

University of Bolton

**RELATING THE EXPLOITATION OF INFORMATION AND
COMMUNICATION TECHNOLOGY (ICT) AND A FIRM'S
COMPETITIVENESS IN VALUE CHAINS: THE CASE OF TOURISM
ENTERPRISES IN MALAWI.**

This thesis is submitted in partial fulfilment of the requirements of The University of Bolton for the degree of Doctor of Philosophy

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DEDICATION

I dedicate this Doctoral work to my beloved wife, Veronica Kaitano who has been a pillar of support in all times and situations and provided special encouragement, guidance in the course of this PhD journey and took time to proof read the whole document. To the saints of Daniel Centre who are closest to my heart, you have become my family and I carry you in my heart. This Doctoral thesis is for you!!

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ACRONYMS

ADB	African Development Bank
B2B	Business to Business
B2C	Business to Consumer
bn	Billion
BP&F	Budgeting Planning and Forecasting
BPR	Business Process Re-engineering
CRM	Customer Relationship Management
CRS	Central Reservation System
DfID	Department for International Development
DMOs	Destination Management Organisations
E-commerce	Electronic commerce
E-procurement	Electronic procurement
ERP	Enterprise Resource Planning
E-Tourism	Electronic Tourism
EU	European Union
GDP	Gross Domestic Product
GDS	Global Distribution System
GPS	Global Positioning System
HR	Human Resources
HRM	Human Resources Management
ICT	Information and Communication Technology
IS	Information Systems
IT	Information Technology

LTE	Long Term Evolution
LTO	Local Tourism Organisation
MDC	Malawi Development Corporation
MDGs	Millennium Development Goals
MK	Malawi Kwacha
MTC	Malawi Tourism Council
NGOs	Non Governmental Organisations
NTO	National Tourism Organisation
PA	Per Annum
PBX	Public Broadcast Exchange
PIT	Publish and Publicise, Interact and Transform
PMS	Property Management Systems
POS	Point of Sale
RTO	Regional Tourism Organisation
SADC	Southern Africa Development Committee
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
SMTEs	Small and Medium Tourism Enterprises
SPSS	Statistical Packages for Social Sciences
SRM	Supplier Relationship Management
SSA	Sub-Saharan Africa
TEs	Tourism Enterprises
TGVC	Tourism Global Value Chain
TSC	Tourism Supply Chain

TSDP	Tourism Strategic Development Plan
UNWTO	United Nations World Tourism Organisation
USAID	United States Agency for International Development
USD	United States Dollar
VC	Value Chain
VoIP	Voice over Internet Protocol
WTO	World Tourism Organisation
WTTC	World Travel and Tourism Council

Abstract

The study sought to explore how the adoption and exploitation of ICT is affecting the competitiveness of value chain players in Malawi's tourism sector. To best understand the research problem, the study engaged a mixed method of data collection to obtain different but complementary data on the study topic in order to not only compare and contrast quantitative statistical results with qualitative findings but also to validate and expand quantitative results with qualitative data.

The study has revealed that despite all tourism value chain players using ICT for business functions, the majority are using ICT for business support functions only; very few operators are using ICT for service improvement, comparative advantage and reducing costs. The study has also found out that there are extremely low adoption levels of GDS, CRS and ERP by Malawian tourism value chain players - attributed to the huge investments that are required to procure these systems, with the exception of Airlines and travel agents. Management and/or owners' commitment to invest in ICT is the main driver to ICT exploitation and facilitates the acquisition of necessary systems and skills. However, poor technology infrastructure, limited investments in ICT, lack of ICT expertise and limited awareness to the strategic importance of ICT are among the various barriers to ICT exploitation in Malawi. Additionally, the study has revealed that the adoption and exploitation of ICT plays a major role in advancing or suppressing the competitive advantage of the tourism industry. ICT adoption and exploitation are among the most prominent forces that can alter the rule of competition - especially in the tourism industry, because the majority of activities in the tourism value chain create and use information. To this end, information accounts for the preponderance of competitive advantage and therefore for profitability for tourism operators.

Chapter 1: Introduction

Chapter one is designed to provide an overview of the research and sets the stage for the various components of the study including tourism and its significance to global and Malawian economies and its growth and it also briefly outlines the research scope and rationale, aims and objectives, research questions, anticipated contributions, research ethics, methodology and structure of the dissertation.

1.1 Tourism and its Significance on Global Economies

Over the decades, tourism has experienced continued growth and deepening diversification to become one of the fastest growing economic sectors in the world. Modern tourism is closely linked to the development of economies and encompasses growing number of new destinations. These dynamics have turned tourism into a key driver for socio-economic progress. Tourism is usually defined as services for people travelling to and staying outside their usual environment for less than one consecutive year for leisure or business purposes (European Commission, 2003; UNWTO, 1995), and it is a powerful vehicle for economic growth and job creation all over the world. The World Travel and Tourism Council (2018) points out in its economic analysis of the global economic impact of travel and tourism that the sector is shown to account for 10.4% of global Gross Domestic Product (GDP) and 313 million jobs or 9.9% of total employment, in 2018 up from 8.8% (258 million) in 2017.

1.2 Tourism in sub-Saharan Africa (SSA)

According to the World Bank (2013) tourism has been one of the key industries driving the socio-economic growth and technological development in SSA economies. One of the key findings of the African Tourism Monitor (2015) report is that the tourism sector in Africa is growing and Africa was the only sector where tourism grew during the economic crisis of 2018. With the full knowledge that tourism is a complex sector with tentacles into a myriad of other economic activities, all of which require careful management, countries with tourism assets are fully justified in deciding to prioritize tourism as a development strategy.

1.3 Tourism in Malawi

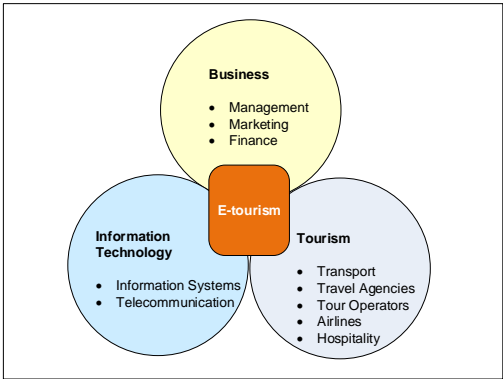
In Malawi, tourism is the third largest foreign exchange earner after tea and tobacco, and a major employer. Tourism is often considered a catalyst for economic and social development because it tends

to have a large trickle-down effect in terms of poverty alleviation, boosting employment creation and small business entrepreneurship. The total contribution of Travel & Tourism to Gross Domestic Product (GDP) was 4.2% or MWK289,738.0m (USD409.0mn) in 2016, 7.2% (MK100bn or 1bn Pounds Sterling) of GDP in 2017, and rose by 4.4% in 2018 respectively and forecasted to rise by 7.2% per annum to 2028 (Malawi Economic Report, 2018). In this regard, tourism remains one of the country's sectors with significant potential for growth as an export service sector that is capable of making a substantial contribution to the socio-economic development of the country.

1.4 E-Tourism and Tourism Value Chain

The tourism industry is an information-based sector and the use of Information Communication Technology (ICT) is ubiquitous to the industry. It is within this context that this research decided to focus on the exploitation of ICT in the tourism industry. E-tourism is the digitisation of all the processes and value chains in the tourism, travel, hospitality and catering industries that enable organisations to maximise their efficiency and effectiveness (Buhalis, 2003). E-tourism, one of the most important sectors in e-business, involves a number of processes including acceptance of online orders, marketing and sales processes. Hence e-tourism bundles together three distinctive disciplines: business management, information systems, and tourism (Buhalis, 2003). To this end, e-tourism can be summarised in Figure 1.

Figure 1: E-tourism disciplines



Source: Buhalis (2003)

Tourism is an information-intensive business, and the very nature of tourism products requires both the consumers and suppliers to access information, entailing that both tourists and tourism service providers in the value chain rely heavily on information that is streaming across the chain (Gratzer and Winiwarer, 2004). The tourism industry has certainly been one of the first to make large-scale use of the new information technologies from the dawn of the new millennium (European Commission, 2003) and all players in the tourism value chain have increasingly become users of ICT in order to ensure their own

survival and competitiveness. Gratzner (2004) argues that competitive advantage is gained by tourism value chain players who utilize digital electronic methods and tools to gather, process, share and distribute information.

The European Commission (2003) pointed out three main innovation waves impacting on the tourism sector in recent decades namely:

- The development of the Computer Reservation System (CRS) in the 1970's;
- The development of the Global Distribution System (GDS) in the 1980's and
- The Internet in the 1990's.

ICT empowers consumers to identify, customize and purchase tourism products and support the globalisation of the industry by providing tools for developing, managing, and distributing offerings worldwide (Bethapudi, 2013). Effective and high-speed ICT infrastructure and software applications in the tourism and hospitality industry are crucial for tourism development. ICT also allow customer relationship management, and supply chain management to be combined into a single source that facilitates a variety of operations – product selection, ordering, fulfilment, tracking, payment and reporting to be performed with one easy-to-use tool (Paraskevas, 2005). Moreover, the Internet has revolutionised flexibility in both the consumer choice and service delivery processes (Bethapudi, 2013).

Table 1 summarises the advantages of ICT usage in the tourism sector as suggested by various authors. There is clear evidence that ICT has revolutionized the way business is conducted in the tourism sector and is critical to the interface between business and its suppliers, partners, customers and markets.

In addition, business processes have fundamentally been altered due to the exploitation of ICT. It is therefore not “business as usual” for any business that would like to move to the next level in the value chain that it is operating in. It is important that businesses must reposition themselves through the usage of ICT to improve their business performance and ability to interact with chain partners. This study aims to build on previous research and examine the tourism value chain in more detail and explore the impact of ICT exploitation on the competitiveness of tourism enterprises. After careful analysis of the ICT tools and models currently in use in the tourism industry, the research will move on to develop a framework for ICT exploitation by various tourism enterprises. The framework can also be applied and adopted by other enterprises in other sectors.

Table 1: Summary of benefits accruing from ICT usage in the Tourism Value Chain

Factors	Authors
ICT enhances Value-generating strategies	Si-qing Liu, 2012
Enables each player including new ones to get in contact with other players in the value chain; able to reach global audience	Gratzer and Werthner, 2004; European Commission, 2003; Farkhondehzaden, 2013
Allows easy pick and feature comparison of different principals and intermediaries offerings; booking transaction complexity is reduced	Paraskevas and Kontoyiannis, 2005
Tour operators can streamline their front-office activities, enables e-procurement via Electronic Data Interchange (EDI), extranets, and e-market places; enables selling online; SMTEs can have equal Internet access to international tourism markets	European Commission, 2003; Kim, 2008
Obtain instant market information and conduct electronic business transactions	Farkhondehzaden, 2013
e-tourism impacts on marketing mix	Bethapudi, 2013; Waghmode and Jamsaudekar, 2012
Strategically, e-tourism makes basic changes within business processes, entire value chain, as well as better strategic relationships with all stakeholders; enables tourism operators to undertake e-trade, eliminating thus intermediaries and boosting their own brand.	Vukadinovic, Kuezevic & Damnjanovic (2017); Berne et.al (2015)
ICT incidence of use significantly influences operational productivity and customer satisfaction.	Abdulhamid, et.al (2016)
ICT use tends to improve the competitiveness of tourism businesses, due to its ability to reduce transaction and operational costs.	Tichaawa (2017)
The use of ICT is a relevant opportunity for the growth and strengthening of the local tourism industry, as well as for the development of the destination economy as a whole.	Illic and Nikolic (2018)

According to Kula et al. (2006), value chains encompass the full range of activities and services required to bring a product or service from its conception to its final markets and include suppliers, producers, processors and buyers who are supported by a range of technical, business and financial service providers. From a tourism perspective, its value chain can be defined as the full range of activities that are required to bring the tourism product from conception and production to the actual experience of the tourist (Paraskevas, 2005). The value chain of the tourism sector is quite heterogeneous when it comes to the types of players involved (European Commission, 2003) and includes the following key players:

- Tourist service suppliers: including hotel accommodation, the companies licenced to carry

passengers (air, sea and land), other players offering amusement and entertainment services and other services such as insurance.

- Travel Agencies: which operate as service brokers and act both as intermediaries and as front-office towards customers.
- Tour Operators: who combine the services offered by various suppliers.
- The recipient agencies: these are the local correspondents of the tour operators and whose function is the provision of services to the end customers at the destination site.
- Destination Management Organizations: these are non-profit government owned entities whose main function is to market tourism destinations and facilitate an environment that is conducive for the other tourism actors.

1.5 Problem Statement and Rationale for the Study

The economic debate has arrived at the consensus that the range of the use of technology is a significant cause of differences in the performance and productivity of firms, sectors and countries (Acemoglu, 2007). However, over the years much attention has been given to the successful adoption and use of ICT by organizations (Ashrafi & Murtaza, 2008; Ongori & Migiro, 2011; Chinyanta, 2011; OECD, 2004; Mpofu, 2004; Mokaya & Njuguna, 2009; Nandan, 2005; Paul et al., 2009; Manuere, Gwangwava & Gutu, 2012; Salam & Noor, 2009; Taylor, 2015; Nduati, Ombui & Kagin, 2015; Ndekwa, 2014; Jaganathan et al., 2014). The literature is of the view that ICT provides many potential benefits to organizations in making them more efficient, effective and competitive. Particularly in value chains, technologies and technological capacity play a central role at different levels (Gereffi et al., 2005). However, technological capacities in value chains have neither been systematically integrated into theory nor explicitly researched (Brach and Kapel, 2009). The majority of studies and models reviewed (Subrahmanya, 2012; Nandan, 2005; Manuere, 2012; Kushwana, 2011; Wolf, 2001; Moni, 2009) merely mention technological capacities in value chains as important components or implicitly consider them in corresponding assumptions. This is more pronounced in the tourism industry – which is an information-based sector and relies heavily on information communication technologies to communicate across the various players in the value chain. Various authors and researchers (e.g. Farkhondehzadev, et al., 2013; Waghmode and Jamsanderkar, 2012; Mihajlovic, 2012; European Commission, 2013; Kim, 2004; and Seliat, 2013) mention e-tourism as key to facilitating communication among and between tourism value chain actors. Additionally, various models and frameworks that analyse and depict the information flow in the tourism value chain have been developed and most of them have focused on developed economies and big enterprises such as hotel chains and airlines. However, there has not been a systematic analysis and empirical research on models and frameworks on how ICT exploitation in tourism enterprises in developing economies can improve their competitiveness, enhance their comparative advantage, and upgrade their internal business processes.

1.6 Research Questions

The study intends to respond to the following research questions;

1. What is the level and extent of ICT adaptation within the tourism value chain in Malawi?
2. What are the factors influencing the level of ICT adaptation by Malawian tourism value chain operators?
3. Do tourism companies in the value chain use similar ICT strategies?
4. Does the use of ICT in the tourism value chain provide Malawian tourism enterprises with opportunities for competitive advantage?

1.7 Research Aims and Objectives

The aim of this study is to develop a better understanding of the exploitation of ICT within tourism enterprises in Malawi. This is intended to assist in drawing conclusions that could support practitioners in the tourism sector to enhance business competitiveness and superior performance.

The objectives of the study are:

- 1) To critically review existing ICT frameworks in the tourism value chains and identify gaps in the literature;
- 2) To review the current status of value chains in the tourism sector in relation to their usage of ICT in Malawi;
- 3) To explore the main usage, benefits, catalysts, and factors affecting the progress of ICT in the tourism value chain; and
- 4) To develop a framework for the strategic exploitation of ICT within the tourism value chain in Malawian tourism enterprises, with a view to service improvement, customer satisfaction and enhance competitiveness.

1.8 Research Contributions

The study is intended to make the following contribution:

- Contribution to knowledge.
- Contribution to the sector (tourism companies) and the economy.
- The proposed framework may be used by other companies in various sectors as a guide to achieve competitiveness through ICT exploitation.

1.9 Research Ethics

The research ethics for this study is based on the University of Bolton guidelines for conducting research, RE1 form has been submitted.

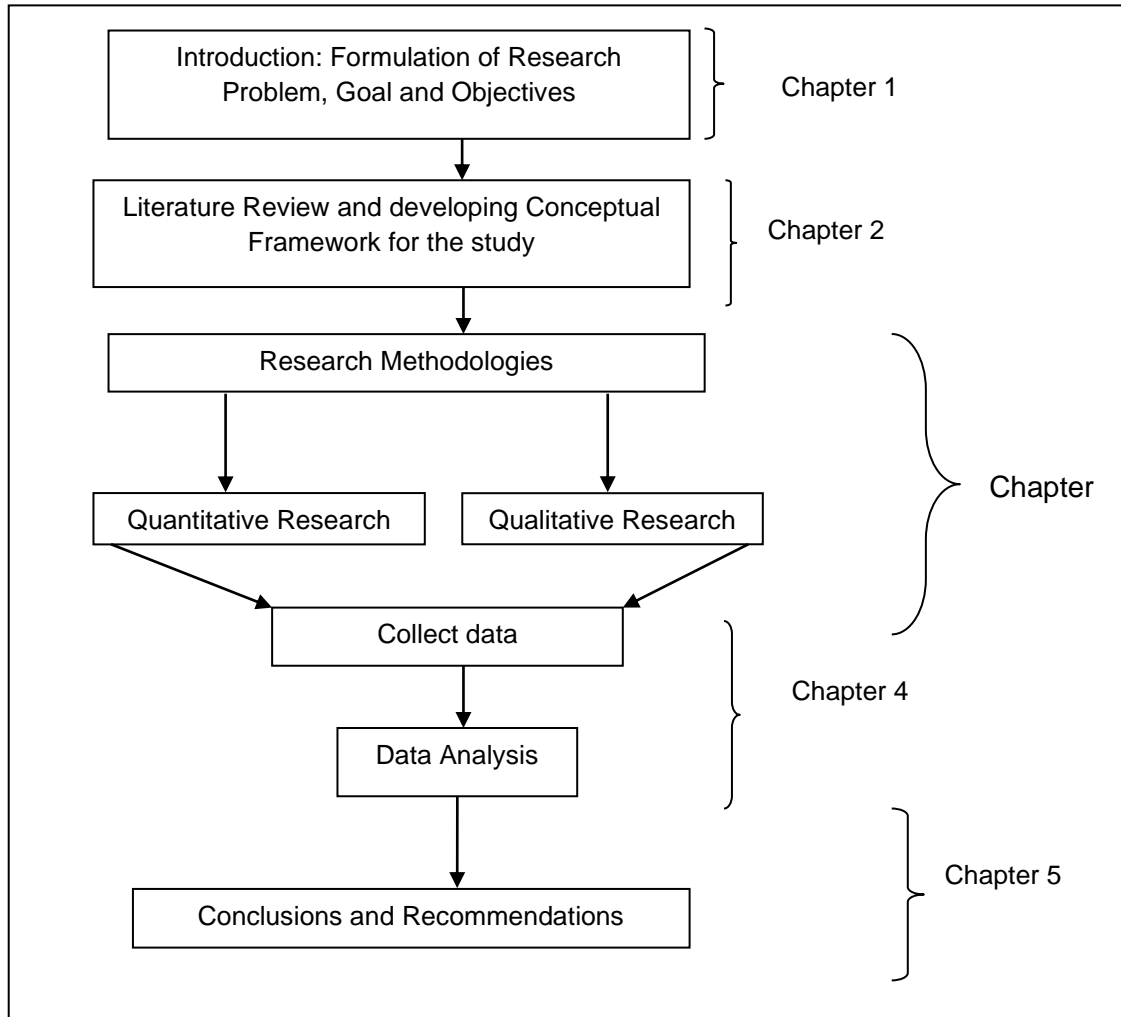
1.10 Methodology

Both qualitative and quantitative research methodologies were used in this research. Given the nature of the research problem, the survey and case study were selected as the most appropriate strategy for this study. The sample for the survey was made up of all stakeholders in the tourism value chain in Malawi, namely, accommodation providers (hotels, lodges and guest houses), travel agents, tour operators, food and beverages suppliers, vehicle hire companies, airlines, insurance companies, and the Malawi Tourism Board. The research used survey questionnaires which were self-administered by the respondents. In order to yield a richer and more detailed refinement beyond what is possible with the survey (Yin, 1994); the overall empirical analysis was supplemented by a detailed examination using case study approach. The case studies entailed personal interviews with key personnel within the selected enterprises to investigate in depth the various variables under study and to triangulate the findings from the survey. Overall, this combination of inductive and qualitative approach aimed at constructing a theoretical framework that will assist tourism enterprises with adoption decisions and successful exploitation of ICT.

1.11 Thesis Structure

Figure 2 provides an overview of the workflow and process that was adopted for this research study.

Figure 2: Thesis Structure



Chapter 2: Literature review

2.1 Introduction

The major themes from the investigation of the tourism value chain in literature and the impact that ICT exploitation has had on various players within the tourism industry are outlined in this chapter. The themes are a continuing stream of literature review from chapter 1 which provides an overview of ICT usage in the tourism sector and its significance on global and African economies with emphasis on sub-Saharan Africa and Malawi in particular; ICT and E-tourism and its impact on the tourism value chain actors; and the key components of tourism value chain and its actors. The analysis further explores ICT and its impact on business performance with special emphasis and attention on e-tourism.

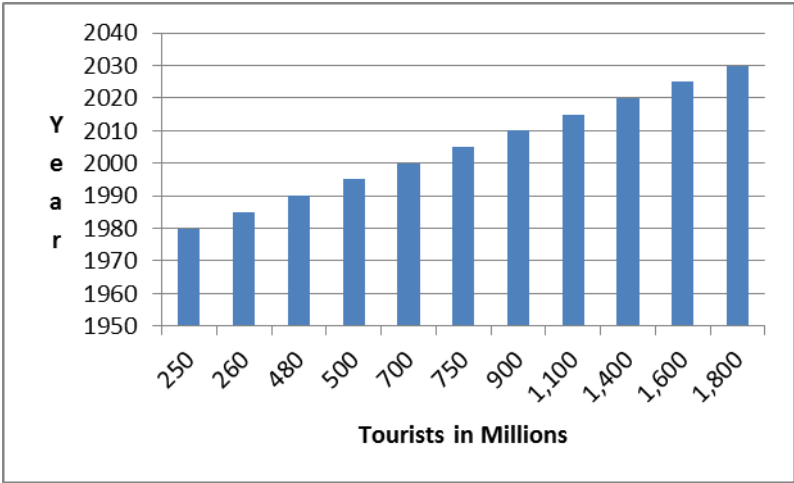
2.2 Tourism: an economic and social phenomenon

Adopting the comprehensive definition of tourism presented by Judd (2006, cited in Debbage and Danials, 1998): “tourism is no single product rather a wide range of products and services that interact to provide an opportunity to fulfil a tourist experience that comprises both tangible parts (e.g., hotel, restaurant, or air carrier) and intangible parts (e.g., sunset, scenery, mood)” which are used to promote particular tourism products. Tourism represents the perfect blend of contemporary globalization, incorporating trade, mobility, people, and development (Taleb Rifai, Secretary-General, World Tourism Organization, 2014). Today, the business volume of tourism equals or even surpasses that of oil exports, food products or automobiles (UNWTO, 2018). Tourism has become one of the major players in international commerce, and represents one of the main source of income for many developing countries. This growth goes hand in hand with a increasing diversification and competition among destinations. The sector has become a synonym with resilience and development, bouncing back faster and stronger than most sectors and providing economic activity embraced by an increasing number of both developed and developing nations. As one of the world’s largest economic sectors, travel & tourism creates jobs, drives exports, and generates prosperity across the world (WTTC, 2018) and the sector accounted for 10.4% of global GDP and 313 million jobs, or 9.9% of total employment, in 2017. The WTTC’s Global Tourism (2018) gives out some indicative pointers to tourism’s contribution to the global economy. Tourism’s direct contribution to GDP was USD2,570.1bn (3.2% of total GDP) in 2017, and rose by 4.0% in 2018, and projected to rise by 3.8% per annum (pa) from 2019-2028 to USD3,890.0bn (3.6% of total GDP) in 2028. In terms of employment, the sector directly supported 118,454,000 jobs (3.8% of total employment) in 2017 and this increased by 2.4% in 2018 and forecasted to rise by 2.2% pa to 150,139,000 jobs (4.2% of

total employment) by 2028. Visitor exports generated USD1, 494.2bn (6.5% of total exports) in 2017 and grew by 3.9% in 2018, and forecast to grow by 4.1% pa from 2019-2028 to USD2, 311.4bn in 2028 (6.9% of total). Travel and tourism investment in 2017 was USD882.4bn, or 4.5% of total investment and rose by 4.8% in 2018, and forecast to rise by 4.3% pa over the next ten years to USD1,408.3bn in 2028 (5.1% of total).

This growth of international tourism can be attributed to factors such as the declining cost of travel, improvements in travel technologies that shorten time in transit, and, more significantly, the information technology (IT) revolution that allows consumers to easily learn about potential new destinations (Christian et al., 2013). Many new destinations have emerged, challenging the traditional ones of Europe and North America (Bethapudi, 2013). The number of international tourist arrivals worldwide is forecast to increase by 3.3% a year, on average, in the period 2010-2030 (Figure 3), compared to an average of 3.9% a year in the period 1995-2010 (WTO, 2011).

Figure 3: International Tourist Arrivals (Millions)



Source: World Tourism Organization (2017)

The projected rate of growth over a twenty year period (2010-2030) represents an increase of some 43 million international tourist arrivals a year on average, compared to an average increase of 28 million a year in the period 1995-2010. This increase is equivalent to the total international tourist arrivals in a major destination like Italy in 2010 (WTO, 2011). As can be noted from figure 3 above, in 2018 the total number of tourists reached 1.2 billion and at the projected pace of growth, international tourist arrivals worldwide will surpass 1.4 billion by 2020 and hitting almost 2 billion by 2030.

According to UNWTO (2018) tourism highlights report, international tourist arrivals grew 6.8% in 2017, the highest increase since the 2009 global economic crisis and well above UNWTO’s long-term forecast of 3.8% per year for the period 2010 to 2020. These results were driven by sustained travel demand for

destinations across all world regions, including a firm recovery of those suffering from security challenges in recent years. In summary, the key drivers of this growth include:

- The global economic upswing, resulting in strong outbound demand from virtually all source markets.
- The recovery of outbound demand from Brazil and the Russian Federation after a few years of decline and the on-going rise of India, also contributed to inbound growth in many destinations.
- By region, Africa and Europe grew above average.
- By sub region, North Africa and Southern and Mediterranean Europe led results in 2017, reflecting strong demand for destinations along the Mediterranean.

The above paints a very rosy and positive growth trajectory of the tourism industry. It is important, however, to note that current global crises and challenges have radically affected the tourism industry for a number of reasons including:

- The threat of global terrorism is real and has negatively affected tourists travelling across national and international borders. The 9/11 attack on the World Trade Centre in New York City was a turning point in the fight against terrorism and instilled fear in the lives of the global populace. This has had a tremendous negative impact on tourism globally. The Bali bombing in 2005, in which hundreds of tourists were massacred at a popular tourist resort in Indonesia and the political turmoil in the Middle East and the rise of ISIS (The Islamic State of Iraq and Syria) which started with the Arab Spring in Tunisia and has spilled over into the whole region has adversely impacted on the tourism and travel industry. The terrorist attacks in the London underground (2007), Paris (2016), Brussels (March, 2016), Mali and Senegal (2016), Brussels and UK (2017) - are some of the major global terrorist events that are affecting tourists' movement globally. Closer to home, the massacre of tourists at a Kenyan holiday resort of Mombasa (2015), the killing of students at a local University in Kenya by Al-Shabbab militants (2016), the attacks in Kenya's shopping malls in 2017 and 2018 and the recent attacks by Islamic militants in Mozambican villages, has had a damaging impact on tourism in East and Southern Africa.
- Despite rising living standards, global poverty is also on the rise. The poor are getting poorer while the few elite are getting richer. This global discrepancy in wealth accumulation means that it is the privileged few who have the disposable income to go out and visit other countries while a large percentage of the world's population living from hand to mouth cannot afford to spend money on tourism. It is therefore important to take note of these emerging global issues as we explore the trajectory growth of tourism globally.
- The impact of the on-going financial crises worldwide has negatively impacted the tourism industry. The financial crisis that started in 2009 and caused the crash of the stock markets globally and has been exacerbated by falling oil prices since 2014, has affected the movement of people as disposable incomes have shrunk.

- The effect of exchange rate fluctuations that requires devaluation of a country's currency makes inbound international tourism less expensive, and, consequently, increases tourist flows to that country. Conversely, an increase in the value of a country's currency will make international tourism more expensive and cause a reduction in inbound tourist flows (Vita, 2016). To this end, due to the financial global crisis that started in 2009 and has never abated, most major currencies have been devalued resulting in most people cutting back on the number of holidays due to reduction in disposable incomes. Ultimately, this has led to reduced numbers of tourists and the time they spend in destination countries reduced.

2.3 Tourism in Developing Countries

Traditionally, advanced economies of Europe, the Americas, Asia and the Pacific have been the world's major source markets for international tourism. However, emerging economies in Asia, Central and Eastern Europe, the Middle East, Africa and Latin America have shown fast growth over recent years, driven by rising levels of disposable income. International arrivals in emerging economy destinations are expected to keep growing at double the pace (+4.4% year) of advanced economy ones (+2.2% a year) (WTO, 2017). In absolute terms emerging economies will add on average 30 million arrivals a year, compared to 14 million by advanced economies. Developing countries have sought to meet the expansion of tourism by promoting themselves as attractive getaway destinations and international development organizations like the World Bank, UK Department for International Development (DfID), United States Agency for International Development (USAID), and the African Development Bank (ADB) have begun to advocate harnessing tourism as a form of pro-poor development and a conduit to achieve the Sustainable Development Goals. Over the past decade, national governments with the aid of nongovernmental organizations (NGOs) and international multilateral agencies have become more proactive in creating comprehensive tourism development strategies to drive growth.

As a result, tourism has grown substantially in many developing countries. The WTO (2018) tourism highlights report indicates the following significant tourism developments in developing countries by region:

- Asia and the Pacific: continued growth has been fuelled by solid intraregional demand. Growth of +6% reflects solid intraregional demand, particularly from China, the Republic of Korea and Australia. Growing purchasing power in emerging economy markets, increased air connectivity, more affordable travel and enhanced visa facilitation continue to fuel tourism from within and outside the region.
- South America: the growth momentum continued in 2018. Robust outbound travel from Argentina and the rebound of Brazil fuelled growth in neighbouring destinations. Double-digit growth in arrivals was recorded in Chile, Colombia, Ecuador, Paraguay and Uruguay.

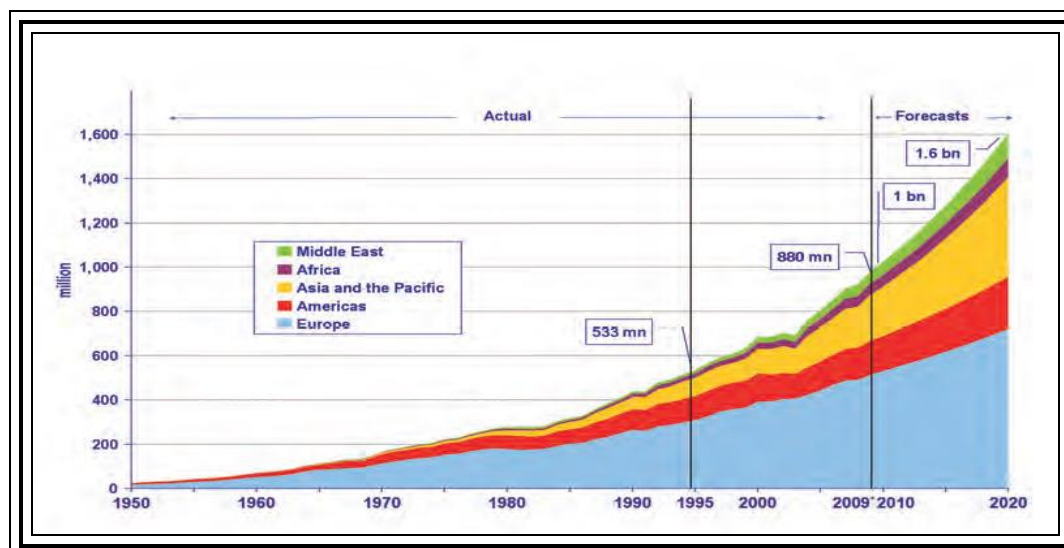
- Central America recorded positive results in almost all destinations in terms of arrivals, led by Nicaragua, but also thanks to strong demand from regional markets.
- In the Caribbean, results were rather mixed, with some destinations recording robust growth such as the Dominican Republic and Jamaica, and others declining due to the strong hurricanes that affected many islands from mid-August through September 2017 and most of 2018.
- Africa: international tourist arrivals are estimated to have increase by 9% and receipts at the same level (+8%). In sub-Saharan Africa, strong performance continued in large destinations of Kenya, Côte d'Ivoire, Mauritius and Zimbabwe. The sub region's top destination of South Africa reported slower growth in arrivals though a strong increase in receipts. Island destinations of Seychelles, Cape Verde and the Reunion; all reported double-digit growth in arrivals, benefiting from increased air connectivity.
- The Middle East showed signs of recovery in 2017 with a strong 13% increase in income generated by international tourism.

2.4 Sub-Saharan Africa (SSA): Tourism Trends, Growth and Challenges

There is a rich diversity of iconic destinations and experiences in the African continent. These riches are in stark contrast to the negative connotations of poverty, incidents of civil unrest and corruption that are often portrayed in the media (Spenceley, 2010). The potential for tourism growth in SSA is significant. Considerable opportunities for expansion exist in safari, beach, business, and diaspora tourism, including in regions of destination countries that have not yet benefited from tourism. Furthermore, SSA has great potential to expand products that are more recently in greater demand, such as nature/adventure tourism, cultural heritage tourism, and travel for wellness, health and retirement purposes.

From a small base of just 17.4 million visitors in 1990, SSA attracted 33.8 million visitors in 2012 (African Tourism Monitor, 2015). The World Travel and Tourism Council (2018) impact report for sub-Saharan Africa points out that the direct contribution of travel and tourism to GDP in 2017 was USD43.7bn (2.7% of total GDP) in 2017 and grew by 4.2% in 2018 and forecasted to rise by 4.4% pa from 2019-2028 to USD 70.3bn (2.7% of total GDP) in 2028. The total contribution to GDP was USD116.9bn (7.1% of GDP) in 2017, and rose by 3.8% in 2018 and forecast to rise by 4.4%pa to USD186.8bn (7.2% of GDP) in 2028. In 2017 the total jobs supported by the industry was 5.8% of total employment (17,204,500 jobs) and rose by 3.3% in 2018 and forecasted to rise by 3.0% pa to 9,405,000 jobs (2.3% of total employment) in 2028. Visitor exports generated USD30.2bn (8.5% of total exports) in 2017 and grew by 2.4% in 2018 and forecasted to grow by 4.8 pa from 2018-2028, to USD50.3bn in 2028 (8.0% of total). Tourism investment in 2017 was USD17.5bn, or 2.5% of total investment and rose to 2.5% in 2018 and projected to rise by 4.7% pa over the next ten years to USD2.4 bn in 2028 (5.4% of total). Figure 4 depicts a trend in tourist arrival over the past fifty years. Africa's share of world arrivals, though still small, is growing.

Figure 4: Trend analysis of global tourist visitors from 1950 to 2020



Sources: World Bank (2012); UNWTO (2011).

In SSA, tourism destination performance varies considerably by region and within regions. East and Southern Africa attract more tourists and contribute more to GDP than West and Central Africa (Table 2).

Table 2: International Tourism in Africa: Arrivals and Receipts by Region

Region	Total tourist arrivals	Total long hauls	Receipts (US\$, million)	Average contribution to GDP (%)
Southern Africa	10,626,127	2,509,893	8,599	3.4
East Africa	11,905,651	3,944,858	6,332	5.5
West Africa	4,419,061	1,748,555	2,676	2.0
Central Africa	1,075,408	654,168	631	1.7
Total	28,026,247	8,857,474	18,238	2.6

Source: World Bank (2017)

On a sub-regional basis, tourism contributes most to East Africa's GDP (5.5%), followed by Southern Africa (3.4%) and West Africa (2%), with tourism contributing just 1.7% to Central Africa's GDP. Tourism is significantly contributing to the GDP of East Africa's economies because of the highly developed infrastructure and abundant wildlife in Kenya and Tanzania while in southern Africa; South Africa's well developed tourism industry is contributing greatly to the region having such GDP. However, the relatively underdeveloped tourism facilities, poor marketing, and political instability have limited contribution of

tourism to GDP for West and Central Africa.

The potential for growth in tourism in SSA is significant and compelling. Christian et al. (2013) are of the view that global hotel chains are poised to spend hundreds of millions of dollars in Africa over the next few years to meet increased demand from both international tourists and the continent's own fast growing middle class. However, significant investment in infrastructure and capacity building is required for inbound visitor numbers to show dramatic growth. Various studies [e.g. African Transformation Report (2014); World Bank (2013;2017); UNWTO (2018); Bichaka Fayissa, Nsiah & Tadasse, (2007)] are emphatic that to achieve its tourism potential SSA will have to address a number of existing constraints as depicted in Table 3.

Table 3: Constraints facing the Tourism Sector in sub-Saharan Africa

Finance	Infrastructure and human resources	Macro-economic	Government policies and business environment
<ul style="list-style-type: none"> • High cost of capital for investors to make investment and get return on investment. 	<ul style="list-style-type: none"> • land availability • low levels of tourism skills • lack of tourism resources that can be developed into economically productive assets • limited local ownership of accommodation facilities • limited availability of training • poor public health • poor road network 	<ul style="list-style-type: none"> • weak economic environment • high levels of taxes 	<ul style="list-style-type: none"> • taxes on tourism investments • lack of security, safety and high crime rates • visa requirements • red tape and bureaucracy • civil unrest • availability of cheap imports • levies and government fees • high levels of corruption and poverty • bureaucratic processes and procedures that undermine private sector

			investment in the tourism sector
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Source: Adapted from African Transformation Report, 2014; World Bank, 2013; UNWTO, 2018; Bichaka Fayissa, Nsiah & Tadasse, 2007; Malawi Economic Report, 2018

In addition to the above, value chain players have to deal with additional challenges [World Bank (2013); UN WTO (2018); African Tourism Monitor (2017)]:

- **Air transport.** SSA's distance from source markets creates an acute need for higher quality and more competitive air access. Despite having 15% of the world's population, the continent is served by only 4% of the world's scheduled air service seats. A few foreign carriers dominate long-haul connections; and a few national carriers continue to operate, some in cooperation with international carriers. Studies commissioned by the Africa Region of the World Bank (2013) found that airfares were almost 50% more expensive to SSA, and charter tours were 20-30% more expensive than comparable destinations elsewhere. The irregularity or non-availability of intra-regional air connections and internal air transport constrains together with access to internal destinations also prevents progress with multi-country tourism packages. The private sector has invested in some local airlines (such as Pro Flight in Zambia, Fast Jet in Tanzania, and Ulendo in Malawi) to compensate for specific deficiencies in routing and the high costs of internal and intraregional travel, however, this does not go far enough to address the air transport problems.
- **Road Transportation:** Road transport is notoriously poor in much of Africa, so it cannot compensate for the inadequacy of internal air transport in most countries.
- **Tour operators:** A higher proportion of tourists (50-70%) to SSA use intermediaries such as tour operators than in other parts of the world (between 10-15%). This is mainly because of the greater complexities of obtaining visas, booking accommodation and making tour arrangements when travelling to SSA.
- **Accommodation:** According to the World Bank (2013), just 10% of the region's 390,000 hotel rooms are estimated to meet international standards, and South Africa has about half of this stock. Unbranded guest houses and lodges, mainly Small and Medium Tourism Enterprises (SMTEs), comprise the largest share of accommodation facilities (African Tourism Monitor, 2013). The occupancy rates and profitability of hotels in SSA show great disparities. Yet, despite these concerns, 23 international hotel corporations currently operate in SSA and the accommodation sector is expanding rapidly with several large hotel projects by major hotel chains in the planning or construction stage (World Bank, 2013; African Tourism Monitor, 2013, UNWTO, 2017).

A number of reports (e.g. Transformation Report, 2013; World Bank, 2010; 2013; African Tourism Report, 2013; UNWTO, 2018) have argued that the SSA tourism sector must enhance competitiveness by taking some drastic measures including:

- Improving the quality of their tourism assets;

- High standards in visitor accommodation;
- Efficiency and safety in transport to, from and within the country;
- Adequacy of a variety of infrastructure components;
- The receptiveness of local populations to tourists;
- The skills of the range of officials and employees with which tourists come in contact; and
- The safety and security the destinations offer to visitors.

The above is indicative of the problems faced by the tourism industry in SSA, and it would be challenging to have a one stop solution to all of these, raising the need for clear and well defined national or regional strategy. Malawi is not an exception to these challenges as can be shown in the next section.

2.5 Tourism in Malawi

2.5.1 Overview of Tourism Evolution in Malawi

As an exceptionally beautiful country, Malawi's tourism potential was recognised even during the pre-independence era, which consisted of the colonial era and the Federation of Rhodesia and Nyasaland periods. During this time, there was little information that indicated the size and scale of tourism. According to the Nyasaland Times (1930), the colonial government promoted what was called 'country publicity.' The mandate was to attract tourists to Nyasaland under the slogan: "The Tourist of Today would be Settlers or Investors Tomorrow". The main reason for early tourism development related to Nyasaland's attractions and scenic places that provided recreational activities, such as hunting and angling.

Five years after independence in 1964, the Division of Tourism was upgraded into the Department of Tourism. The new department was entrusted to develop, coordinate, control and promote Malawi's tourism industry, to train hotel staff and to run some of the existing chain of government rest houses that had been established during the colonial period (Malawi Tourism Report, 2007). For the Malawi government, the expectation was that a large proportion of the business and tourist visitors to Africa, who were entering and leaving via East and South Africa would include in their itineraries the countries in between which had good air and road communications and reasonable hotels. Malawi was positioning itself to occupy this opportunity. It was then a matter of policy that if Malawi was to develop commerce and tourism it needed a network of modern hotels in towns, lodges in the tourist centres, and rest houses in the outlying districts (Malawi, 1968a). Consequently, during this Post-Colonial Development era, the structure and characteristics of tourism development in Malawi displayed a rapid establishment of large-scale tourism projects which were mainly financed and managed by external companies. The accommodation sector expanded rapidly during the late 1960s and early 1970s. A small but rapidly

growing tourism and hospitality industry emerged which was publicly-owned through Malawi Development Corporation (MDC) and managed by expatriates (Magombo, 2011). By 1987 the state of Malawi's tourism and accommodation industry could be described as still being in the infant stage (Malawi Government, 1987). Tourism was contributing 1.8% of GDP which was insubstantial and agriculture was still the leading contributor to the economy. The number of international arrivals had increased more than ten-fold, from 14,000 visitors in 1964 to over 160,000 in 1994 (Malawi, 1997). The country's total revenues increased from MK478, 000 in 1970 (239,000 Pound Sterling) to MK19, 687,000 by 1987 (4,921,750 Pound Sterling) (Malawi, 1987). Nevertheless, the contribution of holidaymakers to the total number of arrivals decreased from 40% in 1975 to 25% in 1994. By 1995 tourism contributed 1.1% of the total exports of goods and services (Malawi, 1997b). As the contribution was less than 5% of the total national income, tourism in Malawi could not be described as a key economic sector (Cater, 1995).

The government targeted 500,000 visitors by the year 2000. By 1997, there were only 207,300 visitors. At the average rate of growth of 4.1% since 1995, the target would not be achieved. In order to reverse the situation government adopted a number of measures. On the one hand, it adopted eco-tourism as a strategic approach to realize tourism economic benefits from international source markets through the Tourism Strategic Development Plan (TSDP), 2000-2006. The goal was to position Malawi as a leading eco-tourism destination in the southern African region (Malawi, 1999). On the other hand, government included the promotion of sustainable tourism in the tourism development strategies. The aim was to use tourism as a tool of alleviating poverty while at the same contributing to the attainment of the Millennium Development Goals and now the Sustainable Development Goals (SDGs). The government intended to promote sustainable tourism as a way of enhancing community participation in tourism development.

In the last two decades and in line with many other African countries, Malawi has embraced tourism as a potential vehicle for development. Promotion of mass tourism from 1994 -1995 led to substantial increases in tourist numbers but drastic falls in per capita tourist expenditure, length of stay, hotel occupancy, hotel room rates, and service quality (Malope, 2006). The Ministry of Tourism continued to promote tourism both locally and internationally. The number of international visitors to Malawi rose slightly by 7-11% from 298,830 in 2002 to 382,647 in 2003. The majority of arrivals were from other African countries in the region, especially from Mozambique, South Africa, Zambia and Zimbabwe, mainly due to cross border trade between Malawi and its neighbouring countries, convenience to travel as many Malawians migrated to these countries and usually travel back to the country to visit relatives and relatively cheaper to travel from these countries into Malawi.

According to the Ministry of Tourism, as a result, international tourism arrivals for 2010 were 780,000 compared to 754,000 in 2009 representing an increase of 3.4% (Ministry of Wildlife, Tourism and Culture,

2011). International Tourism Receipts contributed MK70 billion (23.3 billion Pound Sterling) in 2010 compared to MK69 billion (23 billion Pound Sterling) in 2009 representing an increase of 1.4%. Due to the economic recession in key generating markets, local events such as Lake of the Stars, Mount Mulanje Porters Race, Cycle Challenge and Lake Malawi Yachting Marathon were introduced to promote domestic tourism. The Ministry participated at different tourism trade and consumer fairs particularly in South Africa, Europe and China. Promotion has been through magazines, website, and advertisements on international media such CNN and BBC and other collateral and materials point of sale.

As a member of Southern Africa Development Committee (SADC), Malawi sits amidst a vibrant tourism region that is growing rapidly and increasing its market share. In 2012, Malawi received 770,341 visitors, contributing MK59.6 billion (119 million Pound Sterling) in visitor exports and increased its international tourists to 850,000 in 2015 (Malawi Economic Report, 2016) and to just over one million in 2018. In this regard, tourism remains one of the country's sectors with significant potential for growth as an export service sector that is capable of making a substantial contribution to the socio-economic development of the country. In the long term, the sector aims at having "a Malawi that is an attractive and competitive tourist destination" through the development and promotion of tourism, management of wildlife and conservation and promotion of the country's national identity (Malawi Tourism Policy, 2014).

2.5.2 Tourism Development in Malawi

The principal tourist attraction is Lake Malawi which is set among rolling hills covered in tropical vegetation. Birdlife at Lake Malawi is plentiful. The Lake has one of the highest diversities of freshwater fish in the world. Around Cape Maclear, there are excellent snorkelling and diving spots. There are five national parks in Malawi notable for their spectacular scenery, unspoilt beauty and rich diversity of wildlife. In the 2016/17 financial year, the sector continued with its efforts to increase the number of animals in protected areas through restocking of National Parks, Wildlife Reserves and Nature Sanctuaries. Despite the sector's huge potential for growth, the Tourism, Wildlife and Culture sectors are faced with a number of constraints and challenges. Overall, the financial and other resources available for various sector programmes are inadequate to meaningfully exploit the sector's growth potential. In the first instance, lack of understanding of the impact of global competition in tourism, as evidenced by underfunding of the department of Tourism - especially in foreign missions, has made tourism attaches operations almost impotent (Malope, 2006). In addition, human resources on the ground for law enforcement against illegal activities such as poaching in protected areas are insufficient. Likewise, funding for proper management of protected areas as well as product development, provision of support infrastructure and destination marketing is also inadequate. Coordination challenges inherent in the sector's cross-sectoral foundation exacerbate the situation. Malawi Economic Reports (2013; 2015; 2017; Malope, 2006), identify the following specific challenges facing the tourism industry - depicted in Table 4.

Table 4: Specific challenges facing the tourism industry in Malawi

<ul style="list-style-type: none"> • Visa requirements for international tourists; • High interest rates (hovering between 22 to 30%) resulting in high cost of capital thereby deterring investments; • Lack of direct long-haul flights, leading to more air costs and long travel time, thereby reducing the contribution of holiday tourists; • Poor infrastructure especially in the areas of road and telecommunication networks to most prime tourist destinations; • Inadequate data-base for planning and monitoring tourism development. For example, there is late capturing and production of tourism statistics due to manual collection of statistics, leading to underestimation of the sector's contribution to the economy; • Continued perception by some local Malawians that the services offered by tourism facilities are expensive, thereby negatively effecting domestic tourism; • Limited access to accommodation and infrastructure in tourist attraction areas, especially in the rainy season due to poor road infrastructure; 	<ul style="list-style-type: none"> • Lack of appreciation by SMEs in the industry on the importance of engaging skilled staff in the management of tourism enterprises, resulting in low standards in some of the accommodation units and poor service delivery especially in rest houses and lodges; • Low levels of wildlife in the protected areas due to poaching, resulting in the reduction of tourist visits to some National Parks and Wildlife Reserves and Nature Sanctuaries; • Foreign exchange earnings in tourist off-shore pre-paid packages is not sent back into the country to be used for reinvestment in the industry; • Lack of zoned prime land and consistent sector-specific incentives for private sector investment and development; • Perception that some tourist attractions pose a health risk in terms of bilharzia, sleeping sickness (Tsetse fly) and Malaria (mosquitoes); and • Inadequate destination marketing largely due to limited financial resources.
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Surprisingly, there is silence on ICT adaptation and exploitation as a key constraint in the development and promotion of tourism in Malawi. Despite the critical importance of ICT in the tourism sector, authors do not mention this in their studies. This oversight and deficiency in literature has created a gap that this research wants to exploit and zero in and try to investigate further how ICT can play an important role in facilitating the competitiveness of the tourism industry in Malawi, especially among tourism enterprises.

2.6 Tourism Value Chain Frameworks

The tourist experience consists of a series of activities provided by multiple entities from air carriers and hotels to restaurants and tour operators (Braithwaite, 1992) and each one of these actors provide a

specific service or product to the tourist. At one end of the chain sit the tourism product suppliers also referred to as “tourism principals” who actually bring into the chain their products and services and at the other end the consumer (tourist, visitor). In the middle lie intermediaries who are primarily in charge of bundling, packaging and promoting the tourism product and making it available to the consumer. Due to the complexity of the product, the Principals side is highly fragmented (Bramwell and Lane, 2000) as it is dominated by a large number of mainly family run, very diverse SMEs (Smeral, 1998; Wanhill, 2000). Principals may be distinguished in core (travel, accommodation, food and beverages, entertainment and recreation) and peripheral (ancillary services such as travel insurance, guides, exchange and financial services, transfer coordinators, etc). The main activity of the Principals is the “production” of their offering to customers.

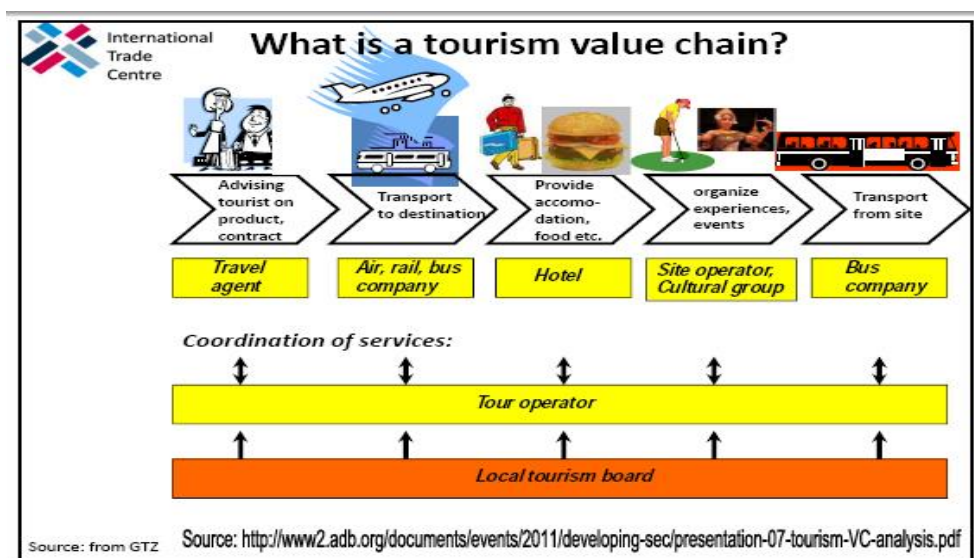
The section below explores the various frameworks that show the relationships between the various players in the tourism value chain.

2.6.1 Tourism Value Chain and Service System

Figure 5 shows the tourism value chain as a Value System (Mubita, 2014) depicting the interface between various tourism service providers that provide services to the tourist. At the beginning of the chain is when the tourist has to be assisted in making a decision on the products that are on offer as s/he commences the journey and this is when the travel agent provides an advisory service and makes the necessary arrangements to ensure that the travel needs of the tourist are met. The travel agent links the tourist to other service providers such as those who will arrange transfers or transportation, the place to stay and the whole experience on the destination. Also at the destination, incoming agents or national tour operators play the lead roles in destination management. Incoming agents are chosen by global tour operators based on their ability to meet coordination, logistics, insurance, and product offering needs.

Hotels in developing countries have excursion operators and tour guide suppliers with whom they work directly, and they usually require their providers to have insurance. Destination Management Organizations (DMOs) such as the Tourism Board ensure that the tourist has access to all the necessary and required information on various service providers in the host destination.

Figure 5: Tourism Value System Framework



Being consumer-driven, highly fragmented and geographically dispersed, the tourism industry has always needed a significant level of intermediation (Paraskevas, 2005). Tour operators and travel agents act as both aggregators and integrators of the tourism product and facilitate purchases, the transfer of the title to the buyer and sales revenue to the Principal (Middle and Clarke, 2001) by bundling, packaging, and promoting Principals' (transport companies, hotels, airlines) offerings and making them accessible to the consumer. National Tourism Boards (NTBs) and DMOs also belong in this part of the chain, acting as non-profit seeking intermediaries for the benefit of Principals in their destinations (Paraskevas, 2005).

Finally, consumers have for a long time been relegated to the end of the chain as only providing feedback about value that the other actors created. Yet, they are at the centre of the tourism value chain as they are the ones who utilize the services and products that are provided by all value chain actors.

This framework gives a detailed and broader outlook of the various key players in the tourism value chain and provides a service outlook to the industry. Indeed, the tourism sector is a service driven one and various actors are viewed as providing services to ensure that the tourists' experience is a memorable one. In addition, the value system is helpful as it gives insight into the dynamics of the tourism value chain as a chain of interlinked and inter related service providers. It also helps to understand the key players in the tourism value chain in the host destination. However, it is limited in its application as it assumes a linear and sequential interaction of the various tourism value chain actors. The model alludes to the fact that a tourist has to interact with each actor in a linear and sequential manner but this is not so. In reality tourists can bypass one or more of the value chain actors due to advances in ICT.

2.6.2 Travel and Tourism Value Chain (VC) Framework

The travel and tourism value chain framework basically comprises of tourist or business travellers who normally spend money on travel, hotels, food, transportation, entertainment, visiting places, as such the industry is directly generating or resulting in revenues for airlines, railways, transport services, hotels and restaurants, various food outlets, entertainment, and various attraction sites (Market-Width.com, accessed 20th August, 2016). Figure 6 gives an overview of the travel and tourism VC framework.

Figure 6: Travel and Tourism Value Chain Model



Source: Market-Width.com, accessed 20th August, 2016

The travel and tourism value chain model has a significant impact on many diverse industries ranging from hotels to food and transportation. This aspect is important as it gives one an understanding of the dynamic nature of the tourism industry impacting different businesses locally and globally. The travel and tourism value chain model is therefore important in understanding the impact of the tourism industry on other businesses and how tourism connects a wide range of enterprises globally. However, the model does not show the interconnectedness of the supply chains of the tourism actors.

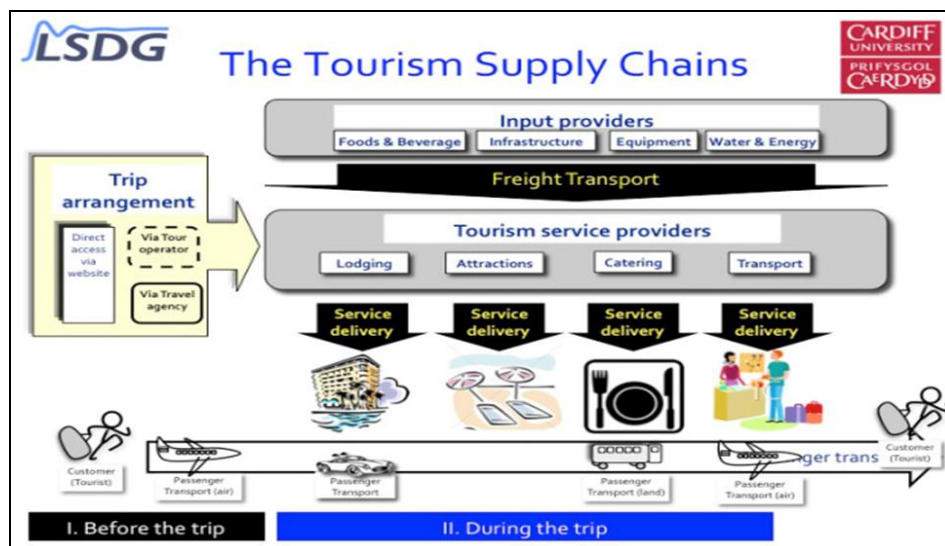
2.6.3 Tourism Supply Chains (TSC)

Figure 7 depicts the Tourism Supply Chain. The supply chain comprises the suppliers of all the goods and services that go into the delivery of tourism products to consumers (Tapper et al., 2003).

According to Piboonrunroj and Disney (2015) there are four main parts in a generic TSC, three compulsory and one optional. The three main compulsory parts are: i) tourism service providers or first-tier suppliers including Lodging, attractions, catering and passenger transport; ii) input providers or second-tier suppliers such as food and beverage, equipment suppliers, water and energy providers and

iii) the third-tier are tourists or customers. The optional part of TSC is the intermediaries i.e. travel agencies and tour operators. The tourist has to make arrangements about the trip from their home country and can do so by arranging the trip themselves via the Internet or purchase combined tourism products directly from tour operators or via travel agencies. During the trip, they may interact with various input providers, freight transport to ferry them around and various service providers to facilitate a smooth and enjoyable tourism experience. To this end, according to Piboonrunroj and Disney (2015), TSC could also be viewed as a combination of various supply chains e.g., accommodation, passenger transport or food and beverage supply chains.

Figure 7: The Tourism Supply Chains Framework



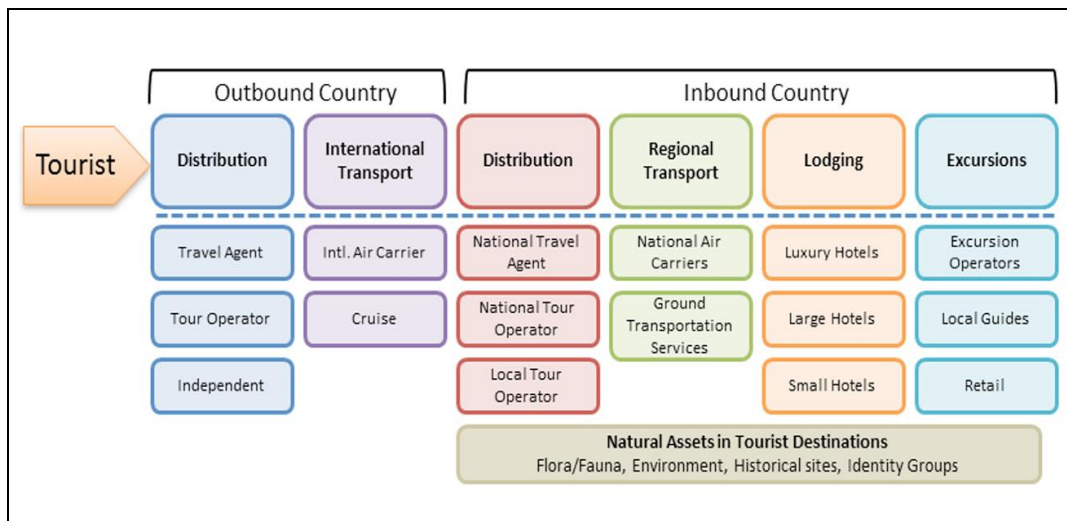
Source: Piboonrunroj and Disney (2015)

This model of the tourism supply chains is important in understanding the relationships between various players in the tourism sector as supply chains who operate through B2B relationships, and supply chain management that delivers sustainability performance improvements alongside financial performance, by working to improve the business operations of each supplier in the supply chain (Tapper et al., 2003). Another expected benefit is a reduction of supply chain cost covering costs of process, inventory and production. Moreover, there are also benefits that can only be obtained via a higher level of collaboration - including the elimination of bullwhip effect, inventory reduction, better transport capacity utilization, and risk mitigation. However, this model does not give an understanding of the global nature of the tourism value chain and is therefore restricted in its scope and application. Taking a global value chain approach can help us understand the interconnectedness and globalisation of the tourism sector.

2.6.4 Tourism Global Value Chain (TGVC)

Tourists come from all over the world and have unlimited options to consider for their visit and spending their time and money. The TGVC presented in Figure 8 uses international tourists as a focal point. Following the tourist “footprint” details the steps and firms tourists interact with from the moment they decide to take a trip to the completion of their international tourist journey through the value chain (Christian et al., 2001). The cumulative activities together represent tourism in its entirety.

Figure 8: Global Tourism Value Chain Framework



Source: Christian et al. (2010)

Rather than being one of the last stages, as in production-based value chains, **distribution** is the first stage in the TGVC. The first thing tourists do is to decide how they will purchase their tourism products or the components of their trip. Travel agents and tour operators are the main distribution intermediaries. Commonly, travel agents act as the retail outlet for tourism products (transportation, lodging, and excursions), and tour operators are wholesalers. Tour operators purchase blocks of airline seats, hotel rooms, and excursion activities and bundle these segments into various “tourist-packages.” The packaged product is then sold directly to clients and/or via a travel agent. Tourists can bypass intermediaries and book their trip components directly online.

The next stage, **international transport**, is mainly international air carriers, but cruise services are a popular option as well. International distribution and transport are based in the outbound countries, but there are regional distribution and transport segments based in the inbound country. Inbound countries have their own distribution actors and often work directly with international distribution firms. While in the destination country, tourists engage in various events that include local transportation (air or ground),

lodging, dining and excursions.

The preceding discourse on tourism value chains shows that the frameworks have some common features. In the first instance, all the frameworks indicate that the various actors in the tourism value chain have distinct and specific services and products that they offer to the tourist. However, the Tourism Value System and the Tourism Service Value Chain add another dimension - that of the existence of coordination services and value adding service providers to the main value chain actors. Secondly, all the frameworks indicate the key value chain players with whom tourists interact with in the destinations namely travel agents, transportation, food, and accommodation providers. However, the Tourism Supply Chains framework shows how tourists access information for planning their trip and the input of various goods and service providers in the destinations. On the other hand, the Global Value Chain framework showcases who the tourist engages with in both the country of origin and destination.

2.7 Relationships between the Tourism, Hospitality and Travel Industries

More often than not, tourism is directly associated with the hospitality and travel industries. Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited (WTO, 2003). This definition shows tourism as an activity that involves travel and lodging, to a large extent. It emphasises the element of “leaving” one’s usual place of residence and travelling to a new and different location for non-work related activities. This definition then shows a direct correlation between tourism and travel. However, it is limited in its scope in that it is silent as to what happens when the tourist travels.

