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RESEARCH ARTICLE

The Evolution of the Internet in Ethiopia and Rwanda: Towards a "Developmental" Model?

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The Internet in Africa has become an increasingly contested space, where competing ideas of development and society battle for hegemony. By comparing the evolution of the Internet in Ethiopia and Rwanda, we question whether policies and projects emerging from two of Africa's fastest growing, but also most tightly controlled countries, can be understood as part of a relatively cohesive model of the 'developmental' Internet, which challenges mainstream conceptions. Our answer is a qualified yes. Ethiopia and Rwanda have shared an overarching strategy which places the state as the prime mover in the development of Internet policy and large-scale ICT projects. Rwanda, however, appears to have developed a more open model which can accommodate a greater variety of actors and opinions, and incorporate them within a relatively coherent vision that emanates from the centre. Ethiopia, in contrast, has developed a more closed model, where all powers rest firmly in the hands of a government that has refused (so far) to entertain and engage with alternative ideas of the Internet. In the case of Rwanda, we argue, this approach reflects broader strategies adopted by the government in the economic domain but appears to counter the prevailing political approach of the government, allowing for a greater degree of freedom on the Internet as compared to traditional media. While in the case of Ethiopia, the opposite is true; Ethiopia's Internet policies appear to run counter to prevailing economic policies but fit tightly with the government's approach to politics and governance.

Ethiopia and Rwanda are often paired in debates about development and democratization in Africa. Both countries emerged from violent civil wars led by ideologically driven guerrilla groups; they have developed a love-hate relationship with donor countries, receiving substantial amounts of aid while advocating distinctive ideas of development that partially challenge mainstream policies; they have achieved sustained economic

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growth in the past decade and their ruling elites have succeeded at staying in power through multiple electoral contests, maintaining a relatively high level of legitimacy. Despite this rich basis for comparison, however, only a few studies have attempted to systematically analyse their developmental trajectories (Kelsall 2013; Serneels *et al* 2010).

In this article, through the analysis of key aspects of how the information societies have evolved in Ethiopia and Rwanda, we aim to contribute to this endeavour, seeing the Internet also as a lens through which the emergence of distinctive ideas of development and progress can be understood. Two specular questions drive our research: 1) How have the – increasingly vocal – aspirations to turn Ethiopia and Rwanda into developmental states influenced the evolution of the Internet in the two countries? 2) To what extent have Internet policy and state-driven Information and Communications Technology (ICT) projects contributed to this development?

The comparison between the evolution of the Internet in Ethiopia and Rwanda does not simply offer the opportunity to understand similarities and differences in the development projects of the two countries. It also highlights fundamental contradictions in the current development agenda. Western donors, the US and UK in particular, for example have increasingly emphasized security, stability, and service delivery – including the use of the Internet to achieve these goals – but they have been unable to adequately acknowledge and address how pursuing this agenda may pose a challenge to other key principles they support, namely promoting democratic change, human rights, and freedom of expression. We also examine whether new donors, including China and South Korea, are moving into gaps created by these contradictions, and to what ends. Also, we ask whether and how new ideas on the Internet travel through new agents. If China is shaping information societies in Ethiopia, does this make it easier for other countries, such as Rwanda, to adopt elements of the emerging Ethiopian model of the Internet rather than drawing inspiration directly from China? Given the greater success some African countries are enjoying, is it becoming easier for some to learn from one another rather than from more distant, old and new, donors? How does this practically play out?

Research frameworks and tools

To answer these questions we build upon our own work on the political economy of development in Rwanda (Booth & Golooba-Mutebi 2012) and on the relationship between communication technology and development in Ethiopia (Gagliardone 2014b), as well as on key studies that have interrogated the nature of developmental state projects (Evans 1995; Leftwich 1995; Mkandawire 2001). In particular, combining Adrian Leftwich's framework, which identifies six dimensions that have come to characterize developmental states – and which are further illustrated below – with the analysis of how large-scale technological projects contribute to processes of state and nation building (Hecht 1998; Hughes 1987), we examine to which extent the Internet has become instrumental in the realization of the political projects envisioned by leaders in both countries. The two approaches build on the assumption that both development and technological adoption in these countries need to be understood politically, rather than technocratically.

Developmental states

Leftwich, together with numerous other scholars who have analysed the emergence and consolidation of developmental states (see, for example, Booth 2009; Evans 1995; Kelsall 2013; Mkandawire 2001), has underlined how

> political factors have always shaped the thrust and pace of their developmental strategies through the structures of the state. [Developmental states] have concentrated sufficient power, autonomy and capacity at the centre to shape, pursue and encourage the achievement of explicit

> developmental objectives, whether by establishing and promoting the conditions and direction of economic growth, or by organising it directly, or a varying combination of both (Leftwich 1995: 401).

In particular, Leftwich identified six major components that have come to characterise the model of developmental states:

1. A determined developmental elite;
2. Relative autonomy;
3. A powerful, competent and insulated economic bureaucracy;
4. A weak and subordinated civil society;
5. The effective management of non-state economic interests; and
6. Repression, legitimacy and performance.

Through our research of how the Internet has evolved in Ethiopia and Rwanda, we have employed these components as guides to understand whether and to what extent the Internet has become part of the developmental project, and to compare how each country has performed along different dimensions. We have also adapted Leftwich's framework to the specific cases under scrutiny, combining his fourth and sixth categories to better account for the role technology can play both in promoting and containing alternative views of the state emerging from civil society and oppositional groups; and connecting it to similarly political readings of technological adoption and adaptation.

Technopolitics

The notion of technopolitics, originally developed by Gabrielle Hecht to study the evolution of nuclear technology in post-war France (Hecht 1998) and later applied to a broad variety of large-scale technology from biometrics (Donovan 2015) to ICTs (Gagliardone 2014a; Rydhagen & Trojer 2003), can be particularly important to understand the relationship between information technologies and development because it shifts attention from individual inventions to the system of relations in which technology is immersed. As we explained elsewhere (Gagliardone 2014a: 6), the concept of technopolitics

> allows one to take into greater account the ways that political ideologies can influence technological shaping and reshaping and challenges the supposed neutrality of technical artefacts, opening to the possibility that a particular technology can become part of a national discourse, and its elements can be captured by the "thickness" of a specific political culture.

This conception accounts for how policy makers often perceive technology as an extension of their plans and ambitions, rather than as a neutral tool that responds to functional imperatives. It places greater emphasis on governments' roles in shaping technology. Studies in information systems have challenged the liberal pluralist notion that a government is merely one 'actant' among many. These studies have advanced the idea that governments have the interest and ability to use policies and technologies to challenge other dominant groups (Brown 2001; Wynne 1996). This emphasis is particularly important in developing countries where the state, while not always able to perform its stated functions in terms of the delivery of public services and goods, still does tend to occupy a position of prominence among other actors involved in policy making and implementation in the ICT sector (Gagliardone 2014a).

Considering these dimensions in the process of technological adoption and adaptation means not only focusing on what technology does and the effects it produces or may produce in a specific context, but also investigating how technology is perceived

and how different actors succeed or fail in turning their conceptualisations into concrete assemblages. This requires mapping those discursive and material elements that are intervening in the process of technological adoption, linking them and understanding how a specific distribution of power, both as exercised through artefacts and as held by social actors, makes certain applications possible while marginalising alternative uses.

Methods

Using this conceptual framework in both countries, data have been collected at three levels, focusing on the key actors, discourses and large-scale projects. At the discursive level, semi-structured interviews were conducted with national and international actors. In Ethiopia, interviews took place with officials in Ministries of Communication and Information Technologies, media lawyers and Internet activists. Interviews were also carried out with individuals working for foreign organizations that have been particularly involved in the shaping of the local information societies. They included USAID, German Development Cooperation, the Chinese Embassy and Chinese companies (Huawei/ZTE). A similar strategy was followed for Rwanda, interviewing first officials in the Ministry of Youth and ICT and then USAID, DFID, the South Korean Embassy, South Korean companies and Chinese companies. At the legal level, policies related to Internet development and regulation were analysed, focusing in particular on external influences in shaping these particular policies. The combined analyses at the discursive and legal levels facilitated understanding of how different influences played out at different times and how different narratives were used to justify specific decisions, laws and policies. For example, the government of Ethiopia has been skilful in 'hijacking' the global anti-terrorism narrative and agenda and using it to justify measures to contain internal dissent. The anti-terrorism proclamation that entered into force in 2009, and whose provisions have been extended to the online sphere through the Telecom Fraud Proclamation in 2012, has been used more often to justify measures against Ethiopian journalists and bloggers than against foreign terrorists. While Rwanda could have employed similar measures rationalized by the media's role in the genocide in 1994, it has so far done so only to a limited extent despite indications that the Internet and social media platforms are increasingly becoming avenues of choice for communication among exiled armed and unarmed opponents and their agents inside the country.[1] Finally, at the technical level the focus was twofold: first on restrictive and reactive measures (how are they implemented, through technology offered by which countries/companies); second on pro-active measures (e.g. realization of large e-government projects, improvement of service delivery through the use of ICTs). The project developed a typology of state-sponsored projects or projects developed by actors other than the state but still within the context of the vision highlighted by the respective governments to understand how the state prioritises certain projects over others and why.

