
Civic Fellowships: A Framework for Civic Technology Innovation in Pakistan

Anam Zakaria

Code for Pakistan
Lahore, Punjab, Pakistan
anam@codeforpakistan.org

Ebtihaj

Code for Pakistan
Islamabad, ICT, Pakistan
ebtihaj@codeforpakistan.org

M.A Ibraheem

Code for Pakistan
Peshawar, KP, Pakistan
ibraheem@codeforpakistan.org

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Abstract

In the last decade, civic technology has empowered citizens by allowing them to use their voices to change the way governments operate. Open government, participatory governance, and easier access to government services are revolutionizing governments across the globe. However, in large parts of the world, introducing/bringing digitization, transparency, and openness is often faced with resistance, bureaucratic hurdles, and systemic challenges that are often difficult to navigate.

In the last five years, Code for Pakistan[1], a non-profit, has been on a mission to build a non-partisan civic innovation ecosystem in Pakistan. Its flagship program, the KP Government Innovation Fellowship Program[2], a three-way collaboration between the KP Government, Code for Pakistan, and The World Bank Group, has empowered 80 Fellows who have worked with 21 government departments, developing 28 digital solutions with five more under development this year. From reporting systems to open data portals to automated service delivery apps, these applications have enhanced government efficiency and transparency while improving the lives of thousands of citizens who interact with the government every day.

In this paper, we will discuss how being a civic tech organization, we were able to bring meaningful difference in the civic and public sector, sharing both the achievements and our learnings along the way.

Author Keywords

Civic Technology, Impact, Learnings, Civic Engagement, Citizen Participation

Introduction

The use of technology to improve governance has been widely used across the world. In doing so, many developed countries have focused on citizen participation in designing laws, policies, and services that impact them the most. Enabling the citizens to take part in the decision-making processes of the state has turned out to be revolutionary for strengthening democracies. Online communities form the basis for civic platforms, which are incubators for new ideas through peer-to-peer networks, stakeholder mobilization, collaboration and partnership engagement.

In the developed part of the world, civic-technology solutions are ubiquitous. Countries like Taiwan, the US, Canada, UK, France, and Singapore have already championed civic technology by transforming how the public interacts with the government. Global movements like Code for All[3] have also been actively involved in promoting civic technology across the world. Code for All is an international network of organizations that believe that digital technology, when used correctly, can both improve governance and open new channels for citizens to more meaningfully engage in

the public sphere and have a positive impact on their communities.

Lately, this co-creation concept between the public sector and the citizens through the use of technology has also gained much traction in developing countries like Pakistan. Civic sector organizations like Code for Pakistan have been working to create a civic innovation ecosystem to improve the quality of life in Pakistan. Code for Pakistan is also an active member of the global Code for All community.

Code for Pakistan's goal is to bring together civic-minded software developers and citizens to give back to Pakistan by innovating in public services using technology, primarily by creating open-source solutions to address citizens' needs. Step by step, Code for Pakistan aims to transform the relationship that the government has with its citizens by leveraging technology to bridge the gap between government interfaces for the public and its users.

The KP Government Innovation Fellowship Program is the flagship initiative of Code for Pakistan supported by the Khyber Pakhtunkhwa Information Technology Board and the World Bank, where a team of talented researchers, designers, community organizers, and developers collaborate to build apps, inspire citizen engagement, improve government, and show how to innovate in public services. This program revolves around three key features:

- Citizens and government working together, hand-in-hand, to solve problems

- Adopting user-centric, lean, and agile development methodologies
- Increasing civic engagement by creating innovative solutions in public services

Our goal with this paper is to provide researchers, designers, and practitioners, a starting point to understand the state of civic technology in Pakistan, the available opportunities, and the challenges in scaling civic tech initiatives in Pakistan.

