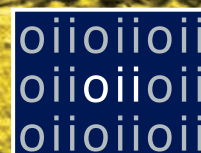


The Internet and Tourism in Rwanda

Value Chains and Networks of
Connectivity-Based Enterprises in Rwanda

Christopher Foster and Mark Graham



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1. EXECUTIVE SUMMARY

1a. Introduction

East Africa was the world's last major region without submarine fibre-optic broadband internet access, and until the summer of 2009 had been forced to rely on slow and costly satellite connections for access. However, the region has recently been connected via fibre-optic cable – in theory, allowing much greater speeds at much lower prices.

This rapid transformation in the region's connectivity has prompted politicians, journalists, academics, and citizens to speak of an economic revolution fuelled by information and communication technologies (ICTs) happening on the continent. While some research has been conducted into the impacts of ICTs on economic processes and practices, there remains surprisingly little research into changing connectivity in East Africa.

Here we summarise research examining the effects of this changing connectivity in the Rwandan tourism sector. We seek to understand what impacts changing connectivity is having, who benefits and who doesn't.

1b. Connectivity

Tourism is a sector where connectivity and the internet have been discussed as having the potential to have significant impact. However there has been little research done on how the internet has impacted low-income country tourism destinations like Rwanda. This research drew on 59 in-depth interviews to examine internet and ICT use in this context.

Inputs

Connectivity can support inputs (that is tourism resources and sights) where online visibility allows locations to be presented to the rest of the world. An online presence of Rwandan natural resources, sites and culture was found, but the benefit of that online presence was negligible.

It is already easy for tourism firms to make a case for Rwanda when it comes to its core Gorilla trekking activities, which are well known globally. However, as the country looks to expand into a wider range of tourist resources, sites and events, Rwanda will have to work hard to compete both regionally and internationally. New resources and cultural sites were less clearly presented online.

Skills and knowledge development can enhance how tourists experience Rwandan sites and services, and skills development has been done online elsewhere. Presently, skills development is typically done offline in Rwanda, through workshops and training. It is only particularly motivated actors in the tourism sector who access online knowledge and self-learn online.

Transformations

Resources and sites are transformed into services to be consumed by tourists. Changing connectivity has played a key role in this transformation, particularly in making organisational logistics easier for Rwandan firms to handle. Online communication simplifies and improves trust between firms both locally and internationally.

Digital communication does not appear to have completely replaced previous offline networks, however. Building links through attending international tourism trade fairs and networking are still crucial elements of tourism in Rwanda and this means that it is difficult for new firms to establish themselves.

For the firms within Rwanda who provide services, changing connectivity brings new risk. New online information and communications flows make tour bundling easier so that it becomes possible for firms outside Rwanda to take on more responsibilities. Some intermediaries are already being marginalised insofar as outgoing firms book hotels directly online. In the future, it is likely that more firms, particularly those who engage in more generic activities, may become disintermediated.

Distribution

Whilst Rwandan firms have pushed towards becoming involved in online distribution of tour resources to customers, the successes of Rwandan firms have been limited. Competition and the locational advantage of outbound tour operators close to customers continue to mean that tourists prefer these firms. Also, many Rwandan firms have difficulties in negotiating the diverse range of websites, social media sites, tourism services and other online resources. It takes time and skill to understand how best to use these resources. Rwandan firms realise that there is great potential in online visibility and internet adoption. Yet, there is still room for further development through undertaking more strategic activity and better understanding of the available tools.

1c. Recommendations and opportunities

Examples of innovative activity were observed in Rwanda which point to opportunities for better use of connectivity. However, often these were activities only undertaken by one of two firms in the sector. Sharing innovative activities could thus lead to wider improvement:

Online destination management

Destination management remains important. It provides visibility and information for tourists who are often not clear about where they want to go, and what they want to do. Online destination management should include extensive information on tourism elements – the natural resources, cultural tours and activities that are possible. This is crucial as Rwanda looks to diversify the range of available attractions to tourists beyond Gorilla and wildlife tourism.

Destination management is also about having more than just one single website. It is about how a bundle of complex cultural and geographic information about a tourist destination reaches customers. This information is as likely to come from 'pushes' and generating interest in social networks and other online applications as it does from 'pulls' of customers searching for information and visiting websites.

Online knowledge and learning

Although online learning resources have not been used much so far in Rwanda, the production of such resources could be valuable in areas where the sector is looking for improvements. Online learning resources would be particularly useful in jobs where staff turnover is frequent and attending workshops is less viable. This is especially the case with activities like customer services and with basic management skills in tourism.

Support internal systems and management development

Coherent internal information systems and skilled management form the fulcrum of more dynamic firms in the tourism sector, and improve the ability of firms to use online resources and services. Adoption is likely to be driven by better managerial training in tourism. Further activities could also push improvements. For instance, promoting knowledge building through hotel and tour associations, and visits to places of best practice might inspire Rwandan firms to improve their tourism services.

Online services

In our work in the sector, we often observed that one or two firms were using online tools or services efficiently. Thus, sharing of best practice in the use of online services and online resources for the tourism sector could be invaluable, and might best be led by well-established tourism associations who could support improved diffusion of knowledge in the sector. However, there are cases where online tools and services fit poorly in the context of Rwanda. With poor fits of online services, it is worth associations and policy makers exploring the growth in the specifically focussed African online tourism services that are emerging.

Youth and online media channels

Online media use in Rwandan firms is sometimes seen by managers as a time-sink or as being overly complex. Yet, it is an increasingly important online resource - in how customers find, share and decide on tourism experiences. There is a tendency for tourism firms in Rwanda to outsource social media activity to external consultants, for which they are often overcharged and where they lose direct interaction with/through these vital resources. With successful examples in mind, it would be prudent for hotels and tour operators to reach out to young employees. Employing a tech-savvy young staff member as a social media co-ordinator can often be done for a relatively low cost, and can allow firms to build social media benefits and skills in-house.

Branding and niche approaches online

Going online is often not a matter of reaching 'more of the same' customers. Firms which strategize and then push to reach specific demographics or targeted segments of customer were generally found to be more successful. There were successful cases of firms who had strategically pushed into niche areas (e.g. bird watching, community tourism, and regional customers). Online activities are a crucial element of such approaches – in looking for such niches and ensuring that they reach a critical mass of customers.

Similarly, for growing Rwandan firms, expansion may not necessarily come through offering extra itineraries and gaining more customers of the same type. Cross branding for different demographics (for instance, by language, by budget) can allow different types of growth. Given that there is little awareness of such approaches it is crucial that these ideas are also linked into training and skills development.

Continue to support internet access within hotels

The Rwandan government has taken positive steps to push internet access in hotels, and support problems when they have occurred. This support has been useful for improving tourist impressions of the quality of hotels in Rwanda. It has also contributed to allowing tourists to interact online when they are travelling, which could increase the country's online visibility. As demands for connectivity grow, attention to access should be maintained to ensure that hotels keep up with the needs of customers and with bandwidth intensive online resources.

1d. Summary

Many tourism firms have adopted and are actively using digital connectivity. But, digital connectivity alone has not led to transformation. Rather, a set of wider barriers prevents the transformative effects of connectivity being realised. Barriers can relate to skills in integrating available technologies into businesses. Online resources and services were also found to poorly fit the needs of the Rwandan sector and this could limit viability. Finally, well-established firms and relationships with outgoing firms have led to a static tourism sector which is difficult to transform. Now that better connectivity is available, the goal should be to tackle these secondary barriers to the effective use of connectivity in order to drive improved benefits.

2. OUTLINE

2a. An introduction to the larger project and the contexts of the work

East Africa was one of the world's last major regions that was not connected to the world's submarine fibre-optic grid, and until the summer of 2009 had been forced to rely on slow and costly satellite connections for access. However, the region has recently been connected via fibre-optic cable, in theory allowing much greater speeds at much lower prices.

This rapid transformation in the region's connectivity has prompted politicians, journalists, academics, and citizens to speak of an ICT-fuelled economic revolution happening on the continent. However, while some research has been conducted into the impacts of ICTs on economic processes and practices, there remains surprisingly little research into changing connectivity in East Africa.

This report focuses on changing connectivity in the Rwandan tourism sector, seeking to understand what impacts changing connectivity is having, who benefits, who doesn't, and how these changes relate to expectations for change. Is connectivity spearheading new types of development fuelled by ICTs, or does engagement with the global economy enabled by connectivity reinforce dependency, inequality, underdevelopment, and economic extraversion? The in-depth research presented in this report seeks to increase our understanding of these questions, as well as provide insights on policies and strategies that might help enhance the potentials of such rollouts in tourism.

In-depth interviews with 59 firms and policy makers linked to the Rwandan tourism sector were undertaken. These were used to study the modes of communications, and highlight the potential effects that information and communication technologies (ICTs) and broadband connectivity were having on the sector. Thus, research principally draws on empirical data as its basis.

2b. Research goals

In Rwanda, tourism has been an important contributor to GDP, national exports¹ and employment (WTTC 2013) and it is regarded as one of the key sectors that can drive Rwanda's economic development. Indeed tourism has been identified as a significant sector in enabling Rwanda to achieve its core 'Vision 2020' goals (GoR 2009).

Impacts of the internet on the Rwandan tourism sector are important to examine. Tourism as an industry is in change and globally it is a sector that is being radically transformed by the use of the internet, where marketing, information gathering, holiday booking and recommendations are increasingly done online (Buhalis & Law 2008). Yet, it is unclear exactly to what extent these transformations are affecting developing countries such as Rwanda. Given changing connectivity, we wish to understand how effective use of this connectivity can bring benefits.

Five interrelated questions are posed with regard to the project goals outlined in the previous section:

1. How are ICTs, including mobile devices, old satellite and new broadband internet connectivity, variably integrated into value chains and flows of knowledge, commodities and capital in the Rwandan tourism sector?
2. Is the Rwandan tourism sector characterised by innovative uses of broadband connectivity or unexpected challenges to broadband use?

3. How are changes in the use of methods of communication and internet access linked to altered socio-economic conditions of economic actors?
4. How do those changes differ from academic discourses surrounding potential effects?

In the next section, we draw on global value chain and global production network frameworks to build understanding of how Rwandan destinations, firms and services in tourism integrate into the international delivery of tourism. In order to orientate research, we also explore the ways in which the literature has envisaged the internet as transforming the sector. In Section 4, we outline the research approach undertaken which forms the basis of empirical work.

Later sections summarise the empirical research findings in the tourism sector as related to the five research questions outlined above. We analyse connectivity and internet use in the sector (Section 4), how changing connectivity has transformed relations and activities in the sector (Section 5), how it is changing relationships of 'production' (Section 6), and highlight innovations associated with changing connectivity (Section 7).

This work then leads to conclusions in two areas. In Section 8, drawing on fieldwork, we summarise who has benefitted from changing connectivity in the tourism sector in Rwanda. Contrasting these findings with policy discourses we highlight some additional risks and policy recommendation around ICT, changing connectivity, and the tourism sector in Section 9.

3. THEORETICAL FRAMEWORK

In this section, we outline a systematic framework to examine the economic effects of broadband connectivity in tourism, drawing on global production network and value chain frameworks. Following an introduction to these frameworks, we discuss two additional elements: first, how to apply these concepts with regard to the tourism sector in Rwanda, and second, we discuss the extensive literature around internet and tourism. This work highlights the different roles that connectivity might play in tourism, and forms the basis of our empirical analysis in the subsequent sections.

3a. Using value chains and production network models to conceptualise tourism

Selecting models

Activities in the tourism sector in Rwanda are best understood when Rwandan firms and policy are considered to be part of a global tourism sector that moves beyond national borders. Adopting a national perspective when many components of tourism are international (e.g. airlines, travel agents and tourists) could lead to an inadequate understanding of the power, motivations and practices in Rwandan tourism.

International studies of tourism have typically adopted two principal perspectives in analysis. One perspective draws on business literature to examine the approaches that firms, regions or even countries can take to be successful. A second perspective has employed a socio-cultural perspective which particularly focuses on the behaviour and decision making of tourists (Ioannides & Debbage 1998, Niewiadomski 2014). Whilst these two perspectives have value, they also have weaknesses. Management literature tends to focus on a single firm or the national sector. This can neglect the increasingly international fragmentation and flexible linkages between firms that occur in reality. An overt focus solely on tourist behaviour tends to underplay the fact that tourism at its heart includes many more generic resources and products (hotels, flights, restaurants) which through supply-side activities construct unique tourist experiences (Bianchi 2009, Ioannides & Debbage 1997).

In this work, we are interested in how changing internet connectivity is reconfiguring economic relations in tourism. Thus, our interest is particularly on analysing changes in relations amongst interlinking firms and customers in tourism. Adapting approaches from economic geography and global production networks enables us to systematically analyse tourism. It also allows us to overcome the weaknesses of managerial approaches through analysis of the complex and often dynamic processes of production. Whilst we include customer perspectives in models, this work positions the choices and behaviours of tourists as only one element in how tourism activities are created and experienced.

Below we first outline the two models used – global value chains and global production networks. We will then briefly comment on their origins and their relevance to tourism

Economic geography and globalised production

Global value chains (GVC) models look to examine

"the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use." (Kaplinsky & Morris 2001 p.4)

Global value chains models draw on business understandings around how production activities are vertically integrated or outsourced in interlinked chains of activity (Porter 1998). GVC models thus take a relational orientation.

In addition, GVC models look to understand power in such chains through analysing the processes of indirect control that guide production (Bair 2005, Gereffi 1999).

The GVC notion of *value* is particularly crucial. It allows us to understand *where* benefits of production are obtained. This can be in terms of specific types of actors or in geographic locations. Further, analysis of value chain relationships can provide insight into the forms of *governance* by which firms co-ordinate and control activity. 'Governance', in particular, highlights sources of power in production processes even where powerful firms are not directly integrated in all elements of activity (Gereffi et al. 2005, Gereffi 1994). For firms involved in value chains, improvements might come through *upgrading*, where firms improve their positions in such chains, albeit within the framework set by value chain governance (Humphrey & Schmitz 2000, Kaplinsky & Morris 2001).

Global production network frameworks (GPN) respond to the perceived weakness of GVC approaches which focus on relationships in production to the detriment of a wider understanding of global production (Henderson et al. 2002). As Coe et al (2008) put it, the GPN model:

"helps us to see beyond the linear progression of the product or service in question to reveal the complex circulations of capital, knowledge and people that underlie the production of all goods and services." (Coe et al. 2008 p.275)

This network perspective links to an analysis in which production is intimately linked to interchanging networks of relationships within specific institutions, context and geographies (Henderson et al. 2002). GPN analysis thus positions power relations as not only linked to production, but to a wider constellation of actors. Production is always 'grounded' where firms are embedded within places, networks and regions. It allows integration of the social, economic and political aspects of these specific places (Coe et al. 2004). GPN analysis thus takes more explicit spatial and institutional consideration into analysis where "networks of production 'interrupt' – and are interrupted by" (Dickens 1998 p.54) its embeddedness within policy, institutions and structures.

Figure 1 summarises these two concepts of global value chains and global production networks together.

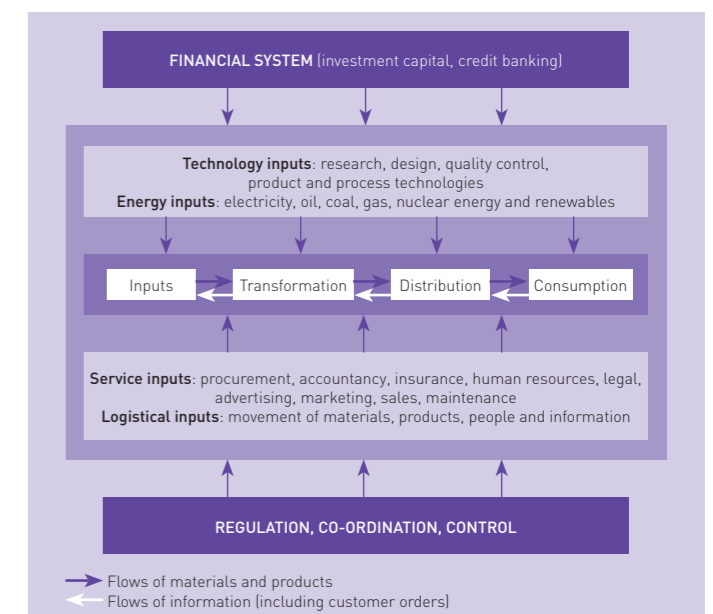


Figure 1: Outline of global value chains and production networks
Source: (Dickens 1998)

The central flow in this diagram can be considered as the value chain. It is a set of transformations of a product by interlinked firms in core production. Outer layers highlight global production networks, some of the wider national, sectoral and global networks that influence this core value chain.

It is not immediately clear from Figure 1 if such models are suitable to the tourism sector. GVC and GPN models originate in analysis of globalised industrial production where attention is typically on goods which are transformed through successive sets of production activities. However, we argue that underlying concepts - around globalised relations, fragmented production and uneven power are also crucial in service sectors. Indeed these models have been usefully applied to tourism, for instance to analyse ownership of tour companies in Kenya and power relations in international hotel groups (e.g. Christian 2012, Christian & Nathan 2013, Niewiadomski 2014). As with non-service sectors, these models have allowed scholars to focus on the power and relations and link them to the complex supply-side dynamics of tourism. Such literature has provided a useful perspective for discussion of the often uneven spatial distributions of such sectors and the relationships which orientate these distributions.

We thus argue that these models do have potential for analysing service sectors such as tourism. In the next section we introduce the Rwandan tourism sector before carefully applying these models to the case.

3b. The Rwandan tourism sector

Outline of tourism

This section introduces the structure, institutions and policy of the tourism sector in Rwanda. This provides the basis for the GVC and GPN analysis in the subsequent sections.

Outline statistics

In terms of its proportion of global tourism, tourism in Rwanda consists of only a tiny piece of the global pie, yet it is a crucial element of the Rwandan economy. Table 1 compares travel and tourism statistics across the East African region. It highlights that Rwandan tourism is smaller than neighbouring East African countries. This is not surprising given that Kenya and Tanzania have been renowned for many years as home of the big game safari. However, given the small size of the country's economy, tourism is still significant in Rwanda. Most notably, tourism expenditure is an important contributor (28%) to exports (a larger figure than any other East African country).

Indicator	Rwanda	Uganda	Tanzania	Kenya
Direct contribution to GDP (\$ bn)	0.2	0.9	1.5	2.1
Direct contribution to GDP (%)	3.1	3.7	4.8	5.0
Total contribution to GDP (%)	7.5	8.8	13.2	12.5
Expenditure as share of exports (%)	28.0	23.9	24.8	19.1
Contribution to employment (%)	6.5	7.6	11.5	10.9

Table 1: Impact of travel and tourism in East Africa

Source: World Travel and Tourism Economic Impact Data (WTTC 2013)

Tourism is also one of the significant growth industries in Rwanda at around 4.3% per year (UNWTO 2014, WTTC 2013), linked to steady growth of tourist visitors to Rwanda (as shown in Figure 2).