We are aware that our analysis privileges top-down initiatives and powerful actors rather than reading Internet evolution through the eyes of the end-users. In this respect, this study does little to counterbalance the prevalent tendency to focus on how ICT projects emanate from the centre rather than understanding how they are actually appropriated by end-users in the Global South. At the same time, it has to be reckoned that even studies that have adopted a more user-focused approach to the study of ICTs in Ethiopia and Rwanda (Mann & Nzayisenga 2015) have revealed how the state in these countries features in most considerations about uses of technology and in the shape of communication, due to the pervasive role it has played in shaping not just the politics but also the bio-politics of everyday life (Purdeková 2011).

Findings and Structured Comparison

This section illustrates the main findings that emerged from our structured comparison of the evolution of the Internet in Ethiopia and Rwanda, along the lines of the categorisation elaborated by Leftwich (1995) to analyse the emergence of developmental states in Africa and Asia. They highlight some critical junctures, explaining why things went the way they did, and focus on some large-scale projects, some remarkably similar, that exemplify the approach towards the Internet in Ethiopia and Rwanda.

1. The Developmental Elite

Ethiopia and Rwanda have been increasingly portrayed as significant contemporary examples of African states ruled by elites who have been able to combine centralised authority, long-horizon planning and neopatrimonial and clientelist practices in ways that facilitate long-term investment and the use of rents for growth-generating activities (Booth & Golooba-Mutebi 2012; Vaughan & Gebremichael 2011). It can be argued that the power accumulated by the state has been 'invested' in projects that could buy legitimacy and a longer time-horizon for the ruling elite to implement its political ambitions. Over time, Internet-based projects – for example e-government platforms enhancing the accountability of local leaders – have begun to play an increasingly important role in this scheme. As has been the case in other developmental states, especially Malaysia and South Korea (Avgerou 2003), the decision of investing in ICTs as symbol of progress and a source of legitimacy within a context where political competition is limited came from the very top. As the late Prime Minister of Ethiopia Meles Zenawi remarked,

> Not long ago, many of us felt that we were too poor to afford to invest seriously in ICT. We assumed that ICT was a luxury that only the rich could afford [...] We did not believe that serious investment in ICT had anything to do with facing the challenges of poverty that kills. Now I think we know better. Now we believe we are too poor not to save everything we can and invest as much of it as possible on ICT. We recognize that while ICT may be a luxury for the rich, for us – the poor countries – it is a vital and essential tool for fighting poverty.[2]

Similarly, Rwanda's President Paul Kagame asserted that, 'In Africa, we have missed both the agricultural and industrial revolutions and in Rwanda we are determined to take full advantage of the digital revolution. This revolution is summed up by the fact that it no longer is of utmost importance where you are but rather what you can do' (Government of Rwanda, 2010). The commitment shown towards making use of the Internet, and ICTs in general, to support the developmental project, has taken, however, significantly different forms in Ethiopia and Rwanda. The intimacy and linkage of bureaucratic and political components of developmental states described by Leftwich as characteristic of developmental states, for example, have been significantly more marked in Rwanda than in Ethiopia. In Rwanda technocrats have been given more room to decide how to realise the visions articulated by the top leadership and have been entrusted the power to implement projects without continuously seeking political approval. In Ethiopia, instead, politics has largely prevailed over technical expertise. In the case of some of the large-scale projects described below, ICTs have been embraced as a tool that could ensure policies developed by the top leadership could be streamlined down to the lowest levels of the administration, minimising room for interpretation and localisation.

Ethiopia

After it seized power in 1991, the Ethiopian People's Revolutionary Democratic Front (EPRDF) went on to develop a series of bold strategies to transform a military victory into

a legitimate mandate to rule over a vast and diverse country. After a period of initial indifference and resistance, the Internet, together with other ICTs, became an important building block of the government's complex strategy. A turning point in the Ethiopian government's determination to use the Internet as part of its state and nation building strategies can be traced to 2001, when Prime Minister Meles Zenawi emerged victorious from the split within his party that followed the two-year long war with Eritrea. The measures that were taken in the aftermath of this political battle included ambitious projects to reinforce the state. The institutional connections between the centre and the peripheries were strengthened and the state was reformed to function as a more active player in social and economic renewal. The Internet came to play a central role in this strategy of transformation and capacity building (Gagliardone 2009).

This was the period when some of the most ambitious projects in the history of e-government in Africa started to take shape, as an instantiation of the core principles that guided state renewal. Known as Woredanet and Schoolnet, these projects constituted an unprecedented endeavour for an African government to sustain a process of state and nation building through ICTs. Woredanet in particular offered a powerful example of how investments in technology could be motivated by the need to signal to the population the commitment of the central state to improve service delivery and improve the responsiveness of its bureaucracy. Woredanet stands for 'network of district (woreda) administrations' and employs the same protocol that the Internet is based upon, but rather than allowing individuals to independently seek information and express their opinion, it enables ministers and cadres in Addis Ababa to videoconference with the regional and district offices and instruct them on what they should be doing and how. Schoolnet uses a similar architecture to broadcast pre-recorded classes on a variety of subjects, from mathematics to civics, to all secondary schools in the country while also offering political education to school teachers and other government officials (Gagliardone 2014a).

In its first rollout, Woredanet was intended to link the central government with the eleven regional and 550 district administrations so that through a 42-inch plasma TV screen installed in the Bureau of Capacity Building at the regional and woreda level, local officials could receive training and instructions from the Prime Minister himself, as well as from other ministers, high level civil servants and trainers in the capital. In the case of Schoolnet, 16,686 plasma TV screens were initially deployed to allow 775 secondary schools in the country to receive broadcasted lessons, from mathematics to civic education. In the most remote areas of Ethiopia, which were without electricity and were not served by the main roads, petrol generators were installed and the military was employed to airlift in some of the equipment.

At a practical level, Woredanet was intended to build the capacity of the peripheral nodes of the state by training and instructing individuals, some of whom had little formal education, to enable them to provide better services. This was to benefit the whole community but at the same time it symbolised the commitment of the government to the rural population. Conveying a unified message was intended to bond the entire country around similar principles, despite its diversity. Through Woredanet, the EPRDF leaders at the centre could reach the grassroots in a mediated way, by turning the members of the state apparatus in the peripheries into messengers of ideas and policies formulated in the capital.

Over time, the infrastructure created by Woredanet also began to serve as an incentive for developing other projects that could rely on the existing infrastructure. TeleCourt, for example, built on Woredanet to allow trials to take place between remote areas

and regional and federal courts. This new mode of dispensing justice at a distance has allowed the state to reduce costs and the time citizens had to wait to obtain a verdict. The response from those who have used the system seems to have been largely positive (Beyene *et al* 2015).

Overall these systems offer an example of the commitment of the central government in proactively using ICTs and not simply resisting uses that could challenge the EPRDF political project. At the same time, differently from the case of Rwanda, these projects developed entirely within the remit of the government, which refused to develop partnership with other actors, even with loyal figures in the bureaucracy and the private sector, to realise its plans. Rather than creating a system of incentives for political and bureaucratic elites to work together for the realisation of a shared ideal, the EPRDF-led government actually used technology to reinforce the dependency of the bureaucracy from political power, offering greater opportunities for bureaucrats to receive trainings and be updated on the most recent policies, but also reducing the freedom to interpret and localise decisions taken at the centre.

