



LESSONS FROM CIVIC TECHNOLOGY: ALTERNATIVE APPROACHES TO INDIVIDUAL ACCOUNTABILITY

Adi Eyal - Open Up

In agency theory, the principal-agent problem is a phenomenon where the goals of the principal and the agent do not align; this is especially true when it is difficult for the principal to verify what the agent is actually doing - this phenomenon of asymmetric information is common in principal-agent problems (Eisenhardt 1989). If we consider the citizen to be the principal and government as the agent, a principal-agent problem arises when government does not serve the needs of the citizen.



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IN A DEMOCRACY this problem is magnified by a lack of coordination amongst citizens, each with their own preferences, goals and political affiliations. The resulting power imbalance creates a chasm between the individual citizen and the machine that is government, and can easily result in sub-optimal governance and poor service delivery.

It is natural to attempt to address these problems by seeking individual accountability, specifically, seeking to hold departments and individual civil

servants directly accountable for their actions, with an expectation that this will result in improved services to citizens. While this approach is occasionally the only practical way to effect change, it does not always have the desired effect (Beu and Buckley 2001). There is often a perverse incentive for individual civil servants to become less transparent or responsive to criticism, lest being held accountable harms their career. Nevertheless, addressing an issue at an individual level exclusively may only treat a symptom

of an underlying system failure. Government failure is seldom the result of a single individual, but rather of weak institutions and systems.

If we do decide to avoid holding individuals to account, what other measures are we left with to ensure that government effectively serves its constituents? While there is no shortage of literature on government accountability, this paper approaches the problem through the lens of technological innovation.

I represent OpenUp (previously Code for South Africa), a civic technology organisation. Our contribution towards a strong and vibrant democracy takes the form of software, websites and other tools that attempt to address challenges experienced by citizens. To be clear, technology can by no means solve the difficult problems that the social justice and human rights communities have been tackling for decades. Mobile apps alone cannot solve the principal-agent problem, reduce inequality, or generally make South Africa a better place to live. Technology does however bring with it the means for scaling interventions. It can also be used to create virtual spaces which can narrow the gap between government and citizens, and simplify engagements between the two in order to encourage participation.

In this article I suggest three tools that can be used in addition to individual accountability. The first is to shift our focus from holding individual civil servants to account, to rather creating processes that promote accountability implicitly, often called procedural accountability (Siegel-Jacobs 1996). Procedures such as procurement, law-making, budgeting and others comprise a series of checks and balances ensuring that no single individual in government is able to make important decisions without oversight. While even the most stringent processes may result in errant actions, with the proper mechanisms in place, they are more likely to

be exceptional cases. What is more, processes that incorporate procedural accountability are less likely to result in defensive behaviour of those involved (Zhang 2005).

The second proposed mechanism emphasises that citizen participation in government processes is an important characteristic. The value of participation has been explored in multiple texts, particularly Irvin and Stansbury (2014). While not always effective, it can, in certain instances, have a positive effect on governance and promote a healthy democracy. Unfortunately, in many cases, significant friction exists preventing citizen engagement, including a lack of information or a poor understanding of the mechanisms through which participation is possible.

Finally, the third mechanism proposes a marriage between collective action by active citizens, and technology. Government can easily dismiss individuals or civil society organisations as not being representative of a significant constituency. It is much harder however, to ignore the concerns of a large and organised citizen body. Improving coordination can strengthen individual voices. Information and communications technologies (ICT) can assist in scaling up dozens of voices to hundreds, thousands or more. We have seen evidence that the collective action of citizens has resulted in collaboration and joint actions between government officials and communities. Community-based monitoring is offered as an example and discussed later in this paper.

Two-hundred years ago, Jeremy Bentham asserted '[I]n the same proportion as it is desirable for the governed to know the conduct of their governors, is it also important for the governors to know the real wishes of the governed' (Bentham 1843: 299). To paraphrase Bentham, while transparency (and perhaps accountability) is important, citizen engagement and collaboration should be seen as an equally important goal¹.

WHERE DOES TECHNOLOGY FIT IN?

In this section, I draw on three examples of technology-driven collaborations with government, and describe how they can be seen as models for creating a space for accountability that is driven by process, while simultaneously promoting citizen engagement.