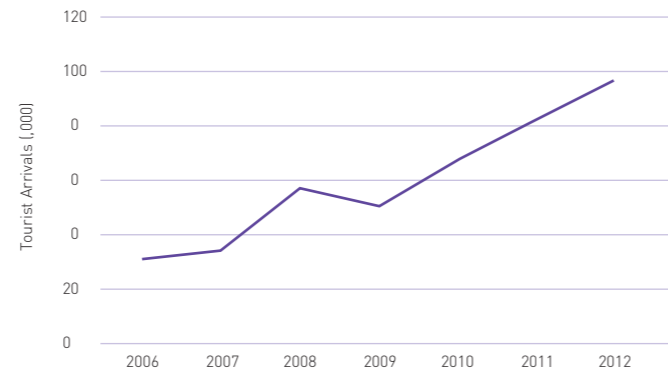


Figure 2: Tourism arrivals Rwanda 2006–2013

Source: UNWTO tourism database (UNWTO 2014)

Figure 3 summarises the most recent year of incoming "holiday and leisure" arrivals broken down by origin of tourists. As can be seen, roughly 50% of inbound tourists come from Europe, US, India and China whilst the remainder tend to be visitors from neighbouring DR Congo, Uganda and Burundi.²

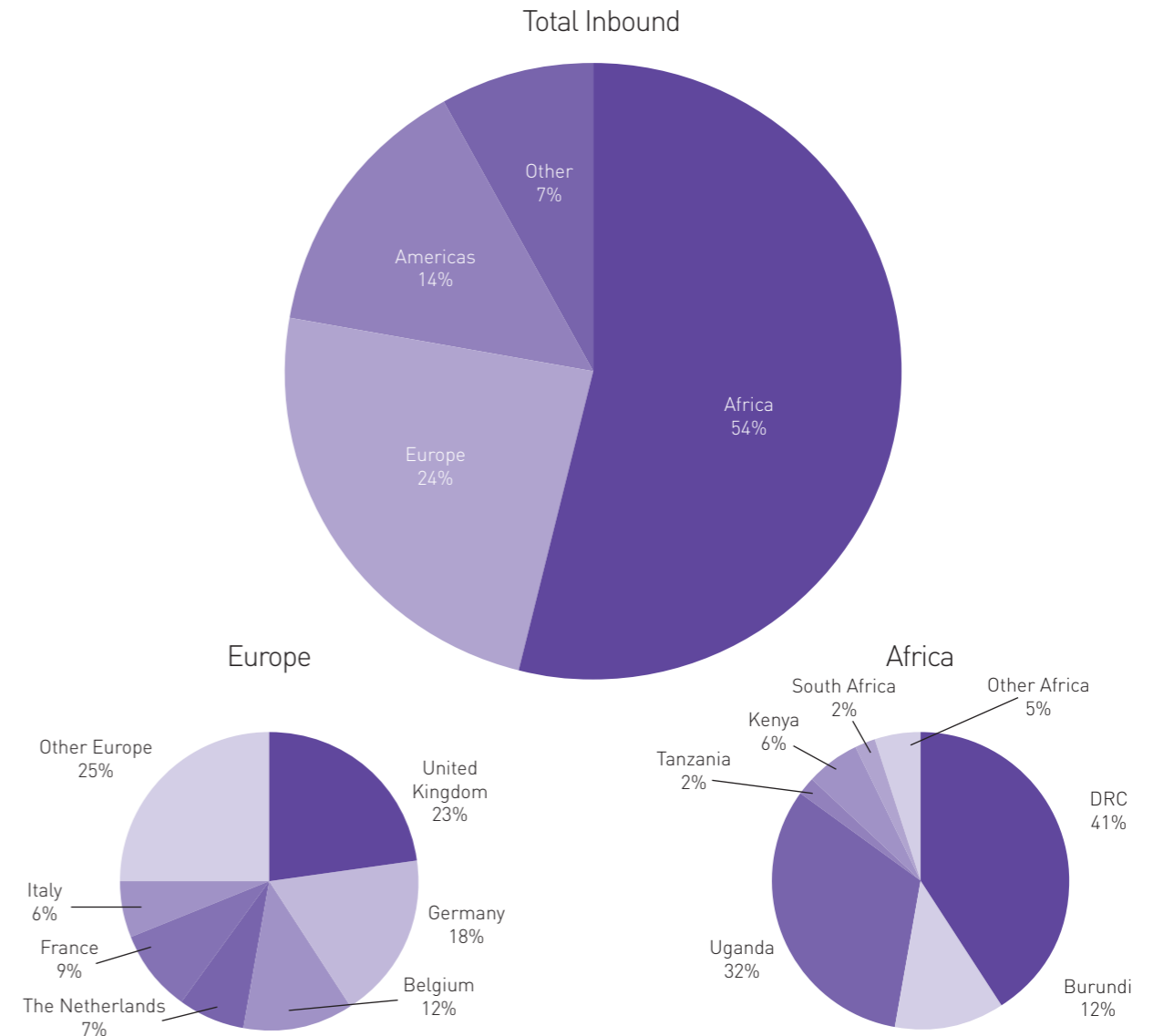


Figure 3: Breakdown of incoming "holiday and leisure" arrivals into Rwanda 2012 (with secondary breakdown of Europe and Africa)

Source: UNWTO tourism database (ibid.)

This paper principally focusses on tourists from outside Africa for two reasons. First, Rwandan strategy in the tourism sector is targeted at this "high-end" international tourism (see next section). Such groups also contribute larger sums to tourism expenditure,³ and they are the main focus of tourism sites and companies. Second, they are also the most likely to be using the internet within their tourism activities.

In this research, the focus is on international tourism, but growing regional and local tourism are also considered. Regional tourism is outside the main strategies of Rwandan policy and firms, and is rarely a fit with the types of costly facilities and connectivity being developed in Rwanda. Nevertheless regional tourism is still worth exploring. Statistics highlight that in national parks in 2011, 21% of activities sold were to Rwandan residents⁴ (RDB 2012). Very recent integration of the East African Community (EAC) also promises growing regional tourism.⁵ As such, in interviews we included questions on local tourism, and we also interviewed a number of local travel agents to understand the use of the internet around local or regional customers.

In terms of international tourist activities, Rwandan tourism is still strongly dominated by 'Gorilla tourism'. Gorillas are an animal very close to being extinct, and those families located in uplands in the north of Rwanda are presently the most accessible in the world, making them a compelling selling point for tourists (the only other locations of gorillas are one less

accessible site in Uganda, and groups in war-torn DR Congo). Costs for visiting the gorillas are very high. The current cost of a gorilla permit alone is \$750. This means that they are only accessible to tourists who are highly affluent even by international standards.

Rwandan institutions and policies in tourism

Tourism has been identified as a priority sector to achieve the country's development goals as set out in the Vision 2020 strategy (GoR 2009). The Rwandan Ministry of Trade and Commerce (MINICOM) is responsible for tourism in the country. Originally the agency that manages and implements policy was the Office of Tourism and National Parks (Office Rwandais du Tourisme et des Parcs Nationaux – ORTPN) which consisted of two elements – the Rwanda Tourism Agency (RTA) and the Rwanda Wildlife Agency (RWA). The main mandate of ORTPN was to ensure the promotion of sustainable tourism and the conservation of wildlife.

At the beginning of 2009, ORTPN amalgamated into the Rwanda Development Board (RDB). This is a cross-ministry agency which drives economic development and investment in the key sectors of Rwanda. This change was in response to the call for stronger private-sector focus within tourism. It was perceived in government that investment was crucial for modernisation of facilities and for encouraging wider tourism growth, and so a sector that was more orientated towards the private end was considered crucial (USAID 2008).⁶

In terms of policy, following post-conflict recovery there have been a number of strategies (MoTI 2007, MoTI 2002) and policies in the tourism sector (MoTI 2009, MoTI 2006). In line with the changing institutions outlined above, tourism policy has also focussed on private-sector investment to support the development of tourism.

Rwandan tourism has a number of identified risks. First, because tourism is mainly focussed around gorillas and the neighbouring region of the Volcanoes National Park (Neilsen & Spenceley 2010). Solely relying on one single selling point is a risk, particularly given that sustainability requirements pose limits on the growth of tourists to such sites.⁷ Second, even with evidence of growing tourist numbers, Rwanda is still an uncommon destination for tourists. It still receives low comparative levels of expenditure by tourists for the region as shown in Figure 4. This is because it is often “seen as an add-on to an East African safari tour, principally to visit the gorillas” (MoTI 2009 p.7)

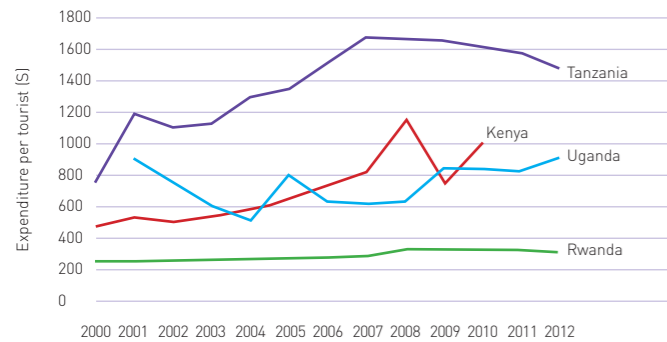


Figure 4: Expenditure per tourist in East Africa

Source: Calculations based upon UNWTO data (UNWTO 2014)⁸

Beyond private-sector growth, recent policies have therefore considered how to overcome these problems – expanding tourism by attempting to diversify sights and increase expenditure by tourists:

“Whilst recognising the importance of this iconic product [Gorilla tourism], much effort is needed on diversifying the industry to include a wide range of other products. This diversification may consider strengthening Meetings, Incentives, Conferences and Exhibitions (MICE) tourism, birding, culture, agro-tourism, adventure products and others.” (MoTI 2009 p.7)

As a consequence of this strategy, new ideas for tourism and activities are beginning to emerge in Rwanda.⁹ However such initiatives are still quite new and as we will discuss, at present the core motivation for international tourists to visit Rwanda has barely changed.

Value chain models and tourism

Given the service orientation of the tourism sector, mapping the value chains is a more difficult task than in sectors where a physical commodity is passed along a supply chain. Figure 5 provides an overview of the different roles in the tourism sector. This figure draws on recent discussions of tourist value chains in East Africa in the literature (Ashley 2007, Christian 2012, Christian & Nathan 2013, Doerry 2008). The actors and roles are discussed below.

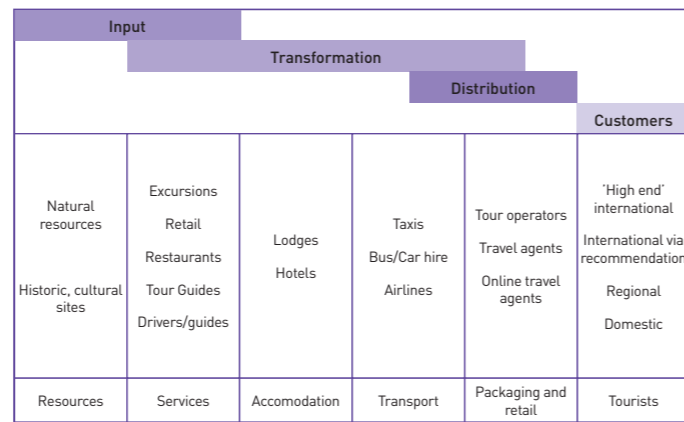


Figure 5: Elements of the tourism value chain for Rwanda

Source: Fieldwork

A key observation regarding value chains in tourism is the more dynamic nature of the supply-side of the chain. The supply-side is not constant but depends on the types of activity and services appropriate to different categories of customer. For instance, a domestic tourist will visit different sites or use different accommodation to international tourists. Thus, value chains are more reconfigurable in the tourism sector, and certain sets of relations relate to specific types of consumer.

Yet, the value chain model is valuable in highlighting the more generic nature of services, sights and facilities that make up tourism (as outlined at the top of Figure 5). Tourism is made up of a few key *inputs* (in the case of Rwanda this is the core natural resources and cultural sites). Next to this sit a set of *transformations* – more or less standardised services, accommodation and transport which provide for customers during the tour. For some tourists certain services are bundled together as a single offering, for example tour operators will bundle hotels, transport and guides for international tourists. For other tourists the same services might be less bundled, for example more adventurous tourists may choose to undertake excursions or trips independently.

Sitting between services and customers are those responsible for *distribution* (i.e. actors who select a bundle of services and sites, and market these to consumers). Distribution has historically been done by outbound firms. There are firms – typically tour operators and agents – that allow customers to arrange a bundle of services whilst in their home country. Inbound tour operators have traditionally focussed on dealing with the logistics of bundling services in-country

In terms of customers in Rwanda, there are two key categories. As outlined, the core focus of Rwandan policy has been so called “high-end” international tourists (MoTI 2009).¹⁰ As mentioned, international tourists tend to not solely visit Rwanda; many visit East Africa with Rwanda as one leg in a wider tour. As reported by Neilson and Spenceley (2010 p.20) a recent Rwandan tourism survey suggested “the most frequently cited length of stay by international tourists was 4 days”. There was evidence in our research of more pro-active international customers.¹¹ Such groups do not bundle all elements of the tour, but rather using recommendations may go directly to an inbound tour operator, or self-arrange extra elements of their tour.

A second category of customers, that we found to be common are labelled as local and regional located customers¹² in Figure 5: Elements of the tourism value chain for Rwanda. These customers are far more likely to purchase services directly – a travel agent here, an excursion, a hotel there – made easier by their local proximity.

In sum, this section has shown the importance of value chains in understanding the supply side of tourism as regards how value is built. The notion of tourism as a combination of more generic services (which can be

		Cost (\$)	% of total tour costs*	Income after costs**	Calculation notes
Outbound tour operator (OTO)		6500	-	23%	Tour prices vary widely in Rwanda. The cost here is based on the published cost of one mid-range tour firm based in the UK. Assuming peak season travel
	Flights (bundled with OTO)	600	10	-	Assuming UK based tourists
Inbound tour operator in Rwanda (ITO)		4420	68	13%	Using charges of mid-range firm (likely to be lower in reality when OTO and ITO are in relationships)
Bundled activities with ITO	Transport/Guides	405	6	-	Take figure from interview high end guide (\$60 per day) Cost of hire 4x4: \$75 x 3
	Hotels	1553	24	-	Three nights with tour operator reduction: 2x Virunga lodge: \$630pn 1 x Serena Kigali \$293pn
	Natural resources	1625	25	-	2 x VNP Gorilla passes at \$750 Kigali tour: \$125

* % of total tour costs, calculates the percentage of the outbound tour operator cost (i.e. the price the customer pays) that each element costs

** Income after costs, estimates the percentage that tour operators receive after they have paid for all the services they bundled.

Notes on calculation:

Based on the average of four days/three nights spent in Rwanda from Neilson and Spenceley(2010)

Itinerary is based on a typical 4-day itinerary from OTOs and ITOs

This calculation intentionally misses out on the regional TO element as it introduces further complication to the profits and losses, so the above looks a little unrealistic as in reality not many would just visit the region for 4 days

Table 2: Estimate on costs and profits in the value chain for a typical tour

Source: Drawing on fieldwork

bundled and unbundled) should lead towards a more succinct analysis of value. Geographically the work also highlights the importance of changing relationship between three locations: outbound countries, regional actors (given that Rwandan trips often traverse multiple countries) and Rwandan actors.

Value calculation

The high level of customisation of tours makes it difficult to clearly define the breakdown of value. Capture of value will depend on customer type (international, domestic) and how customers choose to bundle and unbundle elements of tourism. Table 2 outlines an illustration of where value is captured and created, drawing on the typical ‘high-end’ stay in Rwanda – a four day including a visit to see gorillas.

Whilst this calculation is crude, several key observations can be made. Table 2 highlights that it is those with the ability to reach end-consumers who are liable to extract most value (e.g in the table outbound firms gain \$1500 after bundling costs whilst inbound firms gain \$845). This is in line with similar work in Kenyan value chains (Christian 2012), and suggests that firms who reach consumers are liable to exert most power and control of value chains. The value calculation also suggests that in Rwanda there are a number of roles with the potential to build viable business. Although estimates are crude, clearly inbound tour operators and guides¹³ can be profitable, even with a relatively low level of customers.

Finally, the value chain calculation highlights a high level of intermediation, and clear motivations for disintermediation. Customers are often mediated by two actors (inbound and outbound tour operators) from actual services they receive, and this inflates cost. Similarly, other value chain disintermediation might also reduce costs: ITOs selling direct to the customer, OTOs cutting out ITOs, services selling direct to the customer, guides integrating elements of ITOs into their operations.

Applying production networks to tourism

As outlined previously, global production networks consider the networks of actors at multiple scales that play roles in influencing the production of a product or service. Here we examine how such models apply to the case of Rwandan tourism. In this section we particularly highlight four key considerations: territorial embeddedness in Rwanda, network embeddedness of the tourism industry, networks around private ownership of tourism facilities, and wider financial networks.

Territorial embeddedness

The form that tourism takes in Rwanda is strongly influenced by local conditions. Underlying this is the position of Rwanda as a mountainous but small country, where natural resources are often located in remote areas. This influences the logistics of tourists and tourism firms in Rwanda. In particular two key points can be highlighted. In terms of topography, sites are not simple to access, and some hotels, lodges and sites are located in inaccessible areas which may be difficult to contact.¹⁴ As a CEO of a London-based outbound tour operator noted, topography effects how logistics can be done in country:

“... almost all of what we do [in Rwanda] is private four wheel drive trips where the vehicle will go to the client. You have to have a guide and a vehicle, you want that from a reputable company so there is some backup, and when they are booking a lodge they need to be booked – not only a room for the client but also a room for the driver and that’s got to work. For us it makes sense to use a ground handler for that”

In this outbound firm, the interviewee later discussed how other countries in the region used different forms of logistics. In particular, how elsewhere, hotels and lodges were able to deal with logistics and transport without the needs of local ‘ground handlers’. However, in Rwanda this has not been possible given the complexity of tour organisation,¹⁵ and thus topography shapes the logistics of tourism.

