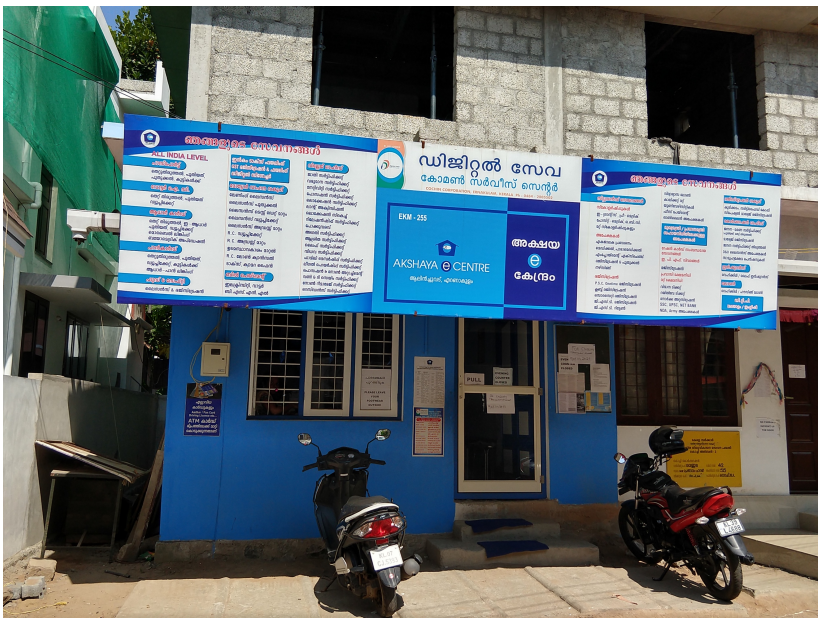

Building an eGovernance system: Insights from the field

aapti institute

This brief would not have been possible without the contributions of citizens, telecentre entrepreneurs, telecentre employees, and government officials who kindly gave us their time and shared insights. A big thank you to all!

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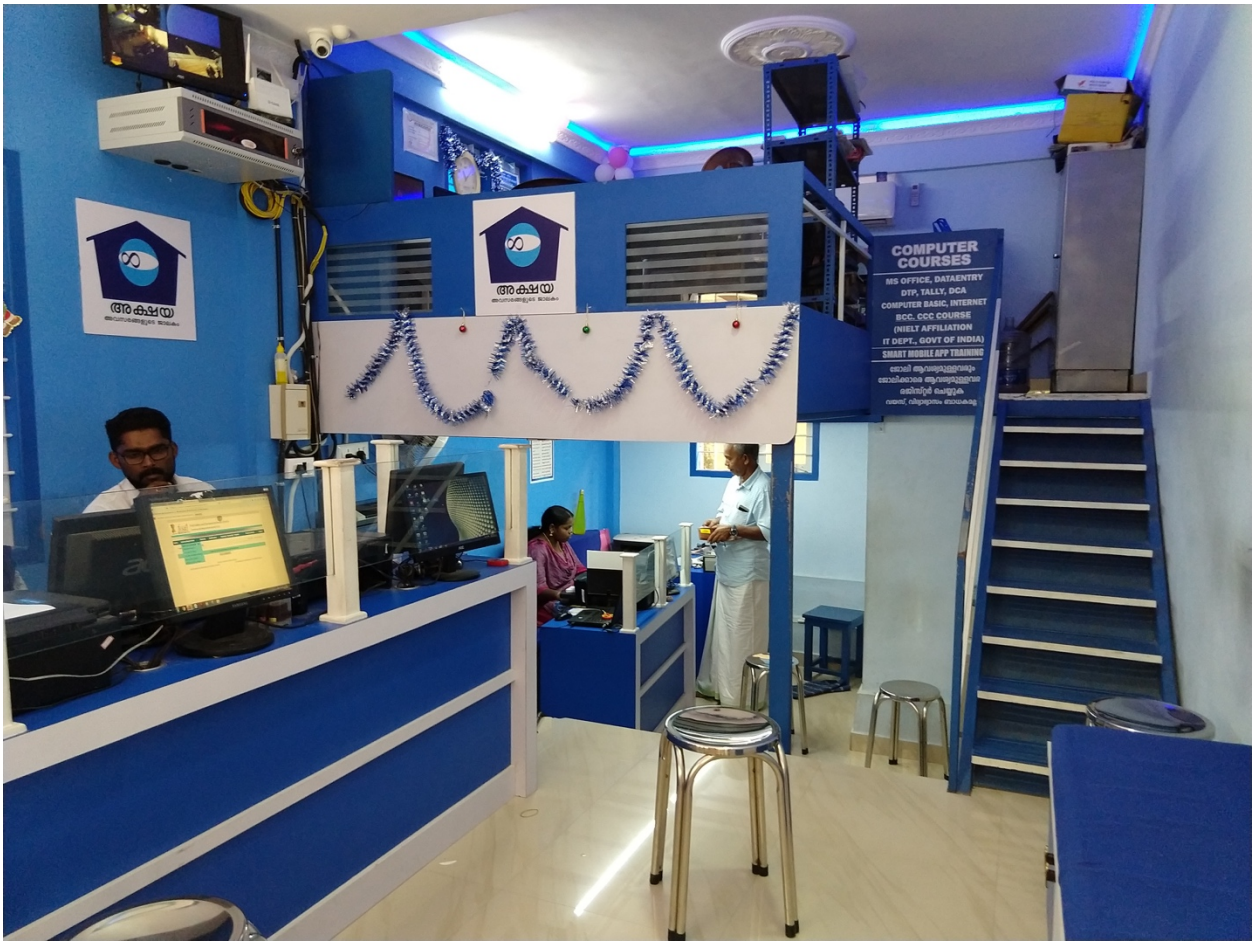

