

DURBAN UNIVERSITY OF TECHNOLOGY

E-PROCUREMENT FOR DESTINATION MANAGEMENT COMPANIES WITHIN
THE TOURISM INDUSTRY IN SOUTH AFRICA: DIGITAL ERA TRENDS,
CHALLENGES AND RESPONSES

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CHALLENGES AND RESPONSES**

Submitted in fulfilment of the requirements of the
degree of Master of Management Sciences
Specialising in
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in the
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Abstract

The study attempted to identify digital era Information Communication Technologies (ICTs) that suppliers used, and the challenges, responses, and trends they generated for e-procurement in Destination Management Companies (DMCs). The objectives were to analyse e-procurement in DMCs, through suppliers using ICTs, whilst concentrating on the elements from the new economy through investigation and evaluation; to predict new phenomena in this ever-changing field; and lastly, assessing the challenges that DMCs experienced because of suppliers using ICTs, with possible solutions or recommendations for procurement.

Qualitative methodologies were used in order to observe various ICTs in the Tourism Distribution Channel (TDC). The population consisted of eight suppliers, representing over 135 different products and services, each differing from one another in terms of regions they cover, representation, and size. Seven DMCs ranging in size, in various locations and operating or specialising in different markets were selected for the research.

To accomplish the objectives, questionnaires, and telephonic discussions with Revenue Managers, Contract Managers or International Sales Managers were conducted. The methodology is based on internal validity as the researcher is close to reality, spending large amounts of time in the field and having collected multiple data and therefore the gaps have been reduced. Reliability of the study can be tested through triangulation as different sources have been used to build a coherent justification.

The results show that there is still much to be done before the successful implementation of e-procurement.

Declaration by student

I, Lucy Berndt hereby declare that the work presented herein is original work done by myself and has not been published or submitted elsewhere for the requirement of a degree programme. Any literature date or work done by other and cited within the thesis has been given due acknowledgement and listed in the reference section.

Lucy Berndt

Place: Cape Town

Date: 01 April 2022

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List of abbreviations

ADR:	Average Daily Rate
API:	Application Programming Integration
B2B:	Business to Business
B2C:	Business to Consumer
BAR:	Best Available Rates
CNN:	Convolution Neral Network
CPA:	Consumer Protection Act
CRM:	Customer Relationship Management
CRS:	Central Reservations System
DMCs:	Destination Management Companies
DMO:	Destination Management Organization
DMS:	Destination Management System
GDP:	Gross Domestic Product
GDS:	Global Distribution System
GPS:	Global Positioning System
ICTs:	Information Communication Technologies
IT:	Information Technology
KNN:	K-Nearest Neighbour
OTA:	Online Travel Agency
OTO:	Online Tour Operator
PPC:	Pay Per Click
PR:	Public Relations
ROI:	Return on Investment
SA:	South Africa
SEO:	Search Engine Optimisation
SCM:	Supply Chain Management
SMTE:	Small Medium Tourist Enterprises
STO:	Sell to Operator

TDC:	Tourism Distribution Channel
UNCTAD:	United Nations Conference on Trade and Development
UNWTO:	United Nations World Tourism Organization
VTC:	Virtual Travel Communities

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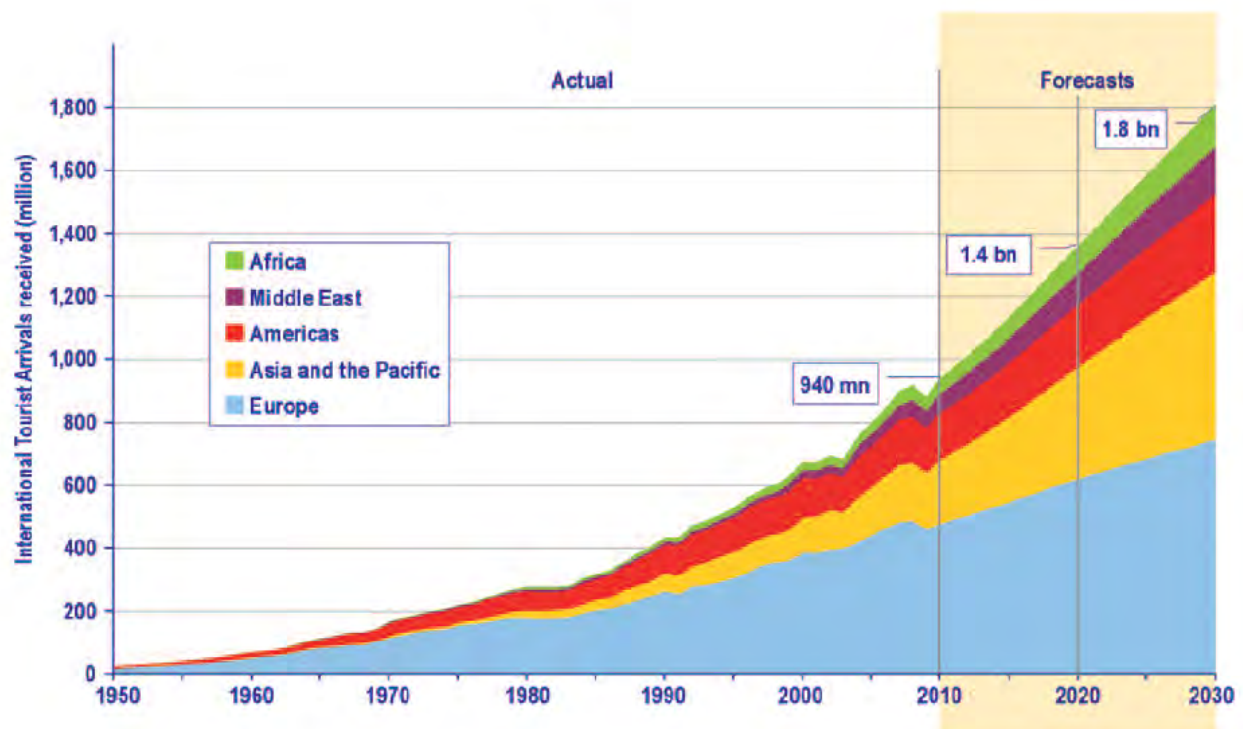
1. CHAPTER 1 INTRODUCTION

The travel industry has many complex operations. Since the onset of computerisation from the 1980s, ICTs have been transforming tourism globally, however in more recent years ICT and the internet have been the dominant factors influencing the sector. Although there has long been competition between destinations for the tourist trade, ICTs have quickened the pace and sharpened the tools for image-presentation, price changes and last minute decision making, among other factors that affect competition in the tourist trade (Buhalis and Law 2008). This chapter sets out literature on these changes under the various headings to assist with analysis. The aim is to give background of what has been written about computerisation in the travel industry worldwide, before moving on with the research to investigate how these changes are affecting South Africa specifically.

Tourism is a growing industry globally and together with advancing technologies ICTs will continually develop and advance as well. According to the The World Tourism Organization (UNWTO (2020) it is expecting emerging economies to grow at double the pace of advanced ones over the coming 20 years (4.4 percent versus 2.2 percent). Tourism has evolved into a global phenomenon, being one of the most important sectors and social activities of our time. We live in a globalised world, where tourism directly contributes five percent towards the global Growth Domestic Product (GDP). It is estimated that one out of every 12 jobs globally are linked to tourism. Furthermore, the tourism sector is a major export sector which contributes close to six percent of the worlds exports goods and services. In 2005, revenue through tourism accommodation worldwide was approximately \$680 billion, while there were about 692 million tourists in 2001 (Panitchpakdi 2005). ICT developments are driven by customer demand, Diagram 1 illustrates how much international tourist arrivals are forecasted to grow, and therefore this growth will consequently lead to an increase in the use of ICTs.