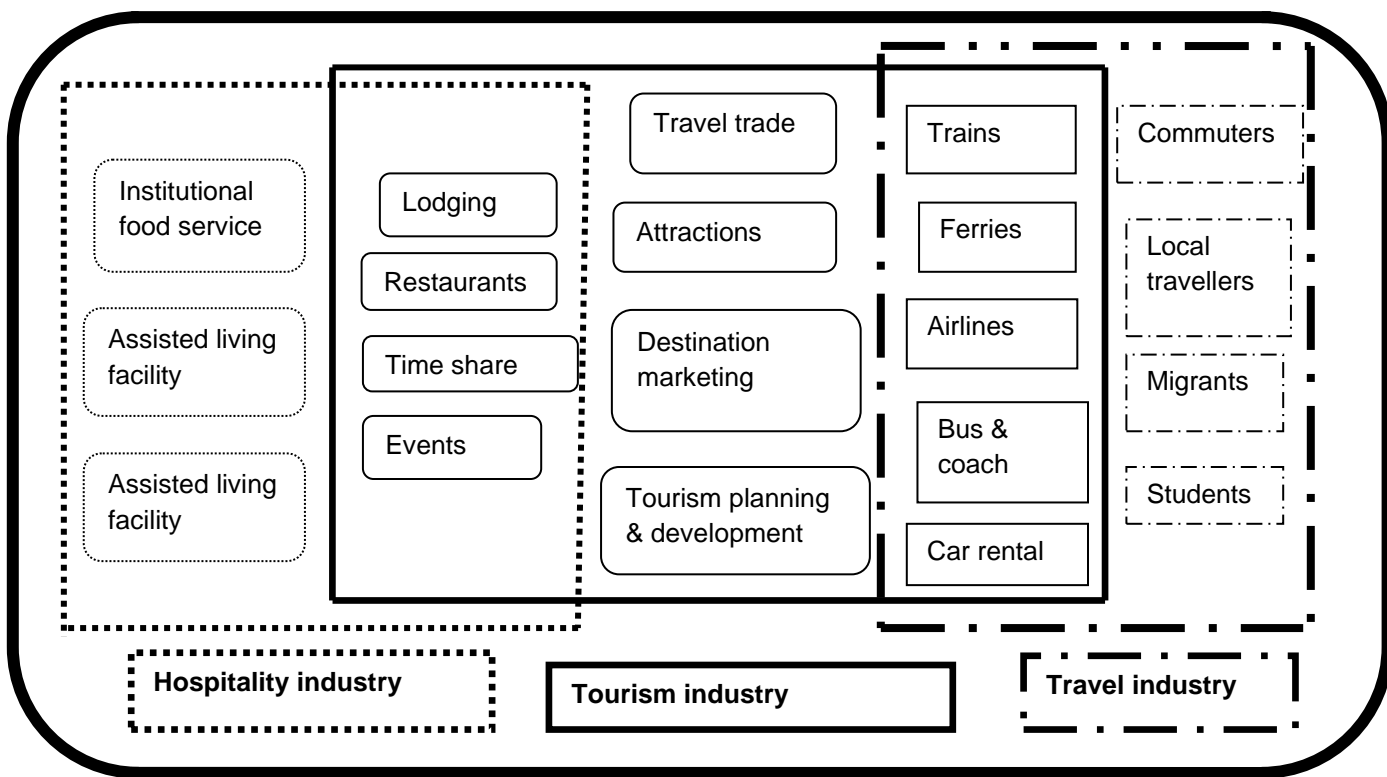
Mathieson and Wall (1982) defines tourism as the temporary movement of people to destinations outside their normal places of work and residence, the activities undertaken during their stay in those destinations, and the facilities created to cater to their needs. This definition is adding an element of what the tourist does when he travels and shows a relationship between tourism and “facilities” that a tourist interacts with when traveling. The word “facilities” is broad and can denote many things and therefore we cannot assume that these include all the services that are required to ensure a smooth stay in the host destination. We need to zero in into a broader definition.

Tourism is a collection of activities, services and industries that delivers a travel experience, including transportation, accommodation, eating and drinking establishments, shops, entertainment businesses, activity facilities and other hospitality services provided for individuals or groups traveling away from home (Northern Arizona University, accessed 20th March, 2016). This definition provides a deeper insight into

the various services that the tourist interacts with as he/she travels away from home. The emphasis of this definition is the players in the tourism value chain which deliver value adding activities to enhance the tourist's experience as they travel and brings in the relationship between tourism, travel and hospitality. Figure 9 below gives a summary of this relationship.

On the left hand side are the service providers who provide eating, drinking and accommodation services to the tourist and these are considered as Hospitality Industry. At the far right are the services and service providers who transport the tourists as they move away from their home to the destination and when they are in the host destination and these are characterised as the Travel Industry. Finally, at the centre of the interaction is the Tourism Industry which is interfacing with both the Hospitality and Travel Industries but focuses more on the actual information providers, areas of attractions, and value adding activities that are offered to the tourist in the destination.

Figure 9: The Relationship between the Tourism, Hospitality and Travel Industries



Source: Adapted from Pizam (2009)

The tourism value chain frameworks discussed in the previous section interrelate with one or all of the sectors of hospitality, travel and tourism as described above. Table 5 demonstrates that all the tourism value chain frameworks have some form of interconnectedness with the hospitality, travel and tourism

sectors. However, the difference is on the emphasis of the key players that are involved in each sector by each of the frameworks. Moreover, the Supply Chains and Global Value Chain frameworks differ from the others in that they clearly offer value added activities.

Table 5: Interconnectedness between Tourism Value Chain Frameworks and the Hospitality, Travel and Tourism Sectors

	Tourism Value Chain System	Tourism Service Value Chain	The Tourism Supply Chains	The Global Tourism Value Chain
Hospitality	Service providers in eating, drinking and accommodation	Service providers in eating, drinking and accommodation	Service providers in eating, drinking and accommodation	Service providers in eating, drinking and accommodation
Travel	Services and service providers of transport	Services and service providers of transport	Services and service providers of transport	Services and service providers of transport
Tourism	Information providers Areas of attraction	Information providers Areas of attraction	Information providers Areas of attraction Value adding activities	Information providers Areas of attraction Value adding activities

The discussion above provides an analysis of the tourism value chain and offers a broader view and analysis of how a tourist interacts with the various actors and service providers/stakeholders in the tourism value chain. Ashari et al. (2014) posits that the tourism industry is an extremely sensitive hybrid industry and incorporates distinct features of information society. To this end, although the core product in the industry is physical service, which is produced and consumed in the physical world, it is dominated and achieved through information services. The perfect integration of information and physical services is the challenge for the contemporary tourism industry across the globe. Hence, it is largely an information product. Since tourism services are consumed the very time they are produced, they are largely based on social interaction between the supplier and the consumer (Ashari et al., 2014). The quality of the service or product is mainly defined by that interaction. To be more elaborate, a consumer has access to only an abstract model of the product at the time of decision-making and contractual agreement. Hence, decision making and consumption are separated in time and space. Such gaps can be overcome by the information about the product, which is available in advance to the consumer. Thus, tourism services and products are based on confidence, trust, information and communication. The mechanism leads to the establishment of specific product distribution and long information and value adding chains (Werthner and Klein, 1999). To this end, ICT has become a central tool for all actors in the tourism value chain and this study explores, refines and aims at developing an ICT framework that can assist in enhancing and

improving communication between tourism value chain actors while, at the same time, enhancing their competitiveness, internal business processes and thereby delivering superior and advanced performance.

2.8 Electronic-Tourism (e-tourism) - ICT in the Tourism Value Chain

2.8.1 Malawi: Evolutionary Stages of ICT and Growth and Development

Nations and organizations are now investing more resources into the development and use of ICT to enhance operational efficiency and effectiveness as they respond to the ever changing environmental trends in order to ensure competitiveness and gain comparative advantage. In this respect, what differentiate developed and developing nations, successful and unsuccessful firms are not only the availability of competent and qualified human resources but, more increasingly, the level and quality of knowledge and information at their disposal that support and facilitate appropriate decisions and actions. This is concurred by the Malawi's National ICT Policy (2016, p. 3) which posits that "nations, organizations and/or communities that lag behind in advances in ICT are likely to increasingly struggle in their efforts to foster and manage sustainable socio-economic development initiatives and interventions." Malawi is no exception. As one of the least developed nations in the world, the country has had a weak and inadequate ICT base and is faced with numerous challenges with ICT development. However, the government has shown strong commitment to facilitate the development and growth of ICT by instituting certain policies, institutions and structures. In addition, the upgrading of telecommunication services from analogue to digital, liberalisation of the telecommunications sector, introduction of mobile phone services and the introduction of high capacity transmission media (e.g. fibre optics) have led to improved telecommunications service delivery. This is indicative of the evolution of systematic development of ICT in Malawi. Thus, despite being in the early stages of ICT development and growth, Malawi is making steady progress in ICT adoption and exploitation. The most notable and significant ICT revolution in the country is the popularity of social media such as WhatsApp and Facebook which is directly linked to the rapid exploitation of mobile phones in the country. In fact, the cellular phone has become a common ICT gadget in both urban and rural areas. Mobile service providers have also invested heavily to ensure that their networks are accessible even in the most remote areas, hence, rural communities have found the mobile phone as the most convenient mode of communication. As such, social media has facilitated the dissemination of all types of information across gender, socio, economic, cultural and geographical barriers. To this end, the proliferation of social media has been a key strategy, not only for individuals and groups to communicate but, more significantly, for business and it has been a major influencer of Business to Consumer (B2C) communication. Businesses are now able to distribute information about their products and services to consumers in real-time at a fraction of the cost if they used traditional means such as telephone, fax or snail mail. In addition, mobile phones have allowed consumers to pay

for some goods and services and offer a wide range of other activities and services such as Internet access, satellite television, water and electricity bill payments and money transfers. It can be deduced from the foregoing that, although Malawi is in its early stages of ICT development and growth, it has made some significant strides towards ICT adoption and exploitation.

New trends in the exploitation of ICT have emerged over the last two decades as industry value chains become increasingly sophisticated and global and therefore the competitiveness of firms increasingly depend on their capacity to connect better and do business with other enterprises to integrate into global value chains and thus become international business partners (EU, 2012). Hence, for Malawian firms to become competitive in a globalised market place they must acquire the necessary competencies to conduct B2B and this requires addressing the key challenges in ICT adoption and exploitation in the country, especially in the tourism industry. The Malawi National ICT for Development Policies (2006; 2016) agree with this sentiment and point out that ICTs are essential to the sustainable development of Malawi, considering the profound transformation impacts they are having at both economic and social levels all over the world and ICTs need to form a key pillar of Malawi's Economic Growth Strategy. Malawi, as a developing economy, has over the years faced a number of socio-economic challenges which are associated, *inter alia*, with inadequate communication infrastructure, very low utilization of ICTs and lack of information (Malawi ICT Policy, 2016). To this end, according to the Policy, Malawian firms have not fully benefited from ICT exploitation due to numerous constraints facing the ICT sector in the country, including:

- Inadequate ICT infrastructure especially in rural areas.
- Underdeveloped research and development capacity in ICT. No patented ICT-based innovation has been recorded in the country. The country imports almost all of its ICT products and services.
- Inadequate specialized ICT professionals and institutional capacity. There are very few certified professionals in specialist ICT areas. Malawi continues to depend on international experts as well as institutions for capacity development and for implementing and managing complex ICT initiatives.
- High investment cost for ICT infrastructure. ICT infrastructure is heavily dependent on imported material.
- Lack of local and relevant Internet content and e-services that may be useful to the rural communities makes it difficult to implement ICT programmes.
- Lack of legal instruments for protection of individuals and societies from abuse arising from the use of ICT and participation in information society. Users do not trust online and electronic services in the absence of the law.
- Lack of awareness of ICT and e-services and their potential.
- Low levels of online public services and low levels of engaging the citizens in using ICTs.

Additionally, there is dearth of home-grown literature and empirical studies on ICT and its impact on firms in Malawi. There is little, if any, research on ICT and enterprises in general and almost none specifically on ICT exploitation in the tourism industry. This, despite evidence that growth potential for the ICT sector remains strong as Internet service providers seek to increase their customer base and mobile phone operators have large potential to increase sales of airtime, Internet subscriptions as well as consolidating new services such as mobile banking (Malawi Telecommunications Limited, 2015). As such there is enormous potential for expansion. Moreover, as technology advances to high speed levels using Long Term Evolution (LTE), 4G and 5G technologies, there is more demand for broadband connectivity for both voice and data services in the country. Almost all telecommunication operators have built fibre optic cable to cater for their own data requirements and for their clients. As such, there is potential for growth of ICT and tourism enterprises (TEs) should be geared to benefit from this expansion. This study investigates how tourism enterprises in Malawi can take advantage of this growth in ICT to improve their internal business processes, gain competitive advantage and deliver superior performance.

More significantly, considering that Malawian and sub-Saharan TEs are lagging behind in ICT usage compared to their counterparts in developed economies, a gap exists for the formulation of an ICT framework that is specifically designed and targeting these enterprises in developing economies. This framework should take cognisance of the various ICT frameworks that have been developed, their applicability to the tourism industry and limitations thereof. Furthermore, the framework thus developed should also be one that can easily be adapted by TEs in the developing world, especially those in sub-Saharan Africa. It is against this background that this research project has embarked on a journey to develop an ICT framework that could be used by TEs in sub-Saharan Africa, with particular reference to Malawi.

2.8.2 ICT in Tourism Enterprises

Buhalis and O'Connor (2005) argue that ICT has profound implications for tourism, and e-tourism reflects the digitization of all processes in the tourism, travel, hospitality and catering industries that enable them to maximize their efficiency and effectiveness. Hence, e-tourism bundles together three distinctive disciplines: business management, information systems, and tourism (Buhalis, 2003).

Firstly, the Computer Reservation Systems (CRS) and Global Distribution Systems (GDS) have had a tremendous impact on the operations of the tourism industry. The CRS and GDS have made it possible to create, develop and globalise the availability of basic tourist services through the intermediation of travel agencies which had exclusive access to automated booking systems (EU, 2003). These booking systems are based on proprietary networks which are very sophisticated from a technological point of view and have very high implementation and running costs. They are the means currently used for purchasing tourist services and packages through travel agencies and airlines. The technological innovation brought

about by GDS broadened the gap between large enterprises and Small and Medium Tourism Enterprises (SMTEs), as only the former could actually benefit from broader market access and the enhanced level of service.

Secondly, the advent of the Internet in the 1990's completely changed the landscape of how people and businesses communicate and conduct business and all categories of players in the tourism industry are now directly accessible and have implemented their Internet strategy (The European Commission, 2003). For the traditional intermediaries such as tour operators and travel agencies, the Internet means not only opportunities for broadening their activity but also forces them to justify their existence (The European Commission, 2003). In terms of sales, tourism products such as air tickets, hotel rooms, and last-minute holiday packages are the most common products sold via the Internet. In addition, the Internet is undoubtedly the cheapest, most convenient and efficient way to address potential new customers in distant countries (Arlt, 2003). The number of Internet users continues to grow exponentially with developing countries reporting bigger increase (Tan et al., 2009). According to the United States Census Bureau (2015), Asia, Africa, Latin America/Caribbean constituted almost 70% of all global Internet users with Africa registering the highest percentage growth of Internet users between 2000 and 2017.

2.8.3 Popular systems or applications used by the Tourism Industry

There are many software systems that can be used by both large and small tourism operators in the African context. Appendix 1 gives an overview of the various software applications that are available on the market, their key features and their suitability to tourism enterprises. The applications vary in their applicability and benefits. For instance, ERP, NETSUITE, SAGE and Oracle e-business suite are highly suitable for all tourism value chain players to communicate with each other and streamline internal business processes. On the other hand, applications such as INTACCT, Unit 4 Agresso and Financial Force are suitable for all tourism players for financial management and accounting processes. Other applications such as VAI S2K Enterprise and Automatica Cloud are specific for improving customer service for tourism enterprises while Global Shop Solutions is only applicable to travel agents and tour operators to integrate their financial and human resource management systems and marketing. It is also important to mention that the mobile phone technology has introduced a major revolution in ICT as a tool to communicate, disseminate, and conduct business. The rise of social media applications such as WhatsApp, Facebook, Twitter, Instagram, etc. have revolutionised B2C and B2B and other e-commerce activities. Internet and mobile banking have increased globally and becoming very popular. As such, tourism enterprises are utilising social media and mobile telephone to conduct business. It is therefore imperative that each tourism player determines its needs and implements the required application to ensure that it enhances its competitive advantage and streamlines and improves its internal processes. For some, this might mean combining one or more applications.

2.8.4 Benefits and Impact of ICT on the Tourism Value Chain

The rapid evolution of digital media technologies, the dramatic cost reduction in electronics and the advent of the Internet caused a series of “disruptive innovations” (Christensen, 1997) that has displaced existing ways of business practice and introduced new business models in the tourism value chain. ICT has changed and continues to change the nature of contemporary tourism. Its adoption in all parts of the industry is transforming tourism into an information and knowledge-intensive sector in the globalised economy. No player, large or small, will refuse to implement ICT-based innovations if that means to remain competitive in today’s economic schema (Seggitur and CICtourGUNE, 2014). As an information-based industry, the tourism sector hugely depends on how information is generated and disseminated across the various value chain actors. Table 6 summarises the main benefits being accrued from ICT systems being used by principals and intermediaries in the tourism value chain.

Table 6: Benefits of ICT Systems among Tourism Principals and Intermediaries

Tourism Value Chain Actor	ICT System	Uses	Benefits	Source
Accommodation and Hospitality	Property Management Systems (PMS) - the software solution to support all basic activities involved in the day to day operations of accommodation establishments	<ul style="list-style-type: none"> Facilitate front office, sales, planning, and operation function 	<ul style="list-style-type: none"> Centralize the interconnectivity between systems managing the hotel inventory - administering a database with all reservation, rates, occupancy and cancellations, Improve efficiency, facilitate control, reduce personnel and minimize the response time to both 	Seggitur and CICtourGUNE, 2014; Bethapudi, 2013

			customers and management requests	
Travel Agents	ERP, GDS, CRS, Business Intelligence Systems, Market & technology surveillance systems and Strategic Quality Management, Strategic Management System	Integrating back-office (accounting, commission monitoring and personnel) and front office (customers' history, itinerary development, ticketing and communication with suppliers) functions,	<ul style="list-style-type: none"> • Booking transaction complexity is reduced • Enhancing and facilitating the marketing of tourism products and services – destination viewing, book accommodation & transportation • Transforms the static plan into a system that provides strategic performance feedback to decision making and enables the plan to evolve and grow as requirements and other circumstances change 	Waghmode and Jamsandekar (2012) Bethapundi (2013)
Tour Operators	Internets, Intranets and Extranets; Kuoni	<ul style="list-style-type: none"> • Critical for the distribution of tour operators' packages • Coordination 	<ul style="list-style-type: none"> • Allows coordination of activities, • Facilitates resolving 	Bethapundi (2013); Buhalis (2003).

		<p>and exchange of timely information</p>	<p>potential problems</p> <ul style="list-style-type: none"> • Ensures that customer requirements are communicated to all principals delivering the tourism product • Boost the globalization of the industry by providing efficient tools to develop, operate and globally distribute their offerings • Allows consumers to alter their tourism package online and to build their own itinerary by making it possible to extend the trip, change accommodation , meal plans and add value to their tourism experience 	
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			<ul style="list-style-type: none"> Provides a tool for communicating to tourists the key and important information pertaining to the destination 	
Destination Management Organisations (DMOs)	Destination Management Systems (DMS), Computerised Information Reservation Management Systems (DICIRMS), Internets, Intranets and Extranets	<ul style="list-style-type: none"> Aid tourism companies in the support of their products Ability to integrate all stakeholders at destinations and to reach global markets 	<ul style="list-style-type: none"> Widely dispatch information collected and structured to help their local businesses reach new markets Create and sustain electronic platforms and markets Provides the infrastructure for communications and business processes between all stakeholders 	Farkhondehzaden, et al. (2013); Collins and Buhalis (2012); Gretzel, et al. (2006); Bethapudi (2013).

In recent years, the strategic and operational dimensions of ICT for tourism are also emerging in literature. ICT has had tremendous impacts on the competitiveness of enterprises, more so between the 70's and 80's (Porter, 2001) and has expanded rapidly over the last 10 years (Franco and Reggi, 2016) and they continue to determine the fundamental roots to competitive advantage. Against this background, it is crucial for tourism practitioners to proactively incorporate ICT into their efforts to improve service quality as ICT enables the dynamic differentiation and specialization of products and services. By using

the Web and the Internet as marketing tools, tourism organizations also gained some distinct advantages in cost reduction, revenue growth, marketing research and database development, and customer retention (Ashari, et al., 2014). From a customer perspective, the Internet affects the bargaining power of buyers, as they have instant access to information, understand market offers and conditions better and are constantly exposed to special offers (Kim, et al., 2004). Customers can now compare prices in an instance and have access to real time information.

It is clear from the foregoing discussion that ICT is important to the tourism industry and, as such, is the main source for creating competitive advantage for various tourism value chain players. Against this background, the next section explores various ICT frameworks that portray how ICT enhances competitive advantage of tourism organizations.

2.9 Tourism Value Chain and Related ICT Frameworks

Having examined the benefits of ICT usage by tourism value chain players and the impact it has on the industry, the next task is to examine various ICT frameworks that have been developed to indicate how various players within the value chain interact and interface with each other. This is important as it will guide the study to identify the key frameworks currently in use, their pros, cons and limitations and detect a gap that can be expanded to develop an ICT framework specifically designed for developing nations such as Malawi.

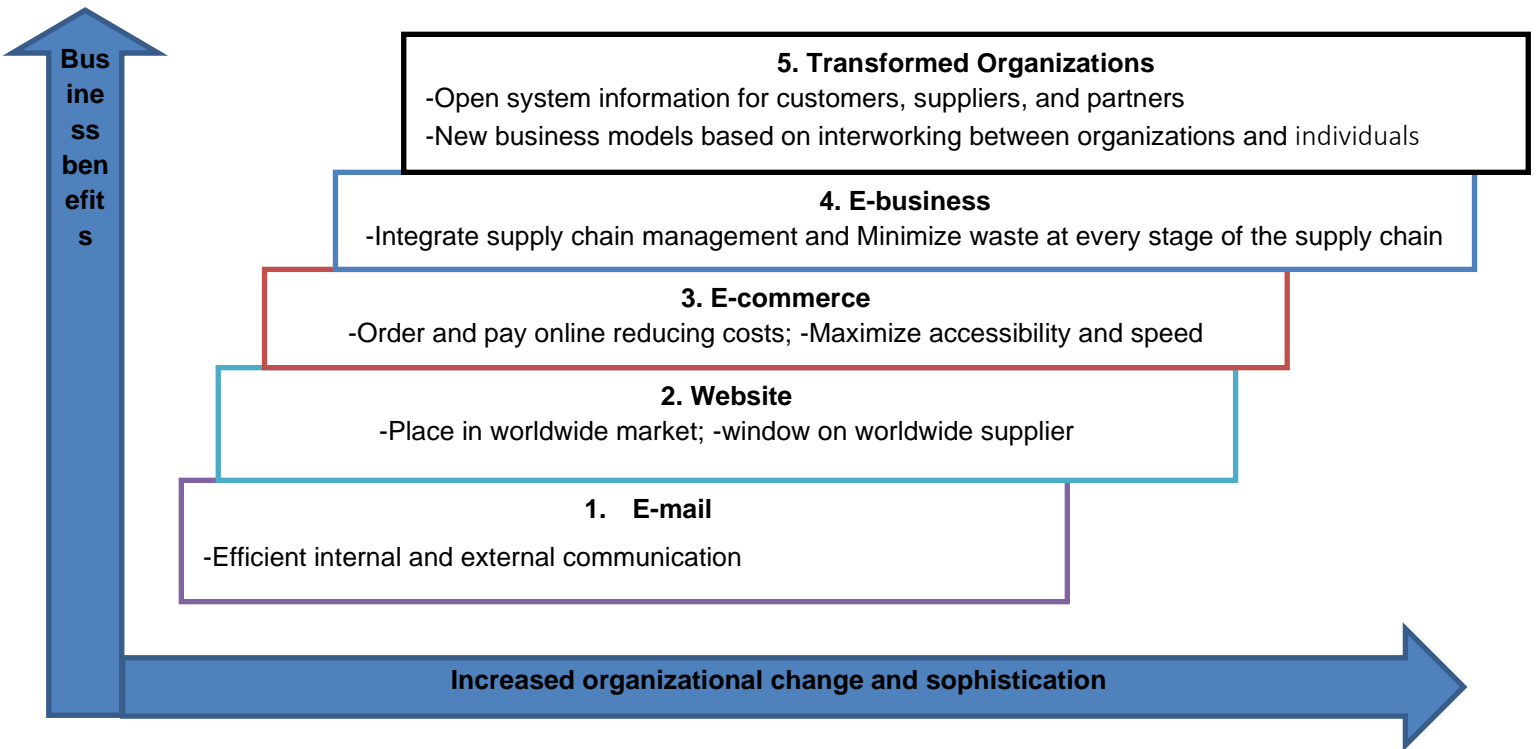
2.9.1 Model of ICT Adoption

Viewed from a purely technological perspective, engagement with ICT is sequential and progressive as can be noted in Figure 10. Taylor and Murphy (2004) have put forth this model for ICT adoption where the sequence for adoption begins with the use of e-mail and progresses through website development to the buying, selling and payment mechanisms of e-commerce, to the supply chain management of e-business and the new business models built on full immersion in the technology.

The model implies that business benefits derive directly from the organisational change and increasing ICT sophistication that the Internet facilitates. That change is progressive. As such, the greater sophistication derived from the supposed unique qualities of the Internet, the greater increased benefits accruing to the organisation. The Internet provides several unique opportunities including: ubiquity of use, interactivity that permits collaboration, speed that allows businesses to operate efficiently and respond quickly to market and partner needs, and intelligence – endowing the ability to retrieve, store and process

information. Keeney and Curry (2001) argue that these qualities offer new ways of organising value chains (especially disintermediation and re-intermediation) and allow new forms of market place to emerge.

Figure 10: Model of ICT Adoption



Source: Taylor and Murphy, 2004

The adoption ladder approach is very useful to firms in that they can gauge at what level they are in terms of ICT adoption and how and what they need to do to migrate to the next level. In addition, it can assist firms to i) assess basic ICT skills they need to acquire in order to make the movement to the next level in the ICT ladder, and ii) investigate what advanced ICT skills and technologies they need, including research and development, management, strategy and marketing. However, the model is simplistic in its design and approach and it is profoundly flawed and problematic in its view of change as it implies that technological necessity operates by welding science, technology, markets and organisations together in an objective and interlocking chain. As such, the model suggests that all firms must follow a prescribed course, with the implication that not to finish one level, that is, cross the divide and climb to the top of the ladder, is some kind of failure. In addition, the model indicates that a firm needs to sequentially move from one level to the next in ICT adoption when, in reality, a firm can skip one level and quickly move to a higher level depending on investments it can make.

2.9.2 The PITs Model of ICT Adoption

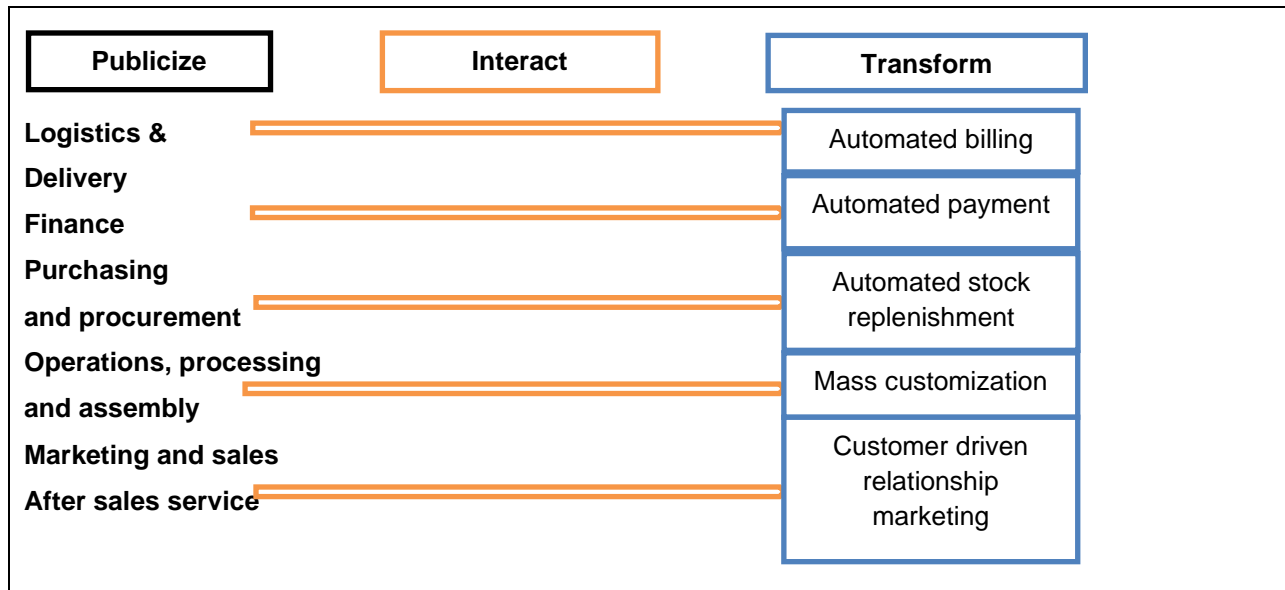
Foley and Ram's (2002) PIT model better accommodates the diversity of applications and adoption of ICT and e-business approaches by firms. The model has two elements, namely, what functions ICT can be used for in the firm, and what activities it can be applied to as shown in Figure 11.

First, ICT and the Internet can be used by SMEs (and by implication all other firms) for three increasingly sophisticated activities which give the model its name (Foley and Ram, 2002):

1. Publicize and publicise information on a Website, such as product and contact details and other "bronchureware", plus terms and conditions or delivery schedules;
2. Interact with customers and suppliers through automated communications systems that are more than simple exchange of emails and, for example, verify credit cards or recognise returning customers; and
3. Transform the way a business undertakes its activities, allowing customers to specify delivery times and places or enabling real time tracking of deliveries.

Secondly, this progressive e-business sophistication can be applied to any area of business activity including logistics, finance, purchasing, and procurement (including management of infrastructure and support services), operations, processing and assembly (including process, product and services R&D), marketing and sales and after-sales service.

Figure 11: The PIT Model of ICT adoption by SMEs



Source: Foley and Ram (2002)

The model provides some useful insight into the primary functions that ICT can be used for in the firm, and what activities it can be applied to. This is very important for firms that would like to get a basic understanding of the advantages of adopting ICT in their business processes and are in the process of considering, one way or another, incorporating ICT in their business functions. Moreover, the model is a framework of the correlation between the functions of ICT in a firm and the activities that can be performed. This is of primary importance as it gives firms clear guidelines on what they should expect in terms of outputs that they will get in investing in ICT. However, the model is limited in its application as it has been designed mainly to establish a link between functions and activities of ICT adoption without necessarily delving into how ICT can facilitate business transactions across value chain partners. In addition, the model is narrow in its application as it only provides an overview of the processes that ICT adoption brings into the firm and does not provide a comprehensive analysis of the outcomes of ICT usage to the organisation's performance and financial turnover.

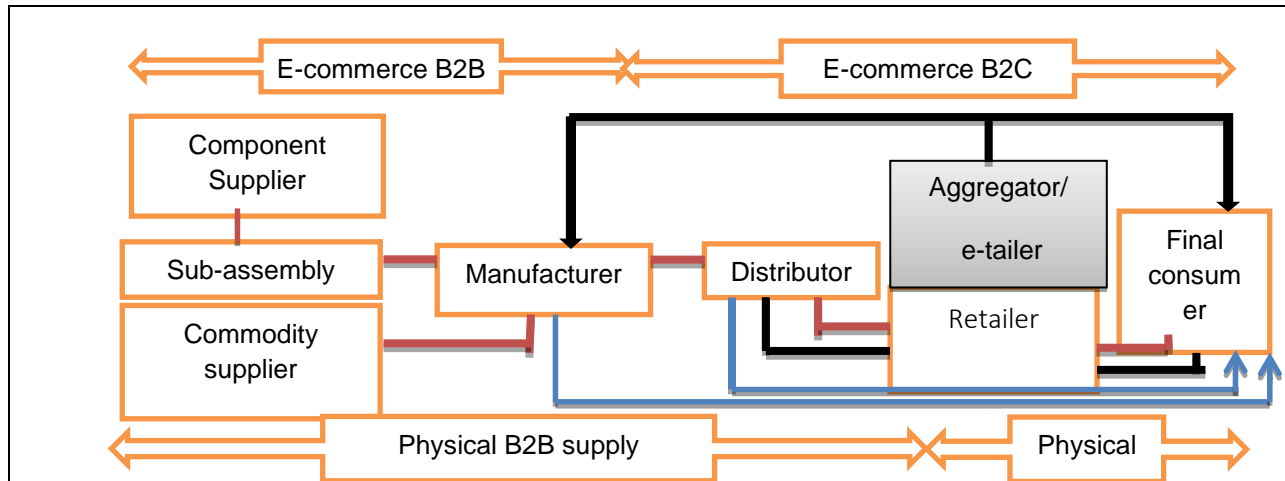
2.9.3 Mediation, Disintermediation, and Re-intermediation Model of ICT

Hammer and Champy's (1993) work on business process re-engineering (BPR) called attention to the value-adding opportunities of de-fragmenting industrial processes. Both Kodama (1992) in general terms, followed by Gates (1999) more specifically, moved the BPR approach to an understanding of changed relationships between proprietors of technological knowledge, particularly as a result of ICT being developed. The notions of intermediation and its sub-sets of disintermediation and re-intermediation are now frequently used concepts in analysing changing structures of value streams – an approach highlighted by Hagel and Singer (1999) and popularised in business management.

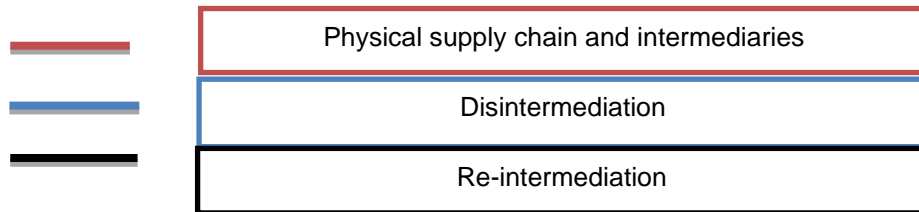
Figure 12 illustrates a traditionally sequenced value stream (red colour line) in which components via sub-assemblers and manufacturers are distributed and retailed before reaching the consumer. Black bold lines connecting the manufacturer and/or distributor directly to final consumer, without the mediation of retailers represent disintermediation. The black bold line (manufacturer to e-tailer and e-tailer to consumer) illustrate new points of mediation: re-intermediation. In the figure, this new mediation point (shown as a grey box) is an e-commerce Website. This may be the site of a particular e-tailer, an aggregator who gathers and hosts B2C offers, or a portal site offering click-through to the e-tailer's offer site.

The difference that ICT makes is that without physical proximity between buyer and seller products can be found, assessed and the transaction completed. To this end, ICT may enable the speedy and inexpensive restructuring and mediation patterns. Note in the block-arrows at the top and bottom of figure how value shift from being manufacturer-centred in physical supply towards being consumer and their point of sale centred with ICT.

Figure 12: Mediation, Intermediation and Re-intermediation Model of ICT



Key to coloured lines:



Source: Hagel and Singer (1999)

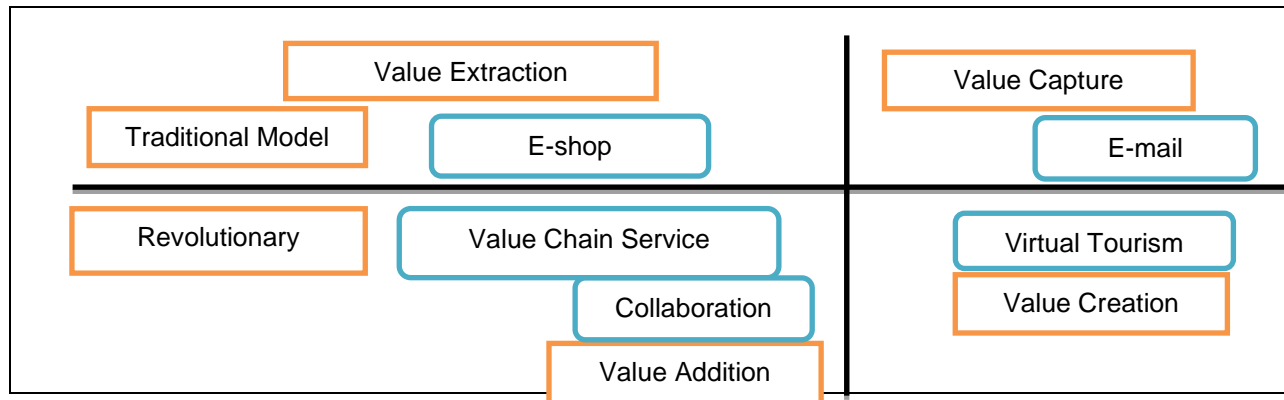
The model is very central in understanding how ICT has radically changed the traditional way of doing business where raw materials or components had to go through sub-assemblers and then manufacturers before being distributed by third parties, retailed before reaching the consumer. With the introduction of ICT and the emergence of disintermediation, a product is able to move directly from the manufacturer to the final consumer without middlemen being involved – reducing the time and cost of the product to the end consumer. In the same vein, with re-intermediation, an e-tailer such as amazon.com and e-bay, act as aggregators who gather products from various manufacturers and, using ICT, connects and sells directly via online to consumers through the Internet and Websites, transactions are conducted electronically and the consumer receives the product without physically leaving their residence. This has radically transformed the way business was done before the advent of ICT and entails that buyers and sellers do not need to have physical contact.

Though the model shows how ICT has revolutionised the way business is conducted, it is restricted to physical products and cannot be applied to services and intangible products such as tourism. As such, the model cannot be universally applied to all business entities and thus falls short in its applicability to the service sector which has become the biggest form of business in the 21st century.

2.9.4 Tourism E-Commerce Model

The tourism e-commerce model vertically depicts an industry undergoing revolutionary changes and the model can be divided into traditional model (traditional tourism enterprises adopt information technology) and revolutionary model (completely new-born Internet based tourism enterprises), on the one hand. On the other hand, horizontally, the tourism e-commerce model supports the digitization of the tourism value chain, resulting in numerous value-generating strategies (Liu, 2005) as portrayed in Figure 13.

Figure 13: Tourism e-commerce Model



Source: Liu (2005)

The tourism e-commerce model shows that e-commerce has changed the way firms in tourism can do business. The Website is changing the needs of customers, who are increasingly less loyal, take more frequent vacations of shorter duration, and take less time between choosing and consuming a tourism product (Liu, 2005). In addition, e-commerce has introduced new benefits to tourism enterprises, including:

- 1) **Value extraction** – which increases efficiency and reduces costs and examples include process automation and client outsourcing, such as self-check-in of hotel guests or airline passengers;
- 2) **Value capture** – an example of this strategy is data mining for forecast or yield management in which client and sales information supports marketing goals;
- 3) **Value addition** – a good example of this strategy - which involves a linear combination of products and services to create richer product bundles – is the linkage of mobile services and existing Websites, to advise tourists during their travel; and
- 4) **Value creation** – the focus here is on network effects, involving, for example, tourists participating in service definition and destination planning.

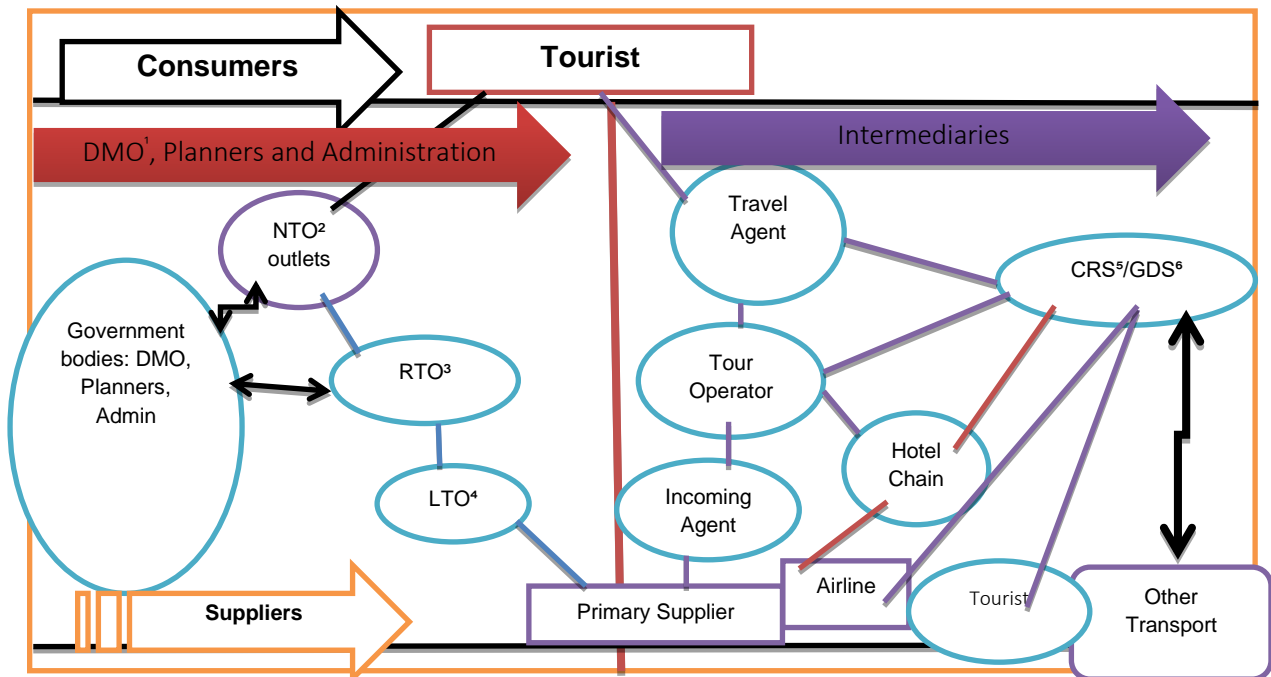
The e-commerce model is helpful as it is specifically designed for the tourism industry and addresses key success factors of e-commerce adoption and usage by the tourism value chain. With strategies that are developed through the model, not only processes are changed, but, more significantly, new services can

be designed - extending the range of options to customize and configure products. Given the interconnectedness of the tourism value chain, customization of products and services and configuration through bundling of different product and service components to integrated offerings has been implemented by almost all players. As much as the model is beneficial in outlining the benefits of e-commerce adoption in the tourism value chain, it is inadequate in its application as it focuses on the value that is accrued through e-commerce adoption. It does not explore the intricacies and inner relationships between various tourism value chain players and how e-commerce has upgraded each player, how the relationships between value chain actors has been enhanced through e-commerce, and how e-commerce has improved the processes of interaction of the value chain.

2.9.5 Structural View of the Tourism E-Market Value Chain Framework

Tourism products require information gathering on both the consumer and supply sides – and thus entail high information gathering by all players in the value chain. Figure 14 represent B2B and B2C concepts and differentiation between the supply and demand sides of the tourism value chain and the respective intermediaries. The nodes indicate the relevant types of players in the field and the links mark the relationships as well as the information flow (Liu, 2005; Werthner and Ricci, 2004). Suppliers like hotels or restaurants are designated “primary” and tour operators can be seen as “aggregators”, and travel agents act as information brokers - providing the final consumer with the relevant information and booking facilities. Intermediaries on the right side provide professional connection between supply and demand (mainly based on the electronic infrastructure and facility of CRS/GDS). The left side is relevant for the management, planning and branding of a destination. These national, regional, and local tourism organizations are normally publicly funded, act on behalf of suppliers within a destination, and are not engaged in the booking process (Liu, 2005). The upstream flow of the figure consists of product information, whereas the downstream flow reports on market behaviour, mostly represented in terms of statistical aggregates. Both information flows create a tourist information network linking all market participants and reflecting economic relationships between them.

Figure 14: Structural view of the Tourism e-market Value Chain Framework



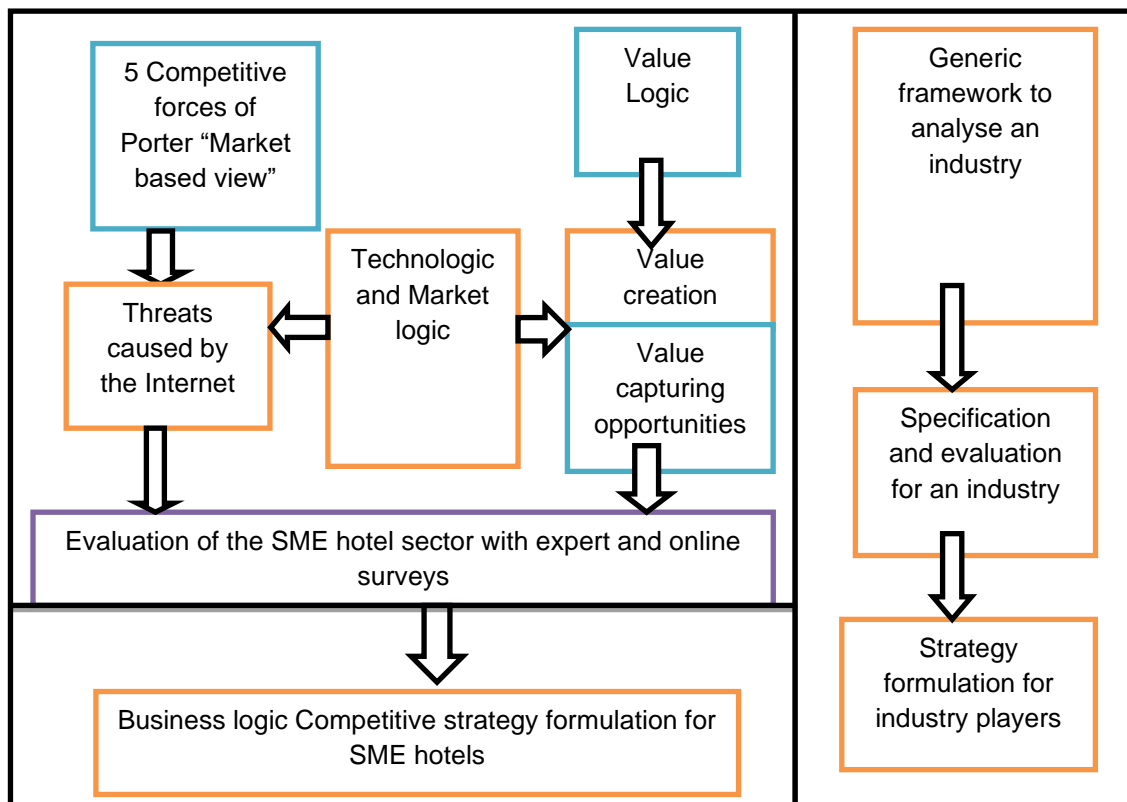
- DMO: Destination Marketing Systems
- ²NTO: National Tourism Organization
- ³RTO: Regional Tourism Organization
- ⁴LTO: Local Tourism Organization
- ⁵CRS: Central Reservation System
- ⁶GDS: Global Distribution System

The framework is very valuable in that it provides an overview of the relationships between various players in the tourism value chain and how they interact with and relate to each other. Moreover, the framework is designed for the tourism industry and gives an in-depth analysis of the actors that the tourist interacts with before reaching their final destination and during their stay at destination. However, it is restricted in its usage as it does not showcase the dynamics involved by each player in relationship to other players. For example, the interactions between various tourism actors in the value chain are not linear and the possibilities of a principal or an intermediary by-passing another actor in the chain are not reflected in the framework. Moreover, the framework is myopic in its conclusions as it assumes that there are distinct and clearly defined separation of responsibilities and roles between intermediaries and principals. In reality, this distinction is blurred and the tourist can interact with any of the players at any point as they move from their country to the destination and when at the destination. In addition, there is a trend towards cooperation between the various players in the tourism value chain and ICT has greatly facilitated this.

2.9.6 Framework for Competitive Advantage in E-business

For accommodation providers, the Internet and especially the Web is a perfect platform to bring information about their products to customers all over the world - in a direct, cost effective, and timely manner. The framework depicted in Figure 15 has been developed by Gratzer and Winiwarter (2004) based on the theoretical framework developed by Michael Porter's (1985) Model of Competitive Advantage and the Logistics Value Concept, defined by Akkermans (2003). According to Akkermans (2003, p. 116) "the Value-based requirements stands for an approach that takes into account the economic value perspective when developing IT-intensive products through an iterative and co-operative process of analysing a business case, documenting the resulting observations in a variety of representation formats, and checking the accuracy of the understanding gained". As such, for the development of e-commerce information systems three distinct viewpoints are important: (1) the business value viewpoint, with a focus on the way economic value is created, exchanged, and consumed in a multi-actor network, (2) the business process viewpoint, with a focus on a way to put the value viewpoint in operation in terms of business processes, and (3) the information or technologic system viewpoint, with a focus on the information systems that enable and support e-commerce processes.

Figure 15: Framework for Competitive Advantage in e-business



Source: Gratzer & Winiwarter (2004)

The framework is used to identify where and how the Internet as a new communication and information technology influences the SME accommodation sector. The model implies that a company has to focus on two major parts: the market view of the industry the firm operates in and the technologic view. By analysing how the techno and the market logics influence the 5 competitive forces, threats for the industry are defined (Gratzer and Winiwater, 2004). On the other hand, these two logics provide opportunities for value creation and value capturing, which can be used to counteract the threats within the business logic of a specific SME hotel and to gain competitive advantage.

The framework includes the following major steps (Gratzer and Winiwater, 2004):

- Industry analysis using the five competitive forces which gives an overview of the developments and threats within an industry caused by ICT;
- To counteract threats identified and to achieve competitive advantage, a strategy is developed by using opportunities of ICT and is primarily based on Logistics Value Concept defined by Akkermans (2003); and
- The framework is applied to the SME accommodation sector and evaluated by an expert survey and a hotel survey.

Tourism is an industry that is heavily dependent on exchange of information among and between various operators in the value chain to facilitate business transactions. This therefore denotes that the framework clarifies the fact that e-tourism is at the intersection of ICT (software companies, telecommunication companies, service providers) and the tourism and travel industry (destination organisations, hospitality, tour operators, transport).

The main advantage of this framework is that, by combining the five competitive forces and Logistics Value Concept, it assists a firm to take a holistic approach to ICT exploitation by integrating the market based view and technologic view to identify areas where economic value can be created, distributed and consumed through ICT adoption and, at the same time, detect the threats caused by ICT exploitation. However, it is narrow in its approach as it limits its analysis of a firm's competitiveness to the market and technologic based views of the firm at the expense of other factors, both internal and external within the organisation – for example, staff competencies, political, economic, social, cultural - that affect business performance. Moreover, it focuses only on the hotel sector and, as such, cannot be applied across all players in the tourism value chain.

2.9.7 Stage Model for ICT Development

O'Connor and O'Keefe (1997) characterised business models by the level of transactions and the level of information content. Trimmers (1999) categorised a business model using two dimensions: level of functional integration and degree of innovation. The models describe how a business uses e-commerce

to operate its business. A model which can describe the logical evolution of e-commerce involving different stages of development, each stage being better in some sense than the previous stage, can be useful in providing a roadmap for improvement to companies and a Stage model can do this. A stage is a set of descriptors that characterise the evolutionary nature of e-commerce. Rao, Metts and Monge (2003) have put forward a stage model for ICT development and propose e-commerce takes place in four stages, namely, *presence*, *portals*, *transactions integration* and *enterprises integration* (Figure 16).

The Presence stage is the entry point into e-commerce by a company and is best represented by a company having a website but there is no integration with internal and/or external processes, and the presence is primarily used to attract new customers. The main facilitator in the presence stage is commitment to use the Internet as a mechanism for achieving the company's strategic objectives while resistance to adopt and exploit technology is a major barrier. Entrance into the virtual world is useful as it introduces the company to ICT exploitation. However, the company is very limited in its ICT exploitation.

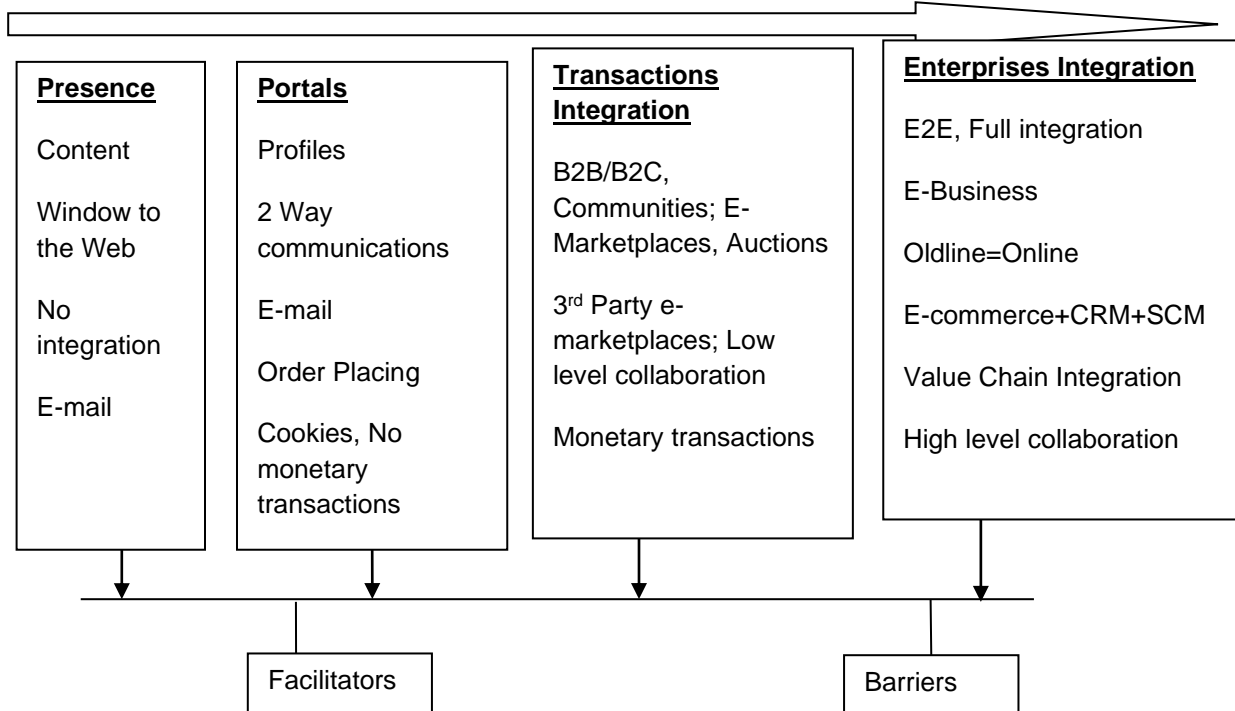
At the Portals stage there is the introduction of two-way communication between the business and the customer (B2C) and/or between businesses (B2B). The main facilitators at this stage are investments and usability required to make internal organisational changes and barriers include development of B2B interfaces – integration driven by the level of technological development within and outside the organisation and culture and/or language barriers. The advantages of this stage is that it provides the firm with facilities for ordering, obtaining product feedback, link information displayed with inventory data, and search capabilities for the users. However, financial transactions cannot be processed at this stage.

The Transaction Integration stage is where interactions can be for selling as well as buying. The main facilitator at this stage is the ability to make substantial investments in ICT and the main barrier is access to financial systems to trade across borders – the lack of compatibility may result in either making financial transactions virtually impossible or making them so expensive that no added value is obtained. The main advantage of this stage is the integration of internal processes, which allows for the optimization of all the operations of the organisation. However, the level of collaboration and sharing of information with partners is considered low.

The Enterprise Integration [EI] stage involves the complete integration of business processes, full integration of B2B and B2C business including value chain integration and high levels of collaboration between customers and suppliers. The critical facilitators for this stage include the competencies of internal staff and the complete integration of business and back office processes. The barriers at this stage include availability of technology, technology diffusion regionally and globally, international standards for trade and transaction processing, development of e-markets, and network complexity. The main advantage of this stage is the capacity of a firm to conduct e-commerce across borders. However

the main disadvantage is that the organization's full integration is dependent on other supply and value chain partners. As such, the firm must intimately understand its partners' current and future/strategic needs; work proactively with its partners to create solutions that address these needs; use information sharing and have long-term contracts with them. This in turn will undoubtedly create network complexities among players in the value chain.

Figure 16 : The Stage Model of e-commerce Framework



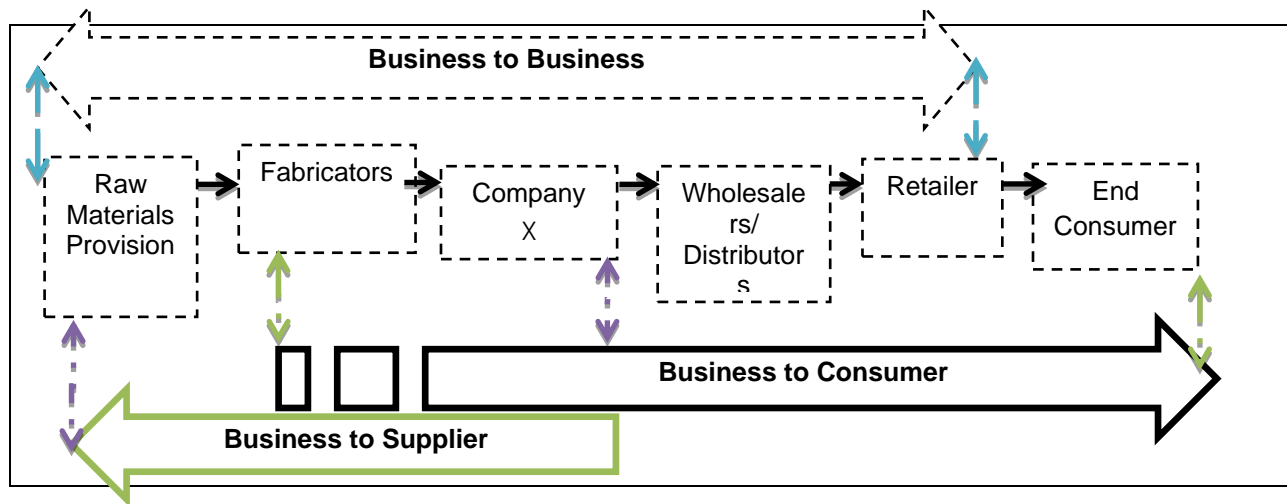
Source: Rao, Metts and Monge (2003)

The overall benefits of this Stage Model is that it offers an opportunity for a company to evaluate its level in terms of ICT exploitation and how it can move to the next level and the required investments in terms of financial, human and infrastructural resources. In addition, the model offers an opportunity for a company to make a comparative analysis in relation to others in the same sector in terms of ICT adoption and exploitation. However, the model is narrow in its application in that it cannot be universally applied to all companies in various sectors and therefore has inadequate scope in terms of application. As a result, the model, though key in evaluating exploitation of ICT by companies, provides limited information on how the exploitation of ICT is impacting on enterprise performance, turnover, profitability and sales. Finally, the model is restrictive in its view as it depicts ICT migration as consisting of linear and sequential movement from one stage to the next. The table in Appendix 2 presents a summary of the four main stages, their key features, main facilitators and barriers to entry.

2.9.8 E-Commerce at various points in the Value Chain Framework

A typical business depends on other businesses for several of the direct and indirect inputs and its end products. B2B e-commerce automates and streamlines the process of buying and selling intermediate products to end users. To this end, according to Milutinovic et al. (2013), e-commerce uses the Internet simply as a means of conducting sales transactions, while e-business leverages new and existing technologies to interact, transact and collaborate with members of the organisation's value chain. ICT exploitation and how it facilitates transactions and exchange of information between organizations at various points along the value chain for the purposes of conducting commerce is illustrated in Figure 17.

Figure 17: E-commerce exploitation across the Value Chain



Source: Adapted from Jakovljevic & Milutinovic (2002)

The significance of the above framework is the new relationships that are forged between a firm and its value chain partners through the use of ICT, the extent to which ICT exploitation facilitates business transactions by various actors in a business' value chain such as raw material suppliers, markets, consumers, and suppliers and, finally, how ICT influences the level of interaction, collaboration and integration within the value chain. This is very important since the external environment plays a crucial role in the performance of an enterprise. However, it is lacking in explaining how the various relationships between the value chain partners are influenced by ICT exploitation and the levels of ICT adoption among and between partners.

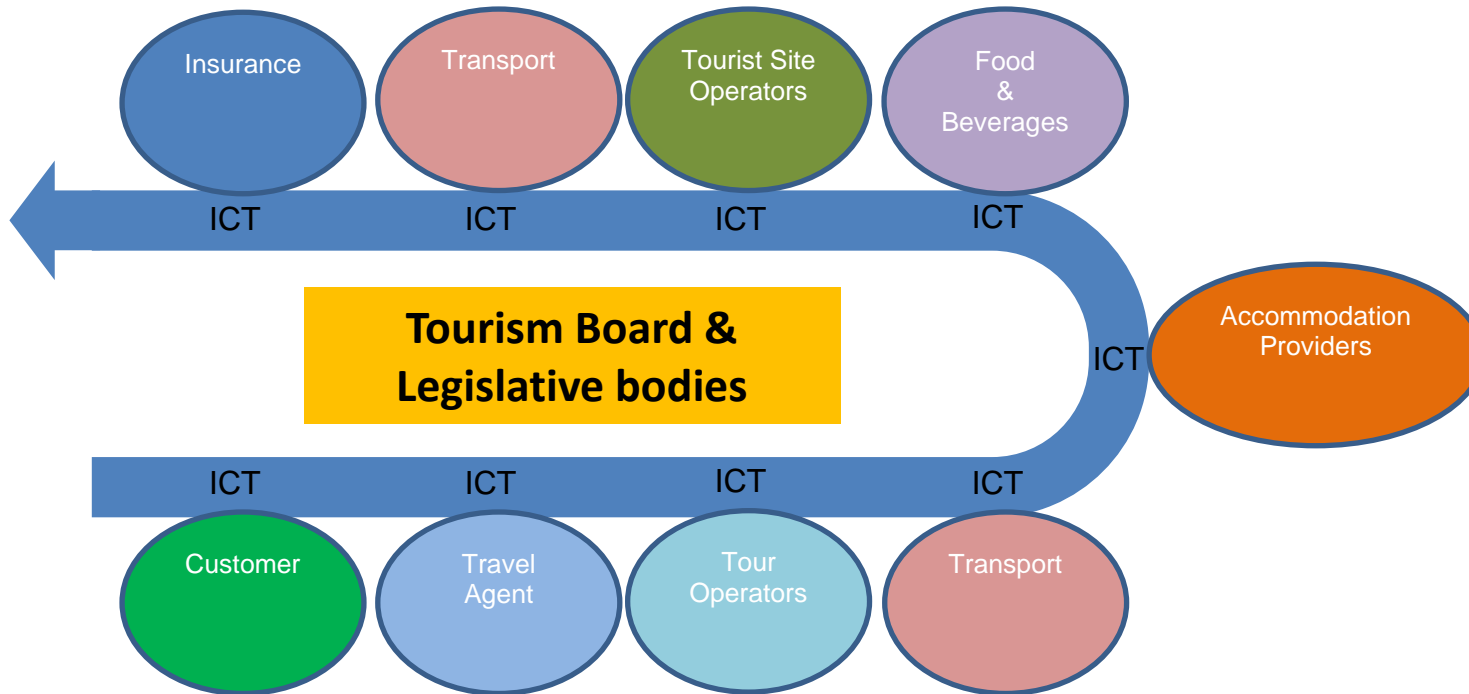
From the preceding discourse, it can be observed that each of the framework discussed has its own benefits and shortcomings and there isn't one-size-fit all framework that can be explicitly applied to the tourism value chain. A gap does exist in the current frameworks which should be exploited to develop a framework specifically designed for the entire tourism value chain and its operators and how the exploitation of ICT by tourism value chain actors can enhance their competitiveness, improve their

business processes, and deliver superior performance. More importantly, none of the frameworks has been designed from a developing country's economic, socio-cultural, and technological conditions and needs. This research will strive to develop this tourism-specific ICT framework with particular attention to tourism enterprises in a developing nation.

