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A GRAND CHALLENGE
FOR DEVELOPMENT

Sometimes it *is* about the tech: choosing tools in South African and Kenyan transparency and accountability initiatives

the engine room

network society lab

PAWA INITIATIVE

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Credits

Acknowledgements

Acronyms	
ICT	Information and Communications Technologies
GPS	Global Positioning System
MAVC	Making All Voices Count
SMS	Short Message Service
T&A	Transparency and accountability
T4TAI	Technology for transparency and accountability initiative
USSD	Unstructured Supplementary Service Data

[1] Making All Voices Count is a citizen engagement and accountable governance programme. It aims to harness the transformative potential of unusual partnerships and innovative applications of communication technologies to contribute to fundamental change in the relationship citizens have with the state. It focuses the majority of its work in six priority countries – Ghana, Indonesia, Kenya, the Philippines, South Africa and Tanzania. See back cover for more information.

Contents

SASHA KINNEY

Key findings

We interviewed staff members from 38 diverse organisations in Kenya and South Africa about the way they had chosen a digital technology tool to use in a transparency and accountability initiative. We wanted to understand the processes they went through to choose tools, and how this influenced the effectiveness of their work. We found that these organisations were adopting digital technology tools because they, and the people they aim to reach, are using more digital tools in more aspects of their lives.

Less than a quarter of the organisations were happy with the tools they had chosen. They often found technical issues that made the tool hard to use, *after* they had decided to adopt it, while half the organisations discovered that their intended users did not use the tools to the extent that they had hoped (a trend that was often linked to specific attributes of the tool).

We found links between the way that organisations chose tools and the outcome of their selections. Most organisations did very limited research to understand their intended users, the technology options available and the problem the tool was expected to solve. More than half the organisations built a tool from scratch without first checking if existing tools could do the job, while few organisations tested out a tool before choosing it (particularly with the tool's intended users). All these trends were associated with tool choices that did not meet organisations' needs.

Organisations' lack of awareness of their own knowledge gaps, difficulties accessing relevant, impartial advice, and limited user research and trialling often prevented them from choosing tools effectively. To address these issues, we make the following recommendations:

Recommendations

For organisations choosing tools in transparency and accountability initiatives: Six rules of thumb

1 Map out what you need to know
Do at least some research in all of these three areas: (1) the goal or problem you want the tool to address; (2) the interests and needs of the people you want to use the tool; and (3) the tool options that are available. Work out what you don't know, and ask for help to fill the gaps.

2 Think twice before you build
Look for existing tools that can do the job; building new technologies from scratch is complex and risky.

3 Get a second opinion
Someone else has probably tried a similar approach before you. Find them (and ask for advice).

4 Always take it for a test drive
Trial the tool; it highlights problems early on and raises questions you never knew you had. Try out at least one tool, with the people you want to use it, before making a choice.

5 Plan for failure
Don't expect to get it right first time; budget for a series of adjustments to your tool during the project.

6 Stop and reflect on what you're doing
Keep thinking about what is working, and what isn't. Apply what you are learning to your organisation's broader work, and share with other organisations.

Recommendations for funders

1 Help organisations do more (and more effective) research
Before organisations become wedded to using a particular tool, support and encourage them to develop project plans that include thorough research into the tool's intended users, the overall goal they think the tool could help achieve, and what alternative tool options are available.

2 Give the space to trial and adjust
The first attempt to use a tool is unlikely to be the one that succeeds. Promote the inclusion of structured trialling phases in projects and allow initiatives the resources to adjust tools in response to the results.

3 Support networks that provide face-to-face advice
Organisations frequently struggle to find suitable technology partners, work well with those they find, or access advice from peers with similar levels of experience. Make connections and support spaces where organisations can share experiences openly or get access to appropriate, tool-agnostic advice.

4 Make research more accessible and actionable
Organisations often don't find or use relevant research that identifies common problems to avoid – and then experience those problems themselves. To help them make better informed choices, investigate various ways to present key heuristics and guidance in ways that are relevant to organisations' specific contexts and actionable at key points in the tool selection process.[2]

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2 The Six Rules of Thumb for organisations choosing tools to use in their work (above) and the Tool Selection Assistant (toolselect.theengineroom.org), which presents our research findings in the form of an online guide through the tool selection process, are two attempts to meet this need. However, further efforts are required to understand how organisations find and use research effectively.

Executive summary

The organisations in our research, the technology they use, and how they use it

- To better understand the process of finding effective digital technology tools in transparency and accountability initiatives, we interviewed 38 organisations in South Africa and Kenya that had recently chosen tools to use in their work. We asked them why they had chosen a particular tool, how they chose it, and if they were happy with the results.

- The organisations we interviewed were diverse (ranging from large, national organisations to very small, community-based initiatives). They worked in areas that varied widely. Many focused on governance-related issues such as corruption, while others monitored public service delivery in sectors such as health or education, or mobilised citizens to hold local or national governments accountable for their actions.

- Organisations are actively attempting to innovate (both to work more efficiently and in response to trends amongst the people they wish to engage and among their peers). However, most organisations in our study were not primarily focused on using technology, and had only limited technical experience and skills.

- The technologies organisations used ranged in complexity from short messaging service (SMS) systems to web-based data portals. Few had staff with specific responsibility for technology, and with extensive experience or skills in using technology tools.

- Organisations in our research brought technology tools into their initiatives from three starting points:
  - Most (21 out of 38) had a need that they thought a tool could address.
  - Some (9 out of 38) had already discovered a tool and wanted to find a way to use it.
  - Others (8 out of 38) saw a peer organisation using a tool and wanted to implement a similar project in their own context.

  In nearly half the cases (17 out of 38), the organisation started with the tool or type of tool they wanted to use before they knew how they would use it.

How do organisations choose tools?

- Organisations' decision-making processes were rarely linear or highly formalised.

- Many organisations conducted little or no research. Those that did focused on one or more of the following questions:
  - What was the nature of the problem the overall initiative was trying to address?
  - What technology tools were available, and what they could do?
  - Who were the people the organisation hoped would use the tool, and what factors might affect their use?

  Hardly any organisations (3 of the 38 interviewed) did research on all three.

- Organisations generally did very limited research to understand their potential users (whether those users were inside or outside the

How organisations chose tools. *This diagram explains the paths that organisations typically took when choosing tools.*

organisation). Only 15 did any research on their users at all. Before launching, they rarely trialled a tool with the people they expected to use it.

- Few organisations identified and assessed more than one tool and compared it with other options before making their choice.

- A very high proportion of organisations (10 out of 20 in Kenya, and 11 out of 18 in South Africa) built a tool from scratch, often with very limited prior experience and without checking if existing tools could do the job. In a large number of these cases, organisations didn't choose a tool at all, but delegated the decision to technical partners.

What happened next: what worked and what didn't?

- Less than a quarter of the 38 organisations were happy with the tools they had chosen.

- The most common reasons for dissatisfaction were:

    ○ technical issues that made tools hard to use or limited their usefulness, which participants only discovered after they had chosen the tools.

    ○ the targeted users' failure to adopt the tools to the extent that the organisation had hoped. This was a problem among almost half the organisations interviewed. Although this 'uptake failure' wasn't always attributable to the particular tool itself, the tool's specific attributes often contributed directly to it.

- Both problems were especially common among organisations that built a tool from scratch. Problems included delays, budget overruns and difficulties in managing relationships with technical partners or suppliers that limited the initiative's overall effectiveness.

- Many organisations had already considered or chosen alternative tools since their initial attempts (5 out of 20 in Kenya, and 6 out of 18 in South Africa). Regarding the process, very few participants (4 out of 38) said that, in a similar scenario, they would choose a tool in the same way again.

How could organisations make better tool choices?

- For organisations with limited resources and technical expertise, we found that the most efficient research strategy was trialling a tool before adopting it. Trialling brought up issues that organisations had not considered, and helped them think about a broader set of factors and contexts when choosing a tool. Organisations that trialled, particularly with their intended users in the context in which the tool would be used, were usually happy with a tool's performance.

- The most effective way of avoiding wasting time and resources by choosing an unsuitable tool was to include a series of 'iterations' (adaptations made throughout the course of a project) in a project's design. Most organisations made no allowance for adapting a tool after beginning to implement it, often continuing the project despite knowing that the tool was ineffective.

- Many of the problems we saw could have been mitigated if organisations had done more research *before* choosing a tool. But for organisations to identify *in advance* what research is most needed is challenging. The organisations we studied often faced "unknown unknowns" – they didn't know enough to identify the gaps in their knowledge.

- Among organisations that were satisfied with their chosen tool, the tool's complexity typically matched the organisation's levels of technical knowledge and capacity. However, organisations often struggled to judge their own levels of knowledge, and how far they could realistically extend them within the space of a single project.

- Overall, many organisations showed that, through learning by doing, they were learning useful lessons about how to choose tools effectively. However, their learning was hampered by their lack of awareness of their own knowledge gaps, limited adoption of structured trialling phases and user research, and difficulties in accessing relevant, impartial advice from peers, researchers or software developers.

- To learn more quickly and effectively, organisations need to commit to understanding and tackling gaps in their own knowledge, as well as gaining better access to networks and practical guidance that is relevant to their situation.[3]

- Based on our findings, we have identified six rules of thumb designed for organisations choosing technology tools for technology for transparency and accountability initiatives (T4TAIs), and four recommendations for donors and others seeking to support organisations to choose tools (above).

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3 This study involved 38 initiatives spread across different contexts, using a broad set of technologies to meet a variety of objectives. Our comments are made with this diversity in mind. Not all the participants may share our perspectives; even understandings of what successful tool adoption looks like.

1. Introduction

This report, produced under the research, evidence and learning component of the Making All Voices Count programme, investigates the processes through which organisations in South Africa and Kenya choose and implement digital technology tools to use in transparency and accountability initiatives.

The phrase: "It's not about the tech" captures a common view that a technology tool itself is less important than the social or political context in which it is used. When applied in relation to technology for transparency and accountability initiatives (T4TAIs), this can draw attention away from the tools that initiatives employ, and towards the broader contexts and processes in which they are used. We do not underestimate the importance of understanding these contexts. However, as researchers and practitioners in what is sometimes called "civic tech,"[4] we start from the assumption – following the historian of technology Melvin Kranzberg – that though a given technology may not be good or bad, it is not neutral.[5] From this perspective, we argue that the choice of a given digital technology tool represents a significant part of the design of any T4TAI. Existing research has not sufficiently explored the implications that these choices may have on the implementation and outcomes of transparency and accountability initiatives.

This research project aimed to investigate the following questions:

1. What are the decision-making processes through which Kenyan and South African transparency and accountability initiatives identify, adopt, adapt and develop information and communications technology (ICT) tools?

2. What contextual, organisational and personal factors influence the decision-making processes?

3. Can standardised heuristics and access to relevant information support better decision-making and more efficient processes in ICT adoption for T4TAIs?

The report is structured as follows:

- Section 2 gives a brief overview of existing research related to the way in which T4TAIs choose tools for use in their work, while Section 3 details this research project's methods and approach.

- Section 4 describes the 38 organisations interviewed in our research, discussing how they think about technology usage, the kind of initiatives in which they were engaged, and the types of technology tools that they used in those initiatives.

- Section 5 details the steps that organisations went through when choosing tools: why did they decide they needed a tool, how did they get information about what they needed, and what factors influenced their selection?

- Section 6 looks at what happened after the tools were selected: were organisations happy with their choices – and, if not, why?

- Section 7 examines organisations' attitudes to choosing technology tools and how this related to their experience and understanding of their users' needs, the issue the organisation was working on and the technology options available.

4 For an overview of "civic tech", see: Patel, M.; Sotsky, J.; Gourley, S.; Houghton, D. (2013) *The Emergence of Civic Tech: Investments in a Growing Field.* Miami: Knight Foundation. http://www.knightfoundation.org/media/uploads/publication_pdfs/knight-civic-tech.pdf (accessed 5 January 2016).

5 See "Kranzberg's six laws of technology" in Kranzberg, M. (1986) 'Technology and History: "Kranzberg's Laws,"' *Technology and Culture* Vol. 27, No. 3 (Jul., 1986): 544–560.

- Section 8 assesses how organisations researched their options, and identifies particular research strategies that seemed to be linked to choices that organisations were happy with.

- Finally, Section 9 makes recommendations on ways in which tool selection processes could be improved, including six heuristics or "rules of thumb" for organisations choosing tools and

four recommendations for donors and others supporting organisations to make more effective choices.

- Section 10 concludes with a summary of the findings and suggestions for next steps, while Appendix 1 contains more information on the online framework for tool selection developed as part of this project.

2. Background to this research

Study of technology for transparency and accountability initiatives (T4TAIs), as with the study of technology in development and governance processes more generally, has been dominated by a proliferation of case studies, with a relatively small number of broader analyses of overall progress in the field.[6]

Research has focused primarily on two questions:

- whether digital technology tools increase the effectiveness of projects promoting transparency and accountability, and

- which contextual and strategic components of such projects result in positive outcomes.

The field of technology for transparency and accountability is relatively new, and its growth is recent. It is possibly unsurprising that there are few general comparative research studies related to it. Avila, Feigenblatt, Heacock and Heller published a global review of initiatives in 2010, which primarily focused on the initiatives' goals and their impact.[7] In the same year, Fung, Gilman and Shkabatur reviewed seven case studies from middle income and developing countries, and suggested some conditions for success.[8] McGee and Carlitz published a study on the users of technology in T4TAIs in 2013, highlighting the need for initiatives to deepen their understanding of the intended users of the technologies deployed,[9] while in 2014 Sika, Sambuli, Orwa and Salim studied how ICT tools are being used in governance-related projects in Kenya, Uganda and Tanzania, and suggested some cases in which they are likely to be successful.[10] Most recently, in 2016 Peixoto and Fox reviewed evidence on 23 ICT platforms that aimed to improve public service delivery through promoting citizens' voice, suggesting elements that make such platforms more likely to bring about uptake from citizens and responses from policy-makers.[11]

6 See Fox, J. (2015) 'Social Accountability: What Does the Evidence Really Say?', *World Development* 72: 346–61; Ahmed, A.; Scheepers, H. and Stockdale, R. (2014) 'Social Media Research: A Review of Academic Research and Future Research Directions', *Pacific Asia Journal of the Association for Information Systems* 6.1–3: 21–37; Sarajeva, K. (ed.) (2013). *ICT for Anti-Corruption, Democracy And Education In East Africa.* Stockholm: Stockholm University. Gaventa, J. and McGee, R. (2013) 'The Impact of Transparency and Accountability Initiatives', *Development Policy Review* 31: s3–28; Joshi, A. (2013) 'Context Matters: A Causal Chain Approach to Unpacking Social Accountability Interventions', *Work in Progress Paper*, Brighton: IDS.

7 Avila, R.; Feigenblatt, H.; Heacock, R. and Heller, N. (2010) *Global Mapping of Technology for Transparency and Accountability*, London: Open Society Foundation.

8 Fung, A.; Gilman, H.R. and Shkabatur, J. (2010) *Impact Case Studies From Middle Income and Developing Countries: New Technologies*, London: Transparency & Accountability Initiative.

9 McGee, R., and Carlitz, R. (2013) '*Learning Study on 'The Users' in Technology for T&A Initiatives.* The Hague: Humanist Institute for Co-operation with Developing Countries.