Diagram 1: International Tourist Arrivals 1950 – 2010 and Forecasts 2010 – 2030

Source: UNWTO (2014: 14)



Arionesei et al. (2014) explain, using information from Diagram 1 above and Table 1 below, that tourism does not always grow year on year. There are years where there have been decreases due to factors beyond the industry's control for example, tourist attacks, countries experiencing economic crisis, the power of the United States Dollar (USD), various civil conflicts and more recently COVID-19. Despite these factors tourism is predicted to continue growing when considering the forecasts for 2030. The UNWTO Secretary General Dr. Taleb Rifai, spoke at the Nueva Economic Forum on 23 January 2013, in Madrid Spain, and he advised that by 2030, the number of international tourist arrivals is anticipated to reach 1.8 billion, meaning that in two decades' time, five million people will cross international borders for leisure, business or other purposes such as visiting friends and family, every day.

Table 1: International tourist arrivals and tourism receipts by country of destination

Source: UNWTO (2020)

Series	International tourist arrivals						International tourism receipts			
	(1000)			Change (%)		Share (%)	(USD million)			Share (%)
	2010	2018	2019*	18/17	19/18		2010	2018	2019*	
Africa	50,426	68,585	69,954	8.3	2.0	100	30,445	38,899	38,426	100
North Africa	19,682	24,081	25,622	11.1	6.4	36.6	9,662	10,735	11,511	30.0
Algeria	VF	2,070	2,657	2,371	8.4	-10.8	220	169	165	0.4
Morocco	TF	9,288	12,289	12,932	8.3	5.2	6,703	7,782	8,170	21.3
Sudan	TF	495	896	..	2.8	..	94	1,043	821	2.1
Tunisia	TF	7,828	8,299	9,429	17.7	13.6	2,645	1,741	..	..
Subsaharan Africa	30,743	44,505	44,332	6.8	-0.4	63.4	20,782	28,134	26,915	70.0
Angola	TF	425	218	218	-16.5	0.0	719	544	384	1.0
Benin	TF	199	295	..	5.0	..	149	162	..	..
Botswana	TF	1,973	1,655	..	2.0	..	510	574	..	..
Burkina Faso	THS	274	144	143	0.7	-0.7	72	121	..	..
Burundi	TF	142	..	..	..	..	2	4	..	..
Cameroun	TF	589	..	..	..	..	159	581	..	..
Cabo Verde	THS	336	710	758	6.3	6.8	278	484	502	1.3
Central African Republic	THS	54	..	..	..	..	11	..	..	..
Chad	TF	71	..	..	..	..	..	..	..	..
Comoros	TF	15	98	45	28.2	25.6	35	76	..	..
Congo	THS	194	166	..	4.7	..	27	..	..	..
Côte d'Ivoire	VF	252	1,965	2,070	9.2	5.3	201	443	..	..
Dem. Rep. of the Congo	TF	81	..	..	..	..	11	60.5	99.7	0.3
Djibouti	TF	51	..	..	..	..	18	57	..	..
Equatorial Guinea	..	..	..	..	..	..	..	..	..	..
Eritrea	VF	84	..	..	..	..	..	..	..	..
Eswatini	TF	868	782	680	-15.1	-13.0	51	16	14	0.0
Ethiopia	TF	468	840	812	-9.0	-4.4	522	969	778	2.0
Gabon	TF	..	..	..	..	..	88	..	..	..
Gambia	TF	91	552	..	5.7	..	74	154	..	..
Ghana	TF	931	1,029	1,088	4.8	5.7	620	944	..	..
Guinea	TF	12	..	..	..	..	2	3	9	0.0
Guinea-Bissau	TF	22	55	52	11.1	-4.7	13	20	..	..
Kenya	TF	1,470	1,931	..	15.4	..	800	1,072	..	..
Lesotho	TF	414	..	..	..	..	23	24	22	0.1
Liberia	..	..	..	..	..	..	12	..	..	..
Madagascar	TF	196	291	376	13.8	29.2	309	697	193	0.5
Malawi	TF	746	871	..	4.1	..	31	38	42	0.1
Mali	TF	169	203	217	5.2	6.9	205	227	..	..
Mauritania	TF	..	..	..	..	..	..	4	11	0.0
Mauritius	TF	935	1,399	1,383	4.3	-1.1	1,282	1,887	1,779	4.6
Mozambique	TF	1,718	2,743	2,019	89.6	-26.4	108	242	252	0.7
Namibia	TF	984	1,621	1,596	4.1	-1.6	437	383	350	0.9
Niger	TF	74	157	192	-4.3	22.3	105	98	..	..
Nigeria	TF	1,555	..	..	..	..	576	1,962	1,449	3.8
Reunion	TF	421	535	534	5.3	-0.2	389	511	469	1.2
Rwanda	TF	504	..	..	..	..	202	375	..	..
São Tomé and Príncipe	TF	8	33	..	15.6	..	11	72	44	0.1
Senegal	TF	900	..	..	..	..	453	496	..	..
Seychelles	TF	175	362	384	3.4	6.2	343	559	590	1.5
Sierra Leone	TF	39	57	..	11.8	..	26	39	..	..
Somalia	..	..	..	..	..	..	..	..	..	..
South Africa	TF	8,074	10,472	10,229	1.8	-2.3	9,070	8,944	8,384	21.8
Tanzania	TF	754	1,378	1,443	8.1	4.7	1,255	2,449	2,605	6.8
Togo	THS	202	573	876	11.5	52.9	93	163	..	..
Uganda	TF	946	1,850	..	31.9	..	784	1,506	1,463	3.8
Zambia	TF	815	1,072	..	-1.0	..	492	742	819	2.1
Zimbabwe	VF	2,239	2,567	2,290	5.9	-10.8	124	..	..	..

E-business in tourism requires advanced technological solutions in order to support e-tourism applications such as e-bookings, e-distribution, e-ticketing, e-destination management systems and other services provided by e-markets (Papapavlou-loakeimidou and Tarani 2008). E-commerce originated in 1995, and presumptions by Kanellou (2000), Tapscott and McQueen (1996) were that ICTs would disintermediate, meaning removing intermediaries and agents and/or resulting in the traditional TDC being done away with all together. On the contrary, various studies by Poon (1993), Buhalis and O'Connor (2005) have shown that three important ICTs innovations, namely, Central Reservations Systems (CRS), Global Distribution Systems (GDS), and the Internet have revolutionised the tourism industry by bringing a variety of opportunities and threats, which have led to tourism organisations needing to adapt strategies, be innovative, and use ICTs as a business tool in order to ensure survival and success. These developments in ICTs have changed business practices and strategies for the industry players. Shanker (2008) explains that ICTs have created a digital marketplace that can manage

transactions, increase efficiency, and open previously closed markets. E-commerce can be used to manage the supply chain and automate several functions, resulting in benefits for economic and social development for citizens and organisations in several ways, including the access of local businesses to global markets, providing new opportunities to export a wider range of goods and services, and by improving internal efficiencies within a company.