2.10 Conceptual Framework – The Impact of ICT on Malawian Tourism Value Chain

Having reviewed the literature, the study has determined to develop a Conceptual framework that will be further developed into an ICT framework for tourism value chain players in Malawi. Figure 18 portrays this Conceptual Framework.

Figure 18: Conceptual Framework for the study



The Conceptual Framework illustrates the nexus and centrality of ICT to all tourism value chain operators. The development of the tourism sector has largely been supported by the rapid and impressive evolution of ICT and the growing globalization of the world economy, resulting in ICT:

- Becoming the new medium for interaction amongst and between tourism operators which were previously carried out through other means;
- Enabling direct interface and collaboration between tourists and tourism operators;
- Re-engineering the role of traditional intermediaries such as tour operators and travel agents thereby forcing them to become more innovative so as to remain relevant in a changing and dynamic business environment;
- Generating opportunities for new entrants such as online agencies, travel portals (e.g. trip.com; www.tripadvisor.com; flight.agoda.com; jet2.com) who are now selling services strictly online. These e-intermediaries have significantly increased customers' choices for searching product information and autonomous booking thereby by-passing traditional intermediaries; and
- Facilitating the trend in the tourism industry towards the integration and concentration of the various value chain operators.

Chapter 3: Research Methodology

3.1 Introduction

Saunders et al. (2009) define research as something that people undertake in order to find out things in a systematic way, thereby increasing their knowledge. Kumar (2010) says that when undertaking a research study to find answers to a question, it denotes that:

1. The study is being undertaken within a framework of a set of philosophies;
2. The research is based on procedures, methods and techniques that have been tested for their validity and reliability; and
3. The methodology is designed to be unbiased and objective.

This chapter describes the paradigms, philosophies and underlying methodologies that were used in undertaking this research.

3.2 Overview of Research Philosophies

Research philosophy relates to the development of knowledge and the nature of that knowledge. As business and management researchers, we need to be aware of the philosophical commitments we make through our choice of research strategy since this has significant impact not only on what we do but we also understand what it is we are investigating (Johnson and Clark, 2006). The literature classifies three types of philosophical research assumptions: ontology, epistemology and axiology.

Epistemology is concerned with what constitutes acceptable knowledge in a field of study (Saunders et al, 2009). According to Tennis (2008) epistemology is how we know. Some common names of epistemic stances mentioned in literature (Saunders et al., 2009; Tennis, 2008; Hoffer and Pintrich, 1997; Rescher, 2003) are: Pragmatic, Positivist, Interpretivism, Referential, Instrumental, Empiricist, Rationalist, Realist, Foundationalism, Coherentism, Explanationalism, Realism, Scepticism, Naturalism, Deontology, Externalism, Contextualism etc. Each of these makes a claim as to what kind of knowledge can be created through research, and how it is gathered and presented and all, however, subsume remarkably diverse species of epistemological theory.

According to Saunders et al., (2009) epistemology should be distinguished from ontology which is concerned with the nature of reality and raises questions of the assumptions researchers have about the way the world operates and commitment held to particular views. The main aspects of ontology are objectivism (how social entities exist

independent of social actors) and subjectivism (social phenomena are created from the perceptions and consequent actions of those social actors concerned with their existence).

Another research philosophy that should be examined is Axiology which, according to Saunders et al., (2009), denotes what roles our values play in our research choices as one's values in all stages of the research process is of great importance if research results are to be credible. Values are the guiding reason of all human action (Heron, 1996) and researchers demonstrate axiological skill by being able to articulate their values as a basis for making judgments about what research they are conducting as they go about doing it (Saunders et al., 2009). Throughout the research process, the researcher demonstrates his/her values and which are reflected in how they conduct the research.

A review of literature (Saunders et al., 2009; Goldkuhl, 2004, 2008, 2012; Dylan, 2007; Dudovskiy, 2013; Walsham, 1995; Moser, 2002; Tennis, 2008; Kothari, 2006; Ahmad, 2006; Kumar, 2010) suggests that there is an overlap and interconnectedness between the various research philosophies and field studies. For example, in terms of which research philosophy is suitable for research in information systems, one camp (e.g. Orlikowski and Baroudi, 1991; Chual, 1986) proposes that three possible epistemologies, including interpretivism, positivism and critical realism are applicable while others (e.g. Wicks and Freeman, 1998; Goles and Hirschheim, 2000) argue that the information systems research paradigm debate should include Pragmatism. On the other hand, Goldkuhl (2004) suggests interpretivism and pragmatism as possible research paradigms for information systems. Hence, as a field of study, information systems is found to be overlapping with other fields of study such as social sciences (Orlikowski and Baroudi, 1991; Hirschheim, 1985); and business sciences (Saunders, 2003). As this study is concerned with ICT, which is a broader umbrella for information systems, the three major philosophies of Information systems, namely, Positivism, Interpretivism and Pragmatism are discussed in detail.

3.2.1 Positivism as a Research Philosophy in Information Systems

According to previous research (Remenyi et al., 1998; Livesey, 2006; Riley, 2007) positivists argue that it is possible and desirable to work with or study an observable social reality or social behaviour and that the end product of such research can be law-like generalisations similar to those produced by the physical or natural scientists to study behaviour in the natural world. As such, the positivist paradigm asserts that real events can be observed empirically and explained with logical analysis (Livesey, 2006). Positivist research methodology therefore emphasises micro-level experimentation in a lab-like environment that eliminates the complexity of the external world (Livesey, 2006; Riley, 2007; Saunders et al., 2004). Clearly, the positivistic paradigm is relevant and suitable for the natural sciences where the researcher is not directly interacting with the people they are studying since they might influence their behaviour (Livesey, 2006; Remenyi et al., 1998). Furthermore, as Saunders et al (2009) points out, the emphasis is on quantifiable observations that lend themselves to statistical analysis. To this end, positivism falls short as a research paradigm for the social sciences as accurately pointed out by Silverman (1970, p. 127)

who described the differences between natural scientists and social scientists in the following way: “social life, therefore, has an internal logic which must be understood by the sociologist; the natural scientist imposes an external logic to his data.” Since the researcher in a positivist paradigm looks at the observed situation with the same detached equanimity with which the natural scientist looks at the occurrences in his laboratory (Schutz, 1970), therefore the researcher is a mere disinterested observer of the social world. However, in social sciences, the researcher is actively involved and engaged in the subject matter which they are studying and contemporary information systems researchers do not perceive themselves as detached and disinterested observers and thus object to this as an unfair characteristic (Goldkuhl, 2012).

3.2.2 Interpretivism as a Research Philosophy in Information Systems

Interpretivist paradigm advocates that it is necessary for the researcher to understand differences between humans in our role as social actors (Saunders et al., 2009). This emphasises the difference between conducting research among people rather than objects. The authors continue to point out that interpretivism comes from two intellectual traditions: i) *Phenomenology* – which refers to the way in which we as humans make sense of the world around us, and ii) *Symbolic interactionism* – which states that we are in a continual process of interpreting the social world around us in that we interpret the actions of others with whom we interact and this interpretation leads to adjustment of our meanings and actions. Moreover, Livesey (2006) adds three more dimensions on which interpretivist sociology is based, namely: i) *Consciousness* - we are aware of both ourselves (as unique individuals) and our relationship to others, ii) *Action* – people make deliberate choices about how to behave in different situations, and iii) *Unpredictability* – if behaviour can be unpredictable it means we can't study it in the way positivists suggest we should. To this end, the author argues that the social world is understood (interpreted) by different people in different situations in different ways. Everything in the social world, therefore, is relative to everything else, nothing can ever be wholly true and nothing can be wholly false; the best we can do is describe reality from the viewpoint of those who define it – the people involved. To this effect, the core idea of interpretivism is to work with these subjective meanings already there in the social world; that is, to acknowledge their existence, to reconstruct them, to understand them, to avoid distorting them, to use them as building blocks in theorising (Goldkuhl, 2012). Orlikowski and Baroudi (1991) argue that the aim of the interpretive research is to understand how members of a social group, through their participation in social processes, enact their particular realities and endow them with meaning, and to show how these meanings, beliefs and intentions of the members help to constitute their actions. In this ontological description, cognitive elements (meanings, beliefs and intentions) seem to be pivotal. Cognitive orientation is also emphasised when the authors describe the intentions of researchers to understand the actors' views of their social world and the role in it.

One of the interpretive principles is concerned with the relationship between researchers and subjects. Myers and Klein (1999) advocate that this principle is concerned with the interaction between the researcher and researched subjects during data generation. It is emphasised that the researched subjects - “the participants” - are interpreters

and co-producers of meaningful data. This implies that empirical data generation is seen as a process of socially constructed meanings; that is, socially constructed by researchers and participants. To this end, value-free data cannot be obtained, since the enquirer uses his or her preconceptions in order to guide the process of enquiry, and furthermore, the researcher interacts with the human subjects of the enquiry, changing the perceptions of both parties (Walsham, 1995). This research philosophy is suitable for the study of information systems since ICT does not operate in isolation but is the product of human actions hence researching on ICT involves interacting with humans in their social setting.

3.2.3 Pragmatism as a research philosophy in Information Systems

Pragmatism argues that the most important determinant of the epistemology, ontology and axiology a researcher can adopt is the research question – one may be important than the other for answering particular questions (Saunders et al., 2009). Pragmatism, according to Goldkuhl (2012), is concerned with action and change and the interplay between knowledge and action. This makes it appropriate as a basis for research approaches intervening into the world and not merely observing the world. There are several reasons for bringing pragmatism into a comparative review of research paradigms for information systems. Goldkuhl argues that pragmatism may contribute to the broadening of possible research alternatives for a qualitative researcher; to see that interpretivism is not the main viable option. In addition, the author points out that the bringing of pragmatism may also contribute with clarifications of pure and hybrid forms of interpretivism and pragmatism in information systems.

This research would consider a mix of different philosophical stances including Interpretivism and Pragmatism as suitable for this research, because the two philosophical paradigms have been identified by various authors as relevant for business and management research and also compatible for studying information systems. However, Interpretivism is most suitable and relevant for this study. The claim that interpretivism is a valid approach to research on information systems in organisations has penetrated the mainstream information systems community, at least in literature reviewed (e.g. Desanctis, 1993; Boland, 1979; 1985; Orlikowski and Baroudi, 1991; Walsham, 1993; 1995; 2006; and Klein and Myers, 1999; Scheiderman and Carroll, 1998). In sum, the authors argue that research in information systems is interpretive and inductive, rather than seeking to confirm or disconfirm hypotheses. It can be concluded; therefore, that interpretivist paradigm is more suited to the studying of information systems and is therefore preferred and relevant for this research.

3.3 Research Approaches

Research approaches were considered from two perspectives for this study: Deduction and Induction on the one hand and qualitative and quantitative approaches, on the other hand.

3.3.1 Deduction and Induction

The choice between the deductive and inductive research paradigms has been discussed by a number of authors including: Cavaye (1996); Hussey and Hussey (1997); Perry (2001). Deduction owes much to scientific research. It involves developing a theory and hypothesis (or hypotheses) and designs a research strategy to test the hypothesis - development of a hypothesis that is subjected to a rigorous test (Saunders et al., 2009). As such, it is the dominant research approach in the natural sciences, where laws present the basis of explanation and allow the anticipation of phenomena to predict the occurrence and therefore permit them to be controlled (Collins and Hussey, 2003).

Inductive research is a study in which theory is “developed from the observation of empirical reality; thus general inferences are induced from particular instances, which is the reverse of the deductive method since it involves moving from individual observation to statements of general patterns or laws,” (Hussey and Hussey, 1997, p. 13). Social scientists were critical of the deduction approach that enables a cause-effect link to be made to particular variables without an understanding of the way in which humans interpret their social world (Saunders et al., 2009). The authors argue that research using an inductive approach is likely to be particularly concerned with the context in which such events were taking place. As such, Induction is considered ideal and suitable for this study.

3.3.2 Qualitative and Quantitative

Various studies have enunciated on the approaches that need to be taken when conducting a research project. Literature reviewed (Saunders et al., 2009; Kothari, 2006; Kumar, 2009; Cavaye, 1996; Darke et al., 1998; Hussey and Hussey, 1997; Leedy and Ormrod, 2001; Miles and Huberman, 1994; Myers, 1997) articulates that there are mainly two research approaches, namely, qualitative and quantitative.

3.3.2.1 Qualitative research approach

Qualitative research is concerned with subjective assessment of attitudes, opinions and behaviour (Kothari, 2006) and is designed to tell the researcher how (process) and why (meaning) things happen as they do (Cooper and Schindler, 2014). Qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena (Myers, 1997) and it includes an array of interpretive techniques which are used to describe, decode, translate, and otherwise come to terms with meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world (Cooper and Schindler, 2014). As such, the qualitative approach aims to achieve an in-depth understanding of a situation. Techniques used in qualitative research include focus groups, in-depth interviews, case studies, action research and observation. The relevance and suitability of qualitative data to this study is that it assisted in understanding the intangible factors such as owner/managerial

awareness of the strategic importance of ICT to organizational performance and competitive advantage, functions, benefits and barriers of ICT exploitation, and the levels of ICT usage at the organisational level.

As much as qualitative data's importance and relevance is recognised in this research, it was not be enough to collect data on some organisational elements on ICT adoption and usage and the economic viability of investing in ICT. Therefore, it was necessary to consider and explore research using quantitative data, in order to consider the approach that will address all of the three elements of IS discipline described by Dobson (2002) and Orlikowski and Baroudi (1991).

3.3.2.2 Quantitative research approach

Quantitative research is based on researcher immersion in the phenomenon to be studied, gathering data which provide a detailed description of events, situations and interaction between people and things, thus providing depth and detail (Cooper and Schindler, 2014). According to Fischler (2015), this approach generally involves collecting numerical data that can be subjected to statistical analysis and the questions must be measurable (e.g. in terms of quantity, amount, intensity or frequency). Examples of quantitative methods now well accepted in the social sciences include survey methods, laboratory experiments, formal methods (e.g. econometrics) and numerical methods such as mathematical modelling (Myers, 1997) and structured observation.

Quantitative approach was considered relevant to this research in that it brought in a dimension that could not be fully grasped by a qualitative approach alone. For example, it assisted in measuring levels of investment made in ICT and the socio-demographics of the employees in each organisation.

As can be deduced from the foregoing discussion, each of the two approaches discussed is not enough in itself in covering fully the three key research issues that are imperative and important in this research in creating sustainable competitive advantage, improve business processes and superior performance for tourism value chain organisations. It is necessary to explore the third recommended approach to information systems known as mixed method in order to increase the reliability and validity of this research.

3.3.2.3 Mixed Methods

Mixed research methods becomes useful when both quantitative and qualitative data, together, provide a better understanding of the research problem than either type by itself or when one type of research approach is not enough to address the research problem or answer the research questions (Fischler, 2015). The purpose of this design is to obtain different but complementary data on the same topic (Morse, 1991) to best understand the research problem. According to Patton (1990) the intent in using this design is to bring together the differing

strengths and non-overlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small sample, details, in depth). This design is used when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data.

Mixed methods approach is applicable for this research, given the number of organisations in the tourism value chain and their different strategies in ICT investment, adoption and usage. Therefore, in order to appreciate the complexity and diversity of ICT usage by tourism value chain players, the two methods were harmonised to strengthen reliability and validity of the research findings.

3.4 Research Strategy

Literature reviewed (Saunders et al., 2009; Remenyi et al., 2003; Yin, 2003) recommend that appropriate research strategy has to be selected based on research questions and objectives, extent of existing knowledge on the subject area to be researched, the philosophical underpinnings of the researcher, the extent of control the investigator has over actual behavioural events, and the degree of focus on contemporary or historical events. Various authors (e.g. Easterby-smith et al., 2008; Collins and Hussey, 2009; Saunders et al., 2009), posit that some of the common research strategies in business management include: Experiment, Survey, Case study, Action research, Grounded theory, Ethnographic study, Archival research, Social networks, Personal reflection, Participant Observation, Telephone Survey, Online Focus Groups, E-phone survey, Internet survey, Mystery shopper, Statistical/data analysis, Semi-structured Interview, In-depth Interview, Focus group, and Content analysis. The research strategies that have been used for this study include Survey and case study.

3.4.1 Survey

Pinsonneault and Kraemer (1993) defined a survey as a means for gathering information about the characteristics, actions, or opinions of a large group of people. To this end, conducting a survey involves identifying a specific group or category of people and collecting information from some of them in order to gain insight into what the entire group does or thinks (Leeuw, Hox and Dillman, 2008). Kramer (1991) identified three distinguishing characteristics of survey research; quantitatively describe specific aspects of a given population and involves examining the relationships among variables, subjective data is collected from people and it uses a selected portion of the population from which the findings can later be generalised back to the population. Saunders et al. (2009) associates survey with deductive approach and suggests that it can be used for descriptive and exploratory research. The survey was partly suitable for this research because it allowed standardised data in the use of its techniques (i.e. questionnaires). The use of questionnaires was partly applicable for this research in the case of collecting qualitative and quantitative data from tourism value chain organisations in Malawi in order to gather information on ICT investments, usage of ICT, barriers

and drivers to ICT usage, opportunities and challenges to ICT exploitation. The methodology for delivery was a self-administered questionnaire that was accompanied by a covering letter explaining the purpose of the study and who should complete it. Consequently, the constraints from a case study (Yin, 2003; Gable, 1994; Khotari, 2006) such as the inability to manipulate independent variables, risk of inappropriate analysis, lack of controllability, deductibility, repeatability, generalizability were minimized by a survey which is robust in those areas.

3.4.2 Case Study

It is an approach in which a particular instance or a few carefully selected cases are studied intensively (Gilbert, 2008). Yin (2003, p. 13) defined case study as an “empirical enquiry that investigates a contemporary phenomenon within its real-life context and especially when the boundaries between phenomenon and context are not really evident.” The case study strategy is of particular interest to gain a rich understanding of the context of the research and the processes being enacted (Morris and Wood, 1991). The case study is based upon the assumption that the case being studied is atypical of cases of a certain type and therefore a single case can provide insight into the events and situations prevalent in a group from where the case has been drawn (Kumar, 2010). Case study strategy was partly relevant to this study as it strove to secure in-depth information and data through interviews from various tourism enterprises. More significantly, as Chetty (1996) observes, utilising case study strategy led to the observation of new insights that did not emerge through the survey. Moreover, case study was utilised to provide an in-depth analysis of tourism enterprises in order to test their robustness in ICT usage, and further develop the framework. Finally, the case study strategy is compatible with the philosophical viewpoint of this research as propounded by Sexton and Barrett (2003) who argues that case study is associated with interpretivism paradigm. Moreover, the limitations of a survey either in the lack of responses from intended participants or in the nature of accuracy of the responses that are received (Bell, 1996) and respondents having difficulty in assessing their own behaviour or having poor recall, inflexibility to discoveries, minimum representation, neglect of context and situational complexity as described by Gable (1994) and Khotari (2006) were minimised by the case study.

3.5 Population and Sampling

Population and sampling are critical foundations in research that assist the researcher in determining, defining and providing direction to the research. Population is the full set of units or cases from which the sample is to be taken or selected (Bryman and Bell, 2011; Saunders et al., 2009) and clearly defines the set of objects, universe to be studied (Kothari, 2006). In the context of this research, population refers to all stakeholders in the tourism sector, namely, travel agents, tour operators, accommodation providers, insurance companies, transportation companies (air and ground), suppliers of food and beverages and the destination management organisation and owner/managers and employees in these organisations in Malawi.

Sampling is the process of selecting a few (a sample or section) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group (Kumar, 2010). Literature reviewed (Saunders et al., 2009; Kumar, 2010; Kothari, 2006; Bryman and Bell, 2011) identifies two types of sampling techniques, namely, probability or representative sampling and non-probability or judgemental sampling.

3.5.1 Probability Sampling

With probability sampling, the chance, or probability, of each case being selected from the population is known so that each unit in the population has an equal chance of being selected (Saunders et al., 2009; Bryman and Bell, 2011). Literature (Saunders et al., 2009; Bryman and Bell, 2011; Kumar, 2010) identifies the following types of probability sampling: simple random sample, systematic sampling, cluster sampling and stratified random sampling.

3.5.2 Non-probability Sampling

Alternative to probability sampling are non-probability sampling techniques which provides a range of alternative techniques to select samples based on the researcher's subjective judgment and is a sampling procedure which does not afford any basis for estimating the probability that each item in the population has a chance of being included in the sample (Saunders et al., 2009; Kothari, 2006). Examples of non-probability sampling techniques include quota sampling, snowball sampling, convenience sampling and purposive or judgmental sampling. For this study, Purposive sampling method was used.

Purposive sampling is where the primary consideration is the researcher's judgement as to who can provide the best information to achieve the objectives of the study and to select cases that will best answer the research questions (Kumar, 2010; Saunders et al., 2009). The advantage of purposive sampling is that it is extremely useful when the researcher wants to construct a historical reality, describe a phenomenon or develop something about which only a little is known (Kumar, 2010; Saunders et al., 2009). Purposive sampling was considered ideal for this research as it depended on the researcher's discretion to select case study organizations, tourism operators to whom the questionnaire was administered to and individuals who could provide the best information to achieve the objectives of the study and answer the research questions. The research involved only relevant tourism enterprises and the sample case study organisations included one organisation in each of the sectors of; **accommodation providers, travel agents, tour operators, food and beverages, vehicle hire companies, airlines, insurance companies, and the Malawi Tourism Board**. In addition, **96 accommodation providers, 7 travel agents, 8 tour operators, 22 food and beverages suppliers, 14 vehicle hire companies, 3 airlines, 12 insurance companies and the Malawi Tourism Board** were selected for the survey. This ensured the inclusion of all tourism operators that use ICT in their daily operations, those who make decisions in making investments in ICT, decision makers who decide which ICT

software and applications should be used. The designed questionnaire was presented to selected key decision makers.

3.6 Data collection techniques

Data collection techniques enable the researcher to obtain accurate and reliable information about the phenomenon under study (Saunders et al., 2007; Lethbridge et al., 2005). Several methods can be used to collect primary data. Interviews, observations, questionnaires and secondary data are some types of data collection techniques suggested by previous scholars (e.g. Kumar, 2010; Greene, 2008; Saunders et al., 2009; Kothari, 2006). For this study, questionnaires and interviews were relevant data collection techniques.

3.6.1 Questionnaires

In this research, the questionnaire was developed using the following process. Firstly, the conceptualisation and designing involved defining the subject or purpose of the study and the variables to be measured (Giesen et al., 2012; Brancato et al., 2006). The main variables considered included; levels of adoption, role and impact of ICT, investments in ICT, catalysts, drivers and barriers to ICT adoption, usage, levels of knowledge and skills in ICT usage by owner/managers and other employees in the sampled organisations, and advantages accruing from adoption and usage of ICT. Secondly, the respondents for the survey included CEOs, owners and senior managers of the selected organizations. Thirdly, was the designing of the questionnaire. In this process, the variables were translated into specific survey questions. Finally, the validation process was carried out by which the questionnaire was assessed for its dependability in line with Howard (2008). For the purpose of this study, the questionnaire was piloted on a sample made up of middle, senior ranked managers from the tourism industry for content, clarity and context. Thereafter, an identification of underlying components using principal components analysis (PCA) was conducted, to determine common themes in the questions that led to the revision of the questionnaire. The sample size for the intended questionnaire was made up of; 120 accommodation providers, 13 travel agents, 10 tour operators, 30 food and beverages suppliers, 20 vehicle hire companies, 4 airlines, 15 insurance companies, and the Malawi Tourism Board. The approach for data collection was a direct visit to the organization selected and having the respondent self-administer it. This approach was adopted to enhance the response rate and to develop an understanding of what is happening and to provide clarity where it was needed to the total sample.

3.6.2 Interviews

In reality, the research interview is a generic term for several types of interviews including structured interviews (which use questionnaires based on a predetermined and 'standardised' or identical set of questions), semi-structured interviews (researcher has a list of themes and questions to be covered, although these may vary from

interview to interview), or unstructured (researcher has complete freedom in terms of the wording to use and the way to explain questions to respondents), and in-depth interviews (Kumar, 2010; Saunders et al., 2009; Kothari, 2006). Semi-structured and in-depth interviews were used for this study to gather information from owners, senior managers and key decision makers of seven selected case organisations – one from each sector and the Tourism Board. Case study organisations were selected from across Malawi in order to be representative and inclusive. The seven case study organizations were chosen from medium sized companies as majority of tourism operators in Malawi are medium sized organizations with similar approach, strategies and policies concerning the use and exploitation of ICT. Interviews were conducted after the completion of quantitative data collection and analysis.

3.6.3 Secondary Data

According to Saunders et al. (2009), within business and management research, secondary data are used most frequently as part of a case study or survey research strategy. Secondary data for this research was collected through books, company reports, journals, industry publications, and government publications.

3.7 Data Analysis

Analysis of data in a general way involves a number of closely related operations which are performed with the purpose of summarising the collected data and organising these in such a manner that they answer the research question(s). Analysis involves editing, coding, classification and tabulation (Saunders et al., 2009; Khotari, 2006; Kumar, 2010). The processed data is then analysed using computation tools.

In this study, thematic analysis was used to analyse qualitative data because it offered a systematic, flexible and straight forward approach to analysing the data collected through interviews from the case studies. In addition, it offered a generic approach to analysing the case study organizations individually and collectively.

Quantitative data for this study was analysed using the following tools:

- Statistical packages for social sciences (SPSS) – a popular statistical computer program for analysing descriptive and inferential quantitative data from mainly surveys, available in click and point or command interface.
- Microsoft Excel – a Microsoft program for calculations, data analysis, graphing tools, pivot tables etc. Useful for storing, manipulation and organizing data.

3.8 Validity and Reliability

In order for assessments to be sound, they must be free of bias and distortion. Reliability and validity are two concepts

that are important for defining and measuring bias and distortion. Definitions of reliability and validity in literature reveal two strands. Firstly, with regards to reliability, whether the result is replicable. Secondly, validity, whether the means of measurement are accurate and whether they are actually measuring what they are intended to measure.

3.8.1 Reliability

Joppe (2000, p.1) defines reliability as "...the extent to which results are consistent over time and are an accurate representation of the total population under study..." and thus if the results of the study can be reproduced under a similar methodology, then the research instrument is considered reliable. Embodied in this definition is the idea of replicability or repeatability of results of the research. Kirk and Miller (1986) identify three types of reliability, which relate to: (1) the degree to which a measurement, given repeatedly, remains the same; (2) the stability of a measurement over time; and (3) the similarity of measurements within a given time period.

Testing reliability is a very important and key component in this research. To ensure that the results of this research are consistent over time, both qualitative and quantitative methods of data collection have been employed. The quantitative data collected allowed the researcher to deeply familiarize himself with the problem under study. As such, the emphasis was on collecting facts about the organizations' key elements in the exploitation of ICT and the quantification and summary of that information. On the other hand, the collection of qualitative data from case organizations expedited the process of validating and ensuring that the data collected from the survey was consistent over time. Secondly, the sample size comprised of 162 tourism value chain operators and the tourism board which was large enough to act as a representative of the entire tourism value chain operators. In addition, data was collected from senior executives and key decision makers from these organizations who provided accurate, consistent and up to date information on the various aspects of ICT exploitation under the study.

3.8.2 Validity

According to Joppe (2000) "validity represents whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow the researcher to "hit the bull's eye" of his/her research project?" Kerlinger (1973, p.5) points out that "the commonest definition of validity is epitomised by the question: are we measuring what we think we are measuring?" If the validity or trustworthiness can be maximized or tested then more "credible and defensible the result" (Johnson, 1997, p. 283) may lead to generalizability. Therefore the quality of a research is related to generalizability of the result and thereby to the testing and increasing the validity of trustworthiness of the research. As such, the ability to generalize findings to wider groups and circumstances is one of the most common tests of validity (Golafshani, 2003). On the other hand, Patton (2001) states generalizability as one of the criteria for quality case studies depending on the case selected and studied. To this end, validity is the strength of the researcher's conclusions, inferences or propositions.

This study applied triangulation as a strategy to control bias and to establish valid propositions for the study. As such, triangulation strengthened the study results and findings by combining methods for data collection, hence both qualitative and quantitative data methods were used. In addition, triangulation was used for confirmation and generalization of the research results. Since the aim of this research was to probe for deeper understanding of ICT exploitation than merely examining surface issues, constructivism facilitated this process. Constructivism holds the view that all knowledge is contingent upon human practices “being constructed in and out of interactions between human beings and their world, and developed and transmitted within an essentially social context” (Crotty, 1999, p.48 cited in Glofshani, 2003). Constructivism values multiple realities that people have in their minds. For this research to acquire valid and reliable multiple and diverse realities, multiple methods of searching and gathering data and information were employed. This therefore involved employing both survey and case study methods to collect multiple views from a wide range of key decision makers in the tourism value chain. In addition, constructivism adheres with the notion of data triangulation by allowing participants in a research to assist the researcher in the research question as well with data collection. In this study, the piloting of the questionnaire to a subset of tourism operators assisted in redesigning the research questions while the engagement of multiple methods to collect data including questionnaires, interviews and recordings led to more valid, reliable and diverse construction of realities. In addition, the composition and size of the sample for the study for both the questionnaire and interviews was a true and accurate reflection and representation of the key players in the tourism value chain and, as such, it can be inferred that the findings of this study can be generalized to the whole tourism sector in terms of ICT exploitation.

3.9 Ethics

Issues of ethics and accessibility are very crucial in any research project. The research for this study was conducted in accordance with the University of Bolton Ethical guidelines and followed a statement of principles and procedures for the conduct of the research provided by the University of Bolton code of ethics, RE1 was considered at the beginning of the study and was submitted at R1 stage of the study.

Chapter 4: Data Collection and Analysis

4.1 Introduction

This chapter is aimed at presenting data collection, analysis and findings of the study. To this end, it is structured in such a way as to provide:

- Strategies for data collection;
- Qualitative and quantitative data analysis;
- Response to research questions and objectives; and
- A reviewed conceptual framework of the study.

4.2 Analysis of Quantitative Data

4.2.1 Sample Profile and Analysis

The sampling frame consisted of 240 accommodation providers, 50 food and beverages, 25 vehicle hire companies, 20 insurance companies, 55 travel agents, 18 tour operators, 4 airlines and the tourism board. The sample was identified based on the Malawi Tourism Council's (MTC) database of tourism operators in the country. The MTC is the officially recognised representative of registered tourism operators in the country, hence its use in the study. Purposeful sampling technique, which depended on the researcher's discretion to obtain a sample of convenient elements, was used to select a sample for the study.

4.2.2 Method of Data Collection

The researcher designed one set of questionnaire for staff in key management positions (Owners, CEOs, General and Operations managers, etc.) across the country. This was intended to generate data in the areas of ICT strategy, equipment and applications being used, catalysts and drivers of ICT adoption and exploitation, ICT usage, main barriers to and benefits of ICT adoption and exploitation, and financial investments in ICT.

At the beginning of the data collection exercise, the researcher sent the questionnaire by email to the targeted tourism value chain operators as indicated in Table 7.

Table 7: Responses from e-mail Survey

Tourism Value Chain Player	No. of Questionnaires sent	No. of responses	Per centage of response
Accommodation provider	140	5	3.6%
Food & Beverages	30	1	3.3%
Vehicle hire	15	0	0%
Insurance	15	1	6.7%
Travel agent	10	0	0%
Tour operator	6	1	16.7%
Airline	3	0	0%
Tourism Board	2	0	0%

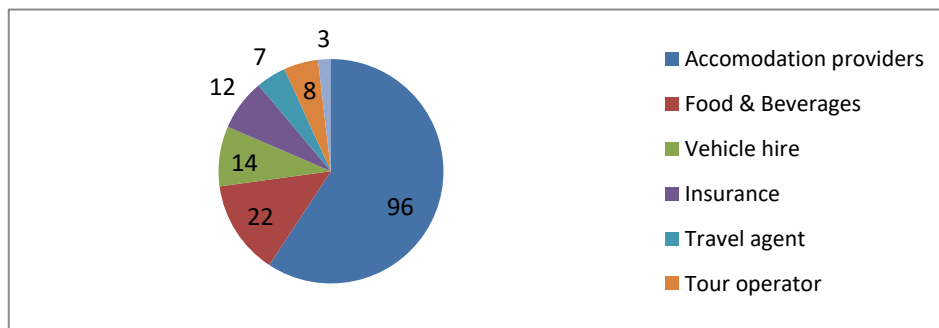
The response rate was extremely low and the researcher had to change tactic to ensure that a representative and accurate sample size was reached which would make the results and findings of the study reliable and valid. To this effect, the researcher decided to utilise purposive sampling to collect data and used his discretion to select the tourism value chain operators and cases that would best answer the research questions and could provide the best information to achieve the objectives of the study. Resultantly, 206 tourism operators were selected to participate in the study. The process of data collection took six weeks to complete and the total number of respondents included 96 accommodation providers, 22 food and beverages, 14 vehicle hire, 12 insurance, 8 tour operators, 7 travel agents and 3 airlines as portrayed in Table 8.

Table 8: Respondents from Survey

		Position							Total No. of Questionnaires sent	Actual Responses	% of response rate
		Operations manager	General Manager	Customer relationship manager	Reservations/Travel Consultant	IT Specialist	Owner/MD/CEO	Other			
Tourism value chain operator	Accommodation provider	26	25	10	12	5	5	13	120	96	80%
	Food & Beverages	9	6	0	1	2	3	1	30	22	73%
	Vehicle hire	7	1	1	2	1	1	1	15	14	93%
	Insurance	3	3	0	1	3	2	1	15	12	80%
	Travel agent	1	1	0	4	0	1	0	10	7	70%
	Tour operator	2	3	1	1	0	1	0	10	8	80%
	Airlines		2	1	0	0	0	0	4	3	75%
	Tourism Board	0	0	0	0	0	0	1	2		50%
Total		48	41	13	21	11	13	17	206	162	

A total number of 162 operators responded out of 206, representing a 78.6% response rate. According to Chin (1998) the number of respondents should be 10 times the number of items in the largest scale. Based on the questionnaire, a minimum of 80 responses was required as the number of items in the largest scale was eight. Apart from the Tourism Board which had 50% response rate, all the other tourism value chain operators had a response of over 70% with vehicle hire companies having the highest rate of response, followed by accommodation providers, insurance and tour operators and finally food and beverages, travel agents and airlines. Respondents had to meet three conditions to be selected for the study. Firstly, they were part of top management and actively involved in making decisions on ICT. Secondly, they were conversant with the ICT systems in the organization. Finally, they were located at the head office of the organization. These conditions enabled the researcher to obtain information from informed respondents and to meet the objectives of the study. Figure 19 provides a summary of the number of questionnaires responded to per tourism operator.

Figure 19: Summary of respondents to the questionnaire



The collected data was analysed in relation to the components of the conceptual framework, i.e. insurance, vehicle hire, tourist site operators, food and beverages, accommodation providers, airlines, tour operators, travel agents and customers.

4.2.3 ICT Strategy in the Tourism Value Chain

The study found out that 85% of Accommodation Providers, 88% of Tour Operators, 67% of Airlines, 90% of the Food and Beverages, 100% of Insurance companies, 86% of travel agents and 93% of Vehicle hire companies under study have some formal (written) ICT strategy that they are using as a road map to navigate through the coming years so as to remain competitive in a globalized world. Whilst the formal or informal nature of such strategic thrust is important, the significance of this finding is that there is a realization amongst the management of tourism value chain players in Malawi that ICT is an important resource that needs to be managed and thereby enabling them to enhance their competitiveness and gain comparative advantage. The study suggests that the level, extent, and sophistication of ICT strategy varied amongst the participants, and there is clear evidence that

there is room for improvement. There was some realization of the importance of ICT as a resource by companies who do not have a formal ICT strategy, including the Tourism Board; nevertheless for various reasons the progress of these companies was limited in relation to the exploitation of ICT.

- **Accommodation Providers**

The majority of respondents (just over 85%) mentioned that they have an ICT strategy which mainly provides strategic direction to future investments in ICT that will be required to ensure that they remain relevant in the ever changing business environment. In most cases, the strategy was developed through consultations between key staff from all departments and top management and incorporated as part of the overall strategic plan for the organization. Having reached a consensus on the way forward, the ICT department or the operations manager usually was tasked to ensure that the strategy is implemented according to what was agreed, with supervision from the head of operations or human resources manager. The strategy was implemented by monitoring the annual review of key success factors to ensure that they were being followed. About 80% of the respondents mentioned that they had an ICT department whilst the rest did not have. Top management is instrumental in making ICT decisions for the company with active involvement of key staff.

- **Food and Beverages**

Nine out of ten companies in this sector said they have an ICT strategy and almost all of the respondents mentioned that it involved aligning their ICT requirements with what the owners of the companies want. More often than not, the strategy was developed by the Franchiser or owners of the company without consulting the franchisee or local staff. As a result, the Franchiser bears the responsibility of implementing the ICT strategy. None of the companies had an ICT department as all ICT decisions are centralised.

- **Vehicle Hire Firms**

The majority of car hire firms have an ICT strategy which mainly revolves around effective fleet management and tracking to ensure that the necessary technologies are in place. Since the installation and management of fleet management systems are outsourced, the ICT strategy aligns itself with what the service providers recommend and hence its development is greatly influenced by their recommendations. The implementation of the strategy is left to the service providers with oversight being provided by the fleet/operations manager. More often than not, the implementation involves acquiring state-of-the art vehicle tracking systems and supporting equipment and software and staff training on how to use it. Interestingly, the majority have an ICT department whose main function is to monitor vehicle movement and conduct routine servicing of the system.

- **Travel agents**

Eighty five per cent of respondents mentioned that they have an ICT strategy and it is mainly used to ensure that

the organization has the necessary and required ICT equipment and systems to meet industry standards. All respondents mentioned that the ICT strategy is mainly developed by the providers (such as Amadeus, Travelport) of the ICT equipment and systems who have business interest to ensure that all travel agents have the required systems to connect to principals and other intermediaries since they get paid by principals such as airlines for the use of their systems. To this end, these systems providers ensure that the strategy is implemented according to industry requirements. None of the travel agents have an ICT department and decisions concerning ICT are generally made by the systems providers who also happen to provide the equipment and systems.

- **Tour Operators**

Eighty eight per cent of respondents mentioned that they have an ICT strategy in place which is predominantly focused in making investments in ICT equipment and systems that will ensure that they are in line with principals', other intermediaries and suppliers' ICT needs. The majority mentioned that the strategy was developed through consultations between owners, top management and key staff within the organization and mutually they agreed on key trends that are influencing the industry and what ICT equipment and systems can assist them to align to this market and industry need. More often than not, the strategy is being implemented through on-going monitoring of key milestones set to ensure that they are met and its implementation is generally the responsibility of top management with overall oversight by owners of the firm. Except for three of the respondents who have an ICT department of 1 person each, none of the other firms have an ICT department and the key decisions in ICT are generally being made by owners in consultation with top managers and key staff.

- **Insurance Companies**

All the respondents mentioned that they have an ICT strategy and considerable investments are being made or are in the pipeline in ICT. The strategy for all the companies is part of their overall strategic business plan and aims at providing the necessary financial, human and technical resources to ensure that the firm's ICT is in line with industry and market developments. All insurance companies in the study are medium to large-scale firms and the development of the ICT strategy is an organizational responsibility involving top managers and key staff as part of the company strategy. The implementation of the strategy is the responsibility of the Chief Executive Officer or Managing Director (60%) while the rest the onus falls on the Operations Directors. The ICT manager in most cases has been given the authority to ensure that whatever has been agreed upon in the strategy must be adhered to and implemented. To this end, implementing the ICT strategy involves the acquisition and installation of the necessary ICT equipment and systems and training staff.

- **Airlines**

The airlines in the context of this thesis refer to national and regional carriers operating in Malawi. Two out of the four airlines operating in the country mentioned that they have an ICT strategy mainly aimed at ensuring that the airlines are able to be in synch with developments in the industry and also to meet IATA regulations and standards.

For three of the airlines whose head offices are outside the country, their strategies were developed at headquarters and the local office was instructed on how to implement it. However, for the local airline, the strategy is aimed at making the required investments in ICT equipment and systems such as GDS and CRS which will meet industry needs in the future. The strategy was developed internally by management and staff and involved consultations within and outside the company on the future trends, customer and partner needs. The strategy is being implemented by all divisions within the company and is being spearheaded by the Commercial Manager. It has an IT officer responsible for maintenance and servicing of the equipment and upgrading the systems.

- **Tourism Board**

The board does not have an ICT strategy in place since the overall government ICT strategy is under the e-government department. However, ICT is a very important component of its daily business. Decisions about ICT are left to individual section heads and the Director has the overall responsibility of making key decisions on ICT.

4.2.4 Systems, Drivers, Usage and Benefits of ICT by Tourism Value Chain Players

To align the findings with objectives 2 and 3, the study investigated the ICT systems that are currently being used by each of the tourism value chain actors, the factors driving the exploitation of ICT, the main uses and benefits of ICT exploitation in each value chain player. This section provides a detailed analysis of these variables as unravelled from the data collected.

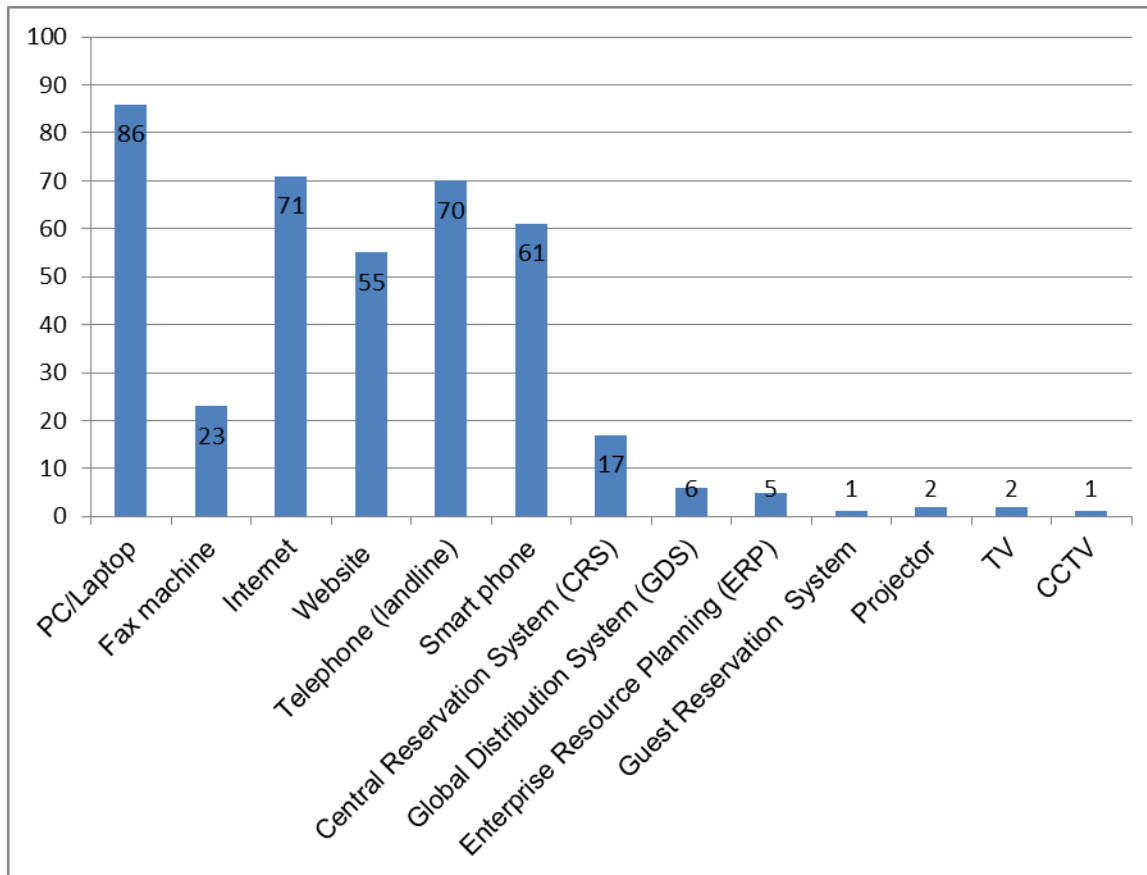
4.2.4.1 Accommodation Providers

- **ICT Systems and Applications**

From the data collected, 91% of accommodation providers have a PC and/or laptop which reflect the basic use of ICT equipment (Figure 20). As such, the high usage of the PC and Laptop equipment denotes the increased awareness by businesses in the sector of the importance of ICT.

Only 24% of accommodation providers are utilizing the fax as a medium of communication. What this denotes is that the Fax machine has lost its dominant position that it had in the 1980's as the main mode of communication among accommodation providers and has been overtaken by the more advanced ICT applications.

Figure 20: Systems and applications for ICT exploitation for accommodation providers



The Internet is being used widely by the accommodation sector as indicated by 75% of respondents. The sales of tourism products such as air tickets, hotel rooms and last-minute holiday packages are the most common products sold via the Internet. The Internet is undoubtedly the cheapest, most convenient and efficient way to address global and potential customers in the majority of African countries (Arlt, 2003). The numbers of Internet users continue to grow exponentially with developing countries reporting bigger increase (Tan et al., 2009). New trends are emerging as industry value chains become increasingly sophisticated and global and therefore the competitiveness of accommodation providers increasingly depend on their capacity to connect better and do business with other enterprises to integrate into global value chains and thus become international business partners. To this end, the Internet provides accommodation providers with a means of reaching end users and being reached by them while internal processes such as collaboration, sales and marketing (e-marketing), service and e-learning are optimized/streamlined using Internet technologies (Milutinovic and Patrcelli, 2010). Despite this relatively high uptake in Internet usage, one in every five accommodation providers under this study is not using the Internet. This is mainly attributed to inadequate ICT infrastructure and lack of local and relevant Internet content and e-services that may be useful to organizations in rural areas.

The telephone, both landline (74%) and smart phone (64%), is an important ICT resource which accommodation

providers mainly use as a communication tool to reach a wide range of tourism players. The fact that the telephone is widely used by accommodation providers in Malawi is an indication of the growing importance of communication in this sector. However, 26% and 36% of respondents respectively are not using the landline and smartphone mainly due to inadequate communication infrastructure and expensive connectivity charges.

The website is a very important ICT application for just over half (58%) of accommodation providers under this study. A website is critical as a tool to communicate with a large number of customers in a variety of geographical settings, distribution of product information to them, and information can be accessed to the same degree by industry players. However, for a website to be effective, it must be able to collect, measure, report, and analyse data and report traffic and behaviour with the end goal of optimizing the success of the particular site (Tutorials point, 2018; GeoTrust, 2018). This can be achieved through website analytics which is normally carried out to analyse the performance of a website and optimize its web usage. All analytics tools work by collecting raw data about an organization's visitors and organizing it in a way that's easier to view and understand. According to Tutorials point (2018), by using web analytics, organizations can:

- Assess web content problems so that they can be rectified;
- Have a clear perspective of website trends;
- Monitor web traffic and user flow;
- Demonstrate goals acquisition;
- Figure out potential keywords;
- Identify segments for improvement; and
- Find out referring sources.

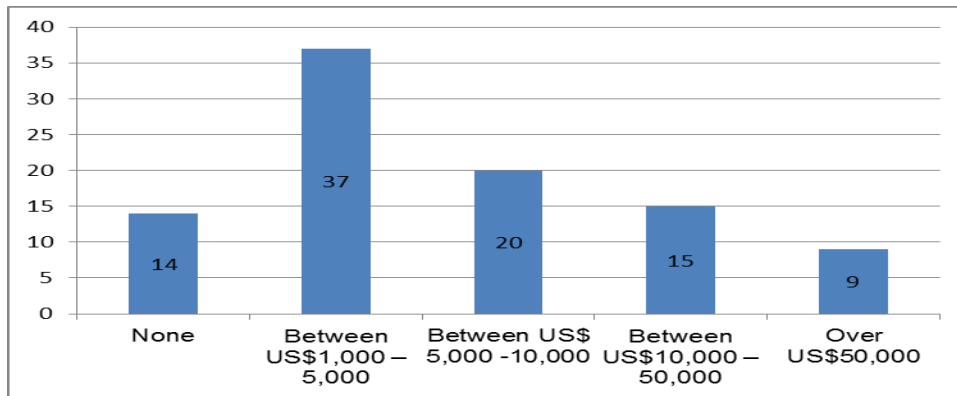
By providing deep insight into; who, what, when, why and how of website traffic and visitor behaviour, web analytics tools can help an organization improve the usability of its site and boost sales. Web Analytics is therefore an on-going process that helps in attracting more traffic to a site and thereby increasing the return on investment. Ultimately, the main objective is not just to have a website but, more significantly, create a website where visitors want to browse and buy.

For accommodation providers who responded as having a website, they mentioned that their website was interactive and had the capacity to monitor the flow of traffic and induce customers for repeat sales. However, considering the critical importance of having a web page for marketing purposes and to reach global audiences, the figure is relatively low and shows that the sector in Malawi needs to up its game if it has to reach wider global audiences and use the website as a marketing tool. Linked to the website is the use of social media which has taken off in a very big way in Malawi. All respondents in this study mentioned that they had presence on social media especially Facebook and WhatsApp, while 60% had Instragram and 20% had a twitter handle. The proliferation of social media as a marketing tool cannot be underestimated.

There is relatively low uptake of more sophisticated applications such as Central Reservations System (18%),

Global Distribution System (6%) and Enterprise Resource Planning (5%). CRS and GDS have increasingly become key ICT tools for accommodation providers globally. CRS/GDS demonstrate an “Intel inside” marketing strategy by linking to major tourist websites to increase transaction volume. With the aid of ICT applications, prospective tourists can view a destination, book accommodation, and pay without leaving their homes (Waghmode and Pallavi, 2012). The low adoption levels of GDS, CRS and ERP reflects the limited exploitation of more advanced systems by Malawian accommodation providers due to limited investments in these sophisticated applications, as depicted in Figure 21.

Figure 21: Investments in CRS, DGS and ERP by accommodation providers

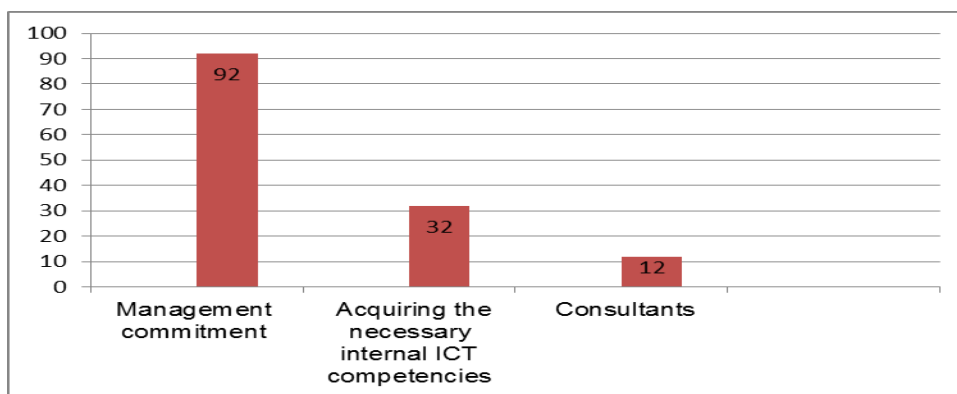


An ERP application, for example, can cost in the range between USD50, 000 to USD350, 000 depending on the level of integration, sophistication, the number of licenses, size of the company, and number of modules used. As illustrated in Figure 21, only 6% of accommodation providers in Malawi have investment of over USD50, 000 in ICT in the financial year 2017/18 with the majority (45%) investing between USD1, 000 to 5,000.

- **Factors affecting ICT exploitation**

The research explored the main factors that are catalysing the exploitation of ICT in the accommodation sector as depicted in Figure 22.

Figure 22: Factors affecting ICT exploitation among accommodation providers



Management commitment is very important for the exploitation of ICT for the majority of accommodation providers. Management commitment relates to the power and influence owners and top managers have on the adoption and exploitation of ICT in their businesses. Owners/managers provide leadership, direction and influence on what their organizations should do, buy and/or use and therefore they influence and control the adoption of ICT. As such, there is direct correlation between the extent of exposure to and knowledge of ICT by owners/managers and ICT adoption and exploitation in an organization. The greater the level of awareness to the strategic significance of ICT by owner/managers is likely to lead to higher levels of ICT acceptance and exploitation within the organization. This has a direct link to the acquisition of the required ICT infrastructure and hiring of specialists.

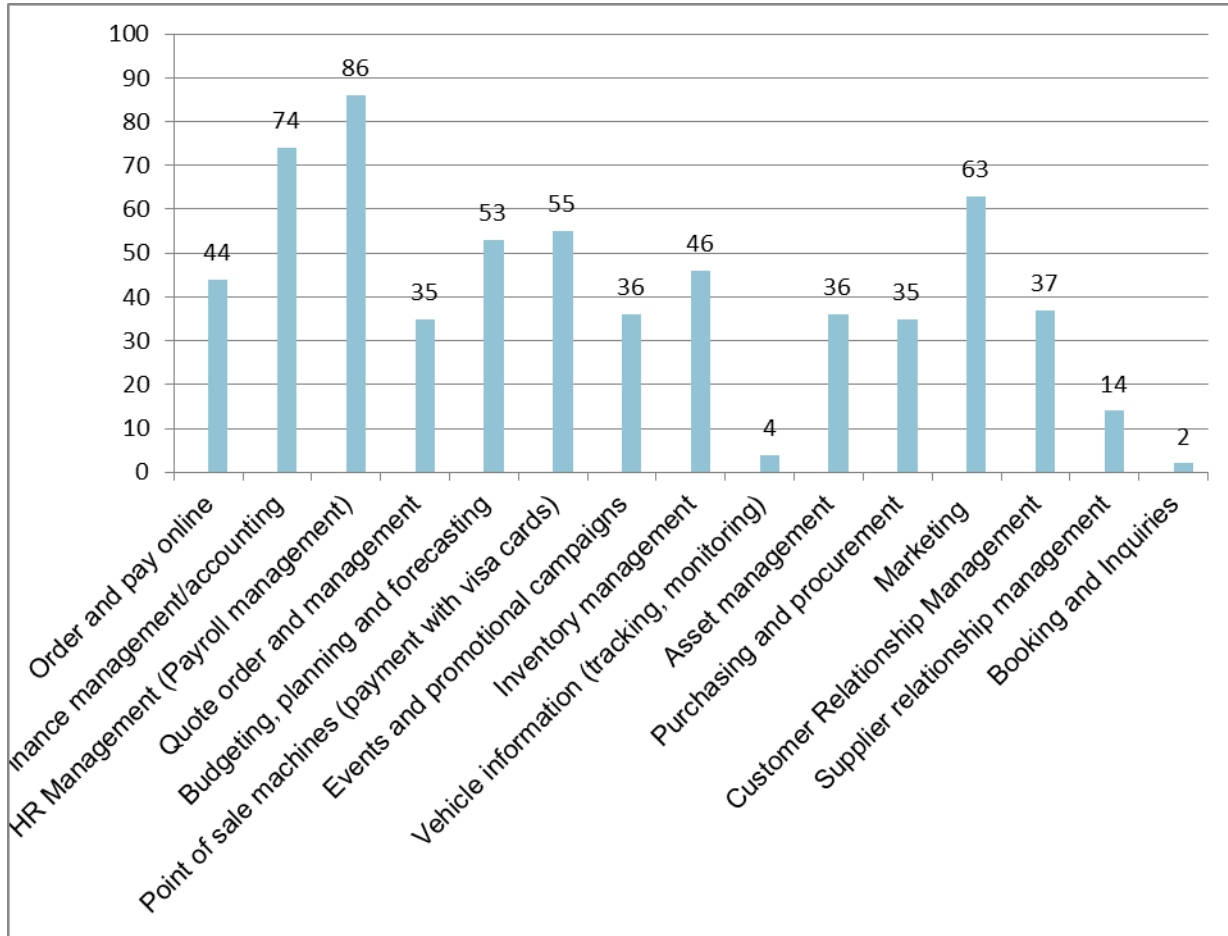
The acquisition of the required internal ICT competences was mentioned by 32% of respondents as a key factor. This fact points to the presence or absence of planning for ICT within an organization. Accommodation providers that have formal planning and strategies for ICT adoption are likely to include ICT in their business activities and the converse is also true and therefore lack of formal short/long term plan may result in low ICT adoption. Consultants are used by accommodation providers (12%). Because the majority of accommodation providers are SMEs and considering the large sums of money that consultants charge for their services, the cost to hiring them is way above reach of the majority of accommodation providers.

- **Usage of ICT by accommodation providers**

From the data collected, it has been revealed that ICT is being used for multiple functions by the accommodation sector in Malawi (Figure 23). Almost nine out of ten of the respondents (86%) mentioned that they are using ICT for human resources management (HRM). Companies are able to streamline their HRM functions by utilizing ICT applications that enables them to effectively and efficiently manage their human resources. This is a key finding, since most accommodation providers have relatively large staff in various departments and the use of ICT in HRM is very important. Organizations are taking cognizance of the implications of e-HRM where, for example, jobs can be posted online and candidates can apply for the jobs via the Internet.

Almost three out of four respondents (74%) mentioned using ICT for financial management and accounting purposes. There are numerous software applications that organizations are using to enhance their capacities, *Inter alia*, SAGE X3, EPICOR, INTACCT, SYSPRO 7, IFS Application. These are being used for budget management, cash flow, e-invoicing, general ledger, payroll, advanced budgeting and planning, automating inter-entity transactions, estimating and quoting and forecasting by accommodation providers. The implication of this finding is that this sector in Malawi has generally automated its financial management and accounting processes, thereby increasing efficiency of operations and increasing competitiveness of the industry.

Figure 23: Usage of ICT by accommodation providers



Marketing products and services (63%) is another major usage of ICT by accommodation providers. This is a very important finding for the sector. ICT facilitates new ways to expand markets, to attract and retain customers by tailoring products and services to their needs, and to restructure their business strategy to gain competitive advantage (Gratzer and Winiwater, 2004). Moreover, ICT enables travellers to access reliable and accurate information as well as to make reservations in a fraction of time, cost and convenience required by conventional methods (Wahgmode and Jamsandekar, 2012; Buhalis and O'Connor, 2005). To this effect, ICT-supported, consumer-centric, flexible service delivery is critical as it greatly enhances greater flexibility, efficiency and quickness in responding to consumer requests as well as to offer ICT tools and mechanisms for product customization. As such, ICT assist customization of service quality and contribute to higher guest satisfaction. To achieve customer centricity, accommodation providers are integrating their ICT systems for both recording customer reaction to stimulus and also to allow consumers to customize their desired products to personal preferences. ICT is also assisting in providing immediate customer feedback that allows them to react fast to customer demands and recognize new market niches.

Over half of the respondents mentioned that they are using ICT for point of sale (POS) machines (paying with credit/debit cards – 55%) and for budgeting, planning and forecasting (53%). Payment using credit or debit cards has become the norm as tourists do not want to carry large sums of cash on them while in the destination. In addition, considering that tourists do not have local currency, payments using POS is important to streamline online payments. However, although 55% of respondents have POS machines, there is need for the financial services sector and accommodation providers to collaborate to ensure that the majority have POS machines and that they are functional.

Budgeting, planning and forecasting are very important business processes for the accommodation sector. The use of property management systems (PMS) for reservation and yield management system via single-image inventory, guest accounting, call centres and CRS, public broadcast exchange (PBX), restaurant reservation and table management systems are elements of the hotel industry that need careful planning and forecasting in order to effectively allocate resources.

Inventory and asset management is a very important business process in the accommodation industry as they have to maintain and manage large records and registers of inventory and assets. The study has discovered that 45% of respondents are using ICT in inventory management while only 36% are using ICT to manage their assets and this denotes that the other 55% and 64% respectively are manually managing their inventory and assets. These are mainly smaller lodges and guesthouses that cannot afford to invest in these ICT applications.

Ordering and paying online was reported by 44% of the respondents as an important activity that requires use of ICT. Considering the globalization of the financial system and the increase in e-commerce in B2B and B2C, online transactions have increased. Accommodation providers interact with other businesses in the tourism value chain such as transportation providers (airlines, vehicle hire), insurance companies, travel agents and tour operators, food and beverages providers, and airlines. In addition, they also transact with guests and customers to restaurants and most of these pay online. Fifty six per cent of respondents do not have the technology in place where other businesses and customers can order and pay online mainly because e-commerce is in its infancy in Malawi.

Other functions that are used by a third of the accommodation providers in Malawi include customer relationship management (CRM) (37%), conducting events and promotional campaigns (36%) to market their services, managing quotes and orders from customers (35%), and purchasing and procurement (35%).

The essence of CRM is to ensure that accommodation providers stay closer to their customers. This is to facilitate the easiness by which customers contact the organization and in assisting them to make the right choices. This is achieved by providing the right level of information, advice and guidance; improve customer reception such as handling efficiently customer enquiries, replying to customer enquiries within agreed time scale; keeping customers informed of progress at all times and setting up procedures for handling problems via ICT such as fax, email,

telephone, website, etc. To this end, those accommodation providers using ICT for CRM are able to keep track of customers and establish a two-way communication with them.

Regarding events and promotional campaigns, ICT is critical in raising the profile of the accommodation providers through online outreach campaigns to their customers. In addition, the Internet takes their products and services to customers in a high impact but cost effective manner. Hence exploiting ICT assists them to bring their products and services closer to their customers.

Accommodation providers solicit quotes and orders for procurement from suppliers and providing quotations to customers. To this end, ICT is not only being used to generate quotes and manage orders but also to provide quotes to customers. Purchasing and procurement is a very important aspect for accommodation providers as they interact and manage their supply chain. The use of ICT in procurement and purchasing reduces order lead-time and purchasing costs; speeds up requisitioning, bidding, supplier selection, and order placements. Moreover, ICT is facilitating closer relationships with customers and suppliers.

Despite making headway in the above processes, the majority (over 60%) of respondents are not fully utilizing ICT for CRM, order and quote management, promotional campaigns and in procurement – mainly because they are SMEs, their location (rural based or in remote places), or lack of investments in ICT. Considering the significance of these processes in terms of customer and supplier interaction, a lot of work has to be done to upgrade to international standards. This will require deliberate strategies by the sector in investing in competent human and technical resources.

- **Benefits accrued from ICT exploitation**

The exploitation of ICT by accommodation providers delivers them with numerous benefits as illustrated in Figure 24.