10 Sika, V.; Sambuli, N.; Orwa, A.; Salim, A (2014). *ICT and Governance in East Africa: A Landscape Analysis in Kenya, Uganda and Tanzania.* Nairobi: iHub Research.

11 Peixoto, T. and Fox, J (2016). When Does ICT-Enabled Citizen Voice Lead to Government Responsiveness? *IDS Bulletin*, Vol 47, Issue 1, Brighton: Institute for Development Studies.

12 Merkel, C.; Farooq, U.; Xiao, L.; Ganoe, C.; Rosson, M.B. and Carroll J.M. (2007) 'Managing Technology Use and Learning in Nonprofit Community Organisations', Proceedings of the 2007 Symposium on Computer Human Interaction for the Management of Information Technology, New York: Association for Computing Machinery, http://portal.acm.org/citation.cfm?doid=1234772.1234783 (accessed 8 October 2015); TechSoup Global (2012) 2012 Global Cloud Computing Survey Results, www.techsoupglobal.org/2012-global-cloud-computing-survey (accessed 8 October 2015); Zorn, T.E.; Flanagin, A.J. and Shoham, M.D. (2011) 'Institutional and Noninstitutional Influences on Information and Communication Technology Adoption and Use among Nonprofit Organisations', Human Communication Research 37.1: 1–33.

"There does not appear to be any systematic study of the processes that T4TAIs go through when choosing technology tools for use in their work."

SASHA KINNEY

Within the broader field of non-profit and civic tech, several case studies discuss what influences whether organisations adopt certain tools,[12] while a significant number of articles consider how technology spreads through different sectors.[13] Some organisations have also produced guidance for direct, practical use by other organisations.[14]

However, there does not appear to be any systematic study of the processes that T4TAIs go through when choosing technology tools for use in their work.

Generally, relatively little attention has been paid to the processes involved in deploying technologies, and even less on the processes involved in choosing those technologies. This study, based on surveys and interviews with individuals leading and managing T4TAIs in Kenya and South Africa, is a first effort to fill this gap. The research aimed to identify the processes organisations followed when choosing digital technology tools for T4TAIs; what factors influenced those processes; and how those factors influenced whether the organisation was happy with their selection.

13 Kim, S.Y. (2014) 'Democratizing Mobile Technology in Support of Volunteer Activities in Data Collection', unpublished PhD dissertation, Carnegie Mellon University, School of Computer Science; Zorn et al., 2010; Hoehling, A. (2013) *The 7th Annual Nonprofit Technology Staffing and Investments Report*, Portland: Non-Profit Technology Network.

14 Slater, D. (2014). *Fundamentals for Using Technology in Transparency and Accountability Organisations*, London: Transparency and Accountability Initiative; Kwok, R. (2014) *Going Digital: Five Lessons for Charities Developing Technology-based Innovations*, London: Nesta Impact Investments, www.nesta.org.uk/sites/default/files/going_digital.pdf (accessed 8 October 2015); Dederich, L.; Hausman, T. and Maxwell, S. (2006) Online Technology for Social Change: From Struggle to Strategy, https://ict4peace.wordpress.com/2006/10/17/online-technology- for-social-change-from-struggle-to-strategy/ (accessed 8 October 2015); Denison, T. (2008) 'Barriers to the Effective Use of Web Technologies by Community Sector Organisations', in CCNR (2008), 5th Prato Community Informatics and Development Informatics Conference 2008: ICTs for Social Inclusion, http://ccnr.infotech.monash.edu/assets/docs/prato2008papers/tomdenison.pdf (accessed 8 October 2015); Wakefield, D. and Sklair, A. (2011) *Philanthropy and Social Media*, London: The Institute for Philanthropy.

3. Project approach and methods

Definitions

This study focuses on the *process* of tool selection. How do organisations go about deciding to use digital technologies; how do they choose a specific tool; and what happens when they implement the tool they have selected? It therefore adopts a broad definition of "digital technology tools" that includes any kind of digitally-based technology – such as piece of software or hardware – that an organisation uses in a transparency and accountability initiative. This definition includes Internet-based software such as websites and mobile applications, online proprietary platforms such as Facebook or Twitter, those utilising on mobile phones' built-in capabilities such as SMS and USSD[15], and hardware such as GPS devices and tablets.[16] It includes tools that are available as finished ("off-the-shelf") products, as well as tools that are custom-built for a particular project, and tools offered as a service by a commercial provider as well as tools managed internally by the organisation.

By "tool selection", we mean the process through which an organisation adopts a tool, including the stages of searching for information about a tool; making decisions about whether and how to adopt it; and taking any other actions prior to using a tool.

Finally, we adopted a broad definition of "transparency and accountability" (T&A) that includes: "direct" or "social accountability" such as monitoring of public health or waste services; efforts to improve electoral processes such as voter registration; promoting government transparency by publishing government data in accessible or relevant forms; and projects to amplify the opinions and views of people who are being governed ("citizen voice").

Methodology

We used mixed methods in our study, including an online survey and interviews conducted in person, or by online video-conference or telephone.

The study comprised three components, all conducted in Kenya and South Africa:

- an online survey assessing civil society organisations' characteristics and perspectives on the use of digital technologies in general.

- semi-structured interviews with representatives of T4TAIs that had recently selected a tool for transparency and accountability programming, or were in the process of selecting a tool.

- the development of an online framework (based on the findings from the above stage), to help T4TAIs make more effective tool selections by presenting summaries of the research findings, guidance and links to resources. Four T4TAIs piloted this framework and were interviewed about their experiences.

Landscape research

From December 2014 to January 2015, the researchers sent an invitation to complete a 25-question survey to all organisations registered in national databases of civil society organisations in Kenya and South Africa, targeting those that used email and had an active online presence. Researchers sent a total of 3,400 emails to South African civil society organisations registered in Prodder, the largest national database; and 4,000 emails to non-governmental organisations (NGOs) registered in Kenya's NGO Bureau; lists from relevant broader T&A networks such as Buntwani and grantees of several regular funders of T&A initiatives.

The survey aimed to understand the types of initiatives that are using digital technology tools; what kinds of tools they were using; and how organisations understood the extent to which the people they aimed to communicate with accessed and used digital technologies. The results informed the design of the subsequent interview, and were also used to identify a preliminary population from which the researchers selected participants for subsequent research stages.

The South African survey received 265 responses. The Kenyan survey had only 39 responses. Because of the very limited response to the Kenyan survey, the results are not included in this report. However,

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15 SMS and USSD are digital, but not internet, technologies. SMS – Short Message Service – is a technology available on all Global System for Mobile (GSM) phones which enables text messages to be sent and received. USSD – Unstructured Supplementary Service Data – is a GSM communication technology that enables interactive sessions between any mobile phone and the network.

16 The Global Positioning System (GPS) is a network of satellite transmitters and receivers (which can be phones, mobile devices or other devices) that allows the receiver to locate and map its position.

the results informed the design of the questionnaire used in the process research stage, and provided the basis for recruitment to the process research stage in both Kenya and South Africa.

Process research

From January to April 2015, the researchers conducted semi-structured interviews with 38 organisations that had recently selected a tool for transparency and accountability programming, or were in the process of choosing a tool. (For more information on the organisations' size, sectors and area of focus, see Section 4.1) Interviews were conducted with 18 participants in South Africa and 20 participants in Kenya.

Selection of sample

The organisations were first selected based on responses to the landscape survey. Where respondents indicated that they had worked on initiatives that addressed transparency or accountability and that used digital technologies, then they were contacted. Researchers also accessed contact lists from international and national networks of civil society organisations that engaged in transparency or accountability initiatives. In addition, some organisations known to the researchers were also contacted. From these initial contacts, organisations were selected if they met three criteria: they had engaged in a transparency or accountability initiative; they had used a digital technology in that initiative; and we could identify a manager or leader with direct and detailed knowledge of the initiative and its history.

The sample was diverse, across the following dimensions: the mandate or sector in which an initiative worked; the size of organisations and initiatives; organisations' technology-related capacities and attitudes (including whether their staff included people with technical skills in using technology); and the kinds of tactics and tools used by the initiative. Participants were members within the organisation who had responsibility for choosing technology tools for use in a project, or were part of a team who had done so. (For more detailed information on the sample, see Section 4: The organisations in our research.)

The sample cannot be said to be representative of all transparency and accountability initiatives in Kenya and South Africa, since we had no reliable means of

establishing a 'universe' of all such cases. However, it did include a substantial number and variety of cases from the networks of organisations that identify themselves as working in the fields of transparency or accountability, governance, open data and "civic tech".

Interview methods

The interviews used a semi-structured approach. Structured questions were asked to gather information on the organisations, the interview participants' roles, and the digital technology tools used by the organisation as a whole. To understand the process of tool selection, researchers asked open questions that aimed to elicit narrative accounts of how tool choices were made, and the contexts in which they emerged. Participants were guided to describe a narrative of how they chose one particular tool, which was selected independently by the participant. This narrative approach was chosen to avoid imposing a predetermined decision-making framework on the participants that might not capture a less structured process. Where necessary, in addition to capturing this narrative account, supplementary questions were asked to elicit information on key steps in the tool selection process and subsequent use of the tool. Participants were told that all information they provided would be de-identified in any publications.

A standardised interview instrument (included in Appendix 2) was developed. It was first tested in Nairobi in February 2015 with three Kenyan participants[17] by the researchers responsible for the fieldwork in Kenya and South Africa, to ensure that the interviewing process was similar in both countries. Narratives were captured in detailed summaries for each case written up by the researchers. In addition, data points were captured for 28 indicators for each interview. These indicators focused on assessing organisations' motivations for adopting technology; their processes for identifying, selecting and implementing tools; and their perspectives on whether the tool they had chosen was successful.

Analysis

We used both quantitative and qualitative methods in our analysis. Data was collated and analysed using SPSS statistical software. In addition, narrative summaries were written for each case. Themes were identified from the quantitative analysis, from the narrative summaries, and from the statements and comments made by the participants. Some themes that emerged from the narratives then suggested quantitative tests that we ran on the

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17   These cases are included in the Kenyan sample, as there were only minor modifications made to the interview instrument following these initial interviews and because we were able to capture the same quantitative data from these interviews as was gathered in the remaining cases.

data. Conversely, when we identified themes from the quantitative data, we then reviewed interviews and narratives looking for participants' perspectives and reflections that might provide further insights.

Reflections on our approach

Our approach – in combining the structured data with the narratives – was productive for a number of reasons. It afforded us insights into the messy, complex processes of decision-making and action that are not captured in standardised, linear project design frameworks such as Gantt charts and log frames. At the same time, it allowed us to build a process model that was capable of being applied to all the cases we studied (see Section 5: The process of choosing tools). It also enabled us to incorporate some of the participants' experiences and perspectives on how and why these processes had come about. We noticed that a number of participants stated that the interview was the first time that they had reflected on the tool selection process in which they had engaged.

While much of the content of the interviews was descriptive, participants were encouraged to provide their own analyses and assessments of what had gone well and what had not. This report uses terms such as "success", "disappointment", "limitations" and, sometimes, "failure". These terms clearly involve judgements, and these are usually those that the participants themselves made of their own tool selections and/or the initiatives in which the tools were applied. Where we have made our own judgements, we have tried to make clear on what basis we have made them.

Our approach also has several limitations. First, we did not independently examine the impacts of the initiatives. For example, where we make judgements on how successful the selections were, we are relying either on the participants' judgements directly, or on data that they provided in the course of the interview. We were also relying on the account of a single person – usually the person who had had primary responsibility for the initiative within their organisation – and did not speak to the tools' intended users, the organisations' technical partners and donors, or any other actors. The view we have is an internal one – as seen from the practitioner's perspective – that is primarily focused on decision-making processes and implementation.

Tool selection framework

Between May and July 2015, the researchers built an online framework[18] based on preliminary analysis of the process research. This framework was designed to capture the findings of the research in a process model that could be used by organisations intending to choose digital tools for use in T4TAIs. There were a number of intentions behind the creation of this framework. The researchers were keen to find forms of presenting the research findings that would be useful and accessible for practitioners. This produced some research questions: would a framework be useful, and would it be used? In what circumstances, and in what form would it be useful?

The framework guides the user through a four-step process: (1) understanding the organisation's objectives and need for a tool; (2) investigating what technology options are available; (3) trialling the chosen options; and (4) finding help (if needed). Each step includes guidance based on the research findings, short case studies drawn from the process research and links to existing resources. Users are encouraged to input information on their research and decision-making process into the framework, to promote a more considered, intentional approach to tool selection. They are then able to view or download a PDF or text file summarising their decisions, which they can use to explain their needs to staff, technical partners, donors or others.

The research team piloted a version of the framework between July and November 2015 with four organisations (two in Kenya and two in South Africa), to assess whether they found this method of presenting information and guidance helpful. The organisations were in the process of choosing a tool, and had expressed interest in piloting the framework. Of the pilot cases, one organisation had participated in the process research stage, while the other three were contacted by the researchers separately. In addition, a number of other people working in transparency and accountability organisations (some of whom had participated in the process research phase) were shown the tool selection framework and provided feedback. The framework was also presented at a meeting of the Making All Voices Count Community of Practice in Johannesburg.

Feedback from all of these sources was considered and incorporated into a public release version of the framework (https://toolselect.theengineroom. org), and an open-source release of the tool's code (https://github.com/the-engine-room/tool-selection-assistant). Time restrictions on the study meant that it was not possible to investigate the effects of the use of the framework on the initiatives' overall tool selection. For more on this framework, see Appendix 1.

18   https://toolselect.theengineroom.org

4. The organisations in our research: what technology they use, and how they use it

In this section, we provide information about the 38 organisations involved in the study and their use of digital technologies in general. We then look at the kinds of transparency and accountability initiatives in which they applied digital technologies, and the kinds of digital technologies they deployed as part of those initiatives.

4.1. How are organisations thinking about technology usage?

Key findings

Organisations of all sizes (ranging from hundreds of employees to one or two paid staff) are attempting to use technology tools in transparency and accountability initiatives.

Almost all organisations we studied use Internet tools and PCs in their day-to-day work (and Internet-enabled mobile phones to a lesser extent). In general, they have significantly better access to the Internet and hardware than the wider populations in their countries.

Most organisations, irrespective of size, believe they are using digital technologies effectively. However, most also have limited internal skills, knowledge and experience of technology tools beyond running basic computer software and accessing websites and social media.

Organisations are adopting digital technology tools in response to global and national changes in access to ICTs. However, many recognise that they are operating under constraints that prevent them from using tools more effectively. The constraint most commonly mentioned was limited connectivity and the lack of access of technology tools among many of the people they aim to engage.

All of the 38 organisations we studied were using digital technologies in initiatives that aimed to increase transparency and accountability, or enhance citizens' ability to express their views. Many focused on aspects of governance, transparency or accountability, such as anti-corruption campaigning, or had broad social justice mandates. Some worked in sectors such as education or health, which led them to monitor public services and engage with the government on how well those services were provided. Others focused on mobilising citizens to hold governments accountable for their actions – for example, one group worked with other organisations to create petitions that targeted public officials and could be completed on mobile phones. There was a small sub-group of organisations committed to developing digital tools for civil society organisations, including transparency and accountability projects. (For more detail, including a breakdown of the numbers of organisations working in specific areas, see Section 4.2.1.)