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Executive Summary

In this brief, we take a look at what it takes to enable eGovernance initiatives to transform the way citizens access the state. These considerations are timely with Common Service Centres (CSCs) becoming ubiquitous fixtures in governance.[i] Moreover, this exploration is particularly significant as we explore issues of efficiency in the context of programmes such as the National Rural Employment Guarantee Act (NREGA) and delivery mechanisms for a potential Universal Basic Income (UBI), and also developing and strengthening data-led, tech-enabled approaches to governance. Yet, while there is a growing understanding of the state of data, technology, and implementation around it, such as through the newly emerging IndiaStack and Societal Platforms approach,[ii] we know less about the human side of things.

Understanding the prospects and limits of technology and imagining its design through understanding society is core to Aapti's belief system. We believe that humans are critical in making technology work, are the carriers of policies. And the intersection of technology with society, particularly in the context of uneven power relations, brings about complex outcomes. We put forward actionable initiatives towards which eGovernment systems must work in order to be effective mechanisms for citizen-state contact and points of welfare delivery. We heed a call to inform the ways in which policy responses must be developed.

Our field-led project work exploring the Akshaya Programme in Kerala here has given us the opportunity to observe the working of a technology-led system in close contact with humans, and the opportunities and challenges for it. We spoke to both the staff and users of these centres to understand the relevant issues.

Our embedded field work at the frontier of the technology with society underscored the overarching importance of people – the human infrastructures around technology - that mediate tech-enabled service delivery to citizens. It also showed the centrality of the centres to claim-making for citizens, suggesting that a move away from these may leave citizens struggling. The work also highlighted the larger benefits for the disadvantaged, especially women, from a well-functioning CSC system, which is magnified by the centres' presence in local communities. These factors must be accounted for and deliberately included in any e-governance system design, and must inform future governance structures around emerging technologies.

Learnings from the Field

Human infrastructures enable technology.

Our observations show that the success of a CSC, in terms of turnover as well as usefulness to citizens, is related to the

commitment of the centre entrepreneur and the efforts of the centre employees, an observation that is vouched for by the programme district administration. We also learnt that citizens preferred visiting the Akshaya centres to navigating online processes on their own, because at telecentres people can follow-up to enquire, and hence, *perceive* processes.

Contrary to narratives surrounding ICT in governance, online transactions in themselves do not guarantee visibility and transparency. Consequently, despite the promise of disintermediation of eGovernance, the intermediation offered by the centre is crucial to citizens.

Supplemental offline infrastructures are lacking, fraying trust.

We learnt that telecentres are often the port of first call for citizens needing state access. The absence of robust offline infrastructures means that citizens call the centre employees. Equally they lack any methods of filing grievances and being heard. The two together lead to lapses in service and friction in the system, fraying trust in the state.

Fee structures in telecentres do not capture the actual costs of intermediation

As humans are so central to technology, demonstrated in the point above, centres often conduct non-remunerative work handling routine enquiries and fielding calls. The fee received per task at the centre does not capture the time spent per task.