Nearly three in four of the respondents mentioned cost savings and quick response to markets, customers, and suppliers as the main benefits from ICT exploitation. In terms of cost savings, property management systems (PMS) were introduced to facilitate the front office, sales, planning, and operation function in accommodation providers. PMS refers to the software solution to support all basic activities involved in the day to day operations of accommodation establishments and can also centralize the interconnectivity between systems within the organization (Seggitur and CICTourGUNE, 2014). This is achieved by administering a database with all reservation, rates, occupancy and cancellations, thus managing the hotel inventory (Bethapudi, 2013). Bookings through the web are a common feature and are convenient for customers. In addition, consumers increasingly expect ICT facilities such as high speed Internet, digital television and data ports in their rooms. Further, integration between PMSs and hotel CRSs has improved efficiency through reduction in personnel and minimizing the response time to both customers and management requests. All these assist the accommodation provider to reduce costs - both

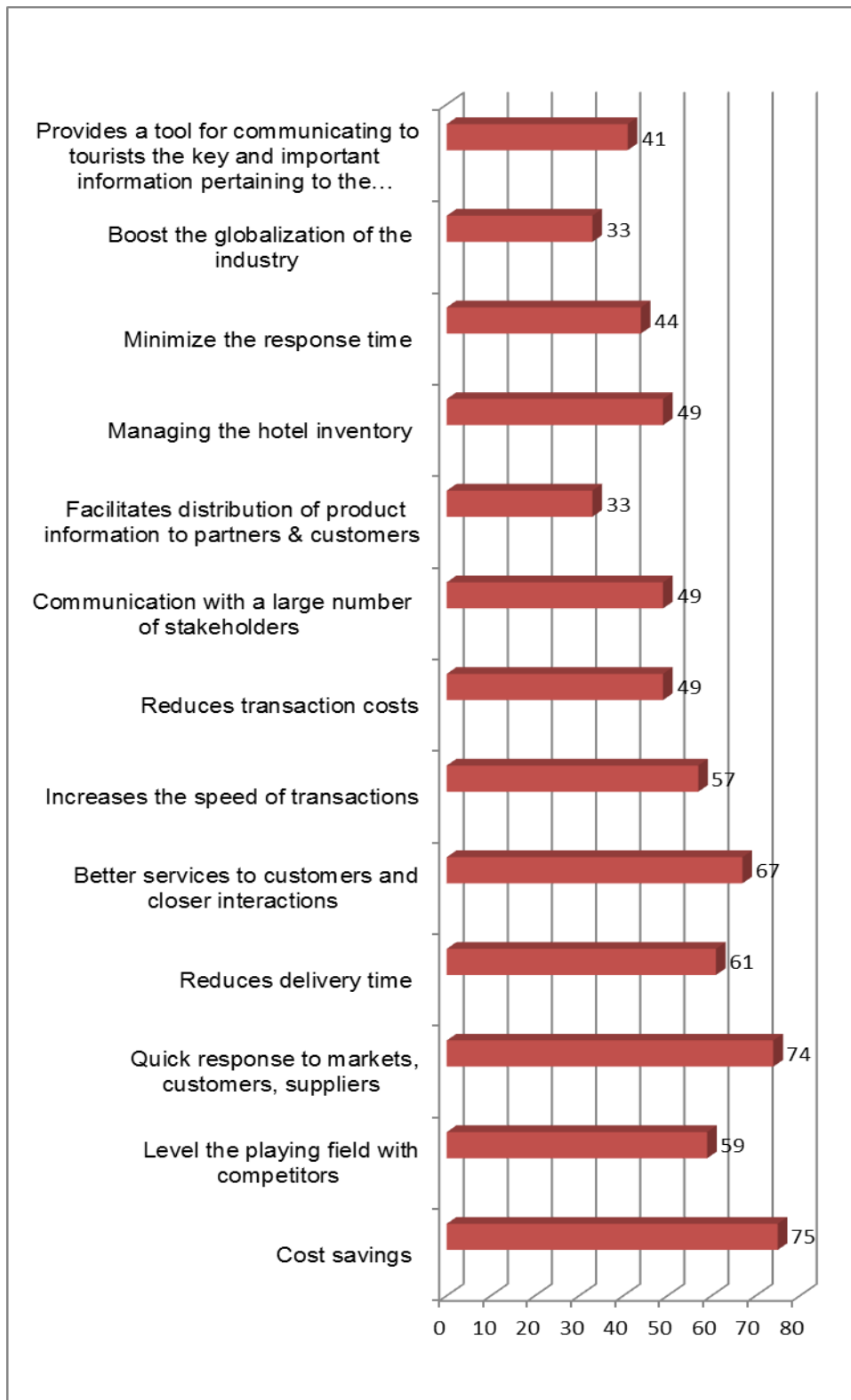
overheads and operational. The increased capacity to reduce costs creates room to manoeuvre to reduce the price for customers, thereby creating a competitive edge for the accommodation provider.

ICT exploitation facilitates quick response to markets, customers and suppliers for accommodation providers through booking solutions that enable prospective tourists to view a destination, book accommodation, and pay without leaving their homes. The ease in booking mechanisms for the accommodation provider increases the efficiency of the system for users and this creates a competitive advantage for the company. In an industry that is competing for the same visitors, those firms that are exploiting ICT have a comparative advantage over their counterparts who are still using bricks and mortar to conduct business.

In the same vein, ICT exploitation facilitates quick response to markets as they can respond immediately to queries, bookings and are able to provide general information on their services and prices to markets globally hence enabling them to effectively compete on a global scale despite size and/or location. This ability to be competitive opens up opportunities for them to be integrated into the global tourism value chain whose main lead firms include international airline carriers, cruise lines, global tour operators, and multinational hotel brands. As a result, investing in technological infrastructure and systems by Malawian accommodation providers is critical. The benefits are numerous, including: access to global markets, visibility on renowned global brands that are trusted by tourists, and able to tap into the vast network of established online travel agents that are globally dispersed. All this increases the competitiveness of the accommodation provider to attract tourists - increasing the number of visitors and thereby generating increased revenue and improved profits.

Respondents to the study also mentioned that ICT provides opportunities to offer better services to customers and to have closer interactions with them (67%) and also facilitates reduction in delivery time of goods and services (61%). ICT has provided new tools and enabled new distribution channels, thus creating a new business environment that opens novel opportunities for accommodation providers to provide products and services to their customers in a customized manner and at their convenience. On the flip side, tourists are also exploiting ICT to obtain information about the accommodation provider: the services they offer, pricing, and get feedback from others online on their views of the service provider. All this means that, as Waghmode and Jamsandekar (2013) points out, ICT tools have facilitated business transaction in the industry by creating networking opportunities with global customers, capacity to distribute products and services and providing information to customers across the globe. Malawian accommodation providers that have invested in ICT are able to offer quality services to customers and establish closer links with them through constant communication on value adding services, promotions, linkages with other global tourism players, pricing and other ancillary services and benefits. At the same time, the exploitation of ICT opens up opportunities to provide accurate information in real-time to customers across the globe. All this creates competitive advantage for these firms.

Figure 24: Benefits accruing from ICT among accommodation providers



Levelling the playing field with competitors (59%) especially by smaller firms and those located in developing countries and the capacity to increase the speed of transactions (57%) were mentioned by respondents as other key benefits of ICT exploitation. The findings suggests that irrespective of the size and/or location of the accommodation provider, the use of ICT provides opportunities for them to reach out to customers across the globe, market their products and position their services in the same manner like their larger counterparts in cosmopolitan cities or developed countries. ICT exploitation, therefore, provides a competitive edge for small firms and those from developing countries such as Malawi to upgrade within the global tourism value chain. Upgrading refers to “a process of improving the ability of a firm or an economy to move to a more profitable and/or technologically sophisticated and skill-intensive economic niche” (Gereffi, 1999, p. 51). ICT facilitates this upgrading as it allows firms to directly market their services, cut out global intermediaries, and efficiently handle their own reservations.

ICT exploitation improves information and knowledge management inside the firm and can reduce transaction costs and increase the speed and reliability for both B2B and B2C transactions. Moreover, ICT exploitation makes communication within the firm faster. Internet-based B2B interaction and real-time communication facilitates the reduction of information asymmetries between buyers and suppliers and build closer relationships among trading partners (Moodley, 2002). To this end, for accommodation providers, e-commerce reduces transaction costs, increase transaction speed and reliability, and extract maximum value from transactions in the tourism value chain. This is achieved through faster communication with their suppliers and intermediaries such as tour operators and travel agents. Additionally, business processes such as invoices, payments, receipts to and from suppliers and other value chain partners are conducted faster and instantly.

Forty nine per cent of respondents mentioned that ICT exploitation reduces transaction costs, facilitates communication with a large number of stakeholders and assists in the management of the hotel inventory.

For accommodation providers, exploitation of ICT in marketing services and products to a large number of clients greatly eliminates processing errors which translates into less wasted time solving order and invoice problems. Moreover, ICT enables reduction in labour and other costs in many areas, including: document preparation, reconciliation, mail preparation, telephone calling, data entry, and overtime and supervision expenses. Thus ICT exploitation helps manage operating costs in many areas, thereby reducing the cost of individual transactions. The use of email and electronic invoicing are a tremendous savings over the traditional methods. For those accommodation providers that have adopted and are exploiting ICT in Malawi, they are accruing these benefits, thereby streamlining their operations, increasing efficiency levels and greatly enhancing their competitive edge vis a vis their counterparts that have not yet invested in ICT.

Communication with partners, suppliers and other tourism value chain players is very important for accommodation providers and ICT exploitation unlocks this. They are able to utilize advanced communication technologies to reach

global partners and customers. This enables B2B via electronic mail, voice mail with videoconferencing, data conference, teleconferencing and electronic exchange of data which enables them to communicate with suppliers, partners, customers, intermediaries and other tourism partners speedily and in real-time. With this in mind, exploitation of ICT is used as a strategic tool for these companies to enhance their competitive advantage at a time when uncertainty is increasing in the global tourism industry.

The main benefit of ICT exploitation in inventory management has been the simplification of the buying process of inventory as it has become more efficient. In addition, ICT has facilitated reducing inventory costs, increased compliance with procurement laws and regulations, and providing better access to information through a standardized purchasing process and has also contributed to reduced paperwork for accommodation providers. We can infer from the foregoing that ICT exploitation augments the competitive advantage of accommodation providers as they are able to effectively manage their inventory systems in comparison to their counterparts who are not using ICT.

ICT exploitation was mentioned by two in every five (41%) of respondents as a tool that facilitates communication to tourists key and important information pertaining to the destination. The more tourists come and visit the country, the more business is generated by accommodation providers and other tourism operators. Therefore, the tourism board can use ICT to a) widely dispatch information about the accommodation providers: their offerings, products, services and structure it for presentation to global intermediaries, principals, and tourists to help the local businesses to reach new markets and b) create and sustain electronic platforms and markets on behalf of the accommodation providers. In this way, ICT enables accommodation providers to gain efficiency and effectiveness in their everyday tasks, by allowing for the integration of the different resources, products and services that the destination embodies. These resources and products include real-time reservations, destination management tools, and paying particular attention to supporting small and independent accommodation providers.

4.2.4.2 Food and Beverages

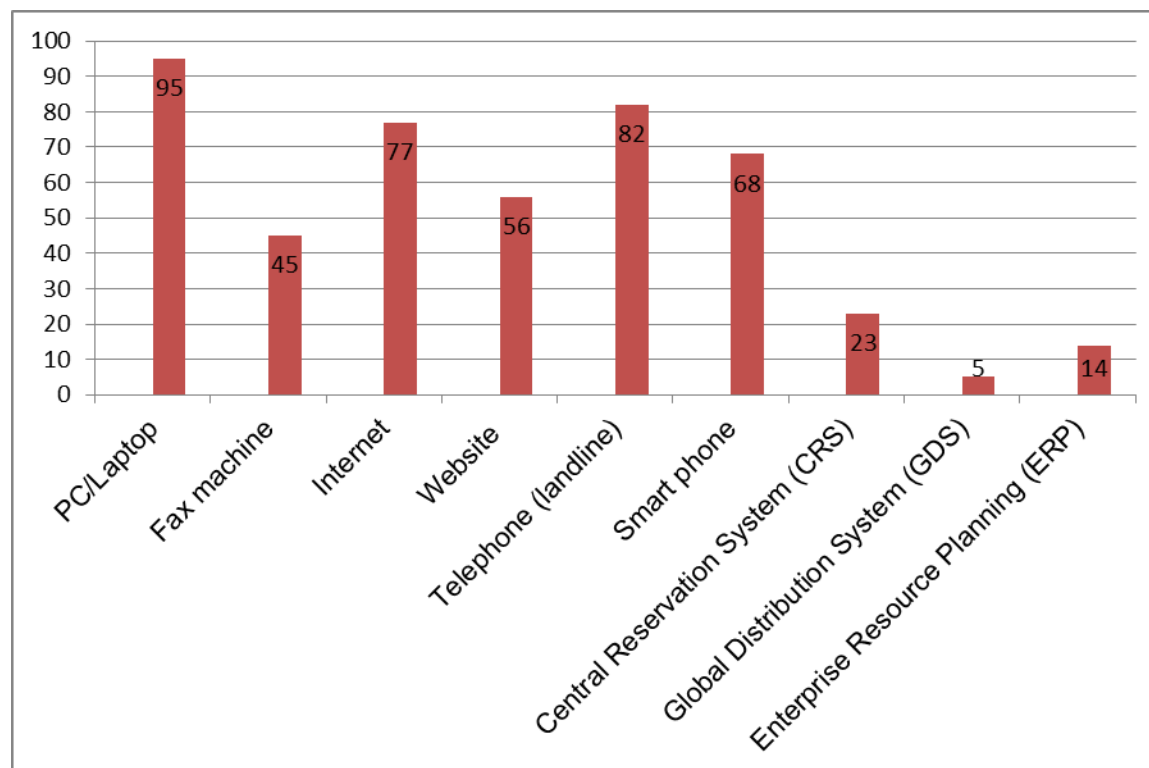
- **ICT Systems and Applications**

From the data collected, 95% of companies in the Food and Beverages sector have a PC/Laptop as illustrated in Figure 25. Significant investments have been made in basic ICT equipment in order to enhance competitiveness of businesses and as a first step in exploitation of ICT.

The fax machine was mentioned by 45% of respondents denoting that almost one in two companies is still using this ICT equipment for communication. Despite the fax machine losing its pre-eminence as a tool for communication, it seems that a sizeable proportion of operators in this sector are still using it. This could be attributed to the fact that the food and beverages is a logistics industry and relies heavily on

backward and forward linkages with supply chain partners and distribution network. Considering the low levels of ICT adoption in most industries in Malawi, the fax machine is still widely used by shop owners and transporters – two of the main partners of food and beverages sector.

Figure 25: Systems and applications for ICT exploitation among Food and Beverages



The Internet is being widely used by the food and beverages sector as indicated by 77% of respondents. Considering that this sector relies heavily on establishing partnerships within the supply chain, the Internet improves business performance in managing the supply chain. Externally, by linking intranets to the Internet, organizations in this sector are able to integrate their internal operations more closely with their vendors, partners and customers (Bollier, 1998). Despite this relatively high uptake and benefits in Internet usage, about one in every five companies in the food and beverages sector under the study are not using the Internet. This undoubtedly puts them at a disadvantage.

The telephone, both landline (82%) and smart phone (68%), is being utilized by the sector as a communication tool with supply chain partners. The smart phone has become very important multi-purpose ICT equipment that is widely used to surf the web, access social media apart from being used as a telephone. However, 18% and 32% of the respondents are not using the landline and smartphone mainly due to inadequate communication infrastructure and expensive connectivity charges.

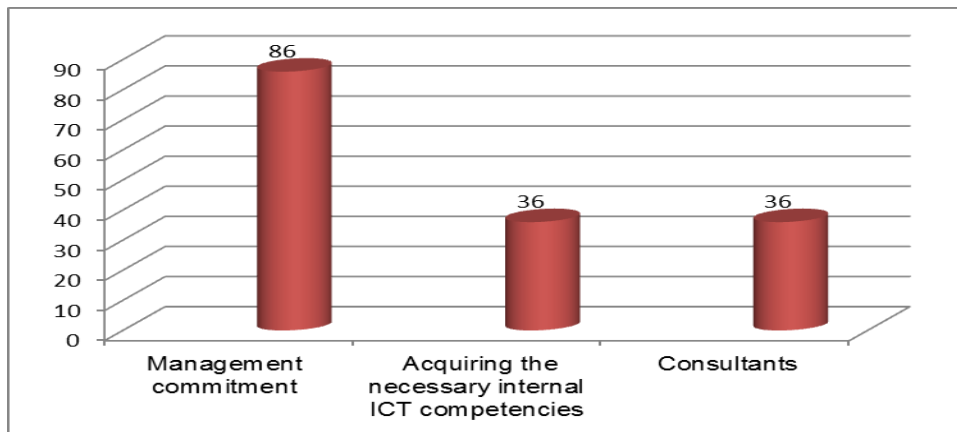
There is relatively low uptake in the more sophisticated applications as indicated by 23% (CRS), 5% (GDS) and

14% (ERP) of the respondents. For this industry, CRS and GDS are not critical ICT applications hence the low uptake. These applications are mainly used by principals and intermediaries in the tourism value chain. The results however indicate that CRS is used by at least one in every five company as a marketing tool to reach out to customers and partners in the supply chain. ERP is an Integrated Information System which food and beverage companies use to store, manage and analyse data from every stage of business (product development, procurement, manufacturing, commercialization, sales management, internal management, etc. The study established that only 14% of companies in this sector have an ERP system. As discussed earlier, these low adoption levels are due to the high cost to procure such applications.

- **Factors affecting ICT exploitation**

Management commitment, hiring of consultants and acquisition of necessary internal ICT competence are major facilitators to ICT exploitation among food and beverages providers and shown in Figure 26.

Figure 26: Factors affecting ICT exploitation among Food and Beverages providers

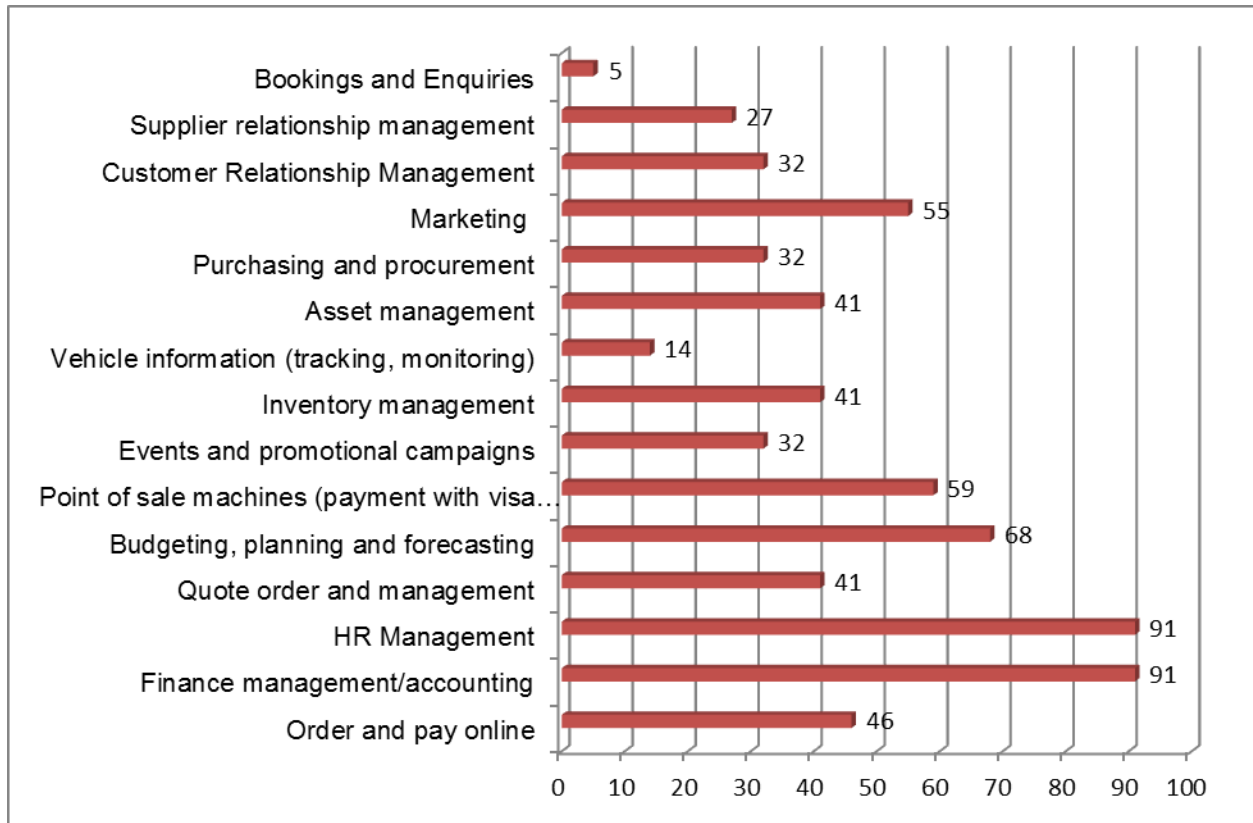


The majority of food and beverages are SMEs and owned by an individual or a group of individuals. To a large extent, training and career experience largely determines whether owners and/or managers have the propensity to adopt and exploit ICT. Those with advanced education and relatively younger entrepreneurs are more inclined to adopt and exploit ICT and they can use their influence and control in the organization to effect ICT investments. In addition, it was observed that the level of awareness and skills in using ICT influences owners and managers to put in place strategies for ICT adoption and exploitation in the organization. High adoption is likely to happen when there is high awareness and skills on using ICT among owners and managers and the converse is also true. This is typical when the owner and/or manager play an influencing role in demanding and applying ICT in the business activities. On the other hand, due to shortage of skills in the organization, consultants are hired to provide specialist services such as recommending ICT systems and applications suitable to the organization depending on the levels of available staff competences, installation, and maintenance and upgrading of systems and training staff.

- **Usage of ICT by Food and Beverages providers**

From the data collected, 91% of food and beverages companies are exploiting ICT for business functions of HR and financial management as illustrated in Figure 27. Automation of HR and financial management increases efficiency of operations and competitiveness. This accelerates productivity of operations and improves effectiveness in the execution of tasks inside the organizations. This is important to attaining competitive advantage.

Figure 27: Usage of ICT by Food and Beverages providers



Budgeting, planning and forecasting are the next widely used ICT in the food and beverages industry at 68% of all respondents. Planning outlines the company's financial direction and expectations for the next three to five years while budgeting documents how the overall plan will be executed month to month, specifying expenditures and forecasting using accumulated historical data to predict financial outcomes for future months or years. Three benefits arise from automating budgeting, forecasting and reporting, namely, reduction of indirect rates, implementation of strategic goals and accountability at all levels of the organization. To this end, the seven out of every 10 companies in the industry that are exploiting ICT for these three internal business processes are well positioned to improve business efficiency and gain competitive advantage over their counterparts who are not yet exploiting ICT.

POS machines (payment with visa or debit cards) were mentioned by 59% of respondents as a key reason for

exploiting ICT. Considering the large volumes of stock that food and beverages companies manage, traditional approaches to stock procurement and management which require merchants to physically review and purchase their current level of stock on a regular basis and pay cash for it, are laborious and time consuming. Since POS systems enables all stock to be scanned upon delivery and entered into a digital database, utilizing them enhances competitive advantage in terms of accuracy in data entry, efficiency and robustness in execution of tasks. In addition, most modern POS systems also offer procurement personnel access to a variety of customizable reports which can include critical information such as daily takings and outgoings, thereby providing them with an understanding of the overall success of their business. Moreover, advanced reporting capabilities can identify common sales trends, such as seasonal variations in product demand. These and other advantages of using POS machines in a globalized economy means that food and beverages companies which are exploiting ICT are gaining competitive advantage, becoming more efficient and reduce time taken to order, procure and distribute stock. In the same vein, the four out of 10 companies that are not exploiting ICT via POS are at a great disadvantage considering that most payments in this era are made online and tourists and other customers expect POS machines so that they can pay with credit or debit cards. It is imperative that these companies should collaborate with commercial banks to facilitate the provision of POS machines in their enterprises.

Fifty per cent of respondents cited using ICT for marketing their products while 32% are using ICT for CRM and for events and promotional campaigns. ICT-supported, consumer-centric, flexible service delivery is critical for food and beverages companies to become more flexible, efficient and quicker in responding to consumer requests as well as to offer ICT tools and mechanisms for product customization. As such, ICT does assist customization of service quality and contribute to higher customer satisfaction. In addition, the Internet is enabling food and beverages providers to be linked to emerging intermediaries. This enables them to distribute their products directly to consumers thus expanding their value chain and able to promote their product and services through a combination of partners and systems. This is very important as it unlocks new markets which traditionally were not possible for the companies to tap into, thereby expanding their clientele base. The other 45% that are not utilizing ICT for marketing their products need to take action, as online marketing has now become the norm rather than the exception and if these companies want to become competitive on the market, they must upgrade their ICT exploitation.

According to results of this study, only 32% of respondents said they were exploiting ICT for CRM. By utilizing ICT such as fax, email, telephone, the Internet, website, etc., these organizations are improving their effectiveness in tracking down and dealing with customer complaints in a timely manner, thereby ensuring customer satisfaction. However, 68% of respondents are lagging behind in their use of CRM mainly because they are small and generally provide services to a limited clientele base in a fixed geographical location.

Regarding events and promotional campaigns, ICT is critical in raising the profile of the organization through online campaigns through its website and e-mailing lists thereby bringing products and services offered closer to their

customers. The low uptake by food and beverages (32%) in using ICT to promote their products and services can be attributed to the fact that the majority are SMEs that have a limited clientele based in a specific geographical location and service a limited number of customers.

Ordering and paying online is being used by 46% of respondents. Food and beverages companies transact directly with other businesses, consumers and end users of their products and services. It is important therefore that they should take decisive measures to increase the usage of this mode of payment. Less than 50% of respondents in the food and beverages industry do not have the technology in place where other businesses and customers can order and pay online due to limited capacity as they are relatively small enterprises.

According to the respondents, other functions that food and beverages companies are exploiting ICT for are; inventory and asset management and quote and order management (41%), purchasing and procurement (32%) and supplier relationship management at 27%. Despite the fact that food and beverage companies manage huge databases of inventory and assets; the use of ICT in inventory and asset management in this sector stands at a minimal 41%. It can be noted that one in six of the respondents are managing their inventory and assets manually. Manually managing inventory increases inefficiency levels. As such, these companies have to deal with inefficiencies of traditional business processes compared to their counterparts that have automated inventory and asset management processes.

Results indicate that the majority of operators in the sector (60%) have not automated their quote order and management hence, by implication, are still manually soliciting and managing quotes. Order management gets challenging when corrections or changes have to be made and data has to be entered manually, despite the size of the firm. As such, there is need for these companies to step up their efforts in automating their systems if they are to become competitive in the industry. Despite the evidence as to the benefits accruing from e-procurement, only one in every three food and beverages companies are exploiting ICT for procurement and this can be attributed to the fact that the majority of these companies are small and hence do not require sophisticated ICT for procurement purposes.

Managing suppliers is a very important business process for food and beverages providers as they have to interface with multiple suppliers of goods and services. Supplier relationship management (SRM) contributes to the supplier selection and increases the competitive advantage of enterprises. Thus the development of a customer-SRM system in the areas of outsourcing is essential for a company to remain competitive (Choy et al., 2003). The study has unravelled that the use of ICT in managing suppliers in the food and beverages sector is in its infancy in Malawi. It can be deduced that over 70% of food and beverage companies are manually managing their relationships with suppliers and since the nature of their business demands interfacing with multiple suppliers, manually managing suppliers denotes that the industry has a lot of work to do to gain competitive advantage.

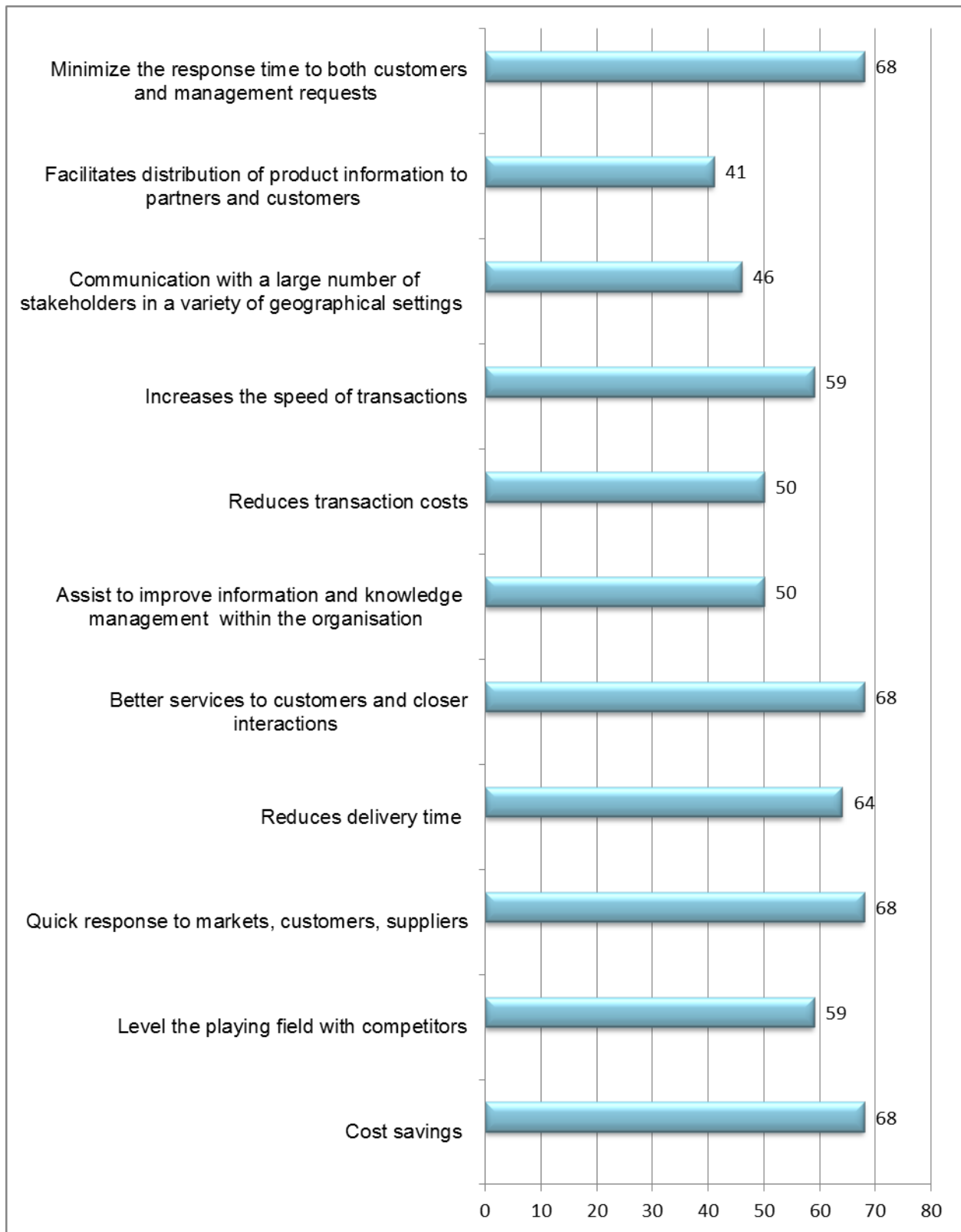
- **Benefits accrued from ICT exploitation**

The majority of respondents, almost seven in every 10 (68%), mentioned minimizing the response time to both customers and management requests; provision of better services to customers and closer interactions with them; capacity to quickly respond to markets, customers and suppliers' demands and needs; and cost savings, as the main benefits from ICT exploitation as illustrated in Figure 28. By taking advantage of ICT, food and beverages companies are now able to provide real-time information and instant feedback to customer and management requests – no matter their location. Web-based technologies with web analytics and/or Internet-based tools integrated into organizational systems reduce the time required to respond to customer demands and complaints and ensures that information about customers is readily available to management to speedily respond to such demands in a more personalized manner. Timeliness has been attained through ICT.

The use of ICT boosts the capacity of firms to quickly respond to markets, customers and suppliers' demands and needs. ICT applications such as the Internet, wireless communications, and video conferencing are being used to integrate all customer and supplier interactions on a central platform providing them with more control on the services they want. For food and beverages firms who have to interact with a wide range of customers and suppliers, the utilization of these ICT tools is extremely important for them to respond in a timely manner to requests, orders, payments, receipts and deliveries. Effective use of relationship marketing can help to create competitive advantage for these firms.

ICT exploitation greatly aids firms to save on both overhead and operational costs as they streamline and automate their operations. Labour costs are often the single largest line item for businesses. As noted in the section for usages of ICT exploitation, 91% of food and beverages are using ICT for HRM. ICT assist companies in the food and beverages sector to save money by reducing the amount of time staff spends on low-value administrative work. To do this, firms are automating many activities that once required workers to prepare and transmit files by using, for example, ICT systems with a single employee-record which allows all information connected with that employee to be updated once across a company's HR, payroll, and benefits records. This allows them to work wherever it makes the most sense, and they can access the information they need from anywhere on any device such as smartphones, tablets, laptops, etc. The increased mobility of employees can account for quicker turnaround times. Moreover, food and beverages companies are using software that's built online, such as accounting software, analytic reporting, and more. Since the program is online, their employees are able to access the information from any location at a moment's time.

Figure 28: Benefits of ICT exploitation in the Food and Beverages industry



Another benefit of ICT exploitation that was stated by 64% of respondents is that ICT reduces delivery time of products to customers, suppliers and other supply chain partners. With ICT exploitation, more and more supply chain members interact with one another through the emerging technologies. This helps in building and strengthening relationships with customers and within the supply chain in which the company is operating in. Moreover, effective use of ICT between a company and its supply chain members also helps in information and knowledge sharing with one another, without geographical constraints. Furthermore, trust is built among the partners and their customers and therefore the participating parties in the supply chain have strong commitment on mutual relationship. It can be deduced from all this that firms in the food and beverages sector that are exploiting ICT are effectively utilizing supply chain network and strategic alliances to enhance mutual relationship, and further promote their competitiveness.

As can be noted from Figure 28, 59% of respondents pointed levelling the playing field with competitors and increasing the speed of transactions as benefits of exploiting ICT. The world is turning into a single social space, shaped by complex economic and technological forces. It is within this context that some food and beverage companies (almost three in every five) in Malawi are utilizing ICT to reach to global markets and suppliers in a simplified and economical manner, thereby cultivating the key competences to compete with larger and global competitors. In particular, these firms are using e-commerce to level the playing field with competitors as it reduces coordination costs. Thus, firms that leverage their local presence with their online business strategy have competitive advantage over firms with no virtual presence. This then positions the local firms to effectively compete with global brands and also do business with global businesses in a cost effective manner.

During the last decade, the source of competitive advantage has increasingly been seen to reside in the supplementary benefits provided to customers, leading to the creation of sustainable perceived value for customers. As well as high perceived quality, control over costs, and product innovation (all of which are helped by ICT support), a firm has to have excellent service, a market-driven learning-oriented culture and speed, that is, the ability to deliver quickly and to quickly solve customer problems (Slater, 1996). Creation of customer perceived value brings a renewed dependence on ICT by food and beverages firms as they must respond fast to customer and supply chain partners' needs and demands. This is illustrated, for example, by the growth of marketing and management support modules in ERP systems, or by the importance attributed by firms to "customer solution" or call centres. Better ICT systems and exploitation by these firms in increasing the speed at which transactions are conducted contributes to competitive advantage because they allow for more efficient use of business resources to meet customers' needs.

Fifty per cent of the respondents pointed out that ICT exploitation supports their firms to improve information and knowledge management within and outside the organization while, at the same time, it facilitates reduction in transactional costs. Knowledge management is generally understood to mean the sharing of knowledge inside or outside an organization. Knowledge sharing has been greatly facilitated by modern computer-based technology.

What is new and exciting in the current knowledge management area is the potential for using modern ICT to support knowledge creation, sharing and exchange in an organization and between organizations (Nahapiet and Ghoshal, 1998). For food and beverages firms, intranets are used in the knowledge creation process about the products, suppliers of raw materials, and consumer habits and preferences. In terms of knowledge storage and retrieval, they are using advanced computer storage technology and sophisticated retrieval techniques, such as query languages, multimedia databases, and database management systems. In terms of knowledge transfer, computer networks and electronic bulletin boards and discussion groups are being used by food and beverages companies to create forums that facilitate contact between employees within the organization and communication with its customers and supply chain partners. All this denotes that those firms that have adopted and are exploiting ICT for knowledge management tend to have a competitive edge and comparative advantage over those firms that are not using ICT.

Forty six per cent of the respondents said that ICT exploitation facilitates communication with a large number of stakeholders in a variety of geographical settings while 41% pointed out that ICT assists in facilitating distribution of product information to partners and customers. New business models and market configuration enabled by ICT, including business process outsourcing and value chain integration, provide firms with access to new markets and new sources of competitive advantage, to drive income growth. However, Malawian food and beverages companies are lagging behind to other sectors in terms of taking advantage of ICT as a communication tool since less than 50% are using it to facilitate communication with partners in a variety of geographical settings – locally and globally. This is greatly affecting the competitiveness of the majority of these firms and it is imperative that they should strive to adopt ICT tools and applications which will enhance their global and local communication capabilities.

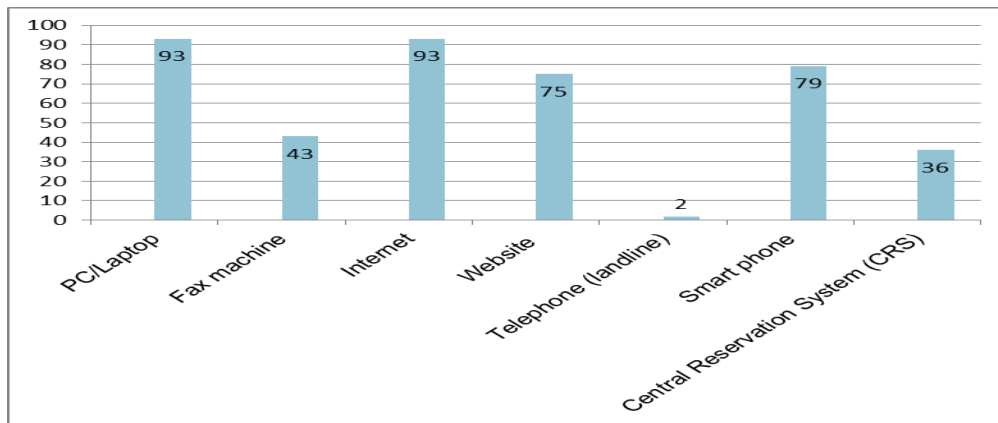
4.2.4.3 Vehicle Hire Firms

- **ICT Systems and Applications**

From the data collected, 93% of respondents from vehicle hire companies mentioned that they had a laptop/PC as depicted in Figure 29.

As noted earlier, the fax machine, which once was on the cutting edge of technological innovation, has gradually lost its prominence in the last two decades due to the introduction of more sophisticated Internet-based alternatives. As such, 43% of vehicle hire companies are using this ICT application for communication. The other 57% reported not having a fax machine in their offices.

Figure 29: ICT Systems and applications in Vehicle Hire firms



There is high exploitation of the Internet in the vehicle hire industry (93%). The Internet has assisted vehicle hire companies to use a wide range of promotional activities to supplement, if not replace, offline promotions. This change is important as the Internet is generally considered as a multi-promotion tool and distribution channel. Web marketing is therefore gradually becoming the norm within the industry. The flexibility of the Internet and the ability to address different target markets support vehicle hire companies to develop a marketing proposition for each target market and to create themes or routes to address the needs of each market (O'Connor and Frew, 2004). In addition, the Internet enables car hire companies to be linked to emerging intermediaries and thereby distribute their products directly to consumers thus expanding their value chain and able to promote their product and services through a combination of partners and systems.

The website was reported as an important ICT application by 75% of respondents. Taking advantage of the characteristics of the virtual reality, car hire firms are forced to adapt their product constantly to satisfy customer demand; use information extensively; develop partnerships; and outsource a significant amount of functions in order to achieve economies of scale (Hale and Whitlam, 1997). The website facilitates the opening of new markets for vehicle hire firms as most people now turn to the Internet for information. With many customers shopping and searching for information online, without a website, the company could get passed-by hence the website gives the business a professional look and builds credibility. However, despite these obvious advantages of having a website, 25% of car hire firms do not have a website and these are mainly small sized firms with limited financial muscle to invest in a website.

The telephone (landline) was reported to be used by only 2% of respondents while 79% had smart phones. The main advantages of the smart phone over the landline is that businesses can link with Internet for email and web access, or connect to the computer network remotely to access relevant data, wherever one is, making it easier for remote workers, or a mobile workforce to stay in touch with the business. This is very important for car hire firms who have to increasingly depend on a mobile workforce that operate mainly out of the office. In addition, smart phones allow integration of business applications to stay connected with business activities and receives up-to-date

report of financial and business operations. The smart phone has now become a key business tool and car hire firms are taking advantage of it to remain competitive and gain comparative advantage. However, since one in every five car hire firms are not utilizing this ICT and hence remain disadvantaged and backward.

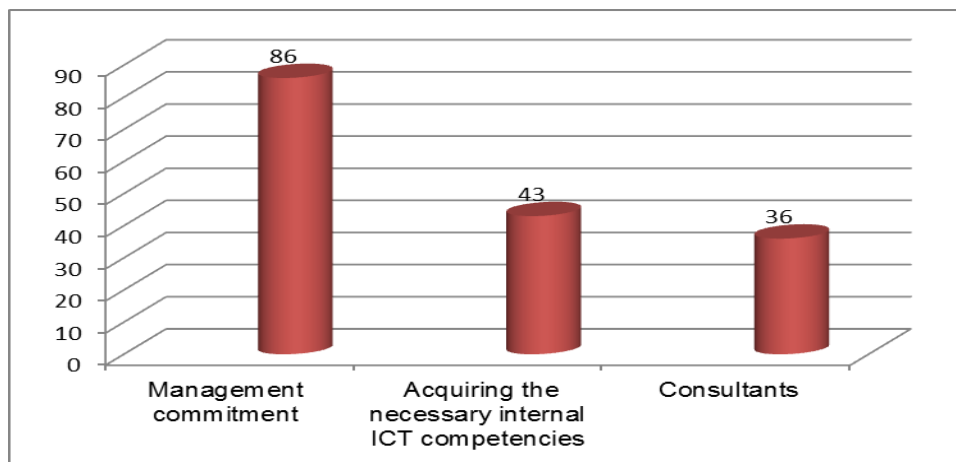
Car hire firms depend on reservations by customers and therefore CRS is important. The study found out that only 36% of car hire firms are using CRS despite the relative advantages of using the application. This is mainly due to the fact that the majority of car hire firms utilize other means to receive orders such as personal contacts or emails. The implication of this is that the majority of Malawian car hire firms are not fully utilizing online booking solutions.

- **Factors affecting ICT exploitation**

Consistent thus far with the findings of this study, management commitment followed by acquisition of the required internal competences, are the main drivers influencing the exploitation of ICT and the same applies to the food and beverages sector as illustrated in Figure 30.

Most vehicle hire companies in Malawi are owned by individuals or families or a group of individual investors. To this end, the extent to which these have knowledge in ICT and understand the importance of investing in ICT will greatly influence the levels of ICT adoption and exploitation in the company. In the same vein, the acquisition of the required competencies in ICT is heavily dependent on the owners/managers commitment to ICT usage in the organization. Consultants as external experts do have influence as they are able to recommend the latest technologies that the car hire firm need to use to remain competitive in the industry.

Figure 30: Factors affecting ICT exploitation among Vehicle Hire firms



- **Usage of ICT by Vehicle Hire Firms**

The data collected indicates that all the respondents are utilizing ICT for HRM (Figure 31). Vehicle hire companies employ relatively large numbers of staff including drivers and administrative personnel. To track such large numbers of employees, there is need to utilize ICT applications that are able to streamline payroll systems and

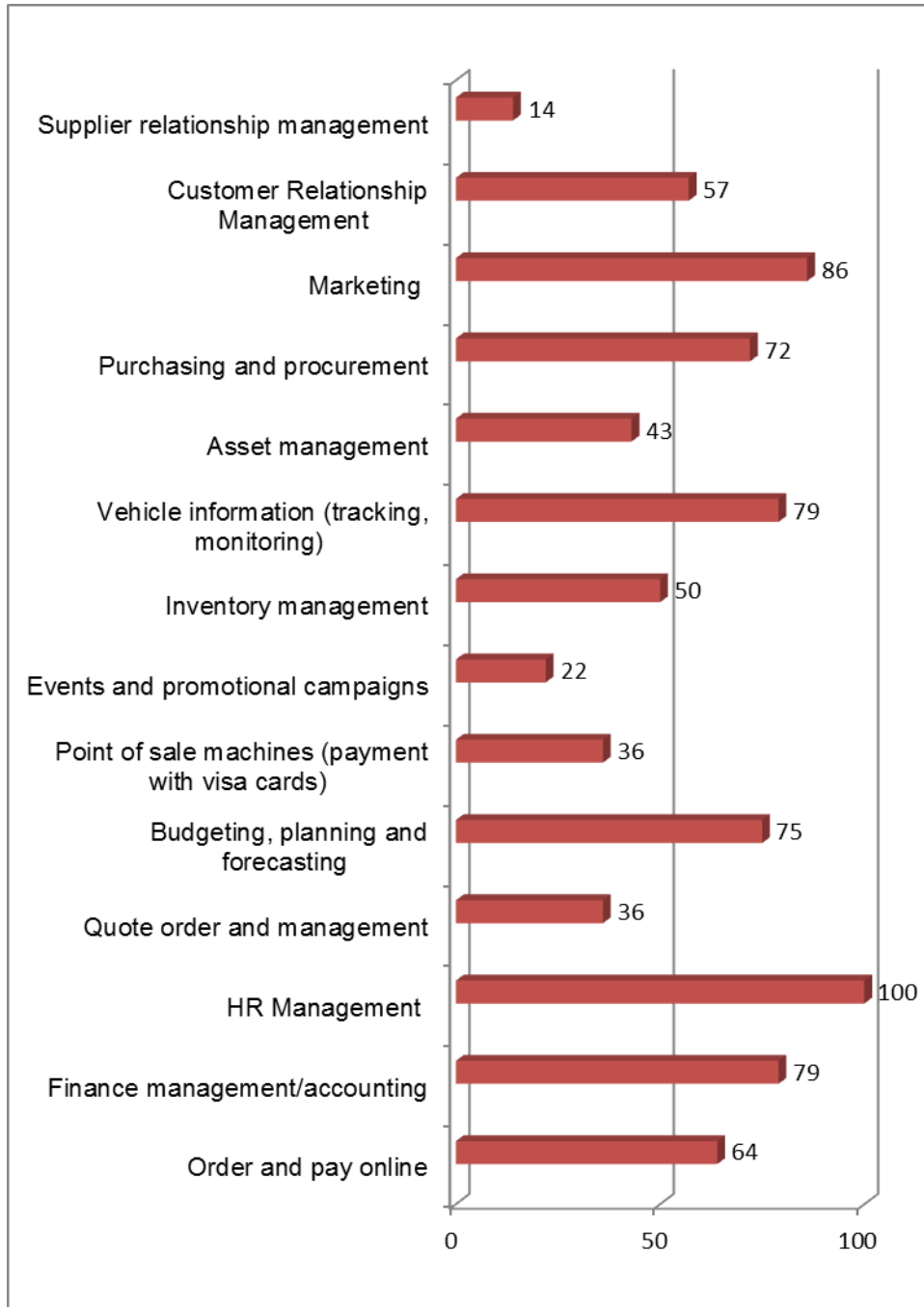
general staff management.

From the data collected, 86% of car hire firms are exploiting ICT for marketing their products and services. These firms are service oriented and require personalized marketing to reach out to customers and attract new ones. This lines up with global trends. ICT encourages businesses to find new ways to expand the markets in which they compete, to attract and retain customers by tailoring products and services to their needs, and to restructure their business strategy to gain competitive advantage (Gratzer and Winiwater, 2014). To this end, vehicle hire firms that exploit ICT for marketing their products and services are able to tap into a diverse range of customers- both locally and internationally, hence achieving remarkable savings in costs and time. This is enabling them to compete at a global level and leverage the benefits accrued from ICT exploitation by being able to integrate into the global tourism value chain, thereby becoming competitive.

Financial management (79%) is one of the main support functions that vehicle hire firms are using to exploit ICT. As noted elsewhere in this paper, tourism operators have automated their financial management systems to ensure efficiency of operations.

Seventy nine per cent of the respondents revealed that vehicle hire information (tracking and monitoring) and finance management are being used as ICT systems in their organizations. The vehicle tracking system is an electronic device that tracks the vehicle's location. In this case, special tracking devices are installed in the vehicles that are linked to Global Positioning System (GPS) that is able to locate the coordinates of the vehicle at any point in time (El-Rabbany, 2006, cited in Bhattacharjee, et al., 2017). Many systems also combine communication components such as satellite transmitters to communicate the vehicle's location to the remote user. Google maps are used to view the vehicle's location. For car hire firms, tracking the movement and location of vehicles at any point in time is very important for several reasons. Firstly, it facilitates tracing of the vehicle in cases where it has been stolen as it enables tracing the precise location of the vehicle allowing the police to do tracking and recovery. Secondly, it assists car hire firms to conduct surveillance of the movement of vehicles as a tracker may be placed on a vehicle to follow the vehicle's movements. Thirdly, the system is used to calculate distance travelled by the fleet, thereby enabling the company to determine the mileage for each vehicle. Fourthly, the car hire firm is able to monitor fuel consumption as the GPS tracking device helps the company to know the fuel usages for vehicles and can therefore control the consumption of fuel. All this enhances competitiveness in terms of streamlining the management and control of the fleet. The findings of this study therefore are accurate in revealing that vehicle tracking and monitoring is one of the major ICT tools for the car rental firms. The main reason that 21% of firms are not using such systems is their size and limited number of vehicles.

Figure 31: Usage of ICT in Vehicle Hire firms



From the data collected, 75% of respondents mentioned using ICT for budgeting, planning and forecasting (BP&F). BP&F provides fact-based guidance for value-based decision making in terms of which vehicles and drivers that are available for hire at any point in time thereby supporting driver-based planning and forecasting to enable dynamic resource allocation. This enhances effectiveness and efficiency and enables a consistent workflow process and streamlines decision making, improves focus of time and effort and eliminates manual intervention and

errors. As such, those car hire firms that have not yet automated their systems – mainly due to their size and limited number of vehicles - are losing the competitive edge vis a vis competitors and are therefore lagging behind in terms of forecasting future business trends and processes.

Using ICT for purchasing and procurement was declared by 72% of respondents. E-Procurement alludes to the utilization of ICT using the Internet to carry out all stages of the procurement process. For vehicle hire firms, there are several benefits accruing from automation of procurement systems. Firstly, considering that they have to procure large quantities of supplies, spare parts and accessories, there is reduction of the procurement cycle time due to the automation of certain phases of the process. Secondly, through the use of e-tendering, car rental firms have easier access to market and tender opportunities through equitable geographical treatment as bids can be submitted anytime and from anywhere to meet the bid submission deadline. Thirdly, there is effective planning on how to allocate resources among competing demands that need to be procured due to comprehensive procurement information which improves financial planning and budgeting and timely payments to suppliers using electronic payment of invoices. This leads to better control of cash flow and efficient contract management which can lead to lower price quotations and standardization. This entails that exploiting ICT increases the efficiency of vehicle hire firms. Those car rental firms that have automated their procurement procedures have gained competitive edge over their counterparts who are conducting procurement manually. In terms of effectiveness, there is value for money due to e-procurement as the company can solicit competitive prices, because larger markets are made accessible due to the automation of many procurement processes. Despite these benefits, 28% of car rental firms are using manual procurement systems which are inefficient and cumbersome as it involves large volumes of paperwork and filing system which takes up larger storage space and requires uncoordinated purchases. This leads to high transaction costs and the system is susceptible to corruption due to limited accountability levels. In the final analysis, the greater levels of ICT exploitation in the procurement process, the higher levels of efficiency, effectiveness and competitiveness for companies.

Other uses for ICT stated by respondents include online order and payment (64%), customer relationship management (57%) and inventory management (50%).

Considering the globalization of the financial system and the increase in B2B e-commerce, online transactions have increased. Davis and Kauffman (2000) suggests that e-commerce can assist car rental firms to move closer and improve relationships with customers, partners and suppliers and offers an opportunity for the companies to sell their products all around the globe, thereby facilitating access to distant markets. Car rental firms deal with other organizations who utilize their products and services including other tourism operators such as airlines, tour operators and travel agents, non-governmental organizations, private sector firms, international agencies and SMEs. The more electronic transactions that a car rental firm has, the greater levels of efficiency and astuteness are displayed to its trading partners. The 36% of the companies that are not exploiting ICT for online ordering and payment are lagging behind and operating less efficiently and this can be attributed to their small size hence limited

scope to conduct e-commerce.

CRM is primarily used for improving relationships with customers in an environment where consumers are more sophisticated, spoilt for choice, and knowledgeable in the products and services being offered on the market. As such, car rental firms are required to anticipate the wants of customers and then exceed their expectations by satisfying their needs in order to retain them and ensuring their loyalty. To this effect, customer loyalty is at the heart of the car rental business. These firms need to transform their service profile, as seen by its customers, into a well-focused, sharp service image, in order to ensure multiple repeat usages of their products. This requires constant communication and interaction with customers through modern and sophisticated technologies. The exploitation of ICT by car rental firms is central to this process. In sustaining the CRM process, quality contact with the customer is important at every stage from initial enquiry through pre-sales advice to after care. The use of ICT tools and applications such as the Internet, websites, email, smart phones by car hire firms helps customers make the right choice in terms of which vehicle they would like to hire as the fleet is available online where customers can preview them. In addition, the right level of information, advice and guidance can be provided online, helping in customers' decision making and thereby facilitating ease of doing business. In the same vein, the exploitation of ICT improves customer reception: handling efficiently customer enquiries and complaints, keeping customers informed of progress at all times and following up sales quickly. All this denotes that those firms that are exploiting ICT for CRM have an upper hand in sustaining customer loyalty than those that are not.

Car hire firms have fairly large inventory to manage and therefore require ICT tools and applications to effectively do so. Inventory management plays an important role in every company as any ineffective inventory system will result in loss of customers and sales (Mohamad et al., 2015). From the data collected, one in every two companies has employed some form of inventory management applications and tools. These are assisting them in ensuring that required levels of stocks are kept, the inventory in stock is immediately available for use while ensuring that there is constant supply of critical inventory.

Finally, from the data collected, there is minimal exploitation of ICT for point of sale machines (payment with credit and debit cards) at 32%, events and promotional campaigns (22%) and supplier relationship management (14%). The low uptake in payment through credit or debit cards shows that the car hire industry is still in its infancy in terms of automation of payment mechanisms for its products and services. Customers are forced to pay either by cash or checks for services rendered and this is making this sector uncompetitive on the global market where payment using credit or debit cards is the norm rather than the exception. Events and promotional campaigns are not widely used in the car hire business due to the nature of the business. The assumption can be made that the majority of car hire firms depend on other mainline forms of marketing as noted that 86% are using ICT for marketing. This is also the same with relations with suppliers where a small minority is using ICT to engage with their suppliers. It can be assumed that the majority of car rental firms have a personal relationship with suppliers.

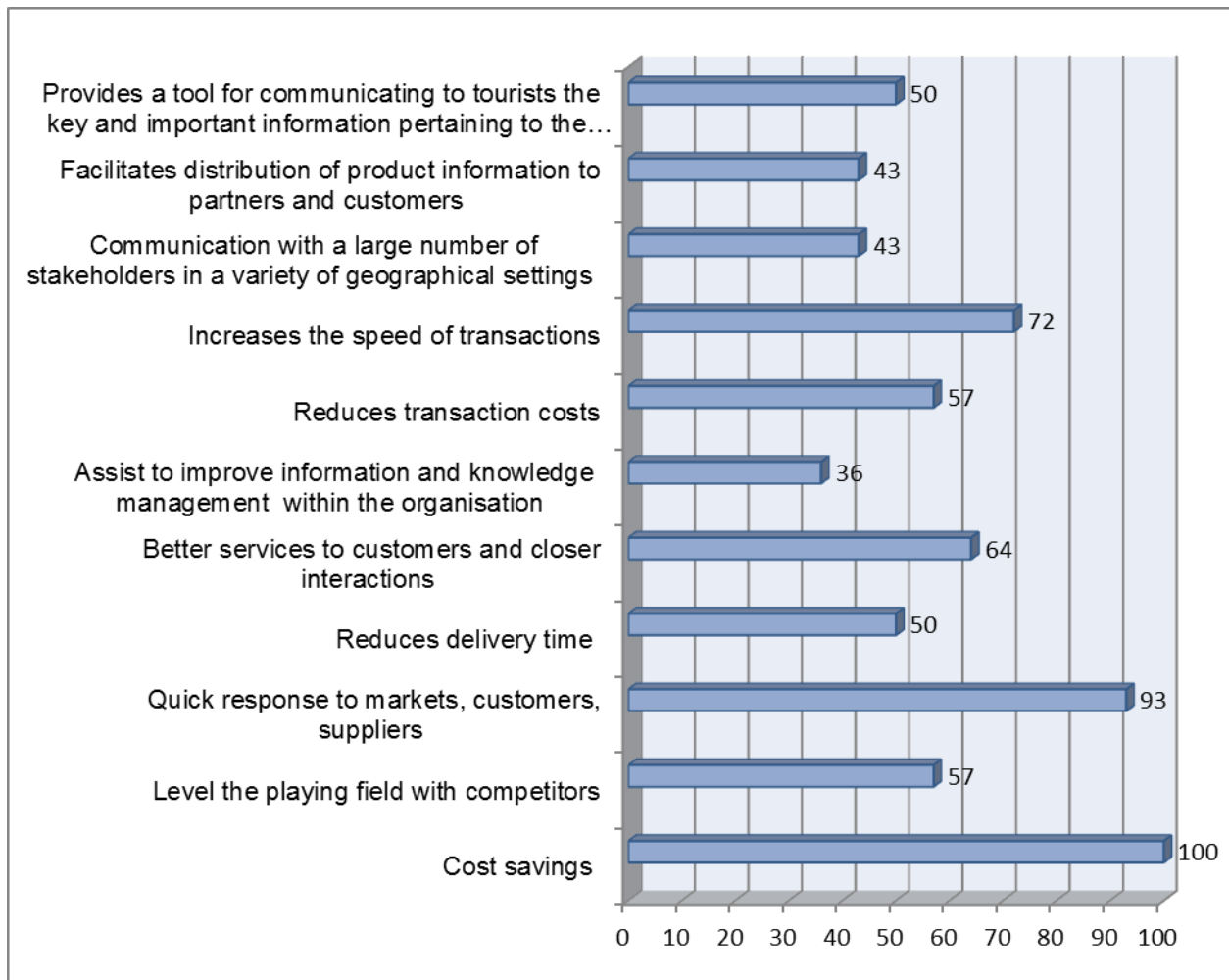
- **Benefits accrued from ICT exploitation**

The numerous benefits that are accrued from the adoption and exploitation of ICT by car rental firms are shown in Figure 32. From the findings, it can be seen that the overwhelming majority of respondents pointed out that ICT exploitation is beneficial as it assists their organizations in cost savings (100%) and also to quickly respond to markets, customer and supplier requirements and demands (93%).

Convergence of ICT and telecommunications has broken down the barriers of technology disciplines, distance and time to enable connectivity anytime, anywhere across any device. In a converged world, communications over a single Internet Protocol (IP) backbone can deliver tremendous advantages in cost savings in terms of people, processes and technology for car rental firms. Firstly, car rental administrators and business owners are able to connect to all facets of their communications network across multiple locations from a central location without having to travel on-site to perform upgrades, monitoring or troubleshooting functions. Secondly, Voice over Internet Protocol (VoIP) dramatically reduces communication costs while enabling interconnectivity between voice, email and wireless applications. Thirdly, car rental firms are able to leverage IP convergence to connect employees, partners and customers to a myriad of online applications to improve productivity and responsiveness. Finally, an IP-based infrastructure also creates numerous opportunities to connect to professional level managed and outsourcing services for infrastructure hosting and support to reduce the capital costs and risks associated with building and maintaining in-house ICT resources.

ICT enables car rental firms to quickly respond to markets, customer and supplier requirements and demands as can be noted from the responses of 93% of the respondents. Through ICT exploitation, car rental firms are able to collaborate with various customers and supply and value chain members effectively – thereby being able to respond to their demands speedily. Collaboration tools such as audio/web/video conferencing and instant messaging have become essential tools in enabling real-time collaboration. Collaboration has facilitated instantaneous real-time communications for workforce operating from remote places such as drivers in the field. As such, collaboration tools have created a more productive distributed workforce that is not constrained by geographical boundaries. Moreover, ICT exploitation has assisted these firms to improve efficiency and productivity since, through collaboration tools, co-workers can quickly convene meetings, share information and engage in more meaningful dialogue. Finally, conferencing applications allow users to simultaneously review documents and presentations, reach a consensus and make immediate decisions. All these benefits of collaboration ensure that car rental firms respond quickly to customer and partner demands in real-time, thereby increasing their competitiveness and efficiency levels.

Figure 32: Benefits of ICT exploitation among Vehicle Hire firms



Increasing the speed of transactions (72%) was cited by respondents as the next layer of benefits for ICT use in the car rental business. Today's business processes necessitates that an enterprise meets the demands of the digital age where transactions within and outside the organization, between and amongst supply and value chain partners, and between the organization and its customers are conducted in a fraction of time than 20 years ago. All this has been made possible by the advent of the Internet and related ICT applications and tools that are readily available to businesses regardless of their geographical location and/or size. For car rental firms, who interface with multiple stakeholders, supply and value chain partners and customers from various geographical locations, the speed at which they respond to their inquiries, queries and needs is of utmost importance. When managers have readily available information at their fingertips, decision making becomes easier hence they are able to speedily transact with partners, staff and customers. This capacity by firms to transact in real-time is more advantageous when dealing with business partners and customers beyond the borders of the organization hence ICT allows business to reach a global audience. To this end, Malawian car rental firms have the ability to transact with global customers and value chain partners such as airlines, hotels, travel agents through the exploitation of ICT, thereby improving

their competitive edge in the global tourism value chain.

Fifty seven per cent of the respondents stated that ICT exploitation created a competitive advantage as it gave them the capacity to level the playing field with competitors while, at the same time, creating opportunities to reduce transaction costs for conducting business. ICT exploitation provides opportunities to reach global audiences in terms of its ability to equip local firms with new and sophisticated communication tools and distribution channels. As Waghmode and Jamsanderkar (2013) postulates, ICT tools have facilitated business transaction in the tourism industry by networking with trading partners, distribution of product services and providing information to consumers across the globe. On the other hand, consumers are able to obtain information and plan their trip and travel online. As an extension of this, customers, through e-commerce, are able to purchase or carry out financial operations from any location and at any time and thus they can transact with Malawian firms without necessarily leaving their homes. As such, by taking advantage of ICT, these Malawian car rental firms are gaining competitive advantage unlike their counterparts that are not.

One in two of the respondents pointed out that, ICT exploitation provides a tool for communicating to tourists the key and important information pertaining to the destination and also reduces delivery time of products and services and payments. Today's tourists rely heavily on electronic media to obtain up to date information and value about the destinations, as well as being able to communicate their needs and wishes to suppliers rapidly. To this end, car rental firms in Malawi are able to tap into the tourists coming into the country because of the tourism board's efforts in marketing the country as a preferred tourism destination. Working jointly with other tourism value chain players, the tourism board has put in place strategies using ICT to position the country to global tourists. Car rental firms are also utilizing their websites, and other ICT applications to establish strategic partnerships with global intermediaries and principals to promote and market the country to global tourists.