Rwanda: From the 'Digital President' to the Ambition of a Service-Based Economy

Rwanda's ambitions for developing the Internet have been driven and facilitated to a great extent by commitment at the highest levels of the state. President Kagame, described by some as 'the digital president' (Basaninyenzi 2014) was, according to an ICT specialist formerly working with the government, 'already talking about the importance of the Internet even as we were still clearing up bodies from the street' after the genocide. President Kagame was not only pivotal in envisioning the importance and role of ICTs in Rwanda's future development; he has been unrelenting in his efforts to pursue the vision and to convince sceptics within his own government that it is achievable even without support from traditional donors.[3] While President Kagame has a reputation as a 'visionary', there have also been many questions about the source of his inspiration and conviction in the field of technology.[4] Nonetheless, Rwanda's cadre of young ICT professionals seem to drive inspiration from him:

> It became a priority because he believed that it was. He played an important role in always bringing clarity. But he let us young people do what had to be done. He was the driver in cabinet amidst scepticism and lack of resources. His steadfast commitment made all the difference. He believes in the power of technology to help Rwanda advance. Without him Rwanda would not be where it is. He made sure things happened. Where there were blockages, he intervened to remove them. We drew strength from knowing that his support was total. He was the fuel that kept us going.[5]

Kagame's inspirational effect on the government's technocrats did have spin-off effects, as they in turn worked to recruit Diaspora Rwandan ICT professionals into the government: 'I can't pay you what they can pay you. But I will give you something bigger: the opportunity to shape the future of your country.'[6] These were the words of a young professional heading a government department to a Diaspora Rwandan working for a large American enterprise. It was enough to convince the would-be returnee to leave their job in the US and move to Rwanda. More than a decade down the road, the returnee reflected on their situation since moving to Rwanda: 'I wouldn't trade being in Rwanda right now, being part of this transformation, for any job... The good thing is that in this country the leadership will do everything that needs to happen. If things get tough, we know where we have to go.'[7]

The commitment of Rwanda's elite comprising politicians, technocrats and technological innovators to promoting technology in general and to using ICTs in their state building efforts has been central to the progress Rwanda has made over the last 20 years. These state actions have sometimes served as ends in themselves or as means to ends such as improving service delivery or strengthening their own legitimacy to govern.

Nonetheless, even with the progress made so far, Rwanda's efforts face stark challenges. For one thing, popularising the Internet and persuading 95 per cent of Rwandans to use it, one of the key ambitions entailed in the promotion of 4G technology, must reckon with the reality that digital literacy remains abysmally low, at only five per cent of the population. Also, despite the government's massive efforts to expand access, Internet penetration remains at only 22 per cent. This is largely the outcome of still-limited access to hardware. Telephone penetration remains at only 67 per cent and handheld devices such as smart phones are well beyond the capacity of most Rwandans to purchase. Over 40 per cent of the population live below the poverty line.

Despite the relatively low numbers charting Rwanda's information society, the Rwandan political leadership seems to have created a solid structure, through alliances between political and bureaucratic power, on which to build the next phases of the country's information revolution. Progress in the ICT sectors is taking place within a shared framework where different actors have been given the opportunity to play complementary roles. As the next sections illustrate, however, this has come at the cost of reducing opportunities for bringing innovation from outside of this framework, possibly limiting the likelihood of more radical innovations.

2. Relative Autonomy of the Developmental State

In Ethiopia, and to an even larger degree in Rwanda, the 'independence [of the state] from the demanding clamour of special interests (whether class, regional or sectoral) and [the ability to] override these interests in the putative national interest' (Leftwich 1995: 408) has been guaranteed by the overwhelming military victory over national and regional opponents. In 1994, the Rwandan Patriotic Front (RPF) led by Kagame established itself as the only legitimate force among the desolation that characterised almost all other actors that had been either implicated in or unable to respond to the genocide. In Ethiopia, the EPRDF could rely on the strength it had accumulated during almost two decades of civil war over the many other movements that similarly tried to oppose the military dictatorship of Mengitsu Halelmariam, but in dramatically less successful ways. In both countries, political leaders made use of their position to initiate a series of reforms from the centre, without having to compromise too much with other political and social forces. However, the degree to which some of these policies and strategies later translated to the ICT sector varied significantly.

In Rwanda, the government extended strategies that had been used in other sectors, mixing a direct intervention in shaping projects that were seen as instrumental in the process of state and nation building with the entrusting to private actors and civil society organisations that it had brought into that process with other tasks. Cases in point are the relationship with Korea Telecom, which has been engaged in a credible public-private partnership for the completion of the optic fibre network, and the entrusting of rural call centres to civil society. In the case of Ethiopia, on the contrary, the EPRDF seems to have been unable to extend some key principles that have guided its actions in the economic domain to the shaping of Internet policies and projects. The government has placed considerable stress on the need to centralise state rents so that a committed leadership interested in promoting development in the long term, rather than obtaining private advantages in the short term, could use

them. This measure has been justified by the need to prevent rent seekers from competing for positions that would allow them to thrive but in ways that would exploit existing resources rather than produce new value. Yet similar steps have not been taken to extend the logic of this argument into the ICT field. The 'embedded autonomy' ensuring the state does not have to respond to private interests, but that at the same time is part of a broader process of development benefiting other economic actors, described by Evans (1989), has actually resulted in isolation. The state has commissioned its largest ICT projects to (largely foreign) private companies, trying to ensure it could exercise a tight control over them, rather than sharing the risks and profits with a growing entrepreneurial class.

Ethiopia: State as Monopolist, Circumscribing the Space for Action

The strategy elaborated by the EPRDF-led government to shape the Internet in Ethiopia has been fairly distinctive in Africa. While most countries on the continent slowly overcame their scepticism towards liberalising Internet provision, only to later introduce regulatory or technical mechanisms to contain the tensions these measures introduced, the Ethiopian government decided from the very beginning to sacrifice access for control and security.[8] In the 1990s, when the first initiatives to promote Internet access in Africa began to take shape, in Ethiopia, as elsewhere on the continent, there were great expectations regarding the Internet's potential. Eventually, however, it was the government's concerns that prevailed in defining the initial and future steps that the Internet would take in the country.

The initiative launched to structure Ethiopia's first moves in the Internet era, aptly called BITE – Bringing Internet to Ethiopia – is a vivid example of this approach. Initiated in 1995 by Dawit Yohannes, the speaker of the House of People's Representatives, BITE was aimed at producing concrete recommendations on how policy makers could handle the Internet effectively. The debate initially benefited from the active participation of representatives from NGOs and professional bodies, who were trying to strike a balance between the hype coming from the West and the initial scepticism and conservatism shown by the EPRDF. As Dawit Bekele, one of the most active advocates for an open and inclusive use of ICTs, described his own involvement in BITE:

> At the time nobody knew about the Internet. From Ethiopia we did not even have access to the Internet, so we could not have access to relevant information for the BITE commission. But we made a series of recommendations anyways. […] We had realized that the government would have not accepted a privately owned Internet provider, so we proposed to have a flexible system under ETC.[9]

ETC, the system Dawit refers to, was a public network service provider, a 'not-for-profit service organisation with the main objective of serving the public and developing services' (Furzey 1995), independent from any actor in particular and accessible to all. The Ethiopian government rejected the idea and decided instead to place service provision under its direct control.[10] This was only the first of a series of frustrations the private sector and the civil society faced in its attempt to import tools, regulatory norms and best practices emerging at the international level. The efforts made by actors other than the government to develop a more dynamic information environment were strongly opposed. This reaction was motivated by the need to slow down the pace of transformation in order to exert more control over it and by the desire to occupy the new political space that was created by the Internet in ways that would primarily benefit the government and its national project.

Despite repeated efforts, none of the activities promoted by individuals and groups

outside the government had real influence in shaping the development of the Internet in Ethiopia, leaving many at the margins and forcing others to be co-opted into the government's ranks. These failures, especially when combined with the expectations that the discourses about the transformative power of the Internet had created, left many with a strong sense of disillusionment. This feeling is captured by Dawit who, after his initial experience with BITE, initiated many other ICT projects in the country, which left him profoundly pessimistic about the possibility of creating an inclusive information society in Ethiopia.