Rwandan tourism is particularly marked by the need for sustainability and community awareness. Popular resources in Rwanda are often set in areas of national parks. Gorillas are also endangered species where it is vital for their survival to ensure that their territory is not destroyed. Thus, Rwanda as a viable destination relies on the responsible stewardship of national parks. There are also demands on tourism firms around 'community awareness'. This concept relates to the international media coverage of Rwanda as a 'post-conflict' country still recovering from the fallout of the Genocide and with many social issues. Given perceptions of fragile environments and communities outside Rwanda, it is not possible for tourist sites and services, particularly those located in rural areas, to ignore these issues. Territorial embeddedness here relates to how many of the lodges and sites are strongly embedded within a local community. This means that rural lodges often have some form of community ownership or stake. Other tour firms have integrated into ethical-tourism activities such as rural home stays and excursions to local communities. Further, some proportion of the income from national park fees has also been fed back into local communities in order to build community support for preserving these resources (Spenceley et al. 2010).

It is not uncommon for eco- and community elements to exist as part of African tourism activities, but in our exploration of tourism in Rwanda a large majority of firms integrated elements around sustainability or community development into their structures.¹⁶ Thus, embeddedness in communities is a crucial element for firms in the tourism sector in Rwanda. As Rwanda looks to attract growing private investment from international groups and financiers, how this commonality of integration of sustainability and community goals fits with the needs of more generic chains and strategies is crucial to understand.

Network embeddedness

Rwandan tourism has been shaped by Gorilla tourism. International tourist visits have typically come through tourist booking with outgoing tour operators. For Rwandan firms, network embeddedness has thus been around the long-term relationships with outgoing operators. Many activities in the sector have been shaped by this structure of long-term relationships with outgoing tour operators. For instance, one key expenditure for the Rwandan government in the context of tourism has come in financing stands in global tourism fairs, to allow Rwandan tourism firms to build links to outbound firms. The outlook, and consequently skills of Rwandan firms are also shaped by this predominant need. Rwandan firms have become comfortable in understanding and organising the logistics of tours, but they have less experience in customer marketing.

Whilst these outbound networks are likely to continue to be valuable, it may be that Rwandan firms have become overly embedded in relations with outbound operators. As one consultant on African tourism outlined:

“What you do see here is over reliance of relationships with tour operators, Europe, and the US can send them clients every year.

“They have sat complacently in those contractual relationships for many years. Some are seeing their numbers drying up and they don't know what to do there and they are not prepared for direct bookings, not prepared for even client service”

What this consultant is alluding to is the fact that tourism is changing. New drivers (i.e. the growth of large tourism chains and the expansion of the internet) may require new forms of relations. Yet, network embeddedness which shapes experience, relationships and skills may make it difficult for Rwandan firms to take advantages of these new opportunities.

Private ownership

International hotels, airlines and tour operators are looking to expand their portfolios, reaching into an increasing range of countries (Niewiadomski 2014). This growth has affected Rwandan tourism. There is increasing integration

of Rwanda firms in global tourism whether that be multinationals or regional groups. Examples found in this work include:

- Hotel chains such as Serena have invested in upgrading their Kigali facilities;
- Lodges located around the Volcanos National Park are part of Kenyan and Ugandan eco-tourism groups/collectives;
- A concession to the South African private company African Parks to manage Akagera National Park;
- Massive private-sector investment in the new conference centre in Kigali;
- Growing presence of multinational firms (US, UAE, India) who have established physical presence as local travel agents in Rwanda

These Rwandan firms that are part of multinational chains need to coordinate efficiently across multiple locations, but also have to integrate within the territorial and networks norms in Rwanda that have been outlined above. This dual set of requirements can lead to a number of tensions around human resources and inputs. For instance, firms are keen to maintain their reputations and standards across nations. It may be that the skills of local staff cannot meet the high level required by these multinational chains. The same is also true of inputs such as local handicrafts and food supply which will need to meet certain levels of quality and professionalism to be trusted by large firms (Shaw & Williams 1998).

How firms build skills locally as opposed to bringing them in from elsewhere will have important implications for the wider impact of tourism in Rwanda.¹⁷ For example, one observation during interviews was that those tourism firms in Rwanda which had international owners, tended to employ management from Kenya (where tourism training is better) or even internationally in Rwandan operations. Further, trade-off between local and imported resources (people, produce, services) are also important to the poverty effects of tourism. As other research has shown, low-income groups can be providers of inputs (such as food) and employed as staff in tourism. How multinational tourist firms choose to balance local versus imported resources will have a direct bearing on poverty effects (Ashley 2007, SNV 2011).

In this work, we are particularly interested in how changing connectivity has influenced these tensions – does connectivity allow locals to improve knowledge and skills to become better integrated? Or does it support simpler sourcing and co-ordination of resources from abroad?

Finance

Networks around financial systems are crucial in orientating activity. Specifically, integration into international banking institutions is an important element of online provision (i.e. by supporting online financial transactions). Rwandan financial integration in terms of financial elements like ATMs, Visa payments, international banking and online services like PayPal influences how digital connectivity can be used in the country.

Building new tourism assets and upgrading services is costly. This is indicated in the large proportion of FDI devoted to Rwanda's tourism sector. To finance upgrading, access to international investor and loan providers is important. Thus, a combination of how Rwanda is perceived by foreign investors, and the types of firm (local, regional, international) that are able to access favourable finance, will ultimately influence how the sector is able to develop.

Summary

Key elements and issues are outlined in Table 3 which links back to Dicken's models of GPNs that were shown in Figure 1.

Production network element	Key elements in Rwanda
Human resources	Skills of local staff to meet more complex needs (hotel management, conservation, etc) Customer service skills amongst staff
Goods, foods etc.	Politics of local vs regional vs international inputs (sourcing of foods, handicrafts)
Logistics	Geographic factors that affect how tourism is set up (terrain, landlocked, need for 4x4 vehicles) (territorial embeddedness)
Financial system	Money for investment in upgrading sites, systems and how this favours multinationals Investment friendly environment of Rwanda Structures of payment systems and how tourism integrates into them
Regulation, co-ordination, control	Status of physical, natural and community resources which demand tourism in Rwanda embeds sustainability and community initiatives (territorial embeddedness) Co-ordination norms in some places around tourists going to local tour-operators or agents – payments, trust, etc. (network embeddedness) Governance and associational structures within Rwanda (territorial embeddedness) Underlying environment for tourism visa conditions, business environment, etc Perceptions of Rwanda as a safe country given history and location close to troubles in DR Congo and how this affects co-ordination and logistics

Table 3: Elements of production networks as applied to Rwandan tourism

These elements of global production networks are used in two ways in this work. First, firms are looking to *upgrade* and capture (or create new) *value* in tourism value chains, and connectivity is one element in this process. Certain elements of production networks can limit the potential for improved growth and integration (such as access to finance, skills). Second, Rwanda is looking to move away from a homogeneous tourist sector focussed on one national resource. The goal is to create a diverse set of tourist attractions and sites. Using connectivity is one way that growth can be kick-started. Here, Rwanda is moving into more competitive sub-sectors of tourism, and different forms of embeddedness will determine the effectiveness in attracting investment, firms and ultimately customers.

GPNs will also influence the outsourcing behaviour of firms which locate within Rwanda. Thus, it is worth considering that, even with highly effective use of changing connectivity to drive tourism, the ultimate impacts and benefits of tourism may be linked to a far wider set of factors.

3c. How has the internet been theorised and perceived as aiding tourism?

There is rich literature which has examined the effects that connectivity had on tourism. In this section, that literature is explored in more detail. This review provides a more detailed understanding of the types of transformations that changing connectivity might bring to the tourism sector.

The internet and the changing face of tourism

The four-fold categorisation used in the value chain in Figure 1 – inputs, transformation, distribution and customers – is used to examine how connectivity effects have been linked to different elements of tourism in the literature.

Inputs: resources and facilities

Resources and facilities are at the heart of a tourism experience. Therefore, from a *visibility* perspective, bringing resources and facilities online is crucial. This can include integrating visuals and using social media to drive improved visibility and demand from customers (Buhalis & Law 2008). Visibility and marketing for countries or districts is often linked as 'Destination Management' and 'Destination Management Organisations' (DMO)¹⁸ in the literature. Online DMO is one element of this, where visibility and information of a country or region is important in customer search and information needs (Palmer 2007).

It is also worth highlighting the growing role that the internet might play in education and learning around tourism. As organisations and sites look to improve tourism experiences, quality of service and improved management are vital. Online learning can provide more flexible and cheaper ways of training and building the knowledge of trained staff, particularly for multi-nationally spread firms (Buhalis & Law 2008).

Transformations: Services and logistics

Changing connectivity can also play a key role in improving so-called 'business functions' which allow businesses to operate more efficiently and reduce costs. Examples of facilities include information systems that allow tracking and monitoring of room (or resource) availability. Online booking and payment systems can also improve the efficiency of co-ordinating and arranging services (ibid.). Beyond this efficiency argument, growing online tourism networks allow disparate activities and firms to integrate (Milne & Gill 1998). Online integration is not new, and there has been a long history: airline booking through videotext systems; computer reservation systems (CRS); and later wider tourism booking in global distribution systems (GDS) (Kracht & Wang 2010). Recently, online travel agents have provided such direct booking functionality and flexibility online for the customer through the web.¹⁹

This idea of growing flexibility also highlights the potential of the internet to improve integration of tourism services. Tourist activities tend to involve a heterogeneous set of actors and thus integration is crucial to ensure more

dynamic production of tourism. Literature on the internet and tourism has suggested that the growth of online systems might allow smaller firms to better compete with larger ones through improved integration. However, evidence in developed countries is mixed, and some work suggests that smaller hotels and firms experience fewer benefits than larger ones (ibid.). For customers, integration of systems and services and these networks can reduce costs, improve services, and potentially provide more choice and dynamic customisation of activities for tourists (Zhang et al. 2009).

As outlined above, online travel agents and tighter integration suggest simplified logistics for arranging tourism and travel. These systems might lead to disintermediation of those actors who have previously been responsible for organising logistics, such as travel agents. In these cases human/firm intermediaries are often replaced with new digitally oriented intermediaries, where a growing wealth of internet resources – search engines, tourism meta-search engines, internet travel agents and traditional firm websites – now look to provide integration for consumers (Kracht & Wang 2010)

Finally, online feedback is important for business functions. Feedback can come from online feedback forms, webstats, social media and information from GDSs/online travel agents and provide firms with rich sources of information about customers and activities. Such feedback can be a source of data which appraises tourist services of a better way to manage operations, predict needs and understand the demographics of customers (Zhang et al. 2009). It also potentially allows greater agility to respond to customer demands and better customise their activities (Buhalis & Law 2008).

Distribution: Bundling and marketing

The growth of the internet in tourism has led to it becoming a key platform in terms of providers reaching and interacting with customers. There are a range of different options when it comes to online visibility. This includes simple online websites and web adverts. There are also specific travel-based websites and resources which firms might take advantage of (such as TripAdvisor and travel blogging sites). Generic online resources such as Facebook, YouTube and online mobile apps also offer larger but less focussed customer bases to push tourism services.

Not all customers gather information through direct links to service providers. Customers increasingly look to peer recommendations and feedback online to influence their trips and service choice. This can be through feedback mechanisms that tourism websites provide themselves, but with the growth of online networks it goes far wider, where content on social networks presents and markets tourism through customer social network activities (Xiang & Gretzel 2010). There is also growth of specific reputational focussed services that have become integrated into tourism related site and searches, of which trip advisor is currently the leading actor (Bronner & Hoog 2011).

Many of these online channels provide a means for firms to connect to customers in the tourist sector. Online channels have particularly been articulated as useful for smaller firms where firms can reach and engage with customers more flexibly (Kracht & Wang 2010). As customers look for more customised tourism experiences, competitive firms can use the internet to engage in multiple demographics and markets more easily. By varying branding and adapting online products according to different customers, firms can have greater agility in responding to customer demands (Buhalis & Law 2008).

Customers

In their work on trends in tourism, Ioannides & Debbage (1997) have suggested a shift in tourism. Customers have moved away from standardised itineraries oriented towards a mass-market. Instead, they increasingly demand customised and flexible tourism, and there is a push towards more individualised creation of tourism *experiences* (Urry & Larsen 2011).

Internet availability is one element in contributing to these more pro-active consumers. Consumers are able to access and discover an increasing range of information on different tourism opportunities and increasingly experience that information as rich media before departing on trips. Drawing on this information, tourists are demanding more flexible and customisable tours. Further, customers can now find and be involved in niche sectors of tourism, which are able to build sufficient customers via the internet (Steinbauer & Werthner 2007).

The internet also potentially offers stronger bargaining power for consumers to reduce costs in tourism activities. For example, customers might cut out customer-facing actors when booking flights, hotels and excursions directly online (rather than by paying intermediaries) (Buhalis & Zoge 2007).

Summary

Trends around connectivity and tourism have revealed a number of ways in which connectivity might transform value chains in tourism. However, it is important to point out that this work has thus far focussed on developed countries as tourist destinations. Some research has brought up the relevance of the internet for developing countries (such as Christian 2012, Karanasios & Burgess 2008, Minghetti & Buhalis 2010) but otherwise no systematic examinations exist. The literature is therefore unclear as to the extent to which tourism trends are applicable to locations such as Rwanda. Our analysis, drawing on empirical work, can provide some insight into this literature gap.

4. METHODOLOGY

The research presented in this report examines tourism in Rwanda as part of a global sector. Our research focuses on the relations and linkages between tourism firms and customers which traverse multiple countries, and how changing connectivity affects linkages. The key roles in tourism were initially mapped during pilot work and this mapping of core roles was used to determine sample selection for qualitative work.

Given the Rwandan focus, the majority of the research focussed on actors in Rwanda itself. The work in Rwanda was supplemented with research with actors in the East African region who link into Rwandan tourism, and also outbound actors (in the UK) who had more direct interaction with customers.

Fieldwork in the tourism sector in Rwanda took place over two principal periods, September 2012 to March 2013 and April 2014. The second period of fieldwork was important in that it was used to clarify and update tentative results through repeat interviews with firms and policy interviews in order to verify the conclusions of the initial work.

Interviews lasted approximately one hour with interview themes drawing on the research questions and GVC/GPN frameworks outlined in the previous sections. These interviews looked to explore changing connectivity, as well as the effects in reconfiguring value chains and production networks (see appendix 13b for sample interview questions). The coverage of actors interviewed is shown in Table 4.

Main role	Comment	Number of interviews
Natural resources and tourist attractions	General managers of such resources	3
Services	Guides, drivers, handicrafts producers/sellers	6
Hotels and hostels	Managers of hotels and services	7
Inbound tour operators (ITO)	Managers and directors of tour operators located in Rwanda	19
Rwandan travel agents	Managers of travel agents – involved in flight arranging, logistics and visa, based in Rwanda	9
Outbound tour operators	Managers of tour operators located in Kenya and consuming countries	11
Sectoral actors	Actors involved in cross-sector of overarching roles – software vendors, associations, policy actors	4
Total		59

Table 4: Interview coverage in tourism sector²⁰

Analysis

Transcripts of interviews were analysed using Nvivo qualitative software for code-based searching and reporting (Gahan & Hannibal 1998, Van Hoven & Poelman 2003). Interview material was first attributed to a role (following Table 4), and then coded, using a pre-defined set of codes drawing on the research questions and framework models, to conceptualise the potential effects of new connectivity in the region. A full list of the codes is outlined in appendix 13c, for example this included codes for occurrence of items such as:

- codes based around how interviewees and reports brought up images and expectations of this changing connectivity
- discussion of changes in production that linked to changing connectivity
- practical issues that interviewees encountered when they were utilising this changing connectivity.

During both these processes of coding, new themes also emerged that were coded in order to provide a more grounded influence of empirical research on findings. These emerging codes allowed a more complete analysis that might have been missed using only the pre-defined codes. These emerging themes were subsequently examined in more detail, some then integrated into the core analysis, whilst others which were deemed to be outside the core scope of this research were therefore rejected. Coding work thus follows well-established techniques of content analysis which allow qualitative and quantitative interpretations of relations between categories and emergent themes (Krippendorff 2012, Lutz & Collins 1993, Slater 1998).

The core analysis presented in this report draws out the key elements that emerged from this work. By examining the codes across actors, expectations of connectivity and roles in production, we were able to identify common or competing discourses about effects of the internet and ICTs, and analyse the effects of changing connectivity in the tourism sector. As outlined above, the dual periods of work in Rwanda were designed to allow iterative analysis (Miles & Huberman 1994), where tentative results and outputs were discussed with key actors during later interviews to ensure that they were a fair representation of what was occurring in the sector. These interviews also provided a forum for additional inputs and participant triangulation on early conclusions.

5. CHANGING CONNECTIVITY

5a. Types of connectivity

Table 5 provides an indicator of the typical levels of connectivity amongst actors in the value chain. The different forms are introduced below:

- **Satellite** (medium speed, postpay, high costs) – Given the rural location of some parks and lodges a lack of broadband or mobile coverage led to use of satellite internet. This provided a limited but reliable connection in remote locations. However, the costs are high, so this was only adopted in a few cases of services owned by larger firms.
- **Mobile phones** (medium speed but inconsistent connection, prepay, low cost) - It is possible to connect to the internet using high spec mobiles. Rwandan tour operators and hotel management often had such connections. They found them useful as they tended to be on the move, but they were generally secondary to higher-speed wired connections in their work places. For guides, constantly on the move, mobile internet provided a primary means of connectivity.
- **USB wireless modems** (medium speed but inconsistent connection, prepay, low cost) –When connected to a PC these provide portable access through 2.5G or 3G mobile networks and were popular due to the lower costs. Many of the smaller tour operators and travel agents use such modems. As outlined below, a number of firms with broadband connection had USB modems for backup purposes.
- **WiMax Broadband/LAN** (medium/high speed, postpay, medium cost) – This denotes higher speed ‘always-on’ networks in Rwanda. This can be through WiMAX networks which connect into ISPs’ dedicated wireless networks. In this category we include a number of firms who had ‘broadband’ connections as part of their building provision.
- **Fibre** (high speed, postpay, high cost) – Some international hotels, as well as some large attractions were directly linked into fibre-optic networks. Whilst this is becoming cheaper, it still requires custom arrangements with ISPs.

All actors who were interviewed were connected to the internet in one form or another (see Table 5). Internet use in this sector was a core part of activities, highlighting the importance that the internet plays in tourism.

Attractions and natural resources may have high-speed connections considering they are arms of government – which often supply fibre to their own facilities in Rwanda. In the case of natural resources, remote locations can necessitate the use of satellite. In both these cases, day-to-day communication

and logistics tend to be done in the location of the site or natural resource, where more strategic activity is done elsewhere (e.g. national parks and RDB, museums and the central museums’ body in Huye).