CSCs are a reflection of society, and are subject to political influence.

We learnt that CSCs were not divorced from local politics. We saw that local politicians use the centre to make claims on the state for citizen welfare. Other forms of influence in the form of entrepreneur selection also exist. Systems design must account for these realities and harness it to the citizens' benefit.

CSCs have the potential to have a wider social impact

Centres' impact goes beyond service delivery – they offer attractive employment and social empowerment. There is prestige and social status attached to being part of a well-functioning Akshaya centre for both entrepreneurs and employees.
All the stakeholders we spoke to during the study, barring one, were women. These centres may thus also be used to achieve larger social goals of employment and empowerment.

The Agenda for Action

From our learnings, we believe eGovernance action agenda, in order to build trust, should:

- Invest in human capital to sustain the human infrastructures that enable technology, through enhancing learning and selecting motivated entrepreneurs;

- Build robust offline infrastructure (IVRS, grievance redressal) to enhance capacity and trust;
- Ensure revenue optimisation to sustain business models
- Co-opt local brokers and politicians to enhance reach and address exclusions.

What's Next?

Careful attention must be paid to designing systems as forms of intermediation, so that they are responsive, accountable, inclusive, encouraging of participation, and ultimately pave the way for disintermediation and direct state access across sections of society. In particular, the likely growth of direct cash transfers as a mechanism of welfare in India, and the use of data-enabled civic technologies such as through IndiaStack necessitates an exploration of the existing mechanisms of citizen state welfare as these may become points for distribution, management, or grievance redressal. Importantly, inserting technology in society must be accompanied by an effort to understand the ways in which systems are instantiated in the complex mesh of power and political economy, and explore measures to address them.

Background and the Project

Background

eGovernment in India has its roots in a vision to transform India into a "digitally empowered society and knowledge economy".[iii] Post the 1990s, e-Governance initiatives have turned towards citizen-centric services, though the early work focused on computerization to create the information systems to enable digitization in areas such as railways, land records.[iv] Initiatives for citizens were initiated at the state level, with states like Andhra Pradesh and Maharashtra leading the way.

The last decade has seen increasing interest among governments to increase the use of technology in governance, including in the delivery of services and welfare. This has taken several forms – together called eGovernance – such as the use of e-service centres or telecentres to enable citizens to access to basic services such as utilities, records and municipal services alongside land records and access to co-operatives, and the use of technology to determine and manage welfare programme allocations.

Nearly a decade after Shirin Madon's work on the Akshaya telecentres in Kerala, this empirical study builds on the understanding that formal and informal state-society interactions are central to outcomes. We also look through the lens of Akhil Gupta's seminal work *Red Tape*, where he underlines the importance of the street level bureaucracy in welfare delivery, a role that is now shared by telecentre entrepreneurs and employees. This reshaping of the way citizens *"see"* the state in the context of Akshaya telecentres is described by Renee Kuriyan and Isha Ray, as shift in the traditional state-citizen interaction as conceptualized by Stuart Corbridge et al. in their book Seeing the State.

This study brings together several strands of ICT-D and e-governance analyses; and human infrastructure and structural design determines how citizens interact with the state and the developmental impact of tech enabled governance.

The current discourse is centred around the technical perspective or the state capacity perspective. Studies focusing on technical aspects assess the capacity[v] and infrastructures for e-Governance[vi], including readiness to service the Sustainable Development Goals.[vii] There is a recognition that these technological systems struggle as they are isolated and less interactive at an architecture level and lack the interoperability that is desirable to fully support citizen needs in changing times.[viii] Efforts such as the India Stack (and the more recent Urban stack) are firmly located in this technological solutionism, and focus on assessing and developing technology architectures.

Other research evaluates state capacity to initiate and implement eGovernance programmes, suggesting that states like Maharashtra and AP may be at higher levels

of capability than other states.[ix] A related set of debates centre on measures to ensure efficiency, and mechanisms such as Aadhaar, and related issues from a citizens' rights perspective. The development of newer technologies like DigiLocker and Aadhaar also need to be integrated.