All but one were non-profit organisations. Many in Kenya, though only two in South Africa (KE: 15/20, SA: 2/18), were part of or affiliated with international organisations or networks. However,

most organisations' day-to-day work was national or subnational in scope. A few were very local, and operated only in one geographic community - for example, in one particular city or district. Organisations ranged in size (employing between two and 800 people, with three organisations having no paid staff at all), in budgets and in levels of formal organisation. Some had large memberships or networks of volunteers. Most had published an annual report in the last year (KE: 13/20, SA: 14/18).

Table 1 Number of staff employed by organisations in our research, by country

	Number of paid staff			
	0-5 staff	6-10 staff	11-20 staff	More than 20 staff
Kenya (total: 20)	8	6	2	4
South Africa (total: 18)	4	4	4	6

Some of the participants (9/38) described their organisations as 'tech organisations'. Most of these were in Kenya, and were usually small in size (all but two had six staff or fewer). Most organisations were based in major cities, although many worked in small towns and rural areas, and some had staff in small towns or rural communities. In Kenya all but three of the organisations were based in Nairobi. In South Africa most organisations were based in the major cities of Johannesburg, Tshwane or Cape Town, with some based in small towns.

4.1.1. Organisations' day-to-day use of technology

Kenya and South Africa have some of the highest penetration of mobile phones – at least 74 per cent and 84 per cent of adults, respectively – and the most widespread Internet access in Sub-Saharan Africa – at least 26 per cent and 34 per cent of adults, respectively.[19] The organisations we studied were clearly influenced by these trends, with even the smallest ones using digital tools in their day-to-day work.

All but one of the organisations had their own website. Almost all had organisational Facebook

pages, and most had Twitter profiles. Generally, employees had access to PCs, and most had Internet-capable phones that they used for work.

Table 2 Organisations' usage of information and communication technologies (ICTs)

	All staff have a PC at work	All or most staff use Internet-enabled mobile phones for work purposes	Organisation has:		
			Own website	Facebook page	Twitter profile
Kenya (out of 20)	20	12	19	19	17
South Africa (out of 18)	18	16	18	16	16

In designing their transparency and accountability initiatives, we found some evidence that organisations were encountering external influences that led them to include some form of technology tool in their programmes. One participant stated that a donor had *"encouraged the organisation to be more innovative"*, while several said that the existence of funding for initiatives presented as technologically innovative had been the impetus for them to consider adopting a particular tool. We also found instances where there had been direct encouragement from donors to use a particular technology tool. For example, two participants reported that their initiatives' funding had been directly tied to using a predetermined tool. In another instance, a partner organisation had used a particular technology elsewhere and wanted to apply it in a new context, bringing ties to the same funder. In general, a number of cases indicated that large international donors and the existence of donor-funded initiatives such as Making All Voices Count indirectly and directly encourage organisations to consider introducing technology tools.

However, the evidence from our study suggests much broader influences. Most participants were aware that other organisations in their field

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19 Calandro, E.; Stork, C.; Gillwald, A. (2012). *Internet Going Mobile: Internet Access and Usage in 12 African Countries.* Cape Town: Research ICT Africa. http://www.researchictafrica.net/publications/Country_Specific_Policy_Briefs/Internet_going_mobile_-_Internet_access_and_usage_in_11_African_countries.pdf (accessed 5 January 2016). These figures are based on Research ICT Africa surveys representative of adult populations. Although they are somewhat out of date at the time of writing, they are the most reliable figures available. Evidence suggests that in 2015, at the time of the fieldwork, penetration will have increased.

20 The scale is based on the *Diffusion of Innovations* approach developed by Rogers and others (Rogers, E. (1995) Diffusion of Innovations, 4th ed., New York: Free Press). This approach views innovation as a process of diffusion through communities or networks, with some people or organisations being 'early adopters' and others ('laggards') only adopting an innovation when they see that everyone around them has done so.

were adopting technology tools in areas such as monitoring public service delivery, mapping incidents or engaging with particular communities (KE: 12/20, SA: 14/18), and many spoke of an imperative to "keep up".

We asked participants in the process research interviews how they perceived their organisation's practices and culture in technological innovation and to put their organisations on an "innovation scale" in comparison with their peers.[20] This data has limitations: participants' own assessments of their technical capacity are inherently subjective, particularly when in comparison with their assessment of peers' capacities, while they may also have been more likely to emphasise their interest in and capacity to use technology because the interviewers had explicitly expressed an interest in how they adopted new digital technology tools. Still, this approach offers insights into the way in which organisations thought about technology, and the ways in which it supported their work.

Participants from the (self-described) 'tech' organisations described them as *"early adopters"* or *"innovators"*. The rest tended to describe their organisations as *"keeping up with the times"*. Some participants spoke of a broad organisational motivation to innovate (KE: 6/20, SA: 5/18) or to learn more about digital technologies (KE: 1/20, SA: 6/18). *"We have been running these programs and working on these issues for a long time, and more recently we are looking for ways to innovate and use new tools to speed up the governance learning/participation processes. [We wanted to] find more tools to take the work further."* They also often referred to the speed with which the ICT environment was changing both within and beyond their organisations: one Kenyan organisation said that they had *"really seen an improvement in our own use of technology over the past four years,"* citing the fact that in that period they had run several SMS-based projects for the first time, and created a social media presence. Organisations often suggested that while they had *"come a long way"*, there was room for improvement: "*We've scratched the surface. There is more potential."* In general, participants described environments where new digital technologies were being introduced both inside the organisation and in the world around them.

4.1.2. Constraints to effective use of technologies

When participants were asked whether they believed that their organisations were using technology 'effectively', most said that they were (KE: 16/20, SA: 12/18). Some qualified this with the statement that they were only using it more effectively than they had in the past or in comparison to their peers, but many did not. Despite this, it was clear that many had limited internal knowledge and experience of choosing and implementing technology tools beyond running basic websites and social media.

When asked what prevented their organisation from using technology tools more effectively, participants most often mentioned finding technologies that they considered appropriate to the work they were doing, and for the people they wanted to engage (KE: 12/20, SA: 8/18). In this respect, the major constraint they cited was limited connectivity and access to specific communications tools among the people they wanted to engage, whether this related to areas with poor mobile phone connectivity or affordability: *"When we go to the ground, we find that we cannot use some of those tools, because the people don't use them."* The most reliable research, conducted in 2012, suggested that 84 per cent of South African adults and 74 per cent of Kenyans owned a mobile phone. Of these, half of the South African phones and about a third of the Kenyan ones were Internet-capable.[21] (Notably, however, several participants inquired about whether more granular data existed, or noted that relevant data would have helped: *"I wish we had data to inform the decisions we are making around use of tech."*) The participants were therefore reflecting an important limitation of their contexts, especially where they wanted to reach a broad public.

Beyond basic access, some cited concerns of how and how well people used technology, or limited access in more marginalised contingents of their target communities. One stated bluntly that the central barrier to their effective use of technology was "*the fact that we are living in a slum. Many people are not used to internet, or are not conversant with the use of technology, though it's changing… at a slow pace. For the people we are trying to reach, because this data is primarily meant for them… we have offline strategies."*

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21 Calandro et al. (2012) *Internet Going Mobile: Internet Access and Usage in 12 African Countries.* Cape Town: Research ICT Africa. http://www.researchictafrica.net/publications/Country_Specific_Policy_Briefs/Internet_going_mobile_-_Internet_access_and_usage_in_11_African_countries.pdf (accessed 5 January 2016)

Many participants highlighted their own limited knowledge, and said that they were learning how to implement tools through practical experience: as one put it, "jumping in at the deep end."

Another noted, *"Not many people in low income areas can access the internet. People would have smartphones… but you can't afford to get [internet data] bundles."* Yet another explained, *"Some of our beneficiaries are not very savvy with technology, especially given that we work with refugees and the rural poor."* In a few instances, they noted the need for simple or multiple tools, such as a web-based initiative employing social media that could add USSD: *"to make it more accessible to people who are cut off from these digital resources right now,"* which were not part of the project plans. One participant articulated a strategic decision not to use more advanced technology: *"We want to move along with the masses, with the people."* One organisation working in a remote area noted the need to train people to use basic tools to collect and produce content: *"They don't get to use that technology so much, so they're not familiar with it, or in the habit of using it."*

Some cited the cost of technology to an organisation as a key constraint (KE: 9/20, SA: 6/18). Others raised sustainable, long-term funding to maintain digital platforms as a specific concern, including technical maintenance as well as staff capacity and funding to produce fresh content and maintain communications. *"We have only two people in the secretariat, and the process [of updating web content] takes time, while those staff are also doing everything else to manage the organisation. The tools are there, but we lack the time to work with them sufficiently,"* explained one. *"Sometimes we struggle to get content to populate the sites,"* noted one. Another participant found that, although they had found SMS to be an effective tool for campaign messaging, they had no long-term funding to pay for sending messages: *"it's not sustainable as of now."* Often, funding limited further expansion or scaling: *"If we had had dedicated funding, we would have pushed technology into other counties… but we really had to juggle,"* including stretching general training budgets to build technological capacity. *"It boils down to technology's affordability,"* said one participant with a small advocacy organisation, who noted *"cost implications in what we can deploy"* as their primary barrier.

More than one participant mentioned a perceived lack of donor support for specific technology-related elements of projects, such as technical support, the flexibility to change course when needed, or long-term maintenance. In one instance, an organisation *"applied for funding with the general use of SMS included,"* with flexibility built in. Once they heard back that the donor was interested, *"then we started considering how to go about it,"* but once the funding came through, it was tied to the use of a particular provider of an SMS platform. No further research was conducted, despite the organisation's complete lack of experience using SMS tools in project work.

Other constraints mentioned focused on organisations' internal technical capacity. Participants also mentioned a lack of internal expertise with technology (KE: 8/20, SA: 4/18). Excluding the self-described 'tech' organisations and very large organisations, very few organisations had any staff with specific technical skills in using or implementing digital technologies. Only some organisations had staff who had responsibility across the organisation for developing or managing digital tools or initiatives. *"Having an ICT officer for the entire duration of the project would be good. Having someone in-house would have been great,"* noted one participant, when asked what help would have made a difficult project go better. A small number intentionally added or invested in staff with expertise, to bolster their initiatives, and were pleased with the results. For example, one small organisation had experienced challenges in working with an external consultant to maintain its web presence and communications. Instead, they sourced the funding to add a new staff member with a range of skills and an "inclination" to learn more. He underwent training to be able to build and maintain the tools they needed in-house: *"The best thing about capacity-building and training is to be able to work with a young person with the inclination to learn these skills."*

Many participants highlighted their own limited knowledge, and said that they were learning how to implement tools through practical experience: as one put it, *"jumping in at the deep end."* Two

INDRA DE LANEROLLE

participants noted a gap between their own staff's personal use of technology and that of the communities they aimed to engage. For example, one organisation's staff was entirely unfamiliar with the mobile communications application WhatsApp, a tool that was widely used by the local volunteer coordinators they were working with; the interviewee suggested that this could be a function of age, class or ethnic background. Table 2, above, shows that staff in the organisations we studied were more likely to use PCs than mobile phones to connect to the Internet, while other evidence shows that the reverse would be true among the general population, and even more so among low-income Internet users.[22] Several described an internal organisational culture that was not conducive to innovation in general, or technological innovation in particular.

4.1.3. Overview: Why are organisations adopting new technology tools?

The comments of the organisations we spoke to indicate that they are becoming increasingly exposed to new technology tools. This is leading to new conversations and attempts to implement new tools. At best, this might indicate that these organisations are adapting to the transformative changes in communications and learning to successfully re-imagine their work. At worst, it might result in 'following the pack' – a herd mentality where new tools are adopted for the sake of making changes, or in response to perceived pressure to adopt technologies from donors or peer organisations, with little learning taking place.

We found cases that fit both these narratives. In between, we found many cases of individuals and organisations trying to adapt and innovate in a broader world that is changing very fast – for organisations, for the individuals working in them, and for the people that they want to engage. (Section 4.2 provides further detail on the kinds of technology chosen by organisations, and the types of projects in which they were being used.) Participants repeatedly said that they felt a need to adapt to a changing environment, and that they were learning about how to research, choose and implement a technology tool in a project.

"We have been running programmes and working on these issues for a long time, and more recently we have been looking for ways to innovate and use new tools to speed up governance learning and participation processes."

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22 de Lanerolle (2012).

While some participants said that learning about technologies was one of their objectives (at either a personal or organisational level), most took an unstructured, ad-hoc approach to building their knowledge and skills – and often did not directly acknowledge that they needed to do so.

Most acknowledged that they had limited skills and experience. Some participants expressed anxieties about these changes, while others were excited by the potential opportunities that accompanied them. While some participants said that learning about technologies was one of their objectives (at either a personal or organisational level), most took an unstructured, ad-hoc approach to building their knowledge and skills – and often did not directly acknowledge that they needed to do so. We have tried to take this into account in our analysis and proposals for helping organisations to improve tool choices (see sections 7 and 9 below).

4.2. How are technologies being used in initiatives aiming to promote transparency and accountability?

Key findings

Digital tools are being deployed for a wide range of purposes. Many initiatives aim to make authorities directly accountable to citizens in areas such as public service delivery. Some focus on governance or electoral processes, some promote publishing open data, and others seek to amplify particular groups or constituencies' views.

The roles the tools played in these initiatives included data collection, data publishing, two-way communication and messaging.

Mobile technologies were the most common choices. Some initiatives chose tools requiring mobile Internet, while others used SMS or USSD - tools available to all mobile phone users.

In many cases tools were expected to be used by very broad and diverse groups (or 'mass publics'). But some initiatives were more focused – on intermediaries such as media organisations, or very clearly defined communities and internal memberships.

4.2.1 What kinds of initiatives are technology tools being deployed in?

While many organisations had more than one initiative that used digital technology tools, each interview focused on one initiative and one specific example of a tool selection process. Although the initiatives we studied were diverse, all could be seen as addressing transparency or accountability.[23]

The largest group of initiatives (12/38) focused

on monitoring the delivery of public services such as health provision or waste disposal. One organisation, for example, created an online site for the public to review and rate public facilities such as clinics and police stations. Others (5/38) were concerned with political and electoral processes such as promoting voter registration or monitoring politicians' performance. Some (3/38) were focused on open government data and transparency, such as publishing government crime data or budget information in accessible or relevant forms.

[23] Not all the participants we interviewed were as aware of the "mantra of transparency and accountability" (McGee and Gaventa, 2013) and what it signified, as others. "Transparency and accountability", as well as "open government data" appeared to be more commonly used in Kenya than in South Africa.

Another group of cases (7/38) were focused on amplifying the opinions and views of people who are being governed (or "strengthening citizen voice"). These cases included an organisation that enabled petitions to be signed via mobile phones, as well as initiatives that aimed to amplify citizens' voices more broadly, such as by training young people to make videos for publication on YouTube.

The last group of cases (6/38) were focused on strengthening communications within organisations, or between organisations and their members or supporters. For example, one organisation created a social network platform to engage with its supporters, while another aimed to build a database to allow it to communicate more effectively with its members and supporters. Another created tools to help journalists gather and collate government data from online sources.