For hotels that cater to international tourists, there has been a focus on provision of internet service for customers, something often demanded. In a 2012 survey undertaken by the Rwanda Utilities Regulatory Agency (RURA), hotels were found to have a wide array of connection from 128kbps to 6Mbps. Apart from from a few top-tier hotels, hotels tended to use WiMax connections, which struggle during peak use. Thus the survey found unsatisfactory slowdown during peak times and when hotels were busy (RURA 2013). This survey did not include lodges close to the natural attractions, but our interviews suggested that due to their remote locations it was often difficult to access high-quality connections. Thus, they tended to integrate expensive but custom internet setups to provide low-speed connection for customers (for example, using satellite internet).

Some tour guides use the internet. In particular, more pro-active tour guides and those who worked in freelance roles used mobile internet. Being available and responsive to queries that arrived through the internet supported their freelance roles and helped with maintaining relationships. Other guides and drivers tended to co-ordinate through mobile phone communication.

For tour operators, whose main role was often in logistics of various in-country services, access to the internet is becoming vital. Connectivity levels varied, but that variance highlights the diversity of tour operators in Rwanda more than it says anything about internet use amongst tour operators. Small firms may organise tours as one element within a range of tourism activities offers, and these firms can survive just through USB modem connections. Larger professional Gorilla safari tour operators might have offices with 5-10 staff and such firms had more reliable broadband or WiMax offerings in order to serve their needs. Similarly, travel agents in Rwanda had a diversity of internet connections according to the size of the firm, and here modem or WiMax connections were most common.

It is also worth pointing out those who are not connected. From interview discussions, it was found that those involved with *inputs* into the tourism value chains, particularly low-income groups, tended to be less connected. Those involved in food selling and handicraft tended to be linked into value chains through face-to-face and mobile phone communications. In a similar way, smaller hotels and restaurants may have minimal connectivity, particularly those which focus on regional and local business customers (ibid.).

Limits to connectivity

From the perspective of tourist firms in Rwanda, growing connectivity is an

important element of tourism. However, in interviews, there was a wealth of complaints from firms about connectivity provision.

First, the internet is playing a key role in Rwanda and larger firms (such as hotels, tour operators and travel agents) are interested in high bandwidth connectivity and have a budget for this. Yet, even with reducing prices of connectivity, the costs of the most consistent (i.e. non-mobile) connections is prohibitive. This high cost is highlighted in discussions with a manager of one large, internationally focussed hotel using a WiMAX connection, which would appear to be the type of company that would have had a high bandwidth connection:

“... fibre optic is still expensive. You know like one gig bite, with MTN because our provider is MTN, it’s around 1 million, 800, 700 Rwf [\$1150-\$1450 per month].”

One manager of a travel agent, part of a multi-national chain used a slightly slower WiMAX link, but was dissatisfied with the price:

“It’s high, trust me ... [we have to look at] how to get it subsidized because I think internet is cheaper everywhere else.”

Beyond the high price, internet access was characterised by a lack of transparency around ISP service. One example was frequent complaints in interviews that bandwidth was often overstated and costs were not well publicized by ISPs. Another example was highlighted in large hotels and firms which wanted to access fibre directly. Whilst fibre has been laid in some places, particularly in urban areas, information on getting connected was surrounded by much confusion. The government report on connectivity and hotels highlights this confusion:

“hotels are not able to connect even if the fibre is passing in front of the hotels. Hoteliers are told that the BSC’s [Rwandan ISP] fibre is reserved for public institutions whereas some hotels in town are connected to BSC’s fibre.” (ibid. p.13)

In another case, a recently employed director in a rural natural resource spent many months trying to get connected into the fibre network. He eventually found that his offices had already been looped into the fibre before he was employed.

“I said one thing we should do is to try to have fiber optic and so I wanted it to be connected – [but] didn’t know how. We had it so when this guy was doing their checking, he said you have it!... And then we discovered we had it ... he connected us and the price was cheaper, the service was great.”

Others missed out though, for example one hotel manager described his frustration on seeing fibre being dug near his hotel but then finding high costs to connect:

“I have realised that for them to come and connect us from the road side to here it will cost us so much.”

There was also disappointment that changing connectivity had not led to great improvements in the speeds of all connections in Rwanda. This disappointment was especially felt by actors outside the metropolitan Kigali region where the hope of a fibre-optic backbone had not been realised in terms of speeds. As one manager of a natural resource described, this promise has not been fulfilled:

“I remember a couple of years ago them digging the trenches along the roads I remember it happening but I don’t know ... what impact it has had in [firm] I don’t think it has had any impact”

One freelance tour guide also found that internet quality was frequently poor as he travelled through the country:

“... when it was laid what we were promised by the media, by the of course the government, it was saying it was going to be high speed internet, but using my small phone here, it’s quite still slow as it was ... I don’t know how they’re going to fix it and make it high speed like they promised us.”

The level of complaints around connectivity was high and more vociferous in tourism as compared to the agricultural sectors we researched in Rwanda, particularly relating to the fact that connectivity is vital to this sector. Slow and inconsistent connectivity can directly hit the bottom line of these businesses. This is highlighted by a safari operator who described how constant connections and immediacy are important in tourism.:

“We need it [connectivity] to be very fast. It’s a bit slow and sometimes it gets some interruptions within the network. So it takes time to rebuild the network and it retards our business if most of the work we are doing is on the internet.”

One manager of a restaurant in Kigali focussed on tourists, also suggesting that inconsistent connections influence the types of business he can run:

“How do I personally feel with the internet here in Rwanda? It needs to be faster. We were going to put up an animation as our landing page on our website ... We opted not to do that because we realized that if you tried to open that in Rwanda, it would take 5 or 10 minutes to load.

“Web pages are much more complex than the web pages we had 10 years ago. [In Rwanda] I feel like I’m browsing the internet like it’s 1995. It frustrates me quite a lot ... there is no point talking about internet business in Rwanda until we actually get decent internet, is sort of how I feel.”

Given that in tourism, customer consumption also occurs within Rwanda. Limits in connectivity do not only relate to businesses functions: they also affect customers when they are in-country. This can manifest itself in multiple ways. First, as detailed in the government report on hotel connectivity mentioned above, connectivity is crucial for hotels as it can affect customer ratings and recommendations:

“... guests visiting the country noted significant progress in hotel services like quality of rooms and foods, hospitality and customer care. But at the same time, the same visitors pointed out the slow pace in improving internet speed in hotels rooms, lobby spaces and internet kiosks.” (ibid. p.4)

Second, beyond hotel internet access, connectivity problems can affect financial and payment systems. One general manager of a high end hotel in Kigali (who did not wish to be recorded) described the consistency of payment services as “terrible, terrible”. Lack of consistency particularly related to dropouts on the network which can be very unreliable leading to time-outs and card error messages. As he described “customers get embarrassed when it doesn’t work”.

A manager of a tour operator that focussed on natural resources had also experienced customer complaints around the inability to withdraw money from cash machines in the locality due to connectivity:

“The internet we have is not fast enough to allow the use of ATMs everywhere in the country so you find that the use of ATM cards is hindered by low capacity of the internet So the government and other people need to work on it and make sure it’s fast all over the country because we lose a lot of money.”

The problems outlined above, slow speed and inconsistency, have been attributed to a number of issues. One key element is the growing popularity of the internet. ISPs are not maintaining sufficient capacity, and saturation can often occur during peak times. For example, one general manager of a tour company whose offices are located in Kigali described issues with his WiMAX connection:

Role	Best connection type						
	None	Satellite	Mobile phone	Modem/ PC	WiMax Broadband/ LAN	Fibre	Not stated
Attractions	0	1	0	0	0	2	0
Guides	0	0	5	1	0	0	0
Hotels	0	0	0	0	5	1	0
Services	0	0	0	0	1	1	0
Tour Operators	0	0	0	7	8	2	2
Travel Agents	0	0	0	4	3	0	1

Table 5: Connectivity by role
Source: Authors’ fieldwork

"you have a slowed connection for a period of about three hours in the morning and again in the evening and whenever that happens, there's delay. ... there's potentially loss of businesses."

Poor connectivity is not solely the fault of ISPs though. Given the high price, hotels may prefer to oversaturate cheaper internet connections than pay for a higher rate:

"We have realized that most of hotels that use fibre optic have stable internet compared to the hotels that use wireless technologies. The problem is most probably not the technology, but the problem may be linked to the bandwidth..which is not enough to satisfy the guests' needs.

"The hoteliers said that the internet is slow during morning hours and when there is a conference or meetings because of the high numbers of participants using hotels wireless internet. The main challenge to address in hotel industry is the internet bandwidth they subscribe to." (ibid. p.12)

There are also problems in connectivity for tour operators and travel agents located in business buildings. Building owners who supply bandwidth to offices may also cut corners. This was a concern of one operation manager of a tour operator whose offices were located in a central office area:

"Founders of this building are sort of kind of greedy; they never like get a limit and say: hey, here is where we are going to stop, they just keep on adding some people [more users, saturating connections] ... So, basically we just use modems in our office rather than connecting through any wireless."

There are also atmospheric condition to consider around wireless internet connections (internet over the mobile network and WiMAX) as they can experience slowdown due to weather conditions, particularly during the rainy season.

To overcome such issues, many firms had tried to switch ISPs at some point in their history. Some had also adopted multiple types of network to allow redundancy where internet is vital. For larger hotels the approach would be to use fibre but with a fall-back of LAN connection.²¹ For tour operators a modem backup for a WiMaX connection, or multiple modems from different ISPs were common to reduce the risk of being disconnected. However, as one manager of a tour operator commented, redundancy tactics were not really a satisfactory solution:

"... if it's a bit slow and always gets a lot of interruptions being the tour operator, we opt to have two systems working and that becomes expensive."

Summary

In sum, internet connectivity is widely used in the tourism industry in Rwanda. It is not a case of firms reluctantly using the internet; rather, it is central to their operations, and this includes even smaller tour operators, travel agents and some guides.

However, the problems that they frequently run into around slow, inconsistent, costly connections and confusing information have not been resolved by changing connectivity. The internet is used extensively by tourist firms and these limitations are problematic.

The review on tourism and the internet has highlighted opportunities for actors to improve their operations and upgrade by taking advantage of changing connectivity. Yet, limitations in connectivity are a real barrier to these improvements.

It was also outlined in the review that it is not just Rwandan firms that are looking to upgrade and disintermediate. International and regional firms are also looking at opportunities to expand. Thus there is a risk that Rwandan firms

with lower-quality connectivity can be a factor in pushing Rwandan firms to peripheral positions in increasingly interlinked global value chains.

5b. Introducing elements of changing connectivity on VC access to information and communication

The previous section outlined basic characteristics and problems around connectivity in the value chains. This section looks to expand the discussion to provide a summary of the online presence and activity of the firms interviewed. To support this discussion, Table 6 shows a survey of the online integration of firms interviewed. In particular it builds a simple classification of website level, and use of e-commerce and social media.

Examples of an 'entry' and 'medium/high' website are shown for two tour companies in Figure 6 below. The top image is a smaller tour company operates with a fairly simple HTML based website. It provides useful information and contact details, but little beyond this. The bottom image is one of the most sophisticated websites from a Rwandan tour firm. This one is more visually rich and includes YouTube material, links to social media and rolling blog content.



Figure 6: Website for two tour operators in Rwanda

Role (number)	Website Quality			Other elements of web use	
	Low	Entry	Good	Ecommerce	Active Social Media
Attractions (3)	0	0	100%	0%	100%
Guides (6)	83%	17%	0	0%	0%
Services (2)	0	0	100%	50%	100%
Hotels (7)	0	0	100%	15%	15%
Tour Operators (19)	15%	32%	52%	0%	42%
Travel Agents (9)	88%	22%	0	0%	11%

Key to categories:

Low: Email only and no website, or evidence of website but not accessible

Entry: Website present with some information and simple contact forms

Medium/High: More comprehensive website, professionally produced and/or including images and 'blog' style updates to site

E-commerce: Website e-commerce enabled (e.g. customer can directly purchase using a visa card)

Active social media: One of Twitter or Facebook is used and has been updated in last month

Table 6: Summary results of simple web presence analysis by value chain role

Source: Authors' research

Natural resources and attractions tended to have higher-quality websites and were more active in social media. Being part of public bodies meant that attractions were presented as part of well-funded central sites (e.g. RDB, National Museums) that have resources to run these online activities. Service providers, such as guides, merely access information through the internet. They are much less likely to create and use online resources such as websites.

Hotels and lodgings were increasingly looking to attract interest online, not only from tour operators but from a growing number of direct clients. Hotels tended

to have a higher quality of web resources available to them as shown in Table 6. Hotels and lodging were also the only area of tourism where firms were dipping their toes into e-commerce. As highlighted for two hotels in Kigali in Figure 7, hotels tended to have customised online reservation forms (which would lead to email being sent to firms).

As illustrated in Figure 8, some hotels have also integrated into online travel agencies such as expedia.com.

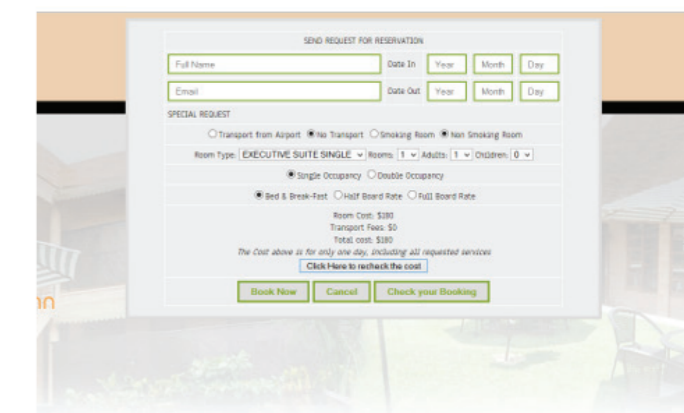
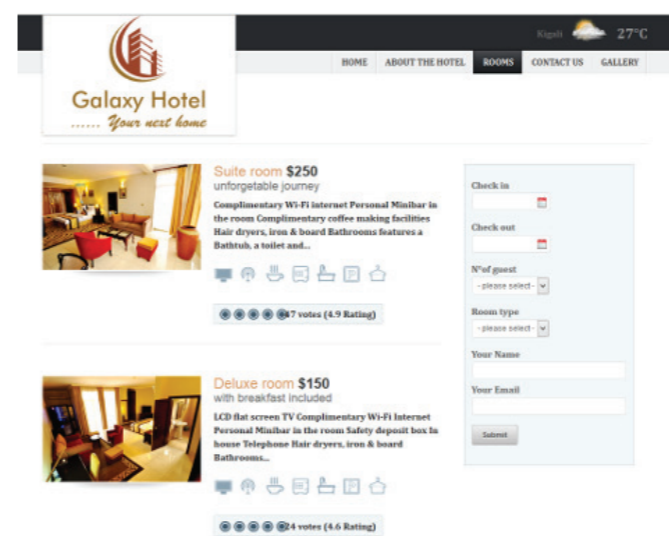


Figure 7: Two online reservation setups for hotels in Rwanda

Both allow specific details of dates and rooms to be specified and sent online. But, actual online booking is not available on these sites.

The screenshot shows the Expedia.co.uk search results for hotels in Kigali, Rwanda, for Sept 1 - Sept 2 for 2 adults. The page is organized into several sections: a search bar at the top, a map of Kigali, a list of filters (Star Rating, Price, Accommodation Type, Hotel Preferences), and a main list of 13 hotels. The hotels are sorted by price, with the lowest price being £103 for the Luxury Hotel Rwanda. Each hotel listing includes a photo, the hotel name, star rating, location, contact information, and a total rate. There are also promotional banners for British Airways and Trivago on the right side of the page.

Figure 8: Expedia results for hotels in Kigali includes 13 hotels

Tour operators are the principal co-ordinating actors in Rwanda, and their communications activities are widespread. Tour operators have websites and are often active in social networks in the hope that these activities will attract new customers. Sites are of varying quality, but often they are simple and informational as shown in Figure 6. None had online provision for booking and many included only vague details of itineraries and even less about prices. Interested customers (if in direct contact) would need to email and then to refine and cost in discussion with tour operators.

For travel agents, given that customers tend to be more local,²² there has been less onus on online visibility where personal networks, word-of-mouth, and walk-in customers have been the main source of business. This low online demand leads to lower standards of websites and social media. This is changing because of growing local use of social media and may require some changes in travel agencies in the future.

5c. Summary

In sum, variation in connectivity comes from multiple conditions. Costs, perceived usefulness of the internet along with location and size determine the type of connection and level of online presence.

We can also observe some limitations in people's ability to connect. There are inconsistencies and problems in the operation of connectivity that may limit how connectivity is used. Notably, wireless connections are more prone to dropouts and saturations than more costly connections. In terms of web presence, many firms only have very simple websites with low use of social media and e-commerce, and this may limit their ability to reach international customers.

In the next section we examine connectivity and web presence in more detail to understand how they are changing (if at all) firms in the tourism value chain, and Rwandan tourism more generally.

6. EFFECTS OF CONNECTIVITY

6a. Input

In line with previous work, we explore two elements around natural resources and services. First, we examine if Rwanda has increased the online visibility of these 'inputs'. Second, we look at whether digital connectivity has been used to support knowledge building and skills of staff in order to enhance tourism experiences.

Visibility of country and resources

Online visibility is an essential element of promoting a country or a region. We discussed such issues with one tourism consultant focussed on East Africa:

"... You've got to look at people's search patterns particularly when you look at some of the challenging market ... In the states [US] their searches often start with 'Africa' and then go down to a destination level before they even approach a business. I think having destinations sites is still important because of lack of awareness of a product."

"... You're still going to get the highest volumes of people search for say just Kenya instead of a particular region. And destination sites are still a common way that people access that."

Thus, with customers looking for tourism information online, destination management sites can be the first port of call. This is particularly the case for less informed tourists who might have more general regions and activities in mind when they are searching.

In Rwanda, the national online destinations site is run by RDB. Given the small size and number of destinations in Rwanda, these are all integrated into the main "Rwandan tourism" website (www.rwandatourism.com). This site also has active Facebook and Twitter feeds as well as using photo galleries and YouTube video to enhance the multimedia experience.

The website is regularly updated and contains useful information about Rwandan tourist sites and hotels. However, such a website is not at the same level of the glossy marketing of those that one sees elsewhere (e.g. South Africa, Israel, India). As outlined in Figure 9, the destination site is broadly similar to its East African neighbours, all of which follow a more information-driven (rather than marketing-driven) approach.

When asked about destination management, some tour operators and service providers suggested that the Rwandan site provided useful information for customers. Indeed, when asked about online sources of referrers, the Rwandan tourist site (which lists hotels and tour operators) was the most frequently cited.

