). It must be borne in mind that globally, discussions affecting access to knowledge have aimed at creating balanced and inclusive systems related to intellectual property (Kapczynski & Krikorian, 2010). Therefore, the essay will focus on: first, the relationship between constituent mobile technologies and intellectual property as a function of production/deployment of smartphones in India; and second, the relationship between innovation and access.

Creating an Enabling Legal Framework to Foster Access to Knowledge

The adage "the only lesson you can learn from history is that it repeats itself" is worth bearing in our narrative. The emergence of the smartphones industry in Asia has commonalities with the flourishing Asian piracy trade – which remains an essential access solution for low-income societies constantly barraged by expensive western media goods. The prohibitive cost of acquiring brand-name devices (e.g. Apple, HTC, Samsung, Sony) drove local production to imitate and innovate cheaper substitutes (WIPO, 2010). This occurred within the lenient and flexible intellectual property regimes prevalent in Asian countries, which continue to be constantly criticized for their failure to enact stricter intellectual property law. The hubs of smartphone production – China, Taiwan, and India – have flexible intellectual property protection law and lax enforcement measures (Centre for Internet and Society, 2012).

Concerns of intellectual property center around patent and copyright legislation, which have yet to be fully developed to address intellectual property in high-tech industries (since trademark issues remain unchanged, they will not be discussed in the essay.) As a result, constituent smartphone technologies have been shaped and governed by a blend of formal and informal rules and legal and illegal practices. This is why they are often referred to as "gray market" technologies. A smartphone in terms of constituent intellectual property can be broadly divided into hardware and software technologies. This piece will first deal with hardware, followed by software technologies.

Hardware Technologies and Their Relationship with IP Law

Presently, most Indian manufacturers import hardware from China and Taiwan, and assemble the phones in India. A few key Indian domestic players are Maxx Mobile, Intex, Spice, and Lava, whose dominance have not gone unnoticed by foreign manufacturers. A couple of these domestic manufacturers are now embroiled in patent litigation threats or infringement suits. And as litigation piles up in Indian courts, the judiciary is slowly waking up to mobile patent litigation, but is yet to rule comprehensively. To make matters worse, the jurisdiction of the Indian antitrust regulator remains unclear, and to a certain extent overlaps with the judiciary, adding to the ambiguity. For instance, when an appellate court ruled in favor of the Swedish tech-giant Ericsson, it ordered Micromax to pay a flat 1.25 – 2% of its devices' selling price to Ericsson (Lakshane, 2015). The ruling was devoid of a more rational and reasoned approach developed by courts of other jurisdictions in similar matters, which prescribed that the infringers pay damages based on the price of the patented components only, and not the retail price of the phones. This decision risks causing a significant increase in the price of phones and potentially threatens local innovation.

The Indian government's Make in India and Digital India campaigns aim to fulfill the vision of a digitally empowered India, and the 2015 Indian Union budget also targets boosting the electronics manufacturing industry. Despite these broad initiatives, there needs to be a more focused policy in place to ensure domestic companies do not get weighed down by patent related concerns. The root cause of litigation is the vesting of a majority of critical mobile patents (Standard Essential Patents, or SEPs) by a handful tech-giants. For instance, Qualcomm owns 5700 patents around CDMA technology (qualcomm.com). In another instance, the DVD format constitutes 311 SEPs for DVD players and 272 SEPs for DVD recorders (CIS, 2012). Such a dense concentration of patents around SEPs creates a patent thicket and thereby compels Smartphone manufacturers to acquire multiple licenses, and to pay high transaction costs and huge royalties to the owner. To reduce conflict and protect domestic players from being arm-twisted into paying high royalties, the government can potentially identify critical technologies and initiate the formation of a patent pool of such technologies. The concept of a patent pool mandates that the patent holders issue licenses on fair, reasonable, and non-discriminatory basis to interested parties. However, a nuanced and cautious approach to setting up such pools is necessary (Shapiro, 2001).

There are interesting lessons in China's steps to encourage local innovation of Smartphone hardware as well, specifically in the form of standardized technologies. The Chinese government has actively supported the development of indigenous standards to shield domestic manufacturers from royalty exposure. In fact, the China Blue High-definition Disc (CBHD) standard was built as an alternative to the Blu-ray disc and was duly adopted by the Chinese government, which reportedly caused the royalty rates for the Blu-ray format to dip. Much later, Warner Bros, Paramount, and other motion picture producers adopted the CBHD standard as well for distribution in China.

Software Technologies and Their Relationship with IP Law

Unlike hardware technology, where India is struggling to build manufacturing capacity, the success of the Indian software industry has already been realized. The software-as-a-service (SaAS) industry is led by Infosys, TCS, and Wipro in software exports. The prevailing trend in the industry since the 1980s was to assign ownership of their products to offshore clients. However, in the past decade, there has been a conscious shift by the Indian software development workforce to build products for Smartphone platforms. This is in response to the shift in local populations to accessing content and services online. Reports indicate that India has the second largest population of mobile applications developers (approx. 3 million) in the world, second only to the US (Livemint, 2015). The Indian government has recognized the potential of mobile application-based ventures and created funds to encourage app development in India (IAMAI, 2015).

Intellectual property protection around software is fairly ambiguous. A piece of code is potentially capable of gaining both patent and copyright protection. In the area of mobile application development, preliminary research findings indicate that coding occurs with an agnostic attitude towards intellectual property laws (Cassar, 2014). One of the reasons is ambiguity on a multitude of issues around the protection of software because Indian legislation on patent and copyright is frustratingly insufficient. There is a growing discontentment about long-term patent protection over software code, which could be detrimental to innovation – particularly, to the start-up segment of software industry. In more technologically advanced economies, software patenting has emerged as a scourge – last year, the US Supreme Court in Alice Corporation Pty Ltd v. CLS Bank International Et Al narrowed the eligibility of software inventions to gain patent protection. The activist discourse has shifted in favor of eliminating software patenting because of the incremental and obsolescent nature of a software invention, inter alia (Lapowsky, 2015). However, in a recent disappointing move, the Indian patent office widened the scope of patent-eligible subject matter for software-related inventions – a move that was decried by free software activists and industry alike. This widening of scope can only benefit tech-giants in building bigger patent portfolios, which is unnecessary and unhealthy for innovation by small and mid-tier entities (Sinha, 2015).

Effective Innovation Systems

Innovation ensures fresh creation of knowledge. A society cannot premise itself on the mere importation of knowledge; it must also strive to use the knowledge to meet its own local needs and environment. Innovation depends on a variety of factors – there is no singular path or factor to build an innovative and enterprising society. The patent system is often incorrectly credited with "promoting" innovation. The discourse around innovation was extremely patent-centric until studies disproved the assumptive correlation between high patenting activity and innovation. Continuing in the same vein, Lea states, "From the A2K perspective, however, relying on patents – which represent the right to exclude others from access to the innovation – is particularly problematic. Patents likely represent the segment of innovation of least value for expanding access to knowledge: improvements in the knowledge stock whose application is limited by exclusive property rights" (Shaver, 2007).

In this framework, it is also important to shed light on the growing movement of openness. Openness as a movement has been captured by various fields - Big data, software, education, media, etc. Free and Open Source Software has emerged as a key agent in information technology policy-making in India, with the Indian government adopting an open standards policy and an open software policy for its own purposes.

In the context of smartphone technologies, preliminary findings also support the shift towards openness (Huang, 2014). Industry participants have observed that openness will lead to greater benefits in private production of hardware technologies. Similarly, mobile applications developers have also voiced support of open source software (Cassar, 2014).

Conclusion

The discussion above identified a limited set of legal and regulatory concerns affecting the state of production/deployment of smartphones in India. These issues and findings are backed by preliminary research, and purport to sustain the emergence of the smartphone as an enabler of access to knowledge. The proposed solutions direct industry and the government alike to take immediate steps to fix problems impeding pervasive access to this knowledge good.

The experience of the smartphone industry with an imprecise legal and regulatory environment, akin to piracy, has thus far been a success story of affordability, quality substitution, and innovation. However, this narrative is now threatened by messy litigation, jurisdictional uncertainties between the anti-trust regulator and judicial system, SEP licensing issues, rise of software patents, inter alia. Despite these issues, the industry continues to grow. The future of access to knowledge is therefore bright, provided that stakeholders make efforts to meet the needs of this emerging industry and the public, including development and consumer interests.

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CHAPTER 2

Being Online

Public Face vs. Private Face: Can It Hold in the Internet Age?

K.S. Park
Korea University, Open Net Korea

Japanese and, to a significantly lesser degree, Korean society have been characterized by sharp distinctions between one's public face and private face, more widely known as honne and tatemae (Wagatsuma & Rosett, 1986). By definition, honne is a true but rarely expressed sentiment to another person, and tatemae is comprised of polite expressions to another person heavily moderated in accordance with the social customs. When people collectively assume public faces towards one another, they tend to honor principles, formality, and decorum. When they collectively assume private faces towards one another, they tend to be pragmatic, informal, and instinctive, while demanding others be the same. Separating the two faces, though potentially engendering hypocrisy, is a highly valued trait in Korea and Japan (Kim, & Markus, 1999). Differentiation between public and private faces has been considered a key component of the glue that holds together society in Korea and Japan and an essential ingredient in creating the "good life" those countries.

Unfortunately, this public-private face distinction is closely related to two phenomena. First, the honne-tatamae dichotomy has formed a similar reputation dichotomy. This is comprised of a public reputation, which is formed by what others say about the individual, and a private reputation, which is comprised of opinions about an individual that are only shared through private channels. This distinction is said to explain why people serve in high public offices with impunity, at least in Korea, whose reputation has been thoroughly tarnished in their actions, lineage, and wealth, and their implication in various corruption scandals including collaborations with the Japanese colonial administration or the military dictatorship (Scofield, 2004).

Second, many expressions and statements used to question or attack an individual's public reputation are banned from public discourse. This helps to explain the persistence of 'truth' defamation laws in Korea and Japan, which attempt to control the release of certain truths into the public discourse (Article 307(1) of Korea's Criminal Code; Article 230 (1) of Japan's Penal Code). Similarly, both Korea and Japan, though to varying degrees, implement insult laws, which attempt to regulate epithets against any person, public or private, in a public setting (Article 311 of Korea's Criminal Code; Article 231 of Japan's Penal Code).

It is almost as if the public-private face distinction cuts across classical legal concepts to create its own category of injury: damaging the integrity of an individual's public face (making one "lose face" as Washburn (2013) puts it), or crossing the public-private face boundary. This presents a serious problem for freedom of speech and public discourse, as any material that is uncomfortable for the subject can be easily censored. Therefore, real stories are not fully presented and shared for public scrutiny and civic engagement (Park, 2013). Both South Korea's truth defamation law and insult law have been condemned by the UN's Human Rights Committee, which has that declared such laws should be abolished (United Nations, 2011).

However, the Internet may precipitate new methods of changing free speech norms by abolishing traditional distinctions between public and private spaces. Many people now log on to various cyber-spaces such as social networking accounts, the comment sections of the news portals, and personal blogs to post private messages. Though users intend for these messages to be read by only a small number of people, the spaces where they are posted are potentially accessible to many individuals. Depending on the explosiveness of the content, some of this content goes viral regardless of the authors' intentions and becomes a permanent part of the public discourse. Also, the Internet's diverse input formats have not only replaced formal discussions but have also replaced more informal discussion forums, such as the scribbles on the doors of toilet stalls or park benches.

One popular 2013 Tweet in Korea read: "Q: History is written by victors. What do losers write? A: Tweets." The popular sentiment reflected in this Tweet is two-fold. First, censorship of public discourse regulations (usually administered and policed by the "winners" of the national politics) has stamped out genuine public discourse in the mainstream media. Second, the Internet has opened up an alternative venue for which censored information and opinions can be freely expressed to a potentially large number of people.

So far, regulators in Korea have met the rising threat of the Internet-led public discourse head-on. The Korean government responded to this challenge by enacting a 'real name' identity verification system, administrative censorship, and a "mandatory" notice and takedown regime (Park, 2014). It seems that

these unprecedented laws came into being on the basis of two beliefs: (1) that much of the content on the Internet is 'illegal' for public discourse as defined by the insult laws and 'truth' defamation laws, the consequences of the public-private distinction discussed above, and (2) that the discourse on the Internet constitutes public discourse and therefore can be regulated (Choe, 2012). These unprecedented laws not present in other types of media and which are intentionally discriminatory against the Internet, show the regulators' determination to hold onto the public-private face distinction, treat the Internet as public space, and, in effect, regulate the speech on the Internet strictly. As a result of this situation, a great number of "private" comments on the Internet face liability, though not without controversy.

Take the case of Choi Hee-seung (Supreme Court, March 28, 2013 Judgment, 2012do11914). The court records show that, in January 2011, Choi posted on an Internet bulletin board for his apartment complex about how a senior resident's association officer and his wife barged into a private meeting of residents discussing the apartment's garbage disposal policies. Upon entering the meeting, the officer and his wife verbally and physically assaulted some of the meeting participants, including Choi's wife. For the posting, Choi was indicted for 'truth' defamation under Article 20 (1) of the Information Communication Network Act and was found guilty at all three judicial levels. The court records show that these guilty judgments came even after the officer's wife had been indicted and found guilty of assaulting one of the people attending the meeting. Even though the first-level court found "the focus of the posting to be disclosing the facts of barging in, obscene epithets used, and violence, condemning the same, and earning sympathy for the injuries suffered," (Information Communication Network Act, Article 20) Choi was still convicted.

Choi was not found to have spread any false information, or even accused of spreading such information. There was no private information involved in the case in any classical sense. The legal interest supposedly involved can be described as "losing face"; one can say that the senior residents' association officer lost face when the story was uploaded on the apartment residents' Internet bulletin board, a public space.

Under current South Korean law, the posting above violates the privacy of the senior citizen association officer. The classical concept of privacy is an ability to maintain in confidence what one has not voluntarily disclosed, a right to be "left alone." The officer certainly did not want to let others know that he administered such verbal and physical violence against fellow residents. However, all concepts of privacy are contextual. All facts about an individual are subject to unwanted disclosure if their actions trigger or invite people's attention. When an individual assaults another, he or she loses privacy because his or her action invites scrutiny and attention from people who were not at the scene, such as the police. If anyone who was at the scene called the police,

the invasion of privacy lawsuit against the caller would have likely been quickly dismissed. Any other result would be unthinkable. If an individual went around passing out a name card stating he or she was a college professor, his or her action would invite people - including those who did not receive cards directly but who heard about the person passing out cards from someone who did receive a card - to know and publicly state that you are a college professor.

Therefore, the only way to explain the Choi case is through the private-public face boundary: Choi's posting commingled the officer's public reputation with his private one by posting on the Internet in a way that broke the public face-private face boundary (Yes, a simpler explanation is that, legally, Korea has truth defamation laws, but this essay seeks to dive deeper into why Korea tries to maintain a truth defamation law despite the UN Human Rights Committee (2011) and the UN Human Rights Special Rapporteur on Freedom of Expression's (2010) recommendations).

Having described the facts and law involved, there is a catch. When Choi made the posting, who was he talking to? He was not speaking to the whole world. He was simply speaking to the fellow residents of the apartment complex he lives in. He just wanted to share his anger with the fellow residents and did not mean to share with others. Can we really say that he crossed the private-public boundary, simply because he uploaded his feelings to the Internet? Yes, others could view the postings on this particular apartment residents' Internet community, but the poster cannot be responsible for such rare curiosity-fed adventures. Perception of the Internet as a space where public reputation is formed does not mix well with the enormously distributed and privately chatty reality of the present day Internet. The Internet is often conceptualized as one stadium-like space, but a better conception is large number small room-like spaces where people can freely enter and leave, but only with effort. Therefore, speaking in one of the small rooms should not be considered speaking 'publicly' or be considered capable of undermining an individual's public reputation. Yet speaking in the small rooms will always risk hurting one's public reputation, since there will be curious people who venture into these rooms, whom the original speaker cannot be responsible for. Soon enough, it will be very difficult to separate public reputation and the private reputation. Cases like Choi will become flashpoints that will cause Korean society to reconsider maintaining the public face/private face distinction.

Hopefully, the discussion here may inform a broader question that has become important within the discourse on the right to be forgotten (the right of a person to restrict the Internet-search-mediated availability of unpleasant information about him/herself). The right to be forgotten debate parallels the discussion of Choi. One of the most frequently cited slogans of the RTBF proponents is that "you do not have the right to know everything about another person." The slogan, for instance, reflected in Gerd Leonhard @gleonhard's mention to Jeff Jarvis' tweet of May 13, 2014 @jeffjarvis, captures the sentiment that, even if

certain data is legally knowable (not subject to any confidentiality obligations, defamation regulation, or any other speech regulation), it does not have to be factually knowable. RTBF proponents believe that what has been legally disclosed in certain public cyber-spaces does not lose its privacy value and that making it available in wider circles, for instance through search engines, violates the individual's right to privacy. This argument is premised on the aggregation-of-small-rooms conception of the Internet, and the conception of a search engine as a device that facilitates the entering and leaving of those rooms.

However, Choi reminds us that this argument works both ways. The fact that data about an individual can be found by searching the person's name does not mean that the whole world will access that data. That something becomes knowable does not mean that it becomes actually known. When we say that the Internet can be analogized to an aggregate of small room-like spaces and therefore that speaking in one of the rooms is distinguished from speaking in all of those rooms at the same, we try to distinguish the actual from the potential. Just because something is available as a search result does not mean that every searcher will click on that on the search results page, and that the information is truly public.

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Creating the Self in the Digital Age: Young People and Mobile Social Media

Toshie Takahashi
Waseda University

While there is a tendency to celebrate children and young people as creative subjects, there is also a tendency to deem them vulnerable targets of media industries. These contradictory characterizations have become even more pronounced with the advent of new digital technologies. "The discourse of the digital native has developed into a complex combination of hope and fear" (Takahashi, 2011, p.70).

Working against the background of such a dichotomous framing, my research question is simple: "Why do children and young people engage with media?" To understand the role of media in the everyday life of young people, I have developed the concept of 'audience engagement' as a heuristic device (Takahashi, 2009). It encompasses the multiplicity of audience activities envisaged within active audience theories in both Western and Japanese media audience studies. The material for the essay is based on my on-going and long-term ethnographic research conducted on Japanese engagement with media and ICT in the Tokyo Metropolitan Area, beginning in 2000. In order to test and re-contextualize the concepts and phenomena that I observed among Japanese youth - as well as to consider new developments - I conducted in-depth interviews and observed various participants between 2010 and 2011 in the UK and US. Drawing on fieldwork done on young people and digital media in the US, UK, and Japan, I have investigated multi-dimensional audience engagement with mobile social media in terms of both the opportunities (connectivity, access, critical, tactics, collaboration, share and participation) and the risks (cyber bullying and defamation, infringement of privacy, hacking and stalking, over-dependency and addiction) of such engagement.

In this essay, I will focus on one dimension of audience engagement - self-creation. "Self-actualization demands the careful negotiation between the

opportunities (for identity, intimacy, sociality) and the risks (regarding privacy, misunderstanding, hostility) afforded by Internet-mediated communication" (Livingstone, 2009, p.118). I will demonstrate how the processes of self-creation takes place through a negotiation between the opportunities and the risks given by their engagement with mobile social media.

Self-Creation

What do I mean by the concept of self-creation? We are familiar with Thompson's (1995), Giddens' (1991), and Hall's (1992, 1996) concepts of self-formation, self-identity, and identification respectively. The idea of self-creation discussed in this piece is derived from their insights, but it also hopes to reflect the creative, original, and individual nature of the process as I have witnessed among the young people that I have interviewed. Giddens' position is that "globalizing influences intrude deeply into the reflexive project of the self, and conversely...processes of self-realization influence global strategies" (Giddens, 1991, p.214). I accept Giddens' portrayal of self-identity as reflexive and responsive to both global and local changes, but in my notion of self-creation I would like to focus on how people create and recreate themselves, even momentarily, through both mediated and non-mediated interaction (Takahashi, 2009). In particular, I consider how this process of self-creation is accomplished through impression management, self-expression, and self-actualization.

Impression Management

Young people create/recreate their self-identity by means of 'impression management' (Goffman, 1959). Why do young people use social media for impression management even though this use involves various risks? Kate and Tony, American high school students, told me how their friends judged them through Facebook.

> **Kate**: You can see like beer bottles all over the floor...
> **Toshie Takahasi (TT)**: Why do you upload these photos?
> **Kate**; Because people judge you...
> **Tony**: Because are like, the ones who don't drink, you're such a loser...
> **Kate**: You're not good company, you know.
> **Tony**: And it's like, you don't know how to fun, you know. Drugs and beer or... people react like, okay that's cool right...
>
> Kate and Tony (pseudonyms), focus group interview, November 3, 2010

Young people tend to post "cool" photos and videos online for impression management, even though it is risky to post such content - which might show the subject engaging in irresponsible or illegal behavior - online. The reason they do this is because they want to be recognized by their friends and gain popularity. But why do young people want to be recognized in such a way by their friends so much? I will examine this desire for recognition using Japanese teenagers as an example next.

"Reajuu (Live Life to the Fullest)" Impression Management

Whenever I ask Japanese young people about the purpose of using social media, they always answer, 'I use Facebook to show "reajuu [I live life to the fullest]," in addition to connecting with friends and family, and seeking information. On Facebook, Japanese young people show reajuu by, for example, uploading large number of photos (sometimes decorating them with stars or hearts using photo editing apps on their mobile phones), and by tagging each other in order to portray themselves as active and popular.

However, these attempts to show reajuu online do not come without risk. Yuha, a 19 year-old female college student, told me that she uploads a lot of photos to show herself "reajuu" and that the number of comments or "likes" she receives shows her popularity among her friends. She told me that social media is "eyes from others" and that it is "shameful" if there are a fewer number of comments (Yuha (pseudonym), personal interview, October 20, 2009).

Yoshitaka Doi (2013) suggests a potential source of this desire for recognition on social media in the age of globalization.

> "Today, without a feel of the social environment (kuuki) or how others may think, it is difficult to be sure if one is going the right direction....So, one is always trying to connect with others on social media such as Facebook and Mixi, and one is always bothered about the number of followers one has on Twitter. "Does anyone recognize me? And do others see me as a valuable person, one who has friends around?" Thus he or she cannot help but care about recognition from others" (Yoshitaka, 2013, p.123).

In the era of globalization, young people have more and more choices. At the same time, as Doi suggests, there is uncertainty. Young people may find it difficult to be sure about the choices they make. This is where the need for recognition, especially from their peers, becomes important. Mobile social media serves as a contemporary platform for individuals trying to win this recognition. Hence, the taking of risks, and of portraying themselves as cool or reajuu, are but strategies of impression management to this end. "Impression

management online and off is not just an individual act; it's a social process" (boyd, 2014, p.49).

Self-Expression

While the number of comments or "likes" young people receive shows recognition from others, some people view the comments or "likes" that they make on other's social media content as a form of self-expression and proof of self-existence. Anthony, a British college student, told me of his desire for proof of self-existence:

> "I do want to stand out in a way... not by what I post but by who I post it to and how often, it's not necessarily by what I post that I want to stand out ... Comments a day? Maybe five or ten comments a day. Well not even comments, you can also just press like, so that...I guess I use that as a way of reminding people that I exist... making sure that people don't forget about me, like, oh don't forget me [laughs]. Also as a kind of PR, like personal PR machine, like this is the image I want to give people, how can I remind people that I exist" (Anthony (pseudonym), personal interview, June 15, 2010).

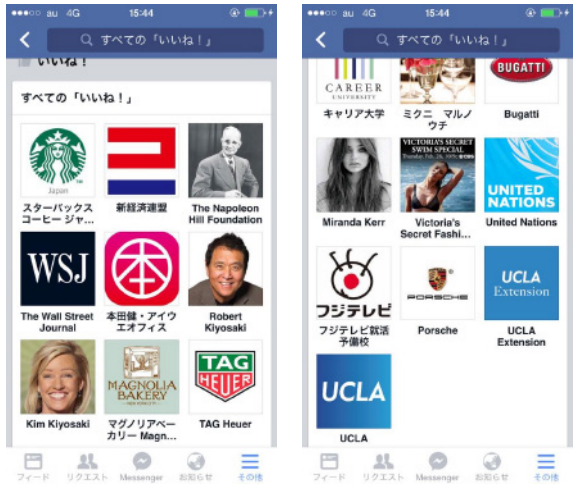
Young people, as social actors in the digital age, often express themselves by uploading photos and videos as well as giving their comments or "likes" to others on social media. In the process, their existence is validated through social media when friends and others accept it. Takaaki Nakai describes this twin desire for recognition and self-existence, stating, "'recognition' is that his existence is recognized and accepted by others in the first instance, and then by himself. A desire for recognition always comes with an unconscious desire for 'proof of one's existence'. We want to 'prove' that we exist. We want proof of how great or wonderful we are to others and ourselves" (Nakai, 2007, p.4).

Thus, young people seek recognition from both others and themselves in order to prove their own existence within the complex processes of globalization and rapid social change.

Self-Actualization in the Global World

Finally, how do young people create and recreate themselves through such engagement with impression management and self-expression on social media? Young people follow and connect with people who can be their role models or give them inspiration on social media. They create a bricolage of those people or celebrities on Twitter or Facebook. Reina, a Japanese college student that I

interviewed, likes to look at her own profile page occasionally where she creates a bricolage of all images of celebrities, companies, and high brands. It reminds her of what kind of person she wants to be in the future. She also told me that the reason why she follows Western celebrities and critics is because popular Japanese celebrities and critics also follow the Western ones, not vice versa. She thinks there is still a hierarchy between Japan and the West. Therefore, she also follows Western celebrities and people who can be her role model, and receives ideas and information directly from them for her self-actualization (Reina (pseudonym), personal interview, April 10, 2015).



Photos 1 and 2. A Bricolage of Images on Renia's Facebook Profile

While Reina connects with celebrities by following them on Twitter and Facebook, Hideaki, a Japanese student that I interviewed, connects with young people all over the world by organizing a Facebook group for the international conference for students. More than 1000 students from 28 countries applied to the international conference through his Facebook group (Hideaki (pseudonym), personal interview, July 25, 2013). During the international conference, these students have stayed together at the Olympic center in Japan in order to learn about and understand their cultural differences. Hideaki said,

> "It is good to stay together during the international conference because we can get to know each other much more. My final goal is to create friendship across national boundaries. Individually, we can make friends with one other, whether Chinese, Japanese or Korean. But, on the national level, it is often difficult. I wish that dialogue between nations could be like dialogue between friends." (Hideaki (pseudonym), personal interview, July 25, 2013)

According to Hideaki, even though people come to the conference from nations in conflict such as Thailand and Cambodia, since both countries have good relations to Japan and could make friends with each other by spending days and nights together in a larger group of students that included Japanese individuals. Facebook makes it possible for these students to constantly connect and reinforce intimacy beyond national boundaries before, during, and after the conference. Through organizing both the Facebook group and the international conference, Hideaki thus creates and recreates himself in the global world.