Table 3 **Main activities/areas of focus of initiatives described by participants**

	Monitoring public service delivery	Improving political or electoral processes	Promoting open data and transparency	Strengthening citizen voice	Strengthen capacity of other T&A actors	Other
Kenya (out of 20)	7	4	1	4	2	2
South Africa (out of 18)	6	1	2	3	4	2
Totals (out of 38)	12	5	3	7	6	4

4.2.2 The roles and purposes of digital technologies

In the cases we examined, digital technologies were sometimes deployed as complete solutions, but were more typically enabling or improving specific functions within initiatives that included other elements. Digital tools were most commonly used in data gathering (10/38); in publishing information (4/38); in enabling interaction internally or between organisations and supporters, members and others (13/38) or in communicating messages in campaigns (4/38).[24]

- **Data collection** cases included: gathering reviews of public service facilities or collecting complaints about a group of health clinics (tools described included mobile apps based on Open Data Kit and iSurvey; a bespoke platform to send and receive USSD; and a Facebook group).

- **Publishing** cases included a database of local economic, service and social data that was drawn from census data and a website hosting information about the electoral process (tools described included a custom-built database

Table 4 **Primary functions of tools described by research participants**

	Tool functions				
	Data collection	Publishing existing information	Dialogue or two-way communication	Messaging/ media	Other
Kenya (out of 18)	6	0	8	2	4
South Africa (out of 20)	6	6	4	1	1
Total (out of 38)	10	4	13	4	4

24 Our categories are similar to, but not the same as, those used by Avila et al. (2010) in their review of 100 T4TAIs. They highlighted data visualisation, which can be used in publishing new or existing information. They also mentioned mobile as a category. Six years on, we believe that mobile technologies are now relevant to all these categories.

managed by a foreign partner organisation and a platform based on existing tools such as Google Fusion tables).

- **Dialogue** cases included an SMS service to enable participation in local budget processes, and an instant messaging tool to connect organisers, activists and a head office engaged in monitoring the environmental impacts of extractive industries (tools described included SMS software by the organisations Ushahidi and Ulula).

- **Messaging and media** cases included a web-based advocacy site to promote a new means of engagement between government and those needing housing and a communications campaign to promote the rights of people with disabilities (tools described included Thunderclap, a tool that works with Twitter, and a custom-built interactive website).

4.2.3 What kinds of digital technologies are organisations choosing?

Almost all the tools that our respondents described (35/38) were software. In Kenya, tools were most commonly SMS-based (KE: 6/20). In South Africa, web-based tools were most common (SA: 7/18): of these, more than half (4/7) did not allow effective use on mobile phones. Bespoke mobile phone applications were frequently described (7/38) – as often as SMS (7/38), and more often than social network platforms such as Facebook or Twitter (6/38) or USSD (a service that all mobile phones, even basic models, can use) (2/38). The hardware described included tablets, a video projector and handheld GPS mapping devices. Participants used both proprietary and open source tools, and software designed for both the non-profit and commercial sectors.

Table 5 Types of technology tools described by research participants

	Web (mobile or PC)	Mobile application	Social network platform/ account/ page	SMS	USSD	Other software	Hardware
Kenya (out of 20)	3	3	4	6	0	2	2
South Africa (out of 18)	7	4	2	1	2	1	1
Total (out of 38)	10	7	6	7	2	3	3

The range of tools used is indicative of the broader context of mobile and Internet diffusion in South Africa and Kenya, particularly organisations' common focus on mobile technologies. Excluding the hardware tools, almost a quarter of the tools used SMS or USSD – platforms that can be used on any mobile phone (KE: 6/18, SA: 3/17). Organisations commonly described tools that worked with social networking platforms such as Twitter and Facebook (6/35).

Initiatives most frequently described custom, purpose-built applications that required smartphones. The group of tools most commonly described (10/35) were web-based. Of these, most (but not all) were mobile-friendly, or easily viewable on mobile devices. In some cases, the web-based tools only functioned on PCs or large screens, despite the fact that they were intended to be used by a broad public.

The largest group of initiatives aimed to reach large public audiences, with other intended users including small, defined communities and internal staff.

4.2.4 Intended users of digital tools

A significant number of initiatives described digital tools aimed at engaging a mass public (13/38), while many (11/38) were aimed at specific, often very localised geographic communities such as residents of a particular country or area of a city. Some targeted intermediaries such as journalists who could publicise the content more widely, while in a few cases the intended users were people within their own organisations.

We found four kinds of intended tool users.[25] The first was internal (7/38): for example, a group of activists monitoring the extractives industry chose an instant messaging tool to communicate with each other, as well as the organisation's head office.

In the second group of cases, the tool was intended to be used by well-defined communities that were geographically limited to a sub-national area (11/38). In one case, an organisation built a tool to engage members of a community to monitor local government services in a particular city, while another monitored the quality of health provision in a specific area of a rural county.

The third group of intended users were 'intermediaries', such as other non-profit organisations or journalists (6/38). For example, a community video project aiming to amplify the voices of young people in a South African township used YouTube to present content that television networks in other countries could access and republish. Another organisation provided detailed mapping of crime data to reach experts, journalists and similar intermediaries.

The largest group of initiatives was aimed at large general publics (13/38). While these target user groups were broadly defined, they often had specific profiles, such as "working-class women" or "users of government services." (While some researchers have described these people as audiences, they are just as often expected to be contributors.)

Table 6 Intended users of tools described by organisations in our research

	Group communication		Public sphere	
	Internal, or among organisations' members or network	Defined communities	Intermediaries	Mass publics
Kenya (out of 20)	0	7	3	9
South Africa (out of 18)	7	4	3	4
Totals (out of 38)	7	11	6	13

25 Fung, Gilman and Shkabatur (2010) suggest only three categories: internal, media and NGOs and mass public. We have added a fourth – defined communities – since we find this to be quite common and distinct, especially in thinking about what types of tools were appropriate or effective.

5. The process of choosing tools: what did organisations do?

In this section, we examine the process through which organisations chose tools, and identify a model that is capable of being applied to all the organisations in our research. This covers three main stages: why the organisation thought a digital technology tool might be needed; how the organisation chose the tool; and how the tool was implemented after it had been chosen.

Key findings

Most organisations started looking for a tool because they had a problem or need that they thought a tool could address. However, a significant proportion started because they had found a particular tool and wanted to find a way to use it, or because they had seen an organisation in a similar field using a tool, and wanted to try a version in their own context.

In nearly half the cases (17/38), the organisation started thinking about the tool they wanted to use before they knew how they would use it.

Of the few who did research, three kinds of research

informed decisions on what tool to use: on the problem the organisation was aiming to address; on what tools were available; about the people the organisation expected to engage via the tool. We found very few examples of organisations that conducted research in all three domains (3/38).

Few organisations actually compared tool options before adopting a particular tool.

A very high proportion of organisations built a tool from scratch, often without investing any effort in finding out whether tools existed that could do the job.

5.1 Why did organisations start looking for a technology tool?

In our sample, we found three conditions that led organisations to start the process of selecting a tool.

- Most (21/38) started looking because they had a prior need that they thought a technology tool could help them address.

- Often (9/38), the organisation or someone working within it encountered a new technology tool. This encouraged the organisation to

consider applying the tool in their own work. We call this 'tool exposure'.

- In some other cases (8/38), the organisation's staff became aware of peer organisations' use of new technologies, which led them to consider using the same or similar tools in their own work. We call this 'use case exposure'.[26]

In nearly half the cases (17/38), therefore, the organisation started thinking about the tool they wanted to use before they knew how they would use it. This might seem counterintuitive. In theory,

26 'Use case' is a term originally used by Ivar Jacobson and widely adopted within the software development community. It refers to a model of interaction between a system – e.g. a piece of software – and a user or actor. See Jacobson et al., (2011).

a tool is meant to be a means of fulfilling a prior need, not an end in itself. But when we think about how innovation spreads (or 'diffuses') in society, maybe we should not be surprised.

Research into the diffusion of innovations indicates that innovation spreads most effectively through exposure and 'trial', enabled via social networks.[27] When seen in this light, our findings are less surprising. However, they highlight a constraint to the potential for improving tool choice: where organisations do not start with an identified need, they may not have clear criteria for deciding whether a digital tool is required, or a particular one is appropriate.

5.1.1. Starting with a need or problem

Most often (SA: 10/18; KE: 11/20), the organisation had a need that they believed a technology tool could help them address. For some organisations, this involved dealing with a problem that was hampering the organisation's daily operations, but in many cases it was focused on improving the efficiency of existing processes. For example, one organisation using citizen journalists to monitor basic performance at a group of health clinics started looking for a technology tool to improve the efficiency of their existing paper-based data collection system.

5.1.2. Starting with a tool

In some cases (SA: 3/18; KE: 6/20), people within an organisation had already tried or been shown a tool (either during their work or in their personal lives). They then brought this experience into the organisation, and suggested that the tool was adopted for use in a project. For example, in one case a small, community-based organisation was using GPS tools to map facilities in their community. When some of their members discovered another tool while assisting a group working in another area, the organisation felt was superior to their current tools and changed their hardware accordingly.

27 Rogers, E. (1995) Diffusion of Innovations, 4th ed., New York: Free Press.

5.1.3. Starting with a use case

Some organisations (SA: 4/18; KE: 4/20) started looking for a tool after seeing how other organisations were using technology tools in innovative ways. In one case, this took the form of first-hand experience: a South African organisation that monitors parliamentary activities saw how Kenyan and British organisations were using interactive web-based platforms to monitor the performance of members of parliament (MPs) on an overseas study trip. Although the organisation was *"pretty comfortable with what [they] were doing,"* the visit led to detailed internal discussions: *"When we came back, our heads were swimming with so many ideas."* Over a six-month period, they considered a number of recommendations that arose from the study trip and decided to create a new online presence closely modelled on the work of one of the organisations they had visited.

5.2 How do organisations approach tool selection?

We found three distinct approaches to selecting digital tools. The approach that organisations adopted depended on the way in which they decided to choose a tool (see Section 5.1).

5.2.1. Search for help to find or build a tool

Most organisations that decided they needed a tool to address an identified need began their selection by looking for a partner or service provider with the technical knowledge to find or build the tool. These partners were generally software developers, sometimes but not always working with civil society organisations. In general, tool selection was then largely delegated to the partner or service provider. As one organisation put it: *"We didn't have a network: a friend with some experience on the web helped us put out a request for proposals and we took the cheapest one. The system came with the supplier rather than us choosing the system."*

Where organisations had decided to adopt a tool because they had found a use case, they usually ended up entering into a partnership with the organisation that had initially used the tool in that way.

5.2.2. Search for tools

The terms "choice" and "selection" imply that there is more than one option to choose between. In fact, few organisations in our sample actually compared multiple tool options before adopting a particular tool.

- Where organisations started with a tool that they were interested in using, they very rarely looked for other options before adopting that tool. For example, one organisation decided to adopt a piece of software to support their communications processes after one member of staff heard of a particular tool (though she had not used it in practice) and started an internal discussion on the ways in which it could be used.

- Where organisations started with a desire to work according to a particular use case, the most common approach was to use the same technology applied in the use case they had seen, and partner with the organisation that had developed it. For example, one organisation visited a peer organisation in another country and saw how they had innovated by using digital tools to collect and process data on the activities of elected representatives. After a process of further research and deliberation, they decided to go back to the peer and asked them to share their technology with them: *"Once we had a fair idea of what we wanted to do, [we] approached the peer organisation that we had met."*

- Where organisations decided that they wanted to use a particular type of tool, they often made some attempt to look for tools through online research or advice from providers, but often opted for the first tool (or provider) they encountered.

5.2.3. Develop a way of using a tool

Where an organisation started with a tool that they wanted to use, they had to think about the way in which they would actually use it. Organisations almost always also had to consider cost (some tools were free to use, but still required staff time to use and modify). For example, one organisation decided to duplicate an SMS tool that collects complaints about health services in one African country in another context. *"For [this country], I sent [the country branch] the project document for [another country] and said, 'This is the basic idea. Amend it for the local context.'"* We found similar examples in cases where an organisation had already found a use case: *"We decided we wanted a reporting tool but didn't have a clear idea of what this meant. Only later, working on the problem, did we get a clearer idea on what we needed, costs, and [what was] appropriate technology."*

Table 7 Processes that participating organisations went through when choosing tools

Why did the organisation decide that it needed a tool?	Which approach to tool selection did the organisation take?	Did the organisation choose the tool themselves?	How common was this approach in our sample?
It had an existing problem that it thought a tool could solve	It looked for organisations or partners to help it find or build a tool	No (it was delegated to a technical partner or support provider)	Very common
	It looked for tools	Yes	Rare
It had found an organisation using a tool elsewhere and wanted to do something similar.	It looked for organisations or partners to help it find or build a tool	No (it was delegated to a technical partner or support provider)	Very common
	It looked for tools that were available to perform the task.	Yes	Very rare
It had discovered a tool and wanted to find a way to use it	It identified a way of using the tool.	No	Common
	It looked for other tool options.	Yes	Very rare

5.3 What kind of research did organisations do prior to choosing a tool?

Organisations conducted three kinds of research that informed decisions on what tool to use:

• research on the problem the organisation was aiming to address

• research on what tools were available

• research about the people the organisation was expecting to interact with via the tool.

We found very few examples of organisations that conducted research in all three of these areas (3/38).

Overall, we found that organisations conducted very limited research. Some did none at all (6/38). Of those that did some research, only a quarter did field research with users (8/32), and only half did research on what existing tools were available (16/32). The most common research strategy was looking at other organisations' use of digital tools

within the same country or internationally (21/32). To take one example:

"We did look at a number of other initiatives that are using technology in similar ways, [including] quite a number in Somalia. Somalia is more advanced in terms of developing those solutions, and the penetration of mobile phones there is also very high. A number of organisations have hotlines, and SMS and web-based applications that are being used."

User research (here understood broadly as research conducted by T4TAIs on the people that they hoped would use a tool) and trying out tools prior to selection or deployment were not well represented in our sample.

5.3.1. User research

Relatively few organisations conducted any form of research on their intended tool users (SA: 9/18, KE: 6/20). Some looked for information on their users' habits and access to technology, but struggled to find it. The researchers were asked for suggestions on sources for reliable information on access and usage on several occasions:

"We still don't have really good data that we can really rely upon for our target communities… I wish

Overall, we found that organisations conducted very limited research. Of those that did some research, only a quarter did field research with users.

there was a … credible study done, out there, that we could use to inform this decision. I haven't seen it. Do you have it?"* [28]

Some organisations sought to introduce tools into ongoing engagement efforts with their community: *"In the workshops, the youth started telling us about a platform and [how it worked]. Youth kept bringing this up. We realized they were more at home within the social media, or using technology, as opposed to just having meetings and sitting down and talking to them. We thought, since they seem to be so keen on tech and social media, maybe we can take advantage of this."*

For example, one organisation believed that they knew their target users well but did no tool research at all: *"On the governance side, and communications of how to use [a tool] well to engage our community, we were excellent, based off of our general experience with public participation… But the actual selection of the tool was immediate: once the funding came, the partner became [the tool provider]. No criteria were really used to make the decision on the specific [tool]."*

5.3.2. Trialling tools before selection

Even fewer organisations trialled tools prior to choosing them (SA: 5/18, KE: 3/20). Testing out tools with samples of intended users was particularly rare, though – as we report later in Section 6.3 – it was a particularly successful strategy for those that did so.

