Title: Can the Internet Improve Local Governance? The Ongoing Case of the Municipal Council Website in Ruiru, Kenya

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Abstract:
The use of information and communication technologies (ICTs) has the potential to improve policy, enhance access and delivery of government services, increase government transparency, and strengthen the involvement of citizens in governmental affairs through "e-government." Regardless of this potential, many e-government initiatives fail altogether. A need exists for more concrete empirical data on the relationship between ICTs and governance, how e-governance projects might be evaluated, and the kinds of conditions and dynamics that can make ICTs a useful tool for improving governance. In this paper, we ask whether the Internet and website development in particular can improve democratic governance at the local level and if so, under what conditions and how. To do so, we analyze our experience of working with the municipal council of Ruiru, Kenya in developing a website. In our case study, we address debates over when and how to involve participation in technology design and examine the role of continuing political negotiations over information.

Key words:
E-Government, Kenya, community participation, participatory development, focus groups, ICTs

Introduction

The idea that information and communication technologies (ICTs) can play a role in improving governance is becoming increasingly popular. The idea of "e-governance," or the combined use of information and communications technologies to improve policy and enhance access and delivery of government services, has gained traction [46]. The use of the Internet for such e-governance purposes, including the development of websites where information is posted and crowd-sourced and projects or budgets tracked, can help render critical information and transactions public and introduce more accountability. This, along with platforms that allow direct payment of fees or taxes, may cut out opportunities for some forms of graft and interference. Such technologies also create possibilities of organizing and opening new spaces for dialogue and interaction. Ideally then, e-governance, including the use of websites, has the potential to create an environment for improved policy outcomes, enhanced public service delivery,[1] heightened transparency and accountability, administrative and institutional reform, and greater citizen participation in the affairs of the government [10,29,33].

Regardless of the potential of e-governance, there is recognition that many e-government initiatives fail altogether [18,19,20]. Indeed, a growing body of literature is rightly posing the key question of whether "e-governance" really works to improve democratic governance and if so, under what conditions? Fortunately, more case studies are emerging that try to answer this question. They give us a better understanding of the complexities and challenges of making newer technologies, including the Internet, work in the way that the proponents of e-governance envision [12,13,24,34,47]. Overall, a need exists for more concrete empirical data on the relationship between ICT and governance, how e-governance projects might be evaluated and the kinds of conditions and dynamics that can make ICT a useful tool for improving governance [27]. This is especially true in places like Africa where e-governance initiatives are taking off, but face a substantial digital divide and very complex governance challenges.[2]

In this paper we present a case study involving Ruiru, a small municipality outside of Kenya's capital, Nairobi, which is part of the greater Nairobi metropolitan region. We ask the question of whether the Internet and website development in particular can improve democratic governance at the local level and if so, under what conditions and how. Kenya is a country where Internet use is rapidly increasing. A 2009 poll showed that daily and weekly Internet usage has more than doubled between 2007 and 2009, while monthly usage grew by 80%. This makes the Internet the fastest growing media, with more than 3.5 million monthly users [49]. This trend is likely to continue. Further, Kenya has produced substantial ICT innovation including the well-known ushahidi.com that pioneered crowd-sourcing information during crises (beginning as a response to the 2008 post-election violence), as well as M-pesa, which allows users to send money using

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[1] In the context of this paper, "public service delivery" is defined as the delivery of key services to the public such as education, health, garbage collection, clean water ,sewerage treatment and other public infrastructure and spaces as well as key information needed by citizens.
[2] These challenges include social issues (poor basic education, low literacy, poor information technology literacy), political issues (low budget allocation, poor integration and reform agenda, lack of cyber laws, slow decision making processes, etc.), economic issues (lack of investors and poor budget control), and technological issues (high cost of the Internet, lack of IT standards, etc.) [26].

cell phones.[3] At the same time it also faces complex governance challenges including an ongoing struggle for democratization and decentralization. This makes it an interesting and important African case study to explore how ICT innovation, including the Internet and local government websites, can play positively into attempts to improve democratic governance. This is particularly critical at the local level, which tends to be neglected in Kenya, yet is taking on greater significance with a new constitution that devolves more power to this level. Whether Kenya can leverage ICT innovation to help it "leapfrog" or negotiate improved governance is thus an interesting and important question.

Our work with Ruiru began within the context of a University of Nairobi-Columbia University project, which started in 2005. The aim of the project was to improve local governance through collaborative planning. In 2009, we introduced the council to the idea of creating a municipal council website where information including a local physical development plan, could be made available to the public for comment (a functioning website would be posted until many months later.) A small social business, IPasha Infotech Enterprise, started by University of Nairobi students, was invited to become a key player in developing a website with the Ruiru Municipal Council. This paper examines the work of the three-way partnership between Columbia and Nairobi Universities, the local government for Ruiru, and a Kenyan socially-minded tech company in building a municipal website and supporting ICT literacy within the council.

This case study speaks to debates over when and how to involve participation in technology design and examines the role of continuing political negotiations over information. We argue that the approach to the initial website development (participatory design) was important, but that the wider *process* of introducing and negotiating elements of e-governance through the website construction was particularly critical. These processes were key to both the "final" dynamic product – the website and the information it contained – and to encouraging change in some aspects of Ruiru's overall governance performance, which improved dramatically recently according to a central government audit. However, the process also helped reveal the challenges of encouraging local government website development as an e-governance tool in Africa's growing cities.

We begin the paper with a brief literature review and discussion of some key theoretical issues and then present our case study, including an overview of the local context and the governance challenges in Ruiru. We highlight the specific problems that led us to propose a website first as a simple mechanism to help circulate information and then as a way to address some of the difficult governance issues we confronted. Within the case study, we describe and analyze the process behind working with the council on the website. This includes the role of broadening participation through focus group discussions with citizens and a small survey of local businesses. We examine how these tools played productively into negotiations with the council, especially about website content and in turn, how this became a way to discuss larger governance issues. Finally, we draw some lessons about the processes and conditions necessary for website

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[3] Kenya has a highly sophisticated ICT sector that has grown substantially since the introduction of telecommunications in 1977. At the same time, access to the Internet throughout the country remains highly limited. In a survey conducted by Bowen in 2010, one fifth of Kenyans used the Internet for any purpose in the past year. Kenya is ranked 116th globally and 10th in Africa on the International Telecommunications Union's 2009 ICT Development Index [3]. However, usage is growing rapidly especially among the young and urban dwellers [48].

development to potentially serve as a tool to improve local governance, and how these processes can help reduce the gap between project design and on-the-ground realities, which is one common issue that causes that such initiatives often fail [20].