Yet, we are only now building knowledge about the human infrastructures that enable this technology. While there is a recognition within the government of issues such as addressing issues of citizen engagement[x] in eGovernance, there is less reflection of the ways in which technology can act as an enabler of policy[xi] or many explorations of the lived issues of gender, caste, feudalism, and traditional experiences of power.[xii]

Against this backdrop of evolving paradigms of governance and technology, using field-based insights, we critically examine the telecentres as instances of e-governance that promise to bridge the state-citizen gap. In doing so, we hope to build a reflexive capacity to understand the complex ways in which technology sits within society, and fulfill the promise of technology in enabling closer citizen-state contact. The impact of technology, and therefore the promise it holds, cannot be abstracted from the social reality within which it lives. Even as India contemplates significant new policy initiatives such as a Universal Basic Income or a Minimum Income Guarantee, or large-scale technology-enabled architectures, understanding existing citizen service infrastructure that can be pressed into delivery can enable nimbleness.

Common Service Centres (CSCs) or telecentres are citizen-facing distribution points of e-government services, where private entrepreneurs deliver public services, documents and access welfare programmes, in addition to other services and business offerings that are required to supplement income and ensure financial sustainability of the centres.[xiii] Under the e-Kranti, Electronic Delivery of Services scheme, one of the nine pillars of the Digital India programme, telecentres have been a particular focus area of the Government of India in recent years.

Our work has led us to conclude that telecentres are crucial as nodes of governance and capable of breathing life into the National e-Governance Plan objective of bringing Public Services Closer Home.[xiv] However, the promise of disintermediation and access that e-governance offers may not be so easy to fulfill as the human dimension remains a central factor in determining outcomes. Indeed, the location of centres within a diverse and dynamic society with unique power structures and socio-economic conditions must influence our thinking about policy and design for e-governance. We found that while telecentres are crucial points of citizen-state contact, they replicate existing patterns of state access by citizens – particularly, a reliance on intermediation.

This brief, based on interviews and observations in the context of the Akshaya project in Kerala, India, hopes to contribute towards designing structural, human, technical, and infrastructural improvements that can aid eGovernance design. Our insights underscore the fact that taking services online does not directly translate into better access – rather, efforts must be directed at solving for access and making intermediation work. We must also consider the ways in which the centres and processes within can enhance state capacity as well as have broader social impact.

Glossary

- District Management – Akshaya project administration for Ernakulam district.
- Local body officials – Gram Panchayat members and Ward councillors, as per context.
- Telecentres/CSCs – We use the terms interchangeably. Akshaya project centres, are the citizen-facing service delivery points.
- Village Office – Local village office in a field site. The Akshaya Centre is supposed to process some applications that are normally processed by this office.
- Village Officer – Officer in charge of the Village Office.

The Project

Research Question

The study attempts to understand how telecentres function in a complex society through in-depth work at telecentres. Through a reflection on our observations at the centres, we attempt to arrive at answers the question:

- What are the structural, human, infrastructural considerations that can aid in designing eGovernance systems?

Methods

In this project, we use the field research to inform the development of actionable solutions from a policy design and implementation perspectives.

We picked two telecentres of the Akshaya project of the Government of Kerala for study, currently being integrated with the Central Government Common Services Centres (CSC) Scheme. The centres were selected along an urban-rural divide in Ernakulam district - one of the centres was in the heart of the city, and the other a centre in a rural fishing village.[xv]

We incorporated a range of techniques for analysis. Participant observation and semi-structured interviews with the centre entrepreneurs, employees, and citizens would help us understand how the state was being accessed and the functioning of the centres. Citizen interviewees were selected from those present in the centre or were residents of the area served by the centre. We also had semi-structured interviews with the district-level project management team that helped us get a broader perspective of the e-governance programme (details of interviews in

Methodological Note). An unfortunate limitation of the study is the paucity of time – a gap which we hope to address as we develop our research program in this area.

Research Context: Ernakulam District, Kerala

Research was conducted in Kerala, which is ranked first in Human Development Index terms in India.[xvi] Our field sites are in Ernakulam district, which has a literacy rate of 95.89%.[xvii] While is possible to argue that the context influences our observations, and therefore our suggestions, we believe that the learnings from this field study can be extended to across contexts to build robust e-governance centres. Specifically, our observations about the relevance of the human touch and the capacity to enhance social welfare imply a broad applicability for our findings on system design. Our work has focused on highlighting structural, rather than contextually idiosyncratic elements, and therefore actions will have broad applicability.

On the Field

Field visits were conducted over a period of one month (December 2018). Subsequently, we have kept in touch with the centre and the District Management over phone. Interviews lasted 20 minutes, and were conducted entirely in Malayalam.