The internet is changing the industry by altering barriers to entry, minimising costs, revolutionising TDCs, facilitating price transparency and competition. The entire process of production and delivery of tourism products need to be re-engineered, and ICT tools need to be reinvented to offer greater opportunities for principals and intermediaries (Buhalis, Leung and Law 2011). As previously stated, the internet and ICTs have brought several opportunities and threats. On one hand, ICTs can empower individuals by giving buyers and sellers the opportunity to share information, increase the profitability of hospitality businesses and be the backbone of capital accumulation. On the other hand, the dissemination, propagation, and accessibility of these technologies can be challenging.

Capasso, Dagnino and Lanza (2005) and Spencer, Buhalis and Moital (2012) assert that the tourism sector has for years been technology based and that e-commerce is not essentially a new phenomenon. Both B2B, for example, CRS, that later converted to GDS, as well as B2C relations, such as the role of local travel agents, have long considered the internet to be an additional channel of communication. Researchers are therefore increasingly seeking to understand and communicate the significance of these new technologies. In addition, investigate and interpret activities associated with it, and are attempting to forecast the way ahead for both industry and technological developments (Buhalis 2019).

The internet and ICTs have become indispensable daily tools for about 12 percent of the world population. From the timeline outlined above, four main strands of ICT developments can be identified which affect the tourism industry in the electronic era, namely, Smart Data using computer systems, the World Wide Web or the Internet, Satellite mapping, and ICTs being used for social media. The new economy elements are placed within each of the four strands for further discussion, including how they

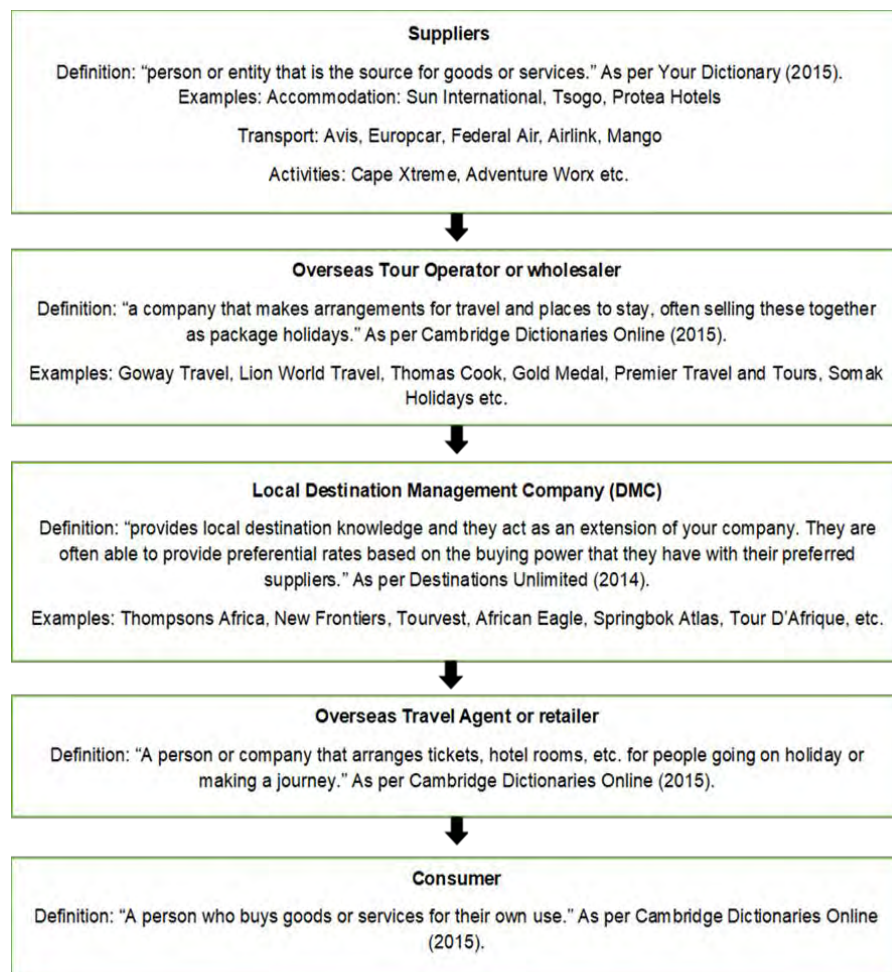
relate to DMCs using them in the e-procurement process in this ever changing digital, ICT based industry.

1.1 General background

The researcher has been in the tourism industry for more than a decade, in various roles, including consulting, operations, senior product and contracting executive, as well as management. Currently and for the past seven years, the researcher has been with various Destination Management Companies (DMCs) in South Africa who follow the traditional Tourism Distribution Channel (TDC). These DMCs have close professional working relationships with the suppliers selected in the study. The below diagram illustrates a traditional TDC.

Diagram 2: Traditional TDC in South Africa for the Inbound Markets (meaning international tourists around the world travelling to South Africa)

Source: Author



1.2 Research problem

Working in the field of study and closely experiencing the trends and challenges that occur with e-procurement, the researcher focused on e-procurement from the DMCs' points of view. Thus, the author investigated Information Communication Technologies (ICTs) interactive systems and the new economy factors such as: challenges with rate negotiations, inventory allocations, special offers, rate parity, protecting the TDC, and how the aforementioned are then relayed to the tour operator. It is essential to establish what the challenges are, find possible solutions and determine future trends.

ICTs refer to technologies that provide access to information through telecommunications. While similar to Information Technology (IT), the focus is primarily on communication technologies. This includes the Internet, wireless networks, cellular or mobile phones, and other communication mediums TechTerms.com (2010). ICTs are an essential tool to suppliers, DMCs, and consumers for the distribution of information, content, and the communication and procurement of goods and services online, as confirmed by (Ritchie et al. 2013; Morais et al. 2016). For this research, the starting point was to investigate ICT in the form of interactive systems called Destination Management System (DMS). These have been defined as "systems that consolidate and distribute a comprehensive range of tourism products through a variety of channels and platforms, generally catering for a specific region, and supporting the activities of a destination management organisation (DMO) within that region. DMSs attempt to utilise a customer centric approach to manage and market the destination as a holistic entity, typically providing strong destination related information, real-time reservations, and destination management tools and paying particular attention to supporting small and independent tourism suppliers" (Frew and Horan 2007: 63). This definition highlights the importance of ICTs and indicates that suppliers, DMCs and/or Small and Medium Sized Tourist Enterprises (SMTEs) will have to rely on creative innovation to survive (Ashari, Heidari and Parvaresh 2014). SMTEs are defined by the European Commission as "all enterprises with fewer than 250 employees (0-10 for micro, 11-50 for small, and 51- 250 for medium sized enterprises)." This includes the primary tourism enterprises such as hotels, tourist and transportation companies and the enterprises that serve the local population and travellers such as restaurants and bars (Buhalis 2003). The secretariat of the United Nations Conference on Trade and Development (UNCTAD), (Annan 2005) added that the majority of tourist

enterprises in destinations are SMTE (Abdal-Fadeel 2011). A noted concern raised by Research ICT Africa is that “while the South African information and communication technology (ICT) sector continues to demonstrate dynamic growth, particularly as driven by the mobile sector, the growth has not met the national objective of affordable access to the full range of communication services” (Gillwald, Moyo and Stork 2012).

Buhalis and Licata (2002) established the following trends through their research conducted on the strategic use of ICTs in the tourism industry – intermediaries are reengineering their processes, including Expedia which is a DMS as a digital era communication tool; they are reengineering their systems to enhance representation; and they are developing internet-based interfaces. In this dynamic ever-changing field, there has been the introduction of many other ICTs such as Business-to-Business (B2B) and Business-to-Consumer (B2C) systems, travelinfo, hotelbeds.com, GDS, CRS, and TripAdvisor among others (Dale (2003); Werthner and Ricci (2004). The introduction of these communication tools pressurizes the TDC in terms of value creation for the various parties in the channel. Managing the TDC can be challenging, and further research is required on technologies of interactive DMSs to make things simpler and more manageable, as prescribed by O'Connor (2009).