Regarding reduction in delivery time of products and services and payments, the adoption and exploitation of ICT such as the Internet makes it cheaper and easier for firms to extend their markets, manage their operations and coordinate value chains across borders (Totonchi and Kakamanshadi, 2011). For car rental firms, they are able to improve operational efficiency by reducing administrative and back-office operational costs through the convergence of voice, data and video over IP. In addition, they can extend their market reach by enabling and improving the quality, quantity and access to services from any location by allowing remote access, monitoring and management of systems and applications. Finally, they are able to enhance collaboration and networking among employees, customers and value chain partners by removing the barriers to real-time communication and effective information sharing, across geographical and time zone boundaries to meet the demands of a global economy. To this end, car rental firms that are exploiting ICT are gaining competitive advantage as they are able to deliver their products and services, make and receive orders and payments, and deliver products in real-time without delays unlike their counterparts that are not exploiting ICT. Another dimension which ICT is being used by car rental firms is through e-business to order, buy and make payments for parts and supplies from suppliers and make and

receive payments to and from principals and intermediaries. Just over two in every five (43%) of respondents pointed out that ICT exploitation is assisting them in communicating with a large number of stakeholders in a variety of geographical settings and also as an important aid in facilitating distribution of product information to partners and customers.

ICT exploitation is critical to facilitating distribution of product information to supply chain partners. Through ICT, car rental firms are able to reduce the cost of production, processing, distribution, maintenance and recovery of information to supply chain partners in comparison to paper systems. Moreover, ICT exploitation makes it possible for these firms to have a closer relationship with their customers as they are able to supply required information on the type and make of vehicles, services offered, pricing structures, etc. in real-time. In the same vein, customers are able to receive online quotes, pay online for the vehicles they are hiring, receive online invoices and give specific instructions on what kind of vehicle they require and other services to accompany the vehicle. Customers can also inspect the vehicles online. From the foregoing, it can be deduced that Malawian car rental firms would greatly create a competitive edge if they invested in ICT. However, only 43% of respondents indicated using ICT as a tool for facilitating distribution of product information to partners and customers. This is a disappointing finding considering the multiple benefits that ICT exploitation brings into the business hence it is advisable that the 57% that is not using ICT for this should consider doing so.

Finally, 36% of respondents mentioned that ICT exploitation assists them in reducing transaction costs. In the case of car rental firms - which rely on intermediaries and principals such as travel agents, tour operators, airlines and hotels for linkages to customers, the usage of ICT entails that they are able to bypass these and directly communicate with the customers – thereby facilitating disintermediation. This is in line with the Mediation, Disintermediation and Re-intermediation Model of ICT discussed on page 41. The main issue here is that ICT makes it possible for business transactions to occur without physical proximity between buyer and seller and hence transactions of the products can be found, assessed and the transaction completed. On account of this, ICT enables the speedy and inexpensive restructuring and mediation patterns. With the introduction of ICT and the emergence of disintermediation, car rental firms are able to directly market their products to the final consumer without middlemen being involved – reducing the time and cost of the product to the end consumer. This is providing competitive advantage to car rental firms as they are able to cut out on commissions which increase the price of their products to the final customer. Indeed, the 36% of firms that are exploiting ICT are comparatively advanced in terms of cost cutting vis a vis their competitors who are not.

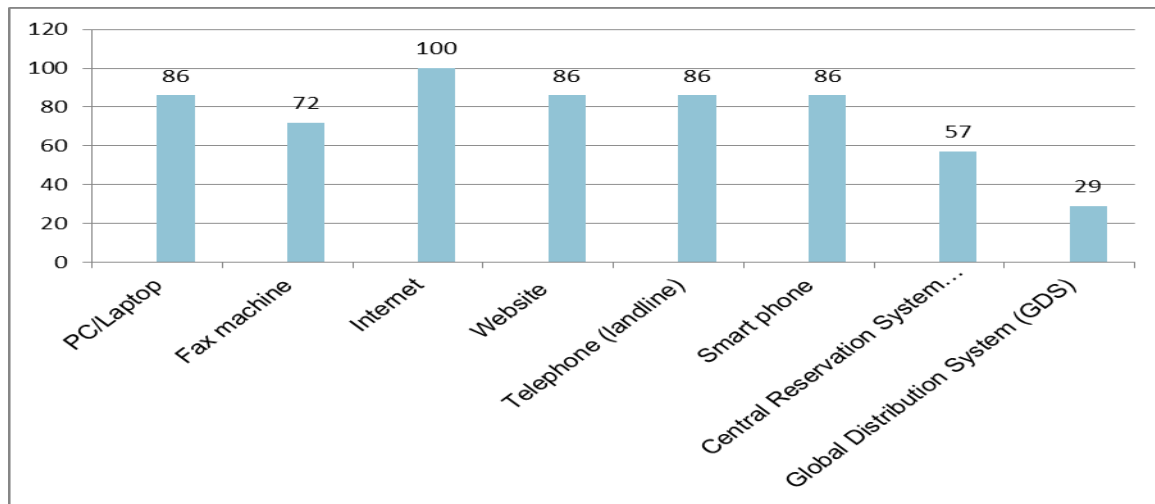
4.2.4.4 Travel agents

- **ICT Systems and Applications**

Eighty six per cent of the respondents confirmed that they were using laptop/PC in their daily business operation as

shown in Figure 33. However, it is of concern that 14% do not have a laptop/PC as this has become important ICT equipment. A relatively large proportion of travels agents (76%) are using a fax machine. This can be attributed to the nature of their business which, as Mihajlovic (2012) points out, involves performing three main tasks that require usage of the fax machine, namely: i) performing the function of information broker, passing information between buyers and suppliers; ii) processing transactions, including printing tickets and transferring money to suppliers; and iii) advising travellers.

Figure 33: ICT systems and application used by Travel Agents



All the respondents mentioned utilizing the Internet in their business operations. Travel agents play a critical role in influencing the tastes, motivations, wants, as well as the needs of tourism clientele (Vukovic, 2003), primarily through communication with target markets. Since tourists cannot try out the tourism product before it is purchased, travel agents materialize the intangible product through marketing and communication during, before and after a trip, thereby creating added value for consumers (Lubbe, 2000; Lorena, Jasmina and Zeljko, 2013). Despite not being the only intermediaries in the tourism value chain, travel agents are the most important as their primary function and profitable line of business is organizing tourist travel and providing intermediary services in selling services related to tourist travels and stays. Consequently, travel agents communicate directly with known customers and have a powerful influence on their choice of the final tourist destination and service. Despite dramatic changes in the availability of information, the efficiency of communication and the wide-spread trend of personalized travel, travel agents have succeeded in maintaining their role by using new technologies and changing their approach to consumers (Cavley, 2011). This is validated by the findings of this study which has found out that 100% of travel agents responded that they are using the Internet as a communication and marketing tool. The study has also discovered that 86% of travel agents have a website. By using web analytics, they are able to use the website as a tool to communicate with a large number of customers in a variety of geographical settings and distribute product information to them. However, 14% of Travel agents do not have a website – to their own disadvantage as they lack the value added benefits that come with a website.

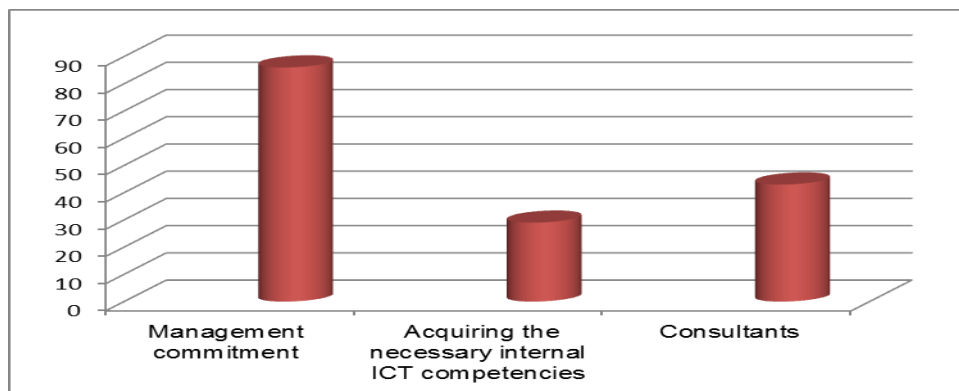
The telephone – both landline and smart phone – is widely used by travel agents as pointed out by 86% of respondents. The telephone is an effective tool that can be used for improving external communications and delivering quality service to customers. However, despite the obvious advantages of the smart phone, 14% of travel agents are not using this modern ICT technology.

The study has revealed that 57% and 29% of respondents are using CRS and GDS respectively – the highest in the industry. The CRS and GDS have made it possible to create, develop and globalize the availability of basic tourist services through the intermediation of travel agencies and are the means currently used for purchasing tourist services and packages through travel agencies. These systems provide a shared platform for information regarding airline, hotel and tour scheduling, and prices; and travel agents can reserve and book directly in real-time. In lieu of the foregoing, CRS and GDS are very important ICT tools for travel agents as they assist in the creation and delivery of tourism products to customers and partner organizations including transportation, accommodation, tour operators, etc. Despite this, 43% and 71% of travel agents are not using these systems. This is a very worrisome trend as it means that a relatively large number of Malawian travel agents have excluded themselves from the global system of reservations, bookings and search engines that are streamlining and integrating the global tourism value chain. This has massive negative repercussions on these intermediaries since they act on behalf of principals and other intermediaries in the tourism value chain.

- **Factors affecting ICT exploitation**

As can be depicted in Figure 34, management commitment is central as catalyst to ICT exploitation among travel agents.

Figure 34: Factors affecting ICT exploitation among Travel Agents



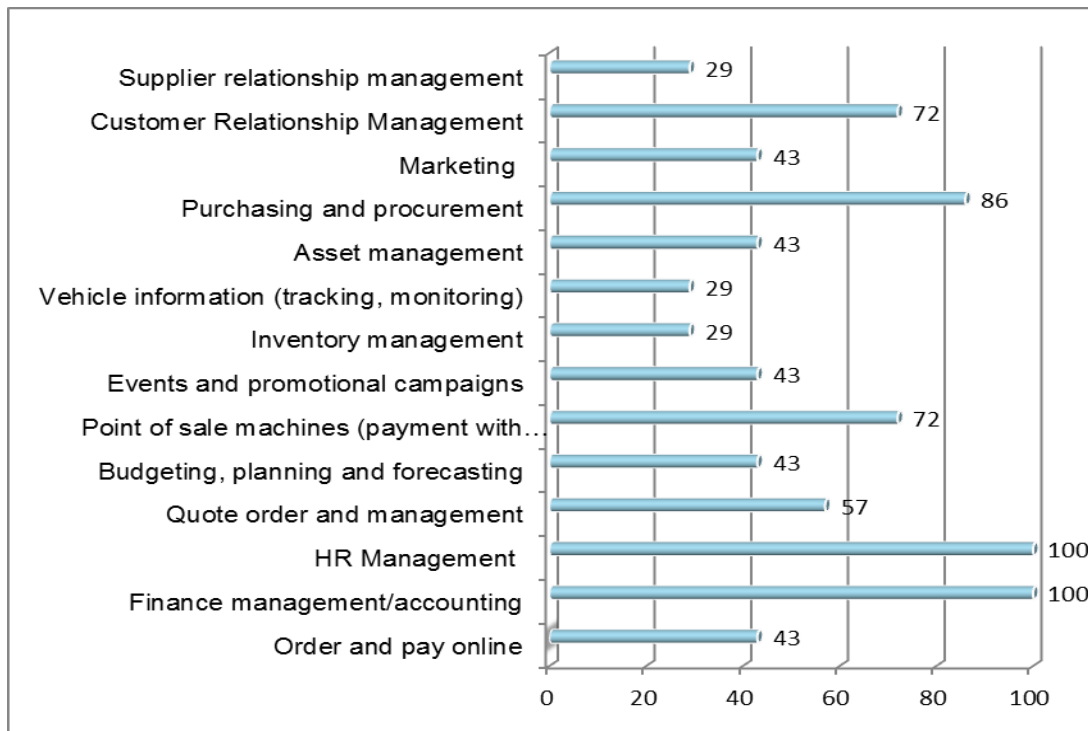
Commitment of the owners and managers often influences decision making in the business on whether ICT adoption and exploitation is part of the overall strategic focus of the firm. This is more pronounced among travel agents, since the majority of these companies are owned by individuals and are relatively small enterprises. Travel agents have no option but to adopt and exploit ICT as owners of CRS and GDS

demand. This is also reflected in the high percentage of these companies using consultants as specialized systems require experts to install, conduct routine and major maintenance and upgrade these systems, and such skills are not normally available internally, hence have to be outsourced.

- **Usage of ICT by Travel Agents**

From the data collected, all respondents mentioned that they are exploiting ICT for HRM and financial management, as can be deduced from Figure 35. Although travel agents in Malawi do not have a large staff contingent, ICT applications are being widely used by these firms to recruit, induct and develop professionals who are conversant with the rules, regulations and guidelines for meeting business goals of travel agents and value creation for the enterprise including organization development for competitive advantage. Furthermore, automation of financial management systems assists them in extensive manipulation and analysis of data. Moreover, ICT exploitation facilitates continuous monitoring of travel agents' processes and timely preparation of monitoring mechanisms and enables preparation of complex analyses and extensive reports both for management and, more significantly, to principals. By and large, ICT greatly helps travel agents in the collection, processing and storage of large volumes of routine transactions from customers and principals. For this reason, modern day travel agents demand both internal and external integration of computer-based systems in their accounting and financial management processes. This enhances efficiency of their operations; communication with principals is greatly improved and reports are generated and disseminated in a timely manner.

Figure 35: Usage of ICT by Travel Agents



Eighty six per cent of respondents professed using ICT for purchasing and procurement of various goods and services from contractors and suppliers such as tourists, principals and other intermediaries. When acting on behalf of contractors, contract obligations are required and this contract becomes an important input for many processes. It is important to note that enforcement of these legal obligations is very central for travel agents as they must abide by them when conducting business. In consequence, since most of the travel agents' transactions are conducted online - including order and quote management, issuing of e-tickets, and online payment by clients, it is critical that travel agents have a clear understanding of the legal implications of B2C and B2B. For travel agents, B2B transactions often involves dealing with numerous principals and intermediaries - either as customers or suppliers while B2C encompasses interacting directly with consumers of principals' products. Carrying out these transactions electronically provides vast competitive advantages over traditional methods.

Point of sale (payment with credit and/or debit cards) and customer relationship management (CRM) were mentioned by 72% of respondents as key areas where ICT is being used. POS systems assist travel agents to offer management and principals' access to a variety of customizable reports. Advanced reporting capabilities helps travel agents to identify common sales trends, such as seasonal variations in demand of products and services thereby assisting management and principals to put in place marketing strategies and promotional campaigns to attract customers in low season. Travel agents have to provide price information that is consistent in multiple locations and POS facilitates this process. Consistent pricing helps to ensure customers receive the same level of service, regardless of which business location they use. As a consequence, customers are more likely to utilize a company's services in the future. It is evident that travel agents improve their effectiveness in dealing with principals and customers due to exploitation of ICT by utilizing POS. The 28% of respondents that are not using POS systems are disadvantaged as they are missing out on the massive benefits that their counterparts are accruing.

Since the use of POS system can assist in achieving customer loyalty, there is a direct correlation between adopting POS system and CRM. Travel agents form strategic alliances, networks, and partnerships with customers and suppliers including airlines, car hire firms, tour operators, accommodation providers and tourists, etc. With the aid of ICT applications, prospective travellers and/or tour operators can view a destination, book accommodation and flights and other forms of transport and pay for all these through a travel agent without leaving their homes. Through the various ICT applications, principals are able to track bookings made via travel agents and determine how much is owed to them. Furthermore, they are also able to keep customers and principals informed of progress at all times and can easily follow up sales quickly either through the telephone and/or email to a recent customer. Above all, the use of ICT applications in customer management facilitates efficiency of administration of travel agents. Usually administration is done by staff that is not directly in contact with customers, but ICT ensures that everybody in the organization becomes customer focused. As can be deduced from this discussion, travel agents that have invested in ICT for CRM are reaping the benefits: improving their interaction with customers and partners, improving the efficiency of internal processes in dealing with customers and becoming effective in building customer loyalty.

ICT is also being used for quote and order management as cited by 57% of respondents. Travel agents get a lot of inquiries that require them to provide quotes to customers – both individual and corporate - who expect speedy response and update and accurate information. This is connected to the above discussion of ensuring quality customer service by providing timely response to customer enquiries. For example, software such as Sage Intacct Order Management automates travel agents' unique order management workflows and pricing requirements using easy-to-configure templates (Sage Intacct, 2017). To this end, online quote and order management provide travel agents' staff the clearest view of relevant, real-time data and are able to track order fulfilment rates, sales numbers, number of transactions conducted and income generated. As an extension of this, travel agents are able to determine very accurately and at a glance the true drivers of business performance, such as which products, sales executives, and customers are driving the most profit—and why. Automation of order and quote management is very important to increase the efficiency of travel agents and the 43% of travel agents that are not yet exploiting ICT – due to insufficient investments - for these key business processes are therefore uncompetitive and lagging behind their counterparts who have automated their systems.

Forty three per cent of respondents reported that marketing; asset management; events and promotional campaigns; budgeting, planning and forecasting; and ordering and paying online were activities that they are using ICT for.

At the core of marketing is the knowledge of customer needs, problems, expectations and the bringing forth of innovative solutions to those problems and communicating them to a defined target audience. Sales promotions draw attention to a particular product or service being offered. Travel agents who are utilizing ICT for marketing and events and promotional campaigns are easily distinguishable and stand out from the rest. Online promotions are both cost and time effective. Travel agents - who largely rely on commission as a source of income - blog promotion, web-based social networking, and email advertising are at an advantage since there is less investment contrasted with traditional advertising methods. In addition, Internet marketing campaigns can be set up by a travel agent at any time as per their convenience. The important point here is that those travel agents that are using online and Internet marketing, promotions and events are gaining a competitive advantage over their counterparts who are not.

Management of inventory and assets using ICT has several benefits for travel agents. Online asset management allows the travel agent to determine whether the asset should be disposed of and at what value. Secondly, IT asset management assists in keeping track of what inventory the firm has and this makes it easier to plan for future spending on assets. On account of this, the 57% of travel agents that are not exploiting ICT for inventory and asset management are disadvantaged and lagging behind their competitors.

As noted, budgeting, planning and forecasting (BP&F) enhances efficiency and effectiveness in the internal

processes of a company. Due to the dynamic nature and fluidity of the tourism industry, travel agents must have a clear understanding of the internal and external environment they are operating in, identify key performance indicators, set strategic plans, identify initiatives and projects, set aside budgets and analyse cause and effect on current/future value that will ensure that they offer a unique selling proposition to justify their existence. To accomplish which, exploitation of ICT becomes imperative.

The study has established that 43% of respondents are using ICT for online payments. Selling and paying online requires enterprises to master ICT, and develop suitable packaging, attractive product descriptions and well-managed inventory of stock, production and orders (International Trade Centre, 2015). However, payment for goods and services is often a barrier to e-commerce in Malawi because the financial infrastructure needed to make and receive payments is lacking, customers have little knowledge of how online payments function and are used to carrying cash. This is reflected in the relatively small number of respondents whose companies are using ICT for online payments. To this end, travel agents in Malawi have to explore other modes of online payment such as M-commerce which is e-commerce conducted over mobile devices and networks. Mobile money has started to be used in many African domestic markets and several local e-commerce applications have been developed. Mpamba and Airtel money, developed by mobile telephone operators in Malawi, makes domestic payments easy. Launched as a way to simplify funds transfers between people, users view these applications as ubiquitous payment solutions in a country where access to banking is limited. With the proliferation of mobile phones even into the most rural and remote areas of the country, travel agents and other tourism operators would greatly benefit by exploring the exploitation of e-commerce through mobile money.

- **Benefits accrued from ICT exploitation**

Travel agents are intermediaries in the tourism value chain that play a vital role in linking the various principals to each other, on the one hand, and principals to tourists, on the other. As can be noted from Figure 36, travel agents can have various benefits from exploiting ICT. Eighty three per cent of the respondents reported that ICT exploitation assists them to save costs; facilitates quick response to markets, customers, suppliers and reduction in delivery time of products and services to principals and customers.

By utilising ICT, travel agents are able to save on time, staff costs, and finances in communicating with principals and tourists. By using GDS and CRS, travel agents are able to control, promote and sell the principals' products locally and internationally. As such, CRS and GDS contribute to reducing costs of communication with principals and customers while, at the same time, offering managerial information on the types of demand and the competitors' position. GDS also provides a platform for offering rapid and firm feedback to clients' requests - making tourism products accessible in an efficient and financially advantageous way. This reduces the costs of communication and reservation and facilitates the payment of commissions to principals by travel agents. In addition to cost savings, ICT exploitation is also beneficial to travel agents as it facilitates quick response to markets, customers and suppliers in the value and supply chain.

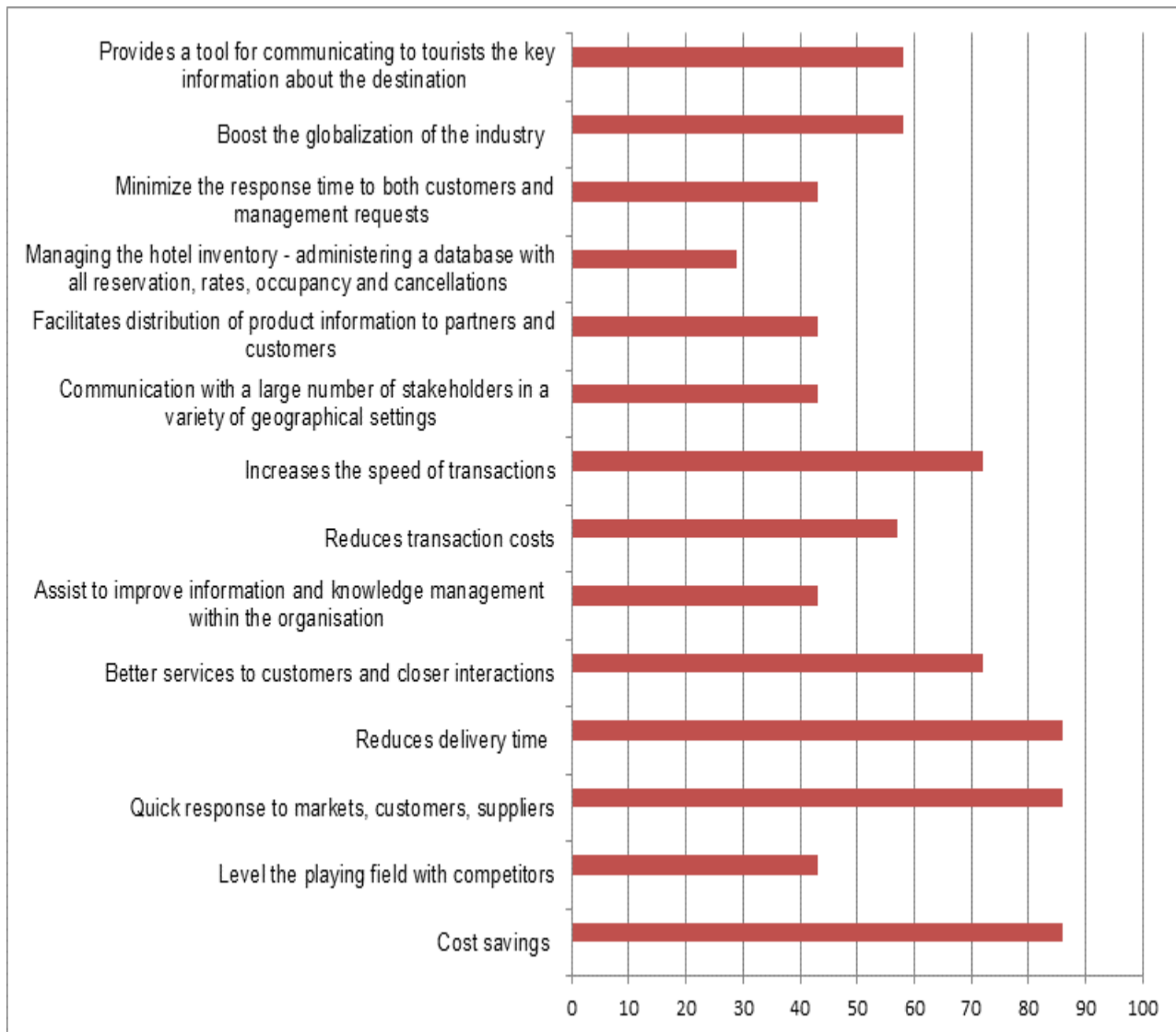
Through the use of ICT applications such as e-mail, CRS, GDS and the Internet, travel agents are able to improve external communication with principals and/or customers, thereby increasing speed of transactions and reliability, thus extracting maximum value from each transaction in the tourism value chain. Moreover, seamless transfer of information through shared electronic files and networked computers (e.g. CRS, GDS) between the travel agent and its principals increases the efficiency of business processes such as documentation, data processing and other back-office functions (e.g. organizing incoming orders and preparing invoices). E-commerce has ensured that the time to pay for services rendered is drastically reduced for both customers and value chain partners of travel agents and the use of websites creates value for travel agents in terms of generating quick response from customers and supplier chain partners in terms of bookings and reservations.

As an extension of the above discussion, ICT exploitation also assists in reducing the delivery time of products and services by travel agents to their principals and customers. Online ordering and payment has made transactions between travel agents and principals and customers more accurate, timely, and less expensive. Moreover, ICT exploitation has had a significant impact on new ways of creating and delivering value - especially for travel agents in developing countries such as Malawi. Through ICT exploitation, and particularly the Internet, these firms are able to get a feel for the customer's expectations, serve them directly, and develop an enduring relationship. This speeds up the delivery of products and services faster than their competitors and increase product innovation, which enhances their competitive advantage.

Seventy two per cent of the respondents pointed out that ICT exploitation offered opportunities for their firms to offer better services to customers and establish closer links and interactions with them. For travel agents in Malawi, ICT exploitation has made it easier and faster for them to supply their customers with a wide range of basic information on the products and services they offer on behalf of their principals. Customers equipped with real-time, accurate and up to date information are able to make buying decisions quickly as they can compare information from various sources. For Malawian travel agents, this is very important as it provides them opportunities to compete on a global scale in a more cost effective manner.

Fifty eight per cent of respondents said that ICT exploitation assisted their companies in ensuring that customer requirements are communicated in real-time to all principals delivering the tourism product; assists in boosting the globalization of the industry by providing efficient tools to develop, operate and globally distribute the company's offerings; and communicate to tourists the key and important information pertaining to the destination.

Figure 36: Benefits of ICT exploitation by Travel Agents



Communicating to principals on customer requirements and demands is very important for travel agents, since their survival and relevance in the tourism industry depends on this. Effective exchange and sharing of information across supply chains play a key role in B2B integration (Yan and Tan, 2009). Porter (1998) concurs with this when he mentions that connectivity (through ICT) has boosted conventional reasons for inter-firm networking and clustering, e.g., creating critical mass, as it facilitates the knowledge-based infrastructure network imperative for today's competitive advantage. In order to interact with their trading partners, travel agents must be able to send and receive messages according to the agreed business protocols. This is achieved through the formation of e-market places which perform a number of functionalities, ranging from advanced personalization, supply chain management, electronic data interchange, workplace integration, and CRM. For travel agents in Malawi, e-market places have presented massive opportunities to network with global principals, communicate critical information

pertaining to customer requirements and supply that information to customers in real-time

ICT exploitation has played a major role in boosting the globalization of the tourism industry by providing efficient tools to develop, operate and globally distribute the tourism operators' products, services and offerings. On the grounds of this, the adoption and exploitation of ICT makes it cheaper and easier for firms to extend their markets, manage their operations and coordinate value chains across borders. For Malawian travel agents, this means the ability to be integrated into the global tourism value chain which enhances their efficiency and competitiveness. This is attained as they are able to establish strategic partnerships with principals from anywhere in the world and to market their products and services to global customers. Thence, ICT has greatly facilitated the globalization of the tourism industry and those travel agents that have adopted and are exploiting ICT have been the main beneficiaries of this process as they are able to perform better in terms of increased sales, lower costs, and improved competitive position.

Forty three per cent of the respondents were of the opinion that ICT was important in the equalization of the playing field with competitors and helpful in assisting to improve information and knowledge management within their organizations; giving them the ability to communicate with a large number of stakeholders in a variety of geographical settings; facilitate distribution of product information to partners and customers; and minimize the response time to both customers and management requests.

ICT exploitation is important in creating opportunities for smaller firms and those from developing nations to compete on equal footing with their larger counterparts and those from developed nations for several reasons. ICT enables these firms to reach global markets that would otherwise be inaccessible. In addition, they are able to communicate with global audiences and market their products and services in a cost effective, real-time manner. This applies to Malawian travel agents as ICT gives them the capacity to communicate and establish strategic partnerships with large principals and other intermediaries from developed nations and conduct business online.

Given its capabilities to widen access, improve quality, and reduce the cost of developing, accessing and maintaining information, ICT offers increased possibilities for managing knowledge. Contemporary themes of strategic management stress that an organization's competitive advantage flows from its unique knowledge and how it manages it. It is therefore argued that the only sustainable competitive advantage in the future will be effective and efficient organizational knowledge management (Lee and Lan, 2011). One of the most vital resources of travel agents is the collective knowledge residing in the minds of the firms' employees, principals, other intermediaries, suppliers, customers, and other value chain partners. Managing such organizational knowledge has the potential benefit of leveraging core business competencies, accelerating innovation, decision-making, strengthening organizational commitment and building sustainable competitive advantage (Gary and Sallis, 2013). For travel agents, knowledge management systems enhance their capacity to share valuable organizational knowledge with principals, other intermediaries and with their own employees through intranets and Internets.

Organizational knowledge flows is facilitated through the exploitation of ICT applications such as expert systems, knowledge bases, various types of information management, software, and document management systems, web-conferencing, collaborative software, content management systems, corporate directories, email lists, wikis and blogs which travel agents are using as effective means for the capturing and transferring knowledge. Therefrom, those travel agents that have adopted and are using ICT have gained competitive advantage over those not exploiting ICT for knowledge management.

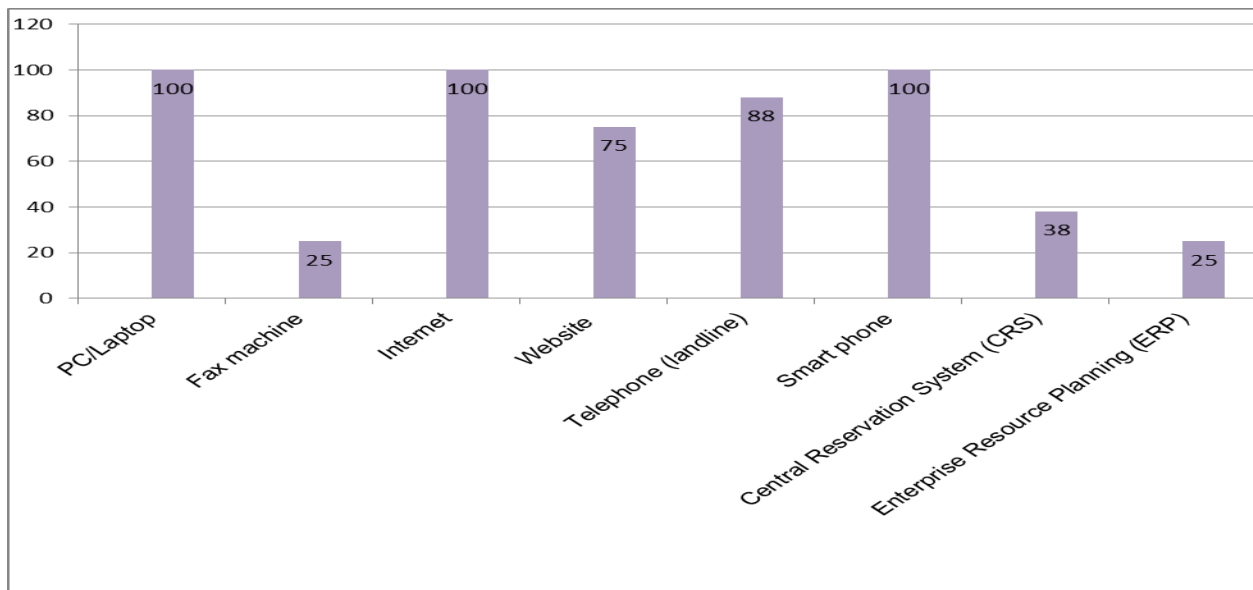
One of the benefits of ICT exploitation is that it facilitates distribution of product information to partners and customers and thereby minimizing the response time to both customers and management requests. For travel agents, ICT exploitation facilitates the creation of new links between internal activities that induces effective and close coordination with their customers, principals, other intermediaries, and suppliers to facilitate integration within the firm. In the same light, ICT broadens the opportunities for travel agents to distribute their principals' products and services to a wide range of customers locally and globally in a more cost effective real-time manner. As such,, ICT provides a cost effective way for travel agents to market their business, launch new products on behalf of their principals, improve communications, gather information and identify potential business partners.

4.2.4.5 Tour Operators

- **ICT Systems and Applications**

All respondents reported that they have a PC/laptop while 25% have a fax machine, depicted in Figure 37.

Figure 37: ICT systems and applications being used by Tour Operators



The Internet continues to be a major tool of communication as evidenced by 100% of respondents. Tour operators need to constantly interact with all their partners, including accommodation and transportation providers and, as such, ICT is critical for the distribution of tour operators' packages. The coordination and exchange of timely information is important because it allows tour operators to coordinate activities, to resolve potential problems and to ensure that customer requirements are communicated to all principals delivering the tourism product. Strategically, ICT play a critical role for tour operators – for example, applications such as Kuoni allows consumers to alter their tourism package online and to build their own itinerary by making it possible to extend the trip, change accommodation, meal plans and add value to their tourism experience. As such, the Internet has become a key ICT application for tour operators and therefore the full exploitation of this technology by Malawian tour operators has ensured that they have become more competitive and has facilitated their integration into the tourism global value chain.

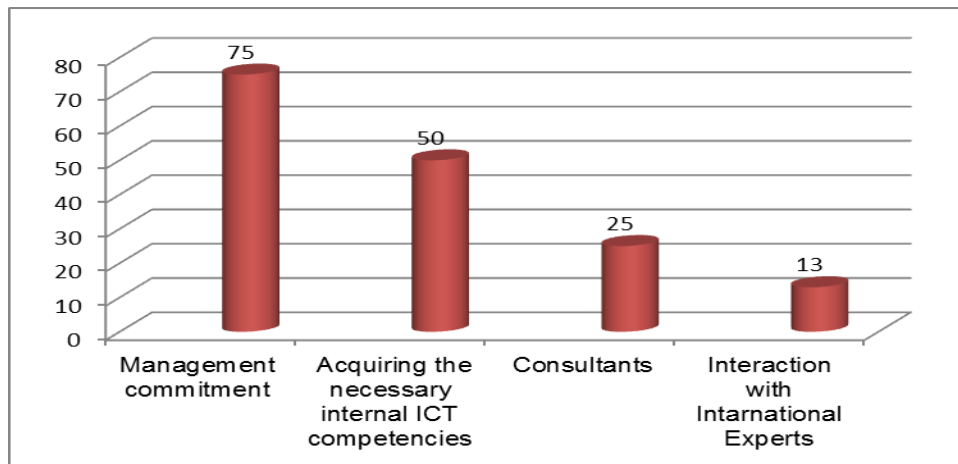
Seventy five per cent of the respondents mentioned that they have a website. Interactive websites empower tourists with more knowledge and reliable and accurate information about the destination which the tour operator is selling, as well as to make reservations in a fraction of time, cost and convenience required by conventional means. Bethapudi (2013) concurs that having become exposed to several tourism products and destinations, experienced, sophisticated, demanding travellers rely heavily on electronic media to obtain information about destinations, as well as to be able to communicate their needs and wishes to suppliers rapidly. By utilizing web analytics, tour operators are able to reduce operating costs in accessing customer data, communicating with them and offering itineraries that suit their needs. However, 25% of respondents did not have a website – a large number considering that there are not that many tour operators in the country. This is attributed to the fact that these are small operators with limited reach in the global market and depends largely on domestic markets for their business. Nevertheless, it is imperative they make the necessary investments in designing and marketing their websites so that they can take advantage of and accrue the numerous benefits that a website provides.

The telephone – both landline and smart phone, are major communication tool for tourism value chain players. For tour operators, 88% and 100% are using the landline and smart phone respectively. From the data collected, 38% of respondents are using CRS, the second highest percentage in the industry after travel agents. However, compared to global standards, this is low mainly due to limited capital to invest in such systems. This also applies to ERP with only 25% respondents reported as using this application.

- **Factors affecting ICT exploitation**

As can be deduced from Figure 38, management commitment is central to unlocking ICT exploitation among travel agents.

Figure 38: Factors affecting ICT exploitation among Tour Operators



There is a direct relationship between the commitment of owner/managers to invest in ICT and the acquisition of the required ICT competences in the organization. These competencies include skills among staff and ICT infrastructure and systems. However, ICT skills are limited among staff in tour operators and there is dependence, to some extent, on consultants who are hired externally to provide specialized services and products. But what is significant and a departure from previous findings is the impact of interacting with international experts that was mentioned by 13% of respondents. Generally, tour operators interact with diverse people from across the globe and it is these global tourists with highly developed technological competencies who pass on the knowledge to the staff of tour operators.

- **Usage of ICT by Tour Operators**

In line with the general findings of this study, all the respondents stated that HRM is a very important function as shown in Figure 39. It is important to note that for tour operators, recruiting professional employees who are experts in tour guiding and customer service is very important. A more innovative method of managing employees is using web-based HR applications which can lead to improved services, better communication and cost reduction. Consequently, this leads to innovative, creative, change oriented, pro-active and dynamic employees who are competent, committed, loyal and trustworthy and therefore execute their tasks in a professional manner.

Eighty eight per cent of respondents declared using ICT for CRM; marketing; purchasing and procurement; budgeting, planning and forecasting; finance management/accounting; and ordering and paying online.

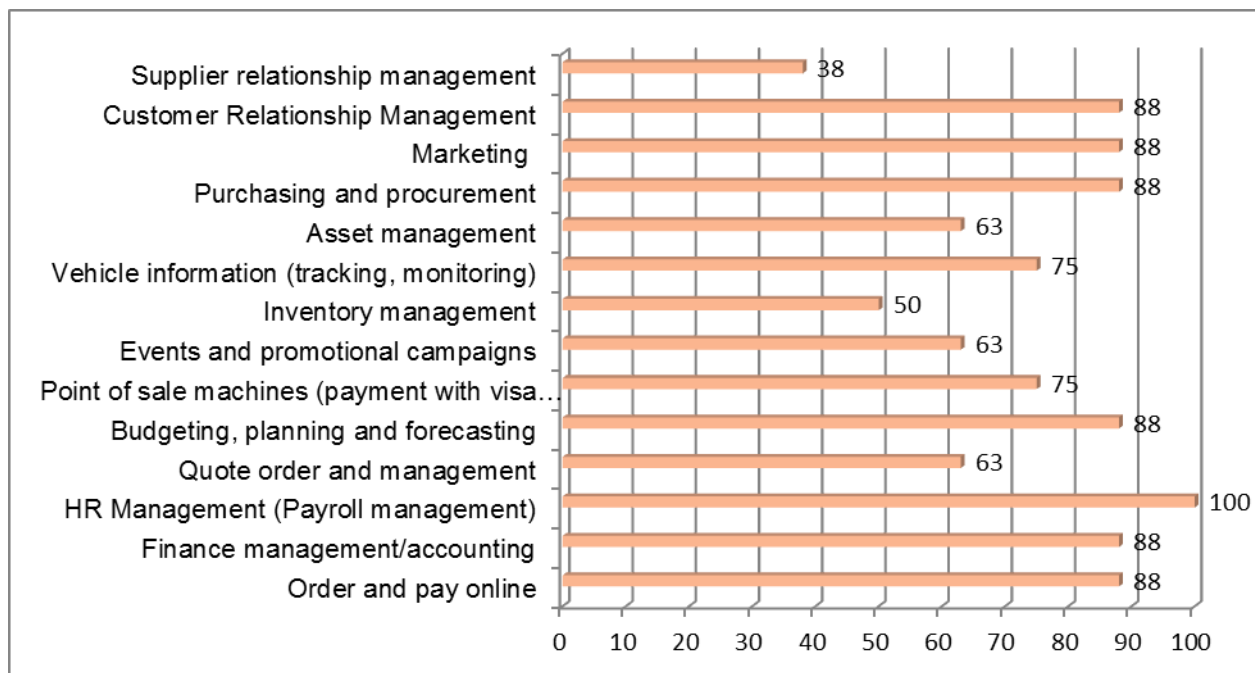
Having contact with other tourism operators, helping customers make the right choice, providing the right level of information, advice and guidance; are very important steps in CRM. The website that has web analytics features in this instance is a very important ICT tool and application to gather data on tourists visiting the site and informing them on the available services of the tour operator, principals and other intermediaries; what they should expect

during the trip and give other details that will assist them to make informed decisions. Once the customer makes contact, it is important that the tour operator efficiently handles customer enquiries and this can only be done through effective exploitation of ICT.

The web gives tour operators instantaneous access to individuals, principals and intermediaries around the world and facilitates communication with global audiences. Arguably, tour operators that are exploiting ICT have competitive advantage over their counterparts that are still using offline or traditional mediums of marketing. Tour operators that are lagging behind in terms of ICT exploitation for marketing should quickly put in place mechanisms to invest in online marketing strategies if they are to survive in this highly competitive industry.

The use of e-procurement by tour operators to facilitate information flow from principals and other intermediaries, for example, notifying them about latest offerings and promotional deals via email and on the website in order to attract niche markets, is very important. Also, ICT is being used by tour operators to communicate directly with tourists and consumers on the web to highlight products and services of various tourist attractions on offer. In addition, by using web analytics, they are able to gather important information on customer needs and requirements.

Figure 39: Usage of ICT among Tour Operators



Considering that four out of every five tour operators are utilising ICT for budgeting, planning and forecasting (BP&F), it underlines the significance of this business process to them. BP&F assist tour operators in driver-based planning and forecasting to enable predictive and dynamic resource allocation (Accenture, 2017). Since tour operators have to systematically plan and forecast the tourists' experiential experience and journey for maximum

enjoyment and impact, it is imperative that careful planning on a package that will give maximum satisfaction and forecasting on elements such weather patterns and other variables have to be carefully considered. This improves their efficiency in dynamic learning capability to leverage allocation of resources, time and budgeting more efficiently. As such, this contributes significantly to designing cost effective packages for tourists and/or principals and intermediaries thereby augmenting their competitiveness to acquire more business.

For tour operators, ICT exploitation enhances their accounting processes, harmonises the payroll procedures and systems, removes and eliminates the enormous manual operations of the accounting clerks, relieves senior staff in the accounting section to more monitoring and evaluation duties, improves the capability of the organisation to generate reports in a timely manner as requested by management and other stakeholders, and generally removes the bottlenecks faced by the accounting section due to work overload as a result of manually entering and analysing data. All this improves efficiency of internal systems and is a key element in tour operators to gain competitive advantage.

Ordering and paying online has become the norm rather than the exception for international tourists. For tour operators in Malawi, e-commerce has assisted them to compete in the global market by facilitating online payment and receipts for services rendered on behalf of principals and other intermediaries. And so, ICT is assisting tour operators to increase business competitiveness and enhance enterprise performance through indirect cost savings such as labour productivity and direct cost such as reduction in payment for services and receiving payment from customers.

Seventy five per cent of respondents said that they are using ICT for vehicle information (tracking, monitoring) and point of sale machines (payment with visa and debit cards). For tour operators - who are mainly engaged in the business of transporting foreign tourists into remote and strange territories, it is vital that all their vehicles are installed with tracking devices. GPS vehicle tracking system acts as a theft prevention and rescue device and thereby ensures the safety of the tourists as they are travelling. In addition, tour operators are able to receive real-time information such as location, speed and expected arrival time of the vehicles in a concise and easy-to-read format, thereby assisting advance planning for the trip's itinerary, communication with the destination and keeping the tourists informed at all times. This is very important as they need to manage risks and expectations of tourists who are safety and time conscious and also need to keep their families and friends in their home countries informed of their whereabouts at any point in time – in case of an emergency or an unexpected occurrence. In cases where tour operators do not have these devices installed to the vehicles, the consequences of a hijack or accident with delayed response can tarnish the image of the tour operator – losing trust of principals and partners with disastrous repercussions in terms of losing clients.

For tour operators, whose main clientele base are foreign tourists who are more proficient at using visa cards for paying for goods and services, having POS machines and offering opportunities for them to pay electronically is

very important. Considering that tourists travelling to foreign countries do not want to carry a lot of cash with them – for security reasons, ICT exploitation by tour operators that allows tourists to pay using visa cards is imperative. In addition, since tour operators mainly work with principals and other intermediaries, if they do not have mechanisms in place for payment using visa cards, the customers (principals and intermediaries) may consider them backward and hence bypass them in recommending tourists to preferred operators. All this denotes that the ICT exploitation facilitates access to customers and improves the visibility of the tour operator.

Sixty three per cent of respondents mentioned exploiting ICT for quote and order management; events and promotional campaigns and asset management.

By using ICT for quote and order management, tour operators are able to maximize speed, accuracy, and efficiency in order and quote generation. By responding speedily to customer requests, the tour operator is positioned as a professional and efficient service provider, thereby satisfying tourists and other tourism value chain partners, thereby improving their competitiveness in the global tourism value chain. As the report by Oracle (2014, p.1) concurs, "...by applying innovative thinking and Web 2.0 technology, companies can eliminate the delays and errors inherent in the cumbersome processes typically used to sell complex products and services across multiple channels. Companies must eliminate inefficiencies throughout the inquiry-to-order (ITO) process to remain agile and competitive in today's economy." This is true of tour operators, who need to respond speedily and provide accurate information to tourists or principals and intermediaries inquiries if they are to remain competitive and not lose business.

Events and promotional campaigns are part of a marketing strategy that is used to reach out to clients at high impact, usually in their natural settings. In the global competitive tourism market, strong online presence is mandatory for every business organization to drive potential customer base. Today, the attention of tourists globally is centred around the web; individuals of any age, ethnic, background and societal position are very much connected to the web in one way or the other, to channelize their personal, professional or business related procedures (Tewari, 2017). The effective exploitation of ICT gives local tour operators the capacity to highlight their brand beyond Malawi, and target more customers in result-oriented manner. Moreover, with Internet promotions and the use of web analytics, tour operators are able to target tourists across the globe and able to visually give the prospective customer an experience of what they need. This interactive promotional campaign empowers the prospective customer to make informed decisions on the destination. All this denotes that effective ICT exploitation is a powerful promotional tool that is greatly benefiting tour operators in Malawi.

Considering that tour operators, by and large, depend on the reputation they establish with clients – the state of their assets is an outward manifestation of their professional presentation. In addition, they need to know the condition of their assets at any point in time. For example, they must have on their fingertips information on the expiration dates of insurance or certificate of fitness for each vehicle so that they are able to take the necessary

measures to avoid embarrassment. This signifies that the exploitation of ICT applications that are able to automatically generate the required and necessary information without physically examining the vehicles and other assets is very important.

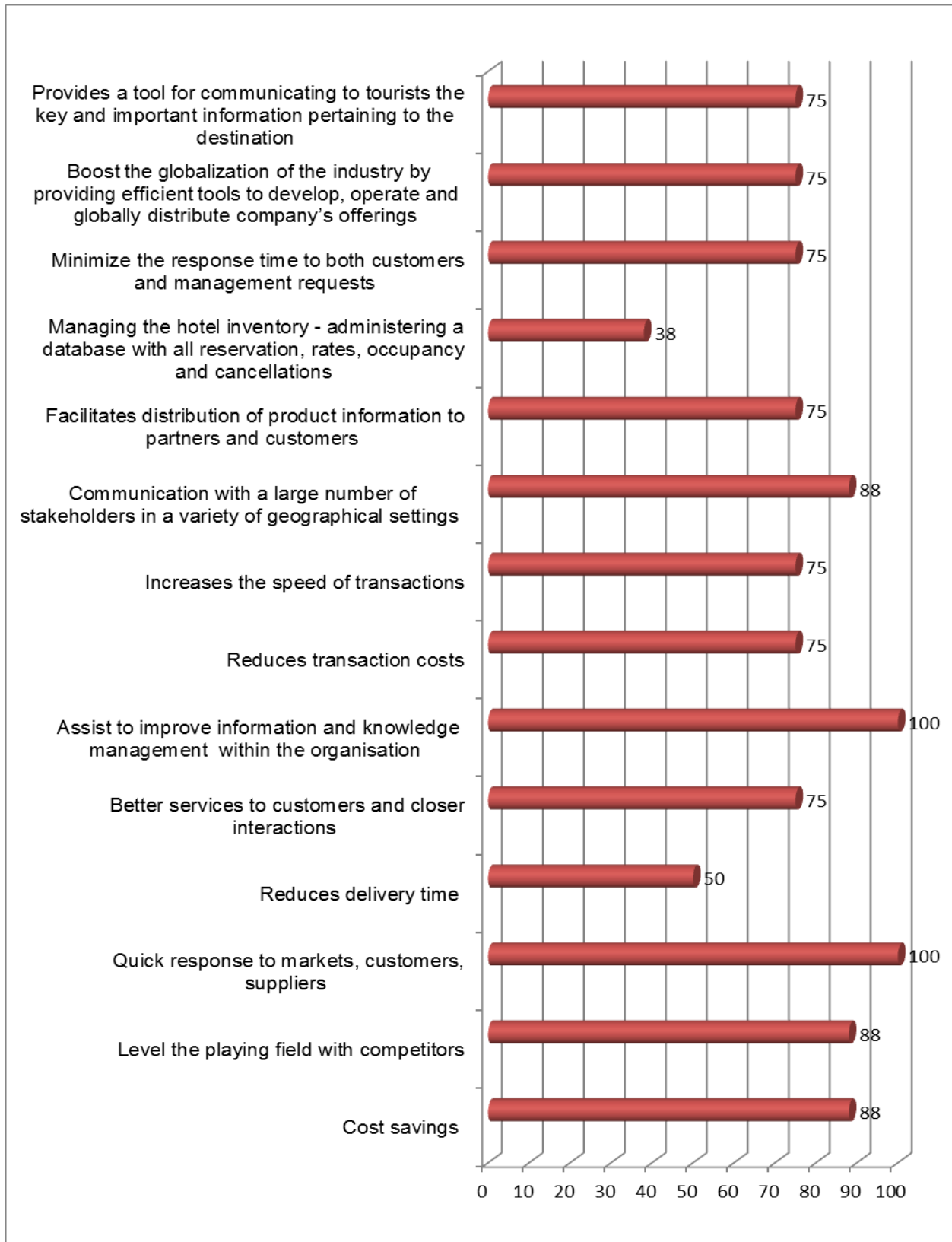
- **Benefits accrued from ICT exploitation**

As can be construed from Figure 40, the majority of tour operators mentioned knowledge management improvement and quick response to markets (100%); cost savings; levelling the playing field and communication with a large number of stakeholders (88%) as the main benefits of ICT exploitation.

ICT allows for organizational knowledge to be applied across time and space by increasing the size of internal social networks and the amount of organizational knowledge available to customers, principals and other intermediaries. Moreover, ICT exploitation also enhances the speed of knowledge integration and application by codifying and automating tour operators' routine jobs such as online bookings, payments and others. Database management systems - providing access to the stored data by application programs, is pivotal in managing customer, principal and intermediary data by tour operators.

ICT exploitation is instrumental in facilitating rapid response to markets, customers and suppliers' needs, inquiries and demands. Tour operators depend on referrals from other intermediaries and principals in the tourism value chain to access customers. As such, quick response to inquiries from customers and other tourism operators is critical to enhancing their competitiveness. ICT is enabling them to respond quickly to customers' inquiries in real-time regardless of their geographical location. To this effect, ICT exploitation allows for instant global dissemination of information across principals, intermediaries, suppliers and customers of tour operators. Linking intranets to the Internet allows for instantaneous positioning of Malawian tour operators on different foreign markets and increases the temporal density of expansion as they are able to enter new markets rapidly. As such, the enhanced exploitation of ICT by Malawian tour operators seems to provide them with greater flexibility in the management of their geographically dispersed network of intermediaries, principals and customers. It can be deduced therefore that ICT offers them the opportunity to effectively coordinate within the tourism value chain and establish inter-organizational networks on a global basis, thereby enhancing their competitiveness and comparative advantage.

Figure 40: Benefits of ICT exploitation by Tour Operators



Cost savings, levelling the playing field with competitors and communication with a large number of stakeholders in a variety of geographical settings were mentioned by 88% of respondents as benefits for ICT exploitation.

Cost savings has emerged in this study as a major benefit for ICT exploitation across all tourism value chain players. Through the use of intranets and the Internet, staff from different geographical locations and those in the field is able to interact in real-time, cost effective manner. In addition, with regards to customer database management, web analytics enables tour operators to have customer databases with a history of client-specific correspondence which helps managers and employees to respond more quickly and effectively to customers. At the tourism value chain level, ICT, especially the Internet and e-commerce, assists tour operators to reduce significantly the costs of conducting transactions with principals, other intermediaries and suppliers, thereby increasing the speed and reliability of these transactions. Internet-based B2B and B2C interaction and real-time communication facilitates the reduction of information asymmetries between tour operators and customers on the one hand, and enhances closer working relationships among tour operators and other value chain players.

Tour operators have to connect with multiple value chain partners simultaneously and the ability to connect through multiple channels – whether via the Internet, wireless devices or telephones; breaks down the barriers of technology disciplines, distance and time to enable connectivity anytime, anywhere across any device. This allows tour operators to communicate with multiple stakeholders across geographical settings at the same time. Indeed, ICT applications such as video conferencing and instant messaging have become essential tools in enabling real-time collaboration between tour operators and other tourism value chain players in multiple geographical locations and empowers them to address the demands of the global tourism value chain - where principals, intermediaries and customers operate in different time zones and at geographically dispersed locations, thereby improving their efficiency and productivity.

Three in every four tour operators mentioned that ICT exploitation was beneficial in a) providing a tool for communicating to tourists important information pertaining to the destination, b) boosting the globalization of the tourism industry by providing efficient tools to develop, operate and globally distribute company's offerings, c) minimizing the response time to both customers and management requests, d) facilitates distribution of product information to partners and customers, e) increasing the speed of transactions, f) reducing transaction costs, and g) offering better services to customers and closer interactions. All these have been previously mentioned to some degree by other tourism value chain players above. Let's examine how these apply to tour operators.

ICT is indeed an important communication tool to raise awareness on important information pertaining to the destination to tourists. Tour operators greatly depend on tourists visiting the country as their main customers and therefore the effective marketing and promotion of the country as a whole as preferred tourist destination is a very important element for their business success. On this account, tour operators have to market the various aspects that the entire country offers as an ideal destination and what attractions appeal to tourists. By using the Internet,

mobile technology and wireless computing as marketing tools, tour operators provide tourists with the means to gain immediate access to relevant information about the destination.

ICT is facilitating the globalization of the tourism industry by providing efficient tools to develop, operate and globally distribute company's offerings. The fragmented and interdependent nature of the tourism product means that various agents with influence on the product offered must co-ordinate their operations to provide the overall experience. Competitive advantage depends on organizational competences and capabilities, and in the global tourism value chain, lead firms such as airlines and hotel chains play an important role. The exploitation of ICT has facilitated the integration of tour operators from Malawi into the global tourism value chain through the use of the Internet and e-commerce which is enabling them to conduct business online with these lead firms. These operators are able to make and receive payments to and from principals located anywhere in the globe for services rendered online. Furthermore, tour operators are also able to promote and market their services to global audiences and principals regardless of their geographical location through the use of ICT. Likewise, they have the capacity to establish strategic partnerships and alliances with regional and global principals and intermediaries without necessarily having any physical contact but networked together through alliances into which they are integrated. This is greatly enhancing the competitiveness of Malawian tour operators that are exploiting ICT.

Through ICT exploitation, the response time to both customers and management requests made to tour operators is also greatly minimized. In terms of B2C, ICT has enabled tour operators to respond in real-time to customer requests and provide instant feedback to their inquiries. In the same vein, customers are able to access information on the tour operators' services such as pricing, schedules, etc. through their websites and online mediums. At another level, ICT has greatly improved the response to management requests on the status of the company and its day to day operations. Records can be kept and tracked more effectively with the use of computerized system - increasing company efficiency and minimizing errors to ensure customer satisfaction. Moreover, ICT exploitation is very important in facilitating effective communication between management and employees, boosts organizational learning process and the availability of information anytime and anywhere as management requires it. This has greatly improved the response time required to make assessment on employees' performance, promotion of teams with diverse skills and aligning the firm's human resources needs to meet its strategic objectives. This entails improved performance and competitiveness of the tour operators that are exploiting ICT.

There is no doubt that ICT expedites the provision of better services to customers and closer interactions with them. Use of digital electronic methods and tools to gather, process, share and distribute information and services throughout the tourism value chain provides a competitive advantage for tour operators. For example, tour operators in Malawi are utilizing Web based technologies such as web analytics to market their products and services and craft tactics to encourage loyalty. In addition, through the use of these web analytics, they are able to get more information about the customer and customize the information and thereby providing tailor-made services and products for specific market segments. ICT is also greatly supporting tour operators in the provision of after

service customer care and soliciting feedback from customers by using the Internet and wireless communications. The use of this relationship marketing is assisting tour operators in Malawi to create competitive advantage and firms exploiting ICT are reaping numerous benefits ranging from superior customer service, improved profitability, sales, reduced operational costs, enlarged customer base and a broader market share.

Sixty three per cent of respondents pointed out that ICT ensure that customer requirements are communicated to all principals delivering the tourism product while 50% stated that it assists them to reduce delivery time for their products and services. Due to the nature of the tourism industry with firms that are interlinked and depend on each other to deliver services and products to customers, ICT is at the centre of ensuring that customer requirements are communicated to all principals delivering the tourism product. Principals rely greatly on intermediaries such as tour operators to access tourists and therefore there is need to ensure that customers (tourists) receive the right information on the services and products they offer. To this end, there is great reliance on ICT tools such as emails, websites, CRS and GDS to access and disseminate information from and to intermediaries and principals.

As can be deduced from the foregoing discussion, ICT is pivotal in assisting tour operators to cut down on the delivery time for products and services to customers, principals and intermediaries. Considering that these firms are dealing with numerous partners and customers located in different locations and operating in different time zones, communication with them becomes important to ensure that there are no delays in accessing and disseminating much needed information. The use of CRS has facilitated the process of networking between tour operators and customers where the latter are able to directly make bookings online and assists the former to respond real-time to inquiries from customers. This has narrowed the time lag between quote, order and booking; and customers can have products and services that are tailored to meet their needs. The Internet provides instant search results for tour operators' products and services, along with real-time pricing information. Electronic payment for services rendered saves time as money transfers between virtual accounts usually takes a few minutes. In addition, it is convenient to pay online as all the transfers can be performed at anytime, anywhere. More significantly, tour operators that have upgraded in their ICT applications are using Business Webs, which are "elaborate network of suppliers, distributors, commerce service providers, and customers that conduct business communications and transactions on the Internet and other electronic media in order to produce value for end-customers and for one another" (Brown and Lockett, 2001, p.15). The use of these systems reduces delivery time of information and services that are provided by each member of the web. In the case of tour operators, through the use of GDS and CRS, they are able to access information on principals' customers, contact them in real-time and make business deals in a fraction of a time. All this means that 50% of tour operators using ICT have competitive advantage over their counterparts who have not adopted ICT applications.

4.2.4.6 Insurance Companies

- **ICT Systems and Applications**

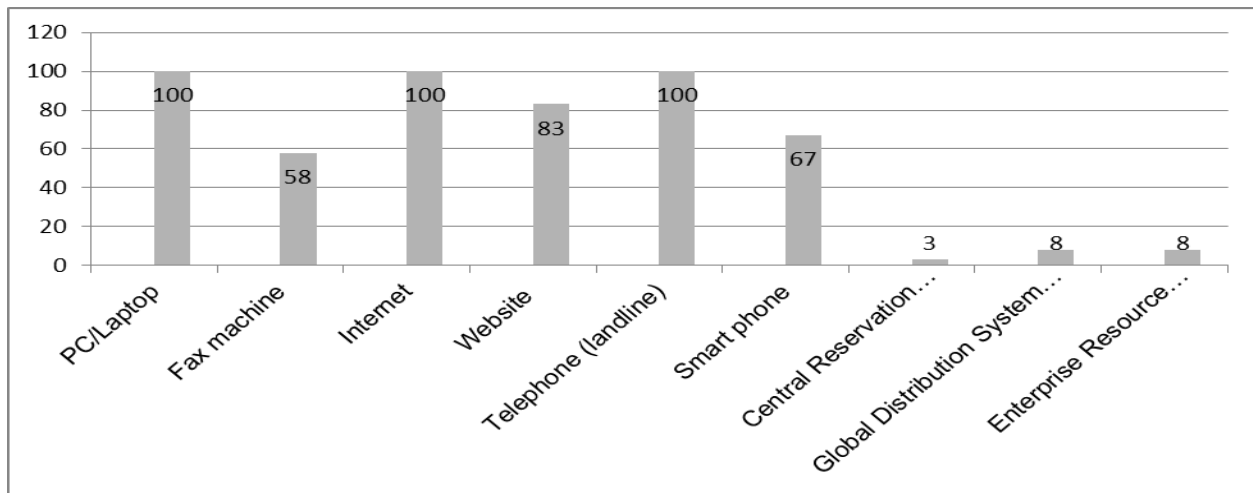
Insurance companies provide cover to all tourism value chain players and play a major role in ensuring that all players are covered in case of accidents and other natural disasters. As can be noted from Figure 41, all the respondents said that they are using a PC/laptop.

Fifty eight per cent of respondents mentioned that they are using a fax machine as a mode of communication. This is a relatively high number compared to other tourism operators. Insurance companies have to communicate with different types of clients which include individuals, SMEs and large businesses and this means that they have to use the most cost effective convenient means to communicate with each market segment. Seeing that insurance also deals with huge amounts of paperwork such as forms to be filled and sent to clients, fax machines are more convenient, especially in an environment where Internet connectivity is low. This is a significant finding in that, although the general trend is that the fax machine has lost its prominence, it is still an ICT tool being used by at least three in every five insurance companies in Malawi.

All respondents stated that they are exploiting the Internet in their daily business processes. The Internet is enabling greater integration of businesses and a blurring of traditional organizational boundaries (Overby and Min, 2001), and this is more pronounced in the Insurance industry which is traditionally a bricks and mortar one. The Internet is enabling easy two-way access to customers, suppliers and partners while streamlining internal business processes. As such, the Insurance industry has had to migrate from a bricks and mortar approach to being ICT driven in order to meet changing business environment and customer needs. This is very significant for an industry that is notorious for its bureaucratic procedures and red tape that has caused people to characterize it as inefficient. The advent of the Internet has facilitated effective transitioning of the insurance industry into a more customer-oriented and service driven one.