In this context, the importance of knowledge of the local language cannot be overstated. Informal conversational exchanges, casual banter, non-verbal cues, gestures, facial and/or other expressions of pun or sarcasm all contain vital information that may be missed by a researcher who does not speak the language or understand the manner of communication of the groups under study. We have used this interpretation to inform our recommendations.

Ethics

Prior to undertaking the study, Aapti Institute conducted an internal review of the proposed methods, and agreed to seek informed oral consent.

Accordingly, all interviewees were asked for oral consent for the interview after the purpose of the research was clearly explained. If anyone refused, the interview was not conducted. In any case, all names are changed to protect privacy. Photographs which show people have been taken with their consent.

Description of the Akshaya program and the centres

As mentioned above, Aapti observed two centres.

Centre One: This centre is a well-functioning centre as evidenced by the continuous stream of citizens from across socio-economic backgrounds, age and gender, that we observed. The centre is run by Meena,[1] a woman entrepreneur. Meena,

[1] All names changed to protect privacy.

we learnt, visits the centre a few times a day and manages the overall functioning of the centre. She maintains personal contact with citizens, is available on the phone for any queries. Citizens confirm that the centre is responsive to citizen feedback and provides timely, hassle free delivery of services.

Centre Two: This centre is located in a fishing village out of Ernakulum city. It has comparatively, fewer visitors. This could be because it is close to the Village office, one of the departments who functions the Akshaya centre is supposed to supplement and expedite. The centre is run by Sister Jo, who is a member of the convent, and runs several other social organizations. Given her other commitments, she is unable to oversee the activities of the centre. As a result, the operations at the centre have suffered and citizens reported preferring to visit another centre, a few kilometers away in order to get the same services or the Village Office itself.

Insights from the field

Human infrastructures enable technology.

Engaging with government run/enabled centres is a taxing experience for citizens especially in the context of the CSCs which add a layer of technology, new and hard to understand for many. Therefore, personalized interactions by able and motivated entrepreneurs and staff enable citizens to approach service delivery without fear. Citizens view centre staff as an extension of government infrastructure provided to smoothen their interaction, and receiving personalized services is a significant part of this sentiment. The human infrastructure at the centre has two components – entrepreneurs and employees.

First, entrepreneurs' qualities and ability to manage the CSC are central elements of citizen perceptions and usability of the centre. In Centre One, we observed that Meena stays abreast with government schemes and services online, and is able to answer most questions leading to citizens reporting that they prefer coming the centre for most needs.

Indeed, motivation, willingness to learn, and innovate have an impact on user experience. In stark contrast, there is a loss of credibility and citizen engagement in Centre Two. Citizens claim, "we prefer to visit the Village Office for information or another Akshaya centre (further away)." The district administration notes that the usability of the centres is hinged on the proactiveness and initiative of the entrepreneurs.

The CSC guidelines[xviii] also recognize the importance of the village level entrepreneur and define the criteria for selection. Yet, we learnt that the process of selection is vulnerable to influence of local politics. A local panel is constituted to finalise selection, and that is subject to political influence. The selected entrepreneurs are usually those, we learnt, who have some measure of social capital (such as Sister Jo, who runs other social activities).

Second, the quality of employees at the centre is also relevant. Citizens at both centres stated that they based their decision on whether or not to visit a particular centre on the perceived competence and approachability of employees at the centre. Even within a centre, citizens had preferences for one employee over another. Personal interactions such as remembering the name of citizens and conversations during the service put the citizens at ease and add a sense of familiarity in a process that seems alien because of technology. It also adds depth to the legitimacy of the centre as a public functionary.

The duration employees spend a centre is a key factor in their success and their abilities to service the citizens in a meaningful way. Village officers revealed that they receive complaints against temporary employees, as their lack of experience results in lapses.

Training of employees also impacts their ability to do their jobs effectively. The programme project management team conducts trainings periodically, but these pertain usually pertain to computer skills. There is a large quotient of learning that happens through peer-to-peer interactions, which are informal.

Supplemental offline infrastructures are lacking and inefficiencies in operation are fraying trust in the system.

The absence of a supplemental infrastructure in a technology-enabled space leads to difficulties in ensuring visibility for citizens into the process, and reduce the burden on the centres themselves. Such processes can gradually socialize a citizenry into a new process, and build trust and faith in the system.

There are two aspects of offline integration that enhance the complexity of the system and fray trust – lack of supplemental information and a *de facto* absence of grievance redressal mechanism. We learnt that the Akshya system struggles with both these issues.