> **Hideaki**: The reason I organize the international conference is to encourage participants to discover their potentials. After the conference, some Japanese people embarked on initiatives to help other Asian countries. For example, one of the participants set up a company closely collaborating with people in Cambodia. Another person living in Cambodia gave up his car and started bicycling because he wanted to do something to help "stamp out poverty" in Cambodia. To the people he met on the street, he would give out a flyer to explain his cause. Today, more than 1000 people have joined him.
> **TT**: Are they running together?
> **Hideaki**: They do. I heard recently that the Cambodian government has come to know this movement and that six elementary schools have been built in Cambodia. (Hideaki (pseudonym), personal interview, July 25, 2013)

Like Hideaki, young people create new communication spaces and constantly connect with each other trans-nationally on social media, and occasionally interact face-to-face. As such, these young people undergo the process of self-actualization in the global world through constant connectivity and reinforcement of intimacy via the Internet and digital technology.

Conclusion

In the complex process of globalization and rapid social change, young people use social media for impression management and self-expression that stems from their desire for recognition and proof of self-existence. They create and recreate themselves, through both mediated and non-mediated interactions online, while negotiating the relationship between the opportunities and the risks implicit in their engagement with social media.

With social media, young people seek and receive information, images, and cultural values which may be different from those prevalent in their country or region. The Internet and digital media give them alternative social and cultural

values that make it possible for them to create a new identity in the global world. Through daily engagement with foreign people and celebrities via social media, young people feel connectivity and social intimacy with them, whereas in the past young people felt distance via mass media. Some young people like Reina follow Western celebrities and high fashion brands, and bricolage those images for thier self-actualization. Furthermore, other people like Hideaki connect and collaborate with others trans-nationally. Globalization highlights the inequality between "the West and the Rest" (Hall, 1992). In the digital age, mobile social media provides new choices, possibilities, and ideas for self-actualization through constant connectivity and reinforcement of social intimacy with distant others. Thus, digital media and ICT play one of the most important roles in the of dynamic process of self-creation among young people in the global world.

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Why K-Pop Will Continue to Dominate Social Media: Jenkin's Convergence Culture in Action

Raizel Liebler and Keidra Chaney
The Learned Fangirl

YouTube's first music awards surprised many mainstream music fans in 2013, when the Korean pop ("K-pop") group Girls' Generation beat out many U.S. pop music stars for Video of the Year (Yang, 2013). In 2015, the fans of K-pop group T-ara won Billboard's Fan Army Face-Off, beating out the fans of well-established Western artists like One Direction and Beyoncé ("Fan Army," 2015). The matchup against One Direction led to the globally trending hashtag on Twitter, #WeLove1DandKpop ("Fan Army," 2015). While some U.S. critics and Western music fans may see these events as flukes, there is a complex history at play here. This years-long history involves the interaction of mobilized fans, the use of worldwide accessible platforms and social media, and global copyright law, upending the assumed social order of online fan communities.

Media scholar Henry Jenkins (2006) has described "convergence culture" as both a bottom-up and top-down process by which media consumers negotiate their right to participate and interact with new media tools, even while media owners negotiate with creating new revenue opportunities and normalizing consumer behaviors (Jenkins, 2006, p. 243). K-Pop fan community activity is an example of this, serving as both a cultural practice and a global market catalyst.

Specific online platforms help to facilitate this fandom activity. For example, conversations on YouTube are fan-driven and lack the gate-keeping and hierarchy of more traditional outlets. This freedom to discover, communicate, and respond makes YouTube an ideal forum for niche fan communities to connect and mobilize. Observe a YouTube comment thread for any K-Pop group, and you'll likely see a global community of fans stumping for their beloved group in a variety of award categories. This happens with other fan

communities, certainly, but because so much of this global fan conversation occurs on YouTube, it follows that mobilizing fans would be easier for K-pop fans in this space. YouTube picked up on this interaction early, launching an official, dedicated K-Pop channel in 2011 (Sang-Hun & Russell, 2012).

This short essay will explore how the South Korean music industry has responded formally and informally to online fan activity, and how a light copyright touch led to the worldwide success of K-pop. We will also explore how online activity disputes regarding K-pop have been almost entirely outside of a legal context - unlike the fans (or listeners) versus labels (or artists) debate that is the continued focus of U.S. music industry.

Theory and Power

Researchers Gibson, Rommele, and Ward (2004) wrote about how the Internet facilitates and reinforces participatory behavior, saying that online spaces are "free from centralized control with intrinsically empowering characteristics - costless, space-less, timeless" (Rommele & Ward, 2004, p. 1). This kind of decentralized and ungoverned media environment supports people's ability to make blogs, upload videos, and conduct other fan-based activities.

Girls' Generation's 2013 YouTube victory was fueled by international fan activity online, specifically on YouTube. Though this fandom existed long before their win, since the formation of Girls' Generation in 2007, YouTube and online culture in general, has played a catalyzing role in K-Pop's growth in the U.S. and other non-Korean countries. This growth has been based in part on the mobilization of fans, and label marketing and interaction. Online participation is the driving force behind K-Pop music discovery and fandom in the U.S. and Europe, particularly for so-called "idol groups" like Girls Generation. Fans work collectively and, as a result, reinforce the popularity of K-pop globally online.

This push is not just from fans, it is also government supported; Korea has a vested interest in making K-Pop accessible to the West. Journalist Euny Hong stated that "Korea look[s] to pop culture as a way to create new sources of revenue, unite people, and generate an exportable product that [will] help spread Korean culture globally" (Hong, 2014, p. 98). The Korean Ministry of Culture's Cultural Content Office promotes music alongside video games, movies, and television, but is also the government branch responsible for copyright enforcement, creating and enforcing copyright policies (Hong, 2014, pp. 98-105). The Cultural Content Office is managing a public-private $1 billion USD investment fund for the cultural content industry, with a five year plan to increase Korean culture exports to more than $10 billion (Hong, 2014, p. 100-102).

YouTube, Twitter, and Music Fan Mobilization

During this time, YouTube, as both a platform and a technology company, has played a specific role in connecting and catalyzing the international K-pop music community, as well as many others. As stated in the New York Times in 2012, "YouTube, Facebook and Twitter make it easier for K-pop bands to reach a wider audience in the West, and those fans are turning to the same social networking tools to proclaim their devotion" (Sang-Hun & Russell, 2012). However, it's important to look back to observe how YouTube's own purpose has evolved. When YouTube launched in 2005, the platform was widely viewed as a dumping ground for home videos or, among the alarmist set, as a breeding ground for porn and video piracy (Sacks, 2011). Since then, YouTube has emerged as one of Google's star acquisitions, successfully experimenting with revenue models and partnerships to evolve as an entertainment and media network (Sacks, 2011).

The U.S. recording industry's litigious attitude towards file-sharing in the early 2000s deterred many music fans from online sharing, and for a long time there was a dearth of online platforms for easy sharing of large music files (Arewa, 2010, p. 462-64). As a result, YouTube emerged as a sort of back-door music sharing platform. Fans could upload music of all genres and pair that with slideshows of images. YouTube became a point of reference for curious music fans doing informal background research on a pop culture reference or catching up on a band's discography (Kim, 2014, p. 75).

By the fall of 2008, YouTube's monthly global audience grew dramatically from 344 million unique users to 500 million, partially because of its global community growth endeavors (Sacks, 2011). It is notable to mention that 2008 is also the year YouTube was introduced in South Korea, as well as, according to some K-Pop fans, the "Golden Age" of K-Pop fandom (Seoulbeats, 2012).

But even before YouTube's evolution into a media company, the growing online K-pop community in the mid 2000s used the service as an easy, consistent way to upload and share videos. Global music licensing restrictions meant that a limited catalog was available in most non-Korean countries for newer fans to view, and restrictions in Korean character displays online meant that fans who could not read Korean would have a hard time identifying artists and songs on file-sharing networks. Both restrictions made a deeper dive into K-Pop difficult for fans outside of Korea until very recently.

Korean "Labels" and Licensing

Another major reason for the difference in how K-Pop fans interact with labels and artists has to do with how artist contracts are negotiated differently

for Korean and Western labels. For Korean pop artists, the term "label" is a misnomer - or at least not a complete description. Relatively new for Western artists, but the absolute standard for Korean artists, Korean management companies/labels serve as a complete 360-degree management of everything that an artist brings to the public. There is only one company to contact for licensing everything from commercial products to television/movie productions to music, including recording, videos, and touring. The ways that artists are promoted, including appearing on multiple live music shows and official releases are highly structured and planned; as stated by Kim in K-Pop: Roots and Blossoming of Korean Popular Music, "an idol group is meticulously managed through a production system that maximizes commercial profits" (Kim, 2012, p. 83).

So if SM Entertainment (for example) wants to promote Girls' Generation worldwide, they can truly speak with one voice. If they want fan-created remixes and dance videos to be allowed on YouTube, they can do so - without having to check with other license holders. Therefore, the lack of strict copyright enforcement of K-pop on YouTube and other social media platforms (unlike the approach of Western copyright owners) by copyright owners is deliberate - and serves to increase fan participation.

While this is not the place to talk about whether or not this "vertically integrated" approach is a good deal for performers, it is a great approach from the perspective of global fans who are provided with a bounty of video content to consume, share, and talk about. Speaking with one voice, a Korean label can make videos or content officially available, unlike well-publicized examples of Western content owners' confusion over ownership and licensing leading to actual limits on or threats to pull back content sharing, including Nine Inch Nails, and many other artists (Reznor, 2007; Gardner, 2014). This is a huge advantage for fans of Korean pop music who do not have to worry about back-and-forth licensing issues, allowing them to both share official content, engage in contests, and recreate dance videos.

There are rare exceptions to this allowance culture - and those are frequently rolled back. In March of 2013, K-pop entertainment agency Cube Entertainment, home of 4Minute and Hyuna, removed their artists' videos for viewing by international fans (Benjamin, 2013). Cube Entertainment is actually one of the few Korean companies who work with a major U.S.- based label distributor, Universal Music Korea. Fans mobilized quickly, reporting that Universal was intending to "keep K-pop in Korea" and was subsequently blocking videos in the U.S. and U.K. Following a very vocal online opposition, including a meme campaign, the videos were re-posted to YouTube shortly afterwards and fans reported that Universal had corrected the mistake (Benjamin, 2013).

Copyright

Korean copyright law is similar to American law, although it differs in its practical application to online music sharing by individuals. Like in the United States, Korea filed criminal and civil charges against big file-sharing services during the Napster era (Leitner, 2008, p. 22-24). While Western music content owners spent energy and money prosecuting fans, Korean music content owners instead decided to engage with their fans ("Top Music Agency," 2011). In 2008, Leitner stated, "the Korean music industry may have little choice but to persuade users to utilize industry-sanctioned channels of obtaining content rather than to seek to enforce copyright rights online" (Leitner, 2008, p. 54). Both content creators and fans use YouTube and other social media to promote and share music, serving as a bridge across these communities and avoiding the copyright-based animosity in the United States.

The difference between approaches to fans by music industries in the United States and Korea is primarily one based on culture - and choosing when to enforce laws against potential infringers, rather than based on the plain text of the law, considering how generally similar the laws are. The Korean Copyright Act (Copyright Act of Korea, 2013, articles 16-22) grants to creators a "bundle of rights" similar, but not exactly the same, as American copyright law (17 U.S.C. §106), including the right to reproduce, to prepare derivative works, to distribute copies, and the right of public performance. While there are "fair use" exceptions that apply to the types of use by individuals for music and music videos, they only apply to works that are not being distributed publicly, and therefore do not apply to the type of music sharing that occurs on social media (Copyright Act of Korea, article 29, 30). One notable difference is that use of many of the "fair use" exceptions requires attribution, the right of a creator to be listed as an author, which is not a requirement in U.S. copyright law (Copyright Act of Korea, article 12, 37).

What this means in practice is in the Western music industry when there are copyright considerations with differing rights, including potential licensing or copyright concerns, there are threats or actual litigation that may drag on for years, as discussed by Gardner (2014), placing continued online sharing in a precarious position – and leaving fans confused. However, on the other hand, when Korean pop music is pulled off of YouTube, as in the Cube Entertainment situation discussed by Benjamin (2013), fans mobilize and can direct their energies at the music label/licensing agency, and can get music back up quickly - and without litigation.

Conclusion

As interest in Korean pop continues to grow in the U.S. and other Western countries, it becomes a convenient narrative to consider acts like Psy (a Korean pop stars whose 2012 "Gangnam Style" music video garnered over 2 billion views on YouTube) a one-hit wonder or brush off Girls' Generation's YouTube award win as a fluke. But this is, in fact, the outcome of a long thread of interactions and iterations between participatory communities, emerging social technologies, and a disrupted global music industry. The so-called "surprise" success of Korean Pop will happen again, and keep happening until the next evolution of this relationship occurs.

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Betting Across Borders: Mobile Networks and the Future of Gambling

Colin Agur
Student, Information Society Project at Yale Law School

In the past decade, in Asian countries rich and poor, mobile networks have transformed individuals' relationship with information near and far, and allowed for a complex new series of interactions. In India and many other countries across Asia, the proliferation of mobile phones has created new opportunities for the longstanding pastime of gambling, especially among young people interested in sports. From international betting websites to local SMS-based betting rings, mobile gambling has become a wildly popular hobby.

In recent years, India has become one of the world's largest gambling markets, especially in cricket. The country has become the largest source of the $40-50 billion worth of bets placed on cricket worldwide each year (Agur, 2013; Hawkins, 2013). Increasingly, these bets involve syndicates with operations in Pakistan, the U.A.E., and other nearby locations. These massive and mostly illegal flows reveal the new spatial dynamics at work in the mobile phone networks of South Asia and the Gulf States. The flows within and between these places involve a complex set of interactions directed from afar, conducted in face-to-face meetings, and coordinated by the sophisticated use of mobile networks.

Gambling: The Oldest Form of the Good Life

Gambling has a long history as a popular pastime in South Asia. Dice and card games and bets on horseracing long predate the arrival of the British; the Mughal emperors prohibited these on the grounds that they violate maisir – the Islamic prohibition on monetary gains from games of chance or speculation. Despite these efforts to curtail gambling, it remained a ubiquitous feature of life in the Mughal period, from 1526-1857 (Mukhia, 1969). Under

the British Raj, gambling became intertwined with the colonial economy: mercantile communities speculated on the prices of opium, gold, silver, and cotton (Richards, 2002). With the introduction of direct telegraph service to and from England, land and undersea wires became long-distance conduits for increasingly sophisticated information, which local populations used for making and taking bets (Benegal, 2012). Within British India, the expansion of the telegraph created new flows of information. Scheduled updates of information prompted a thriving weather-betting market – for example, the amount of rainfall on a given day or pahar (three-hour period) in different cities (Hardgrove, 2002). Certain annual celebrations, such as Diwali (the festival of lights, invoking Lakshmi, the Goddess of Wealth) and Janmashtami (Lord Krishna's birthday) also emerged as occasions for gambling.

Gambling on cricket in India developed later than gambling on commodities, rain, or festivals, and owes much to successive communication networks of the 20th and 21st centuries. The introduction of radio (1924) and television (1959) in India led to gatherings of cricket fans in bazaars and other public spaces, broadcast by shopkeepers who used cricket broadcasts to draw crowds (Cashman, 1980; Ugra, 2005). These assemblies of fans became focal points not only for listening and watching matches, but also for betting on the action. In the postwar period, with the expansion of broadcast radio and television, cricket audiences gathered in bazaars across India to follow their regional team in the Ranji Cup, or the national team in Test matches, most often against England or Pakistan. In such settings, bookies established odds, collected bets, and enforced punishments for those unable to pay. In these large crowds, social relations determined trust; betters needed to know a bookie or be referred to a bookie by a friend who could vouch for the better. Since gambling was illegal, it took place via networks rather than via formal institutions (Hawkins, 2012).

Gambling Goes Mobile

In the past decade, India has experienced spectacular growth in its mobile phone networks. Previously a telephone laggard (fewer than 1% of its citizens had telephones in the early 1990s), India is now the second-largest telephone market on earth, with more than 900 million phones (TRAI, 2014). With this growth, mobile phones have become the carriers for many forms of entertainment. They have also become essential tools for betting participants.

How users bet depends on their phone type. Users with Smartphones can access a wide range of international betting sites. However, because most users in developing countries do not have a Smartphone, they use a basic 'feature phone' in combination with traditional in-person betting. Just as in the early broadcast days, would-be betters need to be referred to bookies, and they meet in person with bookies to settle bets. Once a relationship is established, a better can communicate bets to his bookie via SMS. The information can

easily be coded so that the message fits on a single line of text and, crucially, so that the contents will not be understood by any third parties (e.g. police) who happen to see the message. The following figure shows examples of real bets placed via SMS:

Code	Meaning
CSKtossbat	If Chennai win the coin toss, captain M.S. Dhoni will elect to bat
7-1-nb	In the 7th over, the 1st ball will be a no-ball (illegal delivery)
11:05 W	In the 11th over, the 5th ball will be a wicket
1903b 6	In the 19th over, the 3rd ball will be hit for 6 runs
Malinga 0.3w	Lasith Malinga's 3rd delivery of the match will be a wide
Kallis-W-lbw	Jacques Kallis will be out leg-before-wicket

In my research of gambling related to the Indian Premier League, betters used a fairly standard set (and order) of codes to indicate the conditions for a bet. In the case of spot-bets (those placed on a specific moment in the match, as opposed to the result of the entire match), betters tended to indicate first the over, then the ball, then the action. In the case of non-time specific actions (such as an action by a specific bowler who might begin bowling at any point in the match or the method by which a batsman will get out), betters tended to name the player or team first, followed by the action on which the bet is based. Betters often used colons or dashes to separate components of the code. For example, in the second example above, the better used dashes to separate 7 (the 7th over), 1 (the 1st ball of the over) and nb (a prediction that the delivery will be a no-ball); and in the third example above, the better used a colon to separate 11 (the 11th over) from 05 (the fifth ball of the over). What these codes have in common is ease of transmission. Participants require only a handset with text message capabilities, and an agreement on message formatting. I asked if users gambled on the match without using their phones; more than one user replied, "how else would I place a bet?"

Betting syndicates distribute the odds for a match in real-time, via mobile phone. With these odds, bookies in different cities collect bets and send updates back to their superiors. In his book-length study of gambling in cricket, Ed Hawkins (2013) found that hierarchies of individual bookies exist within

syndicates. The quality, granularity, and frequency of updates via mobile phone depends on whether a bookie enjoys first, second, or third tier status within the organization. A dozen bookies might work for the same organization in one city, but the internal politics of the organization determine which bookies get the most valuable updates (Hawkins, 2013: 46, 62, 67). I encountered hints of these hierarchies when I spoke to bookies. When I asked about an upcoming match, one told me: "There is information out there, but I don't have it. Maybe next week. I'm down the food chain." In the networks of participants involved in cricket betting in India, mobile phones are not a leveler; they allow for organizational hierarchies and differentiated speed and quality of information flows.

The Dark Side of the Good Life

On its own, betting is an off-field diversion that adds excitement for fans. However, when the sums are large, players can be tempted to take part in the action. Fixing the results of entire matches is likely to attract attention, so those in a position to shape the outcome of matches tend to use spot-fixes. These involve pre-determined outcomes on individual balls for small or medium-sized gains at low risk. For example, players (especially bowlers and captains) can make money on the side by engineering certain events at agreed-upon moments in the match (for example: in the 3rd over, the 1st ball will be a certain type of delivery). For young players with single-season contracts and no endorsement deals, inside spot betting offers income that can satisfy requests for cash from friends and family, and fund a more glamorous lifestyle (Agur, 2014).

Mobile networks are a critical factor in inside betting. They are the means by which teams, journalists, and others communicate with players. While veteran players guard their phone numbers with great caution (or hire personal assistants to manage all calls), junior players sometimes give away their number to journalists and others, in the hope of landing an interview or making other useful connections. Faced with a high degree of scrutiny by media and police, players tend to trust only bookies they know personally, or who have been referred by someone close to them. Inside betting networks thus tend to follow existing social relations; over time, they allow new social relations among participants. The high turnover of devices makes for fragile, ephemeral, and fleeting connections among participants. Rather than forming lasting organizations, mobile networks in India encourage one-off, "disposable" connections for specific purposes (Agur, 2013 and 2014).

The worldwide growth of mobile networks has allowed for significant new flows of information and capital (Castells, 2000). In Indian cricket, mobile networks have created the conditions for powerful new networks and criminal syndicates, based in Mumbai and Dubai (Hawkins, 2013). Given this changing

set of possibilities for corruption, a major question is: to what extent have police been able to keep up with criminal syndicates in their use of mobile phones for illegal activity? The participants I interviewed were nearly unanimous: a significant amount of mostly subtle corruption exists in the league, and mobile networks provide the essential link in much of this corruption (Agur, 2014).

Conclusion

The growth of mobile gambling shows that 'the good life' has positive and negative repercussions, and that the effects extend beyond national borders. Thanks to cheap, mass mobile telephony, what large numbers of users in one country do for fun can create new winners and losers elsewhere. This is simultaneously exciting for users, worrying for governments, and highly profitable for a range of actors involved. Mobile gambling is already one of the most popular pastimes for mobile users in India and beyond. In the years to come, the arrival of more mobile phone users (especially young people) will likely mean more participants and more bets.

Mobile networks are essential tools in gambling, since they provide the critical links among participants and allow intermediaries to retain a light physical footprint in their areas of operations. But just as they offer advantages to those able to make use of the technology, mobile networks are imperfect tools. They are subject to surveillance and seizure, and distant bosses must rely on local operatives to make personal contacts and enforce the terms of agreements. The fact that criminal syndicates have set up in close proximity (India, Pakistan, and the U.A.E.) is a reminder of the importance of location in finance and the tensions that exist among players in illicit networks.

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Understanding Where Journalism Fits into the Smartphone Boom in India

Hasit Shah
Berkman Center for Internet and Society

Thakur Charanasi is a 31-year-old man from the city of Gandhinagar, the largely administrative capital of the western Indian state of Gujarat. He runs his own cutlery business and says he earns around $460 a month, a fairly decent amount of money in this part of the world. He reads Gujarati-language newspapers and is mostly interested in local news. He owns a second-hand Samsung smartphone but does not have an Internet connection, preferring to use his device as a music player as well as a phone.

Tanuj Kapadia is nine years younger than Mr. Charanasi and earns a lot less money, around $150 a month, in his job as an electrician. His smartphone is made by an Indian company, Spice, which sells entry-level handsets that nonetheless include touchscreens and run earlier versions of the Android operating system. He does have an Internet connection, which he uses to stream music, send messages to his friends, and even follow the news. He also reads newspapers and is interested in a broad range of topics.

These two gentlemen were among a small sample (Unpublished Raw Data, 2015) of 130 people interviewed at length by students from the Indian Institute of Technology in Gandhinagar, in an effort to better understand how India's millions of new smartphone owners actually use their devices, particularly in the context of news and information.

Alongside the boom in smartphone sales, India has seen a huge rise in the number of people who regularly use the Internet. The increasing affordability of these devices means that it is possible for people without wired broadband access to connect to the Internet for the first time on a massive scale. But although not all smartphone users are also Internet users, as Mr. Charanasi shows, the majority - 77% of respondents to this survey - do seem to have

paid for mobile data plans. Driven increasingly by mobile, India now has the third-largest number of Internet users in the world, behind the U.S. and China (Graham & Straumann, 2015). This is all in spite of the fact that nearly a billion people in India are still not fully connected. On a recent trip to the U.S., Prime Minister Narendra Modi sought help from Silicon Valley giants to realize the government's ambition, through its Digital India project, to connect the country (Goel, 2015).

Meanwhile, Indians are increasingly interested in news and information. Unlike almost any other major country, newspaper sales are rising, with about 300 million people, around a quarter of the total population, now reading a print paper. Between 2005 and 2009 the total number of newspaper titles rose by 23% and now stands at more than 74000, according to the World Association of Newspapers (Shah, 2015). There are now more than 400 news and current affairs TV stations in India. But this huge audience has not migrated to digital platforms. Print and TV news are strong and growing. Their dominance will be difficult to break in a country that is years from becoming fully digitally connected, especially with so many languages to serve and such low literacy rates in many areas. According to the most recent data from the government's Socio Economic and Caste Census 2011, 315 million rural Indians remain illiterate (IndiaSpend, 2015).

Ketla is a project led by Dan Archer from the University of Missouri and myself, a Research Affiliate at Harvard. Ketla is a digital news platform for new Internet users who do not know English, who might not be literate, and currently only have access to low-end devices with erratic connectivity. iPhones in India are mostly unaffordable for the next billion Internet users: these are Chinese or Indian or Korean handsets, all running versions of Android. To combat these problems, Ketla utilizes a comic-book format that is visually engaging, low on text, and undemanding on bandwidth to impart useful information. For example, a healthcare provider might use Ketla to tell people about a free service it is providing and why it is important. The project has been funded by the Miami-based Knight Foundation and will initially use Gujarati, the state's official language.

In August 2015, a group of students from IIT Gandhinagar helped construct surveys to interview local smartphone users about their basic digital habits. They asked everything from how and where users download apps to what sources of information are most trusted (on and offline). They were under instructions not to interview relatively wealthy, educated English-speakers, who are far more likely to have a home Internet connection and associated high quality device. Instead, the students targeted people who might have only recently purchased an internet-connected device.

First, it is important to understand that this survey is not a thorough, long-term ethnographic study. The time span, just two weeks, was too short and

the sample size too small to produce anything other than an approximate snapshot. But a series of approximate snapshots is sufficient. Some real-life data was needed to test the assumptions that the Ketla team had already made. The way that people use the Internet, especially if they have discovered it only recently, will change and develop over time and this kind of snapshot research can help keep track of that process.

Second, the vast majority of interviewees were male. India is largely a patriarchal society in which opportunities for women are relatively limited. Male literacy stands at more than 80%, for example, while the figure is around 65% for women (Census, 2011), and women are less likely to own a smartphone, particularly in the lower-income bracket.