DMCs are facing new challenges daily due to fast paced technological advances, now more so than before, as these technological advances are bringing about various forms of ICTs that have extensive benefits to suppliers and customers. As far as DMCs are concerned, the securing of inventory and services, as well as describing services, facilities, activities, contracts, and relaying that information to the customer becomes difficult to manage. One needs to ensure the value of service is provided in the most efficient, effective, and innovative way possible through ICTs. This is essential for procurement departments to prevent the collapse of the TDC as ICTs are becoming dominant (Kanellou 2000; Pearce 2009). Businesses need to adapt their strategies and mould current business models to fit into this new era of online communication, failing which, businesses will close resulting in possible disintermediation of the TDC. Procurement in DMCs has benefited because of the e-commerce shift, as depicted in Table 1 by Wang et al. (2007). Buhalis and Law (2008: 3) mention that, “increasingly researchers seek to understand and communicate the significance of the new technologies, investigate and interpret

contemporary activity, and attempt to forecast the way ahead for both industry and technological developments". Consequently, the new challenges, solutions and possible future trends of this new economy should be investigated.

Table 2: Old vs New Economy

Source: Wang et al. (2007)

OLD vs NEW ECONOMY	
OLD ECONOMY	NEW ECONOMY
Supplier centric	Buyer centric
Long term contract	Dynamic pricing
Outdated buyer guides	Real time info
Local sourcing	Global sourcing
Hierarchical search	Universal search
Fax and phone communication	Web based communication
Inventory overcapacity	Reduced inventory
Fragmented buys	Aggregated buys
Paper trail	Paperless
Manual tracking	Automatic tracking
Expensive systems	Inexpensive systems

1.3 Research aim, objectives, and question

This research aims to describe ICTs in the form of DMSs in the traditional TDC in South Africa, focusing on relationships with the suppliers and concentrating on elements of the new economy. Furthermore, it aims, through investigation and evaluation, to identify challenges, responses, and trends that ICTs generate for e-procurement.

In addressing the main aim, the study follows three research objectives:

- To examine e-procurement in DMCs using DMSs within a TDC in South Africa, focusing on the relationship with the supplier and concentrating on the elements from the new economy in the table above.

- Through investigation and evaluation, predict new phenomena in this ever-changing field.
- Assess the challenges DMCs experience utilising ICTs in the form of DMSs and identify solutions or recommendations for e-procurement.

The question we aim to answer through this research is:

How are DMCs handling the growth in demand for e-procurement, whilst having to constantly adjust with new phenomena and challenges due to the use ICTs?

1.4 Researched paradigms and methodology

A qualitative research approach has been applied using a range of qualitative methods to understand, explore, and then interpret the phenomenon. Qualitative research according to Ritchie et al. (2013) is a social inquiry that focuses on people, their experiences, the world in which they live and then interprets it accordingly. This method is therefore useful to explore change or conflict in a social science “paradigm shift”. There are a number of common characteristics of qualitative research as pointed out by Ritchie et al. (2013) that have been applied in this research, such as:

- The aims and objectives allowed for an in-depth and interpreted understanding of the way in which the research participants make sense of their social and material circumstances, experiences, perspectives, and history. In this research telephonic conversations were held, followed by in-depth interviews. The interpretation of data collected are discussed in Chapter 3 Research Methodology.
- A reflexive approach is where the role and perspective of the researcher in the research process is acknowledged. The researcher herein has acknowledged and advised that she works and is imbedded in the field of study.
- Non-standardised methods are used for data generation that are sensitive to the social context of the study. The data being rich, detailed and complex can be seen in the in-depth interviews conducted in this research. The interview feedback forms can be reviewed in the annexures.

1.5 Historical background and changes in the travel industry

Tourism has always been a characteristic of humans. If one thinks back to earlier centuries, there were traders, pilgrims, and missionaries who embarked on long journeys for business exchanges, for faith obligations or for exploration. Modern day travel, however, is enormously enhanced by technology, specifically the use of computers and the internet.

1.6 Technological history

Tourism was one of the first sectors to embrace IT, using CRS as the first application of IT worldwide. The following timeline discussed by Joyce (2013), Venktess (2016), and Denby_free (2020), with distinct phases and eras, clearly highlights the evolution of travel technology.

1.6.1 Pre-mechanical era

The earliest evidence of deliberate marks made by Homo Sapiens, found in South Africa at Blombos Cave, is an ochre rock fragment, etched with diagonals, dating from around 73,000 years ago (Anon 2018). Later in pre-historical times from approximately 40,000 years ago, various cultures, including the San, produced cave-paintings which could be regarded as the earliest examples of images linked to visitor-destinations. From 5000 B.C. some cultures, such as the Ancient Egyptians, and the Chinese, utilised ideograms, or logographic writing. From the early Bronze Age, various authorities in Mesopotamia and Persia started to record produce for tax and trade. The earliest example of the abacus is Sumerian, from 2700 B.C. The earliest examples of alphabetic writing (phoneme-based) are in proto-Semitic languages from 2nd millennium BCE. Longer writings became more portable with the use of papyrus for scrolls (Egypt) and paper (China). Calculating improved as the use of Arabic numerals, including zero, supplanted the clumsy Roman system. Accounting, in modern style, was started by the Italians in 1399. Throughout this era all writing, calculation, record-keeping, and travel-related communication was manual.

1.6.2. Mechanical era

1450 – 1840 Gutenberg in Germany first constructed a printing press with movable type and produced the first printed book in 1455. This started the first information explosion with

travel books by or about European explorers proving popular with those who could afford printed books.

From 1500s The first printed illustrations were produced using wood cuts, followed by copper engraving techniques. The early pictures of encounters between the native inhabitants and the new European settlers in the Cape are Dutch engravings (Oakes 1992: 42). Colour printing of engravings came from the nineteenth century, as did black and white photography, but most illustrated travel books and brochures had only black and white photos until the 1970s.

From 1500s Accurate map making also had to await technical developments. The first globe was printed in 1492, but the outline of continents such as Africa were derived from navigators' measurements of coastline features rather than planetary measurements. As sea-traffic increased around the Cape there were many shipwrecks attributed to navigators not accurately calculating longitudinal positions, until the invention of the sextant together with the Naval Almanac in the eighteenth century, followed by the marine chronometer in the nineteenth century (Taylor, 2004).

From 1600s Mechanical calculators were first manufactured for commercial use, with mathematicians such as Leibniz and Pascal working on the invention. In 1801 punch cards were used for programming a machine, while in 1822 the Difference Machine was launched, an automatic, mechanical calculator designed to tabulate polynomial functions. Ada Lovelace is often acknowledged as the first person to foresee the uses of the computer, in her notes on the Analytical Engine made by Charles Babbage.

1.6.3 Electromechanical era

1840 – 1940 This period is defined as the electromechanical age. It was during this time that ground-breaking and innovative technological inventions and advancements were made that resemble modern-day technologies and heralded the beginnings of telecommunications.