First, we learnt from both centres that citizens call the centres with queries before a physical visit. Citizens, not knowing which information to rely on regarding issues such as documents required prefer to speak with a centre employee. Sometimes, human errors creep into the information provided, and result in multiple trips for the citizen, thus debasing their trust in the centres.

Second, we learnt that citizens currently use ad-hoc mechanisms to lodge complaints. They bring their complaints to the district office, which then opens a file to take action. The process is not organized and therefore, not used for a variety of complaints. The Akshaya portal offers several online channels for grievance redressal[xix] as well as links to the District and State Project Office[xx] and to the Chief Minister's Public Grievance Redressal Cell.[xxi] However, none of the citizens interviewed reported having ever used it.

A tight loop between citizens and the administration can yield positive effects. For example, recommendations from local bus drivers led to the Inclusion of welfare board payments through the Akshaya centres, according to an entrepreneur of a centre not covered by the research. Conversely, the lack of channels to lodge complaints can lead to citizens feeling unheard, and impact the trust they have in the centres.

Akshaya centres should have structured offline and localized channels for complaints and grievances and mechanisms to reviews these periodically. Centre employees and entrepreneurs should be empowered to record and address issues, without having to navigate government hierarchy. The free flow of feedback can also help expand the business of centres, and yield more profits.

Fee structures in telecentres do not capture the actual costs of intermediation

Because humans are so central to technology, we saw that centres conduct a lot of non-remunerative work such as routine enquiries, which takes employees away from revenue generating work. This is compounded by the absence of an offline infrastructure, as described below.

Centre entrepreneurs state that the fee structure of several services offered by the centre are modeled along offline patterns and do not reflect new taxes such as GST. The unit time and effort spent by the centre is not proportionate to the fees paid because of the time spent per task does not include the time spent answering questions and explaining technology to concerned citizens.

CSCs are a reflection of the society, and are subject to political influence.

Since the CSCs, and through them their employees are the last link in the chain of service delivery, they can overturn or reinforce patters of social exclusion. Understanding and acknowledging the relationship between local centres and local political and brokerage networks can be used to improve service delivery. Interviews highlighted that the centre is not immune to local political machinations and networks. For instance, the process of entrepreneur selection involves members of the local body at the panel interview stage,[xxii] thus making it susceptible to undue influence. The district management also mentioned that allegations of political favoritism do arise. Politicians also misuse the centre for their own tasks, while regular citizens suffer.

In one of the centres, we observed a local politician walk in with a set of forms for processing. Filling up and processing forms is a function that local politicians and political brokers perform for populations that struggle to access the state. Here, they are using the telecentre machinery for their work.

We also learnt of an instance of an established NRI businessman who struggled to succeed despite setting up a high-end centre and the district management suggested that this may have been related to the fact that he was not well enmeshed in local networks and thus not able to work them to his advantage.

It is thus is difficult to parse out technological systems from local political influence and such interaction is inevitable. Centre design must contemplate how to thoughtfully incorporate these influences to assist claim making as well as build capacity.

CSCs have a wide social impact

The CSC guidelines highlight the potential for wider social impact of the centres. In an era where the state is retreating and outsourcing functions to enterprises in the last mile, the centres are seen as a respectable place of employment for the youth in the area, both as employees and as entrepreneurs. The centre offers skills trainings and growth opportunities for the staff. It serves a dual purpose of generating

decent employment as well as engaging private citizens in structures of governance. In Ernakulam District, the site of the fieldwork, about 70% of all the entrepreneurs, employees and project managers as women, as stated by the district management. The entrepreneur selection process also mandates 10% reservation for those of the SC/ST community,[xxiii] indicating that the CSC project can help increase participation of women and other marginalized sections in the workforce. The centre can be built as a gateway employment hub for young people in the community, and equip them with skills for the future.

Recommendations for CSC design

Invest in human capital

- Select entrepreneurs through a competitive, transparent process that ensures only candidates invested in citizen-services are selected and the process is free from political capture.
- Include softer qualities such as motivation, willingness to learn, and innovate. These qualities impact on user experience.
- Institutionalise peer to peer learning to encourage cross-pollination of ideas, problem solving and knowledge creation.