Yet, there remained some important issues. Firms in the sector are reluctant to directly criticise any arms of the government, but there were implications that some elements were inadequate. As one freelance guide and driver commented, there is still more work that might be done in provision of information:

"... we are not spending a lot of time in developing and arranging this information for them [customers] online, because there are some things that are in existence but they are not advertised anywhere, so I think we need to concentrate more on ... all the information on the websites"

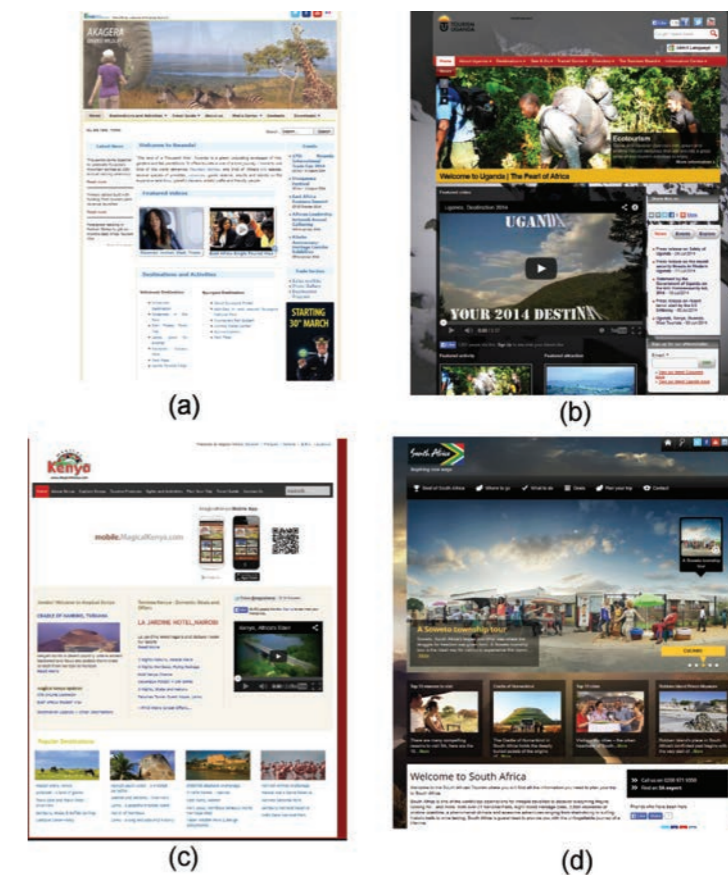


Figure 9: Front page of destination websites for four countries: (a) Rwanda (b) Uganda (c) Kenya (d) South Africa

The South African site is more marketing-driven with more interactivity and visuals. Rwanda in its information-driven approach is broadly comparable to its neighbours, although lack of multi-lingual content (compared to Kenya) and smaller range of content (compared to Uganda) are areas that might be improved.

As mentioned above, this lack was particularly the case when it came to moving beyond well-known tourist attractions. National tourism websites were often limited in providing details about less common attractions, such as birding, conferencing or outdoors activities.²³ This lack of information can lead to potential tourists relying on less reputable sources. For instance, one freelance tour guide commented:

"... information online has never been enough for everyone, you know sometimes there are some things you can go and search and not get clear information."

"You just find like blogs for different people, just relating to what you are trying to search and you don't have like a clear site where you can get like information about let's say wildlife in Rwanda, let's say plants in Rwanda and this is a hindrance ... So, basically there's not enough, so we still expect more of that."

Here the guide suggests that lack of information about elements of tourism on official sites, can lead customers to rely on blogs and other less reliable sources.

There were also problems around duplication of information amongst competing destination sites. For instance, the main RDB internal site also includes tourist information, the new East African Tourism site (<http://www.eac.int/travel/>) duplicates some information around Rwanda, and the Rwanda Tour and Travel Association (<http://rttarwanda.org/>) has similar information on visa and recommended hotels and groups to the main tourism website. Thus, there may also be a risk of diluting the message here.

From our interviews with key policy makers in tourism in Rwanda, it is apparent that the focus of national marketing and visibility is still offline. Rwanda has been particularly astute at employing PR firms to improve the nature of coverage of Rwanda in the mainstream media. Indeed, the country has reportedly spent millions in order to push a more favourable image of the country to reshape external perspectives following the 1994 genocide (Booth 2010). Presenting Rwanda as an attractive tourist destination is one element that supports this change in image of Rwanda, moving from a dangerous post-conflict country to one open to international business and tourism. Thus, whilst online national resources were present, we argue that they still take a back seat to these wider PR and marketing approaches in Rwanda.

Improving skills and knowledge

The section focuses on how the internet has been used to improve the skills and knowledge of managers and employees in the tourism sector. As outlined previously, literature suggests that new online resources could be an important source of skills, knowledge and training which could ultimately improve customer experiences through better service and organisation.

One element of knowledge relevant to tourism is in building in-depth knowledge of the tourist sights, resources and locations within Rwanda (e.g. recommendations of hotels and eating places, knowledge of wildlife, cultural and historic awareness of sights, etc).²⁴ With a growing sector – with new sights, hotels and services emerging – the need for building local knowledge is not only confined to new entrants. It is important that more established actors also maintain and update their knowledge. Interviewees involved in service activities – guides, drivers, tour operators and hotel managers – were asked questions about the sources of their local knowledge. Typically the principal source was not online. For some it was through discussion with those in similar roles (such as between guides). For others, such as tour operators, knowledge came from travelling to locations and experiencing them first hand.

The main 'Rwandan tourism' website outlined above was found to be the most mentioned online resource used by firms. Another online resource repeatedly mentioned was lists of providers given by associations. However, for some sectors such as guiding, resources were difficult to track down online and

would likely only be accessible to those with connections or who were part of said associations.

As outlined in the last section there was sometimes a lack of clear online information on more niche activities, locations and services in Rwanda. Thus, some larger Rwandan tour operators, particularly regional firms with offices in Rwanda, gathered and kept knowledge within internal firm knowledge databases. One manager of a luxury tour operator in the region discussed such a database:

"... once we can build to get up enough data in particular place we can share the information in our database that is why it is very critical for us to have very fast internet and substantial boundaries cause not only you sharing information you are sharing photos."

Here a database includes updated information, intelligence and even multimedia, and these proprietary resources are also used in customer service during decision making and itinerary building.

As well as knowledge of local resources, more general tourism skills in areas such as customer service, languages and the tourism sector can aid improvement of service in Rwanda. When asked about their biggest challenges in Rwanda, a lack of basic skills was seen by nearly all those interviewed as the biggest problem in Rwandan tourism. For instance, one manager of a medium-sized Rwandan tour firm complained about tour guides and drivers:

"I would say in the tourism industry we had a big issues with guides, professional guides and interpreters who do interpretation. They don't understand the power of good interpretation, information."

Many hotels also discussed the limits around customer service, something that has been identified as a systemic problem in the country (MoTI 2009). One front-office manager of a larger hotel commented about the customer service skills of their staff:

"It is a work in progress. RDB is doing a great deal in that aspect. And I mean there was a time I was listening to one of the president's speeches he actually admitted that yes, customer service in Rwanda is challenge but it's something we are working to turn around."

In these areas, policy has focussed on improving training through courses, and setting up some tourism courses. Online learning might support training through workplace courses. However, only one large international hotel was found to support any type of e-learning. A survey commissioned by IFC on tourism training in Africa describes this hotel in detail:

"[the hotel] had an e-learning system through the ACCOR University. There are a variety of courses including restaurant, catering, recruitment and CD-Roms on different issues. The online courses provide feedback to the manager on their progress and performance on courses. This information is part of the performance evaluation used to calculate staff bonuses, which can be considerable at up to 2.4 months salary." (Spenceley & Rozga 2007 p.46)

We did find some cases where online resources were used to build this more general knowledge around the tourism sector. This was particularly the case for more entrepreneurial tourism actors such as guides and owners of small tour operators where building knowledge was one step in growing their businesses. Examples included browsing specific travel blogs and sites, or receiving periodic email newsletters as exemplified by the manager of a small tour operator:

"I mean I get a daily news letter which is about tourism and just it gives like six different tourism stories everyday that are generally based in southern Africa (attraction) ... it's good to kind of keep up to date with what else is going on. I don't necessarily read it every day but I might look at the headlines and see if it's anything interesting and I suppose that helps."

For these more entrepreneurial actors, knowledge-building activity also included visiting websites and in some cases imitating well-established firms. For instance, two managers in smaller tour operator described how simply visiting websites of competitors can stimulate improved knowledge and service:

"Yeah, I check websites about what other tour companies are doing, maybe companies outside Rwanda; I have to make some research about tourism outside Rwanda."

"... of course you have to research and see like log on other websites of the people who are in the same business."

Even though online resources support firms, building local knowledge and wider skills are generally activities not done online. DMO sites support local knowledge but the lack of breadth may be problematic and larger companies may use proprietary knowledge bases. Building general skills online nearly always came from more enthusiastic staff searching and using information. There are no systematic online learning resources to aid firms in Rwanda.

Summary

Rwanda's core differentiation as a tourist destination comes from its 'natural capital' – that is its landscape and rare wildlife. This capital has been supported by excellent sustainability management and improving access to resources (Nielsen & Spenceley 2010). Online resources play some role in promoting supporting destinations and sights. Online destination websites provide marketing and visibility for tourist resources. Ad-hoc online knowledge building aids quality of service in Rwanda.

The main limitation of online resources comes as Rwanda looks to expand its tourism sector beyond gorillas. First, as regards cultural and natural resources, a lack of clear information limits customer search. It also limits the ability of the Rwandan sector to deliver these inputs to their customers as even they are unaware of the existence and uniqueness of these resources. Second, in contrast to Gorilla trekking, in new expansion areas – birding, wildlife spotting, hiking, and business conferences – customers have many more choices of location. Thus, in these cases service provision (management, customer service, language) needs to be exceptional to compete.

Both points suggest that online improvement around 'inputs' can help develop resources. Improved DMO can support awareness and knowledge around Rwanda as a diverse destination. E-learning and online training resources can be an important part of a strategy for improving the provision of knowledge in the sector.

6b. Transformation

Communication and coordination

Changing connectivity can be seen to have provided communication and coordination in tourism with fewer barriers. These better flows of communication and coordination have been particularly experienced by those involved in logistics – around bundling tourist services for customers. This was outlined by one tour operator:

"... you find that you've been dealing with ten different people to bring the services together but ... you have so many different individuals involved in bits and pieces of the activity, the probability of something falling into the cracks is very high."

In Rwanda, tour firms and travel agents tend to use a hybrid of phone calls, emails and (occasionally) online booking to bring together this bundling of services. The growth of email for communication is beneficial in that it has greatly simplified bundling. For instance, as one manager of a large tour operator described, email confirmation reduces risks of errors:

"... we call and get the information ... [but] we rely on a written confirmation which is normally sent on the internet, on the phone we ask for availability but when you want to book we do it through the internet."

Online resources when they are present are also useful as they can speed up the information searching and booking processes. As described by one travel agent involved in air booking:

"... without internet, I would not be able to offer my services. Everything would take time. Imagine I want to book a ticket for a passenger who is in New York flying with Ethiopian airlines. That would mean that I have to queue at Ethiopian office, then send a telex to New York that would take lots of time. But now I do everything here without me moving."

For managers, mobile internet is also useful in allowing coordination to continue and enabling them to organise and communicate when they are not in the office.

Online logistics (whether via email or online) have provided a number of benefits to actors in Rwandan tourism. With processes around logistics slowly becoming simpler, firms are able to focus on increased numbers of customers or improved quality of service. In terms of value chains, this simplification also supported changes in three areas. It supported small firm entrance, regional integration and enabled outbound firm to increasingly become involved in logistics. These are outlined in turn below.

It was striking that during interviews, we came across a large number of tour operators and travel agents who did not operate at a large scale. These tended to be firms that survived on a low number of bookings. Such firms might be started through personal connections. This was illustrated by one small travel agent (who did not wish to be recorded) who started her travel agency after working in another agency. Her initial contacts were through previous contacts that she made in that firm. Initially she was based in her home, operating using a mobile internet connected laptop and a mobile phone. Over time, with growth in customers she has now moved to a small office in downtown Kigali.

In other cases, small firms had emerged when entrepreneurs were able to attract customers (i.e travel agents or freelance guides becoming small tour operators). For new market entrance, there were many factors driving entrepreneurs to start tourism firms that were less related to connectivity, such as building networks to clients and knowledge of the tourism sector. Changing connectivity did have a positive effect. It reduced entrance barriers, as highlighted by one recent tour operator entrant:

"... tourism is something that can be internet based. Tourism is even a good business you don't have to ... ask much money to start that business so I started it when I finished my university studies. It was the only business I could start without investing much."

Furthermore, there is some potential for smaller firms to grow in the tourism sector. This was highlighted by a one-person travel agent who was asked about his hopes for his firm:

"So shortly maybe after one year, or few months, I want to add some products but the barriers so far is availability; I want to also tour but after one year I think our product will also be among the products we are providing."

As outlined previously, Rwanda is often a small trip as part of a wider tour of East Africa for customers. So, Rwandan tour operators often act as a 'secondary' inbound local tour operator for a Kenyan or Tanzanian tour operator when a tourist wishes to visit the country (normally for Gorilla trekking). Simplified logistics driven by changing connectivity is making it simpler for primary tour firms to co-ordinate without the Rwandan secondary tour firm.²⁵ This was particularly the case for freelance tour guides in Rwanda who now sometimes found themselves

employed by a primary tour operator in the region without the need for a Rwandan tour operator.²⁶

Simplified co-ordination also created other risks. Outbound tour operators, previously focussed on the distribution side of tourism, are looking to get involved in the transformation side. One CEO of a larger outbound tour operator based in the UK discussed this change. His firm focussed on tours in multiple countries in the southern African region, and they were already disintermediating inbound firms in many locations:

"... [previously to organise a tour] each one of the places [accommodation, sights], then someone gets on the phone and books those places. Okay? Now obviously with technology that's changing a bit.

"Sometimes where there is a lot of fiddly stuff for us, a ground handler and DMC [inbound tour operator] works ... [but] that's relatively unusual for us.

"Now our travellers fly out, get on the plane and they'll fly in probably internally and they will be met at the airport by someone with a vehicle, a four wheel drive to look after them. The various lodges will pass them, pass them between them. They will get back and we don't have any intermediaries there."

One consultant who had worked extensively in the region describes how this potential disintermediation was a cause of apprehension for inbound tour operators in the region:

Interviewer: *"[referring to inbound tour operators being disintermediated] ... are they changing their role or are they just leaving the industry? Are you seeing any trend?"*

Interviewee: *"I think panicking! In some cases a few of them try to get smarter with it in how they are managing. But, general widespread panic I think would be the best way of describing it.*

"What happened to the travel agencies is happening to them now and if they really don't start rethinking their business, they will extinct the way that so many travel agencies did"

Here the consultant is referring to the historic growth of online air-ticketing which has almost wiped out independent travel agents in some countries. Similar connectivity processes now threaten inbound tour operators. It is worth noting that in Rwanda such changes are occurring more slowly, given the higher complexities of logistics in Rwanda (as outlined in section 2b). Evidence suggests that rather than disintermediating inbound firms in Rwanda, inbound roles become perceived by outbound firms as less central (often referred to as *ground handlers* as in the above quote). This less central role may also result in less value accrued compared to outbound firms in value chains.

Online Services

Beyond simple co-ordination between firms in the value chain outlined, new systems and services also offer improvements in 'business functions'. By using online services,²⁷ firms can improve how they work.

We first briefly discuss the adoption of information systems in tourist firms in Rwanda. Such systems may be confined to internal networks or even single computers within hotels, lodges, tour operators or attractions. Thus they may not necessarily be classified as resources that are online. Nevertheless, they are important in that without them it is more difficult for firms to integrate with online services or use them strategically.

As regards hotels in Rwanda, whilst a few larger hotels used commercial booking systems most of the medium-sized hotels interviewed did not have booking systems, and booking was based on excel sheets, or even paper diaries. Similar findings were also found in the case of tour operators. Smaller

tour operators did not use specific tour planners, as described by one manager of an inbound tour firm:

"In tours I have not seen anything ... I think most people do their bookings manually. I think in Kenya there are different systems ... which companies use to make it easier,"

Even larger ones tended to use a set of unintegrated systems, as described by the founder of one of the larger tour operators:

"there are some [firms] that will want to use it [systems] on the operation side, some will want to use it on the product development side, there are some that will capitalize on the actually on the operation and accounts. It all depends on the company."

These limitations become problematic when firms attempt to integrate into online services. For instance, how are hotels supposed to integrate with online travel agents when they do not use standard systems that record bookings? How are tour operators supposed to deal with payment services (online or offline) when they do not have ways to track payments?

In Rwanda this lack of internal system use led to limited use of online services. Hotel room booking online is a case in point. Some large hotels in Rwanda with integrated systems may have their own online room booking services on their websites²⁸ and are also likely to integrate with online travel agents. However in general online booking is not present as discussed by one hotel owner:

"... hotel reservations and other services concerning hotels, these days they are being done online. But, most of hotels here are not online, so it's a big issue...We are making our services to be online so we must try to put most of the hotels here."

For smaller firms, room reservation forms might appear on websites, but these will often fold back into email communication on submission (see examples shown previously in Figure 7). Other hotels simply provide an email address for enquiries. This lack of online information was discussed by one lodge manager. He was reluctant to automate his booking given the often small size and high end focus of his lodge:

"... we don't yet have yet an on line booking system for [lodge name] for example you know and people can't go on the internet and see whether the tents are available for them they need to email us ... it's only small tent camps, 14 beds so it's not necessary at the moment."

This lack of integration also affects the ability of hotels to effectively use online travel agents' (OTAs) services. A number of OTAs have coverage of hotels in Rwanda, but these work in interesting ways. As outlined by the general manager of a medium-sized hotel:

"Yeah, I'm linked to two [OTAs], we are linked to Hotel.com and we are linked to Expedia. What happens, when we did the contract, on a daily basis we agree a number of rooms. Those are available for Expedia ... they say like give me four rooms.

"For Expedia we go through [intermediary firm]. So we don't deal with Expedia, we deal with the tour company. And the tour company deals with Expedia."

As this quote highlights, OTAs have adapted in Rwanda to provide the ability for less integrated firms to use these services. First, hotels have to specifically assign rooms to Expedia to avoid risks of double booking, due to lack of systems. Second, booking (and payments) are not automated but come through an intermediary firm, typically by email. Thus, OTAs have adapted their services for hotels.

One can recount similar low adoption around other online tourism services.