More than three quarters of the smartphone owners interviewed by the students also had a mobile Internet connection. The rest use their devices for music, video, photos, as well as calling and messaging, and to share content locally via Bluetooth. With or without Internet, a device with a large touch screen is clearly more desirable than the previously omnipresent basic Nokia.

Of those who do have a data plan, 93% use the Facebook-owned messaging service WhatsApp, a high number that could be attributed to the fact that WhatsApp is often bundled with the mobile devices at the point of sale and does not need to be separately downloaded (Balanarayan, 2014). WhatsApp's huge popularity also strongly suggests that it could be the primary distribution platform for news content.

Facebook's original platform is also doing very well; more than two thirds of the interviewees who had data plans utilize the platform. Though much more complex and therefore more expensive than the more basic WhatsApp, users prefer the richer experience and the ability to build personal networks. Facebook's social dominance, even in growing markets like this where it is popular but not universal, is impossible for digital news companies to ignore. Facebook is also heavily involved in the government's Digital India programme: the centre piece of Prime Minister Modi's visit to Silicon Valley was his hug with Mark Zuckerberg at Facebook HQ (USA Today, 2015). Twitter, on the other hand, was used by only 3% of mobile Internet users in this informal survey.

Unsurprisingly, the most popular non-social media apps are video, camera, music, and games. But they are not really thought of as "apps." They are seen as superior functions that work better on newer, more technically capable phones.

It is interesting to observe the terminology used in describing new phones. The vocabulary speaks to how the Internet is conceptualized. For example, smartphones are called "touch screen phones." There is also no hard distinction

between on and offline, perhaps because the available devices and the lack of platforms designed for this audience means users are unable to fully utilize all the benefits of the Internet. WhatsApp, YouTube, and Facebook are important entry points but they do not encapsulate the complete digital experience.

Although most people use Google's Play Store to download new apps, a very significant minority (25% of respondents) are unable to do so, instead relying on friends, family, and retailers to augment their devices with newer, better functions. App discovery is one of a digital startup's greatest challenges. After a platform has been designed, built and launched, enticing people to download and use the app is a monumental step. In India, while digital literacy improves and people acclimate to their devices, an entrepreneur can offer incentives to retailers to pre-load their apps. In the future, Ketla and other similar projects may not need to go directly to users.

But all of this may be moot. While the students were out doing their research, large protests were taking place in Gandhinagar and its larger neighbouring city, Ahmedabad, ostensibly over the legal status of a particular community (BBC News, 2015). As is often the case in India, there was violence and several people died. One of the state government's responses was to shut off mobile internet for three days, because protest organizers used services like WhatsApp to mobilize large crowds at a scale and speed that is far more difficult to achieve with basic SMS. While the Digital India brand becomes more internationally recognized, with the government encouraging foreign and local investment, and entrepreneurship in this space, such as projects like Ketla, local authorities are not above removing these services when they feel it is necessary. The Prime Minister regularly equates Internet access with amenities like electricity and running water but in practice, the extent to which people like Thakur and Tanuj will benefit from Digital India remains to be seen.

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#CokeDrones and the Good Life: Migrant Workers in Singapore and the Politics of Recognition

Renyi Hong
Student, Annenberg School for Communication and Journalism, University of Southern California

In May 2014, Coca-Cola released an advertisement titled "#CokeDrones" in Singapore as part of its "Open Happiness" campaign in Asia (Coca-Cola, 2014). The ad was directed by Ogilvy & Mather and produced collaboratively with the Singapore Kindness Movement, a state-backed program which aims to cultivate "considerate social behavior" among its citizenry (SKM, 2015). It begins with a view of skyscrapers which is soon contrasted with a black screen overlaid with white text. "Singapore is a first world country that is built by a large migrant workforce," it writes, "Far away from home and isolated from the local community, they are Singapore's invisible people." The ad then shows various South Asian construction workers that the viewers identify as the "invisible people." Footage shifts between tired, unhappy faces before zooming in for close-ups where the construction workers deliver testimonies about their struggle with loneliness in Singapore. At this, music turns upbeat, and we see crowds of Singaporeans writing cards, expressing words of thanks to the migrant workers for building their homes. These cards are then delivered to the workers along with cans of Coke by drones. "2734 messages of gratitude were delivered," we are told, "each bringing a little happiness."

Taking the ad's connection between recognition and happiness as a starting point, this essay will consider how "the good life" may be employed as a means of governance, a way of enforcing proper conduct for a disenfranchised population through a logic of affective reciprocity. Engaging with Berlant (2004), this essay seeks to highlight how extending compassion towards a suffering population - an ethical impulse to offer them a "good life" by alleviating their suffering - may ironically constitute a form of oppression. In one respect, the scenes of the ad clearly depict the political economy of the good life: the ones who are able to reside in the towering buildings are the Singaporean citizens, and the ones who built the buildings but are excluded from the comfort of these

homes are the migrant workers. Yet, the gratitude offered by Singaporeans and the tearful expressions of joy from workers suggest a convergence of the good life imaginary, as if the migrant workers have been accepted into the fold of national recognition and its promises of state protection that would enable them to have a better life. Clearly, it is impossible for thankfulness to bring the migrant workers any substantive semblance of the good life - a notion grounded in upward mobility and experiential happiness. Still, the expression of happiness elicited by the extension of recognition conveys the virtuosity typical of a narrative of social justice, where injustice is identified and corrected for a suffering community.

This essay argues that the feelings stimulated through these enactments of virtuosity may be used to deflect attention away from substantive political work for justice. As Brown (2008) explains, it has become increasingly common for elites to substitute a substantive political response with a soothing cultural response designed to indicate that they care about the suffering of a given population. This may take the shape of recognition - reassurance offered to a subordinated community that their suffering is taken into consideration - that is not followed by the political changes needed to rectify the situation (Markell, 2003). Such substitution is evident in the #CokeDrones ad, where migrant workers are seemingly brought close to achieving the good life through the recognition of their existence, as if recognition alone can eliminate the institutionalized forms of oppression that they face. But fantasy is not the most troubling aspect of this cultural response. The ad was a response to a riot by migrant workers that happened four months before and it restates the meaning of the migrants' presence. Implying that the State has fulfilled its obligation in recognizing the suffering of migrant workers, the ad suggests that they now need to dutifully do what the State desires: be docile subjects who do not cause trouble for their hosts, and whose sole purpose is to fulfill their role as laborers serving the nation's economic ambitions.

The fantasy conveyed in this ad is not surprising given that it was explicitly developed to capitalize on a heroic narrative of benevolence. Explaining the choice of subjects for the ad, Eugene Cheong, who leads the creative team at Ogilvy & Mather, remarks that the South Asian construction workers were chosen precisely because of their difficult circumstances (Journey Staff, 2014). He explains that migrant workers "tend to be 'invisible' as they are working in areas that are not accessible to the average person" and that "to appreciate them, we first need to see them" (Journey Staff, 2014). Cheong references a term - "invisible labor" - which has long been associated with states of economic, social, and political exclusion (Fortunati, 1996). As feminists have noted, invisibility may be used as a way of denying the wealth generating potential of labor (Jarrett, 2013). Household chores and childrearing, for instance, are often perceived as economically valueless because they are removed from the public eye (Fortunati, 1996). Still, there is a substantial difference in the definition of invisibility proposed by Cheong and the one employed by feminist scholarship.

For the former, invisibility is premised on the literal omission from visual sight, but for the latter, invisibility is centered on states of exclusion - denial of rights that render a group vulnerable to exploitation. As Nelkin (1972) offers, a group may be understood as invisible even if they are within plain sight. What is important is the symbolic meaning of a group's presence: "Despite their physical presence in a community, they are not part of it. The migrant is an outsider, an element to be dealt with as a problem" (Nelkin, 1972, p. 36-7). In this vein, the non-presence of migrant workers is not as innocuous as Cheong claims. Rather, invisibility for the migrant worker is a politically engineered condition produced through urban zoning that places them away from sight because, as Hage (2003) notes, migrant workers are necessary for their cheap labor, but are otherwise an "aesthetic nuisance" that might render the nation less appealing to foreign investment (Hage, 2003, p. 20).

#CokeDrones relies upon commercial language to bring the migrant workers to visibility. Visual and textual narratives are used to convey a simple but emotionally arresting message. The unhappy state of migrant workers is narrowed and reduced to a single cause - loneliness - which is similarly simplified. No mention is made of the laws in Singapore that prohibit migrant workers from bringing their families along (Ministry of Manpower, 2015), or the fact that the presence of migrant workers are often only tolerated - not accepted - by Singaporean locals (Pheng, Ying, & Shan, 2008). Instead, the expressed loneliness is centered on a heteronormative family far from the shores of Singapore; the workers in the ad take turns to express longing for their wives, children, and parents, verbalizing a conventional narrative that is aesthetically powerful but holds neither the nation nor its subjects accountable for their suffering.

The uncontroversial purity of the message accommodates the logic of visibility in the digital: it discloses a simple message that is emotionally resonant, likeable, and unusual enough for audiences to be attracted not just to view it, but also to spread its message, recommending it on their social media pages. What's not to like? Unhappy workers are made happy, and Singaporeans can feel good because they can feel that they have contributed to the workers' happiness. At the time of writing, this ad had acquired over half a million views, four thousand likes on Youtube, and has been shared on networked news and social platforms extensively. Part of the ad's appeal is that it gives viewers the sense that they are doing a good deed merely by watching, commenting on, and sharing the video. Here, the simplicity of loneliness portrayed and the clear contrast between the two communities encourages viewers to see themselves as possessing compassionate agency. Just as the South Asian construction workers in the video were used to stand in for migrant workers generally, Singaporean viewers are made to identify with their fellow citizens in the video - grateful people who can ease the loneliness of others with their compassion. Implicitly then, "liking" or "sharing" the ad produces feelings of virtuous participation, as if taking these actions were the same as joining the chorus of individuals

who wrote the cards of appreciation in the ad (Kristofferson, White, & Peloza, 2014).

It is important to recognize that this situation is not a simple case of slacktivism, where clicks replace the difficult work of social justice. Indeed, comments on YouTube show that viewers are not necessarily uncritical of the ad. However, the technological fetishism that is propagated by this ad has made it difficult to find any substantial value in the comments that are critical. A fetish legitimates a condition of "false causality," where complex social relationships are imposed and distorted in material objects, usually to offer people a semblance of understanding and control (Chun, 2011, p. 50). In other words, instead of asking 'How do we help these migrant workers improve their working and living conditions,' the viewer is led by the video to ask, 'Have you shared the video about these migrant workers?' In an environment where people are constantly solicited for their opinions and responses, the Internet redirects attention away from what is said, to the literal act of saying itself (Dean, 2010). While there are many ways on the Internet that viewers can challenge the message of the ad, the audience's unquestioned faith in the Internet smother dissent and critique.

Critical comments on the video include: "I think this [sic] guys have again been used" (Divjak, 2014), "The critic in me is skeptical of big brands taking advantage of emotions" (Nair, 2014), and the top comment, "This could be viewed as exploitation of the migrant workers' plight for branding/publicity purposes. However, it does help to raise awareness somehow, and hopefully [sic] triggers affirmative action" (Lim, 2014). These comments are not without skepticism, but they go no further to provide material for discussion - an especially important point given the migrant population's powerlessness. In such a situation, there is a certain seduction in returning to the technological fetish for hope. Lim's (2014) comment highlights this dynamic: when the virtuosity of the good life message fails, we can still turn away from the message to the technology and the idolatry of attention - the suggestion that, ultimately, there is at least something redeeming in the fact that migrant workers were made visible in a video.

But what are the values of visibility here? A press release by Coca-cola suggests that they "were able to bring together two segments of the community who rarely interact" by "using technology in an innovative way" (Journey Staff, 2014). Yet, a close reading of the video would reveal that the interaction between the two communities - migrant workers and Singaporeans - was accomplished without having them meet face-to-face. All their interactions were mediated through drones, cards, and cans of coke. As such, this interaction, even when praised for its extension of visibility, was engineered to be familiar and un-disturbing: amongst their "own," Singaporeans were allowed to express luminous feelings of compassion, without being made to feel uncomfortable by meeting the migrant workers in person. This underscores the fetishistic potential in the

medium's affordance of visibility: it creates a feeling of possibility, a tentative hope that media attention on migrant workers could bring about justice while simultaneously obscuring the social and political conditions that allow such comforting visibility to appear in the first place.

This essay is somewhat narrow, using only one ad as the case study for a cultural examination of good life politics in Singapore. However, there is particular contextual significance to the ad. As alluded to above, the ad was released just four months after the infamous "Little India Riot" in Singapore, where over 300 male South Asian migrant workers rioted in the district of Little India, overturning and torching government vehicles (Neo, 2015). Marilyn Peh, the spokesperson for the Singapore Kindness Movement, expressed that the campaign of gratitude was a means of diffusing "the negativity left by the recent incidents," with the hope that "some empathy along with a small gesture of appreciation can easily spread goodwill" (Schonhardt & Watts, 2014). This statement needs to be understood in light of the general political stance of the State after the riot. Despite evidence to the contrary, political elites have refused to acknowledge the link between the riot and the living conditions for migrant workers (Neo, 2015). Prime Minister Lee Hsien Loong, for instance, insisted that the riot was "an isolated incident arising from the unlawful actions of an unruly mob" spurred by alcohol rather than by systematic mistreatment (Chan, 2014). After the riot, the State engaged in a variety of disciplinary measures, including the prohibition of alcohol sales in Little India, and circulated posters warning that errant workers would be punished (Kaur, 2014). One poster shows a handcuffed man of South Asian origin with the words, "Rioting achieves nothing but caning and imprisonment" (manju venugopal, 2013).

When contextualized within this disciplinary milieu, the ad with its message of recognition represents one in a series of instruments that seek to render docile the economically necessary but socially "undesirable" migrant labor that underpins Singapore's growth. The route that the ad takes is softer, but no less troubling. Its underlying message of reciprocity, implying that migrant workers should return the State's goodwill, alienates even the workers' right to feel dissatisfied. After all, it is ungrateful, even shameful, to feel badly about a host who is kind. Migrant workers, then, are doubly alienated: from their labor and from their feelings.

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CHAPTER 3

Digital Economy

The Seoul of the So-Called Sharing Economy

Emily Hong
Fulbright Korea

Areum* is a bright-eyed university student who hosted me in windy, seaside Aewol-eup, on Jeju Island south of the Korean peninsula. One night's stay in her spare bedroom cost me and a friend about $15 each and in the morning, Areum took a selfie and chatted with us while feeding us peanut butter toast. While the experience of staying with Areum felt like crashing on a friend's spare bedroom, our transaction was just one of potentially 80 million bookings that were facilitated by the Airbnb site last year (de Waal-Montgomery, 2015). This high volume of travelers is just one reason for Airbnb's staggering $25 billion dollar valuation (de Waal-Montgomery, 2015).

Today, companies like Airbnb and Uber have become household names around the world, and – as a result – it may be time to re-examine the "sharing economy." In South Korea – an early adopter of sharing practices – an interesting juxtaposition is unfolding between large multinational corporations and smaller, grassroots efforts. While polar opposites, both claim ownership to the notion of "sharing." From this parallel evolution, we may be able to glean some universal insights.

The term "sharing economy" has been used to encompass a broad range of activities in which human and physical resources are shared between individuals. With the advent of the Internet and near-instant interconnection, it becomes much easier to match these haves and needs as they occur in real time. "Anyone have a hammer?" I post to my neighborhood Facebook page. "Be right over," responds my neighbor.
These companies are essentially only platforms that facilitate exchanges, creating trust and a familiar environment in exchange for a slice of the profits. This monetization of sharing has always posed an ideological problem: true sharing would entail a social interaction that involves no transactions or

profits, like books at a public library. A more accurate term is collaborative consumption, a term proposed by Rachel Botsman (Botsman, 2015). But whatever you call it, the proliferation and interest in these behaviors and services has been remarkable since Seoul's collaborative economy was seeded in 2012. In an effort led by Mayor Park Won-soon, the "Sharing Seoul initiative" sought to doctor the various ills of modern society by promoting this kinder, gentler form of capitalism.

South Korea's transformation from a tiny, destitute, war-ravaged country to a glittering economic and cultural workhorse is nothing short of extraordinary. In the 65 years following the Korean War, South Korea has pulled itself up by its bootstraps to become a rich global technology leader with an enviable soft power grip, carried by the undulating moves of K-Pop idols to the far corners of Asia and beyond (Phillips, 2015). In the US, Korean food has even become big among millennials. South Korea is the only country to transition from USAID recipient to donor, replacing unpaved roads and open-air latrines with high-tech infrastructure that often seems torn from a fantastical architectural rendering.

Of course, this ruthless drive to self-ameliorate has come at a cost. South Korea is currently experiencing rising inequality, and a decline in the social welfare system that has disproportionately impacted the elderly (Hu, 2015). Birth rates are also declining, as educational and living costs skyrocket. Thousands of burned out teens slog through the meatgrinder that is the South Korean educational system, and 80+ hour six-day workweeks are the norm for South Korean workers (Koo, 2014; Ilbo, 2014). Korea also has some of the highest rates of alcohol consumption and suicide in the OECD (Ferdman & King, 2014; OECD, 2015).

The competition for space is real, too. Nearly 50% of the entire population is centered in the Seoul metropolitan area, and at 16,700 people per square kilometer, or eight times the density of New York, Seoul has one of the highest urban population densities in the world (Park, 2013). But this incredible density doesn't just stop at humans; it applies to their stuff as well.

Korea is home to "some of the most crazily conspicuous consumption," says Albert Hahn, the co-founder of the Craigslist-like startup HelloMarket. "In Seoul, you see people working for $3 an hour, right next to someone sitting in Maserati. And it's not like Seoul is a city you can really drive in," he added (A. Hahn, personal communication, Oct. 10, 2014). Pierre Joo, a Parisian who runs the Korean office of the French consulting firm Attali & Associés, agrees, adding that he has started to see a "realization by Korean consumers that their economic model, rampant capitalism, is not sustainable" (P. Joo, personal communication, Jan. 16, 2015).

It's not hard to see the appeal of the sharing economy in Korea, as a movement that challenges the notion "that nonstop economic growth leads to widespread prosperity; and that more stuff leads to more happiness" ("Shareable: About"). This is particularly true for Korea's despondent millennials: despite being born at a time when they can reap the full benefits of South Korea's economic development, these cynical youth have some of the bleakest views towards the future in the world (Parker, 2015). They've even come up with a jul-im-mal or slang abbreviation, for themselves: oh-poh sae-dae, a generation that has "given up on dating, marriage, having children, personal relationships, and home ownership due to the difficulties of life" (Kohlhaas, 2015).

From a historical and cultural perspective, the introduction of collaborative consumption in Korea also makes sense. Many of the values it represents are evocative of the collectivist traditions of Korea's not-too-distant past. As recently as the early 1980s, parts of the Gangnam district were covered in rice paddies, and Korea's agrarian traditions include the proto-sharing economies of gye, community lending circles, poomasi, non-monetary labor exchanges, and du-rae, group labor collectives.

Beginning in early 2013, Seoul passed a number of ordinances and local laws to facilitate the spread of sharing practices, spending 286 million KRW (about $260,000 USD) to support community building around "the sharing economy" and investing in 42 sharing business or organizations (Sharehub, 2014). At the core of Seoul's collaborative economy is an organization called CC Korea. The local chapter of the international Creative Commons organization, under the mandate of Mayor Park, CC Korea operates ShareHub, which serves as a knowledge bank and clearinghouse for all things collaborative in Seoul. (Naturally, the current head of CC Korea is also a host on Airbnb).

Seoul's leadership in this space was praised internationally as "a model for the world," (Johnson, 2014). and resulted in a local boom in small-scale social enterprises and startups. However, two and a half years into the Sharing Seoul program, few domestic services have managed to go mainstream (Johnson, 2014). Most of these services cannot really scale by design: among Seoul's designated sharing companies include Dreaming Acorn, a platform for sharing baby and maternity clothing, and Run Piano, a project that installs used pianos in public spaces (Sharehub, 2015). None of these companies seem to turn large profits; one exception might be SOCAR, a car-sharing service with a business model akin to that of Zipcar in the United States. In fact, a minimal- or zero-profit model might even be a base criterion for a true collaborative consumption firm.

Belonging in Seoul…Through Airbnb

On Airbnb's main landing page for travelers interested in visiting Seoul, white text is superimposed over an aerial shot of the N-Seoul tower. "Palatial relics and fervent pop culture collide in Seoul, a dizzyingly evolving city that dares you to keep up," it reads. Locals love "Korean barbecue and soju" and "relaxing at Jjimjilbangs," while they complain about "traffic," "rising property prices," and "everything changing too quickly" (Airbnb, 2015). In Korea, as in the over 190 other countries the company operates in, Airbnb has styled itself as the ultimate cottage industry, a business carried out in the homes of locals.

Airbnb is the flagship of the so-called sharing economy, and is the only big firm of its category to really work in Korea. The warm and fuzzy feel of Airbnb's marketing is just one example of the remarkable job they have done selling belonging to Koreans hungry for comfort and connection, to a society on the cusp of burnout after decades of untrammeled development. There are thousands of Airbnb listings in Seoul, and the service now accommodates equal volumes of inbound and outbound travelers in Korea.

Airbnb has built a robust user community in South Korea by acing what startup folks call localization, or accommodating local culture in order to gain a foothold in the market. Part of Airbnb's strategy here has been to give its Korean team a remarkable degree of autonomy and ownership, and to stay in close contact with Seoul's City Hall and the national government. Even Airbnb's executive team has gone local: at the beginning of his tenure and in previous roles at Google Korea, the head of Airbnb Korea went by his English name, Patrick Lee. But recently, he has been introducing himself with his Korean name, Jun Kyu.

Airbnb engages with potential new users in the stylish neighborhoods, and recently sponsored a free art magazine called Don't Panic. It has done much to ally itself with small business and creative communities as well, serving as the marquee sponsor for Seoul's 2014 Design Week, and putting together a thick red booklet of 170 small businesses featured as Korean "design spots."

However, its greatest source of appeal continues to be its ability to meet new needs with existing resources. The lure of "making the most of things" was echoed by a young Korean host I met and spoke with, by chance, on the subway in Seoul. She runs the listing for two bedrooms in her parents' home in the Busan, which were recently vacated when she and her brother left for university and military service, respectively.

But arguably, booking a stay on Airbnb is not true collaborative consumption. Especially compared with the analogous service Couchsurfing, where accommodation is arranged for free, critics say Airbnb has become just another

big company squeezing profits out of its users by exacerbating gentrification and competition for space in certain cities. Furthermore, while a number of individuals are still out there on the site renting out their couches and living rooms, the rise of professional Airbnb hosts means that it is no longer accurate to characterize the company as a pure peer-to-peer company. The primary relationship at stake is not between the host and guest, but between the user, be it the host or the guest, and the corporation, Airbnb.

More and more, Airbnb is becoming about the bottom line, and the company is growing so quickly that it has had to sacrifice some of its original sharing-oriented identity. Discussing these issues with a friend in Seoul, she remarked on the tension within Airbnb's values of belonging. While building community is deeply embedded in the collaborative consumption movement, Airbnb is about tourism, essentially the opposite of staying in a place, and by extension the opposite of contributing to the economy sustainably and making the place livable long-term.

Thus, Korea's two "sharing economies" are moving in opposite directions. One operates at the microscale, comprised of dedicated individuals applying sharing principles to build communities in Seoul. Their operations are fringe, generating just enough revenue to keep the services alive. The other is increasingly capitalistic, driven by global flows of money and people. What, if anything, do these two forms of "sharing" have in common?

But back on Jeju that April morning, leaving Areum's apartment and later walking around a nearby residential neighborhood festooned with yellow canola and pink cherry blossoms, Airbnb still felt like some small part of the antidote to over-commercialization. Airbnb, while flawed, feels like one of the few opportunities to keep tourism dollars largely within local communities. Rather than paying money to an international hotel developer who might route money out of Jeju, I paid my local host, Areum... plus a percentage commission to Airbnb.

The twin narratives of the Korean sharing economies highlight how the sharing movement has reached a point of transition. At this point, the sharing economy is mature enough to be a buzzword, but when it comes to actual impact, it still has a long way to go. Either way, people dissatisfied with the state of things, and eager to create a future model for a better life, are driving both forms of the sharing economy forward in Korea. More likely than not, neither shared pianos nor rentable bachelor pads will be surefire tickets to future happiness and prosperity – but innovation around finding new ways to make the most of what you've got just might be.

*Note: some names have been changed to protect privacy.

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South Korea's Approach to 'Internet of Things' Technologies

Hemangi Gokhale
Student, Graduate School of International Studies, Seoul National University

Internet of Things (IoT) generally refers to the ability of objects to communicate with each other and the Internet, and their ability to process data collected through these connections via embedded intelligence and sensors (ITU 2005; FTC Report 2015). South Korea defines Internet of Things as an industry wherein "objects are connected to the Internet" (MSIP, 2014). As one of the most connected (wired) countries in the world, South Korea has a lot to gain by investing in IoT. But what would an IoT environment look like in South Korea's case?

Many new IoT products leverage decentralized technologies such as blockchains to enhance machine-to-machine connectivity, improve transaction transparency, automate low risk decision-making, and enhance productivity (Pureswaran & Brody, 2015). Thus, IoT products based on such technologies have an embedded component that promotes decentralization and anonymity. As Asian governments and market-makers move towards IoT investments, it will be important to know whether their IoT products will retain this focus on decentralization, transparency, and anonymity.

South Korean IoT innovation and development is still in its early stages. It is government led, national development oriented, and is decentralized at design-level and centralized at data collection and processing level. It encompasses cloud computing, data mining, and IoT elements (MSIP, 2014; Kim & Yoon, 2015). The Korean government is passive on anonymity and does not mandate user identification. However domestic users are traceable based on their IoT services registration. Korea's IoT regulations support co-operation with international standards, ensuring international users the standard international level of user anonymity and data privacy (Internet Address Resources Act, 2004). In regards to consumer attitudes, Koreans have historically entrusted

user data privacy responsibilities to the government (Real Name Verification law, 2005; Personal Information Protection Act, 2014). This trend appears to continue into the 21st century. Given high Internet penetration in Korean society, cloud computing based IoT technologies are expected to perform well domestically (KISDI, 2014). However, while Korea is taking bold steps to boost its IoT industry, issues such as data security, global scalability, and sustainable innovation remain to be addressed (OECD Report, 2014). Upcoming IoT technologies such as blockchains can help Korea address some of these concerns.