OPEN DATA

What are my rights? How does government work? What is my municipality spending our taxes on? Who is my ward councillor and what can they do for me? To effectively engage, a citizen must be informed. Open data is a mechanism and philosophy that advocates for the proactive release of data and offers answers to the above questions. The concept has some technical nuances to it, articulated in detail by the Open Knowledge International in the Open Definition² (Open Knowledge Foundation 2005) but which can be succinctly summarised as follows: ‘Open means anyone can freely access, use, modify, and share for any purpose’. This definition contrasts with the work of traditional transparency-oriented organisations, for instance, the Promotion of Access to Information Act (No. 2 of 2000) (PAIA) which is an instrument that attempts to compel government to make specific information available. This Act is however, by its nature, a legal tool and in many cases, a legal request is met with a legal response. From the outset, this frames the interaction as adversarial, where an information officer might seek to avoid releasing information by applying one of the grounds for refusal afforded by the Act.

The author for instance, on requesting a list of tenders awarded by the City of Cape Town (the City) between January and August 2013 was rejected on the following grounds:

- * [The request was] [m]anifestly frivolous or vexatious ..., or [a] substantial and unreasonable diversion of resources.
- * The work involved in processing the request would substantially and unreasonably divert the resources of the public body (City of Cape Town supply chain 2013).

Moreover, PAIA also includes provisions for information officers not to respond altogether:

‘If an information officer fails to give the decision on a request for access to the requester concerned within the period contemplated in section 25 (1), the information officer is, for the purposes of this Act, regarded as having refused the request’. In practice, this clause is used frequently by information officers to simply ignore requests.

In 2014, a study was conducted on PAIA compliance, measuring the response rates to requests made to local municipal offices (Van Der Mey and Eyal 2015). This study sought to evaluate whether the language used in the request had any influence on the outcome. A neutral request was sent to half of the sample, and an aggressive request that used assertive and legally-based language was sent to the other half. The number of deemed refusals amounted to 86%, irrespective of the language used. This means that the most likely response for a request by a member of the public is no response at all. Furthermore, when responses to the requests

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were actually received, the sample using aggressive legal language had a shorter response time; this indicates that citizens without a legal background are at a distinct disadvantage.

Van Der Mey and Eyal's research is not the only such study. The PAIA Civil Society Network (PAIA CSN) Shadow Report: 2013³ revealed that of 250 requests for information, only 16% of those requests resulted in full release of data, while 54% of requests simply went unanswered.

In the opinion of the author, without reform and enforcement of non-compliance, PAIA cannot be used effectively as a general-purpose tool for obtaining data from government. To counter this, the open data movement takes a processed-based approach. A policy of data being open by default side-steps a potentially antagonistic relationship between requestor and information officer. When data is released by default, there is no need to request it, no need to decide whether it should be released, and no need to hurriedly collate it into a useable format. Furthermore, the very act of publishing data in the open is also likely to improve its quality. Publishers of data become more aware of their accountability when it is placed in the public domain (Woolfrey 2014).

A useful example of the potential value of data for accountability is the information on the availability of adequate sanitation facilities in informal settlements around the City of Cape Town. Through a release of data by the City about the location of temporary toilets, a website was developed (Social

Justice Coalition et al. 2016) that showed both the state of sanitation in informal settlement pockets, as well as the constraints reported by the City on the development of permanent facilities. The website was created to facilitate a conversation between communities, civil society organisations and city planners. While originally obtained through a PAIA request, the base data was significantly enriched with a number of other open data sources. Following the development of the website, the Independent newspaper group published two articles⁴ about the plight of communities who do not have access to toilets at all. The substance of both stories emanated from the toilet dataset.

Traditional campaigning and advocacy efforts are not made redundant by the introduction of data but rather are enriched by it. Far from playing a leading role, information, and by extension data, strengthens the hand of civil society where a prior lack of information has placed civil society at a disadvantage when engaging with government. Open data changes access to information into a non-event. The nature of the conversation shifts from whether data should be released at all to discussion about the quality and breadth of data already publicly available.