It takes significant effort for an organisation to test or 'trial' a tool with intended users prior to deploying – and this may explain why it was rarely done. However, in some cases organisations may have underestimated the differences between their own technology needs and those of their intended users. For example, one participant admitted that she had used herself as the subject when testing

out the tool, and that in retrospect this had been a mistake.

5.4 What criteria influenced organisations' choices?

Those organisations that decided which tool to use themselves most often said that the tool's functionality was the main factor that influenced their decision. The next most common factor was recommendations from technical service providers with which organisations were working (or influence from partner organisations). The most influential overall factors in decisions were the functionality of tools (15/38), recommendations of service providers (12/38), cost (10/38), previous experience of the tool within the organisation (9/38), and intended users' familiarity with the tool (9/38).

Commonly noted features and functionalities included ease of use, simplicity, speed, efficiency, convenience, security, limited connectivity and offline capabilities, and ease of training of users. One participant note, *"We needed [our intended users] to be very comfortable in getting the info they need. Maybe that kind of influenced our user experience, because we didn't want to go too fancy, and we also didn't want to go too simple; we just needed to be at [their] level."*

Regarding staff and intended user familiarity, and social media in particular, one participated noted that the tool was *"essentially selected by the audience: we went to where the audience already were. Facebook and Twitter were the main spaces where people already congregate."* Another said, *"We were using Twitter because it was a place where people gathered, in my experience. And where people follow whom they had similar interests with, like governance."* A third said, *"We thought Twitter would be a way to attract not just those in the sector already but a more general public of people who would be interested in getting more information [to gain a better understanding of our particular issues]."*

28 Reliable national data of this kind is in fact available for Kenya and South Africa from independent sources. See for example, Calandro et al. (2012) and de Lanerolle, I., (2012). This points to a problem identified by McGee and Carlitz (2013) of a gap between researchers and practitioners in the field, and possibly more broadly in 'civic tech'. We discuss this issue and suggest actions to address it in section 8.

5.5 Insights on the tool selection process

The terms "tool selection" and "tool choice" imply that an organisation made an active decision to use a specific tool, based on analysis of several options. However, in many cases, the organisations in our research did not choose a tool at all.

This was either because they started with a tool rather than a need that they needed a tool to address, or because they had, in effect, outsourced the decision-making process to a third party. In other cases, after finding a 'use case', the organisation partnered with the organisation that had developed it and adopted the same tool as them. Even where the organisation did take control of the decision-making process, it was rare for organisations to compare more than one tool and assess which would be best suited to their needs.

Why did so few organisations look for and compare tools themselves? Participants offered three main reasons for why they didn't compare tool options.

- First, they felt they had insufficient knowledge, experience or skills to undertake the exercise (this was a common reason for outsourcing the decision).

  "Well, how do I put this? Me and technology, we just don't get along. But I was supposed to lead this project. So actually, the leading criterion for me, was to get a provider who could make my life extremely easy, so I didn't have to plan out and operate everything."

- Second, they didn't know where to find information on what tools were suitable or available – or they found the prospect or the practice of searching for such information overwhelming:

  "We searched and looked up examples online... Every possible option that was known about was considered...[but]...we need better access to information."

- Third, having found one tool that appeared to be 'good enough', they didn't feel the need to look further, or the ratio of costs and benefits of looking further didn't seem worthwhile. This appeared to be a common reason in cases where the tool had come first, but also arose in other cases.

"Really [we didn't compare options and] it was just that one platform, because we were clear about what we wanted and we knew what it would look like."

Where organisations did conduct research on tool options, or had some knowledge of them, they only tried out those options before making their selection in a couple of cases.

"We looked at three tools online in particular — 'freemium' tools you get free for a while — which we checked out before we settled on a homemade custom solution. We checked on how far we could stretch Drupal, how far could we stretch WordPress. We checked on all of that. And then we realized that these tools could only take us so far."

A majority of our sample (KE: 9/20; SA: 11/18) commissioned the building of new tools. These included custom SMS and USSD platforms, content management systems and internal databases (sometimes linked to communications), mapping platforms, and other web platforms for communications, discourse, or feedback mechanisms. Many of these custom-built tools were mobile applications, largely involving modifying existing open source and proprietary apps.

One possible reason for this tendency may be that so many went to an external provider before choosing a tool themselves. We speculate that tech service providers may be biased towards 'building' new tools rather than proposing existing available tools. Perhaps more surprisingly, in the majority of these cases the organisation didn't first investigate what existing tools might have served their purpose – despite the fact that they usually had limited experience and knowledge of the process of building a tool. In one case, a team felt that *"there was a need for better data and that secure reporting through a mobile app would be best, [so they] secured funding in order to implement this mobile app project,"* and then hired developers to find the best way to build the app.

6. What happened next: What worked and what didn't?

This section describes the results of the tool choices that participants described. We asked participants what happened after their organisation had made a choice, learning about the risks and issues that arose from decision–making processes, as well as about their overall assessments of how suitable their tool choice was for their needs.

Key findings

After choosing tools, many organisations discovered functional limitations that significantly affected how useful the tool was for their initiative.

Half the organisations had problems in getting their intended groups of users to use the tools that they chose. Others had collected very little information on whether people were using them.

Where organisations built a new tool, they almost always did so without planning or budgeting for developing the tool beyond its launch version.

6.1. Discovering limitations and problems in the tools

The most common challenges identified by participants were limitations in the tool that only emerged after organisations had chosen it, or cases where the tool did not work as expected (KE: 6/20, SA: 14/18). For example, the content management system that came with a website was not sufficiently flexible for one organisation to be able to make the changes they required themselves. In another case, an organisation discovered that the mobile monitoring app they had commissioned met their initial goals of making data collection more efficient and quicker to collect. But they had assumed it would also make collating and analysing data from multiple sites easier. This turned out not to be the case.

In several cases, organisations encountered limitations in adding more robust features or handling a greater volume of users. In one case, a mobile application was developed for capturing extractive industry data in rural locations. The app had been built to transmit entered data via mobile networks rather than leaving it stored on the device. But once in the field, it turned out that there was often no mobile signal available. Although the developers working on the initiative were aware that there would be some connectivity limitations, they were forced to make amendments at the last minute to make the tool usable.

6.2. Building tools from scratch

In more than half the cases, (KE: 10/20, SA: 11/18) organisations decided to build or commission new tools rather than use existing tools. A number of problems arose in these cases, most commonly problems in the relationship with suppliers or technical partners (KE: 3/10; SA: 4/11). Many participants expressed frustrations with delays, with a lack of communication, and with not hearing of or understanding problems in the software development process. In the case referred to in section 6.1 above (and others), we also heard of frustration from technical providers in not getting information about context and target users that they needed to build appropriate applications.

6.3. Lack of tool use

A common and fundamental problem reported by participants was that the chosen tool was not used by its intended users (described hereafter as "uptake failure"). It was also common for the organisation to have limited or no knowledge of whether the tool was being used by its intended users. In almost half the cases where the project was sufficiently advanced to assess uptake levels, there was uptake failure overall, or among a particular, significant subset of the intended users (SA: 5/12, KE: 6/12). In another quarter of cases (SA: 3/12, KE: 3/12) the organisation had little or no information regarding tool use. This was especially likely to be the case where the tool was intended to reach broad 'mass' publics.

We also identified a possible relationship between tools that were specially built for the initiative and those that had problems in reaching their intended users. Only one of the initiatives aimed at broad publics that succeeded was done on a specially built platform. In several cases, although the tool met the organisation's specifications, fewer people used the tool.

[We are happy with the design, and people are using the [tool] well, but they aren't using it as much as expected and wanted. Getting people to use it has been quite challenging anyway, due to users' limited capacity in using basic technologies more generally. And now costs of internet connections are rising and becoming more prohibitive. Being able to get sustainable and reliable gadgets, needed to use all the features of the website, is also challenging."

In one case, the tool was hardly used, but the organisation still regarded it as a success because it had put substantial effort into the initiative overall – from research to marketing it – *"the mere existence of the tool matter[ed]. Even if people don't file a complaint, knowing the system is there sends a signal out to the public, helps [us] to engage in other ways [through other mechanisms] with those same communities."*

While lack of uptake for a tool might be attributable to other factors (such as marketing or outreach, or false assumptions made about the needs or interests of users), the tool choice was often clearly relevant. For example, in one case an organisation chose to use Facebook for a community complaint platform in a rural community. While the platform successfully reached a large number of middle and upper income (and largely white) community members, it failed to reach many low-income (and largely black) members of the same community. On reflection, the participant acknowledged that the tool choice may have significantly contributed to this outcome – the initiative might have reached a different set of users if it had chosen an instant messaging platform such as WhatsApp or Mxit. As another organisation put it, speaking in retrospect:

"If you come up with a new tool today that's out of their reach, why should someone, for example, buy a better mobile phone in order to do that? The rate of [uptake] will be faster if you always choose a tool that people are already using."

In another case, an initiative aimed at reaching a broad South African public on a national scale used a platform designed for PC use, although widely published research shows that most Internet users in South Africa, and especially those on lower incomes, have no or only limited access to PCs.[29]

6.4. The relationship between tool selection and the outcomes of initiatives

When we asked participants whether their projects had succeeded, we found a picture of some successes, some partial successes, much uncertainty and many failures. This confirms previous research.[30]

We relied on participants' own views of whether their tool selection had been successful, and on their own definitions of success. We also made our own assessments based on these definitions, and on other information provided by participants. Participants commonly described success and failure in terms of achieving project targets or organisational objectives, and many did not clearly distinguish between the success of selection processes and success of projects.[31]

Based on interviewees' self-assessments and researcher assessments, cases were classified as either successful, partially successful, unsuccessful or – if the project was too new to make a judgement – inconclusive. Where our classification differed to

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29 de Lanerolle (2012).
30 Avila et al. (2010); McGee and Gaventa (2013), Fox (2015).
31 See Section 2: Research approach and methods (p.13).

Our research identifies a clear relationship between problems in (or resulting from) tool choices, and the outcomes of transparency and accountability initiatives.

that of the participants, it was because it was too early to tell; the tool itself had been abandoned; the participant had provided evidence that the tool had not met the objectives set for it; or there was no evidence of user uptake.

Of course, tool selection was only one factor that could have contributed to these broader problems. Indeed, previous studies have suggested a range of reasons for the limited number of positive results in the field.[32] However, our research identifies a clear relationship between problems in (or resulting from) tool choices, and the outcomes of transparency and accountability initiatives.

First, where tools were developed from scratch, we found several cases where delays or budget overruns were so extensive that the initiative itself was delayed, suspended or abandoned.

Second, when organisations discovered that the tool had significant limitations, it sometimes had direct, far-reaching impacts on the project as a whole. For example, a mobile app failed to meet its goal – making the analysis of a data collection project more efficient – meaning that the government department the analysis was aimed at found the resulting data too outdated to be useful.

Third, where a tool's intended users failed to adopt it (in part because of problems with the tool itself), the T4TAI itself had a much more limited impact (see 4.4 above).

Finally, some participants said that when initiatives failed to reach their objectives because of the situations above, their organisation had become reluctant to innovate using technologies in future. This was not the case in self-described 'tech' organisations, or organisations that started out with low expectations. But there were a number of cases where disappointment in the results had created scepticism regarding the use of digital technologies in the participant, or within the organisation.[33]

32 Fox (2015) has identified strategic issues while McGee and Carlitz (2013) have identified user engagement in explaining the impacts in T4T&A initiatives.
33 Sika et al (2014) observed a similar trend in Kenya, Tanzania and Uganda.

7. Attitudes and aptitudes: What knowledge did organisations need to make better choices?

Key findings

To make a tool choice that they considered successful, organisations needed some knowledge of: a) the problem they were trying to address; b) the tool that they hoped would contribute to addressing the problem and c) the users they intended to adopt the tool.

Organisations started with different gaps in knowledge that they needed to fill to make good choices.

Many organisations faced a problem of 'unknown unknowns'. Not only did they face significant gaps in their knowledge, they were not always aware of what knowledge they would need to make an effective choice. Speaking in retrospect, many regretted not doing more research and expressed a desire for in-person advice.

7.1. How organisations would do things differently next time

Very few (4/38) participants said that, in a similar situation, they would run the process of tool selection in the same way again. Many had already considered or chosen alternative tools subsequently (KE: 5/20, SA: 6/18) – an indication that they were not satisfied with their original choice. Among the changes participants said they would make the next time they had to choose a tool, participants mentioned doing more user research, finding more tools to compare, and devoting more resources and effort to outreach with the tools' intended users.

"Maybe if we already knew the tools and how they worked, we could have made better choices the first time around about which platform [to use, or choosing] a different tool."

Some participants also mentioned that they would have benefited from personal help.

"[It would have been helpful] if there were a person whom we could contact. Even if I'm introduced to a new tool, my own ability to understand it and explain it to others is limited. If you do know someone …we'd definitely be willing to engage such

an individual … [to] help make the technology we have suit our needs."

"[It would have been helpful if] I had had a conversation with someone like me, who had gone through the process before… I'm sure there would be something beyond the textbook to learn from them."

Others cited a need for consultants with relevant experience, and help with research into various tool options, or case studies to learn from the prior experience of similar efforts:

In response to questions about what would be helpful, one participated cited *"access to a wider group of technical experts or experts with experience of addressing similar problems"* and *"help with research on alternatives and potential solutions"*, while another noted that country-specific *"case studies would have been useful – to be able to easily find case studies of projects working in similar space as us and also information on tools."*

As described above, throughout the interviews, participants said that choosing and deploying the right tool was difficult, and that it needed significant knowledge and skills in a wide range of areas. However, this was much clearer to participants in retrospect.

"We really feel like we need more information to make good decisions [next time]. Data that actually is focused on the target community: what kinds of forms of technology are there, what's really used, what for. That would really help us."

7.2. What skills do organisations need to choose and use tools effectively?

Previous research suggests that T4TAIs are more likely to be effective if those designing them have knowledge in a range of areas: some have emphasised the need for an understanding of the transparency or accountability problem that the organisation aims to address and a clearly articulated 'theory of change'; while others have focused on the need for an understanding of the context and how users are expected to engage with the technologies being used, or the need to understand their motivations for engaging.[34]

Our research suggests a point made less often – that an understanding of the attributes and capabilities of the tools themselves is often also important.

We group these suggestions into three:

- understanding of how a digital technology tool might be used as part of a strategy to increase transparency and accountability.

- understanding of the people that the initiative intends to engage – the users.

- understanding of digital technologies, including the range available, the scope of their capabilities, how they work, and the levels of complexity and investment required.

We found that many organisations had a core strength in only one of these areas. This tended to reflect the focus of their organisation's overall work. Social justice advocates sometimes had extensive knowledge of the intended tool users – especially where their initiatives were focused on particular communities in which they had been engaging for some time. Through their advocacy work, they had sometimes also developed sophisticated, grounded 'theories of change' about how they expected their initiatives to affect the political environment in which they

were working. However, they generally had very limited technical knowledge and awareness of the tool options available to them. On the other hand, self-described 'tech organisations' often had deep knowledge of technologies, but very limited experience of processes related to transparency and accountability, and often limited knowledge of the tools' intended users.

This knowledge was not just explicit knowledge that resulted from training or research. It was often implicit: a product of experience, the mix of people in an organisation and that organisation's internal culture. For example, one participant described her understanding of her initiative's intended users – black women on low incomes – being based in her own experience and background, and said that her strategies to amplify citizens' voices were based on her previous experience as a community organiser in low-income communities.