For instance, we found similar cases – provision of debit/credit card payments in ITOs, bookings for Gorilla permits, provision of hotel room/lodge availability to OTOs, and use of online services such as web statistics/social media/trip advisor. Literature on the internet and tourism has suggested that these services could allow firms to upgrade in the value chain. Upgrading could involve a moving from involvement in 'transformation' – service provision and logistics – to 'distribution' – and reaching tourist directly. Services are one element that might enable this agility. They allow customer booking and payment at a distance, enable tighter integration with outbound tour operators and allow firms to gauge customer demands. Unfortunately, poor adoption of services means limited upgrading of tour operators and hotels in this direction.

Summary

In sum, digital connectivity is much used in the Rwandan tourism sector, and its use in communication is perhaps the most pronounced use of connectivity found. Communication online simplifies the logistics of bundling tours which is the predominant way that tourism is sold in Rwanda. This can improve the quality of inbound tour operators, but it also poses risks from regional and outbound operators who may look to take on more responsibility for logistics (and hence more value).

Tourism services enable hotels, services and tour operators to more closely link up the value chain, particularly to integrate with customers. However, it is difficult for firms to adopt services which require skills and costs for integration.

6c. Distribution

In the previous section we discussed that one benefit of online services is that they might allow Rwandan firms to better integrate with customers. In this section we expand this discussion focussing on how Rwandan firms can be visible and market to consumers.

Marketing to customers

In the literature changing connectivity has been suggested as offering the potential to improve visibility (Buhalis & Law 2008, Law et al. 2010), as hotels and tour operators could market directly to customers as a way to increase their sales (and potentially disintermediate outbound tour operators).

As outlined in section 4b, quite a large number of hotels and tour operators have websites that advertise their offerings. Firms are also aware of the potential of social media, seen as an opportunity simply to reach more customers in their current markets directly (i.e the typical UK, US high-end customer). This is highlighted by the quotes below from two managers – one from an international hotel and one from a natural resource

"How do we use the internet to target the clients? One way is for our own to have our own website. So that people who need us might find us not just physically but from wherever they are."

"I mean our website is one of our biggest things than ago, I mean we put the website address on our business cards, on our e-mail signatures, I mean people can contact us through the website, we send out our news letter through the website like our html newsletter through the website."

Note in these quotes, managers imply a status quo in terms of customer types. They are not attempting to understand or reach new demographics. Rather, visibility is about pushing attention to existing customer types. With a few exceptions (see section 6) this focus on existing customers was the case across the majority of Rwandan firms.

Gains from the use of web resources bringing new customers is possible, but often these numbers are small. For instance, in-tour operators rarely see

direct customers as the main source of business – most customers still book through outbound tour operators. As illustrated by the manager of one of the well-known Rwandan tour operators this impacts on how they design their web-presence for visibility:

"we put an effort to do it and last yeah we updated our website ...

"[But as a customer] you are that tour operator's client ... he's the one who gives you that information ... whenever you ask him a question that he does not understand or he cannot answer properly, he contacts us since we are on the ground.

"It's an interaction between us and the other agent and then he contacts the client."

Tour operators or hotels may also not focus on extensively updating and curating their social media streams with the persistence of outbound firms. As expressed by a manager of one tour operator:

"... the source market companies, they need social media ... a lot of social media interaction is tailored for the consumers and our customers come through, we have relationships with all those companies around the world, those companies are reaching the customers, they are using social media and internet rank to reach direct to customers."

Low levels of marketing online were not solely linked to value chains, they also linked to capacity. Tour operators and hotels are often unclear of exactly the best way to exploit web resources and social media, and may delegate these roles to external staff disconnected from the strategic centres. Here we highlight such delegation in three snippets from tour operators:

"[on Facebook] ... There is a colleague of mine he is the one who used to go check on the Facebook page on my behalf. He stopped and I don't really use that Facebook page at all."

"[on online marketing] ... what's happened is most guys have not embraced internet marketing."

"[on websites] ... He doesn't update the website because I check it. So you know when the website is kind of poor you don't get much people they just you know when you open a website and doesn't attract you don't need to go further."

Online marketing and visibility was often connected to the idea of referrals in interview and of the importance of recommendation and links as driving customers (whether they ultimately book through an OTO or go directly to a hotel or ITO). Referrals were particularly important for smaller hotels and new entrant tour operators where attracting customers through recommendations could be crucial to their survival. As described by one small tour firm manager, customer referrals now increasingly come from online resources:

"I think recommendations is a crucial issue in tourism ... when they are going to choose a company, they just base on the other people who use the company, 90% of the decision taken in tourism are based on recommendations and mostly through internet, so it's an important thing for sure."

Indeed, this view was re-enforced by a regional consultant who outlined that in his view, sources of referrals were increasingly online:

"The number one is online. The number two not that far behind it was family and friend recommendations.

"But when you look at where people are getting those recommendations, it's almost entirely online. Those family and friend recommendations that

used to be done at a dinner party or shown someone photos of your recent trip are now happening on Facebook”

To gain referrals, some firms found that getting incoming links from other websites, banner advertisements or Google searches were important drivers. For instance, one medium-sized hotel had experienced a large influx of tourists connected to a single website recommendation:

“I was asking why we receive many Americans and Kenyans here and one day I said let’s go and see at US commercial department and see what happen and what I realized, the ranking of hotels in Rwanda and East African hotels [his hotel was the third link on recommended hotels] ... we come on the 3rd place!”

Some firms were also aware of more advanced approaches to gaining online referrals. For instance, a manager of a growing tour firm described how he had successfully hired a firm to do search engine optimisation

“Yeah. In 2009 we did that thing where you click on Rwanda and may be it could bring you in like the first 5 companies. Which is very good. Because the client will first look at you as the priority.

“But it was contract for one year so, it ended in 2010. And we haven’t yet got that budget it was very expensive though it worked for us then ... it was very expensive. Talk of 25000 US dollars.”

Search engine optimisation (SEO) in this case pushed referrals: for this firm up to 60% of all customers came from online enquiries on their website.

As the consultant quoted above illustrates, social networks, such as Facebook, and also tourism reputation platforms like TripAdvisor are now growing and turning into the key referrer for tourism. Rwandan firms are often still ‘dipping their toes’ into using these newer online elements. This is highlighted by staff in two firms discussing TripAdvisor:

“Definitely you have to check on the travel advisory [sic] ... some people put very good comments but in reality it’s a pathetic place others they put bad comments.” (small tour operator CEO)

“for example trip advisor is somehow social showing everything about the experience your customer has had in your hotel. You find some appreciating the services and others are really complaining so the information is relevant and important to us because it will show us who really are not what we think we are.

“And if there are complaints we will for sure address those issues that took place so that there might be a correcting act, if there are appreciations we are encouraged to do more.” (medium-sized hotel, Kigali)

These quotes suggest that interaction is at present more reactive as opposed to strategic in driving referrers.

In sum, there are suggestions that the internet could allow inbound firms and hotels to push into distribution. However, in interviews, most firms stated that direct customers only constitute a small minority of total customers, and so some firms are less focussed on investments in online resources. We found that they were often peripheral elements of businesses, or sub-contracted out and then disconnected from core operations in tourism firms.

Visibility also aides inbound firms and hotels through capturing referrals. However, building visibility to get referrals is a difficult task. It requires skills and constant updating of knowledge as web technologies evolve.

Communicating with customers online

For Rwandan firms that become more involved in the distribution of tourism,

they will find themselves in increasing communication with customers. Such communication was found to mainly be occurring through email – hotel booking, offering quotes, or tour operators discussing itineraries.

Changing connectivity has been beneficial to some managers. It gives them or their staff the ability to provide quicker replies to customers and conceivably distribute richer media (particular images) to them using the growing bandwidth available to them. At the same time, moving into distribution leads to new demands of firms from customers. As one manager of a popular tour operator outlined, customers expect prompt replies:

“there are some individuals who have absolutely no patience and they want an answer and when that answer is delayed they look for another alternative. It means that there’s potential for you as a company to lose that business.”

For another manager of a more marginal tour operator these demands meant him becoming increasingly involved with communicating with customers outside office hours:

“they sent you an email and if you respond after ten hours then it has no value because they have already lost the faith. With fast internet even with my blackberry I see an email I can respond very fast coz I don’t even have to rush to office and connect.”

These new demands can be particularly trying for firms. For instance the director of one of the most popular tour operators in Rwanda suggested that with professional websites and correspondence, customers expected instant service:

“The expectation is that everybody’s running 24-hour global booking offices. And that’s challenging ... Two-thirds of our business is coming from the US.

“If you lose that time, you lose a day, in effect, for them [Here referring to time delays that mean US and Rwanda are not in sync]. And that can be challenging. And if there’s a problem in the quote or something that they misunderstand, you can lose another day. So there’s an element of frustration.

“I think all of us are trying to cope with how we deal with a 24-hour world. A faster world ... And that’s where you’re at now, aren’t you? The possibilities are huge, but dealing with it is very complex.”

In terms of the content of customer interactions, Rwandan firms tend to be capable of undertaking satisfactory interactions with customers. However, the types of interactions needed for high customer service can be demanding. The manager of one leading African-focussed outbound tour operator in the UK described what a professional process looks like at length:

“If we get an email enquiry or anything like that what we really want to do is get them on the phone ... The website is a source of inquiries. It’s a very useful tool whilst the clients are researching.

“The key thing that we are selling is expertise ... the key thing is the discussion with the client. Because no matter how much stuff you put on the website, what you actually need to do is listen to a client, have an understanding to what they are looking for and then guidance to that. That’s the key.

“... you’ll often use the technology to help them research or to show them things but the key thing is the discussion and using your knowledge to help them. It seems very valuable but it’s not something that they will do. They will research on their own but the key thing really is the discussion.”

As outlined by this manager, customer interactions are complex. They often involve both online elements but also include phone discussions; and they

can be lengthy exchanges. It is inevitable that outbound firms with dedicated customer service assistants, in the same timezone, speaking the same language and easily available at the end of a phone line are most appropriate for customers. Simply put, when customers are looking for tailored high-end trips (as is common in Rwanda), it is inevitable that inbound Rwandan firms will be less well equipped to handle customers directly.

Summary

As outlined in the literature review, it is certainly the case in Rwanda that inbound firms, particularly hotels and tour operators, are interested in moving into distribution and reaching customers directly. Yet, as this section has showed, there are many limits that make it difficult for these firms to reach customers – skills, networks and standardisation. Adoption of online services that can simplify customer interaction has been low (as outlined in the previous section).

In addition, web presence and social media curation is often limited. Firms may put up websites, and drive some referrals through approaches such as banner ads, emails and mailing lists. Whilst such approaches can work to some extent, in some interviews it felt like the last decade of social media, web2.0 and user-generated content has not been fully appreciated by these firms. Using the web to either actively find customers is a matter of engaging with more complex information ecosystems. Firm often do not have the time or resources for such engagement, simply using a website with an occasional nod to some social network activity.

Finally, Rwandan tours are generally not standardised, and they are bundled. The intricacies and time sinks of interacting to enquiries and customising a tour for a client inevitably favours outbound tour operators over ingoing ones. Whilst this might be compensated for by superior local knowledge in inbound firms, it currently has little effect given the little time that tourists tend to spend in Rwanda (and the range of sites).

Inbound firms that have found particular niches in terms of specific referrals, networked into groups of tourists or online searching can lead to direct customers (see next section). Yet, these types of customer remain in the minority. These interactions may be sufficient to allow smaller hotels and tour firms to survive, but we do not perceive that these categories of tourists are driving widespread upgrading of inbound tour firms, hotels or lodges and disintermediating outgoing ones.

6d. Customers

This section outlines the types of consumer activity in Rwanda, particularly linking to changing connectivity. As previous discussed, core tourist activities still consist predominantly of affluent tourists coming to the country for a few days to visit the main sites.

However, there is a growing niche and domestic customers and these provide opportunities. For example, one freelance guide who had built his skills around birdwatching had been able to build direct custom from online referrals. Another tour operator had linked into Kenyan NGOs and had gained a number of tours by word of mouth within these organisations. In these referral processes, online referrals were an important element which supported the networks and strategies of these respective entrepreneurs.

In terms of customers, it is also worth highlighting that tourist activities do not relate solely to pre-trip searching and booking, and post-trip feedback. With changing connectivity, tourists are increasingly demanding to use the internet whilst they are in their destination, particularly in hotels, lodges and restaurants.

As outlined earlier, provision of good quality internet access for customers support tourist satisfaction with hotels and trips (RURA 2013). Beyond this, one

online tourism consultant in the region discussed at length how online referrals are now also coming through tourists posting online whilst they are on holiday:

“I’ve got the stats somewhere but it’s 75% of Americans now, while they’re traveling, are updating their Facebook at least once a day on their trips.

“It’s something that people will commonly do now, is post their photos while they’re there, at the end of the day, talk about what they’ve done...”

“They doing the marketing for you but you need to leverage that ... if they can check in to a place on Facebook, if they can tag their photos and content that they putting up there to your place page, it comes successfully to you and to your potential clients – and obviously to their friends and family who are going to respond.”

Thus, provision of connectivity for tourists is becoming a vital source of referrals. In general, the internet was available in hotels and lodges but consistent bandwidth was a problem. On one hand as was shown in section 4, this related to glitches and network issues. On the other hand it linked to growing demand from customers. As outlined by the owner of one exclusive lodge:

“Five years ago, they had no internet. Three years ago, when you start putting it up, they then sent an email home saying, ‘I’m safe. I’m alive. See you in two weeks.’ Now they download movies. Now they make movies.

“They go to see the gorillas. It’s an hour. So they have the whole hour there, and they’re trying to send it on YouTube to somebody else. And then they say, ‘Your internet’s hopeless.’ And you have to say, ‘I can’t remember when we agreed to provide a recording studio for you.’ That’s the exponential take-up of internet in the world, isn’t it?”

As highlighted by this quote, demand for bandwidth is not static. Websites are increasingly interactive and customers wish to undertake ever more ambitious activities when they are on their trips. Such activities may seem frivolous to some hotel owners, but as outlined by the consultant above they also serve a purpose in the new social network driven world of peer recommendation.

These issues pose questions as to how connectivity keeps up with growing demands. At a hotel and lodge level it suggests constant awareness of needs. For policy makers, changing connectivity is not a one-shot event, but likely to be an ongoing process if tourism is to remain visible and connected.

6e. Summary

Changing connectivity, alongside growing use of the internet in tourism has led to new demands in Rwanda. In terms of resources and sites in Rwanda, online *visibility* is an important element in making tourists aware of sites and their relevance. At present in Rwanda, online visibility provides some support to core sites and activities, but there is little evidence that it has supported ‘beyond Gorilla’ strategies. In terms of online *knowledge building* to improve Rwanda as a destination, findings were that online activity was mainly informal, undertaken by more active and entrepreneurial actors. It is an area that can be improved.

In terms of transformation and how services and tourism businesses work, changing connectivity supported *improved communication* and made the logistics of bundling and organising tours simpler. *Online services* have grown in the tourism sector more generally and this potentially might also improve business functioning. Yet, such services tend to have only been adopted by a few firms, as they often poorly fit with the systems and skills of smaller firms. This leads to a dual risk. Simpler logistics means firms outside Rwanda are tempted to take an increasing role in logistics. At the same time, low adoption of services means that Rwandan firms are not themselves expanding significantly into new customer-facing distribution activities.

We found that most firms were *interacting directly online* with customers in some form or another, for instance responding to email inquiries, and indeed some have been able to gain referral and direct customers. However, we have suggested that outbound tour firms are better suited to customer interaction than inbound firms, and so distribution remains dominated by outbound firms.

New technologies and better connectivity has not transformed the *categories of tourists* travelling to Rwanda. The majority still book through outgoing firms, likely linked to trust around payments. As outlined above specific niches or referral and regional tourism can be important to some firms. Referrals increasingly relate to online activity, but the level of these types of customers is still quite small. On the consumer side, *internet use by tourists* is also of growing importance. This is central not only to customer satisfaction, but will increasingly drive destination branding and marketing through social network interaction. Thus, the Rwandan government's focus on hotel connectivity seems to be well founded.

7. INNOVATIONS

The previous section has focussed on the overarching trends around connectivity in the tourism sector. Here we outline activity mainly related to isolated examples of innovation and/or good practice around use of connectivity that might be more widely replicated. Here we use the elements of the value chain introduced previously, *inputs, transformation and distribution*, to order analysis.

Inputs

As outlined previously, destination management for countries and regions is still crucial. Tourist may not have decided their tour location, or they may require further information. Countries and regions that are more visible are likely to reap rewards. However, with the expansion of new media platforms and social networks, single online DMO sites are not enough. Thus, it is an open question how destinations use these platforms and networks for visibility.

One approach can be through national online publicising of special events. When these are of sufficient interest and well publicised, it is possible that those interested will drive branding through their retweets and social network posts. One successful case in Rwanda has been in the integration of websites, social media and multimedia into "Kwita Iznia", the annual ceremony for naming baby gorillas born during the previous year. Use of social media, online video and a micro-site for the event, has contributed to huge publicity generated for this event, and was supported by people posting on online networks such as Twitter and Facebook. Indeed, in 2013, the event earned runners-up position in the World Tourism Association's "Innovation in Public Policy and Governance" award.

Similar cases of unique events pushing online visibility were also mentioned during our parallel work in Kenya. Attracting attention through social media and new networks is difficult. However, it may be that a more systematic attempt to amplify unique cultural events online could generate new types of destination branding.

In addition to online *visibility* potentially supporting resources, building skills and knowledge was also outlined as an area where connectivity could improve destinations. Research in this area highlighted some innovation around use of mobile apps that might be pushed further.

Use of online mobile applications was particularly relevant to those involved in tours such as drivers, guides and rangers at natural resources. For instance, one driver for a tour firm explained:

"I have the map, the map app – it's like GPS if there's a place I don't understand when I'm driving around I can put it on – even the it cost money it cost some units my units but I have got that app on my phone."

Another freelance guide also outlined mobile application use related to working on bird-watching tours which were less familiar to him:

Interviewer: *"What else do you use internet for, besides emailing other tour guides or your clients, what else are you using internet for?"*

Interviewee: *"Basically it's about learning more about my profession whatever I don't understand, like of recent I got a dictionary, also this dictionary about only bird watching so whatever I don't understand a terminology which is not common I go in my app."*

Other similar examples found were around use by tour guides of dictionary applications for translation and animal identification. Whilst such mobile applications do not make up for good training and skills, they help to improve customer service and support learning, particularly amongst tour guides. Thus, how such applications might be used more widely to support learning in the tourism sector could potentially be a fruitful activity to explore.