LEARNINGS AND OUTCOMES

Launched in 2014, the KP Government Innovation Fellowship Program has completed five cycles, with the sixth cycle currently in progress. Working closely with government departments, we have gained tremendous insights in the way civic technology solutions can be developed, deployed, and sustained in developing countries where traditionally an environment of hostility and resistance exists towards digitization and automation initiatives. The initial 2 years of the program were challenging, where as a nascent civic tech organization working towards building a sustainable innovation ecosystem, we had to build trust with government partners on one hand and navigate infrastructural challenges on the other. Along the way there were a lot of lessons learnt and through our proactive interventions, we were able to scale the program effectively.

Today through the digital solutions developed under the Fellowship Program, over 3 million queries generated by the public have been handled, over 14,000 citizens are being facilitated each week, and over 90,000 Government hours have been saved thus far[4].

Significantly, we have also been able to bring a cultural shift in government departments, through advocacy and training; almost 160 government officials have already been trained in 21 government departments.

Looking back at these five years from the vantage point of where the program stands today, there are some great learnings which have enabled us to get this far:

1. Building Trust with Government Departments:

When we initially started the program the IT infrastructure in the KP Province was almost non-existent, departments were under-equipped both in terms of human resources and technical resources to sustain digital solutions. Secondly, most departments were hesitant to adopt civic tech solutions considering they would introduce more transparency within the department, resulting in government officials being held more accountable. We had to work closely with our program partners to convince the government departments to make structural changes and be more receptive to these civic tech solutions. We also made a concerted effort in building trust with our partnering government departments, through training and involving them more closely in the development process of civic tech solutions. A significant component of this work was convincing government departments that employing civic technology effectively would make their lives simpler, saving hours and creating easier systems and procedures.

2. Finding the right stakeholders: In our inaugural Fellowship cycle back in 2014, the local utility company in the KP province faced losses due to consumers defaulting in bill payments and rampant theft of electricity. A Fellowship team developed a citizen

journalism app[5] to report electricity theft hotspots in their surrounding areas. Despite being a simple civic-tech solution with a well-defined use case, user-adoption and government buy-in of the app became a challenge. Most of the power theft was happening in suburban areas where the literacy rate was very low, which meant that our target market neither understood English nor had access to smartphones to download the android app and report electricity theft. Secondly, the partnering government department could not convince the utility company to use the app, which relied on law enforcement agencies to act upon the perpetrators. Having too many stakeholders involved resulted in the app not being officially deployed. This was a crucial learning for the Fellowship team, and our problem statement selection criteria was revised to address these fundamental challenges.

3. Ensuring maintenance and sustainability: One of the most significant steps in getting the solutions adopted is the transition period where the solutions are handed over to the parent government department. While many government departments promise to hire resources, the lengthy hiring process, lower pay scales, and unavailability of quality resources are major roadblocks in sustaining these solutions. One of the projects we developed for the department of Minorities in Khyber Pakhtunkhwa[6] was supposed to help the minorities in the province to get government grants. Despite the platform being used to disburse over PKR 10m while the Fellows were maintaining it, after the handover, the platform was never updated by the department and was abandoned. To confront this challenge we maintain a volunteer community of Fellowship alumni who work with us in relaunching such

platforms, where the departments fail to sustain the solution due to lack of resources or technical knowhow.

4. An uptick in user adoption through cheap Smartphones & 3G/4G Launch: Prior to 2018, smartphone penetration in Pakistan was considerably low, 3G/4G mobile internet wasn't widely accessible and consumer adoption was low. In 2018 the era of sub \$100 smartphones revolutionized mobile internet in Pakistan. The number of 3G/4G subscribers crossed 61.61 million active users[7] by December of 2018. This had a direct impact on the civic tech solutions we were developing. A large consumer base came online and started using these digital solutions. An evident example of this was with the Raabta app[8], a consumer app developed for the traffic police department KP, the app gained tremendous popularity among the citizens of KP. With this learning we took a mobile first approach, where for every civic tech solution that creating a mobile app made sense for, we launched that first in order to gauge the usage trends among users.