Background – Blockchains and Internet of Things

Before considering Korea's approach to IoT development, it is important to understand blockchain technologies that are contributing heavily to IoT industry creation opportunities.

Bitcoin, Ethereum, and Blockchains

Bitcoin, an electronic virtual currency and payment system, allows transfer of virtual currency (Bitcoin) from one party to another without any third party involvement. Bitcoins are 'mined' into existence by 'miners' who verify transactions and record them on 'blockchains'. A blockchain is comprised of 'blocks' that consist of: (1) a transactional record (digital signature) (2) a reference to a previous transaction (time stamp via hash function), and (3) a difficult mathematical problem (proof-of-work). Miners are incentivized with Bitcoin to verify transactions by solving the difficult proof-of-work. The bitcoin system creates an electronic ledger that is meant to note all transactions in a transparent but anonymous manner (Nakamoto, 2008).

However, because solving proof-of-work requires large amounts of computing power, instead of centralized transaction verification mining system, decentralized mining is common. Also, transactional information is not centralized, but is held across the entire blockchain network and is available for anyone to access. Additionally, transactions on blockchains are anonymous. This anonymity stems from the technology's use of digital signatures (user details not stored).

Finally, because blockchain transactions are Internet-based, peer to peer, and do not require third party involvement, they are border-less, fast, and carry extremely low transaction costs. Thus, Bitcoin's blockchain technology is lucrative, transparent, and far-reaching.

Built upon this traditional blockchain model is Ethereum - an enhanced blockchain-based decentralized technology - that makes the technology

available to a wider set of consumers. Ethereum allows for decentralized transactions processing for a wide-array of transactions by incorporating self-executing contracts, node to node messaging, and embedded trust components into traditional blockchains (Buterin, 2014). Ethereum's blockchain applications are broad and include: "voting systems, domain name registries, financial exchanges, crowdfunding platforms, company governance, self-enforcing contracts and agreements, intellectual property, smart property, and distributed autonomous organisations" (Mougayar, 2015). Ethereum brings opportunities for high cost savings, improved efficiency, increased transparency, faster transactions, and opportunities for industry and service creation to a wider set of uses. Hence Blockchain technology shows great potential for development of future IoT products and the industry as a whole.

Internet of Things (IoT)

There is no single definition for "Internet of Things." The International Telecommunications Union (ITU) defined IoT as "new telecommunications eco-system represented by the ability for things and people to interact with anything (object), anywhere (place) and anytime (time)" (ITU Report, 2005). Thus, past government IoT efforts were centered on Information and Communications Technology (ICT) (KISDI Report, 2014) with focus on cloud computing, big data and data mining services (e.g. IBM timeline for IoT industry development, Figure 1) (Pureswaran & Brody, 2015). However, new IoT innovations focused on faster global Internet connectivity, high Internet assimilation in society (ICT, 2015), enhanced blockchain technologies, and machine interaction capabilities, now allow real time information collection, processing, and even automated decision making. The 2005 ITU IoT definition can therefore be revisited to reflect a revised expected state of the IoT industry (The What, Where, and How of the Internet of Everything, Figure 2) (Evans, 2012).

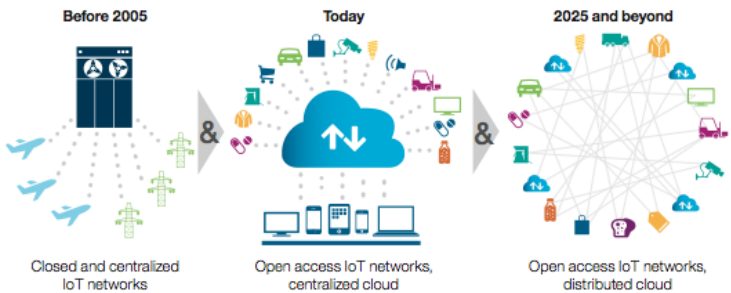
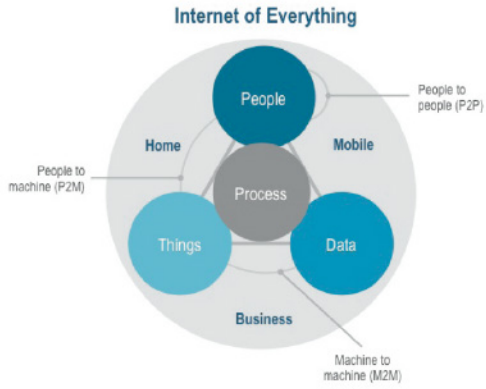


Figure 1: IBM timeline for IoT industry development (IMB).



Source: Cisco IBSG, 2012

Figure 2: The What, Where, and How of the Internet of Everything (Evans, 2012).

Many leading tech firms have forecasted that the IoT industry will expand significantly over the next decade (Pureswaran & Brody, 2015; Evans, 2012; Gartner, 2013). Additionally, governments expect new IoT innovations to improve healthcare services, self-care services, energy efficiency, transportation, agricultural services, weather forecasting, and enhance safety and rescue missions (FTC Report, 2015; Walport, 2014; Inoue et al., 2011 KISDI Report, 2014). Global governments are therefore actively implementing IoT development plans to realize these potential benefits (IoT Policies of Major countries, Figure 3).

<Ref> Policies of Major Countries

US	• US chose the 'Internet of Things' as one of the 'Six Technologies with Potential Impacts on US Interests Out to 2025', and established a technology road map ('08). • It is carrying out the 'Reshoring Initiative' for innovating the manufacturing industry using the IoT ('10)
Europe	• EU chose the Internet of Things as an Action Plan for Europe ('09). • UK announced investment of GBP 45 million into R&D of IoT ('14.3.9) • Germany plans to increase productivity of its manufacturing industry by 30% through Industry 4.0 that uses the IoT.
China	• China announced the '12-5 Plan for Development of the Internet of Things' as part of the 12th 5-year plan (2011–2015) ('11) • It is building IoT pilot complexes (193 including one in Wuhan) targeted toward facilitating use of the IoT and cloud as strategic measures
Japan	• Japan has been implementing IoT industry policies through u-Japan Strategy ('04), I-Japan 2015 Strategy ('09), Active Japan ICT Strategy ('12), etc.

Figure 3: IoT Policies of Major countries (MSIP, 2014).

As one of the most wired and connected countries (KISDI 2015), Korea can benefit immensely from investing in IoT. But what is South Korea's vision in developing its IoT environment, and how is this vision being applied?

South Korea's Approach to Internet of Things

South Korea is still in its early stages of IoT industry development but has robust ICT infrastructure in place to build on. In an ITU assessment on ICT access, use, and skills, Korea placed second among 166 countries (KISDI, 2015) and ranked first among 100 countries in an ICT 2014 assessment on broadband speed (ICT, 2015). Acknowledging Korea's IoT readiness, International Data Corporation (IDC) ranked Korea second in its 2013 Internet of Things Index (MSIP, 2014). Thus, Korea shows potential in becoming a tech leader in IoT industries.

Korea's IoT development is government-driven and development-oriented (OECD, 2014). The Ministry of Science, ICT, and Future Planning (MSIP), is spearheading IoT development efforts in Korea. Following government's 'creative economy' goal, MSIP is pursuing 'inclusive' IoT innovation wherein 'all entities play their role faithfully' (MSIP, 2015). MSIP also aims to solve social problems, such as reducing unemployment, creating business opportunities for SMEs, and boosting domestic innovation and business creation, by developing its IoT reliance (MSIP, 2014). It has outlined four strategies: (1) increasing collaboration among IoT participants (IoT Ecosystem Strategy, Figure 4), (2) moving from closed innovation to open innovation (Open Ecosystem Strategy, Figure 5), (3) developing and expanding services targeted to global markets, and (4) developing custom strategies for big firms, SMEs, and startups (IoT Market Volume and Features, Figure 6).

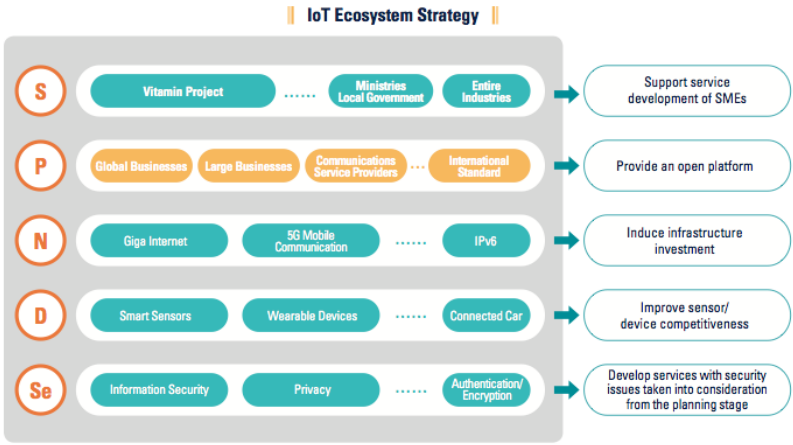


Figure 4: IoT Ecosystem Strategy (MSIP, 2014).

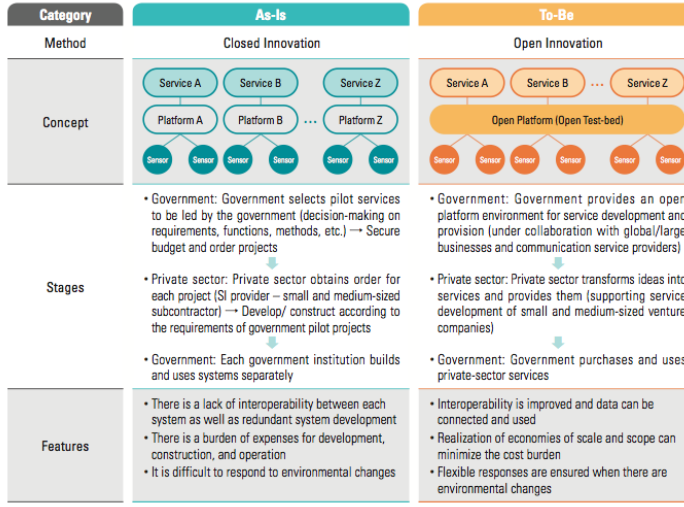
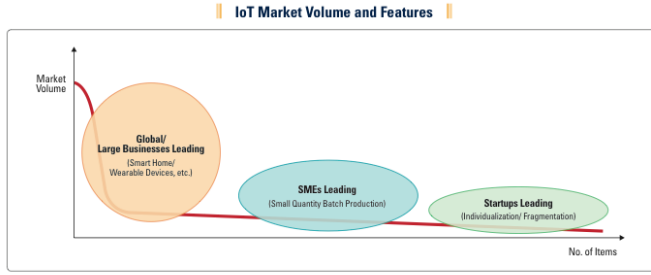


Figure 5: Open Ecosystem Strategy (MSIP, 2014).



① **For Global and Large Businesses**: Strengthen alliances to secure platform competitiveness and lead open partnerships based on mutual growth and cooperation between large businesses and SMEs

② **For SMEs**: Develop and provide an open platform and test-bed to reduce development costs and time-to-market, and support collaboration among businesses of different areas such as software, sensors, devices, and user businesses

③ **For startups**: Establish an ecosystem for realizing ideas into products and businesses, such as open source hardware or software and D.I.Y. (Do It Yourself, where users can develop products on their own)

Figure 6: IoT Market Volume and Features (MSIP, 2014).

Decentralization Approach: Decentralized Innovation, Centralized Information

Per MSIP 2014 report, Korea has a four-pronged IoT development approach that incorporates IoT, cloud computing, big data, and mobile technologies, which is referred to by the collective acronym "ICBM." The KISDI 2014 report describes two forms of IoT ecosystems: (1) a 1.0 ecosystem that links smart device users to big data analytics to collect and processes sensed information in a centralized cloud, and (2) a 2.0 ecosystem that also links real time data from smart devices to each other, while processing collected information

independently of the cloud (KISDI, 2014, p.74-75). Per the report, Korea falls under IoT 1.0 ecosystem. As governments move towards a decentralized information platform in the future, it will be important for Korea to be on par when transitioning to IoT 2.0. By moving from a 'closed innovation' to 'open innovation' system, Korea has already decentralized innovation. Considering decentralized technologies (such as blockchains) can help Korea further shed costs from centralized cloud computing and data management, and help it to maximize blockchain benefits using its high speed LTE connectivity.

User Anonymity, Data Privacy, and Korean Consumer Attitudes: Passive

Korea has a passive approach to anonymity and data privacy. The Korean government does not actively mandate user identification on the Internet. However, given the government's data collection and processing responsibilities, digital signature authority laws, business registration requirements, and IP/Domain registration requirements under IoT laws (Internet Address Resource Act and Digital Signature Act, 2009), user identity can be traced. Furthermore, Korean government can sometimes be proactive on user identification. E.g., following several Internet bullying incidences, Korea passed "Real Name Verification Law" (제한적 본인 확인제) in 2005 and amended "Information and Communication Network Law" (정보통신망법) in 2007, which mandated user identification. While the law initially applied to websites with 300,000 visitors or more, it later extended to sites with 100,000 visitors or more, subjecting most major websites to the policy. But following massive hacking of personal data (Kim, 2012; Yang, 2011) and given public outcry on freedom of speech, user data privacy, and security concerns, the 2007 law was challenged and reversed in 2012.

Overall, Korean consumers entrust personal information and consumption data to the State. Korea has even been applauded for its Big Data analytics and services (Desai, 2015). Therefore, absence of decentralization elements or anonymity features in the current IoT ecosystem does not draw much attention from the Korean consumer.

Other Issues and Suggestions

While Korea progresses with its IoT development, concerns about data privacy, global scalability, and sustainable innovation must be addressed (OECD, 2014; Pureswaran & Brody, 2015). Transactions' data collection, management, and processing are very costly. With IoT development, transactions are expected to multiply significantly, in effect multiplying transactions costs. Blockchain technologies can help Korea overcome this bottleneck by expanding its IoT scalability at lower costs.

Korea also faces significant data security issues. Multiple data leaks and cyber attacks in recent years threaten the data security of Korean IoT users (Choe, 2014). Stringent data privacy measures are needed to maintain data integrity and consumer confidence, especially if Korea plans to model its IoT development on centralized cloud computing.

Finally, Korea faces sustainable innovation concerns. While IoT innovation is decentralized and incentivized by the State (KISDI, 2014), it is lagging because of issues such as improper knowledge transfer and collaboration between start-ups and SMEs, insufficient IoT vs. ICT R&D investments, and insufficient market share opportunities for SMEs (OECD, 2014). Resolving these issues and building an innovation friendly environment can help Korea boost and sustain its domestic IoT innovation.

Conclusion

Korea has great potential to be a leader in the Internet of Things (IoT) industry. Its sophisticated ICT infrastructure, high Internet connectivity, and investment in smart products (Kim & Yoon, 2015) can push Korea on the forefront of IoT services development and product exports. However, its centralized cloud computing and Big Data analytics IoT approach may not be cost and time effective when the number of IoT transactions increase. Therefore, to maximize its high connectivity advantage and to fully realize potential benefits offered by IoT connectivity, Korea should consider application of decentralized technologies such as blockchains.

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The Battlefield and Hunting Ground of Online Marketing: The Ecology of Advertising and Copywriting in Weibo

Wan Man Tsz
Student, The Chinese University of Hong Kong

By June in 2015, the number of Chinese netizens had rocketed to 668 million, 48.8% of China's population (China Internet Network Information Center [CNNIC], 2015). Just like any other country in the world, these netizens are thirsty for a wide variety of online entertainment, commerce, and information sources, among other services. However, trapped and shielded by the "Golden Shield Project," more widely known as "the Great Firewall of China," the Internet ecology of Chinese citizens is developing in the absence of worldwide Internet giants. Given that Google, YouTube, Facebook, Twitter, and many other sites are shut out of China by the firewall, the ecology of social websites in China is almost a closed system with fixed entities and input comprised of censored foreign and mainland information. Despite this disconnection from the world, the closed system has produced social websites with distinctive features tailored to the preferences and needs of Chinese citizens. Weibo, which means micro blog, is basically the Chinese version of Twitter, and this platform has become a battlefield and hunting ground of online commerce and online marketing. This essay focuses on the unofficial online marketing happening on Weibo, the significance of this phenomenon, and discusses how Weibo users make use of Weibo to earn money through online marketing.

Developed in China just five years ago, Weibo has quickly become one of Chinese netizens' most important sources of information and channel to transmit social messages. Sino Weibo (the full name of the platform) has grown to the most popular microblog in China, to the extent that term "Weibo" has become synonymous with this platform. Similar to Twitter, Weibo allows users to instantly share information with personal connections or to publish information openly. 43.6% of Chinese netizens are Weibo users, including users from the government, enterprises, online stores, celebrities, and public figures

that disseminate information and messages for personal and professional purposes (CNNIC, 2014). The netizens on Weibo usually have comparatively high incomes, and the younger generation of users is usually highly educated: 49.9% of them have received tertiary education (CNNIC, 2014). On average, Weibo users are the youngest among all social media platforms in China (CNNIC, 2014). Thus, it is not surprising that these young and rich users become the target of online marketing.

The highly socialized and communicative functions of Weibo favour messages and content transmission, and thus advertising and public opinion channeling. While Weibo allows only 140 characters in each post, the Chinese language needs just two characters on average to convey the same meaning as an English word composed of many more characters. Hence, 140 characters in Chinese can encompass three or even four times the content than could be expressed in English (Gao et al., 2012). Since 140 Chinese characters is short enough to keep people's attention but not long enough to annoy people, Weibo users can use this length to advertise or do public relations tasks efficiently, briefly introducing a commercial product or sharing a short story to catch people's attention. Moreover, Weibo supports longer posts via pictures used to display text more than 140 characters long, which has led to the birth of professional joke writers on Weibo (discussed later).

Weibo authority as a source and identity verification secure the authenticity of information on Weibo and fosters big Vs (popular verified users), who are the main force behind online advertising. A large population of users online speed up the spread of both rumours and real information. Verified users are identified with a "V" sign on their profile picture so that netizens can identify the sources of information. Verified information makes Weibo relatively trustworthy, and people can rely on Weibo for obtaining information. Popular verified users that have a large number of followers are recognized as "the big V". These big Vs, to a large extent, are the major figures that channel public opinion and discussion for their own purposes. Instead of a platform for the creation of strong social relationships, research has shown that Weibo users' relationships are weak compared with other social websites. In other words, people frequently follow other Weibo users they do not know in real life (CNNIC, 2015). This shows that users regard Weibo more as a channel to obtain information than as a tool to communicate with friends (CNNIC, 2015). As a result, the big Vs take advantage of their mass followings and play a vital role spreading viral messages and information.

The above characteristics of Weibo foster the birth of professional private advertising agencies. These agencies have three ways to advertise for their clients. The first approach is for agencies to create their own big V accounts, which are managed by the agency (Liu & Yao, 2015). The agencies register accounts and employ professional management teams to generate or gather interesting posts to catch the attention of Netizens and boost their number of

followers. Such agencies also sometimes purchase well-managed and popular big Vs' Weibo accounts to run. A big V named "Weibo Jokes Ranking (*Wēi bó gǎoxiào páiháng bang*)" made a profit of 21 million RMB when an agency named Feibo purchased the account and started advertising on it in 2011 (Liu & Yao, 2015). The second way that agencies advertise via Weibo is through the big Vs who sign cooperation contracts with the agencies (Liu & Yao, 2015). These big Vs have relatively high autonomy in managing their Weibo accounts compared to the first type of user. They run their own Weibo accounts and continue to gain their own popularity. The more followers and views they have, the more valuable are they to agencies. The agencies collect orders from various companies and distribute the orders to the second type of big Vs. The income from these big Vs varies in accordance with their number of followers and views.

The third way is to approach and form relationships with clients targeted by big Vs. Unlike the second type, these big Vs do not sign cooperation contracts with the agencies and usually do not a make a living from Weibo advertising. They become popular by sharing their habits, opinions, or other specific types of content online. If clients are interested in advertising through these types of big Vs, the agencies approach these big Vs and persuade them to help advertise certain products. For example, the agencies will approach big Vs specialising in makeup and fashion advice, and persuade them to make a post for certain brands of cosmetics. This type of big Vs has the highest autonomy and account for the least income to the agencies.

The first and the second type of Weibo users professionally manage Weibo accounts and generate jokes for advertising. They are recognized as "*Duànzi shǒu*." "*Duanzi*" is a jargon in a tradition Chinese comic dialogue or cross talk meaning "a chapter of joke or story". "*Duànzi shǒu*", which means joke writer, in Weibo becomes a term referring to professional copywriters who incorporate advertisements into jokes and stories for commercial purposes (Liu & Yao, 2015). Because the advertising effects of Weibo big Vs are remarkable, this business has become very profitable. After years of keen competition, three agencies have emerged as near monopolies in the Weibo advertising market, which in total signed contracts with 90% of professional *Duànzi shǒu* (Liu & Yao, 2015). They are still competing with each other for the greatest share of the market, and Chinese media has named this continuing competition "the Game of Thrones of *Duànzi shǒu*" (Liu & Yao, 2015).

To *Duànzi shǒu*, views, likes, clicks, and shares are the source of their great fortune. A popular post with thousands of views can bring them a profit of hundreds to thousands of RMB (Liu & Yao, 2015). Accounts can be divided into two categories according to the way they generate content. The first type is the collectors. They do not generate jokes or content but collect and share (or copy) interesting posts from others to boost followers. They collect funny and trendy pictures, videos, and news to provide entertainment for their

followers. Followers subscribe to them so as to save the effort of updating themselves on popular topics. Research has shown that over 80% of Weibo users use Weibo to catch up with news and hot talk of the town, and over 60% follow topics of interest and famous bloggers (CNNIC, 2015). Some collectors even collect hot topics from the western social media such as 9gag, Facebook, and YouTube (Liu & Yao, 2015). Consequently, general users do not have to risk violating the law to catch up on world trends. The collectors act as organizers that sort massive amounts of information online into different categories that interest different Weibo users. By inserting advertisement in the posts, *Duànzi shǒu* and general Weibo users benefit each other. *Duànzi shǒu* are making a profit from increased likes and views, and the general Weibo users save time and effort in searching for information that interests them. Moreover, general users do not have to risk breaking the law to get updates about world trends because these collectors copy posts outside the Great Firewall and post them on Weibo.

The second type of users are the creators. The creators are very successful in maintaining a favourable personality online. They write jokes and posts in their own style. For instance, a *Duànzi shǒu* named "Genius Panda" (*Tiāncái xiǎo xióngmāo*) wrote a short story about a man who used his cat's fingerprints to unlock his phone for fun. Unfortunately, he forgot to charge his phone and set a password, and he was forced to bring the cat with him to work since he stored some important documents on his phone (Liu & Yao, 2015). This funny story went viral on Weibo and not many people noticed that it contained a subtle advertisement for a cell phone brand. To avoid criticism and sensitive legal issues in China, *Duànzi shǒu* never write about or make fun of politics and news, which creates huge difference in terms of the ecology of content on Weibo compared with western social websites and media (Liu & Yao, 2015).

Apart from content generation, *Duànzi shǒu* also have various tricks to increase views. The most primitive way is to register numerous Weibo accounts, and then like and share the posts the *Duànzi shǒu* has made. Weibo has a ranking system that calculates the number of likes, shares, and comments of each posts per hour and ranks the most popular posts. Other general Weibo users can just click the rank and see what has gone viral on Weibo in the previous hour. Once *Duànzi shǒu* post advertisements, their agencies will make use of those accounts to like and share the posts rapidly (Liu & Yao, 2015). Thus, *Duànzi shǒu* with agencies backing them from behind can easily get to the hit rate rank of Weibo and then come to the attention of many real Weibo users.

As you can see, Weibo provides a free platform for netizens to create both non-materialistic and materialistic values. The commercialized ecology of Weibo, despite the troubles of product placement marketing, provides convenient ways to obtain and exchange entertainment and information. These interactions among Weibo users helps create social cohesion and a sense of belonging within a community. Users online feel as if they have a real

connection with the rest of society when they can be involved in discussions through Weibo (CNNIC, 2014). Furthermore, the stories of the three types of *Duànzi shǒu* agent companies show how the connective function of the Internet can bring people and businesses together. The low-cost of entering into business on Weibo also provides teenagers who are creative and sensitive to social and worldwide trends the incentive to start up their own business without having to suffer from the high cost of renting a physical space. This helps to even the playing field within the business world and empowers young people to stand up to the keen competition of traditional monopolies. *Duànzi shǒu* reform our understanding of copywriting, and help to create a cultural industry that earns money and contributes to social cohesion. Weibo, as an Internet communicative technology, has proven how the Internet can be a fair and common ground for everyone to develop their business. The ever-changing Internet ecology in the half-closed Internet system in China always has room for ambitious beginners on the hunt for a better future.

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Bitcoin, Blockchain & Banking: The Next Best Thing for Development in Southeast Asia

Hauwa O. Otori
Independent Researcher

The Internet has changed the way people interact with each other, engage in democratic discourse, and even the way that we create economic opportunities. For those fortunate enough to have access, the Internet has infiltrated every aspect of daily life and its benefits are endless. These tremendous economic and societal benefits are why Facebook founder Mark Zuckerberg recently urged the United Nations (UN) to deem universal Internet access a global priority and announced (along with Bono's "One Campaign") the "Connectivity Declaration" (Dove, 2015). This declaration, in support of the UN's goals to eradicate poverty over the next 15 years, recognizes that Internet access is a necessity for achieving humanity's goals and aspires to ensure global online access by 2020 (Dove, 2015). Stated simply, Zuckerberg sees Internet access as an important means of decreasing global poverty.

As intergovernmental organizations, governments, and private and public sector actors collaborate on avenues to eliminate global poverty, financial technology (FinTech) start-up companies have identified the "sweet spot" between digital technologies and economic development. Given its long history of digital adoption coupled with its economic potential, Southeast Asia presents a promising case study for how companies are experimenting with Bitcoin and blockchain to offer alternative forms of financial services in lieu of traditional banking to lift people out of poverty and bring marginalized groups into the global economy.

Bitcoin and Blockchain Explained

FinTech companies are leveraging today's digital environment to inspire greater financial inclusion. This sector is growing quickly and has generated $12 billion

worth of investments in 2014 - up from $4 billion the previous year ("The fintech revolution," 2015). Comprised in part of startup companies seeking to deploy emerging technologies, the FinTech industry has the potential to mitigate and even eliminate the challenges faced by about 2.5 billion adults currently excluded from formal financial systems around the world (Chaia et al., 2010). But, what are Bitcoin and the lesser-known blockchain technology?