The telephone – both the landline and smartphone are important ICT tools in the insurance sector and all the respondents cited having landline phones while 67% are utilizing smartphones. For these companies, the smart phone is a communication tool that facilitates interaction between the sales team which spends most of the time outside the office with potential and existing customers and with fellow staff both online and verbally. In addition, since the insurance industry requires one-on-one communication between customers and staff, the smartphone and the landline is extensively used as a communication tool in day-to-day operations. This makes the telephone a vital component of the business architecture of Insurance. However, despite the proliferation of smartphones and the fact that they have become ubiquitous and synonymous with business, only 32% of insurance companies are exploiting this ICT tool and this is cause for great concern.

Figure 41: ICT systems and applications used by Insurance companies

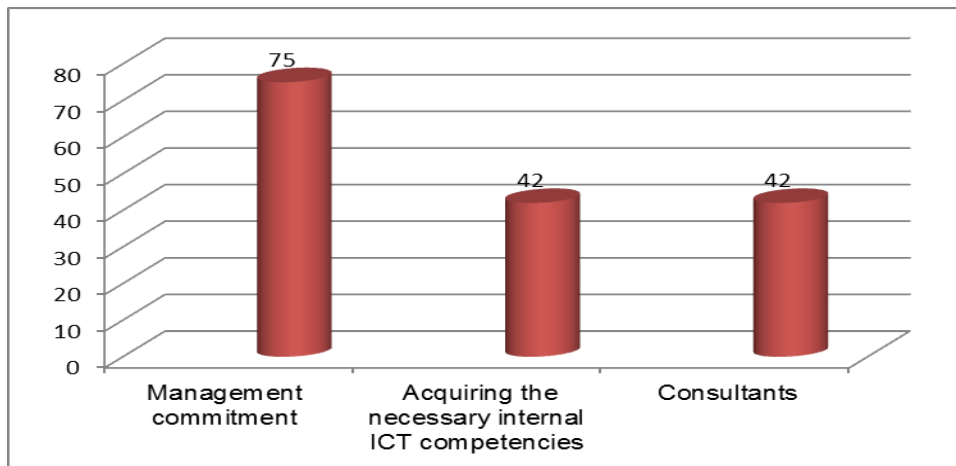


Malawian insurance companies are heavily lagging behind in the exploitation of more advanced ICT applications as can be noted from the findings of this study where a meagre 3% are using CRS and 8% are using both the GDS and ERP. This may not be surprising at all considering that the insurance industry is very conservative and traditional in the way it conducts business and tends to rely more on one-to-one communication rather than online. In addition, the CRS and GDS, which are mainly used by mainline tourism operators such as travel agents, may not be applicable to Insurance companies. However, the low adoption and exploitation of ERP raises caveats for the industry's evasiveness to adopt and exploit modern ICT applications. Considering that insurance business is heavily dependent on interactions with customers - orders, claims, underwriting, complaints, etc. it is imperative that integration of departments within the organization should be encouraged, and ERP is central to this. It is imperative that the insurance industry take drastic measures to invest in ERP if they are to remain competitive in a fast changing business environment.

- **Factors affecting ICT exploitation**

Having a better understanding of the benefits of ICT exploitation and the consequences of not investing in ICT by top management of insurance companies remains an important factor that influences ICT decisions as illustrated in Figure 42. Those executives who are aware of the strategic importance of ICT to the success of their organizations have an edge over their counterparts with negative attitude towards ICT and who are afraid to let go of their traditional ways of doing business. The study has found out that owners must have a positive attitude to assist their companies to adopt ICT.

Figure 42: Factors affecting ICT exploitation among Insurance companies



Insurance companies that have the capacity to obtain internal ICT capabilities are able to fast track ICT exploitation in their organizations. This relates to the capacity the company has to investing in ICT infrastructure, systems and training of staff. The more resources that are committed to buying ICT systems, services and products, the greater capacity for the company to increase its competitiveness in the industry. The influence of consultants in ensuring that insurance companies are exploiting ICT is as a result of limited skills within the organizations in providing ICT systems, maintenance and upgrading and training of staff. As a consequence, consultants are used to provide specialist services and products.

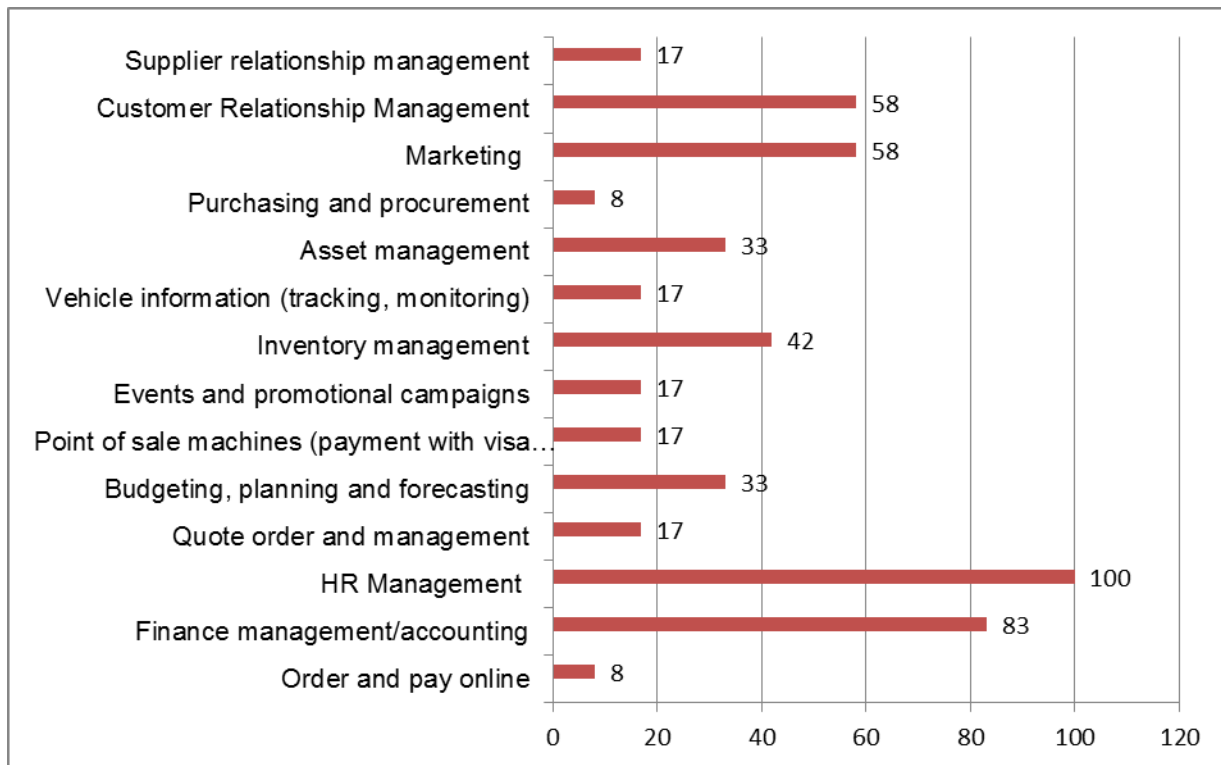
- **Usage of ICT by Insurance Companies**

In line with the general findings of this research, all respondents in the insurance sector said that they are exploiting ICT for HRM while 83% mentioned that they are using ICT for financial management, as illustrated in Figure 43. As has been observed from earlier discussions, HRM and financial management are business support functions that have been automated by the majority of tourism operators. Insurance companies that have integrated ICT financial systems and processes have enhanced the efficiency of their internal business processes and streamlined financial reporting processes.

Fifty eight per cent of respondents cited using ICT for customer relationship management and marketing. Considering the diversity of customers that insurance companies are targeting, the use of Web based technologies such as web analytics to attract new customers; analyse their preferences and behaviours; customize support services while increasing services and value benefits; retain customers; and craft tactics to encourage loyalty is critical. These Web based features include interactive websites or Internet-based tools integrated into organizational systems, which, when properly customized, enable the required interaction with the customer. Thus, the relationship between Insurance companies and their customers in the tourism value chain cannot be realized without effective ICT exploitation. Suffice to say that insurance companies have to be highly competitive to do well

in the business environment; therefore, it is vital for them to encourage behavioural patterns of continuous re-purchase and to retain customers in order to succeed.

Figure 43: Usage of ICT by Insurance companies

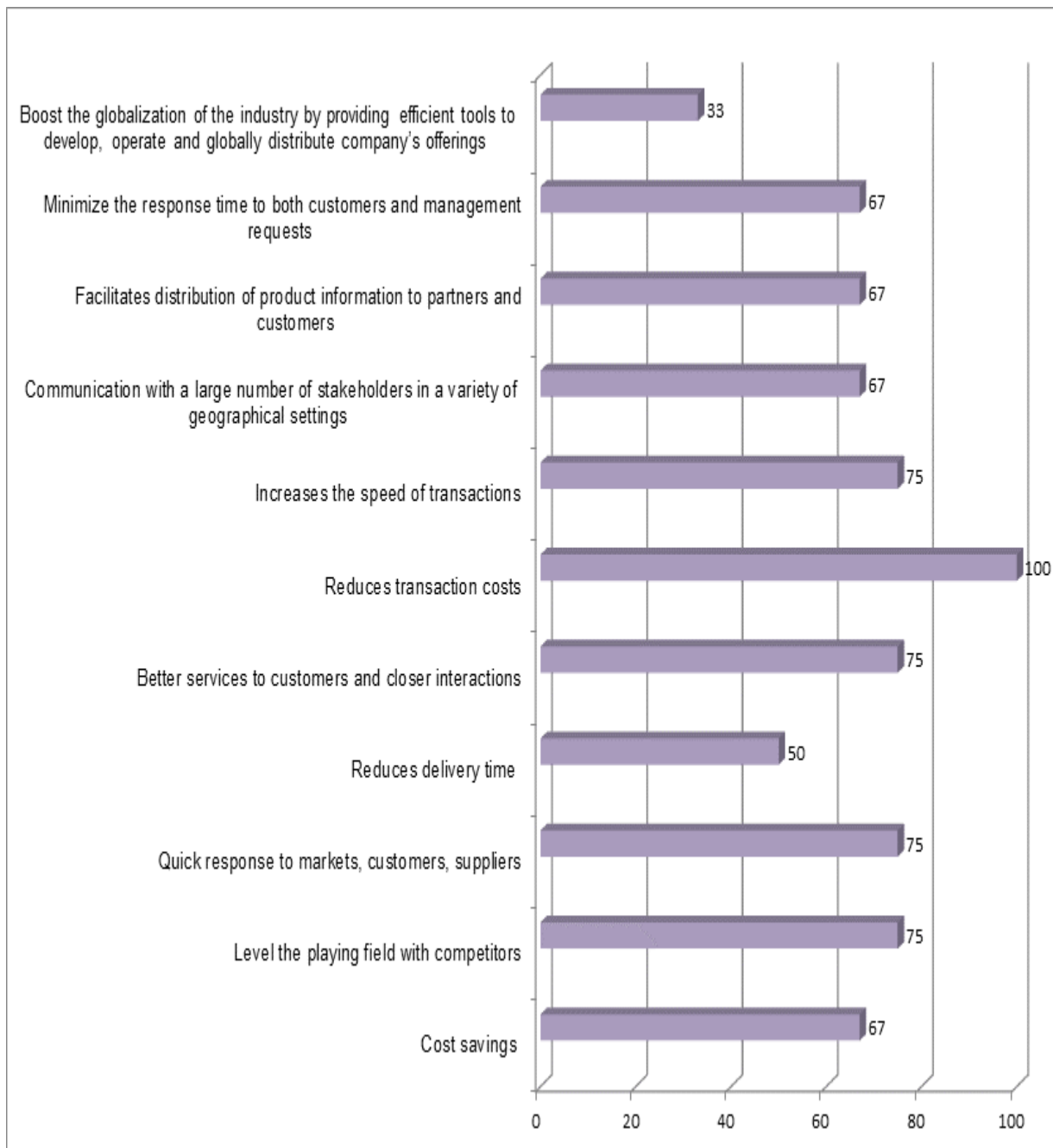


ICT usage in inventory management improves information sharing by facilitating internal coordination within a firm such as determining inventory levels for each department at any point in time and externally with suppliers so that they are communicated to quickly to supply the required inventory; and this is positively associated with operational and financial performance. The use of intranets, the Internet and websites facilitates real-time online communication that ensures the efficient flow of products and services across the supply chain which leads to a reduction in inventory levels that are needed at any one point in time. In this case, the majority of insurance companies in Malawi, 58% have not automated their inventory management processes and it can be deduced that they are manually managing their inventory; thereby being inefficient and uncompetitive on the market place.

- **Benefits accrued from ICT exploitation in the insurance industry**

Insurance companies that are determined to get closer to their customers and are sharper, faster and more innovative to responding to their customers' needs are using ICT and are accruing various benefits as depicted in Figure 44.

Figure 44: Benefits from ICT exploitation by Insurance companies



All respondents stated reduction in transaction costs followed by 75% who said that ICT was beneficial in levelling the playing field with competitors; provides quick response to markets, customers and suppliers; facilitates provision of better services to customers and closer interactions with them and ensures that transactions are done speedily.

Cost reduction is one of the major benefits that tourism value chain players are accruing from the exploitation of ICT. ICT exploitation is enabling the digitization of claims through the use of monitors and applications which allow policyholders to initiate claims instantaneously, making it easier for policyholders and speeding up the turnaround time of processing. Moreover, technology is also strengthening fraud prevention and detection as behavioural, pattern recognition and other fast developing analytical techniques enable insurers to quickly scan for people who may be likely to commit fraud and identify suspicious claims. In addition, automation and artificial intelligence cut costs by speeding up routine underwriting; providing a more informed basis for pricing and loss evaluation. The emerging opportunities include using tracking data in areas ranging from equipment sensors to the GPS transponders on container ships to offer real-time risk monitoring, pricing and protection. As can be deduced from all this, ICT exploitation by insurers has drastically assisted them in reducing cost across all business processes of the insurance business – thereby enhancing the competitiveness of the industry.

ICT is beneficial in levelling the playing field with competitors. Regardless of size and location of the company, e-business is enabling clients to report accidents and make claims online; thereby reducing the time spent filling forms manually. Electronic payments of claims by the insurer are easing the way business is done and increases the efficiency of the business processes. Online marketing and promotion of the insurer's goods and services is possible via the use of the firm's website, selling through emails and conducting promotions through direct selling online. To this end, ICT is transforming traditional firm transactions of insurers and is creating new market places by altering the process by which transactions take place, creating new products and services and by creating new markets in time, space and information that did not previously exist. In the same vein, ICT is enabling business networking within and between insurers, other tourism value chain players and geographical regions to grow. This in turn is providing a platform for the exchange of experiences, options and opportunities for mutual cooperation and technology transfer and thereby benefiting insurers from developing countries like Malawi and small firms to compete on an equal footing with bigger firms and those from developed countries.

ICT is very important in providing quick response to markets, customers and suppliers for insurance companies. For these companies, ICT is an effective tool that is being used for improving external communication and delivering quality service to customers. The use of e-mails; social media such as WhatsApp, Facebook; short message services (sms); and website facilitates two-way communication between the firm and its clients whereby the firm is able to send important information such as premiums, new products and services, expiration dates of policies to customers while, customers can also directly communicate with the firm on accidents, fill online claim forms and pay online for premiums. It can be inferred therefore that ICT are assisting insurance firms to create new,

strong linkages between internal activities, and coordinate these actions more closely with their consumers thereby responding quickly to customer claims and able to underwrite policies in a timely manner. Through the use of ICT, insurance firms are engaging in e-commerce which aids them in increasing their efficiency in their day-to-day business operations as they are able to order and pay their suppliers online, thereby being able to respond instantly when inventories are running low. It can be deduced that the use of ICT by Malawian insurance companies is helping them to remain competitive as they are able to rapidly respond to customer and partner requests, thereby gaining efficiency in their operations and interactions with key business stakeholders.

Another benefit of ICT exploitation that has been widely discussed in this study is that it facilitates the provision of better services to customers and facilitates closer interactions with them. Due to competition, there is need for insurance firms to provide superior services to their customers if they are to retain them - since switching from one Insurer to another is easy once the policy is due for renewal. Insurance processes often rely on heavy manual workarounds, including re-inputting of information onto multiple systems. These manual processes can be time consuming, demands that customers fill volumes of papers to make claims and even processing their payments is a laborious procedure. However, the use of ICT simplifies these processes. A new generation of monitors and apps now allow policyholders to initiate a claim instantaneously, making it easier for policyholders and speeding up processing. In addition, ICT applications such as emails enable Insurers to communicate speedily to customers and access from them important information pertaining to their policies or claims. This is facilitating closer interactions in real-time, yet virtually, between policyholders and insurers, thereby enhancing the competitiveness of these firms that are utilizing ICT.

ICT exploitation has as one of its benefits increase in the speed of transactions for the companies that have adopted it. For insurance companies, e-commerce is facilitating online payments for both the insurers and their customers and is increasing the speed of financial transactions, saving time and thereby increasing the efficiency of delivering services to customers. The high accessibility to mobile phones by a large portion of the population is contributing greatly in mitigating the impact of the digital divide in developing countries such as Malawi. Information is now being accessed through the use of mobile phones; payment for goods and services can be made via mobile money, thereby accelerating the speed of conducting transactions with the majority of previously unreachable people. With access to many rural and low-income populations, mobile technology provides insurers opportunities to reach out and offer insurance products, services and information to individuals who would otherwise be excluded.

Sixty seven per cent of respondents pointed out that ICT is beneficial as it facilitates cost savings for their businesses; enables them to communicate with a large number of stakeholders in a variety of geographical settings; facilitates distribution of product and service information to partners and customers; and assists in minimizing the response time to both customers and management requests.

Karami (2014) points out that ICT has the ability to cut costs of production, processing, distribution, maintenance

and recovery of information in comparison to paper systems. For insurance companies, e-commerce is able to reduce costs of conducting business the traditional way of dealing with customer claims, processing those claims and paying out the claims. With e-commerce, claims can be made and processed online and payment on the claims to policyholders made through electronic banking. To this effect, through the exploitation of ICT, insurers are able to increase the efficiency of the executive affairs of their companies and reduce administrative costs through transacting online with customers. For policyholders, regardless of where they reside, they are able to purchase or carry out insurance operations from any location and at any time through the exploitation of ICT. This is possible as they are able to access information on products and services online through websites, request for information through emails, able to fill forms and have their policy underwritten online. In addition, because of the wider availability of insurance products being offered by a large number of insurers, customers have the option of sampling and making quick comparisons of products and services from diverse sources online.

Moreover, social media is empowering customers as it has created opportunities for them to interact with other consumers and exchange their opinion and experiences more effectively. This has therefore reduced the cost of searching for information. In the same vein, insurers have become more proactive in managing database of customers and communicating with them online through social media platforms, emails and websites on new products and services. All these entail that costs of communication, doing business, searching for information have drastically reduced due to ICT exploitation for both insurers and customers hence enhancing the competitiveness of the industry.

ICT is enabling direct communication between insurance companies and their customers, suppliers and other business partners and is facilitating exchange of information between all parties in the value chain regardless of their geographical location. This is attained through the use of online conferencing such as Skype, Google hangouts, phones and emails to communicate with suppliers and customers without having to pay a personal visit. Moreover, through Voice over Internet Protocol (VoIP), insurers are able to communicate with business partners, suppliers and customers located in different parts of Malawi and also those from across the borders – thereby reducing costs of communication as this eliminates face to face interaction. Report generation and exchange of documents has been greatly simplified through ICT exploitation. For example, computerized network enables the insurer and suppliers to exchange purchase orders and invoices electronically. In terms of financial transactions, insurance companies can now connect to banks through electronic funds transfer (EFT) which enables companies to make payment and collection electronically. In addition, all relevant accounts such as accounts receivable and cash are updated immediately by the computerized system. All these benefits accruing from ICT in facilitating communication with various stakeholders is important in expediting the competitiveness of those Insurers that are using it.

ICT exploitation also facilitates faster and quicker distribution of information of insurance products and services to partners and customers while, at the same time, minimizing the response time to both customers and management

requests. E-mails and websites are being used for better external communication with customers in order to supply them with information on products and services and as a means of obtaining business information from other value chain partners. Websites contain large amounts of information regarding offered products, services, prices and the company itself which clients can access very easily, which helps in decision making process of which products and services are suitable to customers' needs. Customers are able to receive the most current information on new products and services that the insurer is offering, the premiums on each of them, terms and conditions and benefits. As an extension of the above, by using web analytics, companies are able to collect data and information on customers. As such, the Internet is providing insurance companies with an effective mode through which they are able to disseminate information on their company offerings to a wide range of prospective and existing clients in a cost effective manner.

Thirty three per cent of the respondents mentioned that ICT is aiding in boosting the globalization of the industry by providing efficient tools to develop, operate and globally distribute company's offerings. For insurance companies, e-commerce is facilitating the globalization of the industry as it is enabling insurers to conduct business with other tourism value chain partners in other parts of the globe. For example, Malawian insurance companies are able to conduct business with principals such as hotels and airlines to provide their services to them, make online payments on claims and premiums. However, as can be noted, the majority (77%) of insurers do not believe that ICT is assisting them in the globalization of their business activities.

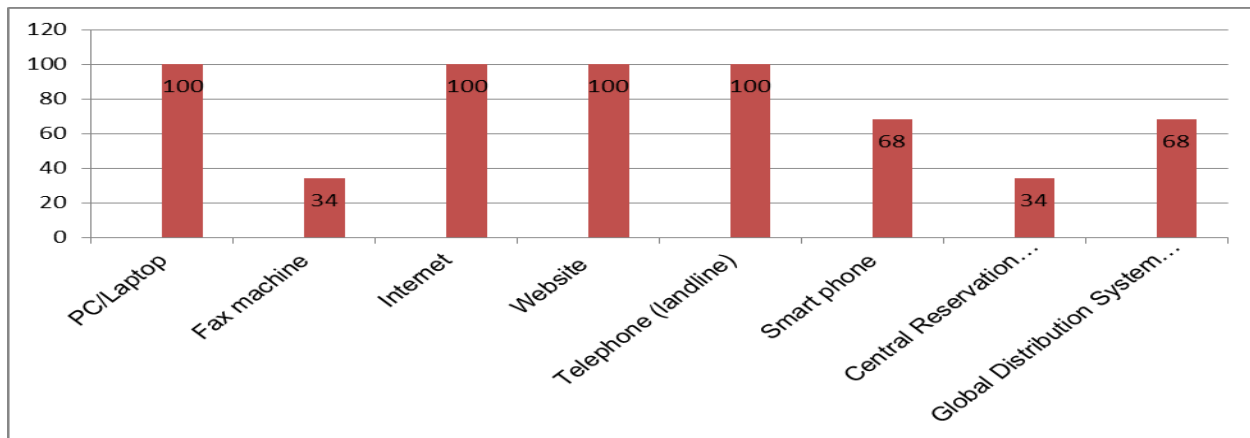
4.2.4.7 Airlines

Airlines operating in Malawi are national and regional airlines and, as such, in the context of this study, airlines refer to national and regional carriers which are operating in and have presence (offices) in Malawi.

- **ICT Systems and Applications**

African airline operators are a key part of the tourism value chain in Malawi as they are responsible for moving thousands of tourists to and from the country. In addition, they collaborate very closely with most of the tourism value chain players such as travel agents, car hire firms, insurance companies, accommodation providers and food and beverages providers. From the data collected, all the respondents mentioned that they were using PC/laptop and only 34% had access to a fax machine as depicted in Figure 45. The laptop/PC has gained importance as an ICT tool and being used by the majority of tourism operators while the fax machine has lost its place as a key communication tool in the Internet age.

Figure 45: ICT systems and applications being used among Airlines



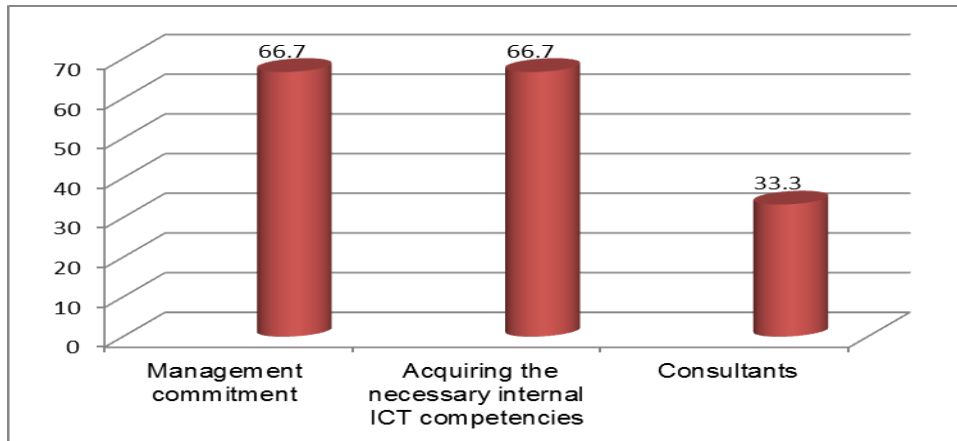
All the respondents pointed out that they were using the Internet and had a website. These have become strategic ICT tools being used by airlines to tap into global markets, communicate and link up with partners and suppliers and facilitate backward and forward linkages within the supply chain. Specific to the airline industry, the Internet of Things (IoT) technology is having an impact on the industry, as it is being used for everything from baggage tracking to cabin and climate monitoring. By effectively utilizing IoT, airlines have the tools to greatly reduce or even eliminate the causes of some of the most common complaints in the industry, such as lost luggage, flight delays, and customer service issues (Drummond, 2016). The IoT allows objects to be sensed or controlled remotely across existing network infrastructure (Friess, 2013), creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit in addition to reduced human intervention (Santucci, 2016). From the foregoing, it can be deduced that the Internet of Things has revolutionized and continues to radically transform the airline and aviation industry and has massive repercussions on the future of the industry. In addition, by using web analytics, airlines are able to boost e-commerce sales, generate more customer leads, enhance their brand awareness, and analytics data is being used to learn a wealth of information about their business and customers.

The airline industry has been at the forefront of adopting and exploiting CRS and GDS that made it possible to create, develop and globalize the availability of basic passenger services through the intermediation of travel agencies. The study has found out that 34% of airlines have CRS while 68% have GDS. Although this is the highest usage of these systems in the whole value chain in the country, it is of great concern to the airline industry in Malawi. While it must be acknowledged that search engines such as booking.com have proliferated the industry and therefore have affected the use of CRS and GDS, these systems are still very critical to the airline industry as they are networked to an array of global tourism players who can book and make reservations in a fraction of a second anywhere in the world. To this end, the airline industry in Malawi must invest in GDS and CRS so that it becomes competitive in the global tourism value chain.

- **Factors affecting ICT exploitation among Airlines**

Two out of the three airlines mentioned management commitment and acquisition of required competences as key factors influencing the exploitation of ICT in the industry as illustrated in Figure 46. The study discovered that management or owners' commitment is a major facilitator to ICT exploitation or lack thereof among tourism operators. This finding is important because an organization's capacity to adopt and exploit ICT hinges on management's knowledge, acceptability and commitment to invest in ICT.

Figure 46: Factors affecting ICT exploitation among Airlines



Once there is management commitment, the possibility of the airline having strong ICT exploitation is assured. This has implications on the acquisition of the necessary ICT competences such as human resources and technical capacities required for the exploitation of ICT. This is in line with global trends. Chau and Turner (2001) argue that managers' lack of knowledge of ICT technology and perceived benefits is a major barrier to the adoption of ICT. Another contributing factor to ICT exploitation is the capacity to acquire the necessary competences within the organization. Competencies include human resources, equipment and facilities and making the necessary investments in ICT. Lack of knowledge on how to use technology and low computer literacy results in low levels of ICT exploitation and are other contributing factors for not adopting ICT. One in 3 of the airlines mentioned using Consultants to support it in providing specialized services. The main reason for using consultants was that airlines lack internal human and technical capacity and relies heavily on specialists to provide ICT services and equipment.

- **Usage of ICT by Airlines**

It is interesting to note that all respondents from the airline industry mentioned budgeting, planning and forecasting as a very important function that ICT is used for as depicted in Figure 47.

One of the key challenges facing airlines today is the ability to plan for the future and to predict operating performance in a volatile and highly competitive business environment. An effective, timeous and accurate budgeting, forecasting and financial planning process offers airlines an opportunity to prepare for and be in a position to succeed in a rapidly changing business environment. As Stretch (2009, p.90) points out, "companies

that can update plans and forecasts quickly are in a better position to take advantage of opportunities and respond to threats.” This is true of airlines that need up to date information on the future trends of the industry and customers. A survey by Accenture (2017) of airlines suggests that executives see the need to invest in a digital future—to improve customer experience and enterprise operations as a dual focus, in order to meet future challenges in the industry. Digital technologies bring solutions to airlines that did not exist before. Budgeting, forecasting and variance analysis are tools that assist airlines to gain a more in depth understanding of the industry in which they are operating in. The best airlines are able to react to changes in the industry environment very quickly, provide consistency of service, avoid service disruptions, and are able to determine appropriate service versus cost conclusions in real-time. For example, airlines have to understand customer behaviour in order to predict the probability of repeat future usage by the customer. Digital customer interactions provide new data points about customer behaviours that airlines can combine with insights from both internal sources (such as reservation systems) and external sources (such as social media). All the above is an indication as to why airlines prioritizes the use of ICT in PB&F above all other functions to gain competitive advantage over other airlines.

Figure 47: Usage of ICT by Airlines



Two out of the three airlines mentioned paying and ordering online and point of sale machines (payment with visa and debit cards); HR management; and purchasing and procurement as important functions for ICT exploitation.

The majority of airlines have a full service online platform to handle their business' international payment needs. This is essential for them to stay competitive in the marketplace and speed up payment delivery to their suppliers such as airports, jet fuel providers and intermediaries. Sending payments through an online platform ensures that the airline is always compliant with the necessary regulations and maintains up-to-date and accurate information for all countries and currencies. In addition, airline customers are increasingly using online payments to pay for their air tickets. With speed and accuracy of payments, transparency into cost and status of a payment, increased control over the payment process, easy integration and 24/7 accessibility with dedicated support, the airlines gain a competitive advantage when it comes to managing their international financial requirements. Moreover, ICT exploitation allows for periodic review of payment data by payment experts in the airlines and ensures that the information on transactions is accurate and comprehensive, thereby ensuring that there are no delays or extra fees due to errors.

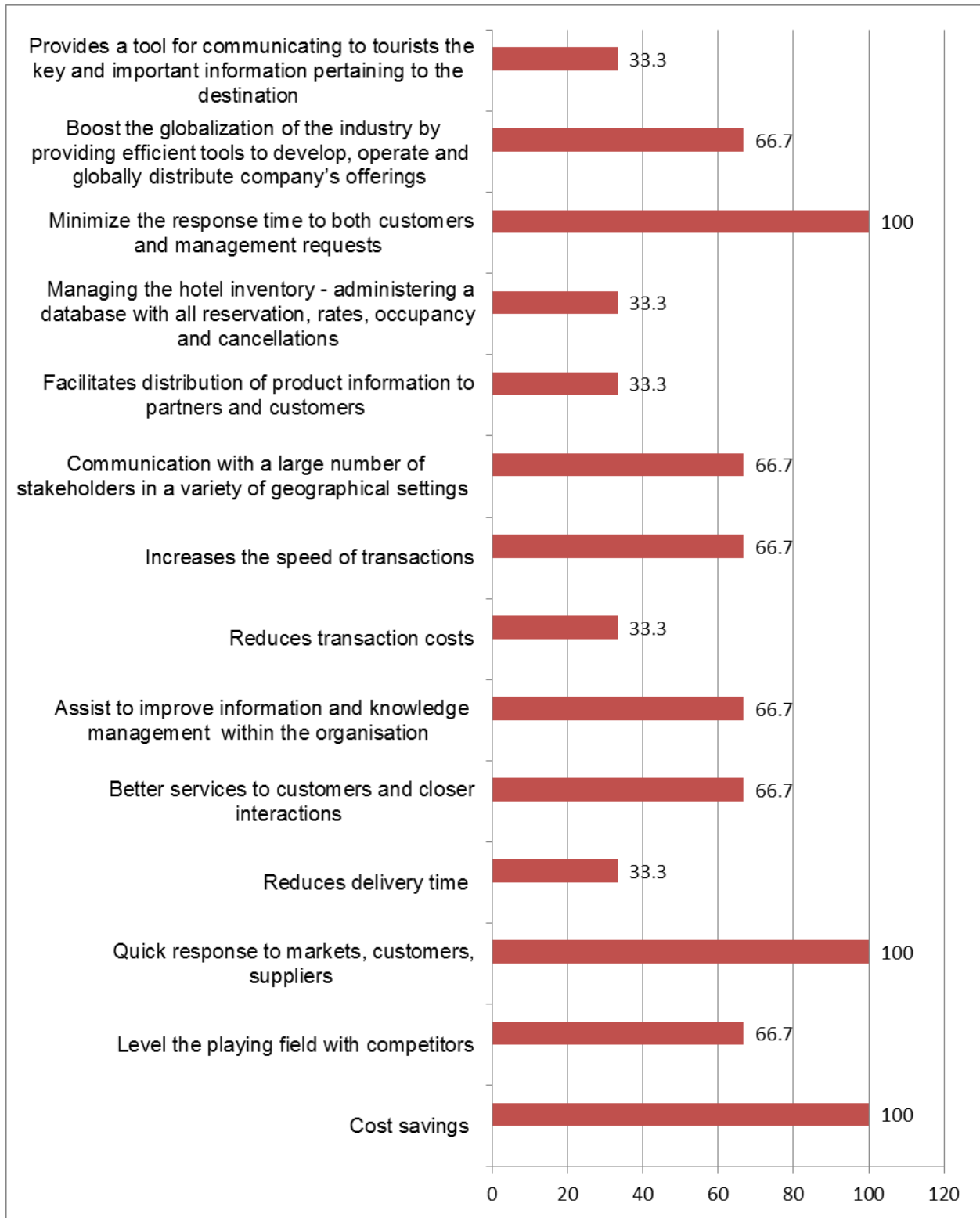
The exploitation of ICT by airlines for HRM is very critical to facilitate organizational learning in the ever changing regulatory frameworks in the airline industry, effective communication with the employees on all aspects of the aviation industry and making available information and updates on current trends and changes taking place in the industry. In addition, ICT exploitation facilitates online training programs for both old and new staff in the airline industry in a more efficient manner, thereby enhancing human capabilities and thus developing and enhancing their productivity. Considering that the airline industry requires specialized skills that are dynamic and in short supply, the use of ICT in upgrading the skills levels of employees is very critical for competitiveness of airlines.

Airlines procure numerous inventories from multiple suppliers. E-procurement is of paramount importance to airlines as it reduces process cycle time, improves inventory planning, management and storage, minimizes inventory cost, enhances the decision making process by having an integrated view of the entire process from purchase request to payment of suppliers. All this simplifies the sourcing of products and services thereby increasing the transparency of the procurement process and facilitates quick exchange of data between both parties and timely coordination and supply of information with suppliers and vice versa. This enhances the competitiveness of the airline as inventory is supplied just in time – as and when it is needed.

- **Benefits accruing from ICT exploitation in the Airline industry**

Airlines are accruing significant benefits from the use of ICT as can be noted in Figure 48. All the respondents mentioned that ICT is assisting them to save costs and assists them to respond quickly to markets, customers and suppliers and management requests. Two out of three of the airlines pointed out that ICT is assisting in levelling the playing field with competitors; is improving information and knowledge management within the organization; provides better services and closer interactions to customers; facilitates reduction in transaction costs; enables communication with a large number of stakeholders in a variety of geographical settings; facilitates distribution of product information to partners and customers; and is boosting the globalization of the industry by providing efficient tools to develop, operate and globally distribute the company's offerings.

Figure 48: Benefits of using ICT by Airlines



ICT exploitation is critical for the operational management of airlines. According to Buhalis (2017, p.12), ICT is required for several requirements “including check-in, allocation of seats, generating a number of reports and orders, such as flight paths, weather forecasts, load and balance calculations, manifests for airport immigration and security authorities, in-flight catering orders and crew rotas”.

ICT also assists in a number of functions including inventory and reservations management as well as ticketing. To this end, ICT are important in reducing costs for airlines. In addition, airlines require well organized co-ordination and communications with stations, branches, distributors, and customers globally which is only possible with ICT exploitation. Airlines need to communicate with travel agencies and other distributors as this determines levels of sales whilst efficient invoicing and revenue collection is critical for both cash flow and profitability. As a result, ICT exploitation is critical to ensure that seamless coordination is attained. In addition, due to ICT, paperless e-ticketing is possible. All this means that huge savings are being made in the daily operations of airlines through the use of ICT and thereby gaining competitive advantage for the industry.

ICT is very important in aiding airlines to respond quickly to markets and customers. As airlines expanded their fleet and routes, they pioneered the introduction of CRS which replaced manual reservations with electronic databases. CRSs allowed airlines to improve their internal organization and also provided a powerful tool to manage their inventory. They also enabled airlines to communicate with travel agencies, consolidators and other distributors and to update routes and provide up-to-date information and rapid feedback to customers globally. To this end, CRS greatly reduce the costs of communicating with customers and other tourism value chain players while, at the same time, offering managerial information on the types of demand and the competitors' position. Resultantly, CRSs as marketing and distribution systems have contributed significantly to the competitiveness of airlines that are exploiting them.

As an extension of the above, ICT exploitation minimizes the response time to both customers and management requests for airlines. The use of GDS and CRS cut the costs of communication and reservation and facilitate the payment of commissions by the airline to intermediaries such as travel agents. Additionally, the use of these ICT systems reduce the time in which customers can communicate with travel agents or other airlines and make reservations for their flights. As such, feedback is provided in real-time on a reservation made and a booking is completed online upon confirmation of the booking – thereby drastically reducing the time that the transaction is conducted. They also improve the efficiency in arranging sales settlements between airlines and travel agencies thereby reducing the time that financial transactions are conducted between the airline and its intermediaries. Moreover, the efficiency of GDS allows airlines to distribute and manage reservations globally, by the combination of the travellers' needs with the services that the airline offers – ensuring that airlines are able to provide real-time information on pricing, routes, time, and flight availability. All this improves customer satisfaction and competitiveness of the airlines. In the same way, the use of ICT facilitates quick response to management requests both within the firm and from other value chain partners such as travel agents and distributors. In order to perform

the various tasks, airlines use a wide range of internal systems and intranets to coordinate these activities. Specialized software facilitates these functions which makes it possible for management to respond quickly and to coordinate these functions, which maximizes operational efficiency whilst keeping costs under control.

Two out of three airlines pointed out that ICT is assisting them in leveling the playing field with competitors. The introduction of CRS and GDS in the airline industry has ensured that all airlines, regardless of size or geographical location, can compete on equal footing as they are able to control, promote and sell seats internationally. The ease with which airlines are able to reach out to global markets and work with travel agents and other intermediaries globally through the use of CRS and GDS, has ensured that smaller airlines are able to compete with bigger ones at a relatively low cost than otherwise.

ICT is greatly improving information and knowledge management among tourism value chain players, and airlines are no exception. For airlines to execute the various tasks that are wide ranging and complex, effective use of knowledge-facilitating tools and techniques is critical. Airlines are utilizing Intranets (which includes electronic mail and group support systems) to enable organizational-wide exposure to greater amounts of online organizational information, both horizontally and vertically. Furthermore, the knowledge generated has to be stored in a format that is easily accessible and retrievable. On account of this, airlines are using advanced computer storage technology and sophisticated retrieval techniques such as Groupware, document management technology, query languages, multimedia databases, and database management systems – which allows knowledge of an organization's past, often dispersed among a variety of retention facilities, to be effectively stored and made accessible. Finally, airlines have to transfer the knowledge they have to intermediaries and suppliers that they work closely with, such as travel agents, to ensure that they are operating on the same wave length. In this light, CRS and GDS are systems that are shared with and transferred to intermediaries that facilitate contact between intermediaries' staff and the staff of the airline in order to share knowledge and in order to increase efficiency.

Another major benefit of ICT exploitation is that it enables airlines to provide better services to customers and establish closer interactions with them. Airlines are using their websites as tools to post important information, as a primary reservation path and as an alternative to the travel agency route. In addition, they are using CRS and GDS and interfacing them with websites to issue e-tickets and to exchange e-tickets with multiple carriers worldwide. Airlines are using electronic scales, stacker systems, handheld terminals, and bar coding to increase their handling efficiency and thereby providing better services to their customers. As Buhalis (2003, p.16) found in his empirical study of 20 airlines, "these systems support the administration, accounting, and passenger or cargo handling processes by coordinating inventory management, sales and marketing, yield and revenue management, ticketing, and departure control systems" all of which ensure that customers are provided with superior service. Another very key area in which airlines are using ICT to ensure efficiency and better service to customers is baggage handling and monitoring systems which allow airlines to increase their efficiency and to track every bag as it moves through the system. This also ensures that no baggage is transported without its owner, as per International Civil Aviation

Organization regulations. The systems support reconciliation procedures of checked passenger baggage which enable airlines to ensure security, reduce operating costs, and improve passenger satisfaction without compromising punctuality.

From the discussion above, the fact that the use of ICT reduces transaction costs for airlines is a point that cannot be overemphasized. Airlines need to maximize the utilization of their most expensive resources: human resources and fleet. Therefore, they need to ensure that their equipment and aircraft are functional and their capacity fully used. Maintenance Control systems are used to co-ordinate aircraft maintenance, commercial, and operational requirements (Buhalis, 2003). They ensure that aircraft and other equipment are regularly maintained and also that technical problems and unscheduled services are dealt with as efficiently as possible to minimize out-of-service periods whilst minimizing service disruptions. Often these systems are integrated with e-procurement systems for allowing airlines to order parts and other consumables online, whilst engineering systems may be integrated for providing online manuals and technical support. Technical documentation management systems often create, distribute, and manage complex technical data and documents. Hence, airlines aim to maximize fleet utilization by improving maintenance, repair and overhaul performance, thereby ensuring that transaction costs are kept to a minimum. In addition, the use of intranet assists airlines to control their crew rotas through crew management systems - which use comprehensive crew databases to undertake pairing construction, roster generation, and crew control in order to optimize the human resources performance.

All airlines rely heavily on their value and supply chain partners for their operations and it is imperative that efficient systems are in place for collaboration and networking. As such, ICT enables communication with a large number of stakeholders in a variety of geographical settings. Extranets and inter-organizational systems are required to facilitate airline interaction with their regular suppliers. Airlines are customers of airports, air control systems and airport handling companies. Through ICT-enabled systems and applications, airlines are in regular contact with these partners and are able to share with each other very pertinent information such as landing slots and docking gates, information about arrivals and departures, altering slots, declaring flight paths, coordinating operations, time of arrival, etc. Moreover, exploitation of ICT through extranets enables airlines to provide and communicate vital information with service providers at airports, including maintenance, refueling, security, baggage handling, load and dispatch, lounge provision, catering, and cleaning services. To this end, developing B2B applications and interconnecting extranet systems supports both the airlines and their value/supply chain partners to streamline operations and reduce their turn-around time at the airport. Clarity of communication and efficiency chain is critical for both controlling costs and delivering service.

Moreover, ICT-enabled systems such as GDS and CRS facilitate the distribution of airline product information to partners and customers. All the airlines in the study heavily rely on travel agents for distributing their products to customers. The airlines mentioned that links with travel agents are normally facilitated by GDS that provide the information for itinerary building and facilitate the entire transaction. Extranets are being used to ensure that critical

information is provided to the agents so that they are able to support their onward distribution chain, providing adequate tools to interact with all departments of the airline and managing their revenue collection on time. In terms of connecting with customers to distribute the airline's product information, websites are critical as they assist airlines to reduce the power and costs of conventional intermediaries. Websites empower the airline to connect directly with customers and provide all the information needed for the customers to make a purchasing decision such as flight schedules, pricing, departure, arrival and connecting times and also provides them an opportunity to book seats of their choice. Airlines are using web analytics to gain insight into what their users like—and don't like—about their web pages so that they can improve their experience while increasing traffic. Likewise, web analytics is assisting airlines to attract more visitors to their sites—and turn more of those visitors into paying customers. This ability to disintermediate travel agencies has enabled airlines to cut down commission rates, thereby increasing their profitability.

ICT-enabled systems in the airline industry are boosting the globalization of the industry by providing efficient tools to develop, operate and globally distribute a company's offerings. Through the use of computerized systems such as GDS and CRS, the airline industry has been at the forefront of the globalization process as they are able to market, sale and distribute their products anywhere, anytime across the globe. Airlines are using the Internet of Things as a major opportunity to tackle distribution costs and to re-engineer the structure of the industry. The use of intranets and extranets has greatly enhanced customer service and competitiveness of airlines as they are able to communicate with partners and service providers across the globe at a much lower cost.

One in three of the respondents mentioned that ICT exploitation is beneficial as it reduces delivery time of services and products; reduces transaction costs; facilitates distribution of product information to partners and customers and ensures that customer requirements are communicated to all principals delivering the tourism product.

One of the observed benefits of ICT exploitation by tourism value chain players is that it reduces delivery time for services and products. Since today's travellers expect personalized service, airlines are able to store and analyse vast amounts of data about customers to create offers and personalize the customer's journey. This is only possible through computerized database management systems that have the capacity for storing vast amounts of gigabytes of data on customer behaviour, frequency of flying which enable airlines to enlist customers into frequent flyer programs, deliver services such as meals, seat preferences, shuttle transfer that suit the customers' needs. In addition, customers are now able to select services and products that they want from the airline online through access to Google flights, Expedia, Priceline and Hipmunk. These ICT-enabled systems and applications ensures that the time that the service and/or product is delivered to the customer is drastically reduced.

ICT has enabled airlines, their customers and partners to greatly reduce transaction costs. Because of e-tickets, there is no need to have a printout of the ticket as one checks-in at the airport. Into the bargain, tickets are now sold online using web based services. Moreover, customers can now conduct self-check-in at airports and select

preferred seats. ICT also allows airlines to bypass intermediaries in reservation and payment, thereby saving costs on commissions. Being able to directly access the reservation database reduces the time customers need to find information and make reservations, and communication costs associated with contacting the travel agent are also eliminated, which helps to increase service quality.

Airlines have to interact with numerous partners such as airports, traffic control, catering companies, and other service providers before, during and after landing. As such, ICT-enabled systems streamline communication flows and coordination to deliver products and services in an efficient and effective manner. Also, Operations Control systems support the automatic calculation and distribution of flight plans and facilitates automatic consideration of all valid aeronautical restrictions in the process of the flight plan calculation. Flight Watch in particular collects and displays vital information, such as booking figures, passenger transfer information, critical weather conditions, crew rotations, airport limitations, etc. Possible problems and critical situations can be identified whilst early alert messages and updates are generated for all other operational systems, such as flight scheduling, reservation, maintenance, and crew control systems.

4.2.4.8 The Tourism Board

The Tourism Board is a non-profit entity which markets the destinations that tourists are travelling to and, according to the World Tourism Authority (2017); these are organizations which are responsible for management and/or marketing of individual tourist destinations. On the other hand, other authors speak about an organization which is responsible for the management and coordination of all the activities in a destination including planning and promotion that provide products and information technology services to customers, agents and suppliers in the sector of tourism (Collins and Buhalis, 2012; Gretzel et al., 2006; Paruden, 2010). Consequently, these are very important entities for the promotion of tourism destinations and exploitation of ICT is paramount for them to effectively function.

- **ICT Systems and Applications**

In terms of systems and applications, the tourism board is using the PC/Laptop, landline and smart phones, the Internet and has a website for marketing and promoting Malawi as a tourism destination. The use of the Internet and website is very important as marketing and promotional tools for promoting the country to tourists. However, it is not exploiting CRS or GDS in executing their duties. This is to be expected since the tourism board is not active in directly booking or making reservations of tourists but only enhancing the image of the country as a preferred tourist destination.

- **Factors affecting ICT exploitation at the Tourism Board**

Management commitment was the only factor mentioned as key to influencing the exploitation of ICT in the board.

As a government entity, the decisions of top level managers such as the Minister, the Principal Secretary and the Director greatly determine the extent to which ICT is exploited. However, to a large extent, ICT exploitation is greatly dependent on availability of funds which, in the case of Malawi, are externally outsourced from development partners. As such, if there is no donor funding, then investments in ICT are limited and therefore directly affects ICT exploitation.

- **Usage of ICT by the Tourism Board**

Results from this study indicate that the tourism board is exploiting ICT for marketing the country to tourists globally; budgeting, planning and forecasting; financial management/accounting and ordering and paying online.

ICT is being used to create a database that gathers all the information needed concerning tourism resources present in the country as well as product and service providers. The board is exploiting ICT to widely dispatch the information collected to help local tourism businesses reach new markets. Moreover, ICT is providing a tool for communicating to tourists the key and important information pertaining to the country as a preferred tourist destination. This is very important as it provides tourists with key information that can assist them to effectively communicate and make informed decisions on the country including the description, facilities, contacts, opening hours, prices and images of the various tourism value chain players. All this is facilitated by ICT systems and tools such as Website, social media and the Internet. More significantly, the board is using web analytics as it provides deep insight into the who, what, when, why and how of its website traffic and visitor behaviour thereby assisting it to improve the usability of its site.

Because of the volatility and unpredictability characterizing the environment in which the tourism industry is operating in due to unpredictable and hostile environment; inter alia, threats of increased incidences of terrorism that have greatly affected the travel industry, the global economic crisis and falling disposable incomes. In this environment, planning and forecasting have become very important tools. The tourism board as an entity with the task of projecting a positive image of the country has to anticipate what would happen in the future and the impact this would have on the tourism industry. As such, as Axson (2013, p.2) posits, “scenario planning is being used to provide a structured method...to evaluate alternative views of what may happen in the future as an aid to strategic, operational and financial planning”. The willingness to anticipate the impact of alternative future scenarios on strategies, plans and decisions equips DMOs with the requisite tools to navigate through uncertain times with greater confidence and an increased awareness of the choices and options open to them (Axson, 2013). The tourism board in Malawi is using scenario planning to forecast global trends, position the country appropriately into the global tourism value chain as a haven of safety and tranquillity with the pay off line “Malawi, the warm heart of Africa.” The significance of this is that by forecasting future trends in the global tourism industry, the tourism board is able to devise strategies that assist the country to meet the demands and needs of tourists and how to effectively reach them. The implication of this is that the country is able to react to changes in the tourism environment very quickly, provide consistency of service, avoid service disruptions, and able to determine the appropriate service

versus cost conclusions in real-time. In the same vein, the board can effectively scan the tourism industry and identify key strategic partners to work with in order to increase the competitiveness of Malawi as a preferred tourism destination. More importantly, marketing strategies and messages that align with findings from the forecasts can be developed and implemented.

The biggest impact of ICT exploitation on accounting has been the ability for government departments in Malawi to develop and use computerized system (the financial management information system) to track and record financial transactions properly and accurately. The recording of transactions manually on ledgers, papers, and spread sheets has been translated and computerized for quick and easy presentation of individual financial transaction and produce reports on it. For the tourism board, computerizing its accounting systems has facilitated the provision of internal checks and balances to ensure that all transactions and accounts are properly balanced before financial statements are prepared thereby reducing fraud within the system. In addition, computerized accounting systems allow the tourism board to process large amounts of financial information and process it quickly through the accounting system. Quicker processing times for individual transactions has also lessened the amount of time needed to close out each accounting period. Shortening this time period has assisted the board in cost control, which has increased its overall efficiency. All this denotes that the tourism board has become more efficient and effective in managing its accounting systems and financial reporting. It has also managed to put systems for early detection of fraud within the system thereby safeguarding its reputation as a reputable, transparent and well managed body.

The tourism board in Malawi is utilizing e-commerce to facilitate the ordering and payment of goods and services online. Firstly, it is using B2B to pay for services such as advertising the country on international TV networks such as CNN. By utilizing these online international payment platforms, the tourism board speeds up payment delivery time, reduce errors and transmit additional necessary payment data for reconciliation by beneficiaries. This has assisted in creating competitive advantage for the board as it can professionally transact with international businesses and pay them on time.

- **Benefits of ICT exploitation at the Tourism Board**

According to Stange, Brown and Solimar (2017, p.1), “destination management organizations (DMOs) are often the only advocates for a holistic tourism industry in a place; and in this role they ensure the mitigation of tourism’s negative impacts to the environment and local communities as well as the sharing of opportunities for a vibrant exchange of people.” In their role as holistic tourism advocates, DMOs are able to facilitate dialogue among the private and public sectors, and other stakeholders that may otherwise never collaborate or understand how their decisions reverberate down a destination’s long tourism value chain. To effectively function in this crucial role, DMOs have to effectively utilize ICT. From the responses solicited from the Malawi Tourism Board, it was mentioned that ICT is facilitating cost savings in the operations of the board and the tourism industry in general; it is providing a tool for communicating to tourists the key information pertaining to Malawi as a preferred tourism

destination; and it accelerates the process of responding to markets, customers and suppliers. In addition, ICT enables the board to provide better services to customers and makes it possible for it to have closer interactions with them; is assisting in improving information and knowledge management within the organization and is enabling the organization to communicate with a large number of stakeholders in different geographical settings.

In many ways ICT exploitation has facilitated the tourism board of Malawi to reduce costs and thereby save the country millions of Kwacha¹. For instance, through ICT, the board is able to market the country to potential tourists online through its website where it is able to highlight key tourist attractions. The board is increasing tourists visiting the country through building extensive private-public partnerships, developing marketing strategies, and creating visitor information centres for inbound tourists, thereby serving the interests of the entire value chain. At another level, the board is able to coordinate various stakeholders in the tourism value chain by communicating regularly with them to learn their concerns, ideas and reach a destination-wide consensus on salient issues. This is achieved in a cost effective manner through the use of emails and online questionnaires sent to stakeholders.

ICT is providing a tool for communicating to tourists key information pertaining to the country as a preferred tourism destination. Various ICT applications are being used by the board to provide information about Malawi to tourists including online advertising where the board is paying for visibility on other websites and through its own Website and also the use of social media as a way to increase word-of-mouth marketing by using online networks to share information about the destination.

The exploitation of ICT by the tourism board quickens the process of responding to markets, customers and suppliers. The board's website generally acts as the main gateway for tourism information for the country and it provides a number of services such as promotion of local attractions and activities, lists local tourism businesses, suggest itineraries, and provide relevant regional history and geography. As such, tourists are able to email the board directly to inquire on tourism attractions in the country and instant feedback is provided. The tourism board is also using social media to provide quick response to customers and suppliers, to provide stories about activities in the country, as well as review trends, perspectives, opinions, and tools that are positioning the country in a new light in order to generate additional interest.

ICT is assisting in improving the creation, acquisition, capturing, sharing and using of knowledge from various tourism operators, to enhance performance of the tourism value chain. ICT has provided inexpensive access to rich sources of information such as local attractions, pricing, location, and has offered the tourism board with new tools both for handling information and for advancing processes of knowledge creation and innovation throughout the tourism value chain. The Internet facilitates web and video conferencing, collaborative software, content management systems, email lists, wikis and blogs that provide effective means for the capture and transfer of knowledge across the tourism value chain. The use of ICT in knowledge management thus creates opportunities

¹ Name of Malawi's currency

for advancing and improving sharing of information about key tourism products and services in the country by creating quality knowledge.

ICT is enabling the tourism board to communicate with a large number of stakeholders in a variety of geographical settings. The exploitation of ICT allows the tourism board to directly communicate with principals and customers and provide them with required information about the country's tourism offerings, regardless of where they are located. Through the use of the board's website and email, it is able to reach a wide range of tourism stakeholders globally and provide information on Malawi.

4.2.5 Barriers to ICT Exploitation

There are several factors that can prevent tourism firms from actively adopting and using ICT in their businesses. These reasons can considerably vary across different value chain players. The findings of this study has identified 10 specific barriers that are ubiquitous across the tourism value chain in Malawi, namely: i) electricity blackouts, ii) ICT infrastructure cost, iii) limited in-house know-how or expertise, iv) poor infrastructure especially telecommunication networks, v) limited of financial investment in ICT, vi) shortage of skilled manpower, vii) technological resistance within the organization, viii) high interest rates resulting in high cost of capital, ix) cultural and/or language barriers, and x) Government policies not being implemented.

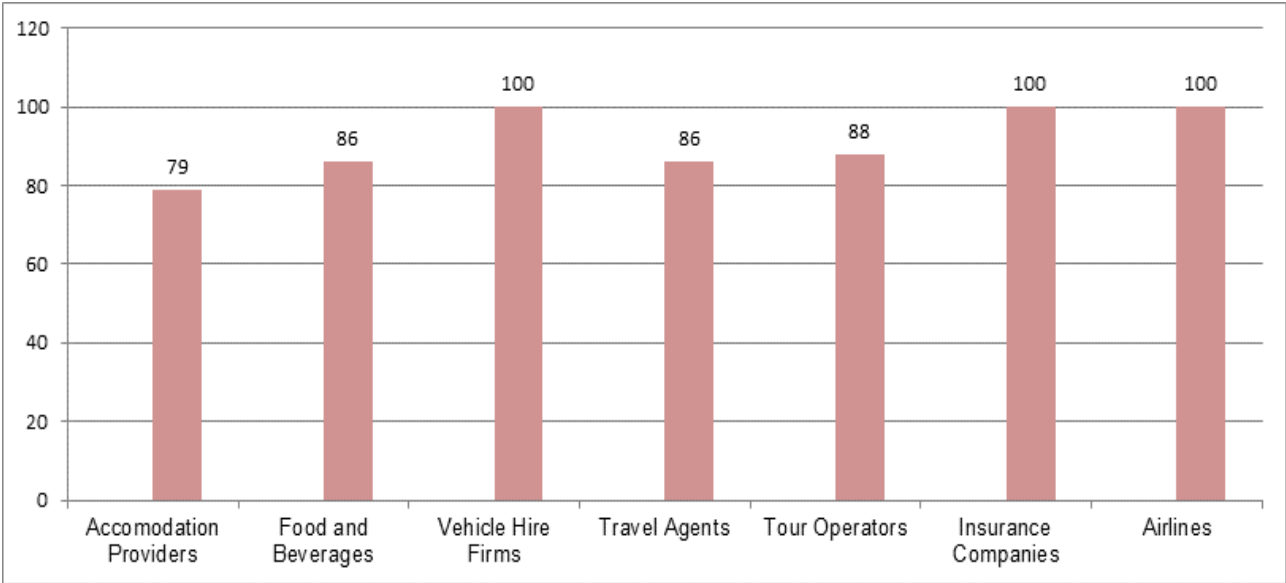
4.2.5.1 Electricity blackouts

There was overwhelming response from the respondents that inadequate energy and intermittent electricity supply was a major barrier to ICT exploitation as depicted in Figure 49.

According to a World Bank report (2016), one of the main growth constraints in Malawi is a significant shortfall in electricity supply. Load-shedding (planned power cuts) and unannounced outages are frequently used to ration power supply by the Electricity Supply Corporation of Malawi (ESCOM). The electricity supply has also been recognized as a factor in deterring investors, and in weakening the competitiveness of local industries. About 98.5% of Malawi's electricity supply is generated from hydroelectric plants operated by Energy Generation Company (ENGECO). Until 2017, ESCOM, a parastatal utility, held a de facto monopoly over the generation, transmission, and distribution of electricity. The unbundling process of ESCOM saw the creation of a new electricity generation company called ENGECO. Transmission and distribution losses are unsustainable and estimated to be about 20%. In addition, ENGECO has very limited capacity to generate electricity to meet the increasing energy demands at both industry and household level because of low generation capacity due to decreasing

water levels in Lake Malawi, obsolete equipment, lack of the necessary and required machinery and technical expertise. All this means that the country has experienced massive load shedding which has affected the tourism industry and other sectors of the economy. This is still going on despite a Millennium Challenge Corporation project (funded by the United States government) worth over USD300 million that supported ENGECO and ESCOM to improve the generation and distribution capacity.

Figure 49: Intermittent electricity supply as a barrier to ICT exploitation in Malawi

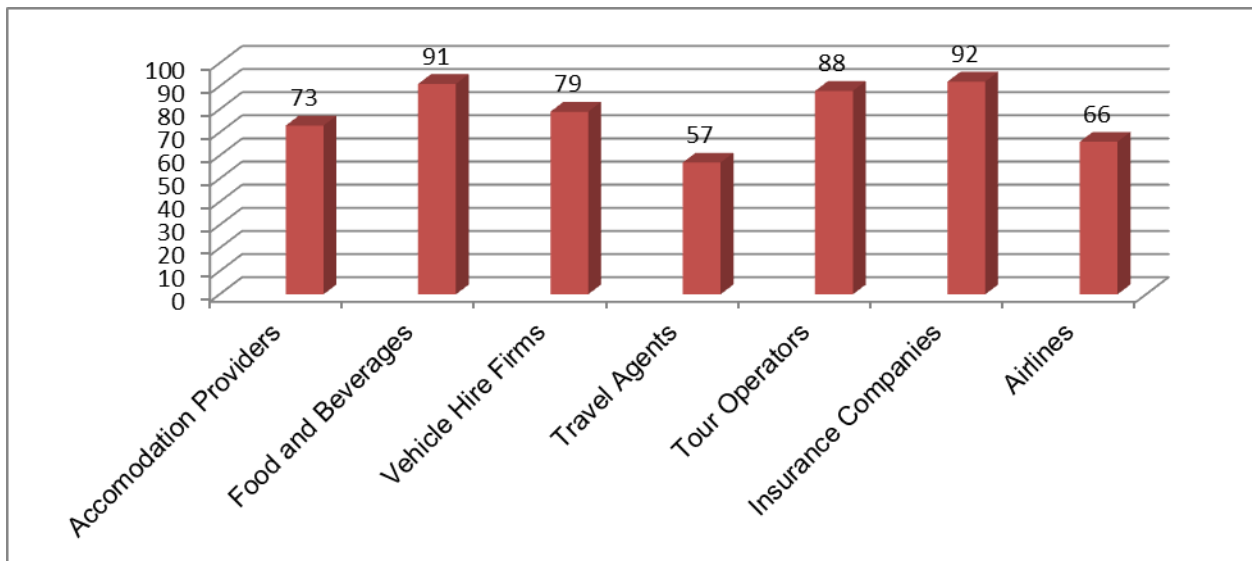


The negative consequences and impact of electricity blackouts on tourism value players are enormous. Erratic power supply is widely attributable to the growth and competitiveness of tourism firms to exploit ICT. There is the possibility of serious consequences on unwary local and international tourists who would shun patronizing tourism establishments as they cannot access basic services that require electricity such as the Internet, lighting, and hot water – to mention but a few. This will ultimately lead to reduction in the number of tourists visiting the country, thereby negatively affecting the profitability of tourism value chain operators. Dwindling number of tourists denotes that the tourism industry in Malawi will become uncompetitive. Secondly, tourism operators are incurring heavy losses as they have to resort to using alternative sources of energy such as diesel powered generators that are expensive to run and not sustainable in the long term. Increased operational costs lead to escalation in prices of the services and goods on offer. This has serious implications on the domestic tourism industry’s capacity to compete with other tourism destinations as it makes it more expensive for tourists to visit the country vis a vis other tourism destinations. All this is contributing to the un-competitiveness of the industry.

4.2.5.2 ICT Infrastructure cost

From the responses of the participants of the study as per Figure 50, the findings point to the fact that ICT infrastructure in Malawi is very expensive, which makes access to ICT very hard. Several factors contribute to this. Much of ICT infrastructure is imported, making it very expensive and inaccessible especially to small players in the tourism value chain. This acts as a deterrent for most tourism value chain players to make investments in ICT. Considering that over 60% of Malawi's tourism operators are SMEs, there is low penetration levels of ICT and hence the exploitation of ICT is very limited.