5. Encouraging Female Participation: In Pakistan female representation in STEM fields is significantly lower than their male counterparts. This is also evident in the job market where fewer women pursue a career in IT and Engineering. In the Fellowship Program, we wanted to encourage female participation and bring more diversity to teams working on innovative civic tech solutions. We did this by introducing a 25% quota system for females applicants. This helped us get more female Fellows who got to work on innovative civic tech solutions. We are also planning to launch a female-centric Fellowship where the program will be focused primarily on onboarding female Fellows, with a focus

towards enhancing their skills and introducing them to entrepreneurship.

6. Adapting to Challenges: Just before the launch of the sixth cycle of the program, Pakistan went into lockdown due to the global pandemic. The Fellowship team decided to execute the program remotely and facilitate front line government departments in relief work towards the containment of the pandemic[9]. Redesigning the entire program for remote execution and convincing government departments to agree to remote work format was a challenging task. This is especially so because many government departments continue to rely on manual in-person work. The Fellowship team convinced the departments by showing them the benefits of online work and ensuring that the deliverables and milestones are achieved on time. Now three months into the sixth cycle, the projects under development have reached the MVP stage and are nearing completion.

7. Spreading the word/Marketing: Pakistan is ranked as the 7th worst country in terms of access to sanitation with over 41 million Pakistanis without access to toilets[10]. In 2019, during the 5th cycle of the Fellowship Program, a Fellowship team created an app focused on promoting health and hygiene. The team developed the Public Toilet Finder[11], a digital solution to facilitate the public in finding, using, and promoting public toilets. The partnering department was the Water and Sanitation Services Department. Despite the buy-in from the department, the app could not bring about the transformational impact it initially intended to. The app has a low number of users and downloads, partly due to slow marketing campaigns from the department's end. The Fellowship team

designed a comprehensive marketing campaign, which included offline and online marketing, but lack of departmental resources and technical knowhow around marketing resulted in poor outreach. To overcome a similar problem in the future, KPITB has started teaching marketing courses to graduates who can support government departments in marketing and outreach and a similar module has also been added to the Fellowship curriculum.

8. Government Buy-In: A digital solution can never work without the buy-in from the parent government department. One of the solutions our Fellows developed aimed to connect the public to the doctors based on the reviews left by their previous patients[12]. Once developed and ready to be deployed, the parent department refused to share the doctors' public data despite committing to provide the data initially. As a result, now a written MoU is signed with the parent department before initiating the project. Also, through our Fellowship Government Liaison Officer we try to engage top tier government officials from secretary level to IT officials in each department, getting their buy-in along the way by sharing regular updates and the potential impact of the app so that the app is sustained after launch.

9. Extensive user research and continuous testing: One of the biggest requirements to ensure successful adoption of the developed solutions is to perform extensive user research. One of the projects[13] that we developed for the Excise and Taxation department enabled the department officials to keep track of the seized and confiscated non registered and tempered vehicles. This system had multiple interfaces across multiple departments and

required all the stakeholders' input to process a request. Given the complex workflows, the department and the Fellows were not able to interview all the stakeholders resulting in the collapse of the workflow post-deployment. This reinforced the importance of user research. User research is a significant component of the Fellowship Program and Fellows conduct surveys through potential end users of the system to ascertain the demand for a specific app or service and use their findings for adding desired features.

10. Approvals and policies: Changing or introducing new policies to adopt a solution or getting approvals from the ministries' higher-ups can take a long time. Despite knowing that the state's existing laws did not allow crowdfunding[14], one of the departments requested a crowdfunding platform to connect startups with potential investors. Post-development, the department could not bring a change to the policy; hence, the platform was never utilized. This was a good reminder that civic innovation isn't just limited to solving the technology problem. Navigating legislative hurdles and campaigning for innovation in local policies is also crucial. Through the Fellowship Program's platform as well as Code for Pakistan's other initiatives and partnerships, we raised our voice on different platforms to convince the government to introduce policies that are business friendly where innovators can leverage the internet to scale their businesses and reach wider audiences.