Capitalizing on the 2008 financial crisis, Satoshi Nakamoto, the pseudonym for the creator(s) of the Bitcoin protocol whose identity is unknown, created Bitcoin and published a white paper describing Bitcoin as a decentralized network permitting the direct and secure transfer of electronic payments without involving third-party financial institutions (Nakamoto, 2008). The Bitcoin network (Bitcoin with a capital "B") facilitates the transfer of its own unit of value called bitcoin (with a lower case "b") (Khaosan, 2014). Making its debut in 2009 and initially deemed "magical Internet money," bitcoin and the Bitcoin network quickly gained traction as people began to see the value in a system they could trust that operates outside the purview of traditional central banks (Macheel, 2014). More specifically, Bitcoin users identified value and potential in the system's underlying blockchain technology, which largely solves what is known as the "double spending problem" (Cawrey, 2014). Double spending occurs when a single unit of digital currency like bitcoin is spent not once but twice, leaving the system susceptible to fraudulent activity (Lee, 2015). In other words, the blockchain, essentially public a ledger that keeps a permanent record of all Bitcoin transactions (Lee, 2015), makes it difficult for a user to defraud the system through its complex verification process. To better understand the process, consider how a Bitcoin transaction works: When a Bitcoin user wants to launch a transaction, the user shares information regarding the sender, recipient, amount, and other relevant information with the Bitcoin network (Lee, 2015). Computers on the network, also known as nodes, also share this information with each other so that essentially everyone is put on notice of the transaction (Lee, 2015). These computers race to verify the transaction by working to solve a complex mathematical problem (Lee, 2015). The computer that solves the problem first shares the solution with other computers (Lee, 2015). After those computers confirm that solution, they add a block to the blockchain, which ultimately becomes a permanent part of the blockchain (Lee, 2015).

In regards to blockchain, early Internet pioneer and venture capitalist Marc Andreessen has described the technology as "the most important invention since the Internet itself" (Gault, 2015). FinTech start-ups, alongside academic institutions, non-profit organizations, and banks are heeding Andreessen's statement and exploring the blockchain's potential, particularly in regards to financial services. The blockchain's rising popularity is attributable to its characteristic as a trusted, decentralized network that can be accessed by any one. Bitcoin is a permission-less network that allows its participants to freely innovate and create services (Lee, 2015).

It is important to note that recent dialogue between the Bitcoin and traditional financial services communities reveal disagreements over how the Bitcoin network and the blockchain are viewed. For instance, while veterans like Coinbase Co-Founder Fred Ehrsam believe that Bitcoin and blockchain are one and the same, others choose to focus squarely on the blockchain (F. Ehrsam, personal communication, September 21, 2015). The attempt to create a conversation that disassociates Bitcoin from the blockchain may come down to either a mere issue of branding or a larger political issue. On the one hand, Bitcoin cryptocurrency is not widely adopted by consumers and merchants, and its pricing often fluctuates. As such, focusing on the positive benefits of the blockchain may be better in terms of improving the public's perception. However, this split could also be the result of a larger political issue. Financial institutions are likely wary of technologies that could challenge their existing system; therefore, focusing on blockchain technology and determining methods to transform the technology into closed, permission-based networks would likely keep them competitive in the fast-paced world of FinTech (Arnold et al., 2015). Nonetheless, investment in FinTech in the Asia-Pacific region is on the rise, skyrocketing from US$800 million in 2014 to US$3.5 billion during the first nine months of 2015 (Rizzo, 2015a). Management consulting firm Accenture predicts that blockchain start-ups will be part of the next frontier in the region, and the firm advises banks, credit card firms, and start-ups to investigate ways to develop blockchain technology ("FinTech Investment," 2015). With focus on the region, there is a case to be made for Southeast Asia in particular. Venture capitalist John Kim recognizes that although some parts of the region face infrastructure hurdles, the region's young population, smartphone penetration growth, and its increased economic growth and power of consumption matched paired with certain pain points, such as the need to store and transfer money and income gaps, make it a viable area for cryptocurrency opportunities (Coin Congress, 2015).

The Case for Southeast Asia

When it comes to the Internet and digital technologies' potential impact on economic and societal transformation, Southeast Asia is a promising region. Despite low Internet penetration - 35 percent of its population of 600 million have access to the Internet - Southeast Asia has embraced the Internet and digital technology and continues to show great promise for digital adoption (Do, 2013), particularly in the context of civil discourse and economic development. For instance, long before the rise of social media and its role in mobilizing people, Southeast Asians have leveraged technology to engage in digital activism. Consider the 2002 ousting of Philippines President Estrada. At that time, Filipino activists relied on text messages via mobile phones to issue calls to protest and demand the resignation of the country's then-corrupt leader (Coronel, 2002).

Additionally, over the last few years, the region's economy has seen millions of people raised out of poverty. According to a recent interview with MasterCard's Matthew Driver, the region's $2.3 trillion GDP increases at a five percent rate annually, indicating significant consumer opportunity (Driver, 2015). However, a large portion of the region's population remains un-banked. Only 27 percent of adults have a bank account, and only 33 percent of firms have a loan or line of credit (Salze-Lozac'h & Warren, 2015). These low rates are in part due to lack of access to formal bank branches in particular areas. In Indonesia, for example, there were approximately 10 commercial banks per 1,000 km2 and about ten commercial banks per 100,000 adults (Villasenor et al., 2015).

McKinsey Global Institute, the business and economic research arm of multinational management consulting firm McKinsey & Company, suggests that increased deployment of digital technologies, such as the mobile Internet, will continue this growth (Woetzel, 2014). Southeast Asian consumers are leapfrogging past feature phones and are increasingly using smartphones (Deloitte Digital, 2015). In the first quarter of 2015, smartphone shipments amounted to about 24 million units, a 65.6% year-over-year growth (International Data Corporation, 2015). Already, countries such as Indonesia and the Philippines are embracing mobile devices to digitize financial services such as remittances. Additionally, traditional financial services companies like MasterCard are bringing mobile payment to the area to increase inclusion (Driver, 2015). In the midst of this digital revolution, blockchain technology could prove to be a significant game changer for the region.

The interplay of Southeast Asia's positive view towards digital technologies, its economic potential, and the large numbers of people outside of traditional banking systems make the region a hotbed for innovation in blockchain technology. Start-ups are exploring areas that could lead to more inclusion. Consider the following examples:

Remittances: Global remittances describe the act by immigrants who send money from their host country to parties in their home country. The remittance industry in Southeast Asian countries like Indonesia and the Philippines is worth billions of dollars - $13 billion and $26 billion, respectively, as of 2015 (Tan, 2015). In 2016, $459 billion worth of remittances will be sent to developing areas like the Philippines (Tan, 2015). Because organizations like Western Union or cash vendors acting as remittance vendors often apply high transfer fees to these remittances, applying blockchain technology to the remittance market enables instant transactions and eliminates these high transfer fees. Additionally, given the blockchain's ability to confirm and secure transactions, people leveraging remittance services based on the blockchain can remain confident in the system. For instance, the remittance app Abra, which relies on bitcoin and blockchain technology, recently announced a launch in the Philippines (Higgins, 2015) for peer-to-peer transactions to occur in a secure way without bank accounts and transfer fees (Abra, 2015). Other

mobile apps like Coins.ph's Teller are poised to offer similar services in the region (Rizzo, 2015b).

Educational Funding: Though not squarely within the traditional definition of financial inclusion, higher education can lead to increased financial opportunities. Skola Fund, a start-up featured in Singapore's FinTech Startup Bootcamp, seeks to offer funding sources to undergraduate students via a crowdfunding platform based on blockchain technology. Skola previously garnered 1,300 registered users in Malaysia alone, proving that students are interested in accessing this type of innovative service to fund their academic aspirations (Jimenez, 2015).

Conclusion

Many factors and characteristics illustrate why Southeast Asia would benefit from services based on bitcoin and blockchain technology to increase financial inclusion among the region's un-banked or marginalized groups that are typically unable to access traditional banking services. Through internal research efforts and sponsored hackathons, financial institutions and FinTech start-ups are exploring potential uses for the blockchain. For instance, leading global bank Citigroup created its own digital currency based on the blockchain called Citicoin (Cosseboom, 2015). Given the number of un-banked people in the Asia Pacific region, there is speculation that Citigroup will test Citicoin in Asian emerging markets (Cosseboom, 2015). Additionally, the bank is also said to be considering ways to use blockchain technology to create a form of money specific to the Southeast Asia region (Cosseboom, 2015). Furthermore, technology company IBM sponsored a hackathon hosted by Singapore's DBS bank to determine blockchain use cases for the un-banked while maximizing existing systems (Cosseboom, 2015). As venture capitalists John Kim indicated, determining viable blockchain use cases for financial services could help the Southeast region facilitate the transfer money not only within Southeast Asian countries but also across borders, as well as close income gaps (Coin Congress, 2015). While financial services seem to be a low hanging fruit, there are a myriad of solutions that could potentially boost financial inclusion in Southeast Asia. Beyond financial services, FinTech companies also have the opportunity to apply blockchain technology in other areas impacting economic growth, such as government transparency through maintaining a trustworthy and accurate record of a politician's voting record (Cosseboom, 2015). The possibilities are boundless.

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Silicon Markets: Smart Hardware from The Streets

Anna Greenspan, Silvia Lindtner, and David Li
Hacked Matter

The street finds its own uses for things.

William Gibson (Burning Chrome)

In June 2015, Shenzhen hosted its second featured Maker Faire, bringing DIY (do it yourself) makers from all over the world to the manufacturing hub in the South of China. On display were an assortment of enticing gadgets showcasing the latest experiments in the Internet of Things: drones the size of one's hand flew above the heads of tens of thousands of visitors, while transformer-like robots marched through the rows of booths sponsored by Intel, Microsoft, Qualcomm, Foxconn, Arduino, and many more. At the opening ceremony, two key figures of the global maker movement Dale Dougherty, founder of the Maker Faire, and Eric Pan, CEO of Seeed Studio ("Seeed Studio," 2015), shook hands with the Shenzhen mayor, who announced Shenzhen's commitment to play a central role in what China's national government calls "mass making" 众创, (a national government policy that promotes entrepreneurship and innovation by funding makerspaces in universities, middle schools, factories, and corporations). The Shenzhen Maker Faire in June symbolized a unique moment for the young city. Until recently, most people knew Shenzhen (if they knew it at all) as a place, where ideas generated elsewhere are simply executed. Today, Shenzhen is celebrated as the "Silicon Valley for Hardware" (Stevens, 2015) and large corporations, investors, and hobbyist makers flock to the city to follow its hype and promise: 'if you can imagine it, you can make it in Shenzhen.' (Stevens, 2015)

Yet, despite its ambitions to insert itself into the glossy world of high-end design, Shenzhen is a cyberpunk city. Alongside the slick formality of corporate events, there is a thriving, vibrant, culture of the street. This is especially vivid in the city's famous chen zhong cun (urban villages) - informal neighborhoods where open air restaurants, fish and fruit vendors share their narrow spaces with pool halls, repair workshops, and mahjong rooms that spill out onto open lanes. Shenzhen's animated street culture seeps its way to every corner of the metropolis, as seen, for example in the jiaozi (dumpling) stands that are set up on weekday mornings just outside the slick glass surface of Shenzhen's expanding landscape of luxury hotels, corporate buildings, and exhibition centers.

Street life and street markets are also key to Shenzhen's emerging identity as the "Hollywood or Silicon Valley of Hardware," epitaphs favored by the city's boosters - from local government officials to entrepreneurs and makers from all over the world. Central to this new urban imaginary are the electronic markets of Huaqiangbei, a 15-by-15 city block area, where an enormous array of electronic components and devices are sold, recycled, and assembled. Though the markets are housed in a cluster of multi-story malls, they come from - and belong to - the streets. The Huaqiangbei markets are part of an open source ecosystem of manufacturing (known as shanzhai) that has emerged in China's Pearl River Delta in the shadows of large contract manufacturing. This open innovation model of technology production has evolved over the last 30 years, feeding off of low barriers of entry, an outlaw spirit, and a corresponding high-speed mode of copy-and-mutate design and production. In the markets, versions of the products on display at the Shenzhen industrial design fair are available at a fraction of the price. Smart watches, wearable bands, and personal drones all can be found for a few hundred renminbi.

The world of consumer electronics is at a strange phase, evoking a peculiar mix of fevered excitement and ennui. On the one hand, the plummeting costs of hardware and digital fabrication have resulted in an explosion of new tools and devices (e.g. 3D printers, household robotics, drones, wearables, and the wide variety of devices that make up the Internet of Things). Yet, exhilaration at the proliferation of 'smart' objects is tempered by the sense that, at least so far, no one is really sure what any of this stuff is for. High profile failures of celebrated gadgets like the Nike FuelBand and Google Glass make plain that the current wave of global technological production is still very much unsettled.

At the Maker Faire none of this ambivalence was on show. Instead, makers and corporates from around the world skillfully wrapped their seductive machines and tools in a change-the-world rhetoric. Behind the hype lurks a familiar business model. Today's emerging hardware companies look to the existing giants - Facebook, Google, and Twitter - and see their money and success coming from the speculative drives of the Internet economy. What matters, here, is not the hardware itself but the abstraction through software,

advertising, and big data analytics. As DIY makers morph into entrepreneurs, many begin caring less about the careful crafting of an object (in contrast to what the maker movement might have us believe), and begin focusing instead on the potential network effects of devices that have the capacity to extract data from a user's behavior. Misfit founder Sridhar Iyengar, for instance, has spoken openly about this approach. Trained as a data scientist, Iyengar views the value of wearables in the data they collect. The company's goal is to create a device so appealing that customers will be compelled to wear them all the time, keeping their monitoring powers close to the skin, day and night. Tuned sharply to the promise of VC funding, this vision sees market domination as the mark of a truly successful wearable device.

In contrast, the shanzhai goods sold in the stalls of Huaqiangbei do not come with end-user license agreements or service models, and are not accompanied with big data analytics or advertising plans. Neither do they have expensive marketing campaigns or rely on the funding of venture capitalists. Instead, capital is borrowed through informal networks, and companies operate primarily with the conventional rules of trade that emerge spontaneously in highly competitive markets. Shanzhai companies do not drift far from financial fundamentals. Unlike VC funds, which choose technology companies in the hope of betting on the next monopoly, shanzhai investors are concerned only that they are repaid with the interest that was promised. This tends to encourage a culture of fierce entrepreneurialism characterized by breakneck agility, micro-experimentation, and the use of the market itself as a product testing ground. The result is a kind of low-end, "folk art" style of its own - a bracelet that is also a USB cable; a power bank modeled on an anime cat; a whole range of adaptations on the electronic unicycle; a flashlight that is also charger, a host of other creative gadgets. This is not the sleek, high-tech design of a global elite that tends towards uniformity; it's the cheap, multifaceted, and niche technology of a vast population that lives predominantly outside the cherished high-end markets of the West.

Shanzhai production constitutes an alternate global market in electronics, which has more in common with the street food hawker than it does with chain restaurants in shopping malls. Though less visible than well-known global brands, Shenzhen's open ecosystem is enormous in scale, producing 300 million phones and 100 millions tablets per year. For instance, in 2014 alone, it released 2 million smart bracelets and 1 million smartwatches to the market as white-labeled products (about 1/5 of global shipment) (Liu, 2014). The intensity of this mode of cutting-edge technology production has already disrupted companies like Nokia and Motorola, which cater primarily to high-paying customers. Devices created and made in Shenzhen are distributed in Africa, India, South America, Europe, and the United States. They are sold as no-name devices in Walmart and Target, and are also behind new disruptive brands, such as Wiko ("Wiko Mobile," 2015) in France or Tecno Mobile ("Techno Mobile," 2015) in Africa.

This distinction between branded high-end technology and cheaper, mutant offshoots receives abstract articulation by historian Fernand Braudel. His three-volume exploration "Civilization and Capitalism" takes pain to distinguish the capitalism of large monopoly-driven corporations from the trade of markets, which always exist in a "layer beneath" (Braudel, 1984). Drawing on Braudel, theorist Manuel de Landa (Delanda, 1996) reinforces this differentiation (or even opposition) between the capitalism of large corporations (which he names anti-markets) and the self-organizing, decentralized realm of small businesses and small shops that constitute the markets of the street. Throughout his historical analysis, Braudel shows that these two economic realms - a capitalist order consisting of monopolistic corporations and a substratum of market activity - have both been at work for centuries. In addition to the monopolistic dealings of the East Indian Company, for example, there was always a vast hybrid traffic of smaller 'pirate' trade. Yet, while this more centralized and organized economic order has always been more visible, its secret is the strength it draws from the markets, which continually exist underneath and alongside it. Braudel repeatedly draws attention to "the enormous creative powers of the market" of this "lower story of exchange..." (Braudel, 1984)

In Shenzhen, as elsewhere, these two economic models - capitalism and street markets - are often intertwined. Aspects of shanzhai production feed into the glossy companies on show at the design fair just as elements of high end corporate capitalism - VC funding, advertising, data analytics - seep into the markets of Huaqiangbei. In Shenzhen today, however, the interplay of these two systems is especially vivid. As designers and makers from around the world flock to the metropolis, the question of a how a global technological elite interacts with, and are influenced by, the culture of the street will shape not only the future of the city but also the way in which technology's latest wave - wearables, robotics, IoT, and ubiquitous computing - gets made.

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Chapter 4

Governance, Rights, and Policy

The Real Digital Divide in Southeast Asia

Pirongrong Ramasoota
Department of Journalism
Faculty of Communication Arts, Chulalongkorn University,
Bangkok, Thailand

The understanding of digital rights is largely shaped by context. The North American and European conception of digital rights tends to highlight the relationship between copyrighted digital works such as film, music, and artistic expression and user permissions, and rights as they relate to computers, networks, and electronic devices. However, in other parts of the world, particularly in developing countries, access to and control of digital information is stressed.

Within the information and communication technology (ICT) and development paradigms, the discourse surrounding access and control of the Internet and digital information is usually framed by connectivity, diffusion, penetration, and ownership of new technologies. "Digital divide," (OCED, 2001) has been widely used to describe the disparity of access to ICT and usually comes with a set of standardized policy recommendations to close the gap caused by socio-demographics and distance.

But the real digital divide may not lie only in the extent that access and use capacity can be measured with empirical and quantifiable data. Issues such as copyright and the right to free speech also impinge upon the actualization of digital rights and impede development towards a dynamic digital economy and society.

A good case in point is Southeast Asia, which has formed a regional bloc of 10 countries in the Southeast Asia region known as the Association of Southeast Asian Nations (ASEAN). With a combined population of around 600 million people, ASEAN is increasingly recognized as an emerging digital market with a growing base of digitally savvy online users and some of the most prolific users of smartphones and social media in the world (Castro, 2015). Nevertheless

the region is facing both digital rights opportunities and challenges, partly because the pool of countries in ASEAN is politically, socially, economically, and technologically diverse.

ASEAN member countries span not only the political spectrum but also the economic spectrum. Highly democratic and transitional societies like the Philippines and Indonesia, and increasingly Myanmar, juxtapose autocratic democracies like Singapore, repressive single-party regimes such as Laos, Cambodia, Vietnam - and lately Thailand - and absolute monarchies like Brunei. Economically, Singapore and Brunei are well within the high-income brackets, Malaysia and Thailand in the upper middle income bracket, Indonesia, Philippines, and Vietnam (in that respective order) in the lower middle, and Laos, Cambodia and Myanmar in the low income group.

Furthermore, a recent Internet Society study observing digital access as measured by Internet penetration found three clusters of countries that do not necessarily correlate with their economic strata: (1) Singapore, Malaysia, and Brunei in the majority access (above 60 per cent of the population) (2) Thailand, Philippines, and Vietnam in the partial access strata (between 25-45 per cent) (3) and Indonesia, Laos, Cambodia, and Myanmar in the low access strata (between 1-20 per cent) (Internet Society and TRPC, 2015). The ASEAN countries are thus diverse in terms of their internet access rates as well.

But beyond these figures and statistics, ASEAN nations generally are finding cyberspace to be a contested terrain for their rights to free expression. Evidently, the rapid growth of digital technology and media online has facilitated citizen engagement and civil society groups' mobilization in this region, where the state still maintains strong control on conventional forms of public media, especially broadcasting. However, at the other end of the spectrum, several ASEAN governments and their allies are quashing expression online.

The most obvious tool for controlling online speech is law. The Philippines and Thailand, for instance, have enacted laws that threaten online freedom of speech through the Cybercrime Prevention Act of 2012 and Computer-related Offences Act of 2007 respectively. Myanmar, though undergoing transition, maintains draconian laws such as the Electronic Transactions Law of 2004. Vietnam introduced in 2013 Decree 72, which limited blogs and social media from disseminating content potentially harmful to national security and opposing government. Similarly, Malaysia continues to suppress online free speech with a long-existing sedition law that purports to support the building of a stable, peaceful, and harmonious state.

Breach of such laws usually entails grave penalties, hence creating a chilling effect and driving self-censorship among the netizens in the region. In August 2015, a new precedent was established in a case in Thailand's military courts that sentenced two people whose Facebook status updates and comments "insulted

the royal family" to 28 and 30-year imprisonments, the harshest punishment in recent decades (The Guardian, 2015). Meanwhile, Singaporean political leaders continue to use criminal punishments for defamation to suppress dissidence, as evidenced in the recent lawsuit by the Singaporean Prime Minister against an activist blogger, which demanded that the blogger pay unprecedented damages of US $282,000. Singapore's reputation is as the country with "the least freedom of expression of all advanced industrial nations" (Quartz, 2015) Its neighbor to the north, Malaysia, is amending its Sedition Act to extend to the maximum jail term for Sedition related charges to 20 years (from the current three years) and to establish a minimum three-year jail term for certain cases. The revised act will also make it illegal to propagate sedition or actions construed as seditious on the Internet.

Apart from the use of restrictive laws, there have also been efforts to control the digital flow of information by regulating online intermediaries through licensing, as in the case of Singapore, or by installing automatic content filtering system to ward off unwanted online materials - such as pornography or anti-Islam content - as in the case of Indonesia. Tactics even include redesigning the local Internet infrastructure to facilitate more control. In early September, the Thai military government reportedly followed the model of China's "Great Firewall" by introducing a "single Internet gateway" (Prachatai, 2015) concept, in hopes of restructuring the ways to control "inappropriate" content and content incoming to Thailand from overseas. ASEAN governments also tend to encourage online authentication systems that are traceable to individuals' actual off-line identity. There is no authority in the region upholding of the right to anonymity online.

In this light, civil society groups have actively campaigned to reduce, or even abolish, restrictions and argued for a multi-stakeholder Internet governance structure underpinned by the respect for human rights and democratic values. At the supra-national level, civil society members from Asia-Pacific convened in Pattaya Thailand early September to deliver the Pattaya Key Messages on the WSIS+10 Review ("Pittaya Key Messages," 2015). Civil societies recommended that Asian governments be proactive in building, promoting, and enabling the Internet ecosystem to promote the free exercise of digital rights. Appropriate legislation, capacity-building initiatives, and broad-based societal programs that promote plurality, public discussion, and rights-affirming cultures were noted as key elements for an open, free, and robust digital environment.

As far as ASEAN is concerned, these elements are also viable ways to remedy the real digital divide, in which access to free flow of digital information and the exercise of free speech is systematically curbed in many places. After all, the right to freedom of expression intersects with and is instrumental to the enjoyment of all human rights. Without seriously addressing these barriers, ASEAN cannot hope to unleash the full benefits of digitization.

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From Digital Divide to Language Divide: Language Inclusion for Asia's Next Billion

An Xiao Mina
Meedan

Access the Internet today in English, and one can find a plethora of content: news, cat videos, social media sites, and search engines all optimized for English speakers. The same could be said for Mandarin, Arabic, Korean, and Japanese speakers, all of whom enjoy a broad array of content and dedicated social networks in their respective languages, such as Sina Weibo, KakaoTalk, and Line. But accessing the web in Ilokano, a minority language in the Philippines, or Bihari, a minority language in India, leads to a very different experience; almost no major websites support these languages. Users can technically access the sites, but without the ability to understand and interact with the content these websites remain practically unusable to the speakers of such minority languages.

While conversations around Asia's digital divide have focused largely on mobile technology and digital literacy, long-standing language divides will continue to exacerbate issues of inequality and access for Asia's "next billion" Internet users. This essay argues that work to close digital divides and improve digital literacy must be paired with efforts to close language divides in Asia. Then it argues from both an experience design and technological standpoint what must be done to make this latter work sustainable and successful, namely, through activating human communities and shifting how we structure linguistic data on the web.

Digital Ghettos Bound by Language

Initiatives to close digital divides have taken at least two forms. The first focuses on improving access to communications technologies, focusing on, but

not limited to, mobile phone distribution, an approach made more and more affordable by dropping phone prices thanks to designs specific to emerging market needs. The informal market has opened pathways for low-cost phone distribution and repair, and small businesses have emerged to provide Internet cafes in both rural and urban parts of Asia.

Other initiatives concentrate on digital literacy, with a special focus on improving these skills for women and young people. While phones and computers are increasingly available to the next generation of technology users, the skills necessary to use these devices can remain limited. Access to phones correlates with formal education levels, often meaning that existing gender divides in more traditional societies exacerbate the gap (Davidson, 2011). This prevents women from picking up skills needed like word processing, social media usage, and basic privacy and security practices. NGOs like TESDA in the Philippines, the National Digital Literacy Mission in India, and ICDL Thailand have made digital literacy training and certification the focus in their work.

It is easy to imagine that getting people online and communicating via digital technologies can help ease inequalities, and evidence has largely demonstrated this. Access to mobile phones and the Internet correlates with increased opportunities for building livelihoods (Sife et al., 2015) and accessing educational materials (Valk et al., 2010). However, a significant divide remains: language. Asia's next billion internet users speak hundreds, even thousands of languages, and most of the web's most important content and conversations will be locked away from them, just as their content and conversations will be locked away from the world.

For example, Wikipedia, a thought leader in language access and frequently packaged with emerging market initiatives, supports hundreds of languages, but as translation depends on the Wikipedia community, some languages have more content than others. Articles available in the Konkani language of India range in the hundreds, compared to hundreds of thousands in Hindi and more than a million in Vietnamese (Wikipedia, 2015). Basic services like Google, Facebook, Line, WeChat, and WhatsApp support - on the high end - dozens of languages in their user interfaces and - on the low end - only a small handful.