1800 The telegraph is created in 1816 by Francis Ronalds, and the first telegraph was installed in Cape Town in 1859.

1835	Morse code is created by Samuel Morse, which sped up communication by telegraph.
1841	In terms of travel, Thomas Cook strikes a deal with Midland Counties Railway for 540 members for a packaged deal, offering a train ticket and lunch, thus defining two important segments in the travel industry, namely, travel agencies and tour operators.
1842	Ada Lovelace successfully uses the difference engine to mechanically translate a short-written work. She is therefore regarded as the first programmer.
1845	Thomas Cook arranges travel for 165, 000 people without the aid of technology, using only a fountain pen and paper.
1857	The Union Castle Line begins regular steam ships to South Africa.
1859	Railway construction begins in South Africa.
1876	Alexander Graham Bell is granted his telephone patent. The first telephones were imported and put into service in South Africa in 1878.
1892	William Burroughs introduces a hand-powered printing calculator and shortly thereafter introduces an electronic model.
1894	Guglielmo Marconi develops the first radio. Radio broadcasting only begins in South Africa in the 1920s.
1918	The Enigma machine is invented.
1900s	Electric trams come into use in South African cities.
1910	Automobile manufacturing increases dramatically. The T Ford models were used by the wealthy in South Africa; however, many roads were not suitable for automobiles. Road traffic grows during the 1950s with the improvement and increase of road construction.
1920	There is a rapid growth of airlines with the first commercial airline in South Africa in 1929.
1920	Motor buses begin being used for local tourism from cities to places of interest.
1940	The first large scale automatic digital computer is created by Harvard University.

1.6.4 Electronic era

1940 – 2021	The electronic era can be defined as the time from the 1940s to present day. The construction of the ENIAC, the first high speed, digital computer capable of being reprogrammed to solve a range of numerical problems, began in 1943 and was unveiled in 1946.
1944	The Harvard Mark 1 is introduced, which is an IBM Automatic Sequence Controlled Calculator. This is the first large scale automatic digital computer in United States of America (USA).
1950s	Due to the rapid growth of air travel, airlines found it necessary to systemise their ticketing operations. Airlines began exploring options towards an automated booking process. It was during the 1950s that four generations of computers evolved.
1951	The first commercial computer, the Universal Automatic Computer (UNIVAC), is developed by John Eckert and John W. Mauchly.
1952	The first IT travel system, called the Magnetronic Reservisor, is created to store airline seat availability on a centralised platform.
1960	IBM installs a transistorised data-processing system in Johannesburg.
1969	The Internet is invented.
1970	The term information technology evolved during the 1970s. The basic concept can be traced to the World War II alliance of military and industry developments of electronics, computers, and information theory.
1971	Electronic books and documents start appearing in the public domain with the launch of Project Gutenberg.
1971	Electronic Mail (Email) is developed by Ray Tomlinson, who also decides to use the “@” symbol to separate the username from the computer name (which later became the domain name).
1975	Development of microcomputers.
1975	The first email customer via internet is established.
1975	The first portable computers are being designed.
1977	The first personal computer (PC) Modem is introduced.

1984	In airline travel, growth in customer demand and complicated booking processes see consumers looking to travel agents to book their airline tickets. Agents, in turn, required more access, which led to the start of Global Distribution Systems (GDSs) and agents could now print out airline tickets at the office.
1984	The domain name system is created, which allows for simpler access for the public by changing internet protocol (IP) addresses to user-friendly domain names.
1987	The first hotel reservation system is launched.
1988	The first malicious software worm is created and released, known as the 'Morris Worm'. The first South African IP address is granted to Rhodes University.
1989	A proposal for the World Wide Web is written by Tim Berners-Lee in 1989. By October of 1990 Berners-Lee had written three fundamental technologies that remain the foundation of today's internet namely, Hyper Text Mark-up Language, better known as HTML; Uniform Resource Identified (URI), an address that is unique and used to identify each resource on the internet, it is also commonly known as Uniform Resource Locator (URL); and Hypertext Transferrer Protocol (HTTP) which allows for the retrieval of linked resources from across the internet. In 2014, the year the World Wide Web's 25th birthday was celebrated, almost two in five people around the world were using it.
1990	Dial up internet access becomes commercially available in the United Kingdom and the USA.
1990s	As a result of the success of commercial internet, many leading travel brands began developing websites in the early 1990s.
1991	The first webpage and the first webcam are created.
1991	The first international internet connection in South Africa is established.
1993	More submarine cables for internet are laid for South Africa and coastal countries.
1995	Online shopping is introduced.
1995	Viator Systems (now Viator) launches its travel technology business.
1996	Hotmail, a web-based email facility, is launched.
1996	The well-known Expedia and Travelocity, online travel agencies, are launched.
1996	South Africa sees its first online banking system.

1997	Wi-Fi is invented and released for consumer use.
1998	Google launches.
2001	Wikipedia launches.
2001	Smart phones with 3G capability are made available.
2001	Google Earth starts using satellite views sourced from different providers.
2002	Telkom offers first asymmetric digital subscriber line (ADSL) in South Africa.
2004	Web 2.0 arrives.
2004	Social networking takes off.
2004	TripAdvisor is launched to fill travel technology gaps.
2005	YouTube launches.
2005	Google Maps is released.
2007	Mobile internet access is developed, and wireless internet subscribers overtake the numbers of wired network users in South Africa.
2008	There is a cell phone revolution with Apple and Android. The smart phone is becoming smarter and encouraging paperless transactions with QR codes and google maps.
2012	There are 12.3 million active internet users in South Africa, with broadband access more than doubling since 2010.
2015	South Africa reaches over 28 million internet users.
2016	A National Integrated ICT Policy White Paper was drafted for South Africa and replaced the Green Paper on e-commerce which underpinned the policy and legislative developments since democracy.
2016	South Africa reaches R7,5 billion mark in online retail, which amounts to one percent of overall retail in SA, according to Worldwide Worx.
From 2016	International investment grows in terms of satellite connectivity for mobile phones and the internet, to benefit users in large parts of Africa where bandwidth has been poor or non-existent. The paperless revolution advances in travel, as customers prefer to opt for electronic records only. Increasingly, ticket evidence on a smart phone will allow access to flights.

What can be seen from this summary of technical developments, which affect the tourist trade, is that key functions of image presentation, description in words, calculations, records of trade, mapping the way to new destinations, new transport networks and attracting new customers are all advanced at each new stage of invention. The focus of this thesis is on the ICT innovations of the last two decades. Gillwald, Mothobi and Rademan (2018) surveyed 16 countries in the Global South (seven in Africa) and found that of the seven African countries South Africa, as the highest performer, has an Internet penetration of 53 percent which shows a 23 percent gap between the next best performing African country, Kenya. However, the survey also shows that South Africa performs poorly in relation to Internet penetration when compared with countries in Latin America (on similar income levels). With only half of the population connected in South Africa; it is well below the Latin American countries surveyed where Internet penetration rates are over 65 percent (Gillwald, Mothobi and Rademan 2018). South Africa is, nonetheless, quite significantly ahead of fellow African states with regards to the World Economic Forum's Network Readiness Index, such as Rwanda who is 80th, Tunisia (81st), Cabo Verde (85th) and Kenya (86th) which shows South Africa's readiness to connect to international and internal tourists.

1.7 Reliability and validity

Due to the complexity of social studies in qualitative research and the phenomena, the concept of replication is said to be naïve. Furthermore, qualitative studies are dynamic, and it is argued that these studies can never be, nor should be, repeated (Gubrium and Holstein 1997).