On a related note, open government data can also be used to hold others outside of government accountable. An example of this can be found in an unassuming Excel spreadsheet hosted on an obscure government website⁵ and how it has been used to empower citizens to ensure they are not being overcharged for their medicines at pharmacies. In South Africa, medicine prices are regulated through a Single Exit Price (SEP) mechanism, enacted by the Medicines and Related Substances Act (No. 101 of 1961). It states '[A] single exit price... shall be published as prescribed, and such price shall be the only price at which manufacturers shall sell medicines and Scheduled substances to any person'. From

the Act, pharmacists are not permitted to set prices of medicines above the SEP⁶. The aforementioned spreadsheet contains the list of the single exit prices for over 9,000 registered medicines in South Africa⁷. The Department of Health likely only publishes this data to fulfil a statutory requirement. On discovering the spreadsheet, OpenUp developed a simple mobile web application⁸ that enables consumers to easily look up a medicine and the maximum price that they should pay for it. This tool is currently being used by thousands of people to verify the prices they are paying. While there have been no reports of overcharging, access to the information itself is empowering.

Interestingly, a chance email from a family doctor provided deeper insight into other uses of the tool. The email reads ‘I work in a mixed-income neighbourhood and being able to figure out what works for my patients’ budgets is extremely helpful - there’s is no point in prescribing medicine that the patient cannot afford to buy. Please keep up the good work’ (Eyal 2014).

On the back of examples such as this, open data advocates often argue for publishing data for its own sake. Data custodians cannot anticipate how data may be used. Furthermore, perceived usefulness should not be a criterion for deciding whether a particular dataset should be released to the public.

Open data is not a panacea however. Data cannot effect change on its own and it comes with its own challenges, especially in relation to data literacy and the digital divide⁹. In addition, such change does not happen overnight. Despite these limitation, open data remains a good example of how technology can create a bridge between citizens and government; it demonstrates how procedural accountability, through the proactive release of data, can be embedded within the daily workings of government and create a starting point for a discussion with citizens.

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CITIZEN PARTICIPATION

Beyond simply increasing transparency, technology can be used to promote citizen participation. In 2016, OpenUp collaborated with the National Treasury to develop an online portal¹⁰ named Municipal Money that publishes data on municipal financial performance online. Its aim is to ‘make this data widely available in order to increase transparency, strengthen civic oversight and promote accountability¹¹’. This example was not the first time that the data was made available, but previously it was packaged in hard-to-understand formats which targeted public finance professionals and was generally inaccessible to lay audiences. The portal sought to change this, by not only making it easy to find, but also to explain financial information as simply as possible, without overly diluting its meaning. The website includes explainer videos in multiple languages, as well as easy-to-understand annotations on the meaning of particular measures and indicators.

While the initial release of the data was simply to make the data available, this portal takes this process one step further by providing the contact details of the mayor, municipal manager and chief financial officer. With a single click, one is able to send an email directly to the municipality – seemingly trivial, this feature is significant. Access to municipal information in an understandable format is valuable, but giving users the tools to take action, in this case by sending an email directly to the municipality, is empowering. While it is likely that a motivated citizen could already

find this information on the municipality's website, the difference here is that these contact details are provided alongside financial performance. In this way, the website has designed a process to encourage citizens to hold local government accountable within a relatively narrow context. Increasing the proximity of information to the tools for action increases the likelihood of focused interactions. This contact feature has been used by many to challenge their mayors and municipal managers about individual problems with service delivery. We have also seen another interesting use-case. A researcher looking at the data for Mpfana municipality in KwaZulu-Natal noticed an irregularity in its reporting of expenditure of solid waste¹². The entire wage bill of the municipality was inadvertently allocated to the incorrect reporting line item. Upon reporting this anomaly to Treasury, an official request for correction was sent to the municipality. Again, this is a small result but it proves the value of opening data to the public.

While municipalities already report to Treasury on a quarterly basis and the data release is not controversial, the portal gives life to this information and encourages citizen action. In a similar way to open data, the accountability is automatically built into the system. In this case, shining light on the data can change government's relationship with citizens.

It is worth considering another example, but this time at a national level; OpenUp and the International Budget Partnership (IBP) developed an experimental micro-website¹³ to test whether citizens