Without improved language and writing script support, new netizens run the risk of living in digital ghettos created by their native tongues. Any online actions they engage in or media they create will be largely invisible and unappreciated by those outside their cultural-linguistic spheres. This can have significant effects, for instance, on human rights advocacy, which can depend so heavily on using social media and email to raise awareness amongst international news sources. Writing on the role of language in fostering attention for human rights, journalist Sarah Kendzior described the hierarchies of language implicit on the web:

> "When an Uzbek activist decides to share her ideas on the Internet, she has to balance linguistic prerogatives that few in other countries have to consider. If she knows Russian, she has to decide whether writing in Russian - and potentially reaching an international audience as well as the 41 percent of Uzbeks who can read Russian - outweighs not being able to reach non-Russian speaking Uzbeks or seeming to value a foreign language over one's native tongue. If she writes in Uzbek, she has to choose which alphabet - Cyrillic, to reach older generations and Uzbeks in neighboring former Soviet republics who only know the Cyrillic version? Or Latin, to reach the younger readers who comprise the bulk of Uzbekistan's Internet users?" (Kendzior, 2014)

New Internet users who don't speak majority languages will likely be unable to participate in global Internet culture and conversations as both readers and contributors; as Mark Graham and Matthew Zook have noted, minority languages speakers, especially those from the global south, will experience substantial information inequality online (Young, 2015). Indeed, people's inability to speak English can significantly affect their very adoption and use of the Internet, even if they are aware of its existence (Pearce et al., 2014).

Closing Language Divides

Closing digital language divides within such a diverse linguistic region like Asia will require a multifactor effort in translating content around the web. I argue that this effort must focus on both developing networks of volunteer human translators, and designing and implementing changes in the web's technological infrastructure.

Anyone who has used machine translation to translate between language pairs other than English and the Romance languages knows that the quality of machine translation engines is lacking, and improvements are slow to come by (indeed, even for the aforementioned language pairs). New language pairs require larger bodies of translation data before machine translation can be effective, and even then, we should expect similar plateaus as what we've seen with existing language pairs. In terms of accuracy, human translation offers significant benefits over machine translation, especially since bilingual individuals can understand the nuances of both languages in a way that machine translation cannot. However, it would be difficult for human translation to work under the current system - where translators are commissioned for piecemeal requests - to scale swiftly and sustainably enough to support the broad range and increasing amount of content requiring translation.
Rich, motivated translator communities composed of multilingual individuals can help assuage this issue. For years, fansubbing communities - groups of fans

who translate and subtitle video content such as anime, Korean dramas, and American sitcoms - have shown the power and popularity of crowdsourced translation around popular media. People working in teams can translate a video from English to Chinese rapidly, disseminating that content through translators' networks long before a commissioned translator can do their work. This informal translation work, widespread throughout many Asian countries, often reflects translators' passions for connecting different language worlds and building their reputations in the community (Zhang, 2013).

More formal efforts have leveraged interest-based communities and others with great success. Sites such as Yeeyan in China, which enables fan translator communities to translate popular Western news outlets into Chinese; and Viki in Japan, which does the same for popular Asian and Western videos, demonstrate both the benefits and potential risks of a crowdsourced approach. These platforms rely on internal reputation systems, and peer and editorial review to ensure success while adopting a relatively open, crowdsourced approach at scale. Smaller networks can be equally effective: as co-founder of the Ai Weiwei English project, I have found that a small community (at most 10) can translate and contextualize foreign language content effectively for an English-speaking readership (the @aiwwenglish Twitter account now has 30,000 followers). Supplementing this work with machine translation support, translation memories, user-generated glossaries, and common dictionaries can help speed up the work of translators while maintaining accuracy.

Activating these communities will require a radical change in how web content is presented on the Internet. Sites like Hypothesis and Genius have demonstrated that the concept of annotating the web and its content broadly can generate both popular interest and interest from funders. We can imagine annotation extended to translation. Indeed, content on Wikipedia, whose design allows for both annotation and translation, benefits from multilinguals who facilitate content between languages and act as critical content bridges (Hale, 2014). Our strong belief at Meedan is that creating a translation layer for social content on the web can help establish translation as a commonplace action (Bice, 2015), such that any and all content can be translated, vetted, and approved with the same familiarity as leaving a comment, sharing, annotating, and/or explaining content. Just as importantly, accessing those translations must be as simple as Chrome's current interaction for viewing a page through machine translation - in other words, part of the experience, rather than an extra, hidden feature.

Additionally, we must build and adapt technological infrastructures to allow for this work to occur at scale. The first change revolves around the very technology standards of the web, to allow for the wide diversity of languages online to be expressed. Mozilla users in Cambodia, for instance, are likely to see blank boxes rather than Khmer script (Valentine, 2015), due to limited font availability in both browsers and computers. Minority language speakers

are even less likely to find a keyboard - whether digital or physical - that supports the particular needs of their writing scripts. And while typographers of languages that utilize Latin letters can access a wide variety of fonts to maximize and improve readability on different devices, the font choices for minority languages remain severely limited.

Creative Internet users have always found ways around these strictures. In the Arabic-speaking world, for instance, "Arabizi" has emerged as a form of online Arabic using a combination of Roman letters and Arabic numerals that resemble popular Arabic letters (Yaghan, 2008). We can expect similar strategies amongst emerging language speakers in Asia whose written scripts are supported by neither screens nor device input. These user-driven workarounds should not be seen as a replacement for true language support for the broad diversity of written scripts used in Asia. Rather, they are better understood as an indicator of user need.

Similarly, technology platforms must accommodate for expressions of language that do not involve the written word. While typographical support will be important, many of the next billion will not be literate in their native languages, and, indeed, many languages may not have a standardized writing system at all (Bird et al., 2014). While the web continues to be optimized for textual input and consumption, improving designs for audio can significantly broaden who is able to participate online and how. An effective content translation solution must include this, with robust support for both speech to text and text to speech, regardless of the source language.

In the world described above, the barriers we imagine the Ilokano and Bihari speakers are encountering when they first log onto the web will start to crumble as more speakers come online and translate different parts of the web. They will be able to read the news, search for educational material, watch funny videos, and contribute to social media conversations. This is not to say that they will automatically be treated equally - power on the Internet depends as much on cultural and political context as it does on language - but they will have a path to closing the gaps of language and material access that do not exist for speakers of English and other majority languages. Thus, the translation work described above will be an important part of closing information and communication divides on the global web.

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Parenting the Parents: State Paternalism Goes Extreme Online

Kelly Kha Yeun Kim
Open Net Korea

South Korea is known as one of the most connected countries in the world, and 99.6 percent of South Korean youths qualified as digital natives in 2012 according to the International Telecommunication Union (ITU, 2013). A recent study by the Ministry of Gender Equality and Family of Korea (2014) revealed that smartphone penetration rate among Korean juveniles was 81.5 percent in 2013, showing a sharp increase from 36.2 percent in 2011 (Ministry of Gender Equality and Family of Korea, 2014). There is no doubt that Korean kids are blessed, especially when compared to the peers living in much less wired or unconnected parts of the world.

Unfortunately, the high connectivity among these young digital natives has exposed them to the threats unforeseen by the previous generations, such as cyber-bullying, online pornography, internet addiction, sexting, and so on. To older generations who aren't quite as settled into this new digital era, these incomprehensible risks lurking online obscure the greatness of the Internet, and make the Internet seem even more dangerous for their children and grandchildren. Thus, a global phenomenon coined in Korea as juvenile protection, a way to seek enhanced online protection for the younger generations, has spread.

One outstanding or distinct characteristic of the Korean juvenile protection regime is state paternalism. State paternalism is observed in every aspect of Korean governance; deeply rooted in the long tradition of Confucianism, state paternalism was the driving force behind the extraordinary economic growth under the authoritarian leadership of President Park Chung-hee from the '60s to the '70s (Tudor, 2012). However, it has taken its most extreme form in online juvenile protection, where the state bluntly assumes the parenting role, leaving no room for autonomy or self-regulation for other stakeholders, especially the parents.

The online juvenile protection regimes discussed below show how such a paternalistic approach not only infringes upon the parents' and the children's fundamental rights, but also hinders innovation. The Korean government should stop paternalizing society under the name of juvenile protection before it's too late to undo the damage. The law or law enforcement are powerful instruments, but should be seen as a "last resort" (Palfrey & Gasser, 2008).

Online Juvenile Protection Regimes Exhibiting Extreme State Paternalism

While the Juvenile Protection Act lays the foundation for juvenile protection in general, a number of laws also prescribes measures to protect juveniles online: the Act on Promotion of Information and Communications Network Utilization and Information Protection, etc. (ICNA), the Telecommunications Business Act (TBA), and the Act on the Protection of Children and Juveniles Against Sexual Abuse. Most of these measures impose direct obligations and liabilities on the intermediaries and online service providers, and failure to comply will result in criminal punishment for these entities.

Media Product Harmful to Juveniles

"Media product harmful to juveniles" refers to harmful content that should not be accessible by persons under the age of 19. The Juvenile Protection Act defines "juveniles" as persons under the age of 19 (art. 2 subpara. 1) and "media products harmful to juveniles" as those media products determined as harmful to juveniles by the Commission on Youth Protection or other competent examining authorities, the list of which is published periodically by the Minister of Gender Equality and Family (art. 2 subpara. 3). This type of content is not illegal - adults should be able to access it. However, it is very hard to access this content online for both juveniles and the adults alike because of the stringent restrictions set-up by law, as described below.

The ICNA, which applies to information and communications service providers such as telecoms, ISPs, and online service providers, dedicates several provisions to making sure that this "harmful" content is not found online. Any person who intends to provide the media products harmful to juveniles must label this media electronically so that anyone trying to access the content would know that it has age restriction (art. 42). A person who provided the harmful content for profit without labeling will be punished by imprisonment of a maximum of two years or a fine of maximum KRW 20 million (art. 73 subpara. 2). Even worse, advertising such harmful content online without the safeguards required for the content itself is also prohibited and criminally punished, thus treating the advertisement and the content being advertised equally harmful (art. 42-2 and art. 73 subpara. 3). For example, a banner or a pop-up ad on an

R-rated movie is considered media product harmful to juveniles and to access it would require verification of age. An information and communications service provider of a certain size or larger must appoint a juvenile protection officer, who is in charge of the juvenile protection duties including blocking and managing harmful content and establishing a juvenile protection plan (art. 42-3). A fine of maximum KRW 10 million will be imposed for not appointing the officer (art. 76(3)). Video or music streaming service providers providing the media product harmful to juveniles must store the content for six months (art. 43), or they will be fined (art. 76(3)).

It is very problematic that the state decides what our juveniles can read, listen to, and watch. While such administrative censorship should be carefully designed and structured, the Youth Protection Commission and most of the rating authorities are administrative bodies where no parents or civil society groups are involved, not to mention the artists or content providers. What is even more problematic is the amorphous nature of the list of harmful content. It is almost impossible for the content providers to label or filter out harmful content perfectly as the list is very extensive and ever expanding. The content providers inevitably become very conservative in choosing content for their users, because any minor violation of the juvenile restriction will result in criminal punishment. Consequently, adults' right to access this type of content is also seriously impaired. Moreover, onerous requirements for juvenile protection creates a barrier to enter into the market for new and small businesses, and hinders innovation.

Compulsory or Optional Game Shutdown Law

On May 19, 2011, the Juvenile Protection Act introduced several measures to prevent online game addiction. Notorious "Cinderella law" or "compulsory" game shutdown law refers to the Juvenile Protection Act, Article 26(1), which prohibits internet game providers from providing their service to juveniles under 16 from midnight to 6 a.m. An Internet game provider in violation of the provision will be punished by imprisonment of a maximum of two years or a fine of maximum KRW 10 million (art. 59 subpara. 5).

On top of that, the Minister of Gender Equality and Family must consult with the Minister of Culture, Sports, and Tourism when evaluating the list of restricted online games biannually (art. 26(2) and (3)), and may provide various kinds of support to the juveniles afflicted physically, mentally, or socially as a consequence of online game addiction (art. 27). The law was further enhanced to require online game providers to acquire the legal representative's consent when a juvenile under the age of 16 wishes to subscribe to their online games (art. 25). The online game providers must then notify the legal representatives of relevant information, such as how long the juvenile played the game (art. 26).

A constitutional complaint was submitted to the Constitutional Court on the game shutdown law in the same year it was introduced. On April 24, 2014, to the disappointment of the juveniles and the game industry, the Constitutional Court found the law constitutional by 7:2 decision (2011Hun-Ma659, 2014). The majority decision dismissed the complainants' claims that the law infringes upon juveniles' right to play online games, the parents' right to educate their children, and the game providers' right to do business (2011Hun-Ma659, 2014). However, the dissenting opinion stressed the importance of family autonomy and found the law too excessive and paternalistic. The dissenting justices quoted H.L. Mencken, "for every complex problem there is an answer that is clear, simple, and wrong" (2011Hun-Ma659, 2014).

Furthermore, there is another set of restrictions on the game businesses under the Promotion of Game Industry Act to prevent online game addiction which is very similar to the ones under the Juvenile Protection Act. According to the law, online game providers must put up time restrictions when a juvenile or the parent (legal representative) requests (art. 12-3(1)3). Interestingly, the law defines "juveniles" as "persons under the age of 18" (art. 2 subpara. 10), and thus incurs unnecessary confusion. This opt-in system, so-called "optional" game shutdown law, seems somewhat less restrictive than the compulsory shutdown under the Juvenile Protection Act, but the parents cannot choose this optional shutdown over the compulsory shutdown.

Apart from constitutional concerns, there is no reliable research that proves the effectiveness of the game shutdown regime in treating game addiction. On the contrary, it's been found that the kids are using their parents or other adults' identification to circumvent the age verification tools to play online games (Heo, 2014). This is a matter of grave concern, because the measures implemented to protect children are encouraging them to learn illegal behaviors instead. Moreover, Korean game developers and providers are losing the market share to oversea-based game companies who are not subject to the shutdown, thus damaging the Korean economy. According to a recent report by the Korea Electro Technology Research Institute (KERI), the shutdown law "shrank the market by 1.16 trillion won after its execution" (Kim, 2015).

Smartphone Filtering App Mandate

Since April 16, 2015, it has been mandatory for South Korean telecommunications business operators to provide filtering measures to block harmful contents on minors' mobile phones according to the Telecommunications Business Act (TBA). The mandate was initially proposed by the Korea Communications Commission (KCC), which had been seeking to mandate a filtering application for mobile devices used by minors for some time.

The TBA states that telecoms must provide means to block the media

products harmful to juveniles or obscene contents when selling mobile phones to juveniles, and prescribes any necessary matters to be specified in the Enforcement Decree (art. 32-7(3)). Accordingly, the Enforcement Decree sets out the procedure in more detail (Enforcement Decree of the TBA, art. 37-8).

At the point of signing the contract, the telecoms must notify both the juvenile and the legal representative (normally the parents) about choices of applications they have and install the app of their choosing (art. 37-8(2)1). Here is the first serious infringement upon parental rights, as the law does not allow the parents to opt-out, thereby depriving the parents from a chance to make an informed decision on whether to accept such filtering or monitoring apps for their children.

The Enforcement Decree of the TBA further compels the telecoms to monitor the phones to ensure that the app is always active (art. 37-8(2)2). This is a grave invasion on the children's privacy, because it allows private parties to collect excessive information about the juveniles that is not required to meet the purpose of the law - to filter harmful content online. Moreover, the parents will be notified or spammed nonetheless even if they gave consent to their children to delete the app (art. 37-8(2)2).

Additionally, Smart Sheriff and other similar software promoted by the government as the filtering measures required by the law come with various monitoring and controlling functions, which accumulate information of the users, such as the length of Internet usage, the websites visited, the apps being used, and social media content that has been received and sent. All the information collected will eventually allow for a complete profiling of an identified juvenile's online activities, and the juvenile's privacy online will vanish. Moreover, such comprehensive information of an individual can easily be targeted and exploited by a malicious party.

It is uncertain whether the benefit of barring juveniles from viewing certain adult material justifies the cost of implanting such a comprehensive monitoring and control app in the juvenile's' personal communication devices, which engender a horrifying list of risks that requires special attention from the technical communities and all other stakeholders involved. Furthermore, many juveniles are learning to use technologies to circumvent the apps, unaware of the fact that doing so makes them or their phones vulnerable.

Conclusion

There is no doubt that a certain level of protection is necessary for our children. However, state paternalism tends to result in rigid protectionism that does not function properly nor efficiently in this fast changing digital environment. So far, we have seen how Korea's extreme state paternalism had made their online

juvenile protection regime a disaster for all stakeholders involved. Korean kids have been ranked as the unhappiest in the world for several years, and they are becoming sneakier by learning behaviors to circumvent ridiculous protections. Parents and teachers have lost their control and are missing chances to build trust with their children and students. The content industries and the service providers are daunted by excessive burdens imposed on them to carry on with their business.

Idealistically, the state's role should remain as auxiliary; it should respect parents' roles and the domestic sphere, protect juveniles' fundamental rights, and provide guidelines and incentives to other stakeholders. Parents and teachers "have the biggest responsibility and the most important role to play" (Palfrey & Gasser, 2008, p. 18). State intervention is only justified when other stakeholders neglect their duties or pose threats. The Korean government needs to admit that an extreme form of state parenting is not the best way forward in protecting our juveniles online in the 21st century.

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Digital Rights in Australia's Asian Century: A Good Neighbour?

Angela Daly
Swinburne Institute for Social Research, Australia,
Tilburg Institute for Law, Technology and Society, Netherlands,
Australian Privacy Foundation

The 21st century has been proclaimed Australia's 'Asian Century' (Australian Government, 2012). Despite Australia's geographical location in the south part of the Asia Pacific, Australia has been culturally oriented towards Britain due to its status as a former colony, while military alliances and trade relationships have bound the country with the United States since World War II. However, due to shifting geopolitical trends, in particular the rise of China and an increasing awareness of its multicultural societal makeup, Australia is undergoing a 'pivot to Asia'. This essay examines how Australia's Asian Century has played out so far in terms of the Internet and digital rights, both at home and in its relationships with its Asian neighbours. Is Australia acting like a good neighbour and contributor to Asia's Digital Good Life, or is the country encouraging authoritarian trends that run counter to ideals of Internet freedom and the protection of digital rights?

Digital Rights at Home

Since Australia's Asian Century was "announced" three years ago, Internet freedom and digital rights have been the subject of various legal and policy debates within Australia, with results that have rarely been a victory for proponents of these liberties and rights.

One initial digital rights development in Australia was the proposal of a mandatory Internet content filter in 2008, which would have given Australia an ignoble position "at the forefront of the spread of this practice from authoritarian regimes such as China and Iran to Western democratic nations" (Bambauer, 2008). After much criticism, including from the U.S. government, that the filter ran contrary to the encouragement of an open Internet (Colgan

& Elliott, 2010), legislation to implement such a filter was not ultimately introduced. Yet, since then, there have been other, more successful, moves to restrict digital rights in Australia.

Copyright has been one site of contestation for digital rights in Australia. The Australian Law Reform Commission published a report in early 2014 on Copyright and the Digital Economy which recommended that Australia adopt a 'fair use' exception to copyright infringement (Australian Law Reform Commission, 2014), similar to that in American, Singaporean, and South Korean laws. However, instead of following this recommendation, which would have strengthened Internet users' rights to use, reuse, and remix copyrighted content, the Australian Government instead devoted its attention to addressing copyright infringement, despite little impartial evidence to suggest that piracy is rampant in Australia (Thomas, Ewing, Lobato & Daly, 2014). As a result, Australia recently passed legislation creating a process for copyright holders to block websites that infringe or facilitate the infringement of their rights (Grubb, 2015).

Furthermore, the Australian telecom sector and large content owners are currently engaged in negotiations over a new industry copyright infringement code which would introduce a graduated warning scheme for Internet Service Providers' customers who are alleged to have infringed copyright, although these negotiations have stalled over how the scheme's costs will be allocated between the parties (Coyne, 2015). These moves have smacked of policy-based evidence rather than evidence-based policy, which is compounded by the close ties some parts of the incumbent content industry seem to have enjoyed with Australian government ministers (Daly, 2014). Australian policymakers seem to have overlooked evidence from overseas suggesting that graduated warning schemes are not successful or effective in addressing piracy (Giblin, 2014). In addition, site-blocking has encountered various problems, both legal and technical, in overseas jurisdictions where it has already been implemented, which also did not seem to be properly considered in the Australian policy debate.

Another significant digital rights area where Australia is falling short is in protecting Internet users' privacy. Australia is unique among Western-style liberal democracies in not possessing a comprehensive bill of rights in its Constitution (like the US) or via legislation (like neighbouring New Zealand). Of the few rights that do receive constitutional protection in Australia, privacy is not among them, and free expression receives only limited protection via the implied right to political communication (Nicholls, 2012; Pearson, 2012). While Australia does provide some protection of data privacy via the Privacy Act 1988 (Cth), Australian Internet users' position of disadvantage with regards to their privacy can be seen through the legislative debate to introduce mandatory data retention earlier this year. Mandatory data retention had been raised as a possibility some years ago during the previous government, but it

was not implemented in the end. However, in the context of the heightening 'War on Terror' and a resulting series of restrictive national security measures, mandatory data retention re-emerged as an Internet policy issue in 2014 (Griffiths, 2014).

The scheme is broadly based on the European Data Retention Directive, itself the subject of much criticism since its enactment, and - significantly - which was ruled invalid by the Court of Justice of the EU for (among other things) its incompatibility with the fundamental right to privacy (Guild and Carrera, 2014). The Australian legislation has broadly replicated the problematic aspects of the EU's Data Retention Directive, but, unlike their European counterparts, Australians have scant grounds for challenging this legislation after its passage on the basis of an infringement upon a fundamental constitutional right.

Digital Rights in the Neighbourhood

Internationally, Australia has recently joined the Freedom Online Coalition, a group of governments committed to working together to protect Internet freedom and fundamental rights (free expression, association, assembly and privacy online). However, the country has not done enough to implement the group's ideals, which is also true of other FOC members such as the U.S. and U.K. (Carlson, 2014; York, 2014). In fact, since Australia has joined the FOC, the level of Internet freedom in the country, as measured by Freedom House (2015), has actually declined.

Australia is also a member of a formerly clandestine international group of English speaking countries, comprising the U.S., Canada, the U.K., and New Zealand, called the 'Five Eyes' (FVEY) intelligence-gathering and sharing network. While Australia's position in the FOC was publicized, the country's membership in FVEY was only revealed fully in Edward Snowden's 2013 disclosure (Ruby, 2015). This disclosure indicated that FVEY countries had been operating global surveillance programmes of individuals' communications, including via the Internet.

Some of the FVEY's practices have been challenged in member states' respective national courts and condemned at an international level. On a national level, Privacy International brought a suit before the U.K.'s Investigatory Powers Tribunal. In this case, the Tribunal ruled that intelligence sharing between the U.K. and U.S. was unlawful prior to Dec 2014 because the rules governing the U.K.'s access to FVEY programs were secret (Bowcott, 2015). At an international level FVEY's practices were condemned by the UN Special Rapporteur on Counter-Terrorism, who deemed FVEY practices as having "a corrosive effect on privacy" (Emmerson, 2014).

Yet, due to internal legal hurdles, Australia's conduct as a part of FVEY has not been challenged on a domestic level. There are various explanations for Australia's lack of action to reign in these activities, including the fact that not very much is known about Australia's precise role in the FVEY partnership, as well as the passing of the aforementioned data retention laws which actually legalize some of this mass data collection and access (Ruby, 2015). In addition, as mentioned above, the lack of constitutional protection for free expression and privacy in Australia means that a challenge to these activities in the domestic court system is unlikely to succeed, placing Australian citizens in a much weaker position compared to the citizens of other FVEY countries.

One interesting development, however, has occurred in the context of Australia's dispute with Timor-Leste (East Timor) over maritime boundaries and the governance of petroleum exploration in the area between the two nations (Pereira Coutinho & Briosa e Gala, 2014). While the initial dispute arose out of sovereignty concerns, a decision handed down by the International Court of Justice condemned concurrent Australian surveillance on Timor-Leste and its legal advisors, and ordered that Australia end the practice (Allard, 2014). Interestingly, this international effort by the ICJ served as the first time a court at any level had ordered Australia to reign in its surveillance activities since the Snowden revelations broke two years ago.

Another neighbour adversely affected by Australia in terms of digital rights is the small Pacific Island nation-state of Nauru. Nauru is one of the locations for Australia's highly-criticised 'Pacific Solution' a government policy of transporting asylum seekers to detention centres in Pacific Ocean island nations rather than allowing them to land on the Australian mainland (Penovic, 2015). This has happened alongside growing rule of law and human rights concerns domestically in Nauru. These domestic concerns on the island stem from: (1) a crackdown on political dissent, (2) the arrest of opposition politicians, (ABC News, 2015a) and (3) the resignation of the nation's Chief Justice in light of New Zealand's suspension of aid to Nauru's judicial branch. (Newton Cain, 2014; ABC News, 2015b).

The Internet in Nauru has not escaped this repressive atmosphere, with the introduction of an Internet block on abusive Internet content and on services including Facebook (Olukotun, 2015). Nauruan opposition politicians told The Guardian newspaper that the restrictions were aimed at stopping the flow of information to Nauruans while also preventing the flow of information from asylum seekers held in Australia's detention centre there (Farrell, 2015), where there are allegations of human rights abuses (Doherty, 2015a). The U.N. Special Rapporteur on Freedom of Opinion and Expression, David Kaye, has urged the Government of Nauru to withdraw these measures restricting free speech and Internet access, and raised concerns about the restrictions on the freedom of the press that Nauru's steep increase in visa fees for foreign journalists in 2014 entailed (UN Human Rights, 2015).

Finally, Australia has been a keen participant in regional trade negotiations for the Trans Pacific Partnership (TPP), an agreement negotiated among twelve Pacific Rim countries (including Japan, Malaysia, Singapore, Brunei Darussalam and Vietnam) as part of President Obama's 'pivot to Asia'. Throughout the negotiations, concerns have been raised by civil society groups and academics about the impact the TPP will have on Internet freedom, based on leaked drafts of the negotiating text, particularly on intellectual property and its enforcement, privacy, and whistleblowing (Electronic Frontier Foundation, n.d.; Rimmer, 2015). Alongside the TPP, the Trade in Service Agreement is also being negotiated by Australia, and concerns have also been raised about its potential impact on Internet freedom, especially privacy and net neutrality (Carrion, 2014). From the leaks, it seems that TiSA may invalidate existing privacy rules that mandate that personal information is held and/or processed within the geographical/jurisdictional bounds of a particular country, and TiSA may also impede countries that have not already done so from enacting net neutrality rules (Kelsey & Kilic, 2014). Australia would be affected by both of these measures as a country which mandates certain personal data (namely that contained in e-health records) is stored within national borders (Daly, 2015) and has considered net neutrality rules but so far has not taken concrete legal or regulatory steps on the matter (Daly, 2016).