Reliability in this study is based on consistency and care in the application of the research. Visibility of research practices, analysis, and conclusions are reflected on in an open account that remains mindful of the partiality and limits of the research findings. Additionally, repeatability is practiced by interviewing eight suppliers and seven DMCs and not just one of each. Replicability is practiced by providing the same survey questionnaires to each sample. Consistency is adhered to as each survey was conducted in the same format.

Lastly, internal validity is attained as the researcher is close to the field of study. Triangulation is achieved using different data collection methods as discussed in the research methodology, Chapter 3, section 3.3.

1.8 Ethics

Prior to the in-depth questionnaires being distributed all potential participants were contacted to enquire as to whether they would be willing to partake in the study. Participation was entirely voluntary. Each voluntary participant was provided with a full explanation as to the selection process and how they fulfilled the selection criteria. Each participant was given a letter of information and consent form, attached as Annexure 3. This provided the participants with a clear topic of research, a brief introduction, the purpose of the study as well as an outline of the procedure. Each participant then completed the consent form as statement of agreement to participate in the research study.

Participants were free to abstain from answering a question, both in the questionnaires and interviews, should they choose to do so. Participants were given the questionnaires in their natural settings and completed the questionnaires at their own pace, allowing them time to think but also to feel comfortable, valued, respected and at ease.

Following the interviews, all participants were given the right to privacy and anonymity, which is also noted in the letter of information and consent in Annexure 3.

With awareness of worldwide trends on the use of internet for the travel industry, the task of this thesis is to investigate specifically how these trends play out in South Africa.

2. CHAPTER 2 LITERATURE REVIEW

This chapter discusses the new economy elements within four subheadings namely: ICTs using computer systems for smart data, ICTs using Wi-Fi and internet for communication, ICT for use of social media and ICTs use of satellites. This is then followed by predictions for the future and a concluding chapter.

2.1 ICTs using computer systems for smart data

In this section we will look at all the new economy elements that are affected by ICTs using computer systems for smart data analysis.

2.1.1 Reduced inventory

Room inventory refers to the number of rooms available in any given establishment on any given day. Inventory reduction is the process of lowering inventory levels to a point where they meet customer demand. Reduction of inventory is necessary to eliminate excess products, free up warehouse space, save money, and increase profits. Room inventory is crucial in identifying how much stock is available at the beginning, and by the end, of the day, thus assisting in financial analysis of daily profitability. Knowing your inventory also allows you to set your pricing accordingly for example, if at the beginning of the day you still have more than half your rooms available you may want to drop the price from R1000.00 per night to perhaps R700.00 a night, alternatively, perhaps it's a small guest house of six rooms that is almost full and the demand is high, you may then decide to increase the price from R1000.00 per night to R1200.00 per night. It is all about ensuring that profits are maximised (Webb 2011).

Forecasting is an essential factor relating to room inventory. Peak season and special event demand can be predicted based on historical and current trends. Predicting demand provides establishments the opportunity to capitalise profits in terms of the supply and demand principle (Webb 2011).

2.1.2 Dynamic pricing

Dynamic pricing is the model or strategy whereby a product is sold at different prices based on the changing dynamics of supply and demand. This concept, also known as real-time or surge pricing, relies

on the flexibility of pricing to maximise profits and increase demand and includes such strategies as special offers (Shpanya 2021). For example, as room inventory starts dwindling the suppliers can increase the price to reflect the demand has increased. When a company still has many rooms available in their inventory, they can introduce lower prices, special offers, and so forth, to trigger a reduction in rate.

Daljord (2014), Xiao, Yang and Zhang (2015) explain that when dynamic pricing is used it shifts risks from supplier to customer. The consumer then focuses on the supplier's costs which results in both parties often having long term relationships, as the customer becomes more dependent on the supplier causing high interdependence. Lowering the prices over time may also cause consumers with high valuations to purchase early, whilst consumers with lower valuations will purchase later at lower prices. The phenomenon, Coase Conjecture, has received wide attention due to the challenge with dynamic pricing. Given that demand can shift towards the lower pricing and consumers will wait for the future discounted pricing and the seller is therefore, competing with themselves on price (Daljord 2014).

The difference between static and dynamic pricing, as is shown in Table 3, is that static pricing uses previous costs to estimate future costs. These cost estimates then serve as the input for estimations of margins which in turn serve as input for price determination. Dynamic prices use actual costs in these calculations. This practice allows for guarantees of margin levels, if the manner in which costs are specifically calculated is correct and mutually agreed upon (Ellström and Larsson 2017).

Table 3: Price typology based on flexibility and cost consideration

Source: Dynamic and Static pricing in open-book accounting (Ellström and Larsson 2017)

Price Flexibility			
Cost Consideration		Static	Dynamic
	No Consideration	Market and Value Based Prices	Exogenous Prices
	Open Book Agreement	Static Cost Based Prices	Dynamic Cost Based Prices

The rapid development of both supply and demand makes ICTs crucial, and they therefore play an increasingly critical role in tourism marketing, distribution, promotion, and co-ordination (Buhalis 1998). There are several factors that affect demand with suppliers. Events such as, annual festivals, concerts, or larger scale events like the Olympics, will cause an influx of tourists. Seasonality also plays a role. Destinations are more popular or attractive during certain times of the year. For example, in Zimbabwe they have a 'green season', which refers to the low season during mid-November to April. During this season visitor numbers are low, and accommodation prices are often reduced by hospitality establishments. However, in South Africa this same period is high or peak season and there is an influx of tourists to the country. Another factor is currency. When foreign countries experience an appreciating currency and the exchange rate adjusts accordingly, this often results in an influx or increase of tourists to countries with a weaker currency. Development factors, such as marketing campaigns can boost demand related to travel trends (Morello 2002). Using these factors as determinants, suppliers can manage this demand through dynamic pricing by implementing Best Available Rates (BAR) strategies (Aurélien and Desiré 2014). Realising that there is an importance for yield management, also known as revenue management, suppliers are optimising their occupancy rates and income per customer by establishing up to date and flexible pricing as well as being able to rationalise the pricing (Aurélien and Desiré 2014) using a BAR strategy.

Ellström and Larsson (2017) have provided several price calculations that can be used, they are as follows:

The dynamic pricing of BAR strategies can be calculated in several ways. The simplest being, when price, P , is determined as a function of a range of observed costs, \bar{C} :

$$P = f(\bar{C})$$

The following equation is based on calculations of margins. In this example the dynamic prices allow the supplier fixed margins, not only costs serve as input for price calculation. The calculation for net profit margin is calculated as follows:

$$\text{net profit margin} = \frac{\text{net profit}}{\text{revenue}} = \frac{\text{revenue} - \text{costs}}{\text{revenue}}$$

Revenue is causally related not only to pricing, but quantities as well. If parties have agreed on a fixed net profit for the supplier, they base price calculation on information about costs, \bar{C} , as well as quantity,

$$Q:$$

$$P = f(\bar{C}, Q)$$

Lastly, another key performance indicator includes earnings before interest, tax, and return (EBIT) on capital employed (ROCE):

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital Employed}}$$

With these calculations we can see that dynamic cost-based prices require open-book accounting which allows for day-to-day cost changes to be calculated, depending on what type of key performance indicator is used as a basis for the prices and different costs.