can be encouraged to make submissions to the parliamentary standing committee on appropriations on the national budget. Amongst the general public, it is widely believed that the budget speech delivered by the finance minister is final and cannot be changed (International Budget Partnership 2016), however this is not the case, as parliamentary approval is still required. The website sought to test whether providing information and the means to make submissions to the committee is a feasible channel for public participation. A number of national media outlets such as the SABC¹⁴, the Sowetan¹⁵, the Independent¹⁶ group and others, agreed to publish the tool on their websites. The micro-site was designed to be informative, and to explain the major changes between the current proposed budget, and that of the previous year. Users were also able to interact with the website to indicate their preferences for certain decisions made. A template letter was automatically generated using formal language, based on these choices. As with the Municipal Money website, an email option was provided for users to make their submissions using the template letter provided. The flow of the tool was carefully designed. Users begin the journey without an understanding of how the budget process works. Through engaging with the tool and interacting with the content, they learn both about the budget process, and also about major changes to the budget. The newly-informed user is then provided with the means to participate. In this case, drafting a formal letter is daunting and may present a barrier to participation, but here it is done automatically by the tool. Additionally, providing the email address of the chairperson of the committee and the means for sending the submission directly from the website reduces the friction to public participation. In all, 204 submissions were made through the tool. A final report to the chairperson of the committee contains details of the submissions and some additional details (International Budget Partnership 2016).

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The concept of participatory budgeting has been suggested as a means to enhance transparency and accountability and help reduce government inefficiency and curb the ills that come with poor governance (Shah A 2007). The project above experimented with a technology-driven approach to encourage participation. Unfortunately, the design did not adequately consider the importance of a feedback loop, without which, many users would not trust that their submissions would be received and considered. Nevertheless, the tool proved the viability of such a mechanism and will be used as a model for future attempts to promote online participation, incorporating the feedback obtained from the testing period.

A final anecdote worth mentioning is my experience on the open data steering committee at the City of Cape Town. I was invited to join the committee as one of two public representatives. In a private conversation with a city official, it was mentioned that the meetings were more open and transparent, simply by me being present in the room. While not strictly related to technology, this example underscores the value of participation.

In this section, the first two examples demonstrate how technology can reach people who would otherwise consider their civic duty to be restricted to casting a ballot every five years. The final anecdote highlights the fact that simply by participating, the public can have an impact on how government functions.

COMMUNITY-BASED MONITORING

The previous section described how individual participation can strengthen governance. In this section, I discuss how communities can work directly with government to effect change through collective action.

The combination of personal experiences and data made for a powerful argument. While an individual narrating a poor experience can be dismissed as a once-off occurrence, that testimony cannot be ignored when it is supported by data collected from hundreds of similar claims from the community.” Where you think it makes most sense content and look and feel wise.

Starting in 2014, OpenUp has been working with the Black Sash, a non-governmental human-rights organisation, on an ongoing community-based monitoring (CBM) project¹⁷ that seeks to encourage citizens to evaluate the quality of services received from government facilities, engage in dialogues with facility staff, and to develop joint action plans to improve services offered to individuals. The aim of the project is to promote community participation in monitoring service delivery. This project was based on the principle that citizens have fundamental rights, including the right to demand better service delivery. The project involved training community organisations to collect information on facility performance at South African Social Security Agency (SASSA) pay points and service centres, as well as health facilities and local government. Citizen monitors used mobile tablets installed with open source data collection software to record community experiences of services received. Once collected, that information was submitted electronically through wireless networks to a central location where it was processed and loaded into a central database¹⁸.

A separate automation process used this data to produce A1-sized posters and A4-sized handouts to be used by communities when engaging with service providers. A dialogue was then facilitated between community members and government officials, which referred to the posters, handouts and the complete dataset. The combination of personal experiences

and data made for a powerful argument. While an individual narrating a poor experience can be dismissed as a once-off occurrence, that testimony cannot be ignored when it is supported by data collected from hundreds of similar claims from the community. Based on these discussions, improvement plans and joint monitoring committees comprising community members and facility management were formed. This collaborative methodology was born out of a shared desire to improve services received by communities, rather than the result of an adversarial process of citizens challenging government. Feedback from a Community Partner case study included the quote:

At the beginning of the project, SASSA staff was worried that we might say bad things about them, but things changed once we had been working on the project for a while. SASSA staff and managers started to trust us... By the time we were ready to hold the report-back workshop, we felt well connected with the SASSA staff. Monitoring has helped us build a strong relationship with SASSA staff and this has helped us to intervene more effectively. Black Sash must keep up its good work (Koskimaki L et al 2016).

Community partners monitored 31 sites over multiple cycles including health clinics, SASSA pay points, SASSA service offices as well as participation with local municipalities. At clinics for example, typical questions included:

- ☞ Did you get all of the medication that you needed?
- ☞ How far did you travel to the clinic?