Build robust offline infrastructure to enhance capacity and trust

- Establish mechanisms for receiving and incorporating citizen feedback and ensuring adequate systems of grievance redressal. These measures not only increase citizen capacity, but also enhance state capacity to serve citizens. Citizen feedback can enable the introduction of new and relevant services.
- Develop an interactive voice response (IVR) system to get basic, reliable information to the citizens via phone. This socializes trust in the system and free up time for centre employees for service delivery. The IVR system can be set up such that It gives general information to citizens but also makes it possible for people to connect to the centre for specific questions, if required. Citizens can phone in understand document requirements for applications, centre timings, costs and secure basic information, to ease their interaction with the centre. This system will also enhance usability and access for citizens who travel to the centre to acquire information. IVR can be made in the common local languages to include migrant populations.

Ensure revenue optimization to sustain business models

- Re-structure remuneration scales and fee structures based on context and awareness of time per service to ensure sustainability.
- Review fee structures frequently. Recalibrate fees in line with the principles of Government Processes Reengineering as mandated under e-Kranti,[xxiv] since online mediation has different cost structure. The fees should be structured such that it is viable for the entrepreneur, but affordable for the citizens.

Co-opt local structures

- Co-opt local brokers and politicians have the capacity to aggregate large numbers of applications to ensure reach in a short time. Use their support to understand inclusions and exclusions.[xxv]

Building technology for the future

Our work has attempted to shed light on a little-researched but vital element of the state infrastructure to serve citizens and enable claim making. We intend for this to be a call to develop technology with a focus on how it sits within society.

The Common Service Centres are a pivotal element of government-citizen relations. We have learnt that it is hard to move away from human contact, even for elites, and therefore we need to develop strategic ways to support existing points of contact and enable them to fulfill a wider array of functions.

The gradual retreat of the state in many domains necessitates a careful evaluation of existing infrastructures for citizen-state contact. This, combined with the increasing reliance on technology architecture require thoughtful integration of it into the existing social and political conditions. For example, the current policy discussions around direct benefit transfers present the possibility of dismantling local infrastructures of welfare delivery. Yet, as we saw, there is a manifest value in human contact, and for technology to account for it in design and development. In such a future, it is possible to imagine the centre as nodal points for citizen communication and grievance redressal. The centres' pre-existing relationships in the society present possibilities for overlaying other systems of delivery and easing the entry for new approaches.

Tech acts as a carrier of policies, and therefore to have widspread, consistent impact technology needs to target structural nodes of existing problems [xxvi], while understanding and co-opting existing structures. For instance, the problems of corruption in the Public Delivery System (PDS) are diffused throughout the system, necessitating an understanding of this chain of corruption before initiating technology.

Note on Methodology

1. Interview numbers

Location	Category	Description
Urban (Centre 1)	Entrepreneur	2 interviews
	Employees	4 interviews
	Citizens	5 interviews
Rural (Centre 2)	Entrepreneur	Multiple calls, 1 interview
	Employees	3 interviews
	Centre Consultant	1 interview
	Village Officer	1 interview
	Citizens	4 interviews
District Project Management	Project Manager	1 interview
	Project Coordinator	1 interview

2. Interview questionnaires

The interviews were semi-structured and conducted in person or on the phone between December 2018 and January 2019. Interviews with all stakeholders were broadly categorized into questions on:

- Access – Questions aimed to understand the process of access. As perceived by citizens in terms of location, time, availability of information, approachability of the telecentre. The entrepreneur, employees and the district management were asked questions regarding specific steps that ensure inclusiveness of access. Citizens were asked whether they access information online, how they engage with the centre etc. For instance, different types of citizens are catered to; and how information on new services is publicized.
- Process - Questions aimed to understand the degree of involvement of interviewees with the system. Entrepreneurs were about the time spent at the centre, presence at meetings called by the project management, how new services were pushed. Employees were also asked questions along the same lines in addition to queries on whether they reported technical glitches or suggested process enhancements. Citizens were asked whether they give feedback or ask for new services to be added.
- Networks – Questions to understand the connections that the entrepreneur has within society, political contacts, residents' associations, self-help groups, other socially-oriented ventures etc.; and how these networks supplement or hinder functions of the telecentre.
- Incentives & vision for the future - Questions to understand why the entrepreneur and employees do what they do. We asked officials in the district management what their vision for the future of the Akshaya project is.
  Citizen perceptions - Questions to understand citizen perceptions of centres, entrepreneur and employees.

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Notes

[i] CSCs receive considerable attention under the National eGovernance Plan (NeGP) 2006 and the e-Kranti Scheme 2014. eKranti is one of the nine pillars of Digital India.