Conclusion

While Australia embarks upon its Asian Century, its digital rights activities at home and vis-à-vis its neighbours in the region certainly do not position it to be a positive contributor to the Asian Digital Good Life, at least in terms of Internet freedom and digital rights. Although Australia has made a public commitment to promoting Internet freedom and protecting digital rights by joining the Freedom Online Coalition, its actions in practice have diverged from those statements. Of particular concern are: (1) mandatory data retention laws, especially since similar measures have been ruled to have a disproportionate interference with individuals' privacy in the EU, and (2) Australia's continuing participation in the FVEY global surveillance network. Australian citizens are also in a weaker position compared to citizens of other FVEY countries due to a lack of constitutional privacy provisions that would be needed to challenge Australia's participation and surveillance. Furthermore, Australia's regional spying on smaller and poorer neighbour Timor-Leste and the resulting limitations on Internet freedom that stem from Australia's outsourcing of asylum seekers to a detention centre in neighbouring Nauru do not indicate that Australia has promoted the Asian Digital Good Life so far, despite a belated expression of concern about events in Nauru from Australia (Doherty, 2015b).

However, despite the bleak picture painted in this article, digital rights debates are still alive in Australia. The prospect of a stronger protection of

rights, including those related to Internet freedom, has been raised by the Australian Law Reform Commission's ongoing 'Freedoms Inquiry' (Australian Law Reform Commission, 2015). There is a possibility that this Inquiry might result in a recommendation to enact a comprehensive bill of rights in Australia, which would bring Australia into line with 'similar' jurisdictions such as the U.K. and New Zealand and, hopefully, give citizens a constitutional means of challenging government infringements on their rights to free expression and privacy. In addition, the ascent of technology-literate Prime Minister Malcolm Turnbull has already impacted the digital copyright debate in Australia though the PM's decision to shift the responsibility for handling copyright issues from the Attorney General's Department to the newly-appointed Communications Minister's portfolio (Chanthadavong, 2015). Finally, details are emerging at the time of writing of the finalized Trans-Pacific Partnership agreement and its negative impacts for the future of Internet freedom through Asia and the Pacific (Greer, 2015). If the TPP is accepted by the Australian parliament, it could have further deleterious effects on the extent of Internet freedom within the country (Weisman, 2015). Furthermore, since Turnbull's ascent to power, the Nauruan authorities have raided NGO Save the Children's offices on the island, seizing laptops, phones, computers, and other devices in an attempt to find journalists' sources within the immigration detention centre (McDonald, 2015).

The murky direction of Australia's attitudes toward digital rights complicates the rights of both the country's citizens and the citizens of its neighbours throughout the Asia Pacific region. As a result, the future of these digital rights remains unclear. Whether Australia choses American or European models and whether those models are even appropriate will be important questions going forward. Certainly, the world's different regions and traditions are closely intertwined through the Internet itself and a common digital link to the U.S. Yet, regardless of what polices Australia ultimately chooses to implement, the Digital Good Life both domestically and throughout Asia must be predicated upon a respect for digital rights and their protection.

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Digital Rights in the Court

Harris Chen
Chiayi District Prosecutors Office, Taiwan

Digital rights have long been recognized in Taiwan, with its democratic society, tolerant culture, thriving 3C (Computer, Communication, and Consumer Electronics) industries, and large number of Web users. Communications via digital and internet-based approaches between the Taiwanese people and the government have been extensive. Various measures have been taken to improve the right of access to the Internet, and access to digital devices for children and the poor. Nevertheless, in the case of the Taiwanese criminal justice system, "going digital" is not yet a significant trend. While lawsuits are still filed with paper documents, charges made by prosecutors increasingly rely on abundant virtual files covering evidence and interrogations. In short, digital rights are coming slowly to the courtroom in Taiwan.

Hence, the Judicial Yuan, the highest office of the judicial branch of Taiwanese government, is now aggressively promoting "E-court" implementation (The Judicial Yuan, 2015). While this movement seems cutting-edge, in reality Taiwan is lagging behind many of its Asian neighbors by several years. Malaysia has established an "All E-court" environment since March 2011 (Ho, 2013). Singapore introduced the E-filing system in 2000 (Ho, 2013). South Korea has expanded its E-suit application to all civil cases since January 1, 2012 (Ho, 2013). Thus, in order to positively promote the E-court system within Taiwanese courts, a special committee was initiated under the supervision of the Secretariat of the Judicial Yuan in December 2012 (Ho, 2013). As of 2015, there are two high courts of second instance that have been equipped with the E-court supplements, as well as several sub-courts, including the parallel district court to my prosecutor's office (The Judicial Yuan, 2015).

Before we discuss digital rights in Taiwanese courts further, there is one fundamental premise that needs to be stressed. Taiwan inherited a Civil Law system from the period of Japanese colonization in the late 19th century. As a result, the criminal procedure is greatly influenced by Europe, even though principles present in the United States court system, such as the "hearsay rule" were also introduced in the early 21st century. Therefore, lawsuits are tried by professional judges in Taiwan, rather than by juries, giving rise to a far different court system than in the United States.

Overview of the E-Court System

In general, the setting of a typical courtroom of the E-court system in Taiwan is comprised of the following major components. First, the E-file/evidence presenting system installed at the clerks' desk displays digital pictures or files on screens, other digital evidence - such as videos of crime scenes - pulls information from legal databases, connects to the Internet for further information, and assists lawyers and prosecutors in identifying any key points of the case shown on the screen. Second, a digital visualizer (a device with a camera that shoots the object placed under the lens and transmits the image to the linked projector) is also available to show any physical item that can't be digitized or digitally displayed in the court. Third, VGA and HDMI lines are provided for the attorneys and prosecutors to connect their laptops and other electronic devices to the court's system. Fourth, each courtroom is equipped with two projectors and at least two large projection screens so that the audience can view the digitally presented materials.

However, for the time being, only the hardware part of the E-court system is near completion. The digital formats exhibited in the courtroom are mostly files scanned by clerks. Files sent to the courtroom are mostly on the conventional medium of paper. In contrast, in Singapore, 84% of lawsuit documents were submitted via the E-filing system by 2012 (Ho, 2013). Unfortunately, there has not been a unified digital platform available to the police, prosecutors, attorneys, and judges to upload or share evidence or documents, online or offline. Like many other major government digital projects, the key to a successful E-court system depends much more on the software than the hardware. In criminal cases, whether evidence is obtained and preserved digitally in the first place by law enforcement officials determines the quality of presentation in the E-court. Prosecutors and attorneys also need to excel in managing digital files and be familiar with the court system. Not until a nationwide, integrated E-filing system is established can there be a successful E-court in Taiwan.

So far, through frequent testing of the E-court system in different courts and rigorous training of numerous court clerks, the courts have become more efficient and more public court activities can be viewed. For instance, the PDF-XChange Editor software allows clerks to tag and search for documents

more efficiently and accurately. Crucial evidence for conviction can be vividly exhibited not only to the defendant but also to the audience sitting in the courtroom. These changes might be welcomed by judges and attorneys, who are frequent users of the courtroom, but what about the defendant? More specifically, does a defendant, guilty or not, have any say in the display of all digital evidence regarding her/his criminal case in the courtroom? Is any member of the audience sitting in the courtroom entitled to witness or know everything in the file on someone else's criminal case?

Defendant's Privacy and Open Trial in E-Court

Perhaps my personal experience can provide some reflection on this issue. As a prosecutor of Chiayi District Prosecutors Office, a counterparty to the defendant in the courtroom of Chiayi District Court, I have been observing the use of the E-court system in court since late 2014. Interestingly, every once in a while I notice a defendant's look of discomfort when digital images of evidences against her/him or police interrogations are shown on large projector screens. Some defendants would glance quickly at the audience. That was a phenomenon I had never observed before testing the E-court system, back when evidence was presented solely by showing the physical file to the defendant, attorneys, and the judge.

In a criminal case, the rights of the defendant should be carefully protected. This principle not only resides in every law textbook but also forms the cornerstone of criminal procedure of Taiwan. Under this premise, defendants also deserve the right to privacy, even in a public courtroom. That is to say, for every piece of evidence digitally displayed in the courtroom, especially those visible to the audience, whether or not the defendant's privacy is protected should be taken into consideration. This does not contradict the right to a public trial, which has been affirmed by Article 16, the Constitution of Taiwan. Instead, it helps create a just environment for the defendant, free from opinions or even prejudices of the audience that might eventually pressure the defendant, thus him or her of his/her right against self-incrimination.

Therefore, this essay holds that the court should be extremely careful about what is shown on the screen. Synchronization of the displays set up at the judge's bench, at the seats of both parties, and at the witness stand is not necessary, unless consented to by both parties and approved by the presiding judge. Furthermore, with the rising demand for an "Open Court" from the public – that court trials should be live or delayed broadcast – the privacy of the defendant must be respected even more, because the "audience" within the "Open Court" context could be limitless. Without a doubt, the Judicial Yuan of Taiwan should keep in mind that the defendant's right to privacy ought not to be harmed in the courtroom by E-court implementation.

Conclusion

Digital rights in the 21st century come in various shapes. Indeed, "going digital" in the courtroom is an irresistible trend in this digital age, and also a way to improve digital rights. As more and more Asian countries go down this path, Taiwan is no exception. The E-court system now promoted in Taiwan is anticipated to enhance court efficiency, reduce the burden of storing paper files, and create a more open and fair trial. Certainly, with the digital format of the case file displayed in front of everyone in court, everything is exposed. While one of the purposes of an open, fair trial is to keep the judge or jury unbiased, keeping every member of the audience inside or outside the courtroom unbiased is equally important. We do not want to see any defendant feel pressured in the courtroom simply because she/he is reluctant to reveal certain information that would be digitally displayed to the public under the E-court system.

In sum, the term "Open Court" does not necessarily mean "Open File." This essay does not intend to oppose any progressive approaches to facilitate a fairer trial or to discourage more efficient and transparent courtroom activities. During the past two decades, digitization has proven effective when conveying large amount of information. This essay intends to emphasize the importance of protecting the defendant's privacy as we embrace the technology of the E-court. In a world connected with all kinds of social networking sites, even a tiny piece of evidence from a simple case could go viral once it has gone digital. Therefore, safely preserving and cautiously utilizing the digital material from a criminal case is equally as vital as the act of digitizing the information, and doing both well secures the foundation of our E-court system.

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Chapter 5

Onward

The Power of Observation: Making Research Visible, Accessible, and Usable for the Asian Digital Economy

Julian Thomas and Amanda Lawrence
Swinburne Institute for Social Research, Swinburne University of Technology, Melbourne, Australia

Research in digital form is now so abundant, in so many forms, on such a comprehensive array of topics, that it is somewhat surprising to find that while the Internet has done so much to make knowledge accessible, we still face numerous problems if we want to find, evaluate, access, understand and - most importantly - use, much of this information. Too much useful knowledge is locked up in expensive, subscription-only journals; too much data is never made public; too much material is lost through 'link rot', where links are not updated and lead users nowhere. The result is that the great potential of the Internet to provide universal access to information is not yet being realized. This essay considers the benefits and possibilities of an online 'observatory' focusing on digital economy and policy issues in Asia. We draw upon our experience developing an open-access, policy-oriented repository in Australia, which aims to make relevant research visible, accessible, and usable for policy-makers, journalists, advisors, activists, and advocates. Our work suggests that with some new ways of gathering and accessing information, initiatives such as observatories can improve the current fragmentation of knowledge across the Internet in ways that will benefit researchers, policy makers, public interest advocates, and society as a whole.

First, some background on the problem that observatories can help to address. We know that the circulation of information and the state of the Internet eco-system itself play a key role in the economy, politics, and society as whole. As Houghton writes, "In a knowledge economy, innovation and the capacity of the system to create and disseminate the latest scientific and technical information are important determinants of prosperity" (Houghton et al., 2009). The evidence suggests that high-income countries, which tend to place an emphasis on the production of high-technology goods and services, devote larger shares of their GDP to research and development (National Science

Foundation, 2014). In policy terms, the connection between information and positive social benefit is often taken to be axiomatic, as a recent UNESCO report illustrates. "How well an individual, an organization, and an entire society can harness, access, share, and make use of available information will ultimately decide their ability to generate economic growth and to enhance the quality of life for all" (Karan, 2011).

Discovery, access, and use of information are critical issues for those engaged in public policy research and advocacy. These are critical resources for freedom of expression, and for the ongoing debates over Internet governance and control. Pakistan's Internet Policy Observatory (iPop; www.ipop.pk) is a remarkable example of this kind of initiative, and is an important Asian repository, associated with the Internet Policy Observatory at the University of Pennsylvania, Annenberg School. iPop aims to provide "researchers, governments, regulators, operators, multilateral institutions, development agencies and community organizations with the information and analysis required to develop innovative and appropriate policies for modern age digital technologies" (iPop, n.d.). However, despite the extraordinary capacities of the open Internet, the ability of individuals and organizations to accumulate knowledge and know-how is highly variable. One reason for this is that the issues we are dealing with, when it comes to the digital economy, are fragmented across many disciplines, involving economics, law, communications, information technologies, politics, sociology, public health, and education. The field also demands the coordination of knowledge and information across the sectoral boundaries of government, private enterprise, education, and community and non-government organisations.

We are now learning more about how research circulates in public policy contexts, and the evidence illustrates the need for new kinds of intermediaries that can supplement the traditional roles of libraries and publishers. Recently we have been involved in a study of the production, use, and collection of information and research for public policy and practice. We asked users of research for policy and practice what were their most important sources of information: 94% of survey respondents identified work produced by government departments and agencies; followed by university centres or departments (83%), NGOs (79%), scholarly or commercial publishers, (78%), think tanks (55%), and commercial research companies and consultants (31%). Survey respondents reported that the most important or very important resources that they use for their work are reports (81%), journal articles (75%), discussion papers (69%), briefings/reviews guides (66%), data sets (61%), conference papers and working papers (52%), and submissions and evaluations (45%) (Lawrence et al., 2014).

All this leads to what we believe is an important conclusion, and one that points to the important roles that policy observatories and other open access repositories are now playing. The key point is that a diverse range of

materials, produced by a diverse range of organisations, outside the boundaries of conventional scholarly or commercial publishing, are used and valued as much, or more, than conventional research outputs such as academic journal articles. Work produced outside formal publishing channels is often called "grey literature." When asked to estimate, research end-users report that the grey literature makes up 60% or more of the material they consult for their work (Lawrence et al., 2014).

One reason for this is that the Internet has enabled online publishing by organisations and new forms of dissemination to flourish. In a separate survey of producing organisations across government, NGOs, education, and the private sector, more than 90% report that the most important reasons they produce materials are to provide an evidence base and to inform public policy debate and practice (Lawrence et al., 2014). For 84% it is to translate knowledge for public use, and for 79% to maximise public access to research and information (Lawrence et al., 2014). Despite these aims, a quick look through a selection of recent policy publications produced by organisations demonstrates a huge range of document types, production standards, and content quality. We find PowerPoint presentations, PDFs, and Word documents; material that may be unsearchable using standard search engines, and material that fail to meet basic accessibility standards.

Evaluating grey literature is a major issue for information users and information managers, and it is vital that organisations systematize production practices. However, with many producing organisations focused on the immediate policy argument or the next research project, there is a lack of systemic management of resources that are (in aggregate) worth billions of dollars in terms of the funds spent on production every year. Content is posted in a dispersed in an ad hoc way, and search engines are not always able to find key content on complex issues. This is where there is a role for digital libraries and observatories to improve discovery, access, and long-term preservation. Such intermediaries can provide the distribution and curatorial services that users need, and that organisations struggle with.

Traditional collection services have been slow to deal with the proliferation of online content. The result is that there has been a mushrooming of digital collections over the last decade, all attempting to provide discovery and access services for a range of interest groups. These provide a variety of research, publishing, and curatorial functions and go by many names including institutional repositories, disciplinary repositories, databases, clearing houses, policy observatories, portals, gateways, data hubs, knowledge hubs, and research platforms. From our research, we estimate that there are at least 500 subject-based digital collections of varying sizes and levels of activity around the world. One that we have been involved with is the Australian Policy Online (APO) database (apo.org.au), which has been cataloguing and collecting public policy related research and information since 2002 and now holds around

30,000 records from over 4500 organisations. At the other end of the scale, Amanda Lawrence - a co-author of this paper - recently joined the advisory group for the Global Internet Policy Observatory (GIPO), a European Commission funded project still in development and that has yet to go live (Global Internet Policy Observatory, 2015).

Given the funds already invested in databases and observatories, the cost of creating metadata, and the need for full text collections rather than linking (due to the problems of link rot) we believe the best option for an Asian digital repository would be to work with one or more of the existing collections and their associated software systems, such as APO, GIPO or others. Respondents to our survey regarding research use reported being frustrated: on the one hand, search engines struggle to reveal the links between documents, while on the other hand the multiplicity of clearing houses fragments the task rather than making it easier. Unless there are major commercial investors, working with an existing repository may be the best option for operating long-term as a not-for-profit at a sufficient scale and with sufficient timeliness to be useful.

It is worth saying a little more about how these repositories work. The Global Internet Policy Observatory, for example, is a European Commission-financed experiment that provides large scale harvesting of web content that is then mined for metadata and taxonomies. At this stage, appropriate taxonomies are still being worked out and the project relies on digital content that already exists online at a monitored source. APO is a potential source for the GIPO harvesting system to pull both full text content and rich metadata across a wide range of policy issues. But APO also provides other services, with the potential for organisations and authors to publish and store their content, disseminate and measure audiences, classify and curate resources, and work with tools to analyze and visualize the database. Databases of this kind need to have intelligence built in. They must provide a level of detail and control for producing both what organizations and users need.

The topics covered by APO are broader than that of GIPO, encompassing education, law, economics, the environment, urban policy, housing, social policy, and much more. Such a wide angle is essential for a broad, multidisciplinary field such as the digital economy. Drawing the line too narrowly around what should be in or out of a repository is a trap. Emerging policy issues quickly cross the lines between topic areas: cybersecurity relates to public security, digital inclusion is related to regional economies, education, and poverty. In its review of information policy in Asia, UNESCO includes national policies, telecommunications infrastructure, the information industries in the public and private sectors, and legal and regulatory frameworks (Karan, 2011). A broad-based collection would allow users to access specific topics, as well as broader contextual and related material.

Within APO, a detailed metadata scheme allows users to explore the relationship between and across documents based on organisations, topics, research groups, time, and geographic locations. Collaborative, user-generated content and profile pages for organisations and individuals to post their own content or that of their research interests are garnering increased interest. A wide range of content types are hosted in the database including research and technical reports, open and licensed journal articles, datasets and surveys, discussion papers, working papers, literature reviews, guides and briefings, evaluations, audio and video, visualizations, and much more. APO is also a sophisticated, interoperable, linked database with a range of technical features and functionalities that are constantly developing and improving. Additionally, we are currently working on mapping the database scheme to schema.org to enhance interoperability and SEO, and we are able to export data as API, XML, and OAI. APO content is discoverable via World Cat and Trove as well as Google and, increasingly, Google Scholar. Future developments are likely to make it easier to reuse content, create sub-sites and a leaner, faster service. Working collaboratively to support long-term open access to universal information is the goal.

Our argument can be summed up in a few simple points. The capacity of people and organisations to find, evaluate, and use research for public policy development and practice can and should be better supported so that public interest debate can thrive. Researchers, business innovators, policy activists, and advocates now have access to more valuable information resources freely online than at any other time. But the abundance of new forms and the diversity of sources of contemporary research and information means that we need to devise and implement new ways to collect, preserve, and curate valuable material. Otherwise we risk losing as much as we gain, as relatively recent resources disappear or become progressively harder to find. An Asian digital economy observatory has the potential to act as a powerful facilitator of better evidence-based policy innovation in the region.

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Improving Informed Voting: Navigating Turbulent Hong Kong in the 21st Century

Christy Pik Sum Hui
Lite Up Project and INVO,
Ash Center for Democratic Governance and Innovation,
UBC MET 2016

"What is a good life?" has long been a deliberated and debated question due to the broad and diverse scope of how "goodness" can be defined. As a pioneer in the study of human happiness, Aristotle believed that a good life is one spent in contemplation, exercising reason, and acquiring knowledge (Aristotle, 2004 ed.). The Latin word Veritas is the name given to the Roman virtue of truthfulness, which was also considered to depend upon adherence to truth by Augustine. Consistently, philosophy in the 12nd century shared the belief that the virtuous person led a good life. Veritas, being the mother of Virtues, was therefore the root of all virtue. It is thus an essential part of human well being guiding us towards a good life (Barnett, Whitby, Wong, Louzao, Reilly, & Denny, 2012). From the humanistic perspective that emphasizes value and agency of human beings, we have an obligation to make responsible and informed choices to help our lives and the lives of others go in a worthwhile and fulfilling direction. These views have informed historical understandings of the good life, but how are they changed by the digital paradigm?

Ironically, an information-rich environment that allows us free and unlimited access to resources does not necessarily give us knowledge and truth. Quite the contrary, we may constantly find ourselves battling against stern challenges associated with both access to and an excess of information in the age of information overload; it's both a blessing and a curse to be saturated with the amount of information we have today, which directly shapes our judgment in all aspects of our lives. This proliferation of information in the digital age has an acute impact on both public opinion and political participation. Due to the Internet's widespread political ramifications, the service has the potential to alter the conduct of civil society and spur democratization movements throughout Asia.

Voting is one of the direct means to political participation, which is fundamental to the health and development of democracy. However, candidate evaluation in elections can be a time-consuming and labor-intensive process, and the arduous nature of this process alone can sometimes discourage citizens' from voting (Aldrich, 1993). This problem is compounded by a number of factors. First, people struggle to allocate the time required to properly gather and process information on the election and candidates. Second, the traditional source for election and candidate information – print media and television – are losing relevance in the digital age. Third, online media may contain misinformation and, even if it does not, such information does not directly encourage civic participation. Fourth, the availability of official information – in the form of officially sanctioned advertising materials or candidates' prior public service and voting records – are scattered, unorganized, and only accessible to the most determined enquirer. As a result, it's difficult for the average voter to make a truly informed and responsible voting decision that is based on objective information. Decisions are instead frequently based on proxies such as party logos, media portraits, and sometimes misinformation (O'Shaughnessy, 2001). This is not conducive to the health of democratic development and good governance.

In hopes of nurturing the development of Hong Kong politics, local media literacy company Lite Up Project has been called upon to create means for efficient access to accurate political information for Hong Kong citizens, in order to shed light on issues of governance and civil participation in a deeper way. This essay will explore the potential of opening up the space for cross-ideological discussion between friends and families across the political spectrum, and fostering a culture of voting through development of a voting decision-making application in Hong Kong.

The VAA (voting advice application) made its first appearance in Europe in 1998 (Fivaz, 2010). Since then, the tool has significantly improved the accessibility of electoral information (Alverez, Levin, Trechsel, & Vassil, 2014). By using a blind questionnaire and matching users' opinions to party policies, VAA provides voters with an informative overview and candidate matching to help voters decide whom to vote for in local elections. This function makes candidate comparison easier and information more accessible for voters. There are many examples of VAA across the globe, predominantly in North America and Europe. Some of these examples, such as Vote Compass and Kieskompas, have been successful in terms of penetration: the most popular VAA in Germany, WahlO-Mat, got used over 13 million times before the German federal election of 2013 (Garzia & Marschall, 2014). Similarly, over 40% of the electorate used Valkompassen prior to the 2014 elections in Sweden (Lindstedt & Eliasson, 2006). All of these apps aim to help voters understand where their policy and political positions stand in relation to those of candidates and parties. Most of these follow the questionnaire and algorithm approach and present voter compatibility scores for each candidate.

Despite its steady growing popularity in Western countries, VAA attracted little to no attention in Asia, including Eastern Asia, home to a number of consolidated democracies including Japan, South Korea, and Taiwan. Larry Diamond (2012) said if a new regional wave of transitions to democracy unfolds in the next five to ten years, it is more likely to come from East Asia, including China (Diamond, 2012). Therefore, introducing VAA in Hong Kong has a lot of attractive potentials. As a special administrative region of China, Hong Kong enjoys a "high degree of autonomy" (Basic Law, Article 2, 1990) that ensures an independent legal system, robust civil liberties, free speech, and free press. These established institutions substantiate the foundation for democracy to foster in Hong Kong. Over the past, Hong Kong has served as China's window to the world in the past centuries. Given its unique, comprehensive and integrated body of history and knowledge, Hong Kong will continue to play a leading role in exchanges between the East and West and bring meaningful impact on the mode of modernization of China and East Asian societies.

Similar to many democratic systems around the world, Hong Kong has a multiparty system with a legislative body of 70 legislative seats representing 14 Cadre type parties and a few independent seats (Registration and Electoral Office, 2012). Parties are divided ideologically (left - pro-welfare and pro-reform vs. right - pro-business and pro-status quo; liberal vs. conservative), each of which without the prospect of grasping dominant political power to govern Hong Kong. Of the 70 seats, there are only 40 directly elected seats (35 are elected from five districts throughout Hong Kong based on proportional representation; the other five super seats are elected Hong Kong wide) (Electoral Affairs Commission, 2012). In other words, voters are given two votes on the ballot in Legislative council elections; one geographical vote and one "super" vote. This electoral process and resulting multiparty system are vital to the consolidation of representative democracy because it ensures party and candidate competition. At the same time, the legislative branch ensures responsible governance as it oversees, scrutinizes, and passes the actions and bills of the executive branch of the government. In recent years, the debates concerning Hong Kong's Chief Executive electoral reform have created a lot of tension within the society (Huntsman, 2014). On September 28th of 2014, an Umbrella Movement broke out in Hong Kong, bringing thousands of mostly young people to engage in a 79-day street occupation (Huntsman, 2014). Among a number of different political issues, the loudest call was for the freedom to elect Hong Kong's chief executive without a preliminary selection process based on the decision made by Standing Committee of the National People's Congress (NPCSC) (Huntsman, 2014). This protest is a practical example of the high public frustration and societal instability in Hong Kong. As it was known as a student-led event, it was evident that political parties even the pan-democratic parties were marginalized throughout the event. Looking ahead, approximately 326000 young people will become eligible to cast their first votes in 2015, therefore, it is imperative to rebuild the confidence in parties, elections, and the government during this critical time.