- ☞ Did the health professionals treat you respectfully
- ☞ Did the staff respect your right to be examined in private?

Through the dialogues, more specific problems are identified such as disruption to service at lunchtime. Improvement plans are then developed, for example staggering lunch-breaks to ensure uninterrupted service. A joint monitoring committee is then formed to monitor the improvement plans.

The above description is a vast simplification of the Black Sash model. A more detailed review of the project can be read in the report (Koskimaki et al. 2016). The work is ongoing and large-scale systemic changes are unlikely to occur immediately. This model breaks the traditional state-citizen divide and provides a good mechanism for how a collaboration can encourage effective engagement (Kosimaki et al. 2016). The model empowers ordinary citizens which in turn can improve responsible and responsive local governance at facilities.

In this project, technology plays an important but invisible role. While each of these monitoring initiatives could be achieved through traditional, manual methods, the use of mobile devices enables monitoring at a much larger scale. Manual monitoring of more than one or two sites quickly becomes intractable. Manual data collection is error-prone and mistakes are easy to make when completing forms. Collection of the submissions can take weeks or months. Data capture is also slow and provides another opportunity to introduce transcription errors. Even if these errors are eventually noticed, it may be impossible to correct them weeks later, as the original respondent may not be found. A digital solution addresses many of these issues and turn-around time is reduced from weeks to days. Validation can be built into the data collection process, preventing many capture errors at data collection time. Automation can

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convert the submitted data into infographics with little or no manual intervention.

A similar but even more extreme example can be seen in the Tendai¹⁹ project, part of the Southern African Regional Programme on Access to Medicines (SARPAM)²⁰. Through Tendai, community organisations in seven southern African countries collected information on medicine stock-outs in clinics, often in rural areas. Information on stock-outs was then used by community organisations to advocate for improvement in the supply chain to ensure that adequate stocks of medicines are available. For such a large project, on-the-ground support was impossible and a system similar to the one used in the Black Sash project was critical for its success. Collecting data from seven, mostly lower income, countries is a challenging task which would have been near impossible without the use of technology.

Technology is of course is not without its challenges. Expensive devices may be needed, although costs are dropping and adequate mobile phones can be purchased at relatively low prices. Airtime and connectivity cannot always be assumed in certain areas and therefore it should be possible to work offline and submit when the monitor is able to access an internet connection. Despite these challenges, it is clear that large-scale collective

action, especially by disparate communities is almost impossible without the amplifying capability of technology.

CONCLUSION

While government should be accountable to its citizens, solely holding individuals to account may not have the desired effect – doing so may result in government officials opting to shirk their responsibilities, or become unresponsive to public complaints. This article suggests three additional mechanisms through which technology can be used to engage with government.

The first is to look for natural opportunities to build mechanisms for accountability into processes, such as through the use of open data. The second is to encourage individual citizen engagement by simplifying public participation. Finally, communities can take advantage of a shared desire between citizens and civil servants to improve service delivery. While it is possible to implement any of these tools using manual processes, technology provides us with the opportunity to scale and reach dozens of communities and thousands of individual citizens.

The techniques mentioned do not have universal scope and will not apply in all situations, but this article argues that they should be considered as first-line interventions before resorting to more traditional advocacy.

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- ² <http://opendefinition.org>
- ³ http://foip.saha.org.za/uploads/images/PCSN_ShadowRep2013_final_20131029.pdf
- ⁴ <http://academy.code4sa.org/stories/the-forgotten-people> and <http://www.iol.co.za/sundayindependent/los-angeles-the-story-of-a-cape-settlement-2002424>
- ⁵ <http://www.mpr.gov.za>
- ⁶ They are permitted to charge a dispensing fee that is based on the single exit price and is updated from time to time.
- ⁷ Medicines with schedules 0, 7 and 8 are not covered by the SEP.
- ⁸ <http://mpr.code4sa.org>
- ⁹ <https://ijinet.org/en/blog/why-publishing-more-open-data-isn%E2%80%99t-enough-empower-citizens>
- ¹⁰ <http://municipalmoney.gov.za>
- ¹¹ <http://municipalmoney.gov.za>
- ¹² <https://oscarbaruffa.com/opendatainthewild/>
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- ²⁰ <http://www.hera.eu/en/sarpam-169.htm>. Unfortunately much of the documentation on this project is no longer available.