Bridging the Digital Divide with Information Technology in Taiwan: A Community and Public Policy Approach

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Introduction

• The purpose of this study is to analyze the public policy for governmental intervention regarding the ubiquity of Information and Communication Technology (ICT) and the Internet in Taiwan.

• Second, according to a community approach, the management system of Digital Opportunity Center (DOC) is described from the MOE level to the local level.

• Finally, we introduced some cases and achievement of DOC projects and digital learning companions in Taiwan.
Background (1/3)

- The rapid diffusion of Information and Communication Technology (ICT) has noticeably influenced the ability of societies to stimulate economic growth and development.

- Although Taiwan’s economy and other developments are based on ICTs, many people are still left behind the new information era.
According to the study by the National Development Council (2016), 83.1% of families in Taiwan owned a computer in 2016. However, among households whose monthly income was lower than the basic wage, only 71% had a computer, much lower than the national ownership rate.

Household ownership rates of computers and the public’s Internet access have significantly big differences in Taiwan, based on the degree of urbanization of residence area, ethnic groups, and individual’s education level.

The opposite has proven true. Technological development has led to digital divides between social classes, regions, and groups.
From 2003, the United Nations held the World Summit on the Information Society (WSIS), in which nations around the world came to an agreement to promote the reduction of the digital divide, so that ICT can be used to benefit minority groups, and so that residents in remote areas and minorities can also have their rights to access and develop their ICT skills.

Among ICTs, the Internet is very important due to its contribution to the advancement of education, learning, and knowledge. Hence, the commitment of the Taiwan government to increasing the ubiquity of the Internet has become the first priority in their policy agendas.
In 2004, the Executive Yuan announced the “Digital Divide Reduction Project” as an essential policy and asked the Ministry of Education (MOE) to take charge of the integration work of the “Urban-Rural Section” for coordinating related government departments to reduce the digital divide between urban and rural areas so as to benefit the groups without social resources, and then build fair digital opportunities.
“Expansion of Digital Opportunities in Remote Areas” program by MOE (1/2)

- MOE targeted at the citizens in remote areas, including indigenous people, native Taiwanese, new immigrant families, females, middle-aged, senior persons, and low-income people.
- By doing so, it would further raise Taiwan’s international reputation in education and build the vision of “promoting IT application to diverse groups of Taiwanese society and making Taiwan as an excellent paradigm of digital diffusion in the world.”
“Expansion of Digital Opportunities in Remote Areas” program by MOE (2/2)

- MOE with government’s policies, has set up Digital Opportunity Centers (DOCs) in remote areas around Taiwan. It focused on expand digital facilities in favor of residents in remote areas, helping them strengthen their basic technology knowledge, skills, and capabilities.

- According to the above strategic goal, MOE had several sub-projects, “Digital Opportunity Center,” “Digital Learning Partners,” “IT Volunteer”, to providing diversified educations in IT applications and digital services to the citizens in remote areas as well as other disadvantaged groups in Taiwan.
Community and Public Policy Approach

- The public policy for bridging the digital divide centers around three factors:
  1. access to ICT hardware and the Internet;
  2. information literacy training;
  3. the availability of appropriate digital content.

Economic and social equality is more likely to be achieved through community-based policy initiatives, and community approach suggests that equity in either of these realms is unlikely without strong community organization.
Digital Opportunity Center (DOC) (1/4)

- DOCs provide people in remote areas a place with IT facilities, like computers, Internet, iPads, and others, for learning how to use computer and Internet through free classes by professional lectors.

- The teaching content focuses on digital learning, application, and experience. In addition, it provides consulting services including information and Internet related information, and also serves as a after-school-care place for children in local community.
From 2005 until September 2017, a cumulative total of 391,368 persons received training through DOC information classes, and this total included:

(1) 18,410 new residents of Taiwan,
(2) 46,902 indigenous residents,
(3) 111,576 middle-aged and elderly persons.

Furthermore, the DOCs’ stellar achievements have included the enlistment of 86,182 community service volunteers and after-class follow-up care to 435,362 persons.
Digital Opportunity Center (DOC) (3/4)

- The implementation of the DOC policies have placed consistent emphasis on the community and public policy methods. Both Xinmin DOC and Xibao DOC (now operating autonomously) revealed: Regardless of whether a DOC is operated by a school, library, or community development association, its degree of linkage with community residents will directly affect its success.
In another case, although the Miaoli County Gongguan DOC is operated by a school, the fact that its manager values close interaction with the community, as well as the community association's vigorous attitude toward community affairs, is the main reason the Gongguan DOC is an instructional model.
Taitung Chengkung DOC (1/4)

- In Taitung's Chengkung Township, there was a group of returnees, who inherited ideas from their family elders to be engaged on aquaculture or related processing businesses.

- At first, they were uncertain, hesitant, and without any supports, which made them feel helpless. Beginning in 2013, depending on the DOC’s e-commerce class as well as network clustering plans, groups of local business persons have been able to band together for synergy. Successful business model is operated in local community.
The former teacher, Xin-ping Peng, operating Wanchang Fish Shop, who gave up a steady teaching position and went back to home village.
After joining Chengkung DOC, through taking the courses DOC offered, she applied what she learned from DOC courses in product marketing networks, product management, web hosting and so on, which made her realize that the features of a commercial distinctiveness can be created in a harbor just as they can anywhere else, and also that this could transfer an traditional industry to a new markets and business model.
Eleven students, with strong enthusiasm and passions, applied knowledge they had learned in DOC to link with Chengkung Township's unique culture, history, attractions, and cuisine, taking local culture and the town's special imagery. They integrated above into their products, designing an “eat till you're full, play till you're full” tours with various hometown characteristics, and marketing.

Chengkung Township, just as their advertising slogan puts it - "On the Road to Chengkung (Chinese pronunciation “success”) - Off to a Great Start!"
Malikuang tribe is surrounded by the mountains of Jianshi Township, and there is a DOC here full of the fragrance of peaches, and a group of lively and lovely May peach moms, whose laughter is the tribe's most resonant soundtrack.

The director of DOC, Priest Mouni, and local staff, Hui-ling, are the most important local representative figures here. Both they successfully promoted “May Peach” to different selling channels, and opened up a new road for local tribe.
The May peaches are the tribe’s main agricultural product. In the past, farmers used to grow May peaches, and all were selling peaches individually with very low prices to channel dealers. Sometimes these farmers must take all peaches with small pick-up to go to cites to find random customers.
“Meeting with the unreasonable and relentless price-cutting customers, we were embarrassed to bargain. And it was also impossible to take these peaches and set off back up the mountain, so in the end we could only sell them with half price, hardly making any money at all from them,” said by May peach mom with sadness smile.
Until DOC began its courses “Blog in Business and Marketing”, teaching farmers how to set up marketing blogs. Then the May peach moms can easily access the end customers, and searching for the high quality of their peaches for certificates.
Furthermore, Priest Mouni asked May peach moms to build a “Wulai Womens' Working Group.” It includes the content of natural non-toxic cultivation, designing a logo, making exclusive Malikuang May peach packaging, integrating concepts of quality control and customer service, and leading the May peach to the brand building.
Hsinchu Malikuang DOC (6/7)

• Another May peach mom said:

“I really appreciate for the DOC, now all the end customers find our information and contact us directly. And there’s a queue of orders, so it's not so hard as before, and we can also earn much more money.”
Actually, Malikuang DOC is very small, with only eight computers. With limited resources, it has been able to change in Malikuang's economic status with May peach.
Based on the concept of connections between universities and remote areas (community engagement). MOE wanted to train college students as digital learning partners, it recruited college students and trained them as learning partners for children in remote areas.

The basis for implementation of the “Digital Learning Partners Program” is the Executive Yuan’s “Ubiquitous Digital Application Program for Remote Areas, 2016-2019” and the MOE’s “Plan to Promote Digital Applications in Remote Areas.” The Digital Learning Partners Program uses the Internet to transcend the geographical barriers between urban and rural areas, and takes companionship and learning as its foundation.
Digital Learning Partners (2/4)

- Universities and local schools used video conferencing equipment and digital learning platform to teach, learn, and communicate with each other. It can overcome urban-rural distance barriers and connect the three partners of universities, elementary/junior-high schools, and the DOCs for learning partners to talk to the students twice a week for 10 weeks each semester at a fixed time and location, providing information application and learning consulting services in a collective form.
From its introduction in 2006 until 2016, the digital study partner program has trained 12,970 university students to serve as university study partners, and has provided service to a cumulative total of 9,119 schoolchildren in cooperation with elementary/middle schools and DOCs in remote areas.

While the program's original targets for 2017 were to let 1,000 schoolchildren in remote areas have digital study partners, and train 1,300 university students/high school students to provide concern, the number of schoolchildren served has been increased to 1,512 in response to the real needs of city and county governments.
The children had a high level of satisfaction toward online tutoring, which was attributable to the fact that, apart from providing direct one-on-one instruction and even more importantly, the university student tutors also provided “psychological support.” As a result, the children felt a high level of satisfaction and help that far exceeded the actual improvement in their grades.

In the study partner program, if the more the schoolchildren perceived a student-teacher relationship, the better their self-study performed.
Conclusion (1/3)

- With the **worsening wealth gap and urban-rural divide**, we must pay greater attentions to the serious challenges presented by the educational environment in remote areas.

- Taiwan’s policy of assisting in the establishment of DOCs has shown that “**community engagement**” can serve as a strong foundation and create great vitality and possibilities.
The building of digital infrastructure over the years has enhanced local people’s basic competence towards digital technology.

The community was also able to gain further self-understanding, nurture innovations related to unique local cultures, and, through the assistance of IT volunteers and digital learning partners from colleges and universities, and then demonstrate the cultural or economical characteristics of each region.
Conclusion (3/3)

- Among above programs, the Digital Learning Partners Program was one of the largest and most difficult to implement, because it required the approval and collaboration from the community to implement long-distance education. This would help students develop and improve their grades.

- Based upon the foundation of Taiwan’s community and public policy built over the last 12 years, the project will focus on integration of inter-agency resources, optimizing different government projects in remote areas, and offering more support to local residents and industries. Also, clustering community, community empowerment, or social enterprise is another possible step.
Thanks for Your Listening~
will be better tomorrow!