As the founder of Lite Up Project, I traveled to Bern, Switzerland, and met with founder of Smartvote over the summer of 2015 shortly before elections began. This meeting provided me with insight into VAA's direction that allowed me to produce a similar technology in Hong Kong. This application will be entirely based on smartphone apps, for Hong Kong has one of the highest smartphone penetration rates ranking third highest (74%) in the world (Google Consumer Barometer, 2014). Figures of Google's Consumer Barometer report (2014) also indicate relatively mature and pervasive use of smartphones in Hong Kong, and this is a sufficient condition for election campaigning to occur through smartphones (Google Consumer Barometer, 2014). As smartphones are at the side of voters during most of their waking hours, users can access the app at any time they choose. Inspired by Smartvote, our platform INVO covers all five geographic districts of Hong Kong and shows users how their views align with those of the candidates running for election by taking a quiz. After its launch in 2016, INVO aims to motivate voters to engage in further research about party policies to help them mitigate biases associated with the "packaged" or portrayed images of candidates by opinionated media or appealing sound bites; they can instead direct voters' attention to substantive sources that are unbiased. The questions presented by INVO will gauge a voter's position on various policy issues, as well as where he or she stands within the political spectrum. An algorithm will compute the voter's policy and political compatibility with each candidate's stated positions. INVO does not recommend which candidate a voter should select per se, but instead compares the voter's position with those of all candidates and enables him/her to explore each of them further. By making accessing information through the app fun and interactive and sharing easy on social media, INVO can promote public awareness of candidates' and parties' platforms at a substantive level and, in effect, INVO can stimulate healthy public and public discussion among users. In fact, social influence can be a powerful driving force for social engagement and voter mobilization (Rolf, 2012). Due to INVO's means of disseminating information, we expect voters in future Hong Kong elections to turn out in greater numbers and to do so with a greater understanding of the issues. This all-in-one information-sharing platform could potentially transform Hong Kong political norms of participation in general, especially in stimulating cross-ideological discussion and establishing voting habits for first-time voters.

The key to INVO's success will be its algorithm design and the process of identifying responses with particular candidates' views and positions. It can be a challenging process to get all political parties involved; yet this process ensures that the app generates fully transparent and accurate results. Like similar applications that exist in other countries, the process of identifying questionnaire responses with candidates' views and positions is performed by a panel of trained and credible professionals. The questionnaire will be drafted to identify the voter's position on a broad range of policy issues by assigning different point values to each multiple choice answer on how strongly they feel about each issue. The panel will study all candidates' information to estimate

how they would respond to the same questionnaire, and then take these predictions to each candidate and party for confirmation and fine-tuning. Through this rigorous process, INVO will have a reliable questionnaire that will be able to correctly match voters' policy and political positions with those of candidates and their parties.

In addition to INVO's primary matching function, the application will have other features that include: (1) a comprehensive profile of each candidate that contains his or her previous public service record, (2) each candidates' party affiliations and political views, (3) location of polling places where the voters can cast their ballots, and (4) historical tracking of changes in the user's political ideology over time. By collecting anonymized data, a database within the application can track changes in public opinion among users. This information, which can be further broken down by region, can be shared with legislators to assist in better future public policy formulation and with news organizations to spur public debate. By doing so, INVO can be an effective tool to create reports that show the overall opinion and demographics of that region's political status. This will help policy makers to design better and more suitable policy initiatives for each region. The data resources could also create and raise interesting topics for news and conversation in debates. Such a shift in public discourse in the digital space could be useful in bringing the political system forward in Hong Kong by encouraging the transformation of public aspirations into real and constructive policies.

Our physical and digital worlds are merging with technology; the experiences we share online and offline are becoming inseparable to our life and wellbeing. These worlds will eventually become mixed, inhabiting all of us as global citizens. As our world connects and expands, new challenges and risks will arise and require us to constantly make complicated choices. We believe that knowledge gives us power to cope with these challenges by opening our eyes to new perspectives through our interaction with others and learning from the information we share, both online and offline. This power gives us the ability to make informed choices including whom we choose to represent us. A sum of all our good choices as informed citizen leads us to a good life, in both the real and digital realms.

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Songdo: South Korea's Connected City

Hyun Ju Park
Masters of Law Program, University of Macau

A twenty-five-minute drive away from South Korea's Incheon International Airport lies the Songdo International Business District, a man-made city which is being presented as the model for how cities should be planned and operated in the future. Only a few years ago, the land that Songdo's wide roads, shiny skyscrapers, and green parks are layered upon was part of the Yellow Sea. Now, Songdo is the world's latest smart city, an urban jungle helping South Korea's government and citizens find ways to adapt to the problems associated with rapid urbanization, whilst capitalizing on advances in digital and mobile technology. It seems to be that in this age, the good life is synonymous with a digital life in a connected world, and smart cities are its foundation. However, digitizing whole cities can bring on a number of different concerns, such as privacy and surveillance issues. The challenge for the 21st century will be to mitigate the disadvantages of going digital, while taking full advantage of the efficiency and benefits that information and communication technologies can add to everyday life.

In the 21st century, it is necessary to rethink the way cities are being developed because of the increasing urbanization around the world and the problems associated with it. The United Nations' Department of Economic and Social Affairs affirms that over half of the world's population lives in urban areas, and urbanization is continuing to increase worldwide, especially in Asia (UN DESA, 2015, p.12). According to the 2014 Revision of the World Urbanization Prospects, "Asia was home to just over half the world's urban population [in 2014], despite its lower level of urbanization" (UN DESA, 2015, p.12). Population data on megacities, which are cities with more than ten million people, corroborates this data. Four of the five most populous cities in the world are located in Asia (UN DESA, 2015, p.16). In the same report, it clarifies that "Tokyo [i]s the world's largest city with an agglomeration of 38 million,

followed by Delhi with 25 million inhabitants" (UN DESA, 2015, pg. 16). With growing populations in cities and megacities, rapid urbanization brings about a range of different economic, social, and environmental issues such as "difficulty in waste management, scarcity of resources, air pollution, human health concerns, traffic congestions, and inadequate, deteriorating, and aging infrastructures are among the more basic technical, physical, and material problems" (Chourabi, 2012).

In this vein, governments and researchers are constantly looking for solutions in science, especially capitalizing on advances in information and communication technology. One solution that tries to address the problems associated with rapid urbanization by connecting digital technology is the smart city. While there are conflicting and varying definitions, the European Innovation Partnership on Smart Cities and Communities defines a smart city as a "place where traditional networks and services are made more efficient with the use of digital and telecommunication technologies, for the benefit of its inhabitants." The goal is to reduce costs and the consumption of resources, but, at the same time, improve the quality and the performance of urban services by making them more efficient.

One Asian country, South Korea, is looking to take advantage of its fast Internet speeds and technological progress as it builds the latest reincarnation of a smart city. The Songdo International Business District is setting new benchmarks for urban development. With 35 billion US dollars invested, the real estate project is led by New York-based developer Gale International, South Korean-based firm POSCO Engineering and Construction, and under the governance of the public sector partner, Incheon Metropolitan City (SongdoIBD.com). It will feature many innovations, such as automatic garbage disposals that would eliminate the use of garbage trucks, underground parking for 95 percent of the city, waste water recycling systems, automation in home and businesses that would allow people to control and monitor these spaces from anywhere, and sensors and safety monitors all over the city for traffic control and other purposes (ReadWrite, 2012). Yet, becoming a smart city does not just mean having digital homes or ubiquitous computing. Cisco Systems, the company that is making the digital supplies needed to power the city believes that smart cities need to be envisioned at a city-wide level, and they plan to "wire every square inch of the city with synapses. From the trunk lines running beneath the streets to filaments branching through every wall and fixture, it promises this city will 'run on information'" (Lindsay, 2010). Cisco will provide the invisible infrastructure that can create smart and connected communities in Songdo, "based on the collection and sharing of information anywhere and anytime, encouraging the efficient use of resources for the promotion of sustainable living" (Shwayri, 2014).

Making cities smart from the ground up is important because studies show that along with the implementation and use of clean technologies (e.g. solar power,

biofuels, batteries, etc.), an effective way to shrink cities' carbon footprint is through conservation of energy. According to a report published by the Global Commission on the Economy and Climate, "Urban areas account for half the world's population and are associated with around 70 percent of global energy consumption and energy-related greenhouse gas emissions" (The New Climate Economy Report, 2014). The infrastructure alone in the top 20 most populous cities (which include Tokyo, Jakarta, Seoul, Delhi, Shanghai, Karachi, New York City, Mexico City, Beijing, and Sao Paulo) make up 15 percent of all greenhouse gases emitted worldwide, which is more than the gases emitted by all forms of transportation, including airplanes (13.5%) (Lindsay, 2010). With environmental sustainability in mind, smart cities will be run like corporations. For example, Walmart has "a real-time glimpse into every store, truck, and warehouse in its system" (Lindsay, 2010). Urban planners behind these initiatives believe that, smart cities can be rid of inefficiencies, similar to an office that becomes more efficient after upgrading from paper files to computers, if the right hardware and software are installed to connect infrastructures, gas and power lines, roads, mobiles, and residences, so that these various entities can communicate with one another (Lindsay, 2010).

As such, not only do these technological improvements make life more convenient for its residents, Songdo's planners have found ways to save money, energy, and resources. Representatives of the environmentally-certified city boasts that its "residents use 40 percent less energy per person than an average existing city, because of things like building insulation and high-tech lighting, heating, and air conditioning systems" (ReadWrite, 2012). Songdo may be only one of many smart cities being built around the world, but it is among one of the first cities to be built from the ground up with information and communication at its core.

The success of the Songdo International Business District will determine how cities are built in the future. For instance, China will need to implement sharp urban planning in the future. According to China's National New-Type Urbanization Plan for the period of 2014-2020, urbanization that is both sustainable and human-centered is a key focus in order to continue increasing the economy's development (Zhu, 2014). The plan hopes to bring 100 million rural migrants into urban areas by 2020 (Zhu, 2014). The government is clear that it hopes to prioritize "harmonious and pleasant living conditions in cities by making basic public services accessible to all permanent urbanites and pursuing better ecology, more clean air and safe drinking water" (Zhu, 2014). Therefore, Songdo can serve as a model for urban planning in other cities throughout Asia and around the world.

While high-tech features can help make living in these cities a lot more convenient and energy-efficient, they also pose various challenges and risks. Having a city run on digital technology means that it may be vulnerable to hacks and system failures. In addition, it may bring upon an array of privacy

concerns related to hacking and surveillance. In a post-Snowden world, citizens are more and more apprehensive about how personal information and their lives can be monitored without their consent. Furthermore, the city will need to be updated constantly to keep up with the rapid advances in information and communication technology.

In this day and age, it is almost impossible to live a life that is not intertwined with information and communication technology, especially for urbanites living in big cities. The advancement of technology is like a bullet train with no intention of slowing down. For many people, living in cities and other urban areas means a more comfortable and convenient life. It also means more opportunities, more consumption, and higher pay. To that effect, governments of developing countries are encouraging urbanization within their borders to improve the economic development and the standard of living of its people. Most of this rapid urbanization in developing countries will happen in Asian cities. However, as the populations of cities get larger and denser, the need for scarce and limited resources to be allocated more efficiently becomes a necessity due to the economic, social, and environmental issues outlined above. Technology has to be employed on a larger scale in order to keep urban services effective and efficient for residents. The solution is to treat cities like corporations that have made the transition from paper files to digital computers. Songdo, built on a piece of land that was reclaimed from the Yellow River, is an example. This city is expected to be completed in 2018 and as planned, Songdo "will position South Korea among a group of leading nations, and possibly at the forefront of new city development, potentially producing a model for export" (Shwayri, 2013). This city being built is smart and sustainable, combining green infrastructure with advanced information and communication technologies and digital networks "to ideally create harmony among the environment, society and technology" (Shwayri, 2013). Even though there are risks associated with living in a city that is completely wired by information and communication technology, such as hacking, government surveillance, and lack of privacy, a connected city in the 21st century is one that is smart, and the good life is one that is digital.

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Little Digital Devices, Huge Recourses

Zhang Tianqi
Student, Institution of Chinese Medicine Sciences, University of Macau, Macau, China

Though the one-child policy in China was recently eliminated, its adoption over the past 30 years has transformed the Chinese family structure into a 4-2-1 model, especially in cities. This means that a young couple must shoulder the responsibility of supporting one child and four elderly individuals - the grandparents. Some young couples find themselves so overburdened that they consider sending their parents to nursing homes. When they visit local nursing homes, they are often disappointed by the inadequate services provided and ultimately decide to support their elderly family members at home. In practice, sending the elderly to a nursing home is against Chinese traditional customs influenced by Confucianism, and the overall low quality of Chinese nursing homes does not help to resolve the dilemma between the heavy burden of supporting the elderly at home and the negative social image of sending the elderly to a social welfare institution (Wu, 2015).

In this situation, there is an increasing significance on building a close relationship between families and social resources. A novel system known as "the virtual nursing home" has been established in several cities in China, which is run by the government and operated by social organizations or private companies, depending on location. The elderly registered in the virtual nursing home can stay at home and wait for either reservation services or instant services for housework, health care, law affairs, and/or mental fitness (Chen, 2013). All of this is achieved through a three-part platform: a management center, terminals, and the connections between them. The platform needs a user-friendly interface that allows the seniors to easily find the services they need.

In late 2007, Canglang District in the city of Suzhou built an information platform to support the elderly in its communities, which is the first virtual nursing home in China (Zhu, 2008). The fundamental part of this platform is its manual ordering system. The senior at home can make an appointment by simply making a telephone call. In the following years, several cities in China carried out similar pilot projects to evaluate the platform's feasibility for full operation, from north to south and east to west, even in rural areas. In 2013, another city, Lanzhou, introduced its 3D Digital Social Service Management System to serve all the citizens, and the system included a visual nursing home (Chen, 2015). This ambitious project relies heavily on digital technologies, such as the geographic information system (GIS), which provides access to a customer's precise location. Additionally, virtual reality technology, 3D modeling emulation system, and other systems that rely on digital technologies are also applied in the construction of the system's infrastructure (Chen, 2015).

However, aside from the heated discussions on how to construct an effective management center, little has been done to figure out how to better connect seniors and the management centers via digital technology instead of by telephone. Considering the educational background and experiences of citizens above the age of 60 currently in China, making a telephone call is the simplest and most convenient way for them to ask for help, and many elderly individuals find the Internet difficult to navigate. Still, some adaptable elderly individuals are able to handle some devices, such as smartphones. It is a reasonable prediction that in 10 years, using an app on a smartphone could be a part of everyday life for the elderly. As a matter of fact, there are already a variety of electronic devices targeted at older consumers that have come to the market in recent years, and the use of these devices can improve the acceptance of such technology by seniors.

Smartphones

Nowadays, smartphones are a basic piece of equipment for Chinese citizens, and its apps are involved in all parts of our life. Apps designed for the elderly could locate the user and inform the guardians, call for domestic services, pay utility bills, provide communication channels and entertainment, and collect users' health information and provide some medicinal services. In recent years, such apps have grown fast as a result of fierce competition. Consequently, it requires great patience to find out the most suitable app for a consumer. A study on apps for seeking medical advice compared 10 commonly available apps in seven aspects including online health counseling, hospital registration, drug information, health information, and three others, and offered some choices such as Chunyu Handholding Doctor, Handholding Doctor Selection and Rapid Asking Doctors, which provided useful information (Hu, 2014). Moreover, many apps are complex for even younger people to use, let alone the elderly, and it is difficult to get our forgetful and slowly-moving grandparents

to keep the Smartphones with them and use them when they encounter an emergency.

Smartwatches

The smartwatch has been in development for nearly 70 years, and several classic styles have impressed consumers over time (Stables, 2015). However, it was not until Apple launched its Apple Watch in 2014 that smart watches became well-known in China. Though Apple Watches are quite suited to the elderly's needs, as a comprehensive health and fitness companion, the cost is beyond what the average Chinese consumer can afford. However, other simplified, highly rated and widely available imitative products have emerged that cost about 10 percent of what an Apple Watch does and have the basic features of voice command, alarm, and location mapping. As an important member of the wearable device family, the smartwatch has a friendly appearance, yet the small size of the screen and complicated operation are still a challenge for many elderly users and production designers. However, wearable devices have a vital advantage over Smartphones, which is that they can be fastened on the body, making it more likely for the senior to keep the device with them and not lose it.

Smart Walking Sticks

In 2013, Fujitsu in Japan released a smart walking stick sample called the Next Generation Cane. This conceptual product combines digital technology with an everyday tool used by the elderly - a walking stick - sparing them the need to carry an additional item, and take a device out of their pocket and operate it. This product will be able to count daily steps, measure heart rate, and show the user's current location, however, it is not available on the market yet ("Value of Fujitsu Design," p. 29). In China, if we put Chinese words of "smart" and "walking stick" into the search bar of an e-commerce webpage, walking sticks with functions such as lighting, an alarm, and a music player could be found, retailing for about $15 to $150 at present. Undoubtedly this basic model needs to incorporate more advanced digital technology to become a smart tool.

The three devices introduced above are the most promising digital equipment to be widely used by elderly consumers. Though great improvements are still needed, the incorporation of digital technology through these devices can empower the elderly to do things previously impossible. Furthermore, integrating these devices into the virtual nursing home can help to integrate the elderly into the system.

All in all, the use of digital devices for elderly care should be a public initiative that receives more attention in China. China is aging, and families are getting

smaller, making it imperative that we find better ways of caring for the elders in our society. Most Chinese citizens can afford a hand-held or wearable digital device, so if we connect these devices to one platform like the virtual nursing home system, elderly individuals would be able to gain access to significant resources that would allow them to continue living in their homes with their family. The vision of an integrated digital system for elderly care will not only benefit the Chinese society, but also other Asian countries with similar conservative family traditions and aging populations.

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A Good Life in Asia with Robots?

Chihyung Jeon
Korea Advanced Institute of Science and Technology

On September 18, 2015, the Korean Association for Posthuman Society held its founding meeting, announcing its goal of "contributing to the maintenance and improvement of human dignity in posthuman society" (Korean Association for Posthuman Society, 2015). The public lecture event to celebrate the association's inauguration featured two main speakers - Professor Jun-Ho Oh, whose team had just won the 2015 DARPA (Defense Advanced Research Projects Agency) Robotics Challenge, and Mr. Kyung-Hwan Kim, whose law firm specializes in technology-related issues. For the audience filled with individuals interested in posthumanism, the robotics professor introduced his famous robot Hubo and surveyed the recent developments in his field. The lawyer's lecture also treated robots as a major legal and policy concern in a posthuman society by referring to the recent film Avengers: Age of Ultron as well as Isaac Asimov's three laws of robotics (1. "A robot may not injure a human being, or, through inaction, allow a human being to come to harm." 2. "A robot must obey the orders given it by human beings except where such orders would conflict with the First Law." 3. "A robot must protect its own existence as long as such protection does not conflict with the First or Second laws") (Asimov, 2008). The event seemed to predict that the robot would occupy a central place for all philosophical, legal, and policy discussions on the future of humanity and Korean society.

A few days later, a forum on the "future of jobs" commissioned by the Korean government featured the robot as the main figure once again. At the forum's opening, two human-shaped "robots from the future" appeared on the stage and warned the young audience that their competition with robots over jobs wouldn't be easy. The forum's keynote speaker, another popular robotics engineer Dr. Jae-Kwon Han, emphasized that we should pursue robotics research and development even though we might worry about the possibility

of robots taking our jobs away. Robots may pose a great challenge for future generations of human laborers, the logic goes, but they would provide solutions to many problems that we may face in the future (cf. Bix, 2000).

These two events suggest that robots are now making their way onto the collective intellectual and social agenda in Korea, and I suspect that there is a similar trend in other parts of Asia as well. For an increasing number of problems in Asia, especially in Korea and Japan, robots are being presented as a - if not the - solution. Robots will come, it is often hoped, to help, care for, and rescue us when our population is aging, the labor force is shrinking, or disasters leave us powerless. Moreover, cute, little robots are advertised as reliable partners to communicate with and potential family members to live with. A good life in the twenty-first-century Asia, if it is possible at all, may have to be a life with robots. But what would such a life be like?

Working, Living, and Thinking with Robots

Situated across the boundaries of science, industry, culture, politics, and private life, robots can serve as objects that are "good-to-think-with," if we adopt the perspectives of Claude Lévi-Strauss and Sherry Turkle (Turkle, 2007). In the eighteenth century, engineers, philosophers, and the public experimented with various kinds of automata to explore the mechanism of life, the organization of labor, and the structure of polity (Schaffer, 1999; Riskin, 2003). Similarly, we can consider the current robotic initiatives as modern-day technical, cultural, and political experiments in which engineers, politicians, and the public attempt to rethink what a good life is, personally and socially. When Japan brands itself as a "robotics superpower," and South Korea wants to prepare itself for the "future robot society," what forms of personal, economic, and political life are they imagining for their citizens? (Headquarters for Japan's Economic Revitalization, 2015; Ministry of Knowledge Economy, 2012)

There are two related modes in which robots are "good-to-think-with." In economic or functional discourses, robots are presented as our workers, mindlessly laboring for our necessity and convenience. In social and cultural settings, robots are presented as our companions, seemingly responding to our actions and emotions. Robots work for us or live with us. We tend to welcome none, either, or both modes of robot existence, depending on our view of labor, the economy, relationships, and humanity. These two perceptions of robots, however, are not entirely separate. Rather, it is the connection between the two that offers us a better way to think about or think with robots.

What arises from combining these two kinds of robots - the worker and the companion - is the figure of the immigrant. When robots come to our factories, houses, and other spaces of work and leisure, they may be considered "immigrants not from abroad but from the future" ("Immigrants from the

future", 2014). It's a different kind of immigration, but robots are designed to achieve what today's human immigrants from abroad eagerly hope for - to work and live together, to become co-inhabitants. Thinking of robots this way can be useful but also sobering. We ask a lot of mostly hypothetical questions regarding robots. Can we win the competition for jobs against robots? Are we willing to accept robots as new members of our society? If we put "immigrants" in the place of "robots," all of these questions become more realistic, imminent, and for some, threatening. Are we ready for robot immigrants as much, or as little, as we are for human immigrants?

So, a good life with robots can be better considered along with, or in contrast to, a good life with immigrants. Korea and Japan are not known for their tolerant policies and cultures toward immigration. We may ask how attitudes and actions toward robots in Korea and Japan are correlated, positively or negatively, with those toward human immigrants. Roboticists like to talk about "co-existence" or "integration" as an ideal mode for a "robot society" or a posthuman society of the future. But these keywords are also very much the concerns of today's human society. To co-exist with others, human or non-human, is a political, economic, legal, and cultural situation, which is always filled with tensions and frictions. For some economists and employers, it may be tempting to think that "robots will free us from the immigrants that are economically (and, therefore, socially) more 'problematic'" and that we will be able to choose to "build rather than import new citizens" (Pastore, 2015; "Domo arigato Mr Roboto", 2007). The desire for robots is linked to a broader social question of who should be allowed to work and live where. The policies on robots in Korea and Japan are likely to reflect these countries' most recent views on how to constitute each society with or without immigrants (Robertson, 2007; Robertson 2014; Guilford, 2013).

What Robots Reveal

The current fascination with robots in Korea and Japan reveals more than our attitude toward immigrants. Appearing at a time of instability and uncertainty, robots bring to light some familiar but less acknowledged characteristics that we have as individuals and as a society. First of all, robots reveal our vulnerability. When robots came to take care of our physical vulnerability in factories and other challenging environments, we were happy to hand our hard work over to them. Now it is our emotional vulnerability that robots are designed to make use of. As we desperately search for anyone, or anything, to connect with, the robots in the form of pets or children offer some feelings of care. In both cases, robots seem capable of finding our weaknesses and filling our physical and emotional voids. After all, we humans are fragile beings in need of help and sympathy (Turkle, 2011). At the same time, robots reveal our desire for a "good life" - a life supported by gratifying work and enriched by meaningful relationships. For some, robots make it possible to achieve a good life even in

aging societies without enough workers to support communities. For others, robots disrupt the traditional good life by degrading the quality of labor and encouraging pseudo-relationships. Either way, we are bringing robots into our definition and assessment of good life.

One question, or worry, is whether robots will also reveal our reluctance - our collective unwillingness to engage in difficult and demanding dialogues on intractable social problems, or our propensity to translate long and expensive social processes into quicker and cheaper technological promises. Whether it is labor, immigration, family, friendship, education, medicine, security, or inequality, robots seem to offer a clean and simple way out, when we actually need more questions and debates. Frustrating and complex problems are transferred onto robots, which tend to capture public attention and imagination more easily than human individuals and institutions do. Instead of job security and social safety, we talk about competition with robots. Instead of systematic problems in welfare and education, we talk about how satisfied the elderly and the students are with the latest robots that talk and smile. Robots will come to do our work, won't they?

The Robots Are Not Coming

What feeds this reluctance is the widely shared belief in the inevitability of robots - they are coming! We have seen this rhetorical trope for railroads, telegraph, automobiles, airplanes, digital computers, and the Internet. These technologies would just happen, and we could do nothing but accept them, willingly or not. Historians and social scientists have argued to the contrary. Technology alone does not change the world or give us a good life; technology comes to matter, and is made sensible, as it operates through institutions, regulations, and cultures (Marx, 2010). Robots are not an exception. Robots are not inevitable. If they cause any change, it is because we let it happen by our deliberate choices - our ideologies, designs, laws, and policies (Lanchester, 2015).

Currently in Korea and Japan, we are witnessing concerted efforts to turn robots into a technical and social reality. From robots for households and hospitals to robot theme parks, the mood is generally promotional and celebratory. Both governments have announced strategic plans to invest in robotics research and prepare for the future. Robots are being made visible, familiar, and by extension, necessary; they are on TV, theater stages, and shopping mall displays. In these societies already obsessed with digital technologies as an indispensable part of daily life, the robot will be taken as the latest and most tangible digital companion. In this sense, the robot builds upon and expands the established capacity and appeal of the digital computer and the Internet.

The question, then, is how we can develop policies and regulations as well as foresights and sensibilities for coping with issues that arise from working and living with robots. Like the computer and the Internet, robots deserve social dialogues, moral debates, cultural experiments, and political actions. In the twenty-first-century Asia, robots can be good-to-think-with; by grappling with them, we assert who we are, what we value, and how we want to live. If indeed the robots are coming, they are coming to question us, or more accurately, to make us question ourselves.

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