Nevertheless, suppliers must remember that a revenue strategy for one may not work for another, as each strategy comes down to matching the right customer to the right product. Taking into consideration pricing tools such as lowest price guarantee, price discrimination, and non-pricing tools such as inventory control, being a room or seat, it is essential to manage this correctly as the Consumer Protection Act (South African Government (2008) protects consumers against overbooking. Capacity management is responsible for ensuring that IT resources are meeting business requirements in a cost-effective manner (Ivanov 2014). Tourism suppliers have taken advantage of the new opportunities and developed e-commerce applications along with diversifying distribution channels. Through the development of the e-commerce channel, suppliers have provided users direct access to their reservation systems. These users are travellers e-booking directly, providing speed to market; DMCs; Online Travel agents; and Tour Operators. This puts pressure on traditional intermediaries (Papatheodorou 2006; Zelenka 2009). As a result, DMCs have developed Destination Management

Systems (DMSs) to link with suppliers and to remain competitive (Buhalis and Licata 2002). It is important to note that, before the implementation of channel management software technology, suppliers used to provide operators with either commission and/or sell to operator (STO) rates. This is a static rate provided by the suppliers to the operators. DMCs have certain costs they need to cover and ensure that they still operate a profitable business.

STO rates or commission have been provided in the following ways:

Option 1: The suppliers provide the rack rates and advise the operator what commission they will earn on each sale, for example, 20 percent, 25 percent, 30 percent and so forth.

Option 2: The supplier provides a net rate, and it is then up to the operator to add that to their margins to make a profit.

The DMCs/operators make sure that the supplier's product is never sold above rack rate to the end user. This ensures that the DMCs do not exploit the suppliers, and the suppliers protect the DMCs by not providing a lower rate than rack rate to end users, thus protecting the TDC. The challenge with these commission structures and STO rates is that the static rates provided would be an annual rate given to the DMCs. The DMCs then use these rates in packages, brochures, websites, and printed marketing material. However, with fixed rates, difficulties can arise should there be price increases or a higher demand as suppliers are still obligated to honour the contracted rate provided. This is what has led to the introduction of channel management systems and BAR rates that are dynamic and can change as demand changes (Ford 2010).

2.1.3 Rate parity

Rate parity is the practice of maintaining consistent rates for rooms across all booking or distribution channels, whether it is for an Online Travel Agent (OTA), DMC, Travel Agent, or direct websites. If suppliers do not maintain rate parity, then partners in the TDC will be reluctant to work with, or promote the products or service offered by, suppliers who undercut rates.

There are two categories of rate parity namely, wide rate parity and narrow rate parity. Wide rate parity is the most restrictive form whereby suppliers of products and services agree not to undercut prices charged by other supplying entities within the TDC. Narrow rate parity allows for supplier's products and services to be offered at a lower rate but only through indirect channels or offline channels such as emails, telephone bookings or guest loyalty programmes. This means that it is not permitted through direct channels online (Trivago Business Blog 2019).

Rate parity is considered the cost of doing business, but this practice does pose several challenges. For example, OTAs cut their commission to offer better rates which may bring in more bookings, at a lower rate, however this may also result in a loss of revenue for hotels. A further example is when a property runs a special offer, they are then required to inform, and offer the special to, all related entities in the TDC, which runs the risk of unsold rooms. (Siteminder n.d.).

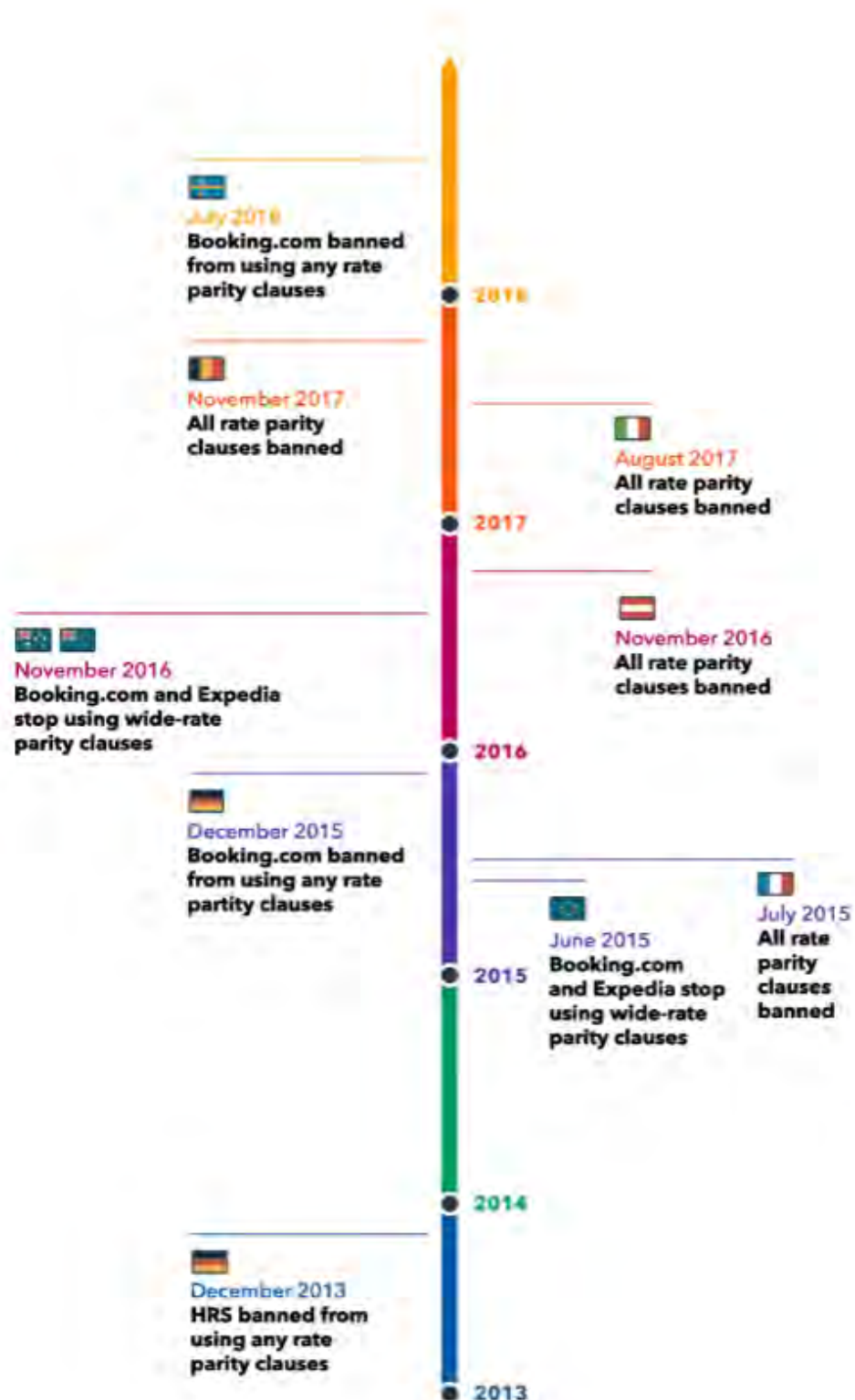
Service and product suppliers are however implementing innovative ways in increasing direct sales without undercutting channel partners, thus allowing maximal profits on products and services, such as:

- The implementation of a pop-up email captures. As soon as a customer accesses a hotel's website, they may be asked for information such as an email address, preferred month of travel, and destinations that are of interest. This information is then used to build an email list. "Email list building" is the process where collecting email address and information of interest helps build mailing lists from visitors to websites to grow a subscriber database. This allows for better business communication with existing or potential consumers (Yieldify 2021).
- The creation of a private discount pages. These pages can only be accessed by a selected group of consumers.
- Target emails, based on emailing data bases, which target potential and existing clients based on their preferred month of stay.
- The creation of value-added packages providing additional amenities or access, such as free parking, Wi-Fi, or a complimentary breakfast, to name a few.
- Customer loyalty programs.