[ii] https://indiastack.org. IndiaStack is a technology architecture around which digital initiatives can be constructed. https://societalplatform.org.

[iii] https://negd.gov.in/digital-india

[iv] https://negd.gov.in/digital-india

[v] Authors have pointed out that while e-governments have attained cataloguing, enabling transactions, and vertical integration, horizontal integration across departments has not been attained. Shah, Mrinlalini: 2007. E-governance in India: Dream or reality. International Journal of Education and Development using ICT [Online]: 3(2).
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[vii] Giribabu Dandabathula, Chandrika Mohapatra and Sudhakar Reddy C.:2018. State of ICT Enabled e-Governance Landscape of India for Achieving Sustainable Development Goals. International Journal of Computer Science and Mobile Computing: 7 (12) December- 2018. Pp.59-78.

[viii] https://negd.gov.in/digital-india

[ix] Internet and Mobile Association of India. Index of Internet- Readiness of Indian States. Available at https://cms.iamai.in/Content/ResearchPapers/38835dc0-7604-4958-a02a-d6cb48a39fdb.pdf. Last Accessed: February 05, 2019. Capacity is measured along 4 dimensions: a) Common Service Centers per person; b) Percentage of wireline broadband connections installed under Rural Broadband Scheme in India; c) Expenditure incurred per CSC; d) No. of e-Services rolled out for participation.

[x] Department of Electronics and Information Technology 2012. Framework for Citizen engagement in e-Governance. https://meity.gov.in/writereaddata/files/Framework%20for%20Citizen%20Engagement%20in%20NeGP.pdf. Last Accessed 05 February, 2019.

[xi] Sylvia Masier: 2015., Redesigning the Indian Food Security System through E-Governance : The Case of Kerala. World Development: Vol. 67. Pp. 126-137.

[xii] Pradip Thomas: 2009. Bhoomi, Gyan Ganga, e-governance and the right to information: ICTs and development in India. Telematics and Informatics: 26 (2009). Pp. 20–31

[xiii] CSC guidelines Section 1.2 (see Library)

[xiv] The ultimate objective is to bring public services closer home to citizens, as articulated in the Vision Statement of NeGP. "Make all Government services accessible to the common man in his locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability of such services at affordable costs to realise the basic needs of the common man." http://meity.gov.in/divisions/national-e-governance-plan

[xv] We anticipated that there could be significant differences in access of the state to citizens and other outcomes along this urban-rural divide. While we did see some differences in the two centres, these were not attributable to the location (urban vs. rural); rather, we believe that they were largely a result of the characteristics of the entrepreneur as we discuss in the report.

[xvi] http://www.undp.org/content/dam/india/docs/inequality_adjusted_human_development_index_for_indias_state1.pdf Figure 1: HDI and its dimensions: Indian states, p9

[xvii] https://ernakulam.gov.in/ District at a Glance

[xviii] Section 4.2.1, CSC Guidelines

[xix] The official Akshaya website has a Help Desk dropdown that links to General Inquiries, FAQs, and an online form for feedback and grievances. http://akshaya.kerala.gov.in/

[xx] The Contact Us page on the Akshaya website has phone numbers and email IDs for all district offices as well as the State Office at Thiruvananthapuram. We communicated with the district management via contact details available on the website. The State Mission office was also readily reachable and

helped with basic enquiries like alternate contact details of the Ernakulam district office. http://akshaya.kerala.gov.in/contact

[xxi] The Akshaya website links to the Chief Minister's Public Grievance Redressal Cell homepage. http://cmo.kerala.gov.in/

[xxii] Government of Kerala Order for Entrepreneurs Selection Process specifies the members who are to form the selection committee. http://akshaya.kerala.gov.in/uploads/posts/attachments/download/5821a13892376-13184219623d77bf1fe4d4c101aedd03.pdf

[xxiii] Ibid. p2

[xxiv] Government Processes Reengineering (GPR), is one of the key principles of e-Kranti. It mandates that GPR be the essential first step in all new Mission Mode Projects (MMPs) without which a project may not be sanctioned. The degree of GPR should be assessed and enhanced for the existing MMPs. (see Library for documentation on GPR).

[xxv] Politicians, because of their interlinkages to the electoral process, are also aware of the reach of programmes within their neighbourhoods and communities.

[xxvi] Sylvia Masier: 2015., Redesigning the Indian Food Security System through E-Governance : The Case of Kerala. World Development: Vol. 67. Pp. 126-137.