> We understood that the government works alone. Everybody tried to work with the government, NGOs, academia, etc. But they have not been effective. The UNECA [United Nations Economic Commission for Africa] was instrumental in activating the civil society but was not enough.[11]

Private initiatives have only been allowed in areas that could produce an incremental and predictable increase in productivity and in sectors that were considered safe by the government. Following the approach pursued by different political elites in the past, newer ICTs were adopted and supported when they emerged as simple enhancers of tasks already defined at the centre, when they could act as sustaining, rather than disruptive, innovations (Wu 2010). While the number of private companies operating in sectors such as sales and maintenance or in software development sharply increased over the years, no private firms were allowed to operate in the telecommunications sector (Adam 2007; EICTDA 2005; EICTDA 2009). Numerous international organisations exercised pressure over the years on the Ethiopian government to initiate the liberalisation of the Internet provisions, but with no success. The World Bank, as part of its ICT Assisted Development (ICTAD) programme, even reached an agreement for the licensing of private Internet Service Providers (ISPs), but this proved to be only a mirage and none of the licensed companies ever started operations.[12]

Differently from the case of Rwanda, international companies in Ethiopia were not called in to share a vision of how the Internet should develop in the country and have a stake in its evolution, but rather to simply execute plans elaborated by the center of power.

Rwanda: State as the Prime Mover, Encouraging Bold Moves

The state in Rwanda is at the centre of shaping policies and implementing projects of national relevance and scale. This is captured by the term 'developmental patrimonialism', a reference to business-politics relations whereby despite blending impersonal/bureaucratic and personal/clientelistic features, the ruling elite manages economic rents in a centralized way 'with a view to enhancing their own and others' incomes in the long run rather than maximizing them in the short run' (Booth & Golooba-Mutebi 2014: 8).

In the information section, there have been two key drivers of this. One is the limited size of the country's private sector and the related lack of experience, expertise and resources, unlike in countries such as Kenya where the much larger private sector has been the leading actor. Related to this is the small size of the Rwandan market for Internet services, itself linked to high levels of poverty[13] which limit Internet access to a small percentage of people who can afford to pay not only for the services but also for the necessary hardware. This second factor accounts for the reluctance by the large telecom companies already established in the country to put up the necessary investment. Given the small market and the scale of the government's ambitions to expand access as quickly as possible, the required investments did not make commercial sense. Consequently, the

government had to step in and find the necessary capital to invest in critical infrastructure, in this case the fibre optic cable, with a view to connecting all parts of the country, starting with government institutions.

Also, the centrality of the state is in many ways derived from the early realisation by the RPF, the party that took over the country after the genocide against the Tutsi in 1994, that to prosper the landlocked and natural-resource-poor country had to develop a knowledge-based service economy. During the war, the RPF leadership held several meetings to discuss the country's economic prospects and the limitations imposed by structural factors. The broad outlines of the thinking and the drivers behind it are evident in the following statement by President Kagame:

> For a landlocked country you want first of all to address the infrastructure problems, which is logistics, transport, communication and so on and so forth... But you also want to get involved in high value products and in services because these are not directly affected by the position we're in of being landlocked, or they are not as affected as much. So some of the things are just dictated by the nature of our economy, of our country (As quoted in Collins 2013).

After the war, given the devastation wrought by the violence and the heavy human toll that wiped out or forced to flee a large section of the country's business and other elites, relying on the private sector to kick-start and drive the economy was a luxury that the new government, keen to establish its authority and legitimacy, could not afford. The imperative to re-equip looted government offices and restore communications services presented it with a huge challenge but also the opportunity to introduce new technology, including replacing looted analogue equipment with its digital variant. It was the pursuit of new technology that, among other things, led to the establishment in the country of the very first international telecoms company, MTN of South Africa (Booth & Golooba-Mutebi 2012).

Luring MTN to Rwanda was no easy task. The company was approached after efforts to attract other international telecoms such as Vodacom and a smaller regional player based in former Zaire, now the Democratic Republic of Congo, Telecel, had failed. The majority of the initial capital MTN used came from Rwandan sources, including the government and the ruling RPF party. MTN therefore came in as a minority investor, bringing in mainly new technology, while the Rwandans bore the bulk of the risk of investing. As the majority shareholder, MTN reckoned that with the country's small market, it would take years before it would turn a profit. The prediction was proved wrong only two years after it set up shop, with early success propelling it to venture into neighbouring Uganda as well. The Rwandan government's pioneering role remains significant and is currently evident via the Rwanda Development Board (RDB), the state's investment sourcing and facilitation arm. More recently the RDB has been at the forefront of negotiations with and incentivising ICT companies to invest in Rwanda. Key recent investors include Korea Telecom and Positivo BGH, a Latin American manufacturer of laptops, computers, tablets and other electronic gadgets which has already set up a production plant in the country and is expected to be the main supplier of ICT equipment to the Ministry of Education and the government in general, and of laptops for the One Laptop per Child programme as it grows and expands access to the Internet by children in primary schools across the entire country (Collins 2014).

3. The Economic Bureaucracy: Power, Competence, Insulation and Penetration

A third element Leftwich identified as characteristic of developmental states is the creation of specific institutions whose task

it is to organise the critical interactions between state and economy. 'What differentiates these economic high commands in developmental states from the generality of planning institutions in so many developing countries appears to be their real power, authority, technical competence and insulation in shaping development policy' (Leftwich 1995: 412). As Leftwich continues, this has varied from state to state and this is another area where Ethiopia and Rwanda have diverged significantly. In Ethiopia, while new institutions were indeed created for the development of ICTs – the Ethiopia ICT Development Agency, which later transformed into the Ministry of Communications and Information Technology – these closely remained within the remit of state control. As we describe below, however, over time some level of experimentation did emerge and some new initiatives, such as the development of an ICT-based Commodity Exchange, began to offer new opportunities for the development of a stronger economic elite. In the case of Rwanda, the model of developmental patrimonialism led to the creation of stronger ties between state and economy that left greater room for manoeuvring to the business elite.

Ethiopia: Innovation from Above?

In Ethiopia, the aspiration to use ICTs to promote economic growth has been tainted by the reluctance to let the monopoly over telecommunications go, but it has not prevented the government from selectively investing in ambitious projects that could symbolise the government's commitment to innovate. Woredanet, Schoolnet and TeleCourt have already been examined. It is another large-scale project, however, that more clearly exemplifies how the Ethiopian government selectively emphasised some of the possibilities offered by the Internet, while marginalising others. Ethiopia was the first country in Africa to create a commodity exchange to trade a variety of products that constitute the core of Ethiopia's agricultural output, including maize, coffee, sesame and wheat. Launched in 2008, and framed as the brainchild of Ethiopian economist Eleni Gabre-Madhin, the Ethiopia Commodity Exchange (ECX) uses the Internet to connect a trading floor in Addis Ababa with grading centres, warehouses and display sites all around the country. Its mission is to 'connect all buyers and sellers in an efficient, reliable and transparent market by harnessing innovation and technology' (Ethiopia Commodity Exchange).

Already in the planning stages the team tasked by the Ethiopian government to realise the new project decided that an in-house suite of applications had to be developed to connect all nodes of the ECX and that a variety of means had to be used both to collect and disseminate information throughout the country (Gabre-Madhin 2012). Inventories are now updated in real time through electronic receipts sent from warehouses to Addis Ababa. Thanks to the coordination allowed by the electronic system between the clearinghouse and the banks partnering with the ECX, sellers can be paid on the day following the trade. Information is transmitted using a combination of technologies that can match the needs of the different actors involved in the trade. The ECX website hosts the most comprehensive set of data, while outdoor electronic ticker boards located in dozens of rural towns present essential information to local farmers and traders. Prices are also broadcast by radio and television. Mobile phones were later added to the mix. Instant messages are sent to subscribers and a toll-free phone service has been set up for those who prefer to call in. Unsurprisingly, given the low literacy level in Ethiopia, radio broadcasts appear as the most popular channel to get updated information (Tsega 2010) but subscribers to phone services have been rapidly rising in number.[14]

The ECX exemplifies the EPRDF's determination to embrace new technology when it can act as a modernising tool; a constructive, rather than disruptive force that can be

channelled to support centralised development processes.

Framed as an example of how technology can be leveraged to help the poor, the ECX fits squarely in the hyped conception of Information and Communication Technologies for Development (ICT4D) embodied by many initiatives launched in the US and Europe to use technology to fight poverty. It is perfectly adapted to the prevailing narrative, the dream of technology, removing middlemen and empowering farmers to directly reap the benefits of the most recent innovations. And while comprehensive evaluations of the ECX are missing, its numbers already chart a success story (Gabre-Madhin 2012).[15]

Most celebratory accounts, however, overlook how the ECX's success is not only the result of an effective application of ICTs to transform value chains, but was dependent on the emphasis the Ethiopian government has put behind the project as it fit within its overarching state-building project. Similar to Woredanet and Schoolnet, the ECX allowed expanding state control over areas that had previously been difficult to bring within the government remits. Especially in remote areas, trade in commodities used to be regulated by informal institutions, based on kin, reciprocity and status. As one of the few systematic studies on the impact of the ECX has shown (Meijerink, Bulte & Alemu 2014), the ECX has progressively substituted these informal governance mechanisms. This has had the advantage of allowing traders to operate beyond their traditional networks. However, it has also eroded social capital within networks, as individuals are less likely to invest in 'social relations' with their trading partners (Meijerink, Bulte & Alemu 2014). The ECX has centralised the power not only to trade a grain of coffee, but also the nodes and links of the complex networks that have grown around its production and sale, formalising relationships whose quality and worthiness have been previously determined in everyday informal interactions.