Literature Review and Conceptualisation

Existing literature on the use of the Internet and ICTs in governance is expansive, as is the literature on citizen participation in governmental affairs through the Internet. However, some central themes tend to recur. First, the digital divide remains a critical limiting factor in the dissemination of e-governance [5,10,15,29,34,36,46,47,50,52]. Second, e-government does not necessarily increase citizen participation overall; rather, it merely provides a new medium for it and can simply move some existing citizen participation processes online [5,6,14,49,51]. Further, moving government services online does not necessarily make them more efficient [13,14].

While the Internet cannot fundamentally make government services more efficient or increase citizen participation, it does have the potential to revitalize communication between representatives and the represented [8]. According to Coleman et al [8], digital technology has increasingly led to the "shrinking of social space and the collapse of traditional constraints of distance," which can create new entry points for citizen participation in the affairs of the government. Further, when information is posted online a new arena of collective action is formed which can increase the possibility for collective action and participation. However, without any real promise from the government that they can and will listen to the public's opinions and deliberations, there is potential to create an "elaborate talking shop," [8, pg 184] in which citizen ideas are not actually linked to any practical outcomes. In short, e-government is not inherently citizen-centric and while it does change the nature of relationships between government and citizens, deeper questions about the political relationships between representatives and the represented need to be asked and understood before any claim of improved participation can be made [50].

Often, the adoption of e-government is falsely portrayed as a panacea for improved governance in developing countries, but experience has now shown that many e-government initiatives fail altogether. In fact, Heeks estimates that in developing/transitional countries 35% of all e-government initiatives are total failures, 50% are partial failures and only 15% are successful [20]. A gap between project design and on-the-ground realities, or the "design-reality gap," is often one key underlying cause of many of these failures [18]. Project designers are often physically, economically, and culturally distant from the location of project implementation. The wider this gap, the more likely e-government initiatives will fail [18]. Other problems arise simply because of the politics of who controls the technology including the Internet or at a smaller scale the website [7,53].

Some debate currently occurs around whether the best opportunity for using technology in the redesign of social and power relations exists in the initial "infighting" around technological change, which points to the importance of including key stakeholders early on in its development. Proponents of this view argue that user involvement in the development of technology leads to wider dissemination and project innovation [39]. Similarly, Olphert et al [35] and Taylor et al [51] stress the importance of involving citizens in the design processes of e-

government, to ensure relevance, usability, and accessibility for citizens. Others noted that trust between government and civil society is a key factor in how civil society and other stakeholders receive e-government technologies [51,29].

In many situations, however, even who gets to participate over time in technological development is part of a broader process of negotiation and change, and government actors, especially in more authoritarian contexts, may not be concerned with relevance or accessibility of the new technology. If all depended on the initial phase, then the possibilities for technology to change the status quo might be curtailed in these contexts. Other theorists argue that change emerges more through a "constant process of interpretation, legitimization, and domination by users and system developers" [17, p.138] and this view tends to allow for a more complex evolution in relations over time. This suggests that even if a system is not very open, an ongoing process of negotiation might lead to emergent change, but also that such changes might be reversed.

Overall, the question of how any technology — the Internet included — will affect government depends on a great many factors and requires careful empirical work along with a study of "specific practices and how these relate to broader developments in government and society" which in turn, requires multi-level analysis [25]. With this in mind, we examine in some detail a very specific case of trying to introduce more Internet connectivity and a website as new technology within a municipality in Kenya facing wider processes of change including democratization and devolution. If much depends on the initial infighting around the introduction of the technology, then by including a wide variety of stakeholders in a participatory design approach, we would be able to ensure change in the form of a strong municipal website that would help facilitate improved governance through better communication and information dissemination. However, if change depends less on this initial phase and more on a complex process of negotiation, which includes processes of legitimization, interpretation and also domination, then it is more fragile and dependent on the broader political context.

Kenyan Case Study

National Challenges and Opportunities

Kenya has been undergoing decentralization and constitutional reform processes. The country has recently adopted a new constitution that will fundamentally change the way local government will operate. However, right now the Ministry of Local Government continues to oversee local government. Four tiers of Local Authorities (LAs) exist under the Local Government Act Chapter 265 including Cities, Municipalities, Town and County Councils. All this is being redefined by new legislation now under debate; whether the new institutional arrangement will depart from a long history of top-down central government control remains to be seen.

In the 1960s, during the early years of independence, LAs were under administrative authority of the Central Government but overall, they were institutions with their own revenue bases and grants from the Central Government [28]. In 1969, however, the Central Government slowly

started to take primary functions from LAs, such as education, health, and secondary roads [28]. In 1974, the Central Government further diminished the powers of LAs by prohibiting them from charging a graduated personal tax on residents in their jurisdiction [28]. The Central Government continued to enact a series of policies that usurped power from the LAs and, by the late 1980s, the LAs were virtually irrelevant and devoid of resources [27]. Unsurprisingly, LAs presently face great difficulty with the delivery of infrastructure and services, financial management, institutional and legal frameworks, human resource capacity, and managing growth and development [27].

Beginning in the early 1990s when the struggle for democracy started to gain momentum, the Kenyan government began to make moves towards some decentralization and citizen input in decision-making processes [27]. The government undertook a number of decentralization programs aimed at addressing service delivery and local economic development. This included transferring more funds to the local level via Roads Maintenance Levy Funds (RMLF) and the Local Authority Transfer Fund (LATF). LATF provides five percent of national income tax to LAs based on population, resource base and financial performance. In order to access LATF, LAs are required to develop a Local Authority Service Delivery Action Plan (LASDAP) through a participatory process [27].

These programs face a range of challenges, and some analysts argue that as much as half of the LATF funds go missing [40]. Procurement of goods and services to implement LASDAP projects is rife with influence peddling and poor transparency [22]. Ochara notes that the political wing in LAs controls how money in the council is spent and with poor downward accountability to citizens, projects may be rejected or distorted if the interests of political players are not met [37]. This often means that because of many irregularities, LASDAP reports are also not made public and this is reinforced by the fact that is not a legal requirement to do so. A study conducted for the Ministry of Local Government argues that, "the weakest aspect of LATF is the communication systems employed in outreaching the public for participation in the project identification, monitoring and evaluation, despite the existence of LASDAP process" [48]. Another more recent study found, unsurprisingly, that citizen awareness of the LATF is low [23]. As the new round of devolution occurs in 2012, deep concerns exist that these problems will persist or even worsen as more resources go to the local level.