Transformation

We have previously outlined how changing connectivity has improved communication, particularly as part of organising the logistics of tours. However, use of online tourism services (e.g. online travel agents, use of feedback sites) has been adopted less and often peripherally, due to their poor fit. Sitting between these two poles has been a more positive growth in the use of generic online services by some firms in tourism. This type of online service includes applications such as online calendaring and document editing, online messaging tools and document-sharing applications.

Online service was not widespread, but a few firms with computer savvy staff had used it to their advantage. For example, inbound tour operators often spend much time receiving requests from outbound tour operators for almost identical itineraries and images that they need to provide to their networks or customers. As outlined by the manager of one of the larger inbound tour operators, some had taken advantage of applications like Dropbox to simplify the time-consuming process of distributing multimedia materials:

"I'm able to send very heavy photos and share them with people who are very far away ... if I had to send it over the internet via e-mail then it would take forever ... I am able to create that shared folder and share it with many different people in many different parts of the world."

A general manager of a Kigali restaurant that had recently added two guest rooms for tourists, also described how they were using Google calendar to organise their bookings:

"we keep track of our guest house reservations using Google calendar, which we have synced to all 3 email accounts, so that any one of us can view, add and change reservations from our own individual, even though we all have access to the Heaven email account. We can also do it through our individual email accounts."

Guides and drivers also reported that they had begun to use a range of phone applications particularly media messaging software, to keep more easily updated with their management:

"I'm using a Blackberry messenger ... I think one of the application I'm using often is like WhatsApp application ... but the most thing the most important thing for me is just to have my emails on hand wherever I am."

The use of generic services highlights that online tools can be favourably used by smaller firms and hotels. Whereas specific tourism services sometimes poorly fit, these generic services allow adaption by firms for their specific needs.

In early sections of this report we discussed how difficult it is for Rwandan firms to be able to use online resources to compete with outbound tour operators for customers. This difficulty has been linked to the close interaction and trust required in customer relations. One innovative approach to overcoming this problem was observed in the ways that several more successful Rwandan companies had strategically expanded outside East Africa. We found three cases of large tour firms that had grown from East Africa and established representatives in the UK and US. In these cases, these strategic decisions had been made prior to the growth of connectivity. Nevertheless, presence in customer-source countries combined with improved online availability in the destination country (i.e. Rwanda) seemed to be mutually supportive in these cases. Even though these three firms only had a single staff member or a notional office outside East Africa, having a website with a UK or US contact number for queries, and ability to take local bank transfers (in the UK and the US) was beneficial to these firms. It should be added that these strategies relied on substantial financial resources and personal connection. Indeed, all

these firms had directors who had personal links outside the region that had been used to spur their expansion. Clearly changing connectivity in such a case can facilitate improved reach of inbound firms into new territories, but for less well linked firms it highlights geographic barriers that can limit even well-connected firms from undertaking successful distribution strategies.

Distribution

During research, we came across several innovative ways in which Rwandan firms were looking to reach new customers. Again these were not systematic, but highlight potential new approaches for firms in Rwandan tourism.

Rwandan firms have generally struggled with how to best use social media. Nevertheless, we found sporadic cases of tour guides and smaller tour operators who had managed to use social media to link to customers. Tour operators and guides found that by ‘friending’ customers and integrating themselves and their firms into their photo sharing, tagging and retweeting activities on social networks they were able to render themselves more visible to future customers. As described by one freelance tour guide, social network use had generated referrals for himself:

“we become friends on Facebook and when they post the pictures of the trip they are like ahhh I’ve just been in Africa I was in Rwanda I did gorillas. Put photos and the first question who was your tour guide ... even last month I had a trip and this was from Facebook because a friend posted some pictures and these saw pictures and contacted me.”

Another driver of potential requests is the TripAdvisor website. For instance, freelance tour guides who are present on the platform can gain some recommendations from customers and therefore visibility:

“[Customers]... go on trip adviser and say we were in Rwanda, our guide was this and this so when they look up your name then your website comes up then they open your website so it’s very important being a tour guide and having your own website.”

This entwining of tour providers and tourists as a way to drive new customers can work and is a viable strategy for smaller firms. But, it requires skill, strategic thinking and an investment of time that many firms do not make.

Rwandan firms that were looking to move into distribution, tended to pursue haphazard marketing approaches. There was scant evidence of firms strategizing to reach specific segments or nationalities of customers. Putting up a web presence was often articulated by firms in Rwanda as ‘having a global reach’ and ‘reaching more of the same customers’. Yet, there were cases of strategic approaches to marketing taken by tour operators. For instance, one exclusive safari company had recently created a new brand which was discussed by its director:

“launched a new brand that we are going to use to take care of the lower budget, of tourism. ... we are able to take care of them in different ways. ... when they come to us and we are able to lead them to that brand and we are able to take care of their needs.”

A second firm, had similarly launched an eco-tourism campsite in Rwanda. In both these cases, firms were able to use separate online websites and branding to market for these specific demographics. Different branding and approaches (both online and offline) provide effective ways for tour operators to attract new segments of customers. Such processes are liable to be resource intensive but they can avoid compromising existing branding. Commonly tour and travel firms in Rwanda who expanded ended up with websites and itineraries that became generic with a plethora of options but little clarity.

8. CHANGING VALUE CHAINS

The extended empirical discussion in the previous sections has highlighted the effects that digital connectivity has had on the Rwandan tourism sector. Here we summarise this analysis by seeking to understand how changing connectivity relates to value chains and production networks.

We discuss four key elements of how connectivity has changed value chains: how changing connectivity has improved efficiency; if changing connectivity has led to firms adapting products and reaching new customers; if Rwandan firms have been able to remove intermediaries and go more direct to customers online; and if firms have been able to diversify and move to new markets using better connectivity.²⁹

Through online communication and co-ordination, firms have been able to become more *efficient*. As discussed, efficiency is enabled by improved trust, management and quality of service amongst tourism firms and resources in Rwanda. To put it another way, value chains are better integrated through improved connectivity. Yet behind this new efficiency and management, the core *products* and ways of selling in the Rwandan tourism sector have not radically changed. The Rwandan product is still wildlife trips as part of a wider high-end East African safari. Policy makers have sought to push a diversity of resources and sights,³⁰ but these have not been widely taken up.

Disintermediation in the tourism sector is complex. In terms of firms in the value chain, virtually every actor is looking to disintermediate others using better connectivity. Three of the most significant types of potential disintermediation in Rwanda are hotels who wish to get direct bookings through online travel agents; inbound tour operators that are looking to reach tourists directly online; and outbound tour operators who wish to reduce their reliance on inbound tour operators in country.

None of these disintermediation processes has occurred at a wholesale level as yet. Some larger hotels are growing their direct customers from online travel agencies (particularly business customers). But, where core tourism comes through international tours, firms need to build relations with those bundled value chains (i.e. outbound firms). Small inbound tour operators have had some successes reaching customers directly online, disintermediating when they look to referrals or niche customers. Yet, it is difficult for Rwandan firms to interact with foreign customers who are located distantly and may be speaking foreign languages and/or are in other timezones. Alongside these difficulties, customer are more comfortable paying local outbound tour operators, where paying what are often large sums direct to firms in Rwanda seems risky. Thus, going through local outbound tour firms is still favoured by customers. We found that outbound tour operators (and particularly regional tour operators) disintermediating inbound tour firms were more of a threat. Evidence from neighbouring countries in Africa suggests that as logistics become easier to organise from afar, inbound tour firms find themselves marginalised. The more complex logistics of typical tourist activity in Rwanda – the remote location, the perception of security, the need for a 4x4 vehicles – mean that this marginalisation has been less observed in Rwanda so far, but it should still be considered an important future risk.

In terms of finding *different markets*, one common path was of small travel agents growing to become dual travel agents/tour operators with the aid of better connectivity. We also highlighted that some firms had used online communication alongside their personal networks to reach niche or domestic customers (i.e. community tourism, from a certain country). These approaches were taken by the minority of firms but do point towards viable small-scale strategies and upgrading to different markets. This evidence also highlights the continuing importance of networks outside Rwanda to drive customer referrals, and this can be a barrier to firm growth.

To summarise value chain changes, the biggest risk to Rwanda is the static nature of the sector. New diversification of tourism in Rwanda has failed to capture a mass of new customers so far, and whilst there have been some changes amongst small firms, the core activities of tourism remain unchanged.

It is worth pointing to the ways that these trends fit into wider production in the global tourism sector. One argument that can be made is that online travel resources and services often poorly fit with the way that the firms are territorially embedded in the Rwandan setting. For instance, online services tend to work with specific standardised facilities – a hotel room, a vehicle, a flight can then be booked - and then potentially dynamically integrated together. Yet local elements in the Rwandan context – the need for a car and driver, non-standard sightseeing trips, lack of hotel information systems – mean that Rwandan sites and settings are unable to be well integrated into digital databases and services. Another example of this poor fit is that a website such as TripAdvisor does not have categories for tour operators and tour guides, and this means their gain from referrals is liable to be lower than hotels which are clearly specified in this service. In both of these cases, forms of globally defined standardisation of tourism are one element which reduces the ability for Rwandan actors to reach customers in a convenient way.

The Rwandan tourism sector is defined by the presence of certain firms, hotels, lodges and guides who are part of established networks of well-known and trusted firms. These firms tend to achieve high-quality service requirement through recruiting trained staff from the region and even internationally. They are the firms that are able to reach out and get finance when they are growing. They are also the ones who are part of the associations that drive decisions in the sector.

It is thus difficult for new firms to penetrate networks stretching out from Rwanda in well-established relations. Whilst changing connectivity offers enticing possibilities for firms to break into these relations, the static nature of customers and the skills of actors make sufficient growth to challenge these larger established firms difficult.

9. WHO BENEFITS?

The discussion in the previous section has reviewed how connectivity has (and has not) changed value chains and production networks. This overarching standpoint forms the basis of an analysis of who benefits from this growing connectivity. This section is split into four constituent elements that have emerged around changing connectivity– visibility, communication, services, and knowledge. We examine these elements to detail who benefits from elements of connectivity.

9a. Visibility online

Online visibility and associated communications offer the potential for Rwandan firms to more directly reach customers, support recommendations and market their goods. This has happened to some extent. A few tour firms have been able to use web resources (websites, social networks), some larger hotels have integrated into services and attracted customers. Online visibility can support improved awareness and small increases in customers. Certainly, for smaller firms attempting to enter tourism and survive, such tactics should not be scoffed at. Visibility online supports a more vibrant set of firms in tourism, and further assistance in developing online skills can push a more diverse tourism sector for customers (and make the sector more viable for entrepreneurs).

However, evidence from our research does not suggest changing connectivity has transformed the majority of Rwandan tourism firms. Beyond connectivity there are a number of factors that still limit the ability of firms to reach customers directly. Some of these factors are low capacities around skills in best exploiting online resources, issues around finance and time to interact with customers. Other limitations are more fundamental, concerning trust and customers preferring to book with firms in the same country, and in how the terrain and logistics of Rwanda mean that activities fail to sit within online services.

These wider elements of capacities, power and networks make it difficult for Rwandan firms to improve their position across the board without an active set of policies and learning. Typically it is the outbound firms and online OTAs who are taking the best advantage of online visibility, and it is those firms that have access to customers who will have the power to bundle tourism services and ultimately, dictate value.

Online visibility of Rwandan natural resources, sites and culture is present, but the benefit is negligible. It was already easy for tourists to make a case for Rwanda when it came to its core Gorilla trekking activities. These rare animals are constantly featured in media throughout the world, and Rwanda is arguably the only viable choice for tourists to see them first hand. However, as the country looks to expand into a wider range of tourist resources, sites and events, they will have to work hard to compete both regionally and internationally. Online national (and regional) visibility of resources and cultural sites can bring benefits across the sector through increased customer numbers. Thus, it is important that Rwanda pushes online visibility to ensure that tourist are aware and understand the benefits of its resources.

9b. Ability to co-ordinate and communicate online

As has been outlined, the tourism sector in Rwanda often involves intermediaries who bundle elements and services together. Logistics can be complex, and changing connectivity has been beneficial in supporting logistics. Typically, communication is still done through emails (with only a few firms having web interfaces). Nevertheless, this communication helps to maintain trust and means that market information is more readily available. For Rwandan firms who connect with customers or other firms in trade fairs and

other links, communication online provides a channel for these relationships to be enhanced and developed. Thus, for co-ordination, changing connectivity does bring a benefit in allowing better organised logistics of services provided for customers.

For the intermediaries within Rwanda who bundle services, there is some risk. These information and communications flows make tour bundling easier so that it becomes possible for remote actors to take more responsibilities. As yet, this change has not occurred at a large scale due to the unique nature of Rwanda’s logistics. Yet, there are risks that firms may look to disintermediate Rwandan firms in the future. Some intermediaries are already being marginalised insofar as outgoing firms book hotels directly online. In the future, it is likely that more firms, particularly those who engage in more generic activities, may become disintermediated.

9c. Use of online services

Rwandan hotels, resources and tour operators have been slow to provide or integrate into the growing number of services that are being provided in the tourism sector. For instance, simple hotel availability information and natural park permit booking is nearly always done manually. Adoption and successful cases of use of online services in tourism such as online travel agents and feedback sites was also low.

This low use and adoption of services does not appear to come from a lack of connectivity. Most tourist resources and services have some sort of internet provision. Yet there are other barriers around the skills/cost required to use services and the seeming low knowledge about how to integrate within the country. In particular, there are pre-requisites for service integration around the need for coherent management and information systems that are often not present in Rwanda.

On balance, online services are likely to have brought some benefits, but the benefits have mainly been to large international chains (for example, one hotel in Kigali that is frequented by business customers who can now book directly). In terms of Rwanda’s ambition to diversify tourism, a lack of adoption highlights further risks. With competitive providers of tourism, a lack of online services in Rwanda could push GPNs of tourism to be underplayed in Rwanda as against competitors. Where it is complex to find hotel availability, book permits and transfer money then tourists may simply look to another country.

9d. Using online resources for knowledge building

We found evidence of knowledge building using online resources. This was found in a diversity of actors – guides developing their knowledge of wildlife, tour operators building their knowledge of local resources and tour building, hotel managers building their skills in hotel management. For these individuals, access to connectivity can be beneficial. The success stories of the tourism sector often come from individuals who through using such resources often go on to be promoted or start their own successful enterprises.

Skills and knowledge development is often ad-hoc, by those with time and access to try and improve themselves. Typically more formal training has been done through offline activities such as workshops.

In sum, connectivity brings potential benefits for knowledge building, but only to a self-selecting group. The potential growth and breadth of such groups might be expanded though, through better availability of online knowledge resources. Producing material tailored to the Rwandan tourism sector, and supplementing offline training with online resources could enhance the benefits from knowledge building online.

9e. Effects on the most disadvantaged

In highlighting the socio-economic effects of tourism, we have found little effect from internet use amongst the most disadvantaged. This is not to say tourism, more widely, is not having effects. As outlined by various studies in Rwanda, low-income communities can be involved in tourism: within community tourism, in national parks as guides, producing handicrafts; as recipients of community funds from national parks, and in jobs provision in hotels (Ashley 2007, SNV 2011, Spenceley et al. 2010). Yet, we found no evidence of significant impact from changing connectivity.

Indirectly, it may be that the growth of community tourism is driven by the ability to sell niche tourism online. Some hotels and sights also reported that they might now advertise vacant job positions online, making this information more transparent. These observations though are highly anecdotal and cannot be seen as significant benefits for the poorest coming from changing connectivity.

10. CONCLUSIONS

10a. Effects of broadband connectivity in the tourism sector

To conclude, we return to the research questions outlined in Section 2. Here we summarise findings drawing on empirical work in the tourism sector.

Connectivity

Previous work has identified the potentials of connectivity to make significant differences in the tourism sector – how customers behave, how firms co-ordinate activities, how firms market tourism activities. This literature has mainly focussed on developed country destinations, thus this work on Rwanda drew extensively on empirical analysis to examine these discussions in the Rwandan context. Our research examining tourism and the effects of connectivity provides us with much evidence that contrasts to wider reported literature.

In terms of online resources supporting *inputs* (that is resources and tourism sites) online visibility allows these resources and sites to be presented more globally. The lack of quality and diversity in these resources limits expansion beyond simple online information provision, and indeed there seems little advantage for Rwanda over its neighbours. Skills and knowledge development that can enhance the presentation of such resources is mainly done offline in Rwanda. In contrast to the literature which has suggested that online knowledge provision and learning can improve service in Rwanda, online knowledge development was found only occasionally, and only undertaken by more motivated actors in the sector.

Business functioning has been improved through the availability of online connectivity, where the logistic of organisations becomes easier to handle by Rwandan firms, improving trust. Yet at the same time, simpler logistics pose risks that may in the longer term lead to firms external to Rwanda disintermediating Rwandan intermediary firms.

Rwandan firms have often looked to push towards *distribution* of tour resources and direct marketing to customers. However, in contrast to the literature which suggested that this would transform value chains, the successes so far of Rwandan firms have been limited. Firstly, using the diverse range of websites, social media sites and other resources available takes time and skill and often leads to only minimal adoption. Secondly, online tourism services which might allow Rwandan firms better reach to customers have also had limited success. In particular, services such as OTAs and feedback sites often do not fit to the types of common tour activities in Rwanda and thus their use has not taken off. Finally, outbound tour firms in close proximity to customers makes them more likely to receive customers than Rwandan firms.

In sum, changing connectivity in tourism, for all the talk of large changes, has surprisingly had little transformative impact. In Rwanda, firms realise the importance of the internet in communication, and adoption is high. Yet, the types of activity undertaken and the value chains have not changed.

Socio-economic outcomes

The impacts of changing connectivity on socio-economic outcomes appears minimal. In terms of positive outcomes, changing connectivity provides some support for new firms in the tourism sector. It provides a channel for guides, small tour operators and travel agents to market and then link to niche customers. These processes can be important in the survival of firms and thus the situation of its owners and employees.

However, there appears to be little evidence of Rwandan firms creating or capturing value in the value chain. Simpler communication tends to

marginalise some Rwanda tour operators. Online services have brought tangible benefits mainly to large international firms who have the ability to well integrate with these global services.

More generally, statistics suggest that whilst Rwandan tourism has been growing, that growth can mainly be attributed to factors not linked to online visibility of destinations (e.g. improved perceptions of safety, direct flights, offline PR marketing). The predominant story in Rwanda then is of some new activities and efficiencies; but little socio-economic change from changing connectivity

Summary

Many firms in tourism have adopted and are actively using digital connectivity. But, digital connectivity alone has not lead to transformation. Rather, one can see a set of wider barriers that prevent the transformative effects of connectivity being realised. Barriers can relate to skills in integrating available technologies into businesses. Online resources and services were also found to be poorly fitting to the needs of the Rwandan sector and this can limit viability. Finally, well-established firms and relationships into outgoing firms lead to a static tourism sector which is difficult to transform. Now that better connectivity is available, the goal should be to tackle these secondary barriers to effective use of connectivity to drive improved benefits.