CONCLUSION

How can data be used to strengthen participatory democracy in countries with fragile political systems?
How can cultural shifts be evoked in government departments when change is perceived as threatening.
How can we work with governments to develop policies

which spark innovation? For the past five years, Code for Pakistan has been actively involved in setting up an inclusive civic tech ecosystem in Pakistan. Using technology as an enabler, Code for Pakistan is focused on building a stronger relationship between citizens and the government. Our experience of working with the KP government has enabled us to think along the lines of replicating the model across different provinces of Pakistan. We are also working on establishing a digital services unit in partnership with the KP government that will take up more ambitious digitization initiatives in the province. With our work in the Open Data Portal[15], we were able to help draft the province's first Open Data Policy that will be passed through the provincial assembly soon.

Civic Innovation does not happen in silos; to innovate in public services and to improve government technologies, establishing trust between key stakeholders is essential. Civic engagement cannot be solved merely through technology but by concerted efforts and lobbying at the policy level to help government departments build their infrastructure, increase their capacity, and be more responsive to openness and transparency. With the Fellowship Program, we have accumulated a great deal of knowledge on navigating these bureaucratic hurdles and innovating despite the structural and policy level issues that linger on. Only through innovation and examples of digital civics practice can we influence a cultural shift in policy and framework.

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REFERENCES

- [1]Pakistan, C. Code for Pakistan. Code for Pakistan, 2020. <https://codeforpakistan.org/>.
- [2]Pakistan, K. KP Gov Innovation Fellowship Program. Code for Pakistan, 2020. <https://codeforpakistan.org/programs/fellowship/>.
- [3]Home | Code for All. Codeforall.org, 2020. <https://codeforall.org/>.
- [4]2019, C. Impact Report 2019. Code for Pakistan, 2020. <https://codeforpakistan.org/impact-report-2019/>.
- [5]Report Electricity Theft, N. NoKunda | Code for Pakistan. Codeforpakistan.org, 2020. <https://codeforpakistan.org/blog/portfolio-item/nokunda/>.
- [6]Grants Management and Disbursement System | Code for Pakistan. Codeforpakistan.org, 2020. <https://codeforpakistan.org/blog/portfolio-item/grants-management-and-disbursement-system/>.
- [7]3G/4G Users Cross the 61 Million Mark in Pakistan. Propakistani.pk, 2020. <https://propakistani.pk/2019/01/30/3g-4g-users-cross-the-61-million-mark-in-pakistan>
- [8]Raabta App. Play.google.com, 2019. <https://play.google.com/store/apps/details?id=com.kpt.raffipolice.trafficapp&hl=en>.
- [9]Reimagining the KP Government Innovation Fellowship Program Amidst the COVID-19 Pandemic. medium.com, 2020. <https://medium.com/@CodeforPakistan/reimagining-the-kp-government-innovation-fellowship-program-amidst-the-covid-19-pandemic-de8dc48ca15c>.
- [10]Mahmood, A. The dirty truth: 41 million Pakistanis without toilets. DAWN.COM, 2020. <https://www.dawn.com/news/1168630>.
- [11]Public Toilet Finder. Play.google.com, 2019. <https://play.google.com/store/apps/details?id=com.watsoncell.publictoiletfinder&hl=en>.
- [12]Pakistan, D. DocSeek | Code for Pakistan. Codeforpakistan.org, 2020. <https://codeforpakistan.org/blog/portfolio-item/docseek/>.
- [13]KP Excise Motor Vehicle Seizure and Confiscation System | Code for Pakistan. Codeforpakistan.org, 2020. <https://codeforpakistan.org/blog/portfolio-item/kp-emvscs/>.
- [14]Pakistan, C. CrowdDurshal: A lifeline for the startup ecosystem in KP | Code for Pakistan. Codeforpakistan.org, 2020. <https://codeforpakistan.org/blog/portfolio-item/crowddurshal/>.
- [15]Open Data Portal for PMRU | Code for Pakistan. Codeforpakistan.org, 2020. <https://codeforpakistan.org/blog/portfolio-item/open-data-portal-for-pmru/>.