At the same time as reforms in local government are occurring, the Kenyan government is increasingly recognizing the importance of ICT and computerization [37,32], and this provides some opportunity to use ICT to help address serious problems of local governance. In the 1990s, the Ministry of Local Government launched the Local Authority Integrated Financial Management Information Systems (LAIFOMS) initiative in an effort to encourage the use of e-government and centralize information on the finances of LAs [37]. LAIFOMS is a computer-based system that aims to improve the ability of LAs to manage their finances. Specifically, the system has components designed to manage revenue, monitor financial and business transactions, assist in budget preparation and monitoring, manage and monitor expenditure, and report all business and financial transactions to a centralized database. Implementation of the program throughout all LAs began in 1999 and at the time, it was the only e-government initiative at the local government level [27].

LAIFOMS, however, suffers from serious flaws. Firstly, the program does not have an interface for the public to get reports. This keeps the focus of LAIFOMS material on the Ministry of Local Government, LAs, and development partners [37] and also opens it up to manipulation. This lack of public access to budget information is a problem, and unsurprisingly, LAIFOMS has been criticized for not fostering public participation and inclusion [37, 27]. Secondly, the deployment of LAIFOMS also does not take into account infrastructure and human capacity issues, or, the "design-reality" gap. Ochara [36] notes that LAIFOMS does not always have strong local actors to mobilize implementation, and that the public, businesses, and some politicians are often left on the periphery of the adoption process. Thirdly, given the top-down nature of the LAIFOMS program which was developed and imposed by the Ministry of Local Government, some argue that this is an example of the Central Government using ICT to "enhance a paternalistic relationship with local government agencies" through technocrats propagating certain portions of e-government for their own personal gain and objectives" [37, p. 96]. In part as a result of these problematic dynamics between LAs and the central government and in part because of the potential threat ICT projects can pose to the balance between central-local power and vested interests at the local level, there is often a lot of resistance from within local government towards such projects [37].

At the local level, there are other issues that arise in relation to LAIFOMS and ICT more generally. Kenya's local authorities are typically poorly governed. As mentioned, the political wing in local government often interferes with procurement and project implementation to favor narrow groups or their own private economic interests. This means ICT projects are also subject to the dynamics where local politicians manipulate any tendering process to their benefit and may not engage the best technology firms for ideas, training, and support. In addition, although this is changing rapidly, many LAs do not have an organized ICT department and or a clear ICT policy including provisions for outsourcing ICT functions. Successful ICT strategies require investment in human resource and ICT capacity within the council as a whole. Hence, in the absence of these policies and investments, councils often end up with ICT management systems that are unlikely to realize the intended impacts of LAIFOMS or any other system designed to improve governance [37,32].

More recently, the central government has continued to move beyond LAIFOMS as its e-governance strategy. In 2004, the Office of the President established the E-Government Secretariat to develop ICT projects within the government and enhance the service delivery of ministries. The government also produced an e-governance strategy aimed at creating an effective and operational e-government system in order to "facilitate better and efficient delivery of information and services to the citizens, promote productivity among public servants, encourage participation of citizens in Government and empower all Kenyans" [42]. The comprehensive plan establishes short-, medium-, and long-term goals to address the development of e-government throughout Kenya.

On 19th February 2007, the Kenya ICT Board also came into being as a state corporation with the Minister and top civil servant in the Ministry of Information and Communication serving on the board. It has an advisory and capacity building function with a vision of making Kenya a global ICT hub. More recently the Ministry of Information and Communication in cooperation with the ICT Board launched the Open Data Initiative to make government data more accessible

to the public.[4] This constitutes an important effort to increase access to information collected by the central government and sends a new signal of openness in line with right to information clauses in the new constitution.

In spite of these efforts, the Government of Kenya is still "ill-prepared" to handle the implementation of a national ICT infrastructure [38]. The existence of both a Ministry of ICT, which oversees access, and a Directorate of E-Governance, which is meant to coordinate government integration, raises questions of fragmentation and duplication of efforts within the government [38].

Another concern is that the official e-governance strategy does not specifically address ICT issues in LAs. Rather, the Ministry of Local Government has been left with the task [27]. Since 2004, the Ministry of Local Government has issued a number of circulars and reforms in an attempt to encourage and standardize ICT use throughout the country at the local level. For example, in November 2010, the Ministry released a circular stating that all local authorities had been registered with a .go.ke extension and that free website hosting facilities are available to the City Council of Nairobi and all town and municipal councils [43]. Similarly, the Directorate of E-Government issued recommended minimum specifications for all LA websites. The requirements specified the navigational structure, site structure, compatibility, color scheme, browser compatibility, image optimization, and website content for all websites [43]. While some of the specifications make sense, such as the requirement to make public information on "major projects and schemes and public services (if any)," some repeat the mistake of top-down control by ruling out much innovation. For example, one specification requires that all Local Authorities websites be hosted within the government servers by liaising with the ICT officer in the Office of the of Deputy Prime Minister and Ministry of Local Government to assist in the hosting of the website. This requirement makes it unnecessarily cumbersome to change web content regularly [43]. Since most Local Authorities' websites are developed through engagement with the private firms, it might be expected that LAs should be able to choose the hosting company of their choice and that such data-based driven websites could be uploaded to the servers at any place. In addition, well-established private website hosting companies provide better security compared to the existing government servers[5]. Unfortunately, although they encourage website development and use of ICT more generally, including by making it part of staff performance contracts, the Directorate provides little in the way of supporting website development. As a result, despite having an official website domain, many municipalities are opting to develop their own websites using a .or.ke domain (similar to a .org domain in the US).

Ruiru Municipality

In 2005, Ruiru Municipal Council invited Columbia University and its partners at the University of Nairobi to discuss pressing problems related to urban planning in the municipality. Shortly after the invitation, a number of student workshops and studios started to collect critical data

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[4] See http://opendata.go.ke/

[5] In January 2011, the Kenya police website, www.kenyapolice.go.ke was 'hacked' twice into (See http://likechapaa.com/2011/01/kenya-police-website-hacked-twice/) within span of few days. This raised issues concerning government preparedness to handle cyber-crimes and security issues of its servers.

about Ruiru which, at only 16 km from the Nairobi core, is considered a peri-urban area of Nairobi and part of the greater metropolitan region. With rapid urbanization occurring and Nairobi growing at approximately 4% per year, there is demand for cheaper land and housing in neighboring towns like Ruiru, and this has increased the pressure for service provision in the municipality. In 1999, Ruiru had an estimated population of 109,574 but by the 2009 census, this figure had climbed to 238,858 people. Recent expansion of the Nairobi-Thika Highway, which passes through Ruiru, is also triggering land speculation and many new plans for real estate developments.