Rwanda: Enhancing Prosperity and Learning from your Neighbours

As already noted, the government of Rwanda has long been pre-occupied by the imperative to overcome the country's structural disadvantages related to being landlocked and without significant endowment in natural resources. Building a service-based economy has been identified as a viable route to prosperity and a decision has been made that its viability is highly dependent on the development of information and communications technology. This explains the emphasis on ICT as a priority and why its enabling role has been made visible across a range of domains, through ensuring that each sector could have its own a flagship initiative. This led, for example, to Rwanda embracing initiatives such as Negroponte's One Laptop per Child programme, which aims at providing tailor-made portable devices to students in elementary schools; or the creation of knowledge repositories such as Rwandapedia, a tailor-made Wiki which collects key information about the country, including informational that can help visitors and tourist navigate the country's attractions. Even a version of commodity exchange pioneered in Ethiopia was created in Rwanda, with the ambition of serving not just the Rwandan market, but also servicing other countries in East Africa.

4. Developmental States and Economic Interest

Similarly to other developmental states, the leaders in Ethiopia and Rwanda sought to ensure state power and autonomy were consolidated before national or foreign capital became influential. Leftwich uses the example of China, Taiwan and Korea to make this point clear.

> In their formative years, private economic interests were either

> suppressed (as in China), or were generally politically weak, if not insignificant, relative to state power. Where landed power existed, it was destroyed through direct political attack and programmes of land reform, classically in China, but also in Taiwan and Korea. Local bourgeois classes were insignificant and private foreign capital barely existed as an important economic or political factor at the time of the formation of the developmental states (Leftwich 1995: 417).

Only once state supremacy was ensured was private (national or foreign) capital allowed to enter into key sectors of the economy. Differently from countries such as China and South Korea, however, which were able to use foreign investments as a temporary measure to later build a strong national industry, Rwanda, and especially Ethiopia, relied more substantially on foreign investment and capacity, with limited ability of using foreign investment to progressively build local capacity. In the case of Ethiopia, this materialised in the form of concessionary loans provided by the Chinese government to realize ambitious ICT projects, implemented by Chinese companies themselves. This strategy ensured the Ethiopian government could have greater control on the direction of Internet development, but also meant high costs for the treasury and keeping a very weak private sector nationally. Rwanda, instead, sought to follow the Asian developmental model a bit more closely but the lack of skills within the country still tied the government to a position of dependence on foreign capital and expertise.

Ethiopia: China as the Supporter

On 8 November 2006, Chinese telecom giant ZTE and the Ethiopian Telecommunication Corporation signed the largest agreement in the history of telecommunications in Africa. Backed by China Development Bank, ZTE offered a loan of $US 1.5 billion (to which ZTE added $US 0.4 billion for engineering) to overhaul and expand Ethiopia's telecommunications system. The loan, to be repaid over thirteen years, was disbursed in three phases. The first phase had a particularly symbolic value. Branded the 'Millennium Plan', it was expected to produce its results – laying down more than two thousand kilometres of fibre optic cable connecting Ethiopia's thirteen largest cities – by 11 September 2007, the day marking the beginning of the new millennium on the Ethiopian calendar. The second and third phases similarly focused on infrastructure development, expanding coverage to rural areas and building the capacity of the system to support 20 million mobile users (from the initial 1.2 million) and more than a million Internet broadband users (Gagliardone 2014c). Resources also went towards upgrading Woredanet and Schoolnet, allowing some of the sites to progressively switch from expensive and inefficient satellite connections to terrestrial broadband.

China's support has allowed the Ethiopian government to reach goals no other African country had achieved before, dramatically expanding access in a regime of monopoly.[16] Elsewhere in Africa the liberalisation of the market was what drove expansion in coverage and lowering costs. Countries that opted for a system tightly controlled by the state, such as neighbouring Eritrea, have severely lagged behind in developing information infrastructure and services. By providing capital, equipment and the expertise, all with no strings attached in terms of policy changes (e.g. liberalising the market), ZTE, which is partially state-owned, has not only brought the Ethiopian government out of the *cul-de-sac* in which it had put itself by stubbornly defending monopoly, it has also helped it realise its vision of a tightly controlled but developmentally oriented national information society.

On 7 June 2011, the now re-branded EthioTelecom issued a tender to further boost the capacity of Ethiopia's mobile-phone

network to 50 million subscribers by 2015 and to introduce 4G connectivity in selected areas. The tender was similarly based on a vendor-financing scheme, as had previously been the case with ZTE. However, in contrast to 2006, the tender was public and various companies competed. As the Wall Street Journal put it, however, 'again, financing won the day, with the two [ZTE and Huawei] pledging a total of $US 1.6 billion. Western equipment suppliers, such as Ericsson and Alcatel Lucent SA, couldn't match the Chinese offer' (Dalton 2014). With the signing of two separate contracts of $US 800 million each with Huawei and ZTE, competition was introduced in the shape of a rivalry between two Chinese companies that have been contending for shares of the Chinese market for a long time. As a representative of Huawei in Ethiopia who requested to speak on condition of anonymity argued, 'It is normal that Huawei and ZTE compete for resources. ZTE in Ethiopia did not do a good job. It did not have enough incentives. So the government asked Huawei to come, because we have a better reputation in Africa.'[17]

Despite the different outcomes, both the first and the second deals which together surpass $US 3 billion, are indicative of the different approach the Chinese government and Chinese telecoms have brought forward to enter the increasingly crowded ICT market in Africa and acquire greater influence. China has been aggressive when providing financial resources to governments struggling to expand ICT infrastructure and services and has relied on state owned banks (China Development Bank and the Export-Import Bank of China) to offer export credit to Chinese companies willing to expand their operations abroad. Despite this increasingly outward exposure, however, the Chinese government has avoided publicly indicating its willingness to export the strategies it has adopted to develop its domestic ICT sector or indicate them as superior to those suggested by Western donors or partners. The lack of proactivity on China's part, however, has not prevented these strategies from gaining appeal among African partners.

In a Wikileaks cable reporting a meeting between Sebhat Nega, a founder of the Tigrayan People's Liberation Front (TPLF) and one of the most influential ideologues of the Ethiopian government, and US ambassador Donald Yamamoto, Sebhat was reported to have openly declared his admiration for China and stressed that Ethiopia 'needs the China model to inform the Ethiopian people' (US Embassy in Addis Ababa 2009). Arguments like these are still confined to informal conversations and, while China has been publicly praised for the commitment shown towards the Ethiopian people, it has still not been hailed as a model to shape Ethiopia's information society. This may change in the near future but the pattern that has emerged in the decade following the 2005 election seems to indicate that the Ethiopian government has preferred to exploit the ambiguities of the dominant discourses advanced by Western donors, the US in particular, when it needed to support unpopular decisions (e.g. the censoring of critical voices and jailing of journalists and bloggers), rather than publicly aligning with measures, such as those adopted by the Chinese government to police its own information space, that are still unpopular among the international community.

Rwanda: Testing New Types of Partnership

Thirty-eight per cent of Rwanda's budget is donor funded. And yet the government of Rwanda has opted to dedicate vast resources to the ICT sector, specifically to the deployment of infrastructure for guaranteeing Internet access. As indicated earlier, Western donors have questioned the wisdom of dedicating millions of dollars to ICT ahead of sectors of more direct relevance to the lives of ordinary Rwandans. While some were prepared to assist with reducing the cost of Internet access as provided by the private sector, and while some have provided funding

to help reduce the cost of broadband access, they have been unwilling to provide funding for infrastructure development.