Figure 50: ICT infrastructure as a barrier to ICT exploitation in the tourism value chain in Malawi



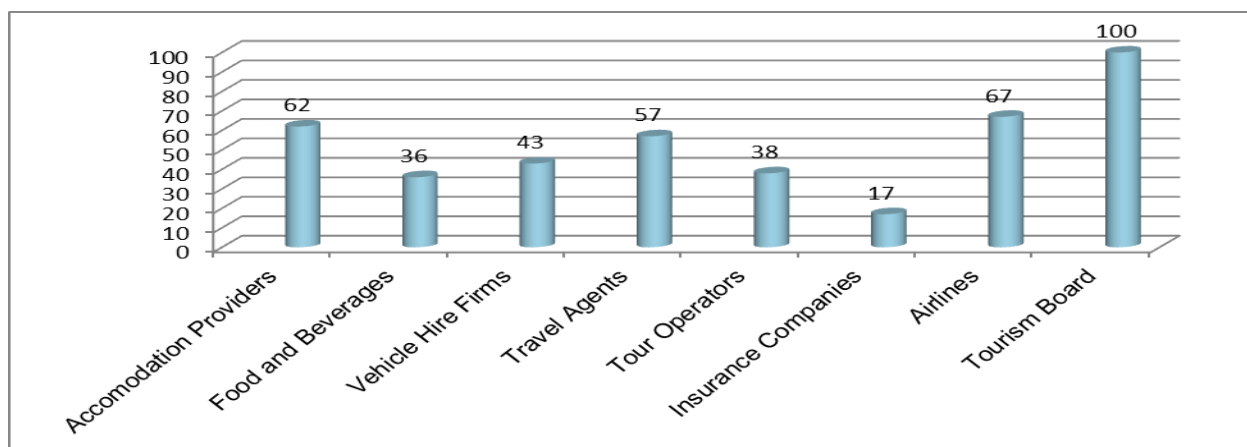
4.2.5.3 Limited In-house ICT know-how and expertise and shortage of skilled manpower

Lack of ICT experts and shortage of skilled manpower in Malawi is contributing to low competitiveness of some tourism operators, especially the tourism board (100%), airlines (67%), accommodation providers (62%) and travel agents (57%) as portrayed in Figure 51.

Several factors are contributing to lack of expertise in the country. Firstly, there is underdeveloped research and development capacity in ICT. No patented ICT-based innovation has been recorded in the country. This has implications on the cost of ICT equipment which is very high and inaccessible to most small tourism operators who cannot afford it. As a result, this is affecting their operations as they cannot effectively compete on a global scale with other tourism operators. Secondly, there are inadequate

specialized ICT professionals and institutional capacity in the country. Malawi continues to depend on international experts as well as institutions for capacity development and for implementing and managing complex ICT initiatives.

Figure 51: Lack of in-house know how, expertise and skilled manpower as a barrier to ICT exploitation in the tourism value chain in Malawi

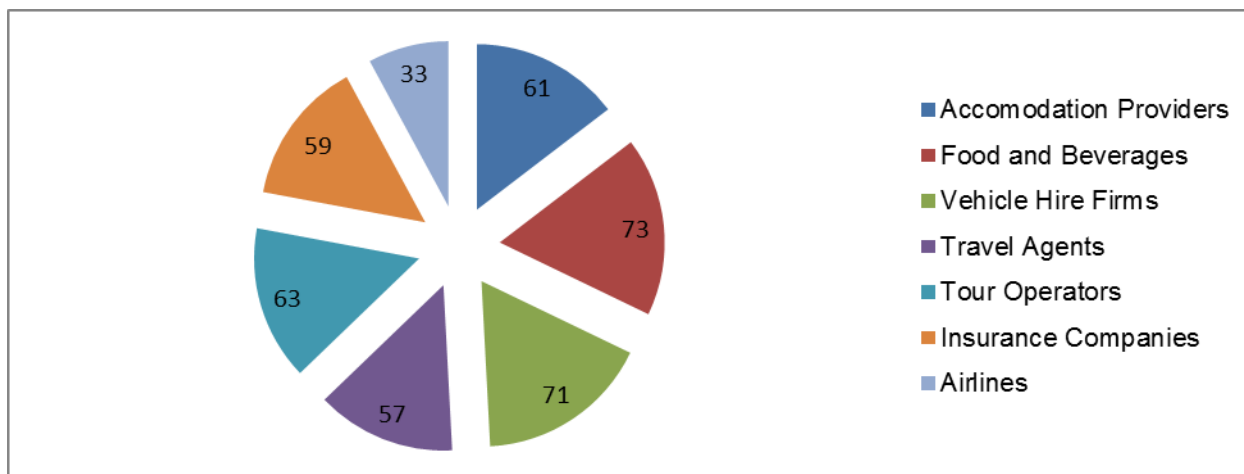


The above is attributed to lack of local ICT training institutions that can train and equip young people and industry workers with the ever-changing technological developments taking place globally and this has led to deficiency in locally available human resources in the industry. This means that the tourism industry does not have access to locally trained ICT professionals who can be employed or sub-contracted to manufacture, install and upgrade ICT equipment. As a result, the industry has to hire foreign experts for constructing and installing the ICT infrastructure. These often times are expensive to hire.

4.2.5.4 Telecommunications infrastructure in Malawi

As a developing nation, Malawi's telecommunications infrastructure is underdeveloped and faces many challenges including poor Internet connectivity, low telephone penetration, minimal penetration of telecommunications into rural areas, amongst others. Figure 52 gives an overview of the responses of the participants of the study. The most common form of communication used by tourism value chain operators is still the fixed telecommunication networks for accessing Internet. Although fixed telecommunication (dial-up connections) networks are useful for basic functions, tourism operators that want to adopt e-commerce or even move towards e-business operations need broadband availability (DSL, fiber or high capacity broadband).

Figure 52: Underdeveloped telecommunications infrastructure as a barrier to ICT exploitation in the tourism value chain in Malawi



The unavailability of these services to tourism operators who are located in remote areas of the country puts them at a disadvantage as they do not enjoy similar level of services as the ones in metropolitan areas. Considering that the majority of tourism operators in Malawi are in rural areas, they are heavily affected in terms of access to Internet connectivity as it is problematic to get signals in these areas. To this effect, most tourism operators have not moved up in the ICT adoption ladder from basic Internet usage and having a website to more advanced levels such as e-commerce where they are able order and pay online and thereby reducing transactional costs and also maximizing accessibility and speed.

4.2.4.5 Limited financial investment in ICT

Another barrier to ICT exploitation that has been highlighted by respondents is limited financial investment in ICT across the tourism value chain. This is mainly true of investments in the more advanced ICT applications such as CRS, GDS and ERP. Investing in CRS, GDS and ERP applications has become mandatory for those tourism operators that would like to gain competitive advantage and be fully integrated into the global tourism value chain. However, the initial capital investment to acquire these ICT systems is significantly higher. The implication of this is that tourism operators in Malawi are investing in basic, low level ICT infrastructure and not in more advanced systems. Consequently, the majority of tourism value chain players in the country will remain uncompetitive on the global scale, thereby losing out on the increasingly expanding and growing tourism market. The ensuing section examines the findings from each of the tourism value chain operator in terms of investment made in ICT.

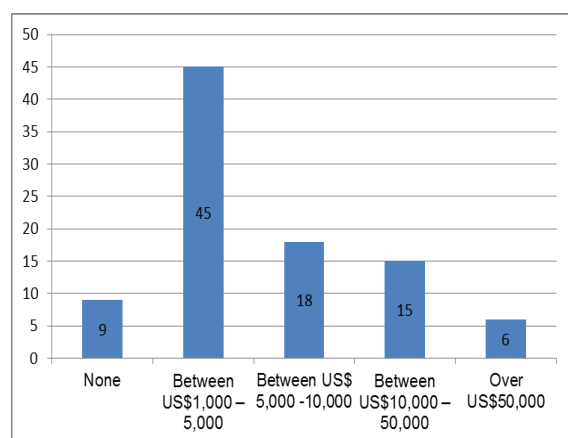
- **Accommodation Providers**

There is relatively low uptake in the more sophisticated applications such as CRS (18%), GDS (6%) and ERP (5%),

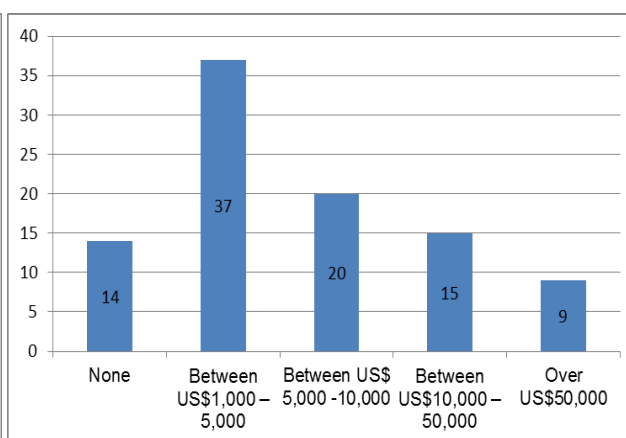
as indicated in section 4.2.4.2 under ICT. The low adoption levels of these ICT systems by Malawian accommodation providers reflects the limited exploitation of more advanced applications by this sub-sector in the tourism value chain due to lack of investments that have to be made to procure such applications. The cost of ERP software and services combined is in the range between USD25, 000 to USD100, 000 for small businesses and between USD50, 000 to USD350, 000 for large enterprises, depending on factors such as customization level, industry requirements, where it is hosted and number of users. As illustrated in Figure 53, only 6% of accommodation providers in Malawi made an investment of over USD50, 000 in ICT in the financial year (FY) 2016/17 and only 9% were planning to make investments of such amounts in the 2017/18 financial year, with the majority (45%) investing between USD1, 000 to USD5, 000 in 2016/17 financial year while 37% planning to invest the same in 2017/18 financial year.

Figure 53: Financial investments for accommodation providers

Figure 53 a: Investments for 2016/17 FY



Figures 53b: Investments for 2017/18 FY



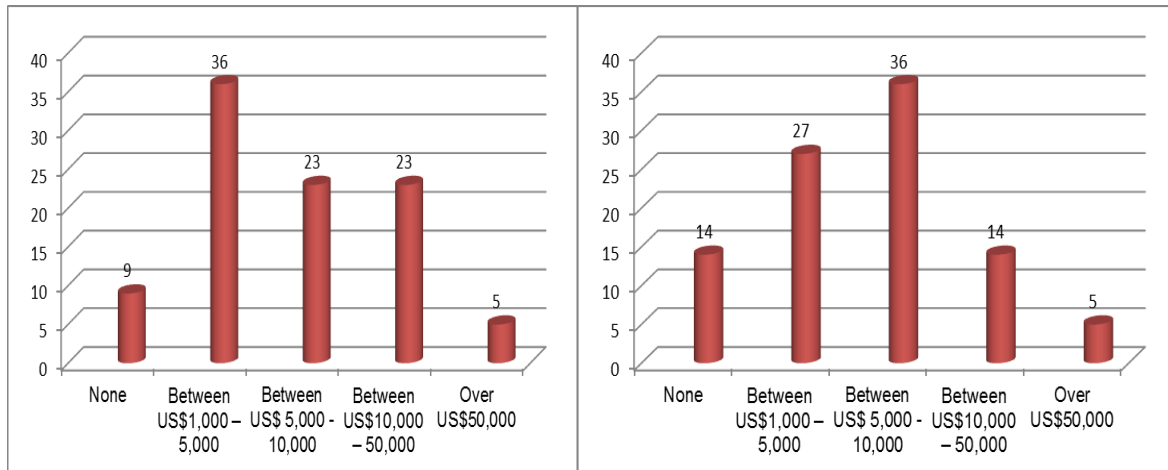
For Malawian accommodation providers to become competitive and be integrated into the global tourism value chain, it is imperative that they take measures to invest in these ICT applications. It is only when an organization has migrated to enterprise integration on the ICT adoption ladder that it can ensure open system information for customers, suppliers, and partners. Taking into consideration that only 6% of accommodation providers have invested in these advanced ICT applications, it can be deduced that they are not achieving the necessary competences for them to effectively become competitive and efficient in their systems.

- **Food and Beverages**

The majority of companies in this sector have not made substantial investments in ICT as demonstrated in Figures 54.

Figure 54: Financial investment in ICT among Food and Beverages providers

Figure 54a: ICT Investments in ICT in 2016/17 FY Figure 54b: ICT Investments in ICT in 2017/18 FY



The majority of food and beverages companies (36% and 27% respectively) invested between USD1, 000 to USD5, 000. As can be noted from the findings, only 5% of respondents therefore use basic ICT applications such as a website with information about the firm’s products, as was noted in the section of ICT systems and applications, which cost between USD1, 000 and \$5,000.

- **Vehicle Hire Firms**

ICT is predominantly a technological tool to rationalize, make vehicle hire firms more efficient and competitive, and to facilitate access to larger and distant markets. Given the uncertainties and knowledge asymmetries (digital divide) prevalent in the tourism value chain as referred to in previous sections, there is an obvious risk for market failures and underinvestment in ICT. However, as is portrayed in Figure 55, vehicle hire firms stand out from the other tourism operators in that 43% and 50% in 2016/17 and 2017/18 financial years respectively had invested in ICT equipment and/or applications of between USD10, 000 and USD50, 000.

Figure 55: Financial investments in ICT by Vehicle Hire firms

Figure 55a: ICT investments in 2016/17 FY

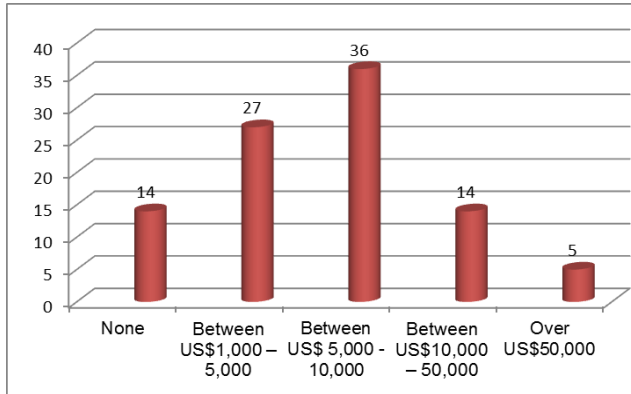
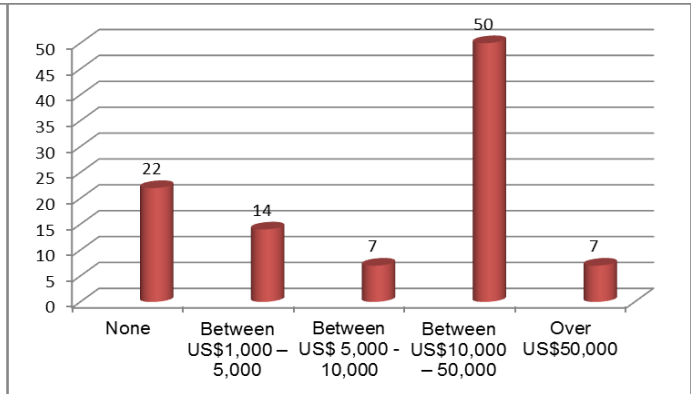


Figure 55b: ICT investments in 2017/18 FY



Considering that the majority of vehicle hire firms have relatively large fleet of vehicles (not less than 100), the cost of hiring vehicle tracking system for all their vehicles is relatively high- up to about USD4,000 per month. As can be noted from figures above, almost half of the companies invested between USD10,000 to USD50,000 in ICT which indicates that a relatively sizeable number of vehicle hire firms understand the significance of making investments in ICT.

- **Travel agents**

It is evident from the data collected that Malawian travel agents have not made substantial investments in ICT as depicted in Figures 56. This is so because travel agents do not need to procure CRS and GDS systems as these are provided by service providers such as Amadeus who get paid by users such as airlines.

Figure 56: Financial investments in ICT by Travel Agents

Figure 56a: ICT Investments in ICT 2016/17 FY

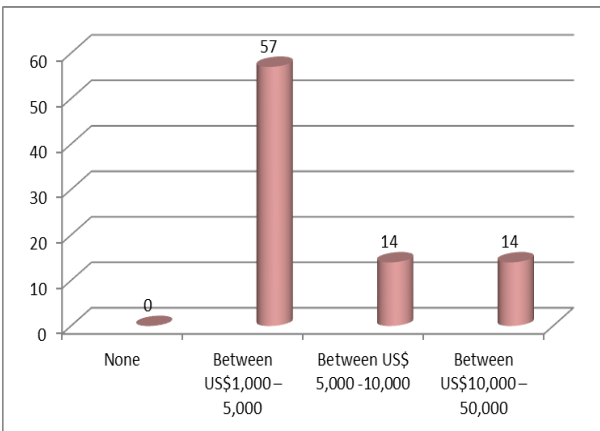
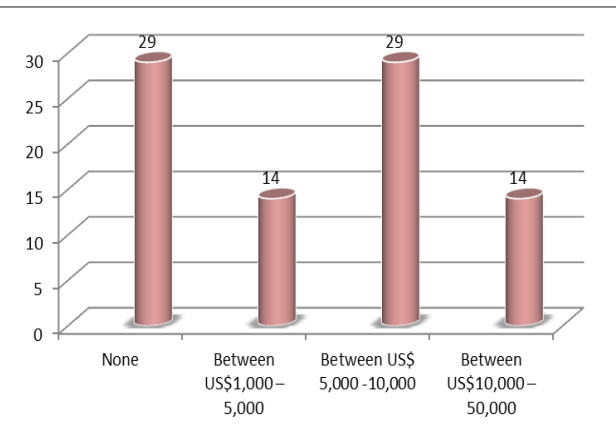


Figure 56b: ICT Investments in ICT 2017/18 FY



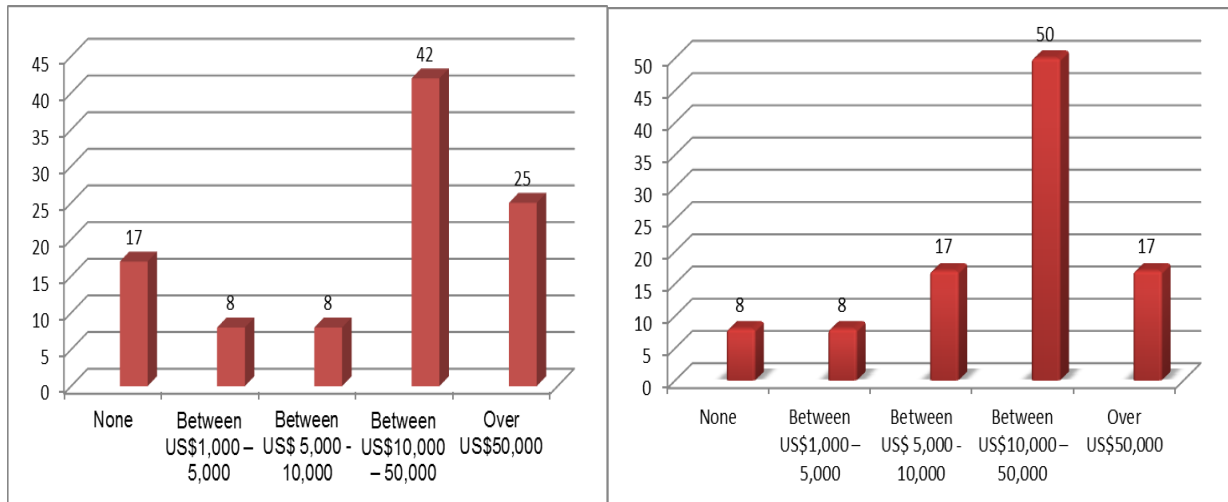
- **Insurance Companies**

Insurance companies deal with a lot of customer orders and complaints that must be handled in a timely manner. As such, investing in ICT applications that facilitate customer service and ease of doing business internally, with customers, partners and suppliers is of paramount importance. To accomplish this goal, the whole enterprise and its system must be integrated with ERP and other decision support systems (DSS), such as: Business Intelligence Systems, Market & technology surveillance systems and Strategic Quality Management. ERP systems enable order processing to be computerized and performance to be monitored real-time. From the data collected, as can be noted from Figures 57, the majority of insurance companies have not made significant investments in ERP and other high end ICT applications. In both financial years, 42% and 50% respectively have made investments of between USD10, 000 and USD50, 000 in ICT. This indicates that about 1 in every 2 of the insurance companies in the study have not made any significant investments in sophisticated ICT applications. In actual fact, only 25% and 17% respectively in the two financial years have made investments in applications such as ERP that cost over USD50, 000. The implication of this finding is that insurance companies in Malawi are investing in low level ICT applications that do not facilitate integration of business processes in order to improve response time to customer complaints and demands.

Figure 57: Financial investment in ICT by Insurance companies

Figure 57a: ICT investments in 2016/17 FY

Figure 57b: ICT investments in 2017/18 FY



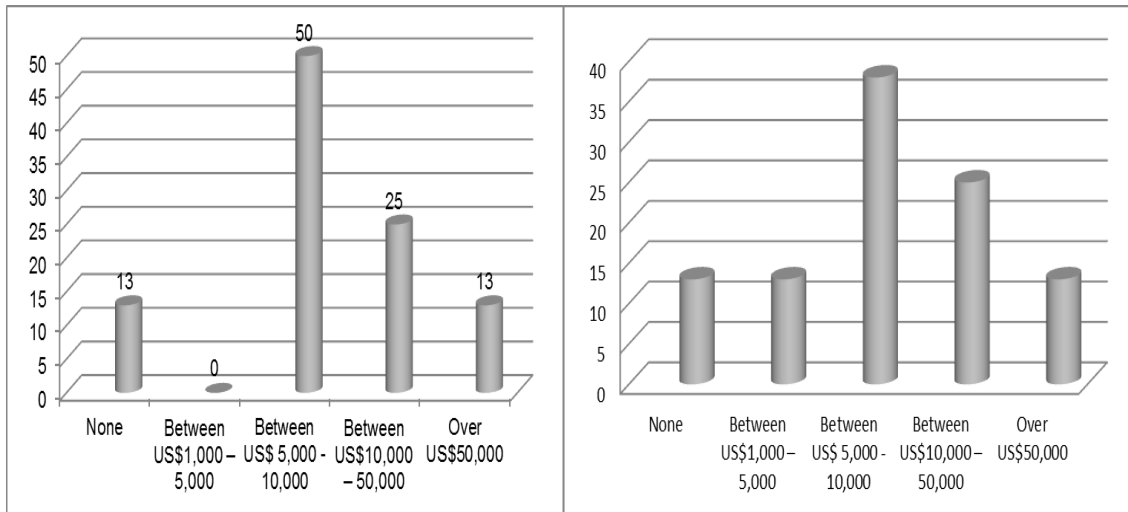
- **Tour Operators**

As can be noted in Figure 58, the majority of Malawian Tour Operators have not invested in ICT applications to align themselves with global trends. The majority of respondents mentioned that the amount invested in ICT was between USD5, 000 to USD10, 000 (50% and 38% respectively). The implication then is that Tour Operators in Malawi have not invested in the more advanced and sophisticated ICT applications such as GDS, CRS and ERP. This is compromising their competitiveness in the global tourism value chain.

Figure 58: Financial investments in ICT by Tour Operators

Figure 57a: ICT investments in 2016/17 FY

Figure 57b: ICT investments in 2017/18 FY



- **Airlines**

From the data collected in this study, only 1 in 3 airlines interviewed made investments in ICT of between USD10,000 and USD50,000 and over USD50,000 in both financial years under review. Considering that CRS and GDS have become compulsory for airlines, it is of great concern that only a third of airlines operating in the country have invested in them. Airlines that have invested in these ICT applications have positioned themselves to emerge on this electronic market and are capable of earning the benefits thereof and to gain competitive edge. The airlines that are operating in Malawi are generally lagging behind and it is imperative that strong measures should be made for them to invest in these ICT applications – as a matter of urgency!

- **Tourism Board**

It is imperative that the Malawi tourism board should invest in ICT applications in order to position the country as a preferred tourism destination to global tourists and other global tourism value chain players and increase the competitiveness of the country as a tourist destination. One way of achieving this competitiveness is through investment into ICT by the destination country. However, the tourism board only invested between USD1,000 to USD5,000 in both financial years in ICT. This low investment in ICT means that the tourism board cannot effectively access and establish partnerships with trusted, influential and important global tourism value chain players and stakeholders. To this effect, without significant investments in ICT-supported systems, the Malawi tourism board cannot become consumer-centric let alone offer flexible service delivery that is critical to position the country as a preferred tourism destination. Further investment will enable the board to become more flexible, efficient and quicker in responding to consumer and partner requests as well as to offer ICT tools and mechanisms for product customization.

4.3 Analysis of Qualitative Data

Semi-structured interviews were used to provide the study an opportunity to “probe answers” in order for the interviews to explain and build on what the survey found. As Saunders et al. (2009) propounds, the interviewees assisted in leading the study into areas that the researcher had not previously considered but are significant in understanding the context of the study and also assist in addressing the research questions and objectives. In total, seven organizations – one representative from each tourism operator – were selected as case studies for the study and Table 9 gives a summary of the various variables for the interviews. Considering that the majority of tourism operators in Malawi are medium sized organizations, the seven case study organizations were chosen from this category.

Table 9: Profile of case study organisations

Name of Tourism VC operator	Key Informant	Location of Organization	Date of Interview	Duration of Interview
Travel agent	CEO	Lilongwe	27 th April, 2018	50 minutes
Tourism Board	Chief Tourism Manager	Lilongwe	1 st May, 2018	84 minutes
Accommodation Provider	Front Office General Manager	Lilongwe	2 nd May, 2018	45 minutes
Food and Beverages	Operations Manager	Lilongwe	15 th May, 2018	31 minutes
Insurance	CEO	Blantyre	21 st May, 2018	45 minutes
Tour Operator	General Manager	Blantyre	24 th May, 2018	38 minutes
Vehicle Hire	Managing Director	Lilongwe	5 th June, 2018	51 minutes
Airline	Commercial Manager & IT Manager	Lilongwe	14 th June, 2018	59 minutes

4.3.1 Case Study 1: Travel Agent

This is small sized company that is located in the centre of Lilongwe city and has 8 employees who are mainly using personal computers, CRS and GDS systems in their daily operations. These sophisticated systems require specialized skills and expertise which is not available within the organization and therefore are managed and maintained by externally outsourced consultants. The company’s ICT strategy is focused on ensuring that it has the requisite systems that are critical for its daily operations and gives it the capacity to interface with multiple principals, intermediaries and customers from different geographical locations. In addition, the strategy focuses on

ensuring that staff that use these systems acquire the necessary skills and competences.

The main equipment being used by the company are desktop computers and laptops, smartphones, ground telephones and tablets. These are the main portals through which GDS and CRS are accessed and exploited. These were provided by Travelport and Amadeus and the travel agent does not pay anything for these. The frequency of use determines the amount of money that principals such as airlines, accommodation providers, car rentals firms, etc. pay to the service providers.

The systems are mainly used for making bookings and reservations on behalf of airlines, accommodation providers and car rental firms. As the CEO of the company said, "...now booking systems and issuing of tickets are electronic. So the benefits are that a client can sit in her office, give us instructions, we do the booking, issue a ticket and email it to her and she can print the ticket." Moreover, ICT has improved communication internally and externally. Externally, ICT is used for linking up with suppliers such as tour operators in distant countries and faraway places where a package can be put together for a client and the tour operator does the necessary bookings for hotels, car rental, places to visit, etc. Internally, ICT assists in monitoring daily and routine activities being conducted by employees; quick generation of reports on reservations and bookings; cancellations by principals, and calculation of daily income that is generated and need to be reimbursed to principals. Therefore, ICT is important in facilitating payments to suppliers and principals. In addition, staff and management are able to get instant feedback on customer, principal or supplier requests or queries.

The main challenge and barrier to ICT exploitation in the industry is cyber-crime - which has now become rampant. Unscrupulous crooks who pretend to be clients request for travel agents' bank details and then are able to hack into their system and consequently steal money. At another level, they are able to hack into the International Air Transport Association's (IATA) system and create parallel accounts and then they inform travel agents that the system of transferring funds has changed henceforth and advise them to deposit funds to this newly created account. This has particularly affected those that pay using credit cards because a credit card transaction is irreversible. Another major challenge in Malawi is intermittent Internet connectivity. "There are times when you can sit for a day or two without Internet, meaning that all systems are down and that costs money because people are coming to you, they want to make a booking, they want information but you cannot provide the information because your ICT provider is down, is not there, it's not working, so companies have lost business." Sometimes this is caused by the persistent blackouts and again this is a major barrier to ICT usage in Malawi. Also, the cost of ICT in Malawi is still on the higher side and this applies to both the equipment and the systems. To exacerbate the situation, there are so many intermediaries (vendors) in the ICT chain. There are very few service providers who have invested in ICT from conception and supplying directly to the customer. In the same vein, the expertise in ICT in the country is not available and this makes it hard to have equipment and systems serviced and repaired. This makes ICT in Malawi very expensive compared to other countries in the region therefore making the industry to be uncompetitive.

The key catalysts to ICT adoption and exploitation in this industry are systems' service providers who generate income by charging principals such as airlines since the more customers that are booked via the systems, the more income they generate. Despite this, the company has invested USD5, 000 to procure NETSUITE - an application that integrates accounting and payments to other value chain players. Furthermore, the company has made investments of USD3, 000 in upgrading its website, opened social media accounts for such Facebook, WhatsApp and twitter and trained staff in using these applications. For FY 2018/19 the company invested in web analytics "...in order to move with the current environment and trends," and this will ensure that it is interactive and multi-purpose. As such, the company's ICT strategy is focused on improving its corporate image, enhancing interaction with customers and principals and other tourism value chain players. The company does not have an IT department but the CEO/Owner of the company is responsible for making decisions on ICT, ensures that the service provider delivers the required equipment and applications and that the right training is provided to staff so that they have the required competencies.

In summary, this company, although small, has put in place mechanisms for adoption and exploitation ICT for its day to day operations – from communicating with customers and principals, receiving orders and making reservations and bookings, and conducting financial transactions with other operators. The service providers of the systems have appointed consultants to service and upgrade the company's ICT systems. Moreover, the decisions regarding investment in ICT are being handled at the highest level of the organization – exhibiting the commitment of top management in ensuring that the ICT strategy is being implemented. The main challenges being faced include cyber-crime and Internet disruptions due to poor Internet service and electricity blackouts.

4.3.2 Case 2: Tourism Board

The tourism board is a government owned institution that is under the Ministry of Trade, Industry and Tourism and employs 35 people who are responsible for marketing the country as a tourism destination and also liaising with various players in the tourism value chain. To achieve this, the board is using a diverse range of ICT equipment but limited systems. The ICT strategy of the board is to position the country as a preferred tourism destination to global audiences. ICT is managed by the e-government department that is responsible for all ICT of government departments while the organization's ICT are maintained and serviced by an ICT officer.

The Chief Tourism Officer of the board started by saying that "we are using ICT and I guess like every organization these days we need ICT as a bloodline for our organization." However, the equipment and systems are basic due to lack of investments. Nevertheless, ICT is central to the marketing of the country as a tourist destination because most of the visitors that come to Malawi reside in developed countries. Considering that most people globally are now using the Internet and social media such as WhatsApp, twitter, Facebook, the board is also using these social

media applications in its marketing efforts. “So if we want to woo people from developed countries to come into our country, obviously we have to be on top of ICT to match their level of ICT development.” Secondly, ICT exploitation is useful as a replacement of manual operations in data storage. With ICT-enabled data storage systems, large amounts of data is captured, stored and easily re-used to reach wider audiences. On this account, ICT is assisting the board in keeping data of all tourism operators in the country, analyse each of them quickly and provide information to potential tourists and link them to tourism enterprises on the website. Thirdly, ICT is used “for our planning purposes and also to forecast what we can do in the future” as the board would like to see what it can do in the future, thereby assisting in planning for future developments of tourism.

The main barrier to usage of ICT is resistance to change - as most people in the government are used to doing things traditionally. People take time to adapt to new technologies and this is to “do with not allowing change to come; because people don’t like change – to find new ways of doing things, it’s somehow in us and we really don’t know how to manage change and because we don’t know how to manage change, we just ignore them or we don’t allow them to come in at all because we don’t have the expertise to manage change. To me that would be one of the hindrance for us to reach there because we don’t accommodate changes easily and I think that is to do with our social development.” Another barrier is finances as government is dependent on donor aid to catalyse things hence when donor funds come to an end, things don’t move forward. Lack of information sharing across government departments is another barrier. “So we really don’t know how to share information and we have lot of information hidden in ourselves. I believe we have a lot of issues that we can bring out together as a team and work them out but this lack of team work hinders our development because even if I bring it to the team, someone wants to bring their own ideas and nothing goes or nothing works at the end. So I have seen people with knowledge but going nowhere, with experience but not using it.” Another related barrier to the above is lack of implementation of what is learnt in seminars and workshops – people in the civil service have the information but “we don’t implement. We have the knowledge but to implement that knowledge is not that easy.” According to the Chief Tourism Officer, the expertise in ICT does exist but the problem is underutilization as they are only involved in routine work despite being qualified programmers. They get frustrated and eventually join the private sector or migrate to developed countries.

Drivers of ICT adoption and exploitation include participating in tourism fairs where one is able to network with people from other countries who are using advanced ICT systems. In terms of investment in ICT, the department has not made any significant investments in ICT in the last two financial years. As for ICT strategy, the board has a strategy for tourism in general but not for ICT. According to the officer, “if we really want to see tourism and ICT advancing together, then there must be a deliberate policy to combine them, then we can make one strategy or have one vision for tourism and ICT going together.” In addition, the board does not have an ICT department although it has ICT personnel. ICT decisions are the responsibility of head of sections and they are responsible for making proposals as to what should be done with ICT.

4.3.3 Case Study 3: Accommodation Provider

This hotel is located in one of the upmarket suburbs of Lilongwe, the capital city of Malawi, and is owned by a Malawian entrepreneur and it has 78 employees – 40 women and 38 men. It is using a wide range of ICT systems and it has employed a full time IT officer who is responsible for the maintenance of the systems and, although it does not have a formal ICT strategy, the company has put in place mechanisms to ensure that ICT is part and parcel of its daily business.

“In this age, if you are in the hospitality industry, you need ICT” was the sentiment of the Front Office General Manager. The hotel is using an integrated CRS called SEMPER which integrates accommodation, conferencing and restaurant. This ICT system is very beneficial as it provides occupancy levels, average room rate per day, restaurant menu, orders and sales and the breakdown of daily income generated per department. “The system we are using is all in one thing – for example, if a conference booking has accommodation, we can book it under one roof and if there are bills in the restaurant under the same booking, we post it into the same account and we can come up with a statement at the end with a breakdown on daily basis of accommodation, meals taken, number of people, etc.” This system has completely replaced manual reservation.

The system is used for procurement of inventory both for rooms, restaurant and conferencing. In addition, it helps in costing of menus and labour output so that the hotel can determine the cost of each room. It is also used in planning and forecasting and budgeting because previously the hotel could not plan ahead and operated haphazardly. As such, it has boosted its efficiency as it is able to plan ahead daily reservations, requirements, quantities, and staff allocation to make sure various services are provided in good time and with good quality.

The main challenge to ICT exploitation is Internet disruptions. Once the Internet is down, the hotel cannot make online reservations from search engines such as Utell, bookings.com, etc. In addition, it becomes hard to confirm reservations and when customers arrive at the hotel they find that their names are not in the system and sometimes the hotel is fully booked. This has repercussions on the reputation of the business. Another barrier is that the hotel does not have e-commerce facilities. As such, clients cannot make a reservation, pay online and immediately be reflected in the system. “If the person would like to pay it means it has to be through bookings.com, which in turn pays the hotel after extracting their charges and the hotel ends up getting not the amount that was expected due to bank charges and transaction fees. This is really affecting the operations, profitability of the hotel and its presentation at international levels.”

Another challenge is that the expertise in servicing the system is not available in the country, making it very expensive to maintain the system as the hotel has to hire experts from outside the country. In addition, the country lacks local programmers since ICT institutions do not train their students in programming hence they have to be imported from South Africa. Another emerging but very serious challenge is cyber-crime. “There are moments when

hackers will hack into your website, get payments from bookers and then the hotel doesn't know anything. This is a major threat and these things are happening." This is mainly a problem with online or credit card payments. The energy crisis is also affecting ICT exploitation in Malawi. "You see, ICT requires electricity power supply, we need to have power throughout the day, if we don't have electricity power supply, we are affected greatly so that sometimes we lose business." This means that the hotel has to resort to using generators which is very expensive – "and if we have to run a generator for a day, it's not even cheap, it's very expensive and you end up operating at cost– just breaking even." Sometimes the generators have faults and this has disastrous consequences on the business: "and we couldn't access our emails because our generator had developed a fault...when we went online, we found emails with bookings for the day and because we had not confirmed, when we went back to them, they said they had found alternatives. So the electricity power supply outages make us lose business and there is a big loss to the business that we have incurred with these blackouts."

At another level, Internet is very expensive in Malawi and therefore the hotel has to charge its customers for Internet yet globally hotels are providing Internet for free. "We have seen people check out because there is no Internet. Internet is no longer a luxury, it's now a necessity! In this era we are living in you must have Internet access. If you don't have Internet, it's as good as no business. This has greatly affected us and it's like a barrier."

The hotel's Management is very committed and is the main driver for ICT adoption and exploitation. Other catalysts for ICT exploitation are the customers and staff who need ICT services. In lieu of this, the hotel has invested in other ICT applications which include ERP and SAGE X3 for financial and payroll management. In terms of investments in ICT, management invested almost USD25, 000 in ICT when the business first commenced in 2015 to acquire new computers, ICT systems and had to bring an ICT expert from South Africa to install and train staff on the usage of the systems. Pertaining to ICT strategy, the hotel does not have a written document although it has put in place a strategy to continuously invest in upgrading ICT systems and the Directors of the hotel have taken the responsibility of overseeing the strategy and are the main decision makers in terms of ICT. The hotel has an IT department that employs a full time IT officer who works hand in hand with senior managers who are responsible for making decisions on ICT, ensure that appropriate ICT equipment and systems are acquired and that requisite training is provided to staff. Additionally, the hotel hires a consultant who is in charge of maintaining and servicing the ICT equipment although upgrading of systems is done by the service providers from South Africa.

In summary, this hotel has adopted and is actively exploiting ICT for its daily operations – from bookings, conferencing to food and beverages. The main ICT systems are for reservations which are integrated with other daily operations such as conferencing and restaurant. The main challenges include Internet disruptions due to poor Internet service and electricity blackout with lack of e-commerce facilities being a major barrier to ICT exploitation.

4.3.4 Case Study 4: Food and Beverages

This company is located in the city centre of Lilongwe, just opposite two major hotels – one a five star and the other a three star and employees 15 people who use a diverse range of ICT equipment and systems in their daily operations. ICT equipment and systems are managed and maintained by the franchisor based in South Africa and the company's ICT strategy is heavily dependent on the franchisor that provides guidance and direction on ICT.

"ICT is helping us in terms of everything that is happening" was the sentiment of the operations manager of the company. The main equipment in use is production computers that also function as cash registers and are connected to the main server in South Africa. The operating system being used is called AURA and it was supplied by a South African company called Co-soft to which the company pays an annual subscription or license fee of USD600. Through this system, frontline staff is able to send customer orders to the kitchen and automatically get updates of daily sales per item; and management is able to monitor and manage inventory on a daily basis thereby assisting in making purchasing decisions. The system is also able to automatically calculate Value Added Tax (VAT) that is due to the revenue authorities and determines royalties that are due to the franchisor. Integrated within the system is generation of various reports including daily sales mix per item (with exact time when it was sold); monthly transactions and income; royalties and marketing fees due to the franchisor and taxes due to government.

The main benefit of using the system is its capacity to manage and control inventory that is bought and sold in vast quantities on daily basis. In addition, the system is able to calculate daily service charge and this enables management "to easily trace the loopholes between our staff at the back and those in front when comparing manually (printout) and electronically". Moreover, the system facilitates automatic calculation of royalty and marketing fees due to the franchisor and also simplifies the balancing of actual daily sales and income generated. All this means that the system has greatly benefited the organization in saving time and money as manual operations would be time consuming and expensive and has greatly improved customer service due to the speed of service delivery which is facilitated by ICT. Furthermore, ICT has enhanced monitoring of operations, staff and revenues by management.

The main challenge is lack of local ICT expertise and unavailability of domestic suppliers of ICT systems as "there is no local expertise, it does not exist." This makes ICT equipment, systems and servicing very expensive as both the systems and experts to service the equipment have to be imported from South Africa. Another major challenge is slow Internet connectivity and most often than not it is disrupted. "For example, we have to be connected to the Internet but you find that the network is not ok – it is slow, even it gets disconnected when you are in the process of repairing the computers. And for you to come back to the call centre in South Africa, you need to find the same person who was helping you and when you go back it happens that he/she is busy with other people and will just

say wait for me.” In addition, the high cost of doing business in Malawi is prohibitive to ICT exploitation. For example, the business has to pay 1% tourism levy, fees to Ministry of Labour and Malawi Bureau of Standards on top of corporate tax (30%), city rates and VAT (16.5%). Additionally, the cost of ICT is expensive as everything is imported and on top of that the company has to pay license fees annually.

The main catalyst for ICT adoption and exploitation are the owners of the franchise and the ICT equipment systems providers since it is in their interests that the franchisee has the systems. However, management’s commitment to ensuring that the company has modern ICT systems is indicated in the investment made in EPICOR – a system that integrates financial, HR and inventory management. For this reason, management invested USD5, 000 in ICT to acquire this application and had to hire an ICT expert from South Africa to install it and train staff on the usage of the system. Staff also plays a key role as they input their ICT needs to ensure that appropriate ICT equipment and systems are acquired and the necessary training is provided. The company does not have an IT department but the operations manager is responsible for making decisions on ICT and to ensure that the franchisor provides the required equipment and applications and that the right training is provided to staff so that they have the required competencies. Additionally, the company hires an ICT expert from time to time for regular maintenance and servicing of the ICT equipment while the servicing of the AURA and EPICOR applications is done by the service providers from South Africa. In terms of ICT strategy, the company does not have its own and, as the operations manager said “so we can’t say we will change this, we will put up this, because they (franchisor) supplied the equipment and the systems and hence it doesn’t belong to us. And so, the decisions about ICT are not in our hands but in the hands of the franchisors.”

In summary, this company is actively exploiting ICT for its daily operations – from inventory management, orders, sales, financial management and generating reports. However, the decisions regarding investment in ICT are beyond management as the franchisor determines the applications to be adopted and this has greatly affected the strategic focus. The main challenges being faced include Internet disruptions due to poor Internet service and electricity blackouts. However, small companies are heavily affected by blackouts since they cannot afford generators and the high running costs associated.

4.3.5 Case Study 5: Insurance Company

This company is a subsidiary of a holding company whose head office is in Nairobi, Kenya and operates in seven countries in eastern and southern Africa. It has its local headquarters in the city centre of Blantyre and has five branches across the country. It has a staff complement of 85 people who are using a wide range of ICT equipment and systems that are managed by an ICT expert at the head office in Nairobi while maintenance and servicing is done by a full time Malawian IT Manager and his assistant. The company’s ICT strategy is geared towards making substantial investments in the acquisition of state-of-the art ICT systems; with the strategic goal of positioning it as the number one insurance company in the region.

According to the CEO of the company, “almost in each and every insurance company you find that they have a certain ICT insurance package. They may not be the same but at least we have an insurance package that we use to process the data that we have.” Generally, insurance companies are using integrated ICT systems from data collection to processing claims that is linked to the finance and human resources functions, underwriting, claims and all other functions within the company. This company is using an ICT system called CIRIUS – an insurance package which integrates all business functions except finance which is using ERP. The company is in the process of upgrading its ICT system to a new system called INISIS which will integrate all the company’s functions including finance, human resources, customer service, underwriting and claims.

The major benefit of ICT exploitation to the industry is that it facilitates efficiency of operations, “because when you are doing things manually, it takes a lot of time but because of these systems we are able to do things faster and more efficient, more cost effective, and you need just a few people to process a lot of data.” ICT is also used for marketing the services and products of the organization. Consequently, the company uses digital marketing and is able to reach out to potential markets through emails and its website. As such, ICT is simplifying customer interaction through the company’s website where a customer is able to login and view the company’s products, download forms to apply for insurance, get in touch with the company to make inquiries and staff is able to get in touch with customers and provide feedback. Furthermore, the company has web analytics which tracks the customers that are using its website. ICT is also actively being exploited for underwriting, processing claims and issuing insurance certificates to customers. As the CEO explained, “ICT has become an integral part of our business, we cannot do without ICT at this point in time, otherwise we will be too slow and we will be very inefficient and it will be very costly but with ICT all things have improved greatly.”

The main barrier to ICT exploitation is irregular Internet connectivity and, more often than not, the connection gets disrupted and is lost. And since these systems are web or Internet based, the moment connectivity is lost, there are major disruptions to operations of the company and there is need to either start all over again or some data is lost. Above this, the speed of the Internet in branches outside of the headquarters (Blantyre) that are in remote places is very slow. In addition, electricity blackouts “have not made things any better, they have made things worse.”

The main catalysts that are driving ICT adoption and exploitation in the industry is the changing environment in which business finds itself. As the CEO explained “we have to live with times, technology is changing every day, things are getting advanced more and more as time is going, so we have to keep up with the pace of advances in technology globally. Things are getting much easier, much faster, things that we never used to use/get like emails is a must now. Letters are long gone now... So it’s change – change of times, change of technology. As such ICT is bringing the competitive edge.” Another driver for ICT exploitation is the need to keep abreast with competition. The better and more advanced ICT systems a company has, the more competitive it becomes on the market hence there is need to be much faster, more efficient, and cost effective than the competition. More significantly, clients

play a major role in ensuring that the company adopts and exploits ICT as they have become adept to technology. In terms of investments in ICT, as a group, the company is planning to invest USD60 million in the 2018/19 financial year to acquire state-of-the-art ICT systems called INISIS which will integrate all functions of the business including payroll, CRM, document management, finance, HR and will have customer portals where the customer will be able to login and transact business. The system is designed in such a way that clients who want to change the value of their asset, will just login and the system will automatically calculate the premium and show them the premium that they would have to pay.

According to the CEO, "it has been quite a huge investment just going forward so that technology can set us apart, can make us be above the rest." He reckons that in the next three to four years, ICT is going to be the major driver of the insurance business processes and marketing and "ICT is going to be the major driver of our business going forward!" For this reason, the company's ICT strategy is geared towards making significant investments in the acquisition of sophisticated ICT systems that will link the countries in the group and effectively make it possible for them to be unified while, at the same time, integrating the entire business operations of the company at both local and group level. The company has an IT department and, moreover, the Board of Directors of the company have deliberately taken the bold decision to strategically position the company at the cutting edge of technological advancement as a thrust towards gaining a comparative advantage over its competitors by making huge investment in state-of-the art ICT systems and that employees are aware of the significance of ICT to the movement forward of the organization. As such, the company has incorporated the demands of each country and the ICT strategy is in place and is being driven and implemented from the head office.

In summary, the company is making major strides to become the market leader in eastern and southern Africa by intensely focusing its resources in the adoption and exploitation of ICT to remain competitive and relevant to industry demands. The huge investment that it is making in ICT testifies to the significance that the company is placing in ICT exploitation. The fact that critical strategic decisions in investing in ICT have the approval of the Board of Directors indicates a sense of urgency by the highest levels of the organization to ensure that the ICT strategy is implemented effectively. However, Malawi is faced with the challenges of Internet disruptions due to poor Internet service and electricity blackouts – which are hindering the effective exploitation of ICT.

4.3.6 Case Study 6: Tour Operator

The company is located in Blantyre, the commercial capital of Malawi which is situated 350 kilometres from Lilongwe, employs 14 people and utilizes a wide range of ICT equipment and systems in its daily operations. ICT equipment and systems are managed and maintained by a full time IT officer who is responsible for its maintenance, servicing and upgrading. The company's ICT strategy is revolves around acquiring essential ICT equipment and systems that will ensure that it stays competitive in the industry and on training staff so that they are conversant with the systems.

The first sentiments of the General Manager of the company were that the company “absolutely cannot do without ICT.” There are several ways that ICT is used and is beneficial. Firstly, ICT provides a two-way communication with customers, principals and other intermediaries – these are able to reach the company through email or the website. Because of the need to respond quickly and from any geographical location and the stiff competition, not just from Malawi, but from across the region and anyone who is remotely interested in southern Africa, there is greater need to seize the attention of customers, and this can only be done through the exploitation of ICT. Other countries are more responsive to ICT exploitation than Malawi and they are very ingenious in selling their products and destinations and alluring to customers by professional presentation through pictures, videos. In consequence of this, it is imperative that “...our service level has to match that of neighbouring countries, so we need ICT.” In addition, ICT is an interface that the company uses to link up with other tourism operators such vehicle hire, travel agents, airlines, and accommodation providers for customer referral and organizing itineraries. It is imperative therefore that the company’s ICT systems be in synch with what the principals and other intermediaries are using and this necessitates being at the same wavelength with them in order to remain competitive.

In terms of usage and benefits, ICT is instrumental in record keeping and financial management through the use of systems such QuickBooks. Additionally, it is used for human resources management. More significantly, ICT is used for communicating with clients and suppliers to review what was agreed in terms of the itinerary and payment terms and keeping records of that communication. It is also beneficial in planning and forecasting as it assists the company in strategically observing trends that are coming into the industry. Moreover, it is used for e-commerce which enables international clients to pay online.

The main barriers and challenges include the high cost of ICT equipment and systems as these are imported, making ICT very expensive. Furthermore, Internet connectivity is very slow, erratic and prone to disruptions which affect the loading of systems such QuickBooks, accessing communication tools such as drop box and disturbs communication with clients and principals. Electricity blackouts forced the company to invest in solar system, but it’s not ideal. Moreover, the actual cost to pay to the Internet service provider is high.

The company does not have a written ICT strategy. However, the Directors - who are based in the United Kingdom - are responsible for the larger ICT decisions and strive to ensure that the company stays on top of the latest technology in the industry. Staff is also actively involved in ICT decisions as it provide input in terms of what is needed and the final decisions are based on what is happening on the ground. “So we are able to say this is what would be feasible as a company, and they (Directors) can make an assessment from there.”

The main catalysts and drivers of ICT adoption and exploitation in the industry is globalization of the industry and clients’ and value chain partners’ demands. ICT exploitation is vital for the industry in Malawi to compete and keep up with global trends. Global customers, who are technologically savvy, and other tourism operators - that the

company interacts with on daily basis, are driving the exploitation of ICT. In order to ensure that the company is in synch with the current industry trends and demands, it has invested USD10, 000 in Kuoni – an integrated application that enables it to coordinate and communicate with other tourism operators and allows it to distribute its tour packages and facilitates timely exchange of information. Moreover, the company has made investments in upgrading its website to have web analytics so that it is able to track hits and the type of people who visit it. For this reason, it has made it mandatory for its entire staff to be on Facebook, twitter and WhatsApp. Thence, the company's ICT strategy is focused on effectively branding its corporate identity both locally and globally in order to improve its interaction with customers and principals and other tourism value chain players. The company does not have an IT department but the Directors are responsible for making decisions on ICT and to ensure that they provide the required equipment and applications and that the right training is provided to staff so that they have the required competencies. Therefore, the Directors of the company play a pivotal role in ensuring that the latest ICT systems affecting the company' competitiveness are explored and acquired and facilitating the training of all staff in these systems.

In summary, the company is striving to remain competitive in the industry by adopting and exploiting ICT systems that are relevant to its operations and is very up to date with global trends due to the strategic positioning of its Directors. It has seamlessly integrated its daily operations though the exploitation of ICT – from communicating with customers and principals, preparing itineraries for clients, receiving orders and bookings, and conducting financial transactions with other operators and tourists. Since decisions regarding investment in ICT are being handled at the highest level of the organization there is fluidity in the implementation of the ICT strategy. The main challenges being faced include Internet disruptions due to poor Internet service and electricity blackouts.

4.3.7 Case Study 7: Vehicle Hire

This company, which is one of the top three vehicle hire companies in the country, has its head office in Lilongwe with branches spread across the country in Blantyre, Zomba and Mzuzu, employs in excess of 350 people and uses a diverse range of ICT equipment and systems. It has different approaches to managing its ICT infrastructure and applications. It has outsourced the management, maintenance and upgrading of its tracking system to an independent IT company while the daily maintenance of ICT equipment and systems that are used in offices are maintained by an ICT manager and two assistants. The company's ICT strategy revolves around ensuring the safety of its vehicles and clients and therefore it has made substantial investments in the acquisition of essential ICT equipment and systems that have been installed in all its vehicles.

The company is using GPS tracking system that has been installed in its vehicles, in addition to the office systems such as Microsoft applications. The main usage of ICT in the company is for financial management, human resources, marketing, vehicle tracking and monitoring and, as the Managing Director pointed out "ICT has become

a phenomenon which is being used in almost every area of our business, including managing our customers.” The exploitation of ICT is assisting the company and the industry in general in cutting down costs of doing business with customers, suppliers and other tourism operators such as tour operators, airlines and accommodation providers. This is possible as ICT reduces transaction costs in terms of communication, bookings and invoicing. As a result, ICT is enabling the company to respond quickly and in real-time to suppliers, customers and stakeholders at a fraction of the cost it would take if this was done manually. At another level, ICT is allowing the company to establish closer customer relationships as it is able to get instant customer feedback on the service provided, the performance of vehicles and breakdowns that may occur. Above all, ICT has given management capacity to track the movement of the company’s vehicles, thereby greatly reducing fraud and wastage.

The main barrier to ICT adoption and exploitation in Malawi “are the problems of electricity blackouts that have heavily affected our connectivity.” This problem is compounded with Internet disruptions that “happen at very regular intervals” and therefore affects the business in general. Another challenge is the lack of local expertise to develop ICT systems and repair them. The company is relying on foreign experts who are very expensive.

The main driver of ICT in the company and the whole industry in general is the globalization of the industry which has ensured that ICT “becomes a part and parcel of how we conduct our business,” according to the MD. The interconnected-ness of the global business environment has made ICT to be an integral part of doing business with all players in the value chain. Another catalyst is the desire by management to have efficient systems in terms of tracking and monitoring the fleet of vehicles so as to ensure the safety and peace of mind of clients. The more advanced ICT systems the company has, the more competitive it becomes on the market as customers feel secure and safe whilst utilizing the company’s vehicles. Apart from the vehicle tracking systems, the company has invested in ERP system that has integrated all its internal business processes in order to ease the way of conducting business. In addition, it has a website and a Facebook page that it is using to market its products and services. Therefore, the company’s ICT strategy is aimed at safeguarding its clients’ safety and comfort while, at the same time, ensuring that the business’ internal operations are streamlined and efficient. The company has an ICT department that employs 3 people to man the department, in addition to working very closely with systems suppliers who ensure that the company has latest technology. In addition, the Board of Directors of the company have deliberately taken the bold decision to strategically position the company at the cutting edge of technological advancement as a thrust towards gaining a comparative advantage over its competitors. The Directors of the company have approved a major investment of over USD100,000 in ICT in the FY 2018/19 in order to strategically position the company as a leader in the industry and thereby gaining a comparative advantage over its competitors.

In summary, the company has taken relevant measures in investing in ICT so as to position itself as a market leader in the industry. The MD pointed out that “with the proliferation of vehicle companies, we have come to the realization that the only way to stay ahead and remain competitive is to invest in ICT.” ICT decisions are the responsibility of the MD and the directors of the company who “have taken a great interest in the evolution of ICT in

this company.” Despite all this commitment to investing in ICT systems, the country continues to be faced with challenges of slow and intermittent Internet connectivity and electricity blackouts.

4.3.8 Case Study 8: Airline

This airline is jointly owned by the government of Malawi and Ethiopian Airlines and has its head office in Lilongwe and sales offices in Lilongwe and Blantyre, employs 50 people who use a wide range of ICT equipment and systems in their daily operations. ICT is construed as an integral part of the daily business operations of the airline - from sales to check-in counters at the airport, to baggage handling, and communication with the array of value and supply chain partners. It is maintained by an ICT officer who is based at the head office and the company’s ICT strategy focuses on ensuring that there is uninterrupted flow of communication between the airline and its customers, intermediaries and suppliers that it works with.

The main ICT systems that the company is using are GDS and CRS which have been supplied by Travelport and Amadeus. These systems enable the airline to communicate effectively and efficiently with principals, intermediaries and suppliers. It also improves its internal business processes such online bookings, communicating with potential customers no matter their geographical location and offers an opportunity for instant customer feedback. Not only that, these systems, according to the Commercial Manager, “greatly help us to be constantly in touch with other principals and intermediaries who link us to customers” and thereby the company is able to access customers that it would otherwise be unable to contact. The systems therefore facilitate cost reduction and savings in reservations and communicating with customers that are dispersed globally. Coupled with this, “these systems assist smaller airlines like ourselves to compete with larger ones on an equal footing” as the company is able to book seats for customers anywhere in the world. As such, “ICT is central to all the operations of our business – from baggage handling, booking and identification, seat allocation, inventory management, checking in passengers, ordering flight meals, communicating with control towers,” posited the commercial manager.

The main barrier to ICT exploitation in Malawi, according to the IT officer, is the “unreliable electricity supply and disruptions to the Internet” which greatly affect airline operations as “we have to be online to conduct our business”. This is affecting the competitiveness of the company in terms of operations. Another barrier is limited availability of local experts in ICT to conduct routine maintenance of the CRS and GDS systems. This makes it very expensive to service these systems as experts have to come from outside the country.

In terms of catalysts to ICT exploitation, it is the nature of the airline business that necessitates that the company must have these ICT systems because, as the commercial manager pointed out, “otherwise we have to close as a business.” There is no way that an airline can function without having these systems in place hence the industry “is driven by ICT systems that determine the nature of our industry.” Apart from these systems, the company has also invested in UNIT 4 AGRESSO – an integrated package for financial accounting, planning, budgeting and

forecasting, business process automation and automatic foreign exchange transactions as a means of facilitating the seamless integration of its business processes and enhances its capacity to conduct e-commerce. In addition, it has a website and a Facebook page that it is using to market its products and services. Consequently,, the company's ICT strategy is aimed at ensuring that the business' internal operations are streamlined and efficient while, at the same time, facilitating communication with clients and other value chain operators. In a drive to stay competitive and to meet industry demands, the company has just invested over USD40, 000 in the last financial year in upgrading its systems both at the head office, ticketing office and airports. The company has an ICT department with two full time employees and top management is very much involved in making key ICT decisions in consultation with the ICT Manager and key staff.

In summary, the company, though a new and small player in the airline industry, has realized that ICT is essential for it to become competitive and has taken the relevant measures in investing in ICT systems so as to align itself to industry demands. With big airlines in the continent incurring losses, smaller players have to become innovative to remain afloat and ICT has proved to be a key component to attain that. However, issues of cyber-crime, intermittent Internet connectivity and electricity blackouts remain major challenges for ICT exploitation in the country.

4.3.9 Summary of Qualitative Data Analysis

Every company and case study organization was analysed individually and then all the cases together by identifying common threads and strands that stood out across all tourism value chain operators. Every case of the value chain player was presented in a similar structure so as to depict a clear picture of what is happening in each player and, at the same time, to know what is happening in every sector. It was observed from the qualitative data collected that all the tourism operators have an ICT strategy, use appropriate systems depending on their sophistication, industry standards, their processes, and their capabilities. Moreover, most are aware of the importance of ICT and make investments depending on their abilities. Additionally, ICT initiatives and decisions to adopt, exploit and invest in ICT are dependent on top management and there is an IT department or someone in charge of ITC in all the organizations. However, progress in ICT exploitation and service provision is subject to disruption due to infrastructure inefficiencies, security, and limited local expertise.

The above discussion has provided some vital information that has triangulated the findings from the survey. For instance, the uses, benefits and barriers of ICT exploitation that were highlighted by respondents in the survey have also been echoed by the case study organizations. The only major new finding from the interviews is cyber-crime which was not mentioned by any of the respondents from the survey. Table 10 provides a concise summary of the findings per individual tourism operator. The following common characteristics are observed from Table:

- All tourism value chain operators have made some investments in ICT;
- Although some do not have a strategy, ICT is still an important component of their business strategy; and
- A very senior manager is responsible for ICT exploitation in the organisation.

Table 10: Summary of Key Findings from Case Study Organisations

	Travel Agent	Tourism Board	Accommodation Provider	Food and Beverages	Insurance	Tour Operator	Vehicle Hire	Airline
ICT Investment (USD)	8,000	5,000	25,000	5,000	60 million	10,000	100,000	40,000
Strategy	Yes – to have requisite systems for communication with customers, principals and partners	Yes – to position the country as preferred tourism destination to global audiences	No, but ICT exploitation part of overall business strategy	None - as dependent on franchisor for ICT systems and equipment	Yes- investment in state-of-the art systems aimed at company as number insurance provider in the region	Yes-acquisition systems for communicating with customers, principals and partners	Yes – ensure vehicles and clients by installing GPS tracking systems	Yes-to ensure uninterrupted communication with customers, intermediaries and suppliers
Key decision maker	CEO	Director	Managing Director	Owners	Board of Directors	Managing Directors/ Owners	Owners/ Board of Directors	Commercial Manager
Systems	CRS, GDS, NETSUITE	Social media, Internet	CRS, ERP & SAGE X3	AURA, EPICOR	CIRIUS, ERP, INISIS	Kuoni; QuickBooks	GPS vehicle tracking systems; ERP	GDS, CRS, UNIT 4

								AGRESSO
Benefits	Improved Communication internally & externally; Monitoring; Generation of Reports	Replacement of manual operations in data storage.	Integration of internal business processes.	Integration of internal business processes.	Integration of business processes; Facilitates efficiency Of operations; Two-way communication with customers, principals and other intermediaries	Two-way communication with customers, principals and other intermediaries.	Track the movement company's vehicles, greatly reducing fraud and wastage; Cutting down costs of doing business; Reduces transaction costs in terms communication bookings and invoicing; Establishing customer relationships	Cost reduction & savings; Ability to compete with larger Airlines.
Uses	Reservations bookings; Reports; Payment to	Marketing the country; Planning & forecasting	Reservations, Reporting, Financial management,	Order management; Inventory monitoring; Reports generation.	Marketing; processing Claims, Underwriting;	record keeping and management; communicating	Financial management; human resources;	Bookings, Communicating with potential customers,

	suppliers; customer feedback		Procurement		Issuing insurance Certificates; Two-way Communi with suppliers, principals, customers.	clients and suppliers; planning & forecasting; E-commerce.	marketing; Vehicle tracking & monitoring.	principals, intermediaries; Baggage handling, Booking and identification, allocation; Inventory Management; Checking-in passengers; Ordering flight meals; Communicating with control towers.
Barriers	Cyber-crime; Intermittent Internet Connectivity; Electricity blackouts; expensive ICT Equipment; Lack of local	Resistance to change; Lack of financial support; Lack of information across government Departments;	Electricity blackouts, lack of e-commerce systems, Limited local expertise, Cyber-crime	Lack of local expertise & Suppliers; Slow internet; Electricity blackouts; Poor business environment	Irregular internet connectivity; Electricity blackouts	High cost of ICT equipment & systems; Slow internet connectivity; Electricity blackouts.	Electricity Blackouts; lack of local expertise	Unreliable electricity supply; Network disruptions; Limited availability of local experts.

	expertise	Lack of implementation of ideas & knowledge gained.						
Drivers and catalysts	Management commitment; Internal competencies	Development Partners	Directors and Management; Tourists; Employees.	Owners of franchise; Management Commitment; Nature of business	Management commitment; Customers; Changing business environment.	Management commitment; Competitiveness other value chain players.	Globalisation; Management commitment.	Nature of airline business;

4.4 Response to Research Questions.

Question 1: What is the level and extent of ICT adaptation within the tourism value chain in Malawi?