When we began our work in Ruiru, the priority was to support a planning process, which would allow the council to have a vision and strategy for managing uncontrolled growth. The council itself consisted of an elected body made up of councilors from electoral units called wards (Githurai, KahawaSukari, Gitothua, Murera, Gatongora, and Biashara) who in turn elect the mayor. It also has an administrative branch appointed by the Ministry of Local Government and headed by the Town Clerk. Originally, there was no town planner and no ICT officer. Overall the staff was very small relative to the population size and magnitude of the problems in the municipality. In the process of working with the council, it was clear that the relationship between the citizens and council was characterized by mistrust. Further, one factor that contributed to the mistrust was the lack of information flow.

A website would be one avenue to address these complex issues which of course, are not just about communication but also about politics and citizenship. We also knew a website was not necessarily the best way to address more difficult governance problems. However, over time, the Ministry of Local Government started issuing circulars pushing for more e-governance and encouraging each council to have a website and eventually an ICT officer. This created an opening to use the website for broader governance discussions. It was clear that the website was primarily viewed by the council as a way to attract resources, especially investment. It was not necessarily being viewed as a way to communicate better and improve accountability but that was probably one reason we encountered support, rather than resistance. Further, as a foreign university and a local technology company, we appeared less politically threatening and also might have been perceived as potential sources of resources – financial and political. This all served as a carrot to support the work.

Once we started working on the website project in 2009 as a spin-off of our ongoing urban planning work, we noticed that the council shared only a few computers and had a single USB modem to connect to the Internet. There was no technical or ICT officer for the council at the time. Further, only two of ten councilors we talked to initially about the project had functioning email addresses. The administrators seemed better linked into the Internet. Also, big businesses in Ruiru were relatively much more advanced than the council with functioning websites and staff using Internet, but in contrast to Nairobi, few cyber cafes existed in the Ruiru central business district for average citizens to connect for a fee.[6] A civic engagement study conducted in 2009 by the University of Nairobi found that of 120 community groups surveyed throughout Ruiru, only 5% of community groups used email to communicate with members and other groups, whereas 39% used the phone. In addition, only 19.2% of community groups surveyed used websites to get information [30].

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[6] Increasingly, however, Kenyans are accessing the Internet via mobile phones [48].

Introducing a Website in Ruiru

As our team began our work in Ruiru, we were aware of the limitations that the digital divide poses to the development of e-government strategies, both within the government and among citizens. Thus, before working on a website for Ruiru it became apparent that other initiatives, such as a computer and Internet training for the municipal council, would be necessary in order to ensure that the council and residents would be able to take advantage of the website and also learn to develop content and keep the website an active tool [32]. Further, in line with a participatory design approach, we needed to discover what citizens and local businesses thought of the website idea and also what information they needed. We also wanted to know how they thought the website would play into the communications and governance issues facing the municipality. This led us to a two-pronged approach of working with the council on building required Internet skills, which also served to get them interested in the website project and helped get their support for focus group discussions with citizens and a survey of local businesses. At the same time, we started to engage citizens as well.

Early on, the Columbia University team and partners at the University of Nairobi were aware that they would need to involve local technical expertise in the website development process. At first, a small local company formed by University of Nairobi students was hired on a contract basis to conduct ICT trainings for the council and develop content for a website. Later, after observing the power of linking young ICT entrepreneurs to the council in the trainings conducted at the university, this small socially-minded company E-Pasha, later IPasha Infotech,[7] was brought on as a full partner in the work with the council. One member of the company had been a student in the Department of Urban and Regional Planning at the University of Nairobi and had conducted fieldwork as a student in Ruiru. This gave him both local knowledge of the town as well as a network of trusting relationships with the council. In this way, we brought in from the start technical experts with solid knowledge of on-the-ground realities [18].

In August 2009, we began our discussions with the Municipal Council by having IPasha, with the university partners at Columbia University and the University of Nairobi,[8] present to discuss the basics of a website, and introduce sample websites to the members of the Municipal Council of Ruiru, including the Mayor of Ruiru, and the Ruiru Town Clerk at the time[9]. We showed the website of another local authority to the South of Nairobi called Mavoko to demonstrate that other local authorities were moving forward with this aspect of the e-government agenda. The initial response of the council was positive; they were enthusiastic about moving forward with the website and seemed to take some ownership over the project. At the same time, it was also apparent that not many members of the government in Ruiru were familiar with the Internet, nor did they fully understand the implications of launching a municipal council website. We suggested as a next step that the groups collaborate in holding an e-training for members of the

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[7]IPashaInfotech Enterprise was originally founded as E-Pasha Information Enterprise. The company underwent management changes and thus became IPasha in 2010.

[8] When the project in Ruiru began in 2005, Columbia University worked very closely with the University of Nairobi, Department of Urban and Regional Planning and focused heavily on urban planning. As it moved away from a traditional urban planning project and focused more heavily on ICTs, Columbia University began to work directly with IPasha.

[9] He would later leave and a more engaged Town Clerk would come to be involved in the process.

Municipal Council, where the website could also be improved upon and developed based on the vision of the council members. They were eager for such training, especially if it was to be held on the University of Nairobi campus.[10]

The idea behind involving municipal council staff in the development of the municipality of Ruiru website was based on a participatory design (PD) approach [21]. This approach focuses on involving users and administrators in the actual website construction process and allows them to decide through negotiation what will be contained in the site and how the website will appear (within the central Government constraints).[11] This was one way to get around the problems discussed earlier of having a static website that did not reflect on-the-ground realities. When discussing what content to make available and how to structure the website, we placed website users into three main categories: civic representatives (municipal councilors); the council staff, which was broken into two categories: senior and junior administrators; and the businesses and citizens of Ruiru. We did not assume they all had the same ideas about the website, but rather we aimed to use the website to catalyze more discussion and negotiation that would include citizens and businesses that are typically not consulted properly. This, in turn, might help shift the power dynamics between the council and citizens. Those attending both the e-trainings (the council) and focus group discussions (with citizens, businesses and industries) were asked to think about what information should be made available to make the website maximally useful.

The civic representatives and the council staff were strategically given the first opportunity to develop content for the site. This would allow them to they felt engaged and respected. Ideally, they should be responding to citizen demands, but we started by We discussing how they could use the site to explain the projects and work they were doing and hence the way it could be used for public relations and improved communication. The PD approach aimed at creating ownership of the site by the council staff and civic leaders, in addition to achieving a broad sensitization on the way the Internet can assist in enhancing local governance through sharing information with the public and expanding the sphere of citizen participation. The first e-training was a formal

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[10] One reason that councilors and staff enjoy workshops of any kind including our e-training is that they receive an 'allowance' for workshops-a system that is widely abused and part of the governance problem. It is common practice in Kenya for governments to offer allowances (money) to employees who attend a training, conference, workshop, or other event. Many times, the entity hosting the event will offer an allowance as well. This often results in perverse incentives to attend events outside of the council. This, however, does not prevent council members from receiving allowances from the council coffer for our events. After this workshop we moved into a mode of working directly at the council with administrative staff in their day-to-day work rather than holding workshops away from council offices. On principle, the Columbia University-IPasha Infotech team does not offer allowances.

[11] Interestingly, these requirements became the topic of lively discussion. Overall, we felt that they were too restrictive since through them, the Deputy Prime Minister and Ministry of Local Government office exercised direct control on the nature of content that will go into the site and where the sites will be hosted. The registration and hosting of the site by the government servers was also considered unreliable and slow with most of the time 'going down'. LAs also would like a service provider who is available on call anytime when there is a problem with their website. By looking also into websites of other LAs such as Mavoko, Thika, Kiambu, Mombasa and Wareng among others, it is clear that many other LAs have resorted to .or.ke/org registration and hosting of website (See, www.mombasamunicipal.org, www.mavokomunicipal.or.ke, www.kiambumunicipal.or.ke, www.warengcounty.or.ke, www.kisumumunicipal.or.ke).

workshop, organized with the Department of Urban and Regional Planning at the University of Nairobi. It utilized classroom-based lecture techniques and participatory discussions centered on the use of ICT in enhancing service delivery. The process was additionally guided by working case studies of how other public organs and local authorities throughout the world are using ICTs in enhancing efficiency in service delivery. Through discussion of other council websites, the participants were able to understand the fundamentals of ICTs and how the website could be used in enhancing local governance and service delivery.[12]

During the e-trainings, we discussed possible website components, such as an online business directory for Ruiru Municipality, which could be of assistance to local businesses that are keen to advertise their services to a wider world. As well, we stressed how it could bring in additional revenue to the council. This tool was meant to increase the interaction between the council and the business community members who, through license purchases and fees, generate significant revenue for the council. Given this, they also have some clout to demand better service delivery. The idea was also that by starting with a winning scenario that would allow the council to see a direct benefit (more revenues and a way to claim they were improving service delivery via the website), we could set the ground for discussions of specific documents and information such as single business permit forms, business registration forms, council bylaws, among others that should be available online. The only way to access these forms at the time was by a physical visit to the council office. Another key benefit that we would later emphasize was how this ICT work allowed staff to meet the goals of their performance contracts[13] with the Ministry of Local Government, which included as an indicator website development and process automation.

The initial e-training led to the development of a framework for content development of the council website. The training team (IPasha and staff members from both universities) emphasized the role of council staff in ensuring that the website is constantly updated with relevant and current information. In other words, it was important to emphasize that websites are not stagnant; rather, they must be constantly updated and council members should expect to have regular communication with the community through the website. This turned out to be the least effective part of our work. Councilors with the exception of the mayor seemed interested in the training (and perhaps the allowances they no doubt received for being away from the council[14]), but few persisted in their interest in developing content and only the mayor and town clerk have contributed to online content. The e-training workshop, to a greater extent, enabled the

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[12] Based on a post e-training survey, participants indicated that the e-training provided them with the requisite skills for the utilization of ICTs in enhancing service delivery by linking theoretical issues with steps for practical implementation. Specifically, 58% of participants felt the training materials and content of the e-training workshop were excellent, while 42% felt the training materials and content was good. 100% of participants felt the workshop was worthwhile [9]. Of course, this must be out in the context of allowances mentioned earlier.

[13] Performance contracts were introduced in Kenya in 2004 as part of a results-based management program aimed at improving planning, programming, management efficiency, effectiveness, accountability, and transparency [30].

[14] It is common practice in Kenya for governments to offer allowances (money) to employees who attend a training, conference, workshop, or other event. Many times, the entity hosting the event will offer an allowance as well. This often results in perverse incentives to attend events outside of the council. On principle, the Columbia University-IPashaInfotech team does not offer allowances. This, however, does not prevent council members from receiving allowances from the council coffer for our events.

identification of what information the council might share over the Internet. However, this did not guarantee that the participants would actively contribute to website content development.

Questions over what to make available on the website proved to be highly political; the political wing of the council tightly guarded information on budgets and the activities. We learned, for example, that council staff felt they could not share the LASDAP report. Our focus groups with citizens and businesses would later reveal that many councilors held onto key forms like National bursary forms to exercise power over constituents. However, since the councilors de facto opted out of the process of website content development, citizens and key administrators got the upper hand over deciding content, including which forms would later be posted.

After the e-training, IPasha worked to restructure the original prototype website to be consistent with the ostensible wishes of the participants of the workshop. This would be the first of many iterations on a draft website that would emerge and change depending on ongoing dialogue and negotiation. What followed this was the first uploading of basic information about the council, some of which was extracted from the draft local physical development plan, whose development was the initial impetus for the website. Unfortunately, the council has been reluctant to upload the entire draft physical development plan. They claim they did not want to post an unapproved plan, but have not been clear with us when explaining why they didn't want to post the plan to get citizen feedback. The information extracted from the plan forms the relatively non-changing content of the site. The rest of the information was to be provided following a content development schedule that was prepared and adopted during the e-training. Specifically, while discussing website content with the participants, it was agreed that the council could first share information regarding:

- service delivery process, as both stipulated in the council service delivery charter, to address what services should be offered, where the services are located, and who is providing the services;
- service requirements and online resources such as single business permit forms;
- council news such as what the council does on a day-to-day basis within the different departments; and
- civic ward information which includes news, projects and other civic-leader initiatives.

In practice, despite the commitment of civic representatives to provide information, it became very difficult to get content from them, as mentioned.

It was not until 2011 that some of the promised information was actually posted on the website. The following sitemap shows what information was finally posted on the website as of 2011, and how it was organized:

We chose the following URL for the website: ruirumunicipal.or.ke.
Our strategy moved away from formal trainings to working more closely with administrators in their day-to-day jobs and finding ways to engage citizens in web content development. This was carried out in practice by IPasha. Interestingly, the council itself did little documentation of its

own processes[15], and this also posed a challenge since any new documentation of process had to be approved first by the chief administrator, the Town Clerk, before uploading into the website. Development of website content now became department-based, and the idea was to ensure that all council administrators participated in building website content through day-to-day interactions with IPasha. We also began to appreciate the fact that different departments within the council served different functions and that the person who understood best how those functions can be explained on the website were the heads of the departments. However, we also learned that no administrator in a department wanted to make a decision without the approval of the head and the Town Clerk. The schedule for content development adapted to this organizational structure and started to target department heads within the council for individual discussions while always keeping the Town Clerk informed.

This shift in approach allowed us to provide on-the-job training, reinforcing the idea that we were supporting the fulfillment of performance contracts. It also allowed negotiations over content as well as a better observation point for understanding the bureaucratic politics. Interestingly, we discovered that according to the council, senior administrators could not be trained together with the junior administrators. Most of the senior administrators, with the exception of the most recent Town Clerk, had little knowledge of Internet applications and use. We suspect this was one reason why senior administrators requested that they be trained separately from junior administrators. Their lack of Internet literacy could have undermined their status.

The schedule for content development also allowed IPasha to set a deadline for receiving all the information from the council to be uploaded to the website. However, in practice the deadlines always shifted. Progress accelerated when the relatively new Town Clerk became engaged and supportive at the end of 2009. The work also got a boost when the council hired a qualified ICT officer in 2010. The municipal council hired the ICT officer to comply with ongoing reform in the country around ICT standards. Previously, ICT matters had been handled by the audit officer in Ruiru. Given that Ruiru is a large council and that there was increasing pressure from our work and also the central government to address ICT issues in the council, it made sense for the municipality to hire an ICT officer. IPasha continued working on the website by working collaboratively with the ICT officer. Having a person on the municipal council staff dedicated to ICT definitely helped facilitate the building and development of the council website.[16]

The greatest challenge remained in web content development and management, which was a continual process of political and technical negotiation. What information should be conveyed remained contentious among civic leaders and especially council administrators, who were sensitive to how the public would perceive them. Some administrators, however, also came up with solid, new ideas around improving accountability such as using the site to document all

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[15] This lack of documentation was a reflection of the governance system. Less documentation would cover any irregularities. However, it is a terrible problem for local policy-making and decision-making,

[16] We would later discover, again reflecting governance problems, that the ICT Officer that was hired was the son of the mayor. However, this ended up working for us for two reasons. First, he was very qualified and eager to prove his merit (which he did) and secondly, he most likely helped negotiate and advocate with his father. This situation did cause tensions in the council, especially for the Town Clerk who was beholden to the mayor but was technically his son's superior.

public lands to support protection of those lands and avoid irregular acquisition. After we identified and agreed upon appropriate information to include on the website, how to package the information for public consumption still remained a challenge. Of course, the council was concerned that whatever they shared made them look positive. Our next step was to turn to the citizens. In 2011, we decided to undertake focus group discussions with citizens and businesses throughout Ruiru in an effort to improve the website.

Improving the Website through Discussions with Citizens and Businesses

Existing literature on the development of e-government systems stresses the importance of involving citizens in the design processes of e-government to ensure relevance, usability, and accessibility for citizens [35,51]. This is also important for generating innovation in improving local governance, including enhanced citizen and business services. For us, this participation was also about enhancing the democratization process and shifting the power dynamics between the council and citizens, representatives and represented. It would be harder to avoid posting information if citizens clearly demanded it, and this was documented via third parties. Fortunately, the previous work with the council had resulted in a certain amount of trust; the council knew that whatever the focus group discussions would reveal, negotiation and discussion would ensue about it before anything was publicly released. Further, by linking the business survey that particularly interested the council for economic reasons to the citizen focus groups, we made the whole idea more palatable. Hence, the Ruiru Municipal Council supported IPasha and Columbia University's idea to hold a series of focus group meetings to consult with community groups, relevant businesses, and civil society organizations on the website in early 2011.

The overt purpose of the focus group discussions was to obtain information on the likely level of use and functionality of the website in planning and provision of services and in accessing information from the council. The discussions enabled us to establish the community expectations of the municipal council concerning communication and ICT tools. This information was vital in restructuring the website to optimize web functions, enhancing citizen participation, improving service delivery, supporting automation of services and council operations as required in the performance contracts, gauging the level of ICT access and literacy, introducing and testing tools that can enhanced service delivery, and developing a structure for content development and information gathering (e.g., what will be on the municipal council website and what aspects of service delivery/information access/planning process will the content enhance?).

The focus groups were not explicitly advertised as being part of a website development process. Rather, in the focus group meetings, which were led by IPasha without the council or university partners present, citizens and businesses had an opportunity to provide feedback on service delivery, the website, and other proposed changes in the operation of the council. IPasha also had its own interest in developing a mobile payment system, where residents would be able to pay fees for business licenses, permits, etc. with their mobile phones. The focus group discussions also gave IPasha a chance to test interest in this idea.

Conversations also centered on broader communication issues between the municipal council and citizens. This would also give the participants a chance to link governance issues to the ICT initiative and their feedback would allow the municipal council an opportunity to reflect on broader aspects of their operation (including service delivery) and their communication with citizens and key groups throughout the municipality. Focus group discussions on ICT sounded technical enough to avoid controversy or obstruction by the council and they supported, but were not involved, in the process.

Groups targeted to participate in the focus group discussions included community-based organizations (CBOs) and civil society groups, especially residents' associations; businesses, including wholesale enterprises, retail storefronts, kiosks, and other small businesses. The participating community groups were sampled from the six wards within the municipality with a total of 30 community-based groups participating in the discussions within each ward. Community groups asked to participate in the study were selected from a community group directory[17] prepared by university researchers in 2009. In the directory, community groups are broadly categorized based on six major areas of operation including credit, infrastructure, environment, business, social services, and sports and culture. The research team selected groups from each of the major activity groups to ensure diversity in attendance at the meetings. In addition, the research team also held discussions with the six resident associations located within the different neighborhoods in Ruiru. While conducting the discussions with the CBOs, we discovered that there is an arm of the council known as the Project Monitoring and Evaluation (M&E) Team, which is elected by the ward residents.[18] As the team was uniquely placed to discuss detailed governance issues in Ruiru, we conducted a separate focus group with them.

Discussions with community-based organizations were based on topics related to citizen expectations of service delivery, methods of communication and participation in the affairs of the council, information sharing between the council and citizens and possible ways of improving communication and information sharing. While holding the focus group discussions, the research team attempted to establish resident expectations of the council, as well as residents' attitudes regarding the state of service delivery within the municipality. Although the municipal council was asked to provide information on service delivery, the information that the council provided often did not match what the residents reported actually exists. In all the discussions held with the resident groups, the research team first elicited personal concerns regarding the operation of

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[17] In July 2009, the Columbia University-University of Nairobi collaboration undertook a field survey of community groups in Ruiru Municipality, Kenya with the assistance of several key actors in the Ruiru community. Research teams undertook door-to-door surveys throughout Ruiru to determine if and where community groups were present, and recorded community group names, activities, and contact information, in addition to marking on a map roughly where the community group is located within the municipality. All activities of community groups were self-reported. This exercise was not directly related to the creation of a website. Instead, the collaboration undertook this exercise in order to better facilitate communication between the council and community groups for all activities undertaken in the municipality. The directory went on to be used by the council and by the Columbia University-University of Nairobi collaboration whenever input from the community was needed for projects and other activities in Ruiru.

[18] This was part of the broader governance reforms being promoted by the central government. The Monitoring and Evaluation Directorate was initially launched as a department in the Ministry of Planning and National Development in 2004 was later upgraded to a Directorate in 2006. The Directorate was established in order to track performance of government projects as part of the larger Economic Recovery Strategy (ERS) and Millennium Development Goals (MDGs) for Kenya See: http://www.monitoring.go.ke

the municipal council. Then, the research team categorized similar expectations and attempted to identify the nature and avenue of interaction between the municipal council and the residents with regards to these specific expectations. A key question that the research team tried to answer was whether there is any avenue of information sharing and communication between the council and the residents and if so, how efficient and effective is it, and what challenges do citizens encounter using it?

Broadly, resident concerns were largely related to the different services that the council is providing within the municipality. The residents appeared well-informed about what kind of services the council should provide, or what other third parties the council can involve to ensure that services are provided. Through the discussions, key issues on improvement of governance, accountability and council transparency emerged. These issues are roughly categorized below:

1. **Time Accountability**: It became clear that the municipal council staff and representatives spend a great deal of time outside the municipality attending workshops and conferences. The citizens do not see any direct benefits of having municipal council officials attend these functions that keep them absent from the municipality often for long periods of time. The residents felt that they should be able to see the lessons learnt and tangible outcomes from the different experiences that council staff receives in these numerous workshops and conferences. As we mentioned earlier, some of these issues tie into inappropriate monetary incentives to attend workshops, since councilors receive allowances for attending these events.

2. **Transparency and Accountability in Project Implementation and Financing:** Residents appreciate the numerous projects that the council is implementing within the municipality. However, the residents noted that the council faces little accountability in carrying out these projects, and they are often not implemented to the required standards. Residents expressed concern over transparency and accountability of resources allocated to the projects. In addition, there are no channels for the residents to actually evaluate independently whether the projects implemented are completed based on any required standards. This speaks to the need to make LASDAP processes more transparent and open to the public.

3. **The Role of the Monitoring and Evaluation (M&E) Team:** The M&E team is made up of residents elected on yearly terms by fellow residents. Each ward has two representatives with their primary mandate being to monitor and evaluate the council-implemented projects and make necessary recommendations to the council and ensure accountability. In a discussion with the M&E team, it became clear that this team cannot be effective because they draw salaries from the council and therefore are not free to openly criticize the council when they see problems. Further, there is little continuity from year to year within the team, as members are elected to one-year terms. Paired with political influence over the M&E team, these flaws in how the M&E team is structured means they are unable to effectively carry out their mandate. This was an area that needed reform.

4. **Political Interference in Service Delivery:** Ruiru residents expressed concern over the mandates of the various staff members working within Ruiru Municipal Council and reinforced many of the concerns found in policy research around Kenya's local authorities. Specifically, residents felt that the line separating the administrative arm of the council from the political arm of the council is often blurred. According to the residents of Ruiru, the politics of the council

have often interfered in the council administration's ability to deliver services. The political arm of the council is the elected representative of the residents, and these councilors have significant influence on the delivery of different services within the council and often interfere in service delivery for personal gain. Residents also noted that often, when they visit the council to raise an issue concerning service delivery, in most cases, before any information or help is offered, the first question is "who is your ward representative"? Residents also have to visit the council since the council telephone number does not work.

5. **Effective, efficient and transparent communication between the council and residents**: Ruiru Residents expressed the need for creating proper communication channels between the council and the residents. In most cases, current communication is on a need to know basis. Few forums for resident participation exist and where they do exist, confidence in their effectiveness and their ability to influence council decisions is low. There are no well-defined channels where residents can participate in putting forward their ideas. Consequently, resident participation in the affairs of the council is meager. Residents speculate that both civic and administrative arms of the council usually have their minds made up on issues and resident participation is just for purposes of showing that the public was involved. In reality, residents were involved to "rubberstamp" decisions already made. Residents felt that the council should start by making its offices open and friendly by introducing concepts such open door policy and making discussion at open forums more transparent and friendly. Residents also suggested creating a friendly inquiry desk within the council that can be reached over the phone during working hours and one that can provide information on different subjects. Another issue of concern is availability of council staff in the office.

The focus group meetings with citizens revealed the following key expectations citizens have of the municipal council:

- Increase citizen participation in shaping the future of the municipality through development of an open door policy and improving public participation forums;

- Improve service delivery within the council and openly share information on the state of the services that the council is providing;

- Establish clear channels of communication where residents can share information with the council;

- Reduce political interference in operations of the council and in service delivery (i.e. in markets improvement and infrastructure improvement within the municipality);

- Enhance and actively catalyze public-private partnerships within the municipality and take advantage of the numerous industries in Ruiru that are ready to support the council in service delivery;

- Support resident associations, especially with regards to their capacity to manage their neighborhoods and effectively control development.

We also targeted the business community including industries, wholesale businesses, retail business, agricultural farms, consultancy firms and institutions. We conducted a survey of 97 businesses (separate from the Focus Group Discussions) on their interest in ICT, service delivery

from the council and willingness to advertise on the Municipal website. They were sampled from the six wards within the municipality with a bigger number provided for major economic nodes, which are Biashara Ward, Githurai, and Kahawa Sukari Ward.[19] The team also conducted some face-to-face interviews to engage in personal discussions on different components of the council's service delivery. Overall, business concerns about service delivery and communication mirrored the concerns of the other focus group discussions. However, what came out was that businesses were more likely to use the Internet than residents associations or community groups, and they were indeed very interested in advertising on the site.

Additionally, from discussion with citizen groups and the business community, it also became apparent that the council was collecting a lot of revenues. Most of the participants felt that direct handling of cash by the council allows for corruption. It also came out that the citizens and especially the business community would be glad to have a more efficient system for making payments to the council and knowing when payment for the different charges are due. The use of mobile systems in making payments and transactions came out as the most popular idea for applying better technology to this problem. Most participants felt that the use of mobile platforms in making their payment will save time and the notification on the due date will reduce conflicts between enforcement officers and the citizens. This will help build better relationships between the council and its citizens.

Overall, the discussion around "communication" and ICT provided a seemingly neutral basis for discussing a wide range of key governance issues that were at play in Ruiru and required changing. While it clearly revealed the need for broader institutional reforms in local government, it helped provoke more thinking on our part on how to craft strategies to mesh the website project with steps toward demanded governance reform. It also confirmed that citizens, as one important part of this reform process, wanted better access to critical information and helped us pinpoint more precisely what information they wanted more accessible. The website itself was largely perceived as one helpful way to improve access to information, but concerns did exist around the capacity of the council to manage it. It also became clear - unsurprisingly - that businesses that are already using Internet were most enthusiastic about the possibilities. At the same time, citizens thought augmenting other modes of communication, such as access to the council via the telephone and face-to-face meetings could be more effective in improving governance.

Working with the ICT officer, IPasha incorporated as much of the citizen feedback as possible in re-working the Ruiru Municipal Council website before handing the website over to the municipality. The council would need to approve these changes and manage the website and the process of updating and responding to citizens moving forward. The Columbia University-IPasha team thus held a meeting with the staff including the Town Clerk to present the key findings in the most diplomatic way possible focusing on what information citizens are asking for on the site: key bylaws, bursary forms, property rate forms, self-help group forms, and tender notices.

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[19] From every ward, a total of 16 businesses were surveyed from the eight main categories as obtained from the LAIFOMS records within the council. From the eight categories, four business establishments from the general trade category, two from informal sector, one from transport, two from professional institutions and technical services, one from the agricultural establishments/farms, two from manufacturing industries, two from health institutions and two from catering and accommodation sector were randomly selected and interviewed.

Armed with real data from citizens and businesses that also translated into some simple ways to respond to citizen demands for basic information, we received agreement and cooperation to upload the key information requested by participants in the focus group discussions. This also allowed us to discuss why improvements in communication were necessary. In addition, we simplified the structure of the website while keeping within Ministry of Local Government guidelines which were beginning to mandate that more information be made available online, thus helping put pressure from above for change.[20] Also, given the ubiquity of cell-phones and the relatively low data costs on phones in Kenya, we adjusted the format so that the site could be more easily viewed using basic mobile phones, which is how a large and increasing number of residents in Ruiru connect to the Internet.

A number of other positive outcomes emerged out of this process. IPasha and Safaricom, one of Kenya's largest telecommunications firms, worked with the council to start an online billing system that is now functioning. Ruiru Municipal Council's engagement with ICT and increasing capacity, no doubt made it more receptive to partnering with technology firms to institute a system that will increase their revenues while making citizens and businesses more satisfied by saving them time, money and the often unpleasant interactions with revenue collectors. It also improves security, eliminating the need for council officers to have large sums of money on them, while cutting out some petty corruption. This was a win-win scenario that made Ruiru a pioneer in this use of technology.

The staff of the council also benefited another way from this engagement since they improved significantly on their performance contracts, which in turn are linked to promotions. The staff were able to point to forms available online and the billing system as a move towards "automation". This helped the municipal council of Ruiru jump overall in its performance according to a recent central government audit [16]. The municipality was ranked 50th out of all 175 local authorities for its performance in the last fiscal year (2009/2010). Among the forty-four municipalities Ruiru placed 15th for having "good" results on their performance evaluations. This is an enormous jump from their ranking of 145th out of 175 in fiscal year 2008/2009 and while many factors played into this improvement, our work played into some of it.

In fall 2011, IPasha officially handed over management of the municipal council website to the council's ICT officer. The council, namely the ICT officer, now has the password for the website and is responsible for content development, updating the website, and making decisions about what is posted. It is not clear if other administrative staff in the council will eventually be trained to manage and develop content for the website, but the Town Clerk is aware that oversight of the website should be a collaborative effort by the entire council. IPasha continues to stay in close contact with the ICT officer and is dedicated to assisting with the website and holding ICT trainings and working sessions for councilors and administrators going forward.

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[20] The Directorate of E-Government has mandated content requirements for all municipal council websites including: 1) role and functions (mission, vision, mandate); 2) major projects and schemes; 3) public services; 4) publications, e.g., annual reports and strategy documents; 5) government tenders; 6) messages/speeches from the Minister Public Secretary; 7) Contact addresses/Telephone numbers, email addresses of senior officers; 8) a feedback/comment page; and 9) frequently asked questions

Many serious governance problems remain, and it is clear that in the negotiations over the website and ICT capacity building efforts, the council maneuvered on its part to benefit. In return, however, there was a need to cede on a number of issues, including on access to information on the web. Since the council, through its ICT officer, has ultimate control over the site, it can still reverse some of these gains, although so far it has not and continues to add some new information. This speaks to the need for long-term engagement and evaluation to see how lasting some of the changes will be and whether new information will be provided and if there are broader impacts on council-citizen relations emerging out of the whole process.

Concluding Reflections

We were aware at the beginning of this work that the Internet alone cannot create a successful e-government system [2,14,29]. Rather, we started with the assumption that the use of e-government systems would involve a political negotiation about "new patterns of decision-making, power sharing, and coordination" [2, pg. 94]. Fountain aptly describes that adaptation to using the Internet for governance as effectively re-arranging the "bricks and mortar of government" [14, p.6]. However, what we have shown in this case study is that to have impacts requires much more than who wins in the infighting over the introduction to a technology, although that too plays into how broader negotiations take place. Instead, change appears to emerge out of ongoing struggles over what the technology will be used for and who will use it and for what purposes. Hence, for the Internet technology to rearrange the bricks and mortar of government and have a positive impact on governance requires a strategic, flexible and longer-term process of engagement than most e-governance projects allow. Introducing and designing the technology was just the beginning. Further, in contrast to many existing case studies on e-governance in developing countries [18], our work in Ruiru gave a primary role to local actors, namely the University of Nairobi and IPasha and in fact, helped change dynamics in the council by bringing them - and citizen and business voices - in.

We know from studies in the history of technology and science that new technology has large, often unintended impacts on society. How any technology actually functions and makes impacts on a society depends on the cultural, legal, social and political practices in that society [41]. This is as true for the Internet as it is for other technologies [7,45,53]. It is clear that a website and related e-government initiatives are not panaceas for the serious governance problems facing Ruiru and other local governments in Kenya. Efforts like our website project cannot substitute for wider reform initiatives but need to reinforce and complement them. By embedding our work in and leveraging broader democratization processes and by including such techniques as focus group discussions in line with participatory design, we were able to both use technological change to support democratization and pressures for improved governance. What this case study shows is that if you explicitly develop e-government projects within a process of reform and strategize to both leverage and enhance ongoing democratization and governance reform processes, such projects can indeed play a constructive role in change. Thus, the introduction of a new technology is not the defining moment but just the beginning of a longer process of potential change that depends centrally on - but is not determined by - broader shifts in power and policy.

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