When participants reflected on their tool selection processes with hindsight, there was often an acknowledgement that they not only lacked sufficient information to make the best choice, but also lacked enough knowledge to see the gaps in the knowledge they needed to address. As one participant put it:

"When it comes to applying tools from other places, even ones used by the same organisation in other countries, we don't really know how to do that…. We're trying to figure it out, [but] we don't even know where to start."

This 'unknown unknowns' problem is challenging: if you don't know what you need to know, you are unaware of a knowledge gap and you are therefore unlikely to try to close it.

"In the implementation, we should have done continuous user experience research because …you don't realise when you're getting stuck into something that is getting outdated."

These findings point to the need to look beyond the design of technology for transparency and accountability initiatives and to examine the experiences and technical capabilities of the organisations undertaking these initiatives, as well as how they develop over time.

We explore this further in the following section and in our recommendations.

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34 See Fung, Gilman and Shkabatur (2010), Avila et al. (2010), McGee and Carlitz (2013), Sika et al (2014) and Peixoto and Fox (2016).

8. A learning trajectory: How did organisations research their options?

Key findings

Organisations rarely researched their users' interests, or existing habits and motivations for using technology. However, when user research was conducted, it helped organisations to choose more appropriate tools. Organisations were often happiest with a tool when they engaged with users that they already knew well.

"Trialling" – getting intended users to use a potential tool before choosing it – was very rarely conducted. In cases where tools were tried out before they were deployed, it appeared to be a particularly effective way of finding appropriate tools.

Organisations struggled to find useful information in an appropriate form to help them identify tool options. This was in spite of (or perhaps because of) the quantity of information on digital tools available online.

Organisations tended to do research in the fields in which they already had strong knowledge, rather than in the ones in which they were weakest. If making good choices requires knowledge of tools themselves, putative users and tool purposes (as our own research suggests), organisations need to consider changing their learning trajectory to improve their ability to choose tools.

8.1 Closing the research gap

In reflecting on how they might do things differently, many participants mentioned that they could have done additional research. The previous section discussed gaps in organisations' knowledge and experience; this section considers how these gaps could be addressed within the constraints of time, money and access to information that organisations face.

As organisations reflected on decisions that were made in the past, we observed two seemingly contradictory trends. On the one hand, organisations only rarely did detailed research before choosing a digital tool. This supports previous research suggesting that practitioners may not be paying sustained attention to existing research in the field.[35]

On the other hand, we were struck by how much organisations had learnt subsequently, and participants' common acknowledgement that they would have liked to have been better informed during the process. User research was particularly rare, even in cases where the targeted users were a broad public – a project characteristic that was also associated with high rates of uptake failure generally.

"There are a lot of details that can make the project fail. I know much much better now which issues to discuss with my counterparts when I start a project… I share with them the experiences in other countries, and we ask, how will you deal with these challenges?"

We have described in the previous section that organisations started with varying degrees of prior knowledge. In this section we explore the different kinds of research that organisations did and did not undertake and how they might adjust their 'learning trajectory' to improve their tool choices.

8.2. User research and uptake failure

Our study offers some evidence that user research could be particularly effective in preventing uptake failure. In both South Africa and Kenya, organisations that conducted user research were more likely to see their tools being adopted than those that didn't.

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35 McGee and Carlitz (2013), p.2; Avila et al. (2010).

Many respondents thought that user research would have improved tool choice and project methods, but felt that they had been unable to allocate human, financial or technical resources to it.

Those who aimed to reach 'mass publics' faced the greatest challenges in uptake, which suggests that they also needed to spend the most effort to understand their users. Kenya and South Africa are two of the most connected societies in Sub-Saharan Africa, but affordable access to mobile and Internet networks remain a major issue in both countries. This is not only a boundary problem – a limitation on how far initiatives reliant on these technologies are capable of spreading within the population; it is also an inequality problem. Women, older people, those living in rural areas and those on the lowest incomes are all less likely to be able to access these technologies.[36] Too few organisations had conducted their own research on these issues, or were aware of available research on them.

Others suggested that their extensive knowledge and engagement with their target communities of users they were targeting obviated the need for structured research. These perspectives were regularly associated with uptake failure, especially where they were aiming to reach mass publics (though there were important exceptions to this).

Respondents generally recognised the value of user research, and lack of knowledge about tool users was commonly cited as a reason for project and tool failure. Many respondents thought that user research would have improved tool choice and project methods, but felt that they had been unable to allocate human, financial or technical resources to it. At other times, they felt that the potential costs of simply trying and failing were lower than those associated with doing further research. As one participant put it: *"This was a fast project: there was no time for research."*

8.3. Trialling in a project context

Cases where organisations had prior experience of using a tool in a project context were even more strongly linked with success in uptake. Respondents described acquiring such experience through using tools in other programs, or through

testing and trialling tools in small groups, focus groups or short pilot projects before making a final selection. We refer to such practices collectively as "trialling". All those who trialled tools (except one) succeeded.

"I think it helped us to involve the [intended users] from the very beginning. It's very important to discuss with the target group, not just to decide that "this can work here" and develop it and go and take it to them."

"It wasn't really a problem to use tech that was being used elsewhere, but also we did our experiments ourselves, because really our context was a bit different [from other organisations in the space." Of those that did not trial, most failed.

"We had no major challenges [in selecting the tool]. But, when we used it, that's when we found out the challenges."

Trialling was an uncommon strategy. However, those who did trial tools prior to selection or prior to launch were generally very strong advocates of trialling, and viewed it as critical to their initiatives' success. As one respondent put it: *"You don't know something is good until you see and try it."* Even where only one tool was tried, it was often a *"good enough"* strategy for organisations with limited resources.

Several projects in the sample went through multiple iterations of both tools and project modalities, and described early failures as important learning experiences that performed much the same function as trialling would have. There seemed to be little awareness of how a structured trialling approach could be incorporated into projects, to save the significant costs of time and money implied by project failure and restructuring.

"My biggest lesson in this effort, and in technology, is that not everything will work. You need to take failure as a stepping stone. You need to know when to move on, and you need to know when to fix it. You need to be mature enough to know [when to say]: 'this one is fixable, and for this one, we have to move on.'"

36 Berdou, E. (2014). The Question of Inclusiveness in ICT–mediated Citizen Engagement, Brighton: Making All Voices Count.

Trying tools out, even where only one tool was tried, was often a 'good enough' strategy. This suggests that in many cases, a serial strategy of provisionally selecting a tool, trying it out and (where it fails to address a need) looking for a new tool might be effective.

8.4. Researching tool options

As reported in earlier sections, very few organisations actually compared tools before choosing one. This lack of comparison often resulted from the way in which they chose a tool: as so many chose to look for a technical partner rather than looking for a tool themselves, they never got an opportunity to compare tools themselves.

In other cases, the tool "selection" was really just the decision to adopt a tool to which the organisation had been exposed. In these cases, organisations did not look for tools to compare with the one they had been exposed to. Comparing tools might have led them to choose another, more appropriate tool – potentially leading, in turn, to better outcomes.

8.5. Researching accountability problems

Some of the organisations in our study had extensive engagement in accountability processes. Some had clear and explicit "theories of change" relating their interventions to changes in accountability. But in many cases, there was little evidence that organisations had done research to deepen their understanding of these accountability processes in relation to a new tool.[37] To highlight a notable exception:

"We were aware of the general prevalent use of SMS across the country, but we knew that we did not just want to use a generic mobile survey tool. We knew we needed it to come from a place of understanding what governance issues we were tackling."

In a small number of cases, we came across one form of such research where organisations looked to other 'use cases'. An organisation working against corruption, for example, studied cases in other countries where organisations had used online reporting to address corruption. One limit of this kind of research was that, while it was possible to find out fairly easily what other organisations had done, it was much harder to find out how effective the intervention had been.

8.6. How 'unknown unknowns' affect research strategies

We found very few examples (3/38) of organisations that conducted research in all three domains - users, tools and accountability processes. We also found that the research organisations did conduct was often in the domains they already had most knowledge of – rather than in the domains they had the least knowledge of. "Tech"-focused organisations primarily researched technology options, while organisations with existing knowledge of users did additional research into their users. Organisations were not able to identify or fill in their knowledge gaps, instead focusing on areas where they already had strong knowledge.

As suggested in sections 5.4 and 5.5, this could be because the less familiar an organisation was with one of the three domains, the less they realised that it was important to understand that domain (and what would be required to improve their understanding). For organisations unfamiliar with a domain, another potential reason could have been difficulties in finding information on their context or information in an appropriate format.

8.7. Building of organisations' knowledge in unfamiliar areas

Our findings suggest that organisations could improve their ability to make effective tool choices by making an explicit shift towards learning about areas with which they are unfamiliar. This could include doing more research targeted to filling specific knowledge gaps, or putting more effort into building networks to connect with others who have skills that complement their own.

We found cases where organisations had done this successfully. One group, with an extensive history in community organising and improving accountability at local and national levels, struggled for a lengthy period to find appropriate technologies for a project to monitor public service delivery. They had much more success when they found a technology partner that the participant felt shared their values and was able to guide their understanding of what technologies might be appropriate. They were able to recognise a gap in their knowledge and find the right help to address that gap. The following sections discuss ways in which more organisations might be supported to follow this path.

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37 This is in line with findings by Sika et al. (2015).

9. Recommendations: How could tool choices be improved?

This study involved almost forty diverse organisations in Kenya and South Africa working on a wide range of initiatives, using a broad set of technologies. We draw conclusions with this diversity in mind. Their contexts, objectives, and even views of what constitutes "success", are different. Not all the participants may share our perspectives. With these caveats noted, we have identified some potential ways to help organisations make better tool choices that could be relevant across this range. This section provides detail on these recommendations and explores the rationale behind them.

For organisations choosing tools in transparency and accountability initiatives: Six rules of thumb

We found that organisations' decision-making processes were rarely linear or highly formalised. Time was often short, and budgets were usually constrained. With this in mind, we have framed our recommendations to people leading and managing T4TAIs in the form of heuristics – "fast and frugal" shortcuts or "rules of thumb" that usually, if not always, help individuals make more effective decisions. Heuristics take account of the decision-maker's capabilities and the situation in which they operate, and we believe that they may be more appropriate for T4TAIs than complex design frameworks that assume their users have substantial time and resources.[38]

1. Map out what you need to know

Do at least some research in all of these three areas: (1) the goal or problem you want the tool to address; (2) the interests and needs of the people you want to use the tool; and (3) the tool options that are available. Work out what you don't know, and ask for help to fill the gaps.

2. Think twice before you build

Look for existing tools that can do the job; building new technologies from scratch is complex and risky.

3. Get a second opinion

Someone else has probably tried a similar approach before you. Find them (and ask for advice).

4. Always take it for a test drive

Trial the tool. It highlights problems early on and raises questions you never knew you had. Try out at least one tool, with the people you want to use it, *before* making a choice.

5. Plan for failure

Don't expect to get it right first time; budget for a series of adjustments to your tool during the project.

6. Stop and reflect on what you're doing

Keep thinking about what is working, and what isn't. Apply what you are learning to your organisation's broader work, and share with other organisations.

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[38] See Gigerenzer (2004) for a detailed discussion of the structure and effectiveness of heuristics in human action

Recommendations for funders

1. Help organisations do more (and more effective) research

Before organisations become wedded to using a particular tool, support and encourage them to develop project plans that include thorough research into the tool's intended users, the overall goal they think the tool could help achieve, and what alternative tool options are available.

2. Give the space to trial and adjust

The first attempt to use a tool is unlikely to be the one that succeeds. Promote the inclusion of structured trialling phases in projects and allow initiatives the resources to adjust tools in response to the results.

3. Support networks that provide face-to-face advice

Organisations frequently struggle to find suitable technology partners, work well with those they find, or access advice from peers with similar levels of experience. Make connections and support spaces where organisations can share experiences openly or get access to appropriate, tool-agnostic advice.

4. Make research more accessible and actionable

Organisations often don't find or use relevant research that identifies common problems to avoid – and then experience those problems themselves. To help them make better informed choices, investigate alternative ways to present key heuristics and guidance in ways that are relevant to organisations' specific contexts and actionable at key points in the tool selection process.[39]

9.1. The turn to technology

The turn to technology in transparency and accountability is here to stay. Organisations are looking to innovate (both to work more efficiently and in response to trends amongst the people they wish to engage and amongst their peers). However, most organisations in our study were not primarily focused on using technology, and had only limited technical experience and skills.

Any support or guidance for such organisations needs to take account of the fact that many are at an exploratory, uncertain stage and have limited resources and capacity to put into improving their tool selection processes. We found that organisations started to choose technology tools with widely varying levels of knowledge – often concentrated on particular topics – and that they did not follow a fixed, uniform selection process.

9.2. Think twice before you build

Our research suggests that a shift from a bias towards building new tools, to a bias towards using 'off-the-shelf' tools could lead to more

successful tool choices. For many organisations, choosing existing ("off-the-shelf") tools has many advantages over building a new tool from scratch.

Organisations that look for "off-the-shelf" tools first can compare them with other available options; identify their limitations before deployment; and (usually) try them out before making a final decision (see section 9.3). Increasing the number of users around existing tools can also help develop user communities that provide support and encourage others to invest effort in improving those tools.

As a heuristic, starting with a search of what existing tools are available and seeing if they can meet an organisation's needs is likely to be less risky, less expensive and more successful. Even where it fails, the cost of that failure is likely to be lower.

Some organisations we interviewed were better equipped to deal with the risks inherent in developing new tools – typically, those that identified themselves as 'tech organisations'. These organisations not only had an appetite for

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[39] The Six Rules of Thumb for organisations choosing tools to use in their work (above) and the Tool Selection Assistant (toolselect.theengineroom.org), which presents our research findings in the form of an online guide through the tool selection process, are two attempts to meet this need. However, further efforts are required to understand how organisations find and use research effectively.

Of all the kinds of research that organisations could undertake, the one that we believe would have greatest return on effort in the most cases is "trialling" − trying out the tool, in context, with the intended users of the tool.

experimentation but also a high tolerance for failure. They often put only very small amounts of their time and resources into new initiatives, and expected to go through an iterative process of adaptations and adjustments before getting positive results or else giving up and moving on. This 'fail fast and forward' approach is common in the technology industry and among inventors.

However, most of the organisations in our research did not fit this description. They had not planned for failure, and did not budget for testing or multiple iterations of software. In our view, not only did they lack sufficient expertise or experience, but their working culture was unsuited to 'invention'.

9.3. Try before you buy

Many participants acknowledged in retrospect that they did not do enough research before choosing a tool. However, it is also clear that they faced constraints – on time, budget and effort – that limited the investment they were willing or able to make in doing this research. Of all the kinds of research that organisations could undertake, the one that we believe would have greatest return on effort in the most cases is "trialling" – trying out the tool, in context, with the intended users of the tool.

Organisations that started with tools they already knew may have been happier with their choice because they had already tried the tool out before adapting it for a new use. They knew the tool's capabilities and limitations, and therefore already knew that the tool would be able to work in the way that they needed.

Previous research has suggested that organisations need to improve their research on the intended users of tools in T4TAIs.[40] Our research supports this conclusion. But suggesting that it should be done does not in itself answer what to do and how to do it.