The study has found out that all tourism value chain players are using ICT for business functions but the majority is using ICT for support functions and only selected operators are using ICT for service improvement, comparative advantage and reducing costs.

The study brought to light that the majority of tourism value chain players, with the exception of vehicle hire companies, are investing in support ICT resources and, as such, have made investments in basic ICT equipment such as PC/laptop and communication tools such as the telephone (both landline and smart phones). Coupled with this, the majority of companies, with the exception of accommodation providers and food and beverages, have websites but only airlines, travel agents, and tour operators are actively using them for web analytics where they are using it to collect, measure, report and analyse their website data in terms of usage, e-commerce transactions, and feedback from customers on their services and products. As such, these operators are using their Websites to gain competitive advantage and improve their service delivery to customers and their Principals, thereby reducing costs of doing business. In the same vein, the study has found out that there is an increased uptake in the use of the Internet among tourism value chain players in Malawi. The Internet is providing them with a means for external communications with customers, suppliers and other value chain players and amongst themselves. Extranets are being used to streamline internal communication processes. The Internet is also being utilized as a marketing tool. Despite this relatively high uptake in Internet usage, almost one in every five accommodation providers and food and beverage companies under the study are not using the Internet. A substantial number of accommodation providers are located in rural areas where there is an inadequate ICT infrastructure hence low connectivity level. For the food and beverages sector, most of whom are relatively small, servicing a specific locality with a limited customer base hence the use of the Internet is limited as a communication tool.

The study suggest that there is extremely low adoption levels of GDS, CRS and ERP by Malawian tourism value chain players - attributed to the colossal investments that are required to procure these systems, with the exception of airlines, travel agents and the case study insurance company. This is providing a competitive advantage due to cost savings, quick response to markets, customers and suppliers and reduces transaction costs thereby improving business performance in managing the supply/value chain and, in so doing, increasing efficiency and improved communications with principals and customers.

In terms of using up to date systems, hardware, software and compatible current technologies, the study has found mixed results. For ICT systems, the majority are using out-dated systems with the exception of airlines, tour

operators; some big insurance and vehicle hire companies, and travel agents. For airlines and travel agents, they are using state-of-the art GDS and CRS and this is attributed to the fact that it is mandatory for them to use these systems to conform to global standards and to communicate with global customers and value chain partners and suppliers. Large sized insurance companies are investing in ERP systems to ensure that their internal business processes are integrated in order to improve their customer service and competitiveness while medium to large-scale vehicle hire companies have invested in GPS powered vehicle tracking systems as the main users of their vehicles including United Nations agencies, embassies, international Non-Governmental Organizations and international tourists demand that vehicles used by their staff have GPS tracking systems installed in them.

In terms of ICT hardware, the majority of tourism value chain companies are using latest hardware such as laptops, desktop computers and smart phones. The main reason for this is that the hardware has to match the Microsoft or apple software. However, most of the operators such as medium to large sized insurance and vehicle hire companies are still using 2G and 3G and airlines, tour operators and travel agents are using 4G systems and none has migrated to 5G. This has implications on the compatibility with global and international systems in the near future.

Question 2: What are the factors influencing the level of ICT adaptation by Malawian tourism value chain operators?

The following section discusses the factors influencing the progress of ICT exploitation in the Malawian tourism value chain:

- **Business environment**

A healthy business environment is fundamental for firms to thrive and benefit from ICT exploitation. For Malawi, the business framework is based on an open and competitive policy as set up by the government. However, the business environment has been negatively affected due to the energy crisis which has resulted in prolonged load shedding of electricity. As a result, tourism operators are incurring heavy losses as they have to resort to alternative sources of energy such as diesel powered generators that are expensive to operate and not sustainable in the long term. In addition, high interest rates have acted as a deterrent for investors since the cost of borrowing is very high.

- **Network Infrastructure**

The findings of this study have unravelled that ICT infrastructure in Malawi is very expensive, making access to ICT very hard – especially for small sized enterprises and those located in rural areas. Internet connectivity is also slow, erratic and intermittent. Due to the high cost of broadband in Malawi and the

problems in accessing technological infrastructure in rural areas, this makes the adoption of ICT low - especially for advanced ICT applications and systems such as ERP, GDS and CRS.

- **Lack ICT Expertise**

Lack of ICT experts and shortage of skilled manpower in Malawi is contributing to the low adaptation of ICT in the tourism value chain. The country imports almost all of its ICT products and services. Moreover, there are very few certified professionals in specialist ICT areas and, as such, the country depends on international experts as well as institutions for capacity development and for implementing and managing complex ICT initiatives. The above is attributed to the lack of local ICT training institutions that can train and equip young people and industry workers with the ever changing technological developments taking place globally.

- **ICT Investments**

When possible, tourism firms are keen to invest in intangible investments and assets (skills, organisation, software, networks) on ICT for competitiveness and growth. The study has shown that the majority of tourism operators in Malawi have invested in basic, low level ICT infrastructure and systems and not in more advanced applications – resulting in low uptake of the more sophisticated ICT systems. However, some operators such as airlines, travel agents and medium and large-sized insurance and vehicle hire companies have invested in sophisticated global systems such as GDS and CRS, ERP and GPS vehicle tracking systems. This implies that the majority of tourism value chain players in the country will remain uncompetitive on the global scale, thereby losing out on the increasingly expanding and growing tourism market.

- **Management or Owners Commitment to ICT**

The study has revealed that commitment of top management and/or owners of tourism firms to invest in ICT applications and systems determine the level of ICT adoption and exploitation in the organization. Management commitment has a direct correlation on the acquisition of the necessary ICT competences, technical capacities and the engagement of qualified human resources required for the exploitation of ICT. As a result, if management or owners have an understanding of the strategic importance of ICT to business performance and competitiveness, the increased likelihood of ICT adoption within the organization. The converse is also true.

Question 3: Do tourism companies in the value chain use similar ICT strategies?

The results of the study indicate a trend where tourism operators are mainly using ICT for various business functions including human resource and financial management. The implication of this finding is that the majority of tourism operators in the country are not using ICT strategically. ICT exploitation improves business performance in managing the supply and value chain, customer service and facilitates integration into the global value chain. In this vein, the integration of internal processes and ICT systems through ERP by, for example, 25% of the respondents from tour operators and the high uptake in CRS and GDS by airlines and travel agents denote that these firms have a competitive advantage over their counterparts in the entire tourism value chain. Despite this, the majority of respondents pointed out that they are aware of the benefits of exploiting ICT strategically but that they lacked the financial muscle to invest in these systems, face constraints in terms of ICT infrastructure at the national level and compatibility issues. For example, large-sized insurance and vehicle hire companies like the ones interviewed, are investing heavily in integrated systems such as ERP. It can be deduced therefore that some tourism value chain players are going through the evolution stage of ICT integration but this will to a large extent be dependent on availability and compatibility of national infrastructure such as telecommunications, electricity and 4G and 5G systems, among others. Despite getting a lot of benefits from using ICT for various business functions, the majority of respondents indicated that they are very keen to adopt ICT for strategic functions and access the required systems and expertise. On account of this, although the level of ICT adoption and development varies from sector to sector, but because of the awareness of the strategic opportunities that ICT provides to a firm's performance, customer service and integration into the global tourism value chain, they are rapidly moving towards that direction. However, this progression will by and large heavily dependent on future investment in infrastructure at national level.

Question 4: Does the use of ICT in the tourism value chain provide Malawian tourism enterprises with opportunities for competitive advantage?

Tourism is an information business because as a service industry, information is one of the most important quality parameters to support communication among all players in the tourism value chain and fosters interaction amongst principals and intermediaries, on the one hand, and with their customers, on the other hand. In addition, it facilitates business transactions across the value chain and reduces the speed of transactions. This also transforms the value chains and relations within the tourism industry. The study has found out that the adoption and exploitation of ICT plays a major role in advancing or suppressing the competitive advantage of the tourism industry. The adoption and exploitation of ICT is critical to altering the rule of competition - especially in the tourism industry, because the majority of activities in the tourism value chain create and use information. To this end, information accounts for the

preponderance of competitive advantage and therefore for profitability for tourism operators. This finding is in line with Porter (1985) who posits that ICT affect the competition in three major ways: i) ICT can change the structure of an industry, and alter rules of competition; ii) ICT can be used to create sustainable competitive advantage and provide companies with new competitive instruments and, iii) as a result of ICT new business can be developed within a company's existing activities.

In terms of ICT changing the structure of the tourism industry, e-commerce has been a critical means of facilitating business cooperation between principals and intermediaries and between Malawian operators with other global operators and has been fundamental in facilitating strategic alliances between and amongst tourism value chain players. For example, travel agents, airlines, tour operators and vehicle hire firms, through the use of CRS and GDS, are able to conduct online payments and receipts with customers and other tourism players from across the globe. As this study has found out, e-commerce adoption increases business competitiveness and enhances enterprise performance through indirect cost savings such as labour productivity and direct cost such as reduction in payment for services and receiving payment from customers. Another way that ICT has changed the structure of the tourism value chain is through Mediation, Disintermediation and Re-intermediation. Intermediaries play a very important role in the tourism value chain as they act as middlemen linking principals with customers and with each other, and also provide product information to a wide section of users. Intermediaries are often adding cost for their services to the products, which have to be paid by the principals or consumers. Essentially, a principal can undertake the same task itself, but an intermediary is preferred because of reduced costs as they have access to an established customer base.

The difference that the Internet makes is that without physical proximity between the consumers and principals, products can be found, assessed, and the transaction completed. Therefore, ICT enables the speedy and inexpensive restructuring and mediation patterns. Electronic markets lower the cost of market transactions, becoming easy to match buyers and sellers directly, and as a result, the role of intermediaries is reduced, or even eliminated, leading to disintermediation. Disintermediation means that products and services are directly given to the consumers, thus reducing costs in form of commissions paid to intermediaries. The Internet is a major instrument that is facilitating disintermediation by connecting customers directly to principals. This suggests that intermediaries such as travel agents have to be innovative for them to remain relevant and they are doing so by exploiting ICT and being integrated in GDS and CRS. All this denotes that ICT is enhancing the competitiveness of both principals and intermediaries in the tourism value chain.

ICT is also being used to create competitive advantage and provide companies with new competitive instruments. Firstly, by exploiting ICT, value is extracted as tourism value chain players are able to accrue benefits such as increased efficiency in their internal business processes and closer and faster

interactions with other tourism operators and capacity to reduce costs. Typical examples in the tourism industry include process automation and integration of human resources and financial management through the use of ERP systems; client outsourcing through the use of CRS and GDS such as self-check-in of hotel guests or airline passengers, online reservations for hotels and airlines. Secondly, by effectively utilising various ICT systems, tourism enterprises are able to achieve the organizations' strategic objectives which include improved communications within the organization and with value/supply chain partners and enhancing their capacity to be integrated into global tourism value chains thereby enhancing business performance in managing the supply/value chain. A typical example for tourism operators of this is data mining for forecast or yield management in which client and sales information supports marketing goals. Lastly, the exploitation of ICT facilitates networking and seamless collaboration between and among players in the tourism value chain. ICT is enabling value chain operators from different geographical locations to collaborate in terms of, for example, booking and reservations of customers. In addition, ICT exploitation has created new networking opportunities between tourists and tourism operators where, for example, tourists actively participate in service definition and destination planning.

As a result of ICT, new business can be developed within a company's existing activities through value addition where tourism value chain players are able to create a hybrid of tourism products and services to create richer product bundles. A very good example is the linkage of mobile services and existing banking services to facilitate e-commerce transactions or the linking of the Internet with CRS to facilitate online reservations and e-ticketing by airlines.

4.5 Response to Research Objectives

Objective 1: To critically review existing ICT frameworks in the tourism value chains and identify gaps in the literature.

For the purpose of this objective, nine frameworks based on their relevance, suitability and application to the tourism value chain were identified and discussed. As much as each of the frameworks has advantages and some relevance, they are limited in their application to the whole tourism value chain. The Model of ICT adoption assumes that each firm must take a sequential and linear progression to ICT adoption while also being generic and not specific to the tourism industry. The PITs (Publish, Interact and Transform) Model to ICT Adoption provides insight into the primary functions of ICT in an organization; it is limited in relation to its application as it focuses on adoption of ICT without exploring how ICT can facilitate business transactions across value chain partners. Mediation, Disintermediation and Re-intermediation Model of ICT is very significant as it showcases how ICT facilitates e-commerce of B2B and B2C and how, with the advent of disintermediation, a product is able to move directly from the manufacturer to the final consumer without middlemen being involved while e-retailers such as amazon.com have introduced the concept of re-intermediation. However, the model is limited to physical goods and cannot be applied to service industries such as tourism. Tourism E-Commerce Model is very relevant to the study as it introduced elements of value creation, value addition, value extraction and value capture and is specifically designed for the tourism industry. However, its narrow view of ICT as limited to e-commerce means that other elements of ICT exploitation have been left in its analysis. On the other hand, the Structural View of the Tourism E-Market Value Chain Framework is comprehensive and very valuable as it gives an overview of how various tourism value chain players interact and relate with each other. However, it is constrained as it does not unravel how ICT is used as tourism enterprises interact with each and also the level and breadth of such interactions. In addition, its linear and sequential portrayal of tourism enterprises is not true as it assumes that there are distinct and clearly defined separation of responsibilities and roles between intermediaries and primaries. In reality, this distinction has been blurred due to the exploitation of ICT. The Framework for Competitive Advantage in E-business is used to identify where and how the Internet influences the SME accommodation sector. The main output of this framework is that it clarifies the link between ICT and the tourism industry by using the Five Competitive Forces as developed by Porter. However, it is constrained in its application as it is limited to the accommodation sector and narrows its analysis based only on the competitive advantage model of business and it overlooks other factors that affect business performance. On the other hand the Stage Model for ICT Development proposes that ICT or e-commerce takes place in four stages, namely, presence, portals, transactions integration and enterprises integration. The model is useful in assisting enterprises in the decision making process of moving to more advanced stages of ICT exploitation by

looking at the barriers and the facilitators of the stage to be entered and therefore provides an opportunity for firms to gauge themselves at what level they are in relation to ICT exploitation and how they can migrate to the next level. Despite this, the model provides limited information on how the exploitation of ICT is impacting on enterprise performance, turnover, profitability and sales. Finally, the E-Commerce Framework at Various Points in the Value Chain Framework argued that e-commerce through the Internet has become a mode of conducting sales transactions, while e-business leverages new and existing technologies to interact, transact and collaborate with members of the organisation's value chain. The model is significant as it unpacks the impact of ICT exploitation by various actors in a business' value chain and how ICT influences the level of interaction.

Objective 2: To review the current status of value chains in the tourism sector in relation to their usage of ICT in Malawi.

Data from tourism enterprises which are using ICT was collected and has been comprehensively discussed in section 4.2.4 and there are several inferences that can be made from the findings. Of the themes to emerge from the study's analysis of the current status of the usage of ICT in tourism enterprises in Malawi is that ICT is mainly exploited by the majority of operators for various business functions although some operators such as airlines, travel agents and medium to large-sized insurance and vehicle companies are using ICT for strategic purposes. The majority of respondents showed a clear preference for using ICT mainly for routine business functions such as financial and human resources management. As a matter of fact, tourism value chain players in Malawi have generally automated their HR and financial management and accounting processes, thereby increasing efficiency of internal business operations. This finding is in line with global trends and evidence in literature. According to an empirical study by Scott et al. (2010) most businesses identified that the benefits they received from ICT use are increased efficiency and improved communications. Externally, by linking intranets to the Internet, organisations are able to integrate their financial and human resource operations more closely with their vendors, partners and customers (Bollier, 1998).

Objective 3: To explore the main usage, benefits, catalysts, and factors affecting the progress of ICT in the tourism value chain.

The study has explored the main usage and benefits of, and factors facilitating ICT exploitation by operators in the tourism value chain and this was extensively discussed in section 4.2.4. We can draw several deductions from the main themes emanating from the findings and analysis of this study.

In terms of the main usage for which ICT is exploited, the study has found out that the most prevalent

uses for exploiting ICT include HRM, financial management, marketing, customer service, CRM, purchasing and procurement, point of sale (payment using credit and debit cards), and budgeting, planning and forecasting, ordering and paying online, inventory and asset management. HRM and financial management are the commonly used business functions by all the tourism operators signifying that all of them have automated their internal business processes to ensure efficiency. As for marketing, ICT encourages businesses to find new ways to expand the markets in which they compete, to attract and retain customers by tailoring products and services to their needs, and to restructure their business strategy to gain competitive advantage (Gratzer and Winiwater, 2004). Moreover, ICT enables travellers to access reliable and accurate information as well as to make reservations in a fraction of time, cost and convenience required by conventional methods (Wahgmode and Jamsandekar, 2012; Buhalis and O'Connor, 2005). To this effect, ICT empowers consumers to identify, customize and purchase tourism products and supports the globalization of the industry by providing tools for developing, managing and distributing offerings worldwide (Buhalis and O'Connor, 2005). In addition, the Internet enables all types of operators to be linked to emerging intermediaries and thereby distribute their products directly to consumers thus expanding their value chain and able to promote their product and services through a combination of partners and systems.

Online payment and paying using credit and debit cards has become the norm in a globalised economy. The tourism industry involves tourists travelling to foreign destinations where business is transacted in local currencies. As such, tourists depend on online payments using credit cards. As has been noted, e-commerce has the advantages of convenience and time saving (Franco and Regi, 2016) for consumers and facilitates international payment for goods and services for principals and intermediaries.

Purchasing and procurement is a very important aspect for an organization as it interacts and manages its supply chain. The use of ICT in procurement and purchasing reduces order lead-time and purchasing costs; speeds up requisitioning, bidding, supplier selection, and order placements; and suppliers get closer to their customers. This is line with literature. Boariu (2017) points out that the e-procurement process eliminates unnecessary activities, allowing the business to focus on more valuable task and it leads to reduced errors as electronic paperwork is streamlined and thus easier to check for errors.

Budgeting, planning and forecasting are very important business processes for any business. The study suggests that tourism value chain players are at different levels in exploiting ICT for budgeting and planning. Organizations that put effort into streamlining their budgeting, forecasting and reporting processes are gaining competitive advantage as they are able to forecast future trends of the industry and craft strategies to make them relevant for times ahead. As such, tour operators and vehicle hire companies are at the forefront of leading the cutting edge digital revolution of planning ahead in turbulent times. It is expected that these companies should have competitive advantage over their counterparts in the tourism value chain.

The adoption and exploitation of ICT is being driven by various factors in Malawi. Both the survey and interviews confirmed this. It was noted from the survey that management commitment and the acquisition of necessary internal ICT competences are the main drivers for ICT exploitation. Commitment of top level managers and how adept they are to ICT exploitation hugely determines whether an organization will adopt and exploit ICT or not. This was triangulated during the interviews where almost all respondents pointed that management are the main drivers and key decision makers in terms of ICT adoption and exploitation.

The most common barriers to ICT adoption and exploitation that this study has unravelled through both the survey and case studies include connectivity problems, electricity blackouts and lack of local expertise and expensive ICT infrastructure. However, the interviews revealed another dimension - cyber-crime. The latter has become a major serious issue and organizations are losing money to cyber criminals who are able to hack into their systems and syphon money. Empirical evidence as pointed out by the CEO of the case study travel agent and the GM of the accommodation provider indicates that this is really happening.

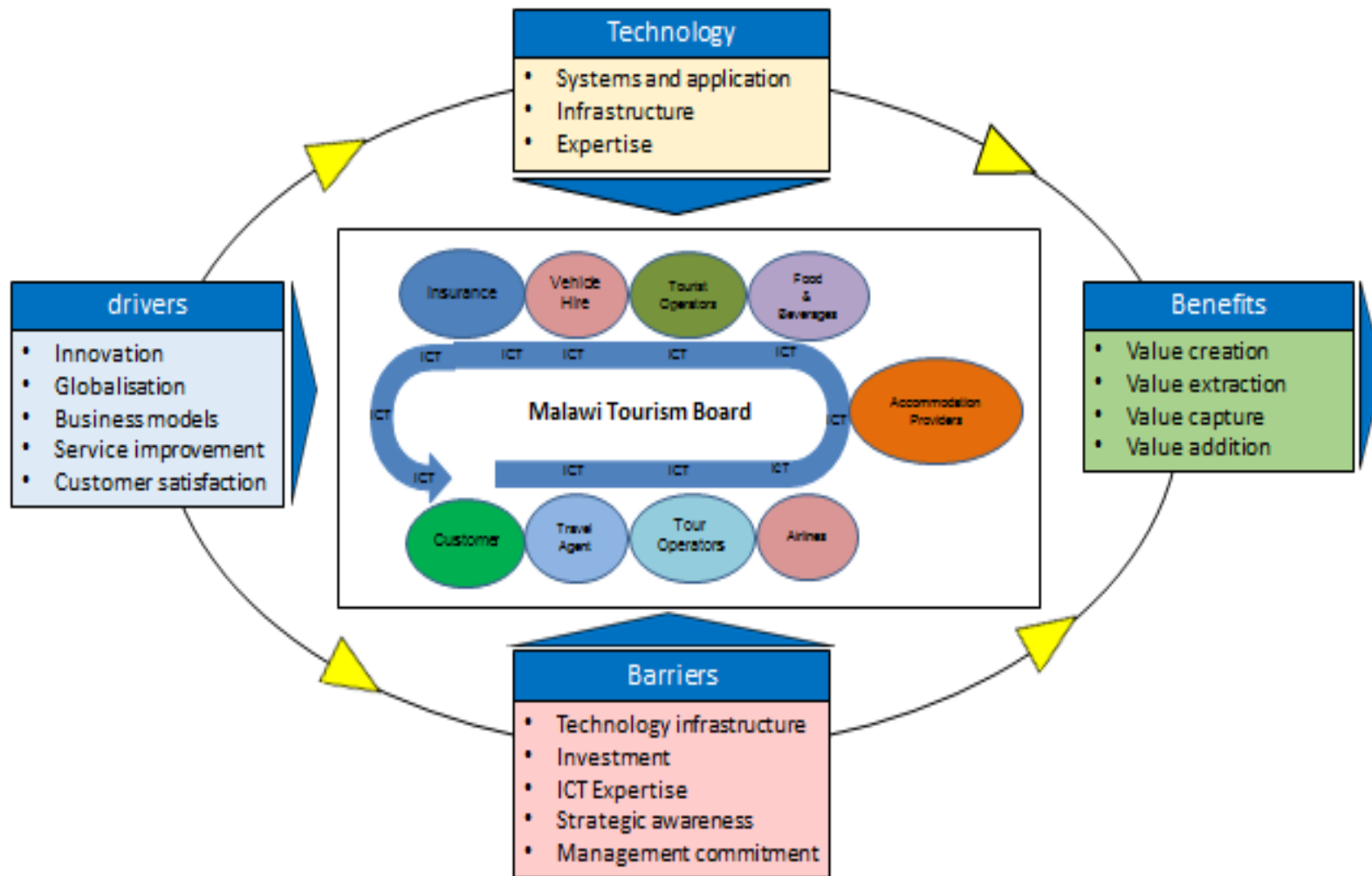
The study has found that tourism operators derive numerous benefits from the exploitation of ICT and these include, *inter alia*, facilitation of internal and external communication, levelling the playing field and globalisation of the industry. In addition, ICT can be used as a catalyst for competitive advantage due to cost savings, enhancing customer service, responding quickly to market demand, and enhances business processes. This finding implies that a significant proportion of tourism operators in Malawi consider ICT as a beneficial tool for business efficiency and facilitating integration of the various functions thereby centralizing the interconnectivity between systems. In the same vein, ICT facilitates control of internal processes, reduce personnel and minimize the response time to both customers and management requests. Also, ICT exploitation provides an opportunity to offer better services to customers and closer interactions with them in the virtual world. To this effect, ICT applications improve business performance in managing the supply chain thereby increasing efficiency and improved communications with customers.

Another key benefit that tourism value chain operators are accruing from using ICT is levelling the playing field with bigger tourism operators from developed and more advanced economies. ICT has proven to be a very important tool in bringing smaller players into the global value chain, and this study has confirmed that. The Internet is an extremely cost-effective marketing medium, which has the potential to level the playing-field for small tourism businesses and those from developing nations such as Malawi.

Objective 4: To develop a framework for the strategic exploitation of ICT within the tourism value chain in Malawian tourism enterprises, with a view to service improvement, customer satisfaction and enhance competitiveness.

Given the current conditions in developing countries such as high levels of poverty, poor infrastructure, limited access to technologies, low income levels, illiteracy as well as the socio-cultural environment, it is undeniable that an ICT framework based on a model from developed countries is irrelevant and inapplicable to provide solutions to tourism enterprises in these developing countries. Also, the business environment and challenges facing these countries are quite different from those in developed countries, so a framework that matches the environment of African countries is more than necessary. Taking into account all the variables discussed in this paper and mentioned in previous sections, a pragmatic model for the tourism value chain can be designed to include all the actors in the tourism value chain at its core in order to indicate the centrality of ICT to direct and monitor most of their business activities, as depicted in Figure 59.

Figure 59: A Framework for the strategic exploitation of ICT in the tourism value chain



The proposed framework is intended to assist tourism value chain operators in developing countries such as Malawi to ascertain the technologies that are being used, the benefits of exploiting ICT, the main barriers hindering the exploitation of ICT, and the drivers that are catalysing ICT exploitation in the tourism value chain that can affect the competitiveness of tourism enterprises on the market and where and how ICT exploitation influences the tourism sector. The framework alludes to the fact that a tourism enterprise should focus on two major parts: the market view of the industry the firm operates in (benefits, barriers and drivers) and the technologic view in order to understand the dynamics at play for it to attain competitiveness, improve business performance and deliver superior customer satisfaction.

The beginning point of the framework is the technologic view which is central to the exploitation of ICT through various infrastructure and systems, including:

a) Systems and applications:

The exploitation of ICT is not possible without accessing the hardware and software that makes it possible. There are many systems and applications that tourism enterprises are using for ICT exploitation prominent of which are the Internet, websites, CRS, GDS and ERP. These systems enable tourism operators to communicate with partners, customers and suppliers; allows customers to make online bookings and reservations; facilitates HR and financial management; enables integration of internal business processes; promotes the globalisation of the industry and assists smaller players to be integrated into the global tourism value chain.

b) Infrastructure:

ICT exploitation largely depends on the availability of telecommunications infrastructure such as Network backbone, fibre-optic backbone for Local Area Networks amongst others that are essential for interconnectivity. The greater the presence and accessibility of this infrastructure, the superior the service provided in terms of ICT exploitation and operability. In addition, if a country has the capacity to manufacture and produce its own infrastructure, it has a comparative advantage as this reduces the cost and accessibility of such infrastructure to individuals and businesses. On the other hand, if a country imports most of its ICT infrastructure, the cost of bringing it into the country is high and hence makes it very expensive to consumers.

c) Expertise:

At the core of ICT exploitation is the availability of training institutions that have the capacity to equip young and other people with the requisite skills and expertise in programming ICT systems, construction, upgrading, maintenance and servicing of ICT equipment. The existence of professionals that are locally trained and have the requisite skills is a critical success factor for effective ICT exploitation. The availability of experts to design and manufacture infrastructure and systems brings down costs of accessing ICT equipment, maintenance and upgrading of systems.

On the market view of the industry, tourism enterprises should put emphasis on the following variables to determine competitiveness and business performance of their firm:

a) Drivers to ICT exploitation:

Central to ICT exploitation in the tourism value chain are the key catalysts that motivate enterprises to adopt and exploit ICT which encompasses:

- **Innovation:** innovation must be differentiated from invention. Wintjes (2016, p.10) makes this distinction clear when he posits that “while an invention concerns the creation of the first idea of a new product or process, innovation refers to the use of this new and better idea or method, the attempt to try it out in practice and to bring it on the market or deliver it as a public service. So where inventions can be seen as technological ‘breakthroughs’ in science, innovations can be seen as ‘breakthroughs’ in markets and societies.” To this effect, innovation in ICT is the implementation of a new or significantly improved product or process whose genesis is new ideas and technologies that come out of research and development. The evolution of ICT has witnessed many innovations, the most prominent of which is the computer that acted as a gateway to the information and communication revolution. For tourism, three main distinctive technological innovations that revolutionised the industry include the introduction of CRS, GDS and the Internet. Modern tourism operators cannot do without any or a combination of these technological innovations. However, the level of adaptation of these technologies in the tourism industry varies depending on the classification of the country – whether it is developed or developing; and the level of sophistication and integration of the industry in which the tourism operator is operating in. For countries such as Malawi that are classified as developing, technological innovation is very limited and largely depends on imported technologies from developed countries such as China, Europe and United States of America (USA). The onus is upon each operator to make the necessary investments to procure the latest state-of-the art technologies that would enhance its competitiveness and improve business performance.
- **Globalisation:** the globalization process has greatly been as a result of technological advancement and change that have created a new global economy that is driven by technology and fuelled by information. The twin forces of globalization and the ICT revolution are combined to create the so-called new economy, marked by higher rates of economic and productivity growth. In this global economy, the use and integration of ICT in business has completely changed the landscape of how business is conducted and has revolutionized relationships and operations within organizations and those between and among organizations and their customers. For tourism enterprises, ICT is being used by firms to deliver products and services globally regardless of size and/or location and capacity to reach global markets at a fraction of cost than previously done. Specifically, the use of ICT in marketing and value chain coordination has enhanced communication, encouraged greater customer participation, and enabled mass customization, besides reducing costs. Globalisation offers many opportunities for the tourism industry including access to new

markets, participation in the global tourism value chain that networks various players in the industry, increased market access, increased access to capital, and increased access to technology and information.

- **Business Models**: many actors along the tourism value chain have seen their traditional ways of doing business challenged by a combination of factors: technological progress; unexpected competition across traditional boundaries; greater sophistication levels in tourist behaviour, regulation, and economic conditions; and market realities and dynamics outdated beliefs, practices, and structural solutions on how to serve tourist needs in economically sustainable ways. Thus, the tourism industry is looking to update and change how its actors create, capture, and disseminate value. This has encouraged value chain players to embark on the development of new and innovative models - an interdependent system of activities that explains how an individual or collective actor creates and captures value. The exploitation of ICT is facilitating networking and seamless collaboration between and among players in the tourism value chain. ICT is enabling value chain operators from different geographical locations to collaborate. For example, airlines have formed strategic alliances which collaborate in terms of booking, reservations and transfer of customers. Additionally, airlines and accommodation providers have entered into new working relationships where passengers are booked into a hotel in case of cancellation or prolonged delays of flights. Furthermore, ICT exploitation has created new networking opportunities between tourists and tourism operators where, for example, tourists actively participate in setting the itinerary for the trip, bypass intermediaries such as travel agents and make direct bookings to principals and actively plan their trip at the destination long before they depart their home countries. Moreover, by exploiting ICT effectively, a hybrid of tourism products and services are being created and introduced by tourism operators to create richer product bundles. As a result, e-commerce transactions have been greatly facilitated through linkages of mobile telephone services and existing banking services where payments for goods and services are made using mobile money. Other new business models include the linking of the Internet with CRS and GDS to facilitate online reservations and e-ticketing by airlines.
- **Service improvement**: at the core of the tourism industry is to exceed customers' expectations and this requires continuous improvement of all aspects of the service being delivered to the customer. Tourism operators strive to improve the quality of their services and the level of customer satisfaction with the view to create loyal visitors who will utilise their services over and over again. Failure to satisfy customer needs has devastating consequences on a tourism operator as customers frequently switch to a different operator. Customer loyalty can no longer be taken for granted. As such, tourism operators strive to improve their services and offerings so that they create satisfied customers who tend to be loyal to the company and more likely to return and even promote the business within their network. The exploitation of ICT has been central to improving the service of tourism operators. Further, tourism operators have efficiency in their internal business processes which entails that all aspects of the business become customer-centric from, for example,

check-in at hotels or airports, organising an itinerary by tour operators, booking for a vehicle, ordering a meal or processing a claim by an insurance company. In addition, ICT has assisted in improving feedback to customer requests and solutions to their complaints. Moreover, ICT enhances interactions with other tourism operators which ensure that supplier and partner complaints and queries are dealt with speedily and timely.

- **Customer satisfaction**: customer satisfaction is a post consumption evaluation that disappoints, meets or exceeds expectations and is based on the overall experience (Solomon, 2002) and it is determined by overall feelings, or attitudes, a person has about a product after it has been purchased. On account of this, quality contact with the customer is important at every stage from initial enquiry through pre-sales advice to after care and this can help to build the highest levels of customer satisfaction. Customer satisfaction is at the core of the tourism industry since the contemporary tourist, as Valentina et al., (2015) points out, “wants to live a unique experience and is not interested anymore in purchasing a standardized product/service” and in order to meet the new needs of the demand, tourism operators must give top priority to the achievement of tourist satisfaction. On that note, customer satisfaction is crucial to all tourism value chain actors due to its great impact on future consumer intentions, loyalty and word-of-mouth communications. As such, keeping close to customers is very important and ICT exploitation has facilitated this process.

The ease with which customers contact a tourism establishment is important and tourists are now able to reach them through the use of ICT facilities such as fax, email, telephone, the Internet, call centres, and websites. Once the customer makes contact, it is important that the tourism operator efficiently handles customer enquiries which can be done through email, responding through personal contact by telephone or providing feedback through the website. This aids in replying to customer enquiries within agreed time scales, thereby bringing customer satisfaction and creating a professional image for the potential customers to decide to do business with the company. Upon confirmation of a booking or a reservation, it is imperative that mechanisms be put in place to ensure customer loyalty so that they are retained to use the services of the firm for life. Loyalty is secured through customer retention programmes which reward customers for their loyalty in a way that further enhances customer service. ICT exploitation is paramount here – emailing customers latest promotions, linking promotions to company’s website, sending promotional videos on you tube, utilising social media such as Facebook – are some important tools. In terms of B2C, ICT has enabled speedy and real-time response to customer requests and provision of instant feedback. In the same vein, customers are able to access information on the tourism operators’ services such as pricing, schedules, etc. through their websites and online mediums. Electronic payment for services rendered by tourism operators through e-commerce assists the firms to move closer and improve relationships with customers and offers an opportunity for them to sell their products all around the globe, thereby facilitating access to distant markets.

b) Barriers to ICT exploitation

Firms in developing countries are faced with barriers that are specific to them and it would be inappropriate to generalize the findings from developed countries to them. To understand the lack of, or slow uptake of ICT by tourism value chain operators, it is appropriate to look into the environment in which they operate. Due to the many constraints inherent to developing countries, these firms are faced with many barriers within and without. To gain a better understanding and assist them in overcoming the barriers it is imperative to examine these barriers in depth.

- **Technology infrastructure**: lack of infrastructural facilities is a major barrier affecting the effective exploitation of ICT by Malawian tourism operators. This is as a result of insufficient provision of some major infrastructures needed for the proper implementation of ICT including deficiency of telecommunications infrastructure such as poor Internet connectivity, lack of fixed telephone lines for end user dial-up access, the underdeveloped state of the Internet service providers, high subscription and infrastructure costs, coupled with the poor quality of service by service providers at inception and the high cost of imported ICT equipment inhibits the effective utilization of ICT. In addition, the availability and reliability of connectivity infrastructure is still inadequate. This is typically the case in aspects such as telecommunication networks and other supporting infrastructure such as electricity and roads. Electricity supply is a major barrier since only 10% of the country is connected to the national grid and, to exacerbate the situation, the country is faced with massive load shedding and blackouts.
- **Investment**: investment power relates to the capacity that a tourism operator has to afford investing in ICT. This is because, in the Malawian context, most of the operators have invested limited amounts to the acquisition of the more sophisticated applications and systems such as CRS, GDS and ERP. Such operators may have a strong focus on ensuring that they get their return on investments committed to the core business and, accordingly, limited resources may be available to buy and pay for ICT equipment, services and products. This situation results into low power of investment, hence low exploitation of the more advanced technologies. Moreover, managers of small and medium sized tourism enterprises (SMTEs) often lack sufficient funds to procure new technologies. The majority of Malawian SMTEs managers are sceptical of investing in ICT due to the dual dimension of the high cost of training their employees and maintaining, servicing and upgrading the various ICT equipment and applications. Moreover, it has been found that most advanced ICT systems and applications are geared towards the needs and requirements of large firms as they are willing to pay more. These products are often complex and too expensive for small firms.
- **ICT expertise**: the poor technical knowledge and lack of expertise in ICT in the majority of Malawian tourism operators deprives them from benefitting from new technological developments and in turn slows their growth. The main reason for the dearth of technical expertise in the country is due to the fact that there are hardly any institutions of higher learning and training that are offering ICT courses that would equip young people and/or employees of organizations with the requisite skills in programming and software engineering.

This implies that ICT experts have to be imported from other countries as consultants who charge exorbitant fees and this makes them virtually inaccessible by the majority of tourism enterprises in Malawi.

- **Strategic awareness**: the owners and/or managers of tourism enterprises have significant influence on the adoption and exploitation of ICT by a firm and their perception has massive implications on how the firm views the role of ICT. Thus, even when they possess the financial resources needed to integrate ICT into their business, they often fail to recognize the need to use ICT in their company. Conversely, when owners and senior managers have knowledge and understand the strategic importance of ICT to business performance, then the business is very likely to make substantial investments in ICT equipment, applications and training of staff. Consequently, high adoption and exploitation of ICT is likely to take place within a firm when there is high strategic awareness and skills on using ICT amongst individuals in the organization. This is typical when the owner or any other influential individuals play an influencing role in demanding and applying ICT in business activities. The firms that want to adopt and exploit ICT need to have employees with a reasonable amount of knowledge regarding use of technology. Firms lacking sufficient in-house expertise can opt for outsourcing of ICT services but with the advent of e-commerce, it can become dangerous if they rely on outsiders. Under such circumstance, advice of professional consultants becomes priceless. However, for small firms, the high cost of consultants entails that they cannot afford their services.
- **Management commitment**: senior management provide leadership, direction, and influence decision on what their organizations should do, buy and/or use. This is because of their direct involvement in the management of the day to day activities of the business including decisions on whether the firm should invest in ICT such as computers and related systems and applications. They also influence the control and utilization of ICT, particularly the Internet. To this effect, if senior managers are aware of the strategic significance of ICT to business performance, then they are more committed to ensuring that the necessary investments are made to procure ICT systems and equipment.

c) Benefits of ICT exploitation:

The strategic importance of ICT for the competitiveness of tourism businesses has to be clearly understood by owners and managers. On the whole, ICT applications can provide several benefits across a wide range of inter and intra-firm business operations and transactions. Certainly, as discussed in this paper, ICT applications can contribute to improve information and knowledge management inside the firm, can reduce transaction costs and increase the speed and reliability of transactions for both B2B and B2C transactions. On top of this, they are effective tools for improving external communications and quality of services for established and potential value and supply chain partners, suppliers and customers. Above all, ICT enhances collaboration and knowledge transfer between value chain partners even if the partners do have a common location and culture. There are four main benefits accruing from collaboration between tourism value chain partners that come into

play that accelerate business competitiveness of tourism value chain enterprises through ICT exploitation, namely:

- **Value extraction** – by exploiting ICT, tourism value chain players are able to accrue benefits such as increased efficiency in their internal business processes and interactions with other tourism operators, capacity to reduce costs and enhance satisfaction. Typical examples in the tourism industry include process automation and integration of human resources and financial management through the use of ERP systems; client outsourcing through the use of CRS and GDS such as self-check-in of hotel guests or airline passengers, online reservations for hotels and airlines.
- **Value capture** – by effectively utilising the various ICT systems, tourism enterprises are able to achieve the organizations' strategic objectives which include improved communications within the organization and with value chain partners and suppliers and enhancing their capacity to be integrated into global tourism value chains thereby enhancing business performance in managing the supply/value chain. A typical example for tourism operators of this strategy is data mining for forecast or yield management in which client and sales information supports marketing goals.
- **Value addition** – by exploiting ICT effectively, tourism value chain players are able to create a hybrid of tourism products and services to create richer product bundles. A very good example is the linkage of mobile services and existing banking services to facilitate e-commerce transactions or the linking of the Internet with CRS and GDS to facilitate online reservations and e-ticketing by airlines.
- **Value creation** – the exploitation of ICT facilitates networking and seamless collaboration between and among players in the tourism value chain. ICT is enabling value chain operators from different geographical locations to collaborate in terms of, for example, booking and reservations of customers. Moreover, ICT exploitation has created new networking opportunities between tourists and tourism operators where, for example, tourists actively participate in service definition, destination planning, reservations and airport self-check-in and seat selection.

Chapter 5: Conclusions and Recommendations

This chapter consolidates all the research parameters and findings of the study including: the implications, recommendations, limitations and contributions from this research.

5.1 Conclusions

The study used a combination of qualitative and quantitative methods to collect data and found that there is significant evidence suggesting that the adoption and exploitation of ICT is critical to the success and competitiveness of value chain players in the tourism industry in Malawi. This has been examined comprehensively through seven major players in Malawi and the tourism board who have also been very supportive of this study in Malawi through providing access to information on tourism companies in the country that are registered with the board, giving the author a platform to disseminate partial findings of the study at the annual tourism expo it organizes and providing leads as to which tourism players should be approached.

In recent years, technological development, globalization, environmental changes, and the desire to enhance business performance has encouraged tourism players in the value chain to move away from traditional practices and embrace new technologies and business models with a view to business efficiency, service improvement, and competitive advantage. ICT is being utilised by tourism value chain operators under the study to varying degrees.

The exploitation of ICT is critical to the success of every aspect of tourism operations including marketing, procurement, customer service, payment for goods and services (e-commerce), budgeting and planning to customer relationship management. Consequently, ICT has potential to create competitiveness and success for tourism value chain players. The findings indicate that the effectiveness and the success of tourism enterprises in ICT adoption and exploitation is influenced by the enabling business environment in which the enterprises are operating in, the commitment of management to adopting and using ICT, lack of awareness of the strategic importance of ICT especially among owners/managers of smaller operators, lack of infrastructure especially telecommunications and systems such 4G and 5G, slow Internet and limited access to electricity and limited investments in ICT and shortage of skills in the industry. The external factors and barriers can be perceived of as a make or break or a rite of passage for tourism enterprises to adopting and exploiting ICT.

The study suggest that there are low adoption and exploitation of advanced ICT systems and applications such as Central Reservation System, Global Distribution System and Enterprise Resource Planning, as evidenced by the minimal investments in these systems. This means that the majority of Malawian tourism value chain players, and more so the smaller operators, are less

competitive than their counterparts globally as these systems have become the norm rather than the exception in the industry. Although the findings are generally compatible with findings from previous empirical studies (Mokaya and Njunguna, 2016; Ongori and Migiro, 2011), there are several areas in which they differ. The study found out that the adoption and exploitation rates of GDS and CRS by airlines and travel agents is comparatively higher than other tourism operators while medium sized insurance companies and accommodation providers have shown that their rate of adoption of ERP is comparatively higher than their counterparts. Further, medium sized insurance companies are investing heavily in integrated systems that are incorporating ERP and other advanced ICT systems.

There is clear evidence that ICT is used by the majority of value chain players for business functions including human resources and financial management/accounting. The finding suggests that manual processes in these two functions are cumbersome and time consuming; therefore their automation has facilitated the ease at which routine duties are conducted, which helps to increase efficiency of operations. This is in alignment with previous research such as Cohen et al. (2002) who posit that ICT plays a supportive role in terms of enhancing organisational efficiency and effectiveness. An empirical study by Scott et al. (2010) found out that the most frequently identified areas of ICT use in the participating tourism organizations were marketing, customer service and finance/accounting. Fink and Disterer (2006) also added that ICT helps organisations become more efficient, effective and competitive. Irani (2002), on the other hand, ascertains that ICT helps organizations to have access to robust business information that leads to organisational effectiveness. The implication is that Malawian tourism enterprises have made great strides in automating their administrative functions and this has facilitated efficiency of operations and increased competitiveness of the industry. This finding is broadly in harmony with those of researchers such as Apulu and Latham (2009) who mention that ICT can assist firms gain competitive advantage by reducing costs and improving core business processes, such as human resources and financial management.

The study found out that exploitation of ICT by some tourism players especially airlines, travel agents, medium to large sized vehicle hire and insurance companies is intended to achieve strategic objectives, including marketing; customer relationship management; procurement; budgeting; and planning and e-commerce. The above is aimed at improving performance and profitability, communication within and outside the organization, and enhances the capacity for Malawian tourism enterprises to be integrated into global tourism value chains. This conclusion is in line with findings of other researchers who mention that through new information flows, ICT greatly enhance a company's ability to exploit linkages between activities, both within and outside the company (Porter and Millar, 1985). Thus, ICT create new, strong linkages between internal activities, and even coordinate these actions more closely with their consumers and suppliers to facilitate integration within the company (Leenders and Wierenga, 2002; Rothwell, 1994). In addition, this finding is broadly in line with the work of other authors including Johnston (1998); Kahn (1996, 2005) who point out that ICT usage favour the adoption of new organisational, strategic and managerial models. The findings are in congruent to the widely expressed view that effective use of ICT benefits firms in reducing transaction

costs by improving their internal processes, improving their products through faster communication with customers, better promotion and distribution of their products through online presence, levelling the playing field with larger firms, being able to extend marketing efforts, improve communication, identifying and developing new markets, improved procurement procedures, capturing global markets, sell to international customers, and compete favourably with large corporations (Evans & Wurster, 1997; Taylor, 2001; Nandan, 2005; Brady et al., 2002).

Another important conclusion that can be made from this study is that ICT exploitation improves business performance in managing the supply/value chain thereby increasing efficiency and improved communications with value chain partners and suppliers. This aligns to literature such as Kong et al. (2010) who posits that adopting ICT by tourism operators greatly enhances efficiency through better coordination of firms in the tourism value chain and enables operators to have global presence and partnerships around the world in an efficient and cost effective manner. It can be deduced therefore that ICT exploitation reduces inefficiencies resulting from lack of coordination between firms in the value chain. Indeed, tourism operators in Malawi have enhanced their position within the global tourism industry due to the increased interconnectivity and interactivity with consumers and partners, thereby levelling the playing field with global players through the exploitation of ICT. Therefore, to compete on a global scale, stay closer to customers and suppliers and thereby improving efficiencies, tourism operators in Malawi must adopt and use ICT. Literature confirms these conclusions (for example Ashari et al, 2014; Gratzler and Winiwater, 2014; Buhalis and O'Connor, 2005).

The study has also found out that major barriers to ICT exploitation in the country include the enabling business environment and management commitment. There is urgent need for infrastructural development and upgrading especially of the energy sector and investment in technologies such as 4G and 5G systems. Additionally, if management is convinced of the importance of ICT and are aware of the strategic benefits of ICT adoption, then the organization has a high likelihood of investing in ICT equipment and systems. The converse is also true. Literature concurs with this conclusion. For example, Chau and Turner (2001) and Knol and Stroeken (2001) argue that owners' lack of ICT technology and low computer literacy contribute to low levels of ICT adoption. In addition, cyber-crime has become a major security threat and a major barrier to ICT exploitation as unravelled during interviews with case study organizations which runs counter to most literature reviewed. In fact, none of the literature reviewed nor the survey mentioned this as a serious barrier. Cyber-crime is a major threat that can disrupt and discourage ICT adoption and exploitation because of the risk involved in international money transfers and making foreign currency payments.

5.2 Limitations of the research

A Major limitation of the study was the challenging nature of data collection due to cultural issues in Malawi. Most companies in Malawi are sensitive to sharing company and relevant data. Therefore, some respondents were hesitant to give information they considered sensitive. This entails that the

information for the research was collected with difficulty and expensive in terms of time and resources. However, the questionnaire was designed to ensure that all data was collected successfully because the researcher has in-depth knowledge of the sector and various techniques were used to collect. In addition, the response rate to email survey in Malawi is generally low and attempts at this mode of survey delivery were a dismal failure. The researcher had to self-administer the questionnaire which added to the time planned for data collection.

5.3 Recommendations from the study for future research.

The sample size for the study was representative of the tourism value chain. However, the majority of tourism operators in Malawi are SMEs and they would be subject to different constraints in terms of investments in ICT, expertise. Future research should focus on small tourism enterprises in Malawi.

5.4 Highlights of the contribution the research has made to the body of knowledge.

- **Contribution to Knowledge**

There is dearth of empirical research on the tourism value chain in Malawi. The findings of this study will contribute to knowledge of ICT exploitation in the tourism value chain in the developing world.

- **Professional practice**

The study is the first of its kind in Malawi and, as such, it raises the awareness of the importance of strategic exploitation of ICT in companies in the tourism value chain. Furthermore, the proposed framework can be used as a template for strategic exploitation of ICT by companies. The study would also be beneficial to practitioners in the sector and will greatly contribute to the sector (tourism companies) and the economy by bringing to the fore the various aspects of ICT exploitation to the industry. In practice, the findings of the research program are highly valuable to practitioners in the tourism value chain and can be adapted to enhance the competitiveness of specific tourism operators.

- **Industry**

As well as the tourism industry, the proposed framework may be used by other companies in various sectors as a guide to enhancing competitiveness through the use of ICT.

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7. Appendices

Appendix 1: Business Software Applications and their Suitability to the Tourism Industry

Application	Features	Suitability to Tourism Industry
ENTERPRISE RESOURCE PLANNING	Integrated applications to manage the business and automate many back office functions related to technology, services, and human resources	Highly suitable as it a very useful tool that can be used by all players in the tourism value chain to communicate directly with each other and ensures that internal processes are streamlined to meet customer needs.
NETSUITE	Global accounting and consolidation	Highly suitable for tourism enterprises (TEs) to gain competitive advantage in global marketing, integrated accounting and payments with other value chain players and CRM.
SAGE X3	Built to handle multiple languages, currencies for financial management, CRM tools & HR management & other business processes	Highly suitable for all TEs in managing internal business processes, linkages with other key players on the global market.
EPICOR	Accounting features like accounts payable, Electronic funds transfer, Payroll and tax, Inventory management, Forecasting, Supply chain management	Medium suitability mainly for accommodation and travel agents in financial Management and accounting
INTACCT	General ledger: Accounts receivable, Revenue management, Cash management, Multi-currency management, Sales tax management, etc	Highly suitable for managing the accounting processes and e-commerce
SYSPRO 7	Modular ERP system	Highly suitable for SCM and e-commerce
GLOBAL SHOP SOLUTIONS	Capacity planning, tooling and materials, CRM tools, events and campaigns, purchase orders (PO)	Highly suitable for travel agents and tour operators for CRM, financial management, and HR systems
IFS	Asset data, budget, HR management,	Highly suitable for managing internal

APPLICATION	payroll	business processes
UNIT 4 AGRESSO	Ideal for people-based organizations needing financial accounting, planning, budgeting and forecasting, business process automation, automatic foreign exchange translations	Highly suitable for financial management and accounting processes
FINANCIAL FORCE	All apps built on the Salesforce1 platform: 2,200+ complementary and vertical applications on the AppExchange that integrate with FinancialForce.com and Salesforce.com applications	Highly suitable for integrating accounting processes and SCM
VAI S2K Enterprise	Web-based interface enables easy access, navigation and control, e-commerce, enterprise portal	Highly suitable for integrating procurement, customer Service and e-commerce
Acumatica Cloud	Financial management suite includes cash flow forecasting and tax reporting	Suitable for managing customer service
Oracle E-Business Suite	Asset lifecycle management, CRM tools, Financial management, Supply chain management (SCM), Value chain planning, offered in the cloud (E-Business Suite) or on-premise (PeopleSoft)	Highly suitable as integrated tool to manage all aspects of Value chain, SCM and finance
Plex Systems Plex Online	Accounting, CRM module, SCM, HRM	Highly suitable for e-commerce and SCM
Exact Macola	Fully configurable workspaces provide actionable business intelligence	Highly suitable for integrating and streamlining internal business processes

Source: Business-Software.com (Top 20 Software Report, 2016); Tambouceus and Tambouceva (2013)

Appendix 2: The Stage Model of ICT Development

Stage	Key Features	Facilitators	Barriers	Source
Presence	<ul style="list-style-type: none"> - involves the initial steps that organisations do to get involved in a digital environment 	<ul style="list-style-type: none"> - Commitment – strategic organisational motivation to use the Internet as a mechanism for achieving some strategic objective. - Content: effective presentation of a product or service on a web site to ensure that the site is attractive and user friendly. - Price flexibility - the ability of a company to absorb the competitive environment of the web and still achieve acceptable levels of profitability. - Competitive access cost for the target users 	<ul style="list-style-type: none"> - technological resistance within the organization and in-house know-how or expertise, - acceptance of growth by managers, - financial investment, - development of communication infrastructure. 	Barry (2000); O'Connor and O'Keefe (1997); Rao, Metts and Monge, (2003); (Jeff Coate et al., (2000).

		– the relative cost of consumer to the web.		
Portals	<ul style="list-style-type: none"> - introduction of 2-way communication (B2B & B2C), customer or supplier order placing, the use of profiles and cookies - ability to link information displayed with inventory data, and search capabilities for the users. 	<ul style="list-style-type: none"> - investments and usability required to make internal organisational changes - the marketing or sales department of the organisation 	<ul style="list-style-type: none"> - development of B2B interfaces and cultural and/or language barriers. 	(Rao, Metts and Monge, (2003); (Trimmers, 1999).
Transaction Integration	<ul style="list-style-type: none"> - interactions can be for selling as well as buying - integration of internal processes. 	<ul style="list-style-type: none"> - the ability to extend ICT technology from a financial investment perspective, - acquiring the necessary internal ICT competencies, - partnerships for B2B and third party opportunities, e-commerce community 	<ul style="list-style-type: none"> - financial systems to trade across borders. - governmental taxes and trade policies. - security and/or privacy for transmitting financial data including credit card and other financial related account 	(Rao, Metts and Monge, (2003).

		<ul style="list-style-type: none"> - development, selection of competitive payment system. 	<ul style="list-style-type: none"> - numbers and information. - governmental contractual and legal environments which e.g. international laws. - 	
Enterprise Integration [EI]	<ul style="list-style-type: none"> - complete integration of business processes. 	<ul style="list-style-type: none"> - competencies of internal staff, - business process and integration - back office integration. 	<ul style="list-style-type: none"> - technology availability and diffusion regionally and globally, - international standards for trade and transaction processing, - development of e-markets, - network complexity 	(Rao, Metts and Monge, (2003);

Appendix 3: Survey Questionnaire



Teaching Intensive Research Informed

Dear Sir/Madam,

PhD REQUEST TO PARTICIPATE IN A SURVEY

My name is Vincent Kaitano and I am conducting a survey as part of my PhD at the University of Bolton in the United Kingdom and I would be very grateful if you could make time out of your busy schedule to respond to a survey questionnaire on the topic: **“The Impact of Information and Communication Technology (ICT) on Tourism Value Chain: The Case of Small and Medium Tourism Enterprises (SMTEs) in Malawi”**.

The aim of this study is to develop a better understanding of the exploitation of ICT within the tourism industry by Malawian Small and Medium Tourism Enterprises. This may assist in drawing conclusions that might support practitioners in the tourism sector to enhance business competitiveness and superior performance.

There are 12 questions that should take not more than 10-15 minutes to complete. The University of Bolton complies with the relevant data protection legislation and your responses and personal details will not be divulged to anyone else. No source, individual or institution, will be identified or comment attributed without written permission of the originator and you may withdraw at any time without consequences of any kind.

Thank you for your time. I look forward to hearing from you.

Vincent Achikulire Kaitano

Research Student

the University of Bolton, Off Campus Division

Tel. +265 995 509 798 Email: vak1mpo@bolton.ac.uk

If you are interested to receive a copy of the summary of the findings, please tick the box below and complete the table.

Yes

Name:	
e-mail	

Please tick the appropriate answer by double click on box and then select "checked" on Default value

1. What is the type of your organization?

- Accomodation provider
- Travel agent
- Tour operator
- Vehicle hire company
- Insurance company
- Food & beverages supplier
- Airline
- Tourism Board

2. What is your Position?

- Owner
- General Manager
- Operations manager
- IT specialist
- Other

(Specify) _____

The questions below are relevant to Information and Communication Technology (ICT) in your organization; whereby ICT is the various telecommunications software and hardware that you use in your daily business operations

3. Does your organisation have an ICT Strategy?

Yes

No

3.1 Is the strategy documented?

Yes

No

3.2 How was it developed?

Consultative process with all staff

By Consultant

IT Specialists from within organisation

Others (Please specify)

3.3 Who is normally responsible for the development of your ICT strategy?

Management

Consultants

ICT specialists

Others (Specify)

3.4 How was it implemented?

Training of all key staff

Consultants

Management

Others (Specify)

3.5 Who is responsible for the strategy?

Management (CEO, MD, Director, Head of IT, etc)

Consultants

ICT specialists

Others (Specify)

4. Do you have an ICT department?

Yes

No

4.1 How many people work in the ICT department?

Between 1 and 5

Between 5 and 10

Between 10 and 15

Over 15

4.2 Who is responsible for making ICT decisions in your company?

Management (CEO, MD, Director, Head of IT, etc)

Administration

Consultants

ICT Specialists

Others (Specify)

5. What ICT equipment and applications are used in your organisation?

[select as many as appropriate]

PC/Laptop

Fax machine

Internet

Website

Telephone (landline)

Smart phone

Central Reservation System (CRS)

Global Distribution System (GDS)

Enterprise Resource Planning (ERP)

Other (Please Specify)

6. What are the levels of ICT knowledge and skills among staff in your organisation?

Rate them on a Scale of 1(excellent) to 10 (very poor)

Staff level	Score
Management	
Administrative	
Operational	
Clerical	
Accounting	
Marketing and Sales	
Front office	
Others (Please Specify)	

6. What have been the main facilitators for ICT adoption and usage in your organisation?

- Management commitment
- Acquiring the necessary internal ICT competencies
- Consultants
- Other (Please Specify)

7. For what purpose do you use ICT in your organisation?

[select as many as appropriate)

- Order and pay online
- Finance management/accounting
- HR Management (Payroll management)
- HR Management (recruitment)
- Quote order and management
- Budgeting, planning and forecasting
- Point of sale machines (payment with visa cards)

- Events and promotional campaigns
- Inventory management
- Vehicle information (tracking, monitoring)
- Asset management
- Purchasing and procurement
- Marketing
- Customer Relationship Management
- Supplier relationship management
- Other (Please Specify)

8. What are the main barriers to ICT adoption and usage in your organisation?

[select as many as appropriate)

- Technological resistance within the organization
- Lack of In-house know-how or expertise
- Lack of Financial investment
- Accessing telecommunication infrastructure
- Cultural and/or language barriers
- Governmental policies
- Electricity blackouts
- Shortage of skilled manpower
- Expensive ICT infrastructure
- Government policies
- High interest rates resulting in high cost of capital thereby

detering investments in ICT

- Poor infrastructure especially telecommunication networks**
- Other (Please Specify)**

9. What are the main benefits of using ICT in your organisation?

- Cost savings**
- Level the playing field with competitors**
- Quick response to markets, customers, suppliers**
- Reduces delivery time**
- Better services to customers and closer interactions**
- Assist to improve information and knowledge management within the organisation**
- Reduces transaction costs**
- Increases the speed of transactions**
- Communication with a large number of stakeholders in a variety of geographical settings**
- Facilitates distribution of product information to partners and customers**
- Managing the hotel inventory - administering a database with all reservation, rates, occupancy and cancellations**
- Minimize the response time to both customers and management requests**
- Ensures that customer requirements are communicated to all principals delivering the tourism product**
- Boost the globalization of the industry by providing efficient tools to develop, operate and globally distribute company's offerings**
- Provides a tool for communicating to tourists the key and important information pertaining to the destination**
- Others (Please Specify)**

10. How much investment did your organisation make in ICT in the 2016/17 financial year?

- None
- Between US\$1,000 – 5,000
- Between US\$ 5,000 -10,000
- Between US\$10,000 – 50,000
- Over US\$50,000

11. How much investment is your organisation planning to make in ICT in 2017/18 financial year?

- None
- Between US\$1,000 – 5,000
- Between US\$ 5,000 -10,000
- Between US\$10,000 – 50,000
- Over US\$50,000

Thank you for your Participation

Appendix 4: Interview Questions



Teaching Intensive Research Informed

Dear Sir/Madam,

PHD REQUEST TO PARTICIPATE IN A SURVEY

My name is Vincent Kaitano and I am conducting a survey as part of my PhD and I would be very grateful if you could make time out of your busy schedule to respond to a survey questionnaire on the topic: **“The Impact of Information and Communication Technology (ICT) exploitation in the Tourism Value Chain: The Case of Tourism Enterprises in Malawi”**.

The aim of this study is to develop a better understanding of the exploitation of ICT within the tourism industry by Malawian Tourism Enterprises. This may assist in drawing conclusions that might support practitioners in the tourism sector to enhance business competitiveness and superior performance.

The *interview* should take about 30-45 minutes to complete. The University of Bolton complies with the relevant data protection legislation and your responses and personal details will not be divulged to anyone else. No source, individual or institution, will be identified or comment attributed without written permission of the originator and you may withdraw at any time without consequences of any kind.

Thank you for your time.

Vincent Achikulire Kaitano

Research Student

Business and Creative Technologies

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Survey questions (Please fill and tick as appropriate)

Value chain actor details

7. Name of organisation

8. Role in tourism value chain

- a) Accomodation provider
- b) Travel agent
- c) Tour operator
- d) Vehicle hire company
- e) Insurance company
- f) Food & beverages supplier
- g) Airline
- h) Tourism Board

9. Position of participant

- a) Owner
- b) General Manager
- b) Operations manager
- c) IT specialist
- d) Other (specify) _____

2 Key Issues of ICT exploitation within your organisation

2.1 Does your organisation have an ICT Strategy?

2.2 Is the strategy documented?

2.3 How was it developed?

2.4 Who is normally responsible for the development of your ICT strategy?

2.5 How is it being implemented?

2.6 Who is responsible for the implementation of strategy?

2.7 Do you have an ICT department?

2.8 How many people work in the ICT department?

2.9 Who is responsible for making ICT decisions in your company?

2.10 What ICT equipment and applications does your organisation use?

2.11 Which ones are more relevant in your day to day operations? Why?

3. For what purpose do you use ICT in your organisation? (Why do you use ICT?)

<p>4. What are the benefits of using ICT in your organisation?</p>
<p>5. What are the main barriers and/or threats to ICT adoption and exploitation in your organisation?</p>
<p>6. What have been the main facilitators/catalysts for ICT adoption and usage in your organisation?</p>
<p>7. How much investment did your organisation make in ICT in the 2015/16 financial year?</p> <ul style="list-style-type: none">a) Noneb) Between US\$1,000 – 5,000c) Between US\$ 5,000 -10,000d) Between US10,000 – 50,000e) Over US\$50,000
<p>8. How much investment did your organisation make in ICT in the 2017/18 financial year?</p> <ul style="list-style-type: none">f) Noneg) Between US\$1,000 – 5,000h) Between US\$ 5,000 -10,000i) Between US10,000 – 50,000j) Over US\$50,000

Thank you for your Participation

Appendix 5: Published Paper