10b. Policy implications

The critiques made in this work, combined with examples of innovative activity observed, point to ways in which these secondary barriers to uses of connectivity might be reduced. These are discussed below:

Online destination management

Destination management is still important. It provides visibility and information for tourists who are often not clear about where they want to go, and what they want to do. In the case of Rwanda, new diversifications of activity were particularly found not to be visible on the internet. Destination management sites should include extensive information on such elements – the newly assigned natural resources, cultural tours and activities that are possible. This can provide an informational basis for customers as well as highlighting new opportunities for highly entrepreneurial tour operators.

Destination management is about more than one single website, it is about how the cultural and diverse information of a destination reaches customers. This information is as likely to come from ‘pushes’ in social networks and other online applications as it does from ‘pulls’ of customers Google searching for information. As the case of “Kwita Iznia” (the gorilla naming ceremony) shows, it is possible that these approaches can work in a country like Rwanda. The challenge is in examining how existing activities might be best pushed in this way.

Online knowledge

Ad-hoc learning online by entrepreneurial actors suggests the potential for making knowledge more accessible to those involved in the sector. In Uganda, for example, the tourism sector has partnered with local application developers to build tourism resources that could aid knowledge building. It is not out of the question that such initiatives could happen in Rwanda.

Whilst it has not been used much in Rwanda, some production of online learning resources, around simple activities like customer services and basic management could also be valuable to a sector. Such resources would be particularly useful in jobs where staff turnover is frequent and attending workshops is less viable. Online approaches on their own will not overcome all barriers in the sector, but as yet online learning has barely even been explored in Rwanda.

Support internal systems and management development

Coherent internal information systems and skilled management are the fulcrum of more dynamic firms in the tourism sector. They also improve the likelihood of firms using online resources and services.

Thus, adoption of online tourism resources and services are likely to be driven by improving managerial training in tourism, something that already occurring in the sector, through government support. Other activities beyond managerial training could also push systems use. For instance, promoting shared knowledge groups through hotel and tour associations, and visits to places of best practice might inspire improvement for these firms.

Online services

In our work in the sector, we often observed that one or two firms were using a particular online tools or services well. Thus, sharing of best practices of use of online services, and provision of frequently updated lists of online resources for the tourism sector could be invaluable. This might particularly be led by well-established tourism associations who can support improved diffusion of knowledge in the sector.

However, there are cases where online services are simply poorly fitting with the activities and contexts of the local setting of Rwanda. With poor fits of online services, it is worth associations and policy makers exploring the growth in specifically focussed African online tourism services that are emerging. Tools such as Safari Now (dynamic Safari scheduling service), Nights Bridge (online systems for small hotels) and WETU (itinerary sharing service) all seem better tailored for the needs of Rwandan firms (but all have zero presence in the country). Such services (or others) could be welcomed and adopted in Rwanda.

Youth with new social media

Social media use in Rwanda can seem overly time consuming or complex for firms in the tourism sector. Yet, social media is an increasingly important online resource in how customers find, share and decide on tourism experiences.

There is a tendency for tourism firms to contract social media activity out to consultants, for which they are often overcharged and where they lose direct interaction with these vital resources. As shown, successful cases using social media depend on interest, time, trial and error, and keeping up with the newest developments. With these demands in mind, it would be prudent for hotels and tour operators to consider hiring younger staff to undertake social media roles. As has been done successfully in a few firms, employing a tech-savvy young staff member as a social media co-ordinator can often be relatively low cost, and allow firms to build social media benefits and skills in-house over time.

Branding and niche approaches online

One key weakness for Rwandan firms is that going online is often a matter of reaching ‘more of the same’ customers. Firms who strategize and then push to reach specific demographics or segments of customer were generally found to be more successful. Further, here there seems to be more potential for direct customer interaction online, particularly in finding niches.

Where firms strategically push into niche areas (e.g. bird watching, community tourism, and regional customers) can be highly successful. Online activities is a crucial element of such approaches – in looking for niches and ensuring that niches reach a critical mass of customers.

Similarly, for growing Rwanda firms, expansion may not necessarily come through offering extra itineraries and gaining more customers of the same type. Cross branding for different demographics (for instance, by language, by budget) can allow different types of growth, and online activities are central. Given the low awareness of such approaches it is crucial that these ideas are also linked into training and skills development

Continue to support internet access within hotels

RDB has taken some positive steps to push internet access in hotels and support problems when they have occurred. This support has been useful for improving customer service, as well as contributing to ‘pushing’ the Rwandan brand through social networks. As the demands of connectivity evolve, attention must be paid by policy makers to ensure that hotels keep up with the needs of customers and bandwidth intensive online resources.

NOTES

- International tourism is considered an export in that it is ‘produced’ in a host country and paid for in foreign currency by a tourist. The difference between tourism and other exports is that tourism is consumed in the host country rather than the consumer country.
- Likely the African tourist proportion is skewed by the nature of visa categories liable to inflate levels classifying themselves as tourists.
- For instance, leisure travellers arriving by land (typically regional tourists) spend on average 13,000RwF (\$19) on accommodation per night against 90,000RwF (\$130) for travellers arriving by air (typically international tourists) (RDB 2010)
- Likely linked to the lower local entrance fees. For instance Gorilla trekking costs 30000RwF [\$43] for Rwandan citizens whereas it costs \$750 for non-nationals.
- This particularly related to the EAC visa which will offer free movement of citizens in the region, although arguably other countries in the region with more refined mid- and lower-range facilities may be more liable to benefit from this future growth.
- According to RDB figures 1999 and 2009, foreign direct investment (FDI) of RwF 258 billion went into hotels and leisure (equivalent to the tourism sector), accounting for 20% of total FDI. Local investment in hotels, restaurants and other tourism activities amounted to RwF 140 billion between 1999 and 2009, representing 16% of total local investment over that period. The total investment has therefore been RwF 398 billion or more than US\$ 700 million in the sector.
- The preservation of the natural resources, habitat and peace for these primates relies on high levels of ecological sustainability. So sustainability of this resource limits the volume of visitors per day who can visit gorilla groups. If Rwanda remains a country with only one attraction, it will lead to a hard limit on tourism growth (Nielsen & Spenceley 2010, USAID 2008)
- Uses UNWTO category ‘expenditure (including transport)’ for expenditure; UNWTO categories ‘tourists’ and ‘excursion’ (single day) to calculate visitors.
- This includes enhancing nature reserves, new hiking and cycling trails and the ongoing construction of multi-billion pound conference facilities.
- There is no formal definition of this category, but from interviews this seems to refer to highly affluent tourists with large budgets for tourism, often older and retired.
- It is difficult to ascertain the level of such actors from this qualitative work, but we would estimate it to be up to 10-20% of customers. Interviews suggest that the trend is a significant enough level to be considered in analysis. It should be emphasised that tourists tend to still be from the “high-end” of tourists but to be those are looking to reduce costs. There was little evidence of international tourism in Rwanda becoming more dominated by mid-range or budget tourism over time.
- This group was small but sizable enough to be considered in analysis. This included local/regional citizens, but also a significant number of regional business travellers, conference attendees and non-governmental actors who undertake travel and tourist activities in Rwanda whilst working there.
- We might also add travel agents who are not included in this specific calculation
- Later we will discuss how connectivity is helping to reduce such issues; here we talking about how the sector has been historically shaped by its remoteness and terrain.
- This also likely relates to the perception of security in Rwanda, where given the well-publicised history, tourists may feel more comfortable when accompanied by a guide in rural areas.
- For example, community support schemes, employment or training for lower-income staff in rural lodges, part ownership of more rural lodges by the local community, and financial support for community events.
- Such inputs could be defined as different value chains themselves.
- These can be government run, PPPs or associations of private firms in a region.
- In interviews, many GDS vendors had bought up online travel agents firms as they realised their market was disappearing.
- Some interviewees took multiple roles, for instance several tour operators also provides travel or car hire services and two tour operators were also lodge owners. Here we highlight the main service of the companies. Numbers do not include repeat interviews.
- Some international hotels had gone as far as setting up dynamic ‘multi-homing’ hosts to dynamically switch or to load balance between different connectivity types and ISPs.
- We found that Rwandan travel agents typically focus on organising flights and other needs (such as visas) for Rwandan (or sometimes regional) customers. Typically the bulk of their customers are local businesses who require a firm to undertake travel services for them, or local business travellers who do not have credit cards. International tourist use such firms less, as when they arrive they will already have their itineraries booked. Even if they make changes to the plans they will tend to do booking online using their bank cards rather than using travel agents.
- Indeed, the author of this paper also experienced this issue when trying to find some tourist information during the periods of research!
- And conceivable East Africa for firms who have a regional focus
- Combined with other factors – regional integration, lower air costs and cheap cross-border mobile calls
- It should be stated that this can work both ways. A few Rwandan tour operators reported that they had similarly organised trips in neighbouring Tanzania and Uganda without contracting secondary tour operators. These cases were rare though, presumably because it is rare for tourists to be based in Rwanda as their primary East African location.
- Here we define ‘online services’ to include online resources that firms use in their activity. These particularly allow non-proximate sharing and access in the value chain.
- This is particularly the case for a few Kigali hotels who are integrated into larger regional chains of hotels
- There four elements are roughly akin to the four distinct categories of value upgrading – process, product, functional and chain (Gereffi et al. 2005)
- And indeed recent investment in conference facilities may turn out to be effective in the long run.

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12. APPENDICES

12a. Glossary of terms

DMO: Destination Management Organisation – Organisations which provide resources for tourist destinations

GDS: Global Distribution Systems – Flight and hotel booking systems generally used by travel agents

GPN: Global Production Networks – Framework used in this work

GVC: Global Value Chains – Framework used in this work

ITO: Inbound Tour Operator

OTA: Online Travel Agent

OTO: Outbound Tour Operator

RDB: Rwandan Development Board – Rwandan policy maker for tourism

12b. Sample interview questions for tourism managers

Italic questions indicate follow ups which were used as prompts to expand on the topics discussed:

1. Before starting, I want to just ask, broadly speaking, do you think that fibre-optic internet has had a big or small impact on the way your business operates? In what ways?

2. What types of Internet access do you have? What company? *Why this company? Have you shopped around for other offers? Speeds? Prices? How and when has this changed? Do you face any problems getting online?*

3. What do you mainly use the Internet for?

4. Are you disappointed by the internet in any way?

5. How did you come into this job? Did you {the manager/ point of contact} come to tourism because of family, from another industry or did you start from scratch?

6. What made your company successful when you first started your company/ started working in the field? *Do you think this has changed over time? Do you feel that faster Internet changes any of this?*

7. Are there any reasons why your business is located where it is? *Is the specific location of a company important?*

8. Roughly how many customers do you receive annually?

9. How many workers are employed at this firm? How does this break down into the different types of work you do? (e.g. 10 software developers, 2 clerical, 2 managerial). Has the internet changed the number of people or the kinds of work that people do?

10. What kinds of services do you provide? *Do you provide all these services or do you use any middlemen?*

11. What happens if you go over your capacity to handle tourists? OR what happens if you get an unusual request or a request that you cannot provide on your own?.

12. If you use the services of other drivers/accommodation/tour guides: *How do you search for these people? Do you use the internet to search for them? Do any of them have their own websites? Are you worried about them cutting you out?*

13. What about the services you do not supply, like food or arts/crafts? Do you take your customers to the same restaurants/cafes and arts shops? *How do you think the internet is changing how these groups [food and crafts people] engage with customers?*

14. Do you provide your services only in Kenya/Rwanda or in other countries?

15. Do you think local firms have an advantage over foreign firms? For example, do you have an advantage over foreign firms in Kenya/Rwanda?

16. Has your company specifically changed any of the work that it is engaging in in recent years? *If so, can you describe why? Are these changes connected to a faster internet connection?*

17. Where do you get your clients from? % from middlemen, travel agents or other companies, % from your own website, % from directly via email or telephone, % from other

18. Do you have any permanent contracts or relationships with other companies?

19. How do you search for new partners or other companies to work with? *Who makes contact with who? Do you search for other companies? Or do you wait for them to make contact with you?*

20. What has been the most successful way of forming new partnerships? What has been the most challenging? Do you have examples of either?

21. How do you use the internet to contact new people/companies? Has faster internet allowed you to do this more effectively?

22. How important is reputation? How do you determine whether you can trust a company?

23. How do you use the Internet to gauge whether someone is trustworthy? Do your changed connections make it easier or more difficult to trust people?

24. Have you experienced problems with cybercrime or people trying to be dishonest on the Internet? How have you dealt with this?

25. How does the firm brand itself? Have you tried to re-rebrand yourself in new ways? *How do you use the internet to re-brand yourself? Has faster internet changed any of this?*

26. Do you change your margins/profit margins depending on: Whether the customer comes directly to you or via a middleman? Whether they came from different countries? For any other reason?

27. How do you use the internet to target these different groups of tourists or do you just use a blanket approach?

28. How important are recommendations from other companies? What about recommendations and reviews directly from other tourists?

29. How do you ask for feedback from your clients or from other companies?
Have you had any experience with online feedback/feedback on the internet?

30a). Do you feel that there is enough online information available for tourists to learn about activities and destinations in Kenya/Rwanda? Where do you think they are primarily getting their information from, and is this changing?

30b) Do you feel that there are an increasing number of Kenyans/Rwandans creating content about Kenya/Rwanda (e.g. reviews on TripAdvisor, videos on YouTube) and does this affect your business in any way?

31. Is there any advertising or marketing that you are trying to do, but it isn't working as well as you had imagined?

32. If they have a website: did you do it within the company or did you bring someone in? Who are you predominantly trying to target with your website?

33. Do you have more than one website? WHY do you have more than one website? Are you targeting different kinds of people?

34. Do you use social media? *Who are you trying to target? Do you feel like you know how to use it effectively? If they say Facebook, do they use ads on Facebook? Do they contact people on Facebook or do they just have a page? Has it been at all helpful?*

35. Do you use TripAdvisor? *Who are you trying to target? Do you know how to use it effectively? Do you feel that it exposes you or makes you vulnerable in any way?*

36. Do you know anything about search engine ranking or optimisation?

37. How else do you make your company more visible online?

38. How did you learn about websites/social media/TripAdvisor/search engine optimisation? *Where do you go to look for new information or better understanding about these things?*

39. How important is experimentation and 'playing around' with websites and using websites? *Do you feel comfortable trying out new things online, like modifying your websites, using search engine optimisation tools, using social media? Does having a faster connection make a difference in how much you experiment?*

40. Can you give examples of how you might have changed the way you learn about new things online because of faster internet?

41. Do you still visit trade shows or make physical visits/go in person to visit new clients/locations/hotels? Does the internet reduce the importance of these visits or are they still important?

42. What percentage of your customers are from Kenya/Rwanda and what percentage are from abroad? What were the percentages three years ago? *Of those that come from abroad, what were the top three countries three years ago, now? More specifically what % of your clients come from each place?*

43. Are there any specific countries that you would like to target in the future? *Does faster connectivity have a role in this? What kinds of tourists/companies would you ideally like to target in the future? Do you have any strategies to make this happen? Does changing connectivity have a role in any of these strategies?*

44. How do you normally research or gather new information about tourism and new destinations? (e.g. face-to-face meetings, trade shows, online)?

45. Can you indicate how much of the information that you use in your day-to-day operations you obtain from websites and how much you obtain through emails and personal conversations?

46. How do you search for new employees? How important has word of mouth been for you to find the right calibre of employees? How has the internet changed the way you search for employees?

47. Do you feel that the education system is doing a good job at preparing graduates for work? Do you feel that universities are getting better or worse over time? Are there any specific skills that are particularly lacking among Kenyan/Rwandan job seekers? Does this prevent you from winning contracts? Do you have any relationships with universities or training colleges in terms of recruitment and internships?

48. Does the faster connection change how you perceive geographic barriers?

Do far away customers or clients feel less far away? Or is this not the issue? Do you see more opportunities from far away Does it mean you are able to pull opportunities into your location?

49. Are there any other way that ICTs have enabled your firm to do things differently?

50. How do your tourists pay you for your services? How do other companies pay you for your services? How do you pay others for their services to you?

50b. Does having faster connection change the ease of using digital payments?

51. Are there any remaining barriers to communication that you face either in terms of internet access, access to software/hardware or any other technological access?

52. How involved are you in professional associations or government initiatives?

53. Has government policy influenced the direction of your business? What criticisms do you have of their policies with regards to your sector?

54. What are the barriers to better coordination between you and the government? Who have been your key allies in government? Are there any tensions within the government that make it hard for effective policy-making (perhaps between ministries or between city level and national)?

55. What kinds of policies or support from government or other professional bodies would you like to see? What would help you the most?

56. What are the threats to your business in relation to the changing internet infrastructure?

57. Are there any ways that your competitors are using the internet better than you?

58. What is holding you back?

59. Studies have shown that it is important for companies in other African countries to have government backing or strong social networks. *Do you think that this is true in the tourism sector in Kenya/Rwanda? Do you think your competitors benefit in any way from these kinds of networks?*

60. You said at the beginning that you felt that the faster speed made a big/small impact. Given everything you have said in the interview, do you still feel the same?

61. Did you expect us to ask you anything that we didn't?

12c. Codes for interview scripts in tourism

Connectivity use in the tourism sector

- Automation and services
- Connectivity and communication
- Connectivity – problems and solutions
- Connectivity types in firm
- Connectivity and knowledge building
- Expectations of impacts of connectivity
- Information flows and connectivity
- Online presence and visibility
- Online security and risks
- Social media

Aspects of value chain

- Intermediation and disintermediation
- Linking to international markets
- Linking to local markets in Africa
- Relationships and trust (global)
- Value chain relations and linking
- Value chain upgrading

Aspects of production networks

- Associations
- Capacity and HR
- Overcoming geography
- Ownership and parent firms
- Payment or finance
- Policy (formal)
- Policy (informal)
- Relationships and trust (local)

Contextual issues

- History of firm
- Grounded codes emerging in analysis
- Connectivity – descriptions of practice and use
- Flexibility and internet
- Attracting customers
- Discussion of future ICT uses
- Offline interactions
- Time sinks of internet
- Trust and tactics for building trust



Oxford Internet Institute
University of Oxford
1 St Giles Oxford OX1 3JS
United Kingdom
Telephone: +44 (0)1865 287210
Fax: +44 (0)1865 287211
Email: mark.graham@oii.ox.ac.uk
<http://www.oii.ox.ac.uk>