Our research suggests that testing the tool in the field with intended users lets organisations surface questions they didn't know they had. In piloting the Tool Selection Assistant, the online guide to the process created by the researchers, (see Appendix 1), one participant gave an excellent example of this process. While testing digital audio recording software with a group of citizen journalists, he brought one of the microphones he was intending to use so they could try out the software. He was surprised when several expressed concern that the size of the microphone would make interviewees uncomfortable. He said he had not considered microphone options at all and had not thought about size, and how it might affect the relationship between citizen journalists and interviewees, in his tool selection process.

"I learnt a lot from trying tools out...I wouldn't have thought about microphone size if I hadn't done it."

Trialling brought to light not only answers, but new important questions. Encouraging organisations to "take tools for a test drive" – trialling them in realistic conditions with the people that they hope will use them – is a powerful heuristic precisely because it can make uncodified "tacit" knowledge of these users explicit, and easier to share with others.

9.4. Planning for failure

Those organisations with the most knowledge of the risks and challenges of developing and deploying software did not expect their initial deployments to succeed. They budgeted and planned for failure. They allocated their resources to enable them to adapt or even change the tools they had selected. In other words, they took an iterative approach.

"It was during trials that I noticed...failures, maybe two or three. So I said, you know what? I need to be trained. So I went for a training with the provider and

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40 McGee and Carlitz (2013), Sika et al (2014).

the guy from the IT department who was operating the system now, so that I could understand what was happening and what was going on."

But very few organisations did this. Most assumed – or hoped – that their initial tool choice would work. When, in many cases, it didn't, they had rarely budgeted time or resources to adapt it.

Responsibility for addressing this issue rests not only with organisations implementing initiatives, but also with funders, technical providers and organisations that provide guidance and support. Shifting planning processes so that budget and time is allocated to allow adaptation and learning from the tool's first deployment could lead to a significant improvement in results. This is a particularly important finding because the T4TAIs we have studied were often operating at the outer limits of their knowledge and experience.

9.5. A learning trajectory

We have argued that successful tool choices are anchored in an understanding of three factors: (1) the transparency or accountability problem (or job to be done); (2) the users who are expected to use the tool; and (3) the technology options itself. We found only a few examples where the organisation had sufficient knowledge and understanding of all three of these factors. Most organisations started with knowledge of only two areas, and sometimes only of one.

If organisations are more aware that they don't know about several of these areas (and that this could lead to problems in their project), they may be more likely to do the work needed to fill in those gaps. We have used the idea of 'learning trajectories' to highlight that whilst organisations may need a similar combination of knowledge to succeed, they will all start from different places.

By better understanding where organisations start from, it may be possible to present guidance and research in ways that are more geared to organisations' differing levels of experience and approaches to doing research. The Tool Selection Assistant, described in Appendix 1, and the Six Rules of Thumb described above, are a first contribution to supporting organisations to conduct appropriate and relevant research. However, further efforts to understand how organisations find research and use it effectively are needed.

9.6. Network–building

All the organisations that participated in our study had the technical means to be able to access online information about existing tools and how they were used. But some participants said that finding appropriate information was difficult or overwhelming. In fact, they were often particularly keen to speak to peers who had similar practical experiences. As one participant put it:

The descriptions of the many problems that arose in these supplier relationships indicate that there is a clear need for more local, independent and tool-agnostic advice – as well as a better understanding among organisations of how to develop productive relationships with technical providers.

"I had already researched and googled, and found guidelines, and gone through them. But I did not get the real knowledge that I needed. It would have been helpful if I had perhaps had a conversation with somebody whose level of technology knowledge was like mine, who had gone through the process before."

Perhaps as a result, many organisations contacted potential suppliers or technical partners as a first step. As we describe in Section 5.2, this may account for the prevalence of 'building' rather than buying, and the risks associated with that strategy. The descriptions of the many problems that arose in these supplier relationships indicate that there is a clear need for more local, independent and tool-agnostic advice – as well as a better understanding among organisations of how to develop productive relationships with technical providers.

However, it was rare for people to look to peer organisations, independent researchers, organisations that provide pro bono technical support, or others with experience on similar projects or similar tools. Participants often said that they did not have enough contacts with relevant experience or knowledge. One participant, a leader of a large social justice organisation, reported that though his personal networks included a wide range of specialists and experts, he knew no-one with expertise in digital technologies.

Cultural, generational, occupational or social divides could be contributing to this situation. When reflecting on what support would have been helpful in retrospect, participants frequently cited the need for advice from someone *"like themselves"* who had similar experiences: a tacit indication that they thought the advice currently available was not tailored, or not relevant to their needs.

It also suggests that there may be an opportunity for network-building, both within the T&A community but also beyond it. Many of the tool selection problems we came across may not be specific to T4TAIs, but could apply more widely to what is sometimes called 'civic tech'.[41] As the field expands and the number of initiatives has grown, building networks within countries and beyond may be an increasingly productive strategy.

During our research, we saw signs that efforts to create these networks are growing. The Making All Voices Count Communities of Practice in South Africa and Liberia and the Buntwani meetings in Kenya and South Africa are examples of serious attempts to build them. Further research and investment in developing them may be needed, as well as a specific emphasis on tailoring activities to address gaps identified in this and previous research. For example, some participants said that they would have liked more information on tool choices and implementation provided in a focused, face-to-face format – something that networks of this sort could be well-placed to provide.

41 For example, the Civic Patterns site (http://civicpatterns.org/) contains a series of similar, relevant heuristics designed for use in 'civic tech' projects.

10. Conclusion

Our research suggests that, sometimes, it *is* about the tech. Choosing the right tool is a necessary, though not sufficient, part of ensuring that a T4TAI meets its goals. To take just one example, whether an organisation chooses Facebook, WhatsApp, Twitter or a specially built tool to interact with people can make a decisive difference to whether it succeeds in doing so – and thereby determine whether the initiative can reach its overall goals.

As researchers, we would like to see further research done to see if what we have found applies beyond Kenya and South Africa. We have also tried to suggest research strategies that practitioners could undertake to help make better decisions. We argue that the turn to technology is so pervasive that initiatives' frequent failures to use technology tools effectively does not – and should not – require that they stop attempting to use them altogether. However, we believe that our research *should* compel organisations to consider the learning journey that they are on, making a more thoughtful acknowledgement of what they don't know. More learning and sharing their own

We argue that the turn to technology is so pervasive that initiatives' frequent failures to use technology tools effectively does not – and should not – require that they stop attempting to use them altogether. However, we believe that our research should compel organisations to consider the learning journey that they are on, making a more thoughtful acknowledgement of what they don't know.

experiences honestly with others will be needed if current failures are going to form the basis of future success.

We have proposed some practical steps for improving processes, grounded in our research findings, which practitioners and funders should consider. These include "taking tools for a test drive" before choosing, "thinking twice before building your own tool", and "planning to fail" to improve the chances of success. We also suggest that choosing the right tool requires an organisation to understand (1) the problem a tool needs to address; (2) the users who are expected to use the tool; and (3) the strengths and weaknesses of the tool itself. The Six 'Rules of Thumb' we have proposed above is an attempt to translate our findings into clear and practical suggestions for practitioners. The Tool Selection Assistant published in conjunction with this report (https://toolselect.theengineroom. org) represents a further attempt to help organisations narrow the gaps in understanding that we have identified. We hope practitioners will interact with these resources. Mindful of the need to 'take our own medicine', we are aware that its first iteration is unlikely to meet the need we have identified for help in making better tool choices. We have open-sourced the code for the Assistant to allow others to adapt and develop it further.[42]

In conducting this research we saw signs, in Kenya and South Africa, of nascent networks that span technologists, social activists, government officials, journalists, donors and researchers who share common goals and values, and are beginning to develop common approaches and platforms for communication. They are attempting to address some of the gaps we have identified. If organisations can learn together, they have an opportunity to improve their processes for choosing tools over time. This could make a significant contribution to realising the potential of digital technology tools to enhance transparency and accountability projects.

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42   https://github.com/the–engine–room/tool–selection–assistant

Appendix 1: A framework for improving tool choices: The Tool Selection Assistant

To address our finding (see Section 7)[43] that many T4TAIs do not conduct enough research into their users, the tool options available to them and the problem they are trying to solve, we aimed to assess if providing organisations with guidance and access to relevant resources through an online framework could help them make more effective tool choices.

Between May and July 2015, the researchers designed and built an online framework to guide a user through the process of choosing a tool (hereafter, the Tool Selection Assistant (TSA)). We tried to incorporate our research findings into the design and content of the TSA. We then piloted the TSA for a four-month period with four T4TAIs in Kenya and South Africa, asking them whether it had influenced the way that they chose tools. Researchers also showed the TSA to several other individuals working in transparency and accountability organisations (some of whom had participated in the process research phase), who provided feedback. The TSA framework was also presented at a meeting of the Making All Voices Count Community of Practice in Johannesburg in December 2015.

Intended users

The TSA was targeted at members of staff within a T4TAI who are involved in choosing a digital technology tool – an intentionally broad group of intended users chosen because it matches the profile of our research participants. It was intended to be usable by people from different contexts and levels of technical capacity, including small organisations with relatively limited technical capacity. It was also intended to be usable by individuals who want to choose a tool by themselves in a short period of time, or teams within an organisation over a period of several months. Further research might indicate that this user group needs to be broken down into smaller subgroups.

Assumptions

In planning to develop this framework, researchers made several assumptions, that:

- organisations pursuing T4TAIs would be aware that they needed to improve the way in which they choose technology tools.

- these organisations would be willing and able to invest time in using a framework that provides guidance and access to relevant information about the process of choosing technology tools.

- organisations would perceive an online, interactive framework to be an effective way of accessing this advice and information.

- the findings from the process research, if included in the framework and applied by the organisations, could be relevant and appropriate for the participating organisations.

Design

The TSA was designed to help users identify gaps in their knowledge, and to suggest ways that they can fill those gaps.
To help them identify knowledge gaps, the TSA invites users to enter text about their existing levels of knowledge on a particular aspect of their tool choice (for example, their users' interests and needs). To suggest what information organisations might need at these points, the TSA presents de-identified case studies from the research to

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43 Supported by findings from McGee and Carlitz (2013), Avila et al (2010), Sika et al. (2014).

disseminate experiences from organisations more widely. It also gives short summaries of this project's research findings, focused on particular areas that our research indicated were important to enable an effective tool selection.
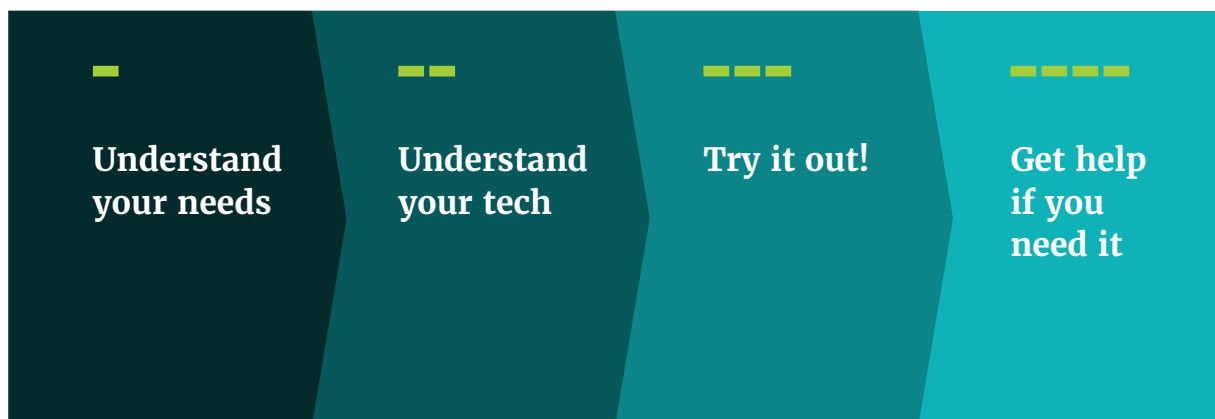
To help organisations fill these knowledge gaps, the TSA presents users with heuristics and guidance drawn from the research. It also summarises guidance from resources produced for practical use by T4TAIs and other organisations; and provides links to other sources of information and support. It also offers sample answers to guide organisations through the process. The TSA is available at https://toolselect.theengineroom.org, while an open-source release of the tool's code is at https://github.com/the-engine-room/tool-selection-assistant.

Structure

The TSA is structured around four steps, each of which has between seven and ten sub-steps. Based on this study's findings that T4TAIs most often start with a problem they want to address, the TSA's **Understand your needs** step suggests that organisations explicitly state how they think the tool will help achieve their project's objectives and conduct research on their users before considering the technology options available. Even in cases where the organisation starts with a tool, the TSA structure encourages them to think about whether their users would be likely to use it, and then to compare it with alternative options.

The **Understand the tech** step guides organisations through the process of looking for multiple tools, comparing them with each other and considering areas where they would probably need to iterate in future. This is followed by the **Try it out** step,

which gives advice on planning a trial and factoring learning into tool design, and the (optional) **Get help** step, which suggests ways in which organisations can find appropriate partners and develop a good working relationship with them.

The TSA is designed to encourage users to complete it in the sequence in which the steps are presented. However, in line with our findings that overly 'formal' approaches may not be used in practice, users can skip steps and complete them in a different order. Users can also return to and amend text that they have added.

The text that users input can be viewed on a summary page (one at the end of each step, as well as a final summary document) and exported in Word or PDF format. This summary document has several potential uses:

- as a planning document to identify and address knowledge gaps.

- to explain to colleagues what a staff member wants a tool to do in a straightforward, structured way.

- to show external support providers, technical suppliers or advisers what the organisation is looking for.

- to demonstrate evidence of planning to potential donors or partners.

Identifying pilot participants

The researchers invited all organisations involved in the process research phase, as well as other organisations involved in T4TAIs, to test the TSA. The piloting process comprised an initial interview, a series of check-in interviews to assess progress and

The TSA's four-step structure

Understand your needs | Understand your tech | Try it out! | Get help if you need it

a final interview to review the TSA's overall utility. Respondents were interviewed before starting the pilot to assess their confidence in choosing a tool successfully, as well as the context within which the tool would be adopted. A standardised interview instrument was used for initial pilot interviews, to collect feedback at regular intervals during the piloting process, and to collate reflections on the framework's utility at the end of the pilot period.

Four organisations completed the pilot process, investing varying degrees of effort. Despite significant efforts by the researchers to identify and recruit pilot participants, many organisations did not take up the opportunity to test the TSA. This could be due to the perception that the organisation did not need support in selecting tools in general, or a belief that a framework would not be useful enough or relevant to the organisation's work.

Several other organisations initially agreed to participate, but later dropped out of the pilot – a tacit indication that they did not think it would be useful for their purposes. This could have been because of a lack of clear incentives to commit sufficient time to participate in the series of pilot interviews. At least two pilot participants faced evident constraints in their time and capacity to invest in additional elements of work, which were expressed directly and also evidenced by difficulties in scheduling check-ins. However, the lack of TSA use could also be because the first iteration of the TSA (as an alpha version) was not visually appealing and had several small technical glitches. Further research would be needed to assess which (if any) of these reasons affected the lack of take-up.

The TSA is most likely to be useful at a specific point in the tool selection process – early on, when the organisation is thinking about how they should go about making their choice. Many organisations expressed an interest in principle, but were unsuitable candidates for piloting in practice because they were not choosing a tool during the pilot period.