- Marketing strategies aimed at specific audiences such as followers on Facebook, Twitter, and Instagram pages.
- Using metasearch sites which allow pay per click, getting travellers to click through to a website and then book directly.
- Making the booking process seamless and smoother than any TDC.
- Using channel managers, allowing a single login process to connect to multiple distribution channels simultaneously to update rates, instead of multiple extranet logins to update rates and prices.

Rate parity clauses with OTAs are a contentious topic, due to them undercutting the rest of the TDC by dropping their commissions to offer a lower rate. Worldwide, there are currently varying regulations on rate parity clauses and OTA behaviours. Some countries such as France, Austria, Italy, and Belgium have all opted to strictly prohibit rate parity clauses. Other countries such as Germany and Sweden have prohibited OTAs from using rate parity clauses. The European Union, Australia and New Zealand have come to an agreement that Booking.com and Expedia will only use narrow rate parity clauses. Lastly, countries such as USA, South Africa, and countries in Latin America do not have rate parity regulations. The above is not an exhaustive list of all countries facing and adapting to changes in OTA behaviour, however this does reveal that rate parity is a thing of the past in some areas of the world (Trivago Business Blog 2019). Diagram 3 provides a time frame on which year different countries have made decisions on rate parity and what the outcome has been.

Diagram 3: Time frame of regulations on rate parity being implemented in different countries
Source: Trivago (Trivago Business Blog 2019)



2.1.4 Aggregated buys

Aggregated purchases have proved to be a useful tool in the procurement of goods and services. Aggregated buying can be seen where customers collectively purchase several items at the same price to receive a volume discount. This is what has led to group travel, series travel, multi-generational travel, and other forms of mass travel. Aggregated procurement increases the negotiating power of the buyer allowing them access to better prices, services, and technologies that they might never have been able to obtain alone. It is not necessarily about finding the cheapest offer but rather the best offer which considers cost, quality, and turnaround. The benefits include saving time, improvement on expenditure, allowing companies to improve performance of service and to introduce economies of scale. Fragmentation on the other hand also known as trading in parts, is the use of different suppliers for goods and services (resources 2017).

E-procurement processes involve agreements on contract prices with vendors, which are stored electronically in the buyer's internal databases (Aikins, Osei, Duah, Adjei, Broni and Christian 2014). To implement e-procurement successfully one needs to understand that all the required tools need to be in place, such as back-end applications (e-procurement systems) and front-end applications (customer relationship management systems). Once the correct tools are in place entities are able to capitalise on the advantages of e-procurement while simultaneously remaining aware of the challenges or disadvantages, as shown in Table 4, which combines information from various authors such as Mozeik (2004), Dof (2001), Jooste and Van Schoor (2003), Neef (2001) as well as Huang and Welsh (2002).

Table 4: Advantages and Disadvantages of ICTs of e-procurement

Source: Author

Advantages	Disadvantages / Challenges
<ul style="list-style-type: none">- Lower administration and procurement cost- Purchasing prices- Shorter lead time- Enhanced cooperation with suppliers- Performance, quick turnaround time	<ul style="list-style-type: none">- Internal resistance to change- System too difficult to understand- Integration with existing IT- Integration and migrations with supplier systems into business IT systems

<ul style="list-style-type: none"> - Multi-chain operators - Reduced unauthorised buying also meaning increased control over supply chain - Organised information - Tighter integration with back office - Proactive management of data - Improved expenditure control - Better supplier management - Sales increase - Expansion of customer base - Shorter selling cycle - Leverage buying power - Ease of information exchange - Electronic routing - Payment for purchases can be automatically triggered 	<ul style="list-style-type: none"> - Security concern - Database maintenance - Limited supply base, due to unique problems regarding the implementation of “first world” technologies; not many suppliers are using ICTs as primary distribution source - Limited bandwidth - e-procurement affordability; the technology is advanced and costly - Competition issues
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These are the results of the emergence of e-procurement, a concept defined simply as the use of technology to facilitate corporate buying through the internet. It is for this reason that e-business, from the perspective of Supply Chain Management (SCM), is a crucial focus point. However, SCM literature has been heavily dominated by studies related to tangible products, thus calling for research focusing on the service sector (Katsoni 2015). Zhang, Song and Huang (2009) further point out that supply management studies are scattered and lack clear focus. In considering this, it can be seen that further rigorous research is needed with regard to supply chain relationships in an ever-changing ICT environment, with an emphasis on analysing the e-business adaptation and its impact on relational quality. The research that is available has been contradictory. On one hand, Verhoest, James, Marais, and Van Audenhove (2007) state that ICTs form a popular sales channel rather than a tool for purchasing and procurement. On the other hand, Buhalis (1997: 83) points out that “the greater the perceived risk in pre-purchase context, the greater the consumer propensity to seek info about the

product.” Furthermore, statements of joint ventures in ICTs, ensuring accurate reliable information, support this and, in the absence of physical distribution, asks the question of how procurement can create value. The most vital point to mention is that, despite its importance, a review of literature on the adoption of e-procurement revealed that virtually little to no academic research has been conducted to investigate the application of e-procurement in hospitality supply chain management and there are no common indicators for e-business and e-commerce (Aikins et al. 2014). Mafini, Dhurup and Madzimure (2020) point out that their journal titled “E-procurement, supplier integration and supply chain performance in small and medium enterprises in South Africa” has theoretically contributed to existing literature. However, they acknowledge that e-procurement is a multidimensional concept which requires further research.

It is evident that e-procurement is essential in digital era ICTs, however De Klerk and Kroon (2005) suggest that SA is adapting rather slowly to the new e-procurement movement. This is confirmed by the Customer Data Platforms (CDP) Supply Chain Report for 2016 to 2017, however, the report also indicates that there are more signs of innovation. “ICT, in fact, seems to generate a complex process, pushing, on one hand, towards disintermediation, through more direct relations both in business to business and in business to consumer; on the other hand, strategic networks and alliances seem to be the right way to keep up with innovation, and gaining and sustaining competitive advantage” (Capasso, Dagnino and Lanza 2005: 50).

2.1.5 Real time information

Focus (2017) defines real time information as, “the ability to engage with your customers or fans instantly based on real-time information – like their actions and behaviour, changes to your own data or external news or events. It is instant, (mostly) automated, and targeted.”

Information search is a significant part of the purchasing and decision-making process. An informed customer can find products and services that meet their requirements, take advantage of special offers or reduced rates, reduce uncertainty and perceived risks, and access real time information while they are travelling thus enhancing the quality of trips. Kozak, Baloğlu and Bahar (2009) analysed customer

information search patterns and found that different nationalities and demographics require different information from the internet. There are various communication tools and platforms being used by the traditional TDC to access real time and live information, content, and rates such as Channel Managers and Application Program Interface (API) links.

O'Connor and Piccoli (2003: 188) point out that the decision-making process in selecting what channel manager to use has become more complex than before, and that there is very little guidance to help entities within the TDC to determine what will best suit their business needs. A Channel Management system is an internet software-based technology that allows communication between a service provider's reservation system such as Opera and Hospitality Technology International (HTI), among others, and B2B or B2C customers (whether direct or through the TDC) DMS. The DMS includes, but is not limited to, Travel Studio, Tourplan, and Travelogic. This allows suppliers to update pricing and inventory automatically in the customers' databases. The linