



Exploring Worldwide Democratic Innovations - A case study of Taiwan

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Introduction

As a newly democratised country, Taiwan has experienced a surge of civic tech initiatives. This case study surveys civic tech's transition from oppositional politics to a more institutionally anchored role in facilitating inclusive decision-making in Taiwan. This paper will foreground the case of g0v (pronounced "gov zero"), a Taiwan-based civic tech community founded in 2012, which has emerged as one of the largest in East Asia. This example shows an ongoing dialogue between data activism and political institutions and how this impacts Taiwan's young democracy.

Taiwan's Civic Tech Movement

After many years of top-down state e-gov initiatives, Taiwanese activists began to develop a more bottom-up civic tech in the 2010s. In 2012, two factors led to the formation of g0v by software engineers as a Taiwanese open-source movement. The first was government failures in e-governance and communication: in October of that year, the government launched an official website to reveal the real transaction prices of housing.

The measure was a campaign promise of the ruling party to address the skyrocketing prices of real estate, and yet the government portal was so poorly designed that it constantly crashed. Four programmers decided to set up a parallel website using the same official data, which turned out to be wildly popular for its usability.¹ In response, the Ministry of the Interior redesigned the official website rendering it impossible to retrieve the data for the independent site. Criticism immediately arose because many netizens were angered by the inability of officials to provide this data themselves and by their obstructionism.²

The other formative episode for g0v was a TV commercial that promoted the government's economic recovery plan in the wake of the global financial crisis

of 2007-2008. The ambiguous advertisement conveyed nothing about the recovery plan but simply asked citizens to stand with the government, which was widely considered an insult to citizens' intelligence.³ These two incidents galvanised Taiwan's hacker community into action, resulting in the formation of g0v; its founding statement mentioned that they were "a polycentric community of self-organised contributors" who are committed to "citizen participation" and "collaborating to bring about change".⁴

The g0v's Mandarin Chinese name is *linshi zhengfu*, which carries the connotation of "digital government" or "provisional government", somehow implying the current authorities are illegitimate. Such a defiant gesture can be considered understandable in the context of Taiwan's reawakened civil society and emerging protest and activism. The oppositional stance of g0v was particularly noteworthy during the 2014 Sunflower Movement, a student-led protest to oppose a free trade agreement with China.⁵ Immediately after protesters occupied the national legislature, g0v activists built the communication infrastructure connecting online and offline participants and at the same time introduced many novel digital tools that helped monitor police action, as well as coordinate and distribute donations.⁶ Since the Sunflower Movement's occupation of the national legislature was a highly-attended event, the involvement of g0v hackers helped popularise the notion of civic tech in Taiwan.

1 Ting Yu Cheng and Tze Luen Lin, "Keyboard Participation: A Case Study on the Civic Hacking Community 'g0v.tw,'" *Communication and Society* 46 (February 2018): 18-9. (In Chinese).

2 "Real Transaction Prices Cannot Be Retrieved. Ministry of the Interior Claimed it as a Protective Measure of Bandwidth against Bots," *ET Today*, November 16, 2012, <https://finance.ettoday.net/news/128316>.

3 行政院經濟動能推升方案廣告 (備份) [Advertisement of the Yuan's Economic Momentum Promotion Plan (back up)], YouTube Video, https://www.youtube.com/watch?v=RAbD3AGFX6I&ab_channel=hsnujeffy.

4 "G0v Manifesto," g0v.tw, g0v, accessed March 10, 2022, <https://g0v.tw/intl/zh-TW/manifesto/en/>.

5 Ian Rowen, "Inside Taiwan's Sunflower Movement: Twenty-Four Days in a Student-Occupied Parliament, and the Future of the Region," *Journal of Asian Studies* 74, no. 1 (February 2015): 5-21.

6 National Taiwan University Graduate Institute of Journalism, ed., *I am Citizen and also Media* (Taipei: Media and Books, 2015). (In Chinese).

Simplifying Social Problems into Technical Tasks

In Taiwan and elsewhere in the world, transparency and participation are the core values among civic tech enthusiasts, and their programmer background evidences a technological optimism for translating social problems into programmable tasks. As the often used term “keyboard revolution” indicates, major changes are always at our fingertips.⁷ This ethos was in sync with the Sunflower Movement in several ways.

First, the movement originated from criticism that the government negotiated the free-trade bill with China in “a black box” fashion because prior consultation with affected stakeholders was nearly nonexistent and the public came to know of the impending trade liberalisation only a few days before the official signing.⁸ Second, the unprecedented occupation of the legislature involved massive participation among those who had previously been unconcerned about politics.⁹ It was their myriad acts of spontaneous, amateurish, and voluntary contribution that sustained the protest over three weeks. As such, the decentralised pattern of movement participation echoed the cherished creed of horizontal collaboration among civic tech activists. Lastly, the unusual experience of exchanges between hackers and protesters left long-lasting impacts, such as more non-specialists becoming willing to take part in the g0v’s bimonthly events called “hackathons”, and the more frequent exchanges between tech- and non-tech participants resulted in a flourishing of citizen campaigns, or “projects” in the g0v’s parlance.¹⁰

For instance, the visualisation of Taiwan’s central government budget was one of the first of g0v’s projects.¹¹ The campaign proceeded with the goal of lowering the threshold for citizen participation. Its participants believed in a technical solution for tackling the information asymmetry between experts and ordinary members of the public so that citizens could

be more informed and more willing to express their preferences on complex technical issues. In the wake of the Sunflower Movement, a nonpartisan candidate Ko Wen-je captured the mayoralty of Taipei City, ending the 16-years of Kuomintang local dominance. Ko invited g0v participants to a task force to make the city budget more accessible.¹² A key outcome of this government-nerd collaboration was the Taipei City Government launching a visualisation website for the municipal budget.¹³ After the change of ruling party in 2016, the DPP government also followed suit by offering a new site for budget visualisation. In addition, some official surveys were made more interactive by allowing users to retrieve and compare data for their own purposes.¹⁴

Another of g0v’s projects in reusing and improving governmental data was focused on the Ministry of Education’s official dictionary for Mandarin Chinese, which had been perennially criticised for being outdated and prone to error. In 2013, the g0v launched a “dictionary woodpecker” campaign by recruiting more than five hundred online participants to find problems in the official version. In the end, the crowdsourcing campaign identified that more than four thousand entries were problematic, and the campaign evolved into a new and free digital dictionary called Moedict.¹⁵ Having gained the Ministry of Education’s authorisation, g0v participants were able to license Moedict as a Creative Commons project and made it widely available across different digital platforms.¹⁶ Over the years, Moedict has grown to incorporate entries from Taiwan’s Minnan and Hakka languages, while providing equivalent translations in English, German, and French.¹⁷

G0v activists also tackled the issue of transparency in election finance. How politicians received donations and financed their electoral campaigns had been a persistent problem for Taiwan’s young democracy, as many citizens had become increasingly upset about the disproportionate influence held by corporate and special interests. In response, Taiwan adopted a major legal reform in 2004 requiring candidates to reveal their financing sources;¹⁸ yet, the information was only made

8 Ho, *Challenging Beijing’s Mandate of Heaven*, 99-101.

9 Ming-sho Ho, “The Road to Mainstream Politics: How Taiwan’s Sunflower Movement Activists Became Politicians,” in *After Protest: Pathways Beyond Mass Mobilization*, ed. Richard Youngs (Washington DC: Carnegie Foundation for International Peace, 2019), 61-68.

10 For how g0v works, see <https://g0v.tw/intl/en/>, accessed June 4, 2022.

11 中央政府總預算 [Total Central Government Budget], g0v.tw, g0v, accessed March 3, 2022, <https://budget.g0v.tw/budget>.

12 “Ko Wen-je: Visualization of the Budget for Citizen Supervision,” Yahoo! Kimo News, September 11, 2015, accessed June 3, 2022, <https://tw.news.yahoo.com/news>.

13 “Visualization of the municipal budget,” Taipei City Government, accessed March 3, 2022, <https://budget-tbsv.gov.taipei/Budget>.

14 “Accounting, and Statistics, visualization,” Directorate-General of Budget Accounting and Statistics Executive Yuan, R.O.C. (Taiwan), accessed March 3, 2022, <https://www.dgbas.gov.tw/>.

15 Moedict, online dictionary for Mandarin Chinese, “Moedict”, accessed March 3, 2022, <https://www.moedict.tw/%E8%90%8C>.

16 Cheng and Lin, “Keyboard Participation,” 36.

17 “From a National Language Dictionary to a Multilingual One,” *Scientific American*, May 1, 2015, accessed June 3, 2022, <https://sa.ylib.com/MagArticle.aspx?id=2713>. (In Chinese)

18 Po Liang Chen, “Follow the Money: The Buck Stops Where? A Historical Analysis of Transparency and Campaign Finance Law in Taiwan (1935-2004),” *National Taiwan University Law Review* 14, no. 1 (March 2019): 1-63.

available in printed form. Control Yuan (the supervisory and auditory branch of government) required interested citizens to come into government offices physically during office hours to read documents relevant to candidate financing, which could only be printed and not photographed.¹⁹ This restrictive approach dampened the effort to bring more transparency to Taiwan's politics.

Immediately after the conclusion of the Sunflower Movement, g0v initiated a campaign finance project to "free data from the birdcage". Volunteers went to Control Yuan with the mission of copying all the relevant documents, and then netizens were recruited to manually type in 300,000 records.²⁰ The result was an impressive revelation of how Taiwanese politicians financed their campaigns, which previously was a largely unknown topic for voters. In 2017, a new media company (Mirror Media) collaborated with g0v to initiate a new round of campaign finance revelation.²¹ The media attention brought more public awareness to this hitherto underused source, giving rise to many pieces of investigative journalism on how corporate influences are seen in policymaking. Finally, in 2018, a legal revision made it possible for citizens to access the financing information digitally.²²

In addition to facilitating citizen participation and governmental responses, Taiwan's civic tech activism empowered advocacy groups. Due to the nation's decentralised pattern of industrialisation, many factories were spatially scattered and often located in farmland areas. These factories outside of designated industrial zones emitted pollution that made agricultural products toxic, and the transportation of their materials and products overburdened countryside roads, posing dangers to many nearby residents. Taiwan's government made a commitment to completely relocate these farmland factories by 2016, but factory owners constituted a powerful lobby group that effectively prevented clampdown action.²³ Exacerbating the issue, victims of these factories were typically reluctant to report for fear of revealing their personal information.²⁴

In 2020, an environmental group, Citizens of the Earth, pitched a proposal at a g0v hackathon, which resulted in more than fifty programmers voluntarily joining the campaign to develop an easy-to-use website that

facilitated citizen reporting on new factory encroachment in farmland areas. The online platform incorporated an advanced GIS (geographical information system) design that excluded the complication of giving an exact address when providing information.²⁵ The website also provided feedback on the progress of individual instances of reporting so users could be constantly updated about results. As of June 2022, the project had received more than 4,200 reports.

G0v's Move Towards a More Collaborative Role

G0v is a non-hierarchical and decentralised grouping without a leadership structure. Nevertheless, the post-Sunflower Movement evolution of g0v has seen closer collaboration between Taiwan's civic tech community and the government. The Sunflower Movement dealt a blow to the then ruling Kuomintang government, as the party suffered a major defeat in the 2014 local elections, enabling Taiwan's civic tech community to collaborate more closely with the incoming government. Jaclyn Tsai, then a Minister without Portfolio, attended a g0v hackathon and encouraged the development of a digital tool that could improve communication between citizens and the government. Taiwan's civic tech community eagerly responded to this call, and the result was the vTaiwan platform (v stands for virtual).²⁶ This platform makes it possible for governmental agencies to propose an ongoing dispute for public deliberation. After being proposed, an issue goes through the process of opinion collecting, reflection, and legislation.²⁷ The platform incorporated the digital tool of pol.is, a software devised to gather and analyse the opinions of multiple stakeholders to facilitate consensus building.²⁸

Designed with g0v participation, vTaiwan was designed to solve emerging controversies related to digital technology. Since its launch in 2014, the platform has been able to solve several internet-related disputes in Taiwan, including the legalisation of Uber (a ridesharing service) and the sale of alcohol online, both of which were considered difficult and complex issues. Taking Uber, for instance, the tech giant's arrival in Taiwan created

19 Cheng and Lin, "Keyboard Participation," 32.

20 Lee, "Free the Data," 1-2.

21 Lee, "Free the Data," 9.

22 "Legislature Approved the Revision to Political Donation," Central News Agency, May 29, 2018, accessed June 3, 2022, <https://www.cna.com.tw/news/firstnews/201805290275.aspx>. (In Chinese)

23 "There Are More than Seventy Thousand Factories on the Farmland," The News Lens, November 25, 2016, accessed June 3, 2022, <https://www.thenewslens.com/article/55046>. (In Chinese)

24 "Illegal Farmland Factories Claimed Themselves as Underprivileged," News and Market, March 2, 2002, accessed June 3, 2022, <https://www.newsmarket.com.tw/blog/166328/>. (In Chinese)

25 "Dismantle Illegal Farmland Factories," Citizens of the Earth, accessed June 3, 2022, <https://about.disfactory.tw/>.

26 "vTaiwan," Government of the Republic of China (Taiwan), accessed March 3, 2022, <https://vtaiwan.tw/>. (In Chinese)

27 "What is vTaiwan?" vTaiwan, Government of the Republic of China, accessed March 3, 2022, <https://vtaiwan.tw/intro/>. (In Chinese)

28 Elizabeth Barry, "vTaiwan: Public participation: Methods on the Cyberpunk Frontier of Democracy," Public Governance Quarterly 4, no. 4 (December 2015): 87.

a whirlpool of controversies: some of the conflicting forces were drivers intending to use the service to earn extra income, existing taxi drivers fearful of losing their income, and consumers eager to reap Uber's technological conveniences.²⁹ After a six-year deadlock, vTaiwan made it possible for the government to reach a policy consensus by legalising the Uber service with seven conditions.³⁰ As of 2018, vTaiwan has been able to process 26 digital policy issues, and its website claims to have resulted in "decisive government action" in 80 percent of cases.³¹

In 2015, a government-operated platform, JOIN, was launched under the sponsorship of the National Development Council.³² The website has made it possible for citizens to submit a policy proposal to the government via the Internet. If an initiative collects more than 5,000 endorsements, the relevant governmental agencies have to respond with a formal explanation.³³ As of June 3, 2022, there have been 13,853 issues proposed on the platform, and 289 proposals met the threshold that automatically initiates a government response, while more seemingly frivolous suggestions, such as banning parsley, were automatically rejected.³⁴

Audrey Tang, a retired Silicon Valley entrepreneur as well as a g0v cofounder, played an instrumental role during the Sunflower Movement. In 2016, the DPP government appointed them to a ministerial position (Minister without Portfolio), replacing Jaclyn Tsai. At the age of 36, Tang was Taiwan's youngest minister and the first non-binary person in the cabinet. Prior to their governmental appointment, Tang accepted the invitation of Tsai to work on the vTaiwan project. With their ministerial position, Tang's mission was to further deepen Taiwan's digital economy and open government policies. They played a critical role in persuading more governmental agencies to embrace open-source data and broadening the participation of civic tech communities.³⁵

In 2018, under Tang's direction, Taiwan's government launched an annual Presidential Hackathon for Social Innovation.³⁶ Governmental agencies, NGOs and academics were welcomed to submit their proposals based on the creative use of governmental information, and the winning projects would be implemented. In

practice, events like this have amounted to incorporating the experiences of civic tech communities into the public sector. In 2020, the Director of the American Institute in Taiwan (the de facto United States Ambassador) William Brent Christensen attended its award ceremony and praised the event for demonstrating technology was more than an economic and commercial tool but also capable of creating common values.³⁷ Audrey Tang has also made possible a number of public-private partnership projects. For instance, in the early months of the COVID-19 epidemic, Taiwan experienced a shortage of face masks and had to resort to a mask rationing measure. Due to Tang's intervention, the Ministry of Health and Welfare released the data of licensed distribution points so that g0v programmers could design smartphone apps to broadcast the real-time information on supply across the nation.³⁸ In July 2022, Taiwan will establish a new Ministry of Digital Development with Audrey Tang as its first Minister,³⁹ which is likely to witness even closer collaboration between civic tech activists and the government.

Taiwan's post-Sunflower civic tech movement is seeing a growing acceptance by government leaders. A broad bipartisan understanding of the benefits brought by digital technologies seems to have developed. The evolution from oppositional politics to a more collaborative role, in a sense, began to blur the distinction between civic tech and gov tech. To better understand the trajectory of Taiwan's civic tech movement, we can use John Postill's mapping of nerd politics. According to Postill, worldwide digital activism operates in four major arenas: data activism, digital rights, social protests, and formal institutions.⁴⁰ Taiwan's case has demonstrated persistent attention to data activism can lead to a visible transition from social protests to formal institutions, as participants were allowed to reset the policy-making rules from within. While some activists have been concerned about possible "co-optation" there is no indication that the resourcefulness of civic tech participants has been sapped due to their closer relationship with bureaucrats. Even with closer collaboration with the government, g0v programmers have still been involved in a number of projects that have pressured the government for more transparency, such as the farmland factory monitoring action mentioned above.

29 Elizabeth Barry, "vTaiwan," 90-1.

30 Chris Horton, "The Simple but Ingenious System Taiwan uses to Crowdfund its Laws," MIT Technology Review, August 21, 2018, accessed March 13, 2022, <https://www.technologyreview.com/2018/08/21/240284/the-simple-but-ingenious-system-taiwan-uses-to-crowdfund-its-laws/>.

31 Yu Tang Hsiao et al., "vTaiwan: An Empirical Study of Open Consultation Process in Taiwan," SocArXiv (2018), <https://doi.org/10.31219/osf.io/xyhft>.

32 "JOIN," Public Policy Online Participation Platform, Government of the Republic of China (Taiwan), accessed March 3, 2022, <https://join.gov.tw/>. (In Chinese)

33 "Directions For Implementing Online Participation in Public Policy," National Development Council, Government of the Republic of China (Taiwan), accessed June 3, 2022, <https://theme.ndc.gov.tw/lawout/EngLawContent.aspx?lan=E&id=62>.

34 "Historical Data," JOIN, Government of the Republic of China (Taiwan), accessed June 3, 2022, <https://join.gov.tw/history/search>.

35 Audrey Tang, "A Strong Democracy is a Digital Democracy," New York Times, October 15, 2019.

36 "Presidents Cup Social Innovation Hackathon," Government of the Republic of China (Taiwan), accessed June 3, 2022, <https://presidential-hackathon.mic.org.tw/2018/Default.aspx>.

37 "Christensen Attended the 2020 Presidential Hackathon," Radio Taiwan International, September 20, 2020, <https://www.rti.org.tw/news/view/id/2079961>.

38 Ming-sho Ho, "Watchdogs and Partners: Taiwan's Civil Society Organizations," in *Global Civil Society in the Shadow of Coronavirus*, ed. Richard Youngs (Washington DC: Carnegie Foundation for International Peace, 2020), 14-5.

39 "Ministry of Digital Development Will Be Established As Soon As July," Liberty Times, June 3, 2022, <https://news.ltn.com.tw/news/politics/breakingnews/3948543>.

40 Postill, *The Rise of Nerd Politics*, 4.

Finally, there are also concerns about whether Taiwan's civic tech community is dominated by particular voices; as noted by many observers, computer nerds tend to be young, educated, and solitary men. Does this demographic profile discourage the participation of other people, especially the underprivileged? To address this concern, the activists present their hackathons and summits as a meeting place between specialists and non-specialists, and insist these events are as inclusive and diverse as possible.

A field note for a g0v summit in 2018 provides an example of the organisation's commitment to inclusivity. The three-day event attracted over 600 participants and

around 60 percent of them were first timers. Prior to the summit, organisers solicited proposals from civil society in the hope that more social concerns be incorporated. For instance, a workshop on deaf rights was included in the program, and staff made effort to make sure both Taiwanese sign language and Chinese sign language were used. In one case, a mother and her two young daughters with one-sided deafness were among the new participants, and in spite of their unfamiliarity with civic tech, they garnered enough votes to speak in the plenary session. As such, more civic tech participants came to know the particular difficulties for people with one-sided deafness.⁴¹

⁴¹ Shun-Ling Chen, "Postscript: Two Stories of Inclusion: A Field Report from g0v Summit 2018," *East Asian Science, Technology and Society: An International Journal* 13, no. 2 (October 2020): 294-7.

Discussion and Conclusion

As a new democracy, Taiwan faces many challenges. Electoral democracy in the one-person-one-vote form only arrived in the mid-1990s. In this century, various schemes of deliberative democracy, including citizen conferences and participatory budgets, have been tried in some communities and policy areas. Starting in 2017, the legal requirements for national referendums were lowered, resulting in an explosion of direct democracy events. In 2018 and 2021, as many as 14 national referendums were held.

In this context, digital interventions by Taiwan's civic tech community represent the new and innovative practices that have been adopted to reinvigorate democratic institutions. In its first decades, the civic tech movement has empowered civil society organisations, made government officials more responsive and their data more accessible and encouraged more informed and inclusive public participation. Yet, despite its remarkable achievements, civic tech or gov tech is no panacea. As noted above, the legislative deadlocks that civic tech has helped resolve were mostly related to the Internet. Despite the best intention to broaden the avenue for

participation, the persisting digital divide still prevents some marginalised communities from exerting their democratic rights. Moreover, Taiwan's recent politics has witnessed heated and polarising debates over pension reform, working hours, same-sex marriage, energy policy, and several other issues. For these deeply rooted conflicts entrenched in ideological and partisan differences, there is simply no technical solution to mediate between opposing factions.

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About the project:

'Exploring Worldwide Democratic Innovations' is a research project supported by Robert Bosch Stiftung, which explores emerging innovations in democratic participation around the world and offering an overview of the lessons learned throughout the application of these innovations. The project highlights policy implications and gives a set of recommendations for European policymakers and practitioners working on the EU's internal democratic renewal. The project brings together researchers, practitioners and policymakers to exchange best practices in democratic political innovations.