Feedback

Among the four organisations that actively piloted the TSA, feedback was broadly positive. Several participants said that the information provided encouraged them to focus on trialling, researching their users and anticipating potential problems in advance. One participant said that after using the framework, *"[I realised that tool selection was] a more complex and important choice than I appreciated at the beginning. It has also made me feel that I am anticipating and dealing with the risks and issues around tech use. And so I probably now prioritise it more."*

However, there were also indications that some participants found the amount of information in the TSA to be overwhelming or "too comprehensive". Others reported logging in but only completed the initial steps. In one case, initial enthusiasm in providing feedback dissipated noticeably, while others demonstrated tacit reluctance to schedule further check-ins.

"The framework is extremely helpful and provides a learning experience along the way, but also has a lot of information which might make the user keep postponing its use."

Based on the limited feedback received thus far, it appears that information provided in this way may be highly useful for organisations that are willing to undertake methodical, considered selection processes, but less useful for others interested in accessing shorter, simpler information or simply asking for help from peers or experts. As one participant put it:

"It worked really well for people like me: who had some familiarity with the tech but not with thinking through the tech choices. If I think of giving it to a CJ [community journalist] to make their own decision, who wasn't [familiar with the tech], they might wonder why they are using it."

For many of the organisations we contacted, the simpler "Six Rules of Thumb" for choosing tools (see Section 9) may have been a more accessible way – albeit a significantly more simplistic way – of presenting the research findings. Indeed, during dissemination events for this research held with T4TAIs in Kenya and South Africa, it was clear that several of the "Six Rules" were both novel and directly applicable to participants considering choosing new tools. In general, however, efforts to develop the Tool Selection Assistant appear to indicate that any one format for presenting guidance and research will be unlikely to suit the needs of all the diverse range of organisations involved in T4TAIs, particularly bearing in mind that they are all at different points in their understanding of technology and data. More research is needed to investigate which formats might be appropriate in particular situations.

Appendix 2: Interview guide

This appendix contains the interview guide that was used during interviews with the 38 organisations in the process research stage of this project (see Project approach and methods, p.12).

All text in bold should be read aloud.

Instructions and background information are provided in italics, in a smaller font.

Instructions for interviewer

This interview begins with structured questions about the context in which tool selection has taken place, and aims to identify a specific instance of tool selection on which the second half of the interview will focus. The second half of the interview does not follow structured questions, but will encourage the interviewee to tell the story of the tool selection process. The interviewer should encourage the interviewee to follow their own narrative of the events, asking clarifying or additional questions along the way – only as is necessary to secure essential data points from the interview. Once this narrative has been captured, the last section aims to extract reflections from the interviewee on their learnings from the process.

Note that not all interviewees will be able to answer all the questions, and that the level of detail in answers may vary significantly. It is not important that every question is answered in detail, but at the end of the interview you should feel confident that you have secured an understanding of the points detailed in the interview guide.

Interview questions and guide

Hello, and thank you for making the time to talk to me. I am a researcher working on a research project conducted by the engine room, the Network Society Lab at the University of the Witwatersrand, and Mtaani Initiative based at Pawa254.

The project aims to understand the way in which organisations that aim to enable public participation, represent people's interests, or support their ability to hold government to account choose technology tools. We are conducting interviews with 39 of these organisations in Kenya and 35 in South Africa. You have been selected because:

- You completed an online survey on how your organisation uses technology, and said that you were willing to be contacted by the researchers.

- Our research team has learnt about your organisation's work and identified it as a suitable candidate for this research.

2.1. What are your personal responsibilities for technology use within the organisation?

2.2. [ADD DATA POINT] At this point in time, approximately how many paid and unpaid staff does the whole organisation have (including consultants)? ('Unpaid' includes volunteers on small stipends.)

[You may need to record staff and separately record members or volunteers for networks or membership based organisations]

2.3 [ADD DATA POINT] Has your organisation published an annual report in the last year?

2.4 [ADD DATA POINT] Do paid staff at your organisation have access/use to a computer for work purposes? (all, most, some, none)

2.5 [ADD DATA POINT] Do paid staff at your organisation have access to/use Internet (data) enabled mobile phones for work purposes? (all, most, some, none)

2.6 [ADD DATA POINT] Does your organisation have any of the following: its own website, its own Facebook page or its own Twitter account? If so, which?

2.7 [ADD DATA POINT] Do you think that your organisation is using technology effectively?

2.8. [ADD DATA POINT] What do you think are the main barriers preventing your organization from using technology more effectively?

[For example, this could include a lack of staff, insufficient training/knowledge, costs, infrastructure (internet access/ electricity supply), challenges in managing data

2.9. [ADD DATA POINT] Would you describe your organisation as a 'tech' organisation?

2.10. Do you think of your organisation as one that tries out new technologies before other similar organisations, or learns from other organisations first?

[After they have given their answer, ask this specific question:]

2.11. [ADD DATA POINT] Which of these words or phrases best describes your organisation's use of Internet, social networking or mobile technologies:

'innovator/experimenter',

'early adopter/ ahead of the pack',

'keep up with the times'

'wait and see what others do' or

'the last to try something new'

Process of tool selection (open narrative)

Below is a script for asking the respondent to tell the story about a specific tool selection process. It is set out according to the sequence of a tool selection process. Allow the respondent to speak freely and without specific structure.

Make thorough notes in this document throughout the interview in the spaces provided. Ensure that all essential data points (marked in purple) are captured by the end of the interview. If participants get stuck or are uncertain how to proceed, use the background questions provided in the boxes.

Selecting a relevant project and technology tool

3.1. I'd like you to think about all the different technology tools your organization uses. These can be any kind of tool – hardware or software - and can be used directly in projects or to support the organization's activities in general. Could you list as many tools as you can think of?

3.2. I'd like you to think of a recent project where your organisation used one or more of these technology tools to increase public participation, represent people's interests or hold governments to account. Can you tell me about this project and what it aimed to achieve?

3.3. Which technology tools did your organization use in this particular project?

3.4. Now I'd like you to think back to a specific occasion in the recent past when your organisation chose one particular technology tool to use in the project we've discussed.

Explain that the tool can be any kind of tool, hardware or software, and it doesn't have to be a tool that directly increased participation/represented people/held government to account, but it should have been expected to be involved in this kind of work somehow.

If there are several such examples, select the one that is most recent, or the one that is the best example of how the project / organization chooses tools.

What was this tool?

3.5 Do you know about how this particular tool was chosen, or were you involved in choosing it?

If no: end the interview here or return to 3.2 and identify another project/tool

If yes: ensure you have enough information to complete all elements in the box below (or return to 3.2 and identify another project/tool):

Description of the chosen project and its purpose

The target constituency for the project

Description of the technology tool chosen for this project

The purpose of the chosen technology tool

Ok, the selection of this tool will be the focus of the rest of this interview. I'd like you to tell me the whole story about what happened, from the first conversations, through the process of choosing the tool, to how the tool was rolled out and what you learned if you got that far. What I want to try and understand are what kinds of things influenced that choice, what the outcomes were, and whether the process could have been improved.

First, I'd like you to think back to the first time that you or your organisation talked about the tool in this example. What prompted the first discussions and what happened next?

Background questions (use these to ask supplementary questions, or to help the respondent if they get stuck or are unsure). Ensure all points coloured in purple are recorded.

- **3.6. [ADD DATA POINT]** *Why did you – or anyone else involved in the decision – think that you might need a new tool?*

- *3.7. Why did you think of choosing a technology tool (as opposed to a non-technological solution)?*

- *3.8. Or, did the discussion start with the tool and only come to a need or purpose afterwards?*

  - *(If so, why did that particular tool come up?*

    - *Options if needed: did one of the team used it, had you seen or heard of another organisation using it, did someone do some research?)*

- *3.9. Was there a specific problem that the organisation was trying to solve?*

- **3.10 [ADD DATA POINT]** *Who raised the issue originally?*

- **3.11. [ADD DATA POINT]** *What was the context for this discussion? Can you describe how the selection process was organised within your organisation - who was involved and what did they do?*

First steps and gathering information:

Ignore if the respondent naturally provides this information as part of their narrative.

Now I'd like you to think about what happened after you agreed that a new tool was - or might be needed. What were the first steps towards making a decision and was information collected to inform that decision?

Background questions

*(use these as a checklist to see if you have collected enough information, or to help the respondent if they get stuck or are unsure). Ensure all points **coloured in purple** are recorded.*

- **3.12. [ADD DATA POINT]** *Who was responsible? (an individual or a group)?*

- *3.13. How much authority did they have?*

What was the process?

- **3.14. [ADD DATA POINT]** *What were the first steps taken after the initial discussions?*

- **3.15. [ADD DATA POINT]** *Was an explicit plan created? Was this formal or informal?*

Background research

- **3.16. [ADD DATA POINT]** *Was there any kind of formal or informal information gathering or research?*

- *3.17. [If yes to 3.16], where did the organisation collect information from (individual or group experience, networks, consultants, online resources, other organisations, funders or international support organisations)?*

- **3.18. [ADD DATA POINT]** *How helpful was this information? Was anything missing?*

- **3.19. [ADD DATA POINT]** *Were experts, users, staff or any other people consulted? How formal was this process?*

- **3.20. [ADD DATA POINT]** *Did anyone in the organisation have relevant experience or knowledge?*

- *3.21. Did this person/those people influence the process? If so, how?*

Making the decision

Now I'd like to talk about how the decision was actually made. Who was involved and what influenced the decision?

Background questions

(use these as a checklist to see if you have collected enough information, or to help the respondent if they get stuck or are unsure). Ensure all points coloured in purple are recorded.

- *3.22. [ADD DATA POINT] Who was responsible for deciding? (officially and in reality)*
- *3.23. [ADD DATA POINT] Did any other people influence the decision (IT specialists, program officers, senior leadership, board, funders, or consultants)?*
- *3.24. [ADD DATA POINT] How long did it take from the start of the process to the final decision?*
- *3.25. [ADD DATA POINT] Was the decision-making process formal or informal?*
- *3.26. [ADD DATA POINT] Was more than one option considered? If so, were these options compared with each other?*
- *3.27. [ADD DATA POINT] What criteria were used to make the decision? Were they used explicitly or implicitly?*
  - *Was seeing others use the tool you chose influential?*
  - *Was it important to try out the tool before you decided on it?*
  - *Did the tool's ease of use influence the decision?*
  - *Did you consider how easily the tool would fit into your ways of working and your use of other tools?*
  - *Was improved productivity or efficiency a factor?*
- *3.28. [ADD DATA POINT] What were the most influential factors? Were these discussed explicitly?*
- *3.29. [ADD DATA POINT] What were the most challenging things about selecting the tool?*

Adoption

Ignore if the respondent naturally provides this information as part of their narrative.

Now I'd like you to recollect what happened after the tool was chosen. Tell me about what happened when you started using it, or tried to. Did it work as expected?

Background questions

(use these as a checklist to see if you have collected enough information, or to help the respondent if they get stuck or are unsure). Ensure all points coloured in purple are recorded.

- *3.30. [ADD DATA POINT] What happened after the tool was chosen?*
- *3.31. [ADD DATA POINT] Did you test the tool before implementing it? Was there a pilot stage?*
- *3.32. Was it easy to use? How long did it take to set up? Did you have to make any modifications?*
- *3.33. [ADD DATA POINT] How did the implementation go?*
- *3.34. [ADD DATA POINT] What were the most challenging things about adopting and using the tool?*
  - *Did people in the organisation have challenges adapting to using it?*
  - *If the tool was intended to be used by people outside the organisation, did they use it as expected?*
  - *What were the views inside the organisation of whether the tool was working or not? Did they change over time?*
  - *Did the organisation have the skills, money and support they needed to use it?*
- *3.35. [ADD DATA POINT] Did the tool achieve what it was expected to? Is it now working as planned?*
- *3.36. [ADD DATA POINT] Has the organization considered any other tools to replace or add to this tool?*

Reflections on the selection and adoption process

Before prompting this final portion of the narrative, review the code sheet to be sure that all essential data points from the other portions have been collected. If not, ask supplementary questions to secure that data.

Thank you for telling the story of what happened. Reflecting on everything you described so far, what do you think you learned about choosing and adopting tools?

Background questions

(use these as a checklist to see if you have collected enough information, or to help the respondent if they get stuck or are unsure). Ensure all points coloured in purple are recorded.

- *3.37. **[ADD DATA POINT]** How would you define whether the tool adoption has been a success?*

- *3.38. **[ADD DATA POINT]** Did the project itself meet the goals originally set for it?*

- *3.39. What did you learn about that specific tool after choosing it? Were there differences between your expectations of it and your organisation's experience of it?*

- *3.40. What made that tool successful or unsuccessful?*

- *3.41. **[ADD DATA POINT]** Did anything go wrong during the process? Did you miss any opportunities or make any mistakes?*

- *3.42. **[ADD DATA POINT]** What did you learn about the process of choosing tools?*

- *3.43. Would you do anything differently if you were choosing a tool for the same purpose again? If so, what?*

- *3.44. What factors would you want to place more or less emphasis on next time?*

  - *trying out the tool before you decided on it ?*

  - *would ease of use influence the decision?*

  - *considering how it would fit into users' ways of working and their use of other tools?*

  - *would you consider the tool's impact on efficiency or productivity?*

- *3.45. **[ADD DATA POINT]** What kind of help would have been useful, either in selecting the tool or implementing it?*

Closing the interview

Once you have ensured that you have collected all of the essential data points coloured in purple, close the interview.

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About Making All Voices Count

Making All Voices Count is a programme working towards a world in which open, effective and participatory governance is the norm and not the exception. This Grand Challenge focuses global attention on creative and cutting-edge solutions to transform the relationship between citizens and their governments. The field of technology for Open Government is relatively young and the consortium partners, Hivos, Institute of Development Studies (IDS) and Ushahidi, are a part of this rapidly developing domain. These institutions have extensive and complementary skills and experience in the field of citizen engagement, government accountability, private sector entrepreneurs, (technical) innovation and research. Making All Voices Count is supported by the U.K. Department for International Development (DFID), U.S. Agency for International Development (USAID), Swedish International Development Cooperation Agency, and Omidyar Network (ON), and is implemented by a consortium consisting of Hivos, the Institute of Development Studies (IDS) and Ushahidi. The programme is inspired by and supports the goals of the Open Government Partnership.

Research, Evidence and Learning Component

The programme's research, evidence and learning contributes to improving performance and practice and builds an evidence base in the field of citizen voice, government responsiveness, transparency and accountability (T&A) and Technology for T&A (Tech4T&A). The component is managed by the Institute of Development Studies, a leading global organisation for research, teaching and communication with over thirty years' experience of developing knowledge on governance and citizen participation.

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the engine room (theengineroom.org) researches and supports the safe and effective use of technology in advocacy. This involves a combination of applied research, generating evidence and providing direct strategic and material support to activists and organizations using data and technology in their work. The **Network Society Lab** at the University of Witwatersrand, Johannesburg, South Africa (networksocietylab.org) researches the diffusion of Internet and mobile technologies and their social, economic and political effects in Africa. **Mtaani Initiative** is a Nairobi-based community-driven organisation that fosters civic engagement and collective action on governance and anti-corruption issues, centred at collaborative space and social enterprise Pawa254 (pawa254.org).

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