Initial attempts by the government to get the private sector to invest in infrastructure resulted in limited and disjointed efforts, with each investor, driven by the profit motive, seeking to build their own infrastructure. Subsequently, the government privatised the former state-owned telecoms company Rwandatel and injected the proceeds into laying the fibre-optic backbone across the country. The backbone established the foundation for further development for which the government had no resources. Leveraging the backbone, the government was able to source the necessary resources from Korea Telecom and to attract assistance from the other non-traditional donors, the Chinese, Korean and Japanese governments. The partnership with Korea Telecom, which had initially come into Rwanda simply as a contractor to lay down part of the backbone, since 2013 took the form of two joint ventures with the government of Rwanda, one aimed to roll out 4G connectivity reaching 95 per cent of the population by the end of 2018, the other leading to the creation of Olleh Rwanda Networks (ORN). ORN launched operations in March 2014, providing IP-based services to public and private institutions.

As Pansik Shin Ngenzi, ORN's CEO explained, the joint venture was an indication of how KT and the government of Rwanda shared a similar vision and were ready to take some risks to see it realised. In his own words:

> Rwanda took the right approach. The quicker the better. It is true, you have problems like electricity. You have to get the right balance between short-term needs and long-term vision. Something can be a luxury now, but in the long run we need skills. The ICT development is important to transform this country from agricultural based to service based. It is also good for this society to brand itself as a smart society. In this market they are looking forward to the 4G. There are big expectations. If I can use a single word I would say this is the 'right shortcut' to reach Vision 2020. But we have also to admit that we have not seen the returns yet.

Rwanda also represented an opportunity, for a country like South Korea, which is relatively small but has been at the forefront of innovation in the digital domain, to test new possibilities in Africa. As ORN's CEO's continued, 'We want to expand to other countries. Other countries in Africa are looking at Rwanda as an example. And the fact that we have localized a solution in Rwanda can help us then tailoring for another African country.'

However, for South Korea as a whole, investing in Africa seemed to represent an opportunity to display its increased role internationally, experimenting in an area – new communication technology – that appeared relatively familiar. It is worth noting that South Korea decided to open an embassy in Kigali after Korea Telecom became a major partner of the Rwandan government, showing an interesting example of business driving diplomacy. As a Korean diplomat in Kigali explained:

> South Korea does not have a strong presence here in Africa. But right now in SK many more people recognize the importance of Africa. We have opened a new emphasis. Rwanda for us is a very good target country also to show to our own people in Korea that both private investment and aid can have good results.

But technology does not represent the only factor tying the two countries together. The perceived similarity of the development model used in Asia to lift their populations out of poverty and promote prosperity also

played an important role. For example, traditional donors have been reluctant to put resources into infrastructure development in technical schools to facilitate technical and vocational education and training and to bridge several skills gaps. South Koreans, on the other hand, have been willing to help build, renovate and equip a number of technical and vocational institutes and technology incubation centres across the country to facilitate the development of second-tier skills still lacking in the country.

5. Civil Society, Civil Rights, Performance and Legitimacy

Leftwich's original model identifies two dimensions related to the relationship developmental states have developed not just with economic actors but with other actors seeking to influence social policy and ensure the rights of individuals and groups are respected. The first dimension is concerned with the relationship with the civil society and the media, which tends to be weak in developmental states or is actively targeted, controlled or co-opted by government actors. The second dimension refers instead to the suppression of civil rights and the trade-off between the promise of improvements in service delivery and economy opportunities on the one hand, and the tight control over dissent on the other. In the case of Internet policy and practice, these two dimensions are closely related and we chose to address them together. In both Ethiopia and Rwanda, emphasising the symbolic and practical value of the Internet as a tool for economic development also meant de-emphasising its potential as a tool for political change. This meant both limiting the power of civil society and the media to shape Internet policy and also actively targeting individuals and organisations seeking to make use of the Internet as a tool for contestation and mobilisation.

Against in this case the approach followed by the governments in the two countries has been different, especially at the technical level: Ethiopia has developed one of the most pervasive systems of political filtering and surveillance on the continent; while in Rwanda, cases of Internet censorship have been limited. At the discursive level, however, terrorist threats and the need to guarantee greater security have increasingly been invoked to build a stronger case for the state to take a more active role in policing online spaces.

Ethiopia: No Place to Hide?

Despite Ethiopia continuing to score very low in terms of Internet penetration, it has developed one of the most ambitious surveillance apparatuses for online communication in Africa (Marczak *et al* 2014) and routinely filters political content online (Opennet Initiative 2014). The evolution of how the Ethiopian government has been policing the information space indicates how these measures have been progressively asserted as legitimate in the face of both national and international actors. The first cases of online censorship in Ethiopia date back to 2006, one year after the most contested elections in the country's history that saw the opposition making very significant gains. At the time the government refused to comment on how some websites had become inaccessible, claiming technical malfunctioning; however, in the following years it began to assert more clearly its sovereign rights over Ethiopia's information space. Initiatives such as the Anti-Terrorism Proclamation, and the Telecom Fraud Offences Proclamation, drafted by the Information Network Security Agency (INSA), Ethiopia's equivalent of the US National Security Agency (NSA), emerged as central components of this process. A new discourse hailing security and stability as fundamental ingredients of Ethiopia's path towards development started to be articulated more widely and visibly. Since coming into force, the anti-terrorism law has been used to override existing norms regulating the media in Ethiopia and to silence, attack

or threaten critical journalists inside and outside the country (Gagliardone 2014b).

Ethiopia has been relatively slow to enact a domestic anti-terrorism law, as compared to other countries that introduced similar legislations in the aftermath of 9/11 to comply with UN Security Council Resolution 1373, which requires states to ensure 'terrorist acts are established as serious criminal offences in domestic laws' (UN Security Council 2001: 2). Coming into force only in August 2009, Ethiopia's Anti-Terrorism Proclamation was framed nonetheless as a response to the Resolution passed eight years earlier and to international pressure to combat terrorism. The Telecom Fraud Offences Proclamation, passed in 2012, has extended the provisions of the Anti-Terrorism Proclamation to the online sphere (Article 6). Since its creation, the Information Network Security Agency (INSA) has taken on the responsibility of 'protecting' the national information space, 'taking counter measures against information attacks', which the law frames as any 'attack against the national interest, constitutional order, and nation's psychology by using cyber and electromagnetic technologies and systems'.

Examining the profiles of the individuals convicted under the Anti-Terrorism Proclamation helps to clarify the motivations behind the law and to understand how, similar to what had been experienced in other countries including Colombia, Nepal, the Philippines and Uganda (International Commission of Jurists 2009), the Ethiopian government interpreted the global war against terrorism as an opportunity to pursue domestic enemies while fending off external pressure and condemnation. Out of the 33 individuals convicted under the Anti-Terrorism Proclamation between 2009 and 2014, thirteen have been journalists. Some of them have been accused of planning terrorist attacks on infrastructure, telecommunications and power lines (Woubshet Taye and Reeyot Alemu); others to support Ginbot 7, an organisation led by Berhanu Nega, who in the 2005 elections had won the seat of mayor of Addis Ababa but was included on the country's terrorist list soon after its establishment (Eskinder Nega, Abebe Gelaw, Fasil Yenealem and Abebe Belew); two journalists working for the newspaper Ye Musilmoch Guday were charged with plotting acts of 'terrorism, intending to advance a political, religious or ideological cause', as part of a broader crackdown on Ethiopian Muslims (Solomon Kebede and Yusuf Getachew); two Swedish journalists who had embedded themselves with the Ogaden Liberation Front to cover the conflict in southern Ethiopia were also charged under the Anti-Terrorism Proclamation and pardoned by the president after having served 450 days in prison (Johan Persson and Martin Schibbye). Some of the journalists have been charged in absentia; those who were apprehended in Ethiopia are serving sentences of up to 18 years in prison.

Numerous international organisations, including the Committee to Protect Journalists, Reporters without Borders, Amnesty International and Human Rights Watch, have accused the Ethiopian government of taking advantage of a law they label as 'deeply flawed' (Human Rights Watch 2013) to persecute and silence critical voices. The government has responded to this criticism by re-asserting the legitimacy of its acts. Bereket Simon justified his government's decision to detain the two Swedish journalists by labelling international pressure to free the detainees as 'a very wrong defence of foreign journalists who have been caught red-handed assisting terrorists'. (as quoted in Davison 2012). Similarly, in 2014 Prime Minister Hailemariam Desalegn commented on the arrest of the Zone9 bloggers (whose case is discussed in greater detail below) by alleging their links with terrorist groups. As he remarked, 'I don't think becoming a blogger makes somebody immune, if someone involves into this terrorist network that destabilizes my country' (as quoted in Fortin 2014).

These assertions were criticised by international pressure groups but they also indicate how the post-9/11 agenda, primarily aimed at combating international terrorism and the possibility that instability in distant places could have repercussions 'back home', has created 'pockets of legitimacy' that can be, and have been, exploited to pursue a variety of other ends, including curbing dissent. When the Ethiopian government has had to justify measures limiting freedom of expression or stifling political debate in the country, the discourse on security has been privileged over other potentially more controversial arguments. As explained in the next section, despite financial and technical support from China enabling the Ethiopian government to realise its vision of a tightly controlled national information society, the government has refrained, for example, from publicly referring to China as a model to follow in the field of media and telecommunications.

Rwanda: Is the Internet a New Space to Experiment?

Since the end of the genocide against the Tutsi, the government of Rwanda has remained wary of a resurgence in violence and political upheaval that characterised the pre- and immediate post-genocide periods. Measures to ensure security and stability have comprised putting in place a suitable security apparatus, including a countrywide community policing system. As illustrated for example by Purdeková (2013), security and surveillance operate both at the formal and informal levels and, similar to other sectors mentioned above, ICTs act as an enabling tool. Differently from the case of Ethiopia, however, the Rwandan government has maintained a lower profile in terms of filtering and surveilling communication. More interestingly, while the Ethiopian government seems to have interpreted the Internet as just another medium, and have extended the treatment applied to print or radio journalists also to bloggers and individuals active in social media, the Rwandan government seems to have allowed greater freedom on the Internet as compared to other media. It is as if the Internet had been considered a 'special political zone', a term originally used by Rebecca Mackinnon (2008) to describe the greater freedom allowed by Chinese authorities to people posting online, as compared to journalists in older media.

Despite the limitations inherent in ranking based largely on the perceptions of a limited number of experts assessing different countries, the Freedom of the Press and Freedom of the Net indices for Ethiopia largely match. Both rank Ethiopia as 'non-free' on both dimensions. In the case of Rwanda, while the country is ranked as 'non-free' for its press, it is ranked as 'partially-free' when it comes to the Internet.

Kagame himself is also among the most active African heads of states on twitter and has often taken to the medium to engage with his fans and critics, both nationally and internationally. Kagame has also set a standard for other members of the government, who have been encouraged to take to the medium to engage with a population that is growingly increasingly literate in the digital domain.

Conclusion

The analysis of how the Internet has developed in Ethiopia and in Rwanda offers some important indications of how new nationally relevant conceptions of the Internet are emerging and consolidating in Africa despite dominant narratives from the outside. The comparison of the specific ways in which ambitions to turn Ethiopia and Rwanda into developmental states shaped the evolution of the Internet has highlighted how some governments in Africa are becoming increasingly assertive in charting their own paths towards alternative uses of the Internet, resisting Western pressures, but also how similar strategies can lead to substantially different outcomes.

Large-scale research projects investigating development strategies and governance in Africa, such as the Africa Power and Politics

Programme (Booth & Golooba-Mutebi 2012; Booth & Cammack 2014; Kelsall 2013; Vaughan & Gebremichael 2011), have shed light on the many similarities characterising the developmental projects of Ethiopia and Rwanda, which combined centralised authority, long-horizon planning and neo-patrimonial and clientelist practices in ways that facilitate long-term investment and the use of rents for growth-generating activities. The analysis of the evolution of the Internet in Ethiopia and Rwanda, however, suggests the two regimes have reacted differently to the possibilities offered by the Internet.

In the case of Rwanda, the ruling elite seem to have extended strategies that have guided its economic policies in other sectors to the development of the Internet. This has resulted in a commitment toward ICTs articulated at the very top of the political hierarchy, exemplified not only by the extensive use made of social media by key political figures, the president above all, but more significantly by a series of bold initiatives meant to create local capacity through credible partnerships with external funders (the South Korean Government and Korea Telecom in particular) and allowing a certain degree of freedom for local innovators and civil society actors who have accepted to operate without the larger framework developed at the top of political power. On the other hand, some of the more coercive measures that have characterised traditional media seem to have been lifted in the case of the Internet, which has apparently been interpreted as a terrain where greater forms of experimentation are allowed.

The Ethiopian government's approach towards the Internet seems to have gone in the opposite direction. The forms of developmental patrimonialism that have characterised its strategy in other sectors, leading for example to the creation of private companies that are closely tied to political power but are managed according to the principles of the market, do not seem to have translated to the field of ICTs, which has been managed directly by the government and through alliances with foreign partners (e.g. the Chinese Government and Chinese companies ZTE and Huawei). In contrast to what has been the case in Rwanda, the repressive measures that have characterised the press, especially after the contested electoral competition of 2005, have been translated to the online sphere, with few signals of the desire to offer greater freedom to individuals using he Internet as a new terrain for political competition or to engage with the arguments put forward by oppositional forces.

If we want to sum up the connections between the overarching political and economic strategies pursued by the governments of Ethiopia and Rwanda and the development of the Internet in the two countries we could say that: the policies pursued by the Rwandan government regarding the Internet have been characterised by continuities in the economic domain (creating credible public-private partnerships and allowing a certain degree of freedom to companies that are endorsed by political power but allowed to chart their own paths towards innovation) and discontinuities at the political level (by which the Internet seems to offer a greater degree of freedom than traditional media); on the contrary Ethiopia's policies have shown discontinuities at the level of economic policy (by which the government seems to have regressed to isolation, shaping Internet policy and development from the centre while seeking resources and expertise through unequal partnerships with foreign governments and companies) and continuities in the political realm (where the same norms characterising print media have been extended to the online sphere).

Balancing between similarities and differences between the two countries is a complex endeavour; it can however be argued that while Ethiopia and Rwanda have shared an overarching strategy placing the state as the prime mover in the development of Internet policy and (large-scale) projects, Rwanda has developed a more *open* model of a developmental Internet, which could accommodate a greater variety of actors and opinions and

incorporate or tolerate them in the context of a relatively coherent vision emanating from the centre; Ethiopia on the contrary, has developed a more *closed* model of the developmental Internet, where all powers firmly rest in the hand of a government that has refused (so far) to entertain and engage with alternative ideas of the Internet. These distinctions, we believe, have important consequences for how the Internet will evolve in the two countries. Nonetheless, the fact that the two countries share important similarities could also allow one to learn from the other. It could, for example, offer to Ethiopia the means to progressively open up its information space to greater competition and accommodate a broader political debate.

Competing Interests

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Notes

[1] For example, there has been a spate of arrests of people alleged to be collaborators with the DRC-based Democratic Forces for the Liberation of Rwanda (FDLR), some of whose members stand accused of participation in and execution of the genocide against the Tutsi. Some of the arrests followed the tracking of communication between FDLR officials in the DRC and individuals within the country.

[2] This quote by Meles Zenawi was used in the inaugural speech made the Minister of Capacity Building Tefera Walua (2006) at e-Learning Africa, the international conference on ICT for development, education and training in Africa that took place in Addis Ababa on 25–27 May 2006.

[3] One encounters this view among people who have worked closely with him across a wide range of domains (business, security, agriculture, education, etc.).

[4] There is some speculation that he could have been inspired by the story of Asian Tigers: 'The Asian Tigers developed via technology. As someone who is interested in technology, he must draw from their experience. He didn't just wake up with the ideas.' (interview with a government ICT expert, 20.10.14).

[5] Interview with a former government employee who joined the government's ICT policy team in 2000, now with the private sector (20.10.2014).

[6] Interview with a young ICT professional, Kigali: 20.10.14.

[7] Interview 20.10.14.

[8] The Kenyan government, for example, in the aftermath of the violence that erupted after the contested elections of 2007, introduced new measures to curb hate speech disseminated both on social media and through SMS (see for example Kagwanja & Southall 2009).

[9] Interview: Dawit Bekele, Professor at Addis Ababa University and Africa Focal Point for the Internet Society ISOC, Addis Ababa, 3 March 2008.

[10] Dawit stressed the risks connected with being too proactive by noting that 'the guy who made the recommendations, the chair of the technical committee was marginalised since then. It was bad judgment. The government did not really know what the Internet was and it did not want to listen. They did not like the Internet' (Interview: ibid.).

[11] Interview: Dawit Bekele, Professor at Addis Ababa University and Africa Focal Point for the Internet Society ISOC, Addis Ababa, 03.01.2012.

[12] According to the contract, the ISPs had to be licensed by September 2005 but the licences were issued only in March 2007. However, the four companies that obtained licences, Millennium Systems, All-In-One, Symbol Technology and Net Computer, never started operations (EICTDA 2009).

[13] Just under half (45 per cent) of the population still live below the poverty line (EDPRS II).

[14] In 2011 256,000 people had a subscription to the ECX 'push' service sending out updated information by SMS and the toll-free number was receiving an average of 61,000 calls per day (Gabre-Madhin 2012).

[15] Figures provided by the ECX indicated that the value of its 'trades has risen by 368 per cent to reach US$ 1.1 billion in 2010–11. Storage operations have grown from one warehouse in Addis Ababa to 55 warehouses in 17 regional locations' (Gabre-Madhin 2012: 18).

[16] For a comparative analysis of China's investments in the ICT sector in Africa see Gagliardone 2013; Gagliardone, Repnikova & Stremlau 2010).

[17] Interview: Representative of Huawei in Ethiopia, Addis Ababa, 9 May 2013.

References

Adam, L 2007 Ethiopia telecommunications sector performance review: a supply side analysis of policy outcomes. Retrieved from www.researchICTafrica.net.

Avgerou, C 2003 The link between ICT and economic growth in the discourse of development. In Proceedings of the International Federation of Information Processing, IFIP, 9 373-386.

Basaninyenzi, U 2014 Paul Kagame: Digital President Leading a Technology Movement.

Beyene, Z, Zerai, A and **Gagliardone, I** 2015 Satellites, Plasmas and Law: The Role of TeleCourt in Changing Conceptions of Justice and Authority in Ethiopia. *Stability: International Journal of Security and Development*, 4.

Booth, D 2009 Elites, governance and the public interest in Africa: working with the grain. *The Role of Elites in Economic Development*.

Booth, D and **Golooba-Mutebi, F** 2012 Developmental patrimonialism? The case of Rwanda. *African Affairs*, *111*(444): 379–403. DOI: http://doi.org/10.1093/afraf/ads026

Brown, M B 2001 The civic shaping of technology: California's electric vehicle program. Sci. Technol. Hum. Values 26: 56–81. DOI: http://dx.doi.org/10.1177/016224390102600103

Collins, K 2013 Exclusive: Rwanda's "digital president" Paul Kagame on technology's role in Africa's future. WIRED.

Collins, M 2014 Positivo Chief: Why we are opening a plant in Rwanda. New Times.

Dalton, M 2014 Telecom Deal by China's ZTE, Huawei in Ethiopia Faces Criticism 7 January *Wall Street Journal*. Retrieved from http://online.wsj.com/news/articles/SB10001424052702303653004579212092223818288

Davison, W 2012 United Nations Rights Advocates Criticise Ethiopian Use of Anti-Terror Law 3 February. Retrieved 28 August 2014, from http://www.bloomberg.com/news/2012-02-03/united-nations-rights-advocates-criticise-ethiopian-use-of-anti-terror-law.html.

Donovan, K P 2015 The Biometric Imaginary: Bureaucratic Technopolitics in Post-Apartheid Welfare. *Journal of Southern African Studies*, *41*(4): 815–833.

EICTDA 2005 Monitoring and evaluation report on ICT laws enacted and ICT business status in major towns of Ethiopia (2005).

EICTDA 2009 Monitoring and evaluation report on ICT laws enacted and ICT business status in major towns of Ethiopia.

Evans, P 1995 *Embedded autonomy: states and industial transformation*. Princeton: Princeton University Press.

Fortin, J 2014 Ethiopia: Bloggers and Journalists Are Charged as Terrorists. *The New York Times* 18 July. Retrieved from http://www.nytimes.com/2014/07/19/world/africa/ethiopia-bloggers-and-journalists-are-charged-as-terrorists.html.

Furzey, J 1995 A critical examination of the social, economic, technical and policy

issues, with respect to the expansion or initiation of information and communications infrastructure in Ethiopia [WWW Document].

Gabre-Madhin, E 2012 *A market for Abdu: Creating a commodity exchange in Ethiopia*. IFPRI.

Gagliardone, I 2009 The Socialization of ICTs in Ethiopia. *International Journal of Sociotechnology and Knowledge Development*, *1*(4): 13–28.

Gagliardone, I 2013 China and the African Internet: Perspectives from Kenya and Ethiopia/China y el Internet africano: Perspectivas desde Kenia y Etiopía. *Index. Comunicación*, *3*(2): 67–82.

Gagliardone, I 2014a "A Country in Order": Technopolitics, Nation Building, and the Development of ICT in Ethiopia. *Information Technologies & International Development*, *10*(1).

Gagliardone, I 2014b New media and the developmental state in Ethiopia. *African Affairs*, *113*(451): 279–299.

Gagliardone, I 2014c Media Development with Chinese Characteristics. *Global Media Journal,* 4(2).

Gagliardone, I, Repnikova, M and **Stremlau, N** 2010 *China in Africa: a new approach to media development?* Oxford: University of Oxford.

Government of Rwanda 2010 An Integrated ICT-led Socio-Economic Development Plan for Rwanda.

Hecht, G 1998 *The radiance of France: nuclear power and national identity after World War II*. Cambridge: MIT Press.

Hughes, T P 1987 The evolution of large technological systems. In: W. E. Bijker, T. P. Hughes, & T. J. Pinch (Eds.), *The social construction of technological systems: new directions in the sociology and history of technology*. Cambridge: MIT Press.

Human Rights Watch 2013 *Ethiopia: Terrorism Law Decimates Media*. Retrieved from http://www.hrw.org/news/2013/05/03/ethiopia-terrorism-law-decimates-media.

International Commission of Jurists 2009 *Assessing Damage, Urging Action. Report of the Eminent Jurists Panel on Terrorism, Counter-terrorism and Human Rights*. Geneva.

Kagwanja, P and **Southall, R** 2009 Introduction: Kenya–A democracy in retreat? *Journal of Contemporary African Studies*, *27*(3): 259–277.

Kelsall, T 2013 *Business, Politics and the State in Africa: Challenging the Orthodoxies on Growth and Transformation*. London: Zed Books Ltd.

Leftwich, A 1995 Bringing politics back in: Towards a model of the developmental state. *The Journal of Development Studies*, 31(3). DOI: http://dx.doi.org/10.1080/00220389508422370

MacKinnon, R 2008 Cyber zone. Index Censorsh, 37: 82–89.

Mann, L and **Nzayisenga, E** 2015 Sellers on the street: the human infrastructure of the mobile phone network in Kigali, Rwanda. *Critical African Studies*, *7*(1): 26–46.

Marczak, B, Guarnieri, C, Marquis-Boire, M and **Scott-Railton, J** 2014 Hacking Team and the Targeting of Ethiopian Journalists. Citiz. Lab.

Meijerink, G, Bulte, E and **Alemu, D** 2014 Formal institutions and social capital in value chains: The case of the Ethiopian Commodity Exchange. *Food Policy*, *49*: 1–12.

Mkandawire, T 2001 Thinking about developmental states in Africa. *Cambridge Journal of Economics*, *25*(3): 289-313.

Purdeková, A 2011 "Even if I am not here, there are so many eyes": surveillance and state reach in Rwanda. *The Journal of Modern African Studies*, *49*(03): 475–497.

Rydhagen, B and **Trojer, L** 2003 ICT and the role of universities: a technopolitical and postcolonial challenge. In *ITDG closing symposium, Lule\a a University of Technology*. Retrieved from http://www.diva-portal.org/smash/record.jsf?pid=diva2:838223.

Serneels, P, Montalvo, J G, Pettersson, G, Lievens, T, Butera, J D and **Kidanu, A** 2010 Who wants to work in a rural health post? The role of intrinsic motivation, rural background and faith-based institutions in Ethiopia and Rwanda. *Bulletin of the World Health Organization*, *88*(5): 342–349.

Tsega, T 2010 Ethiopian Commodity Exchange (ECX)-Connecting farmers to the market.

UN Security Council 2001 Resolution 1373.

US Embassy in Addis Ababa 2009 Wikileaks Cable #09ADDISABABA149.

Vaughan, S and **Gebremichael, M** 2011 Rethinking business and politics in Ethiopia. *Africa Power and Politics, UK Aid, Irish Aid*.

Wu, T 2010 *The Master Switch. The rise and fall of information empires*. London: Atlantic Books.

Wynne, B 1996 SSK's identity parade: Signing-up, off-and-on. *Social Studies of Science*, 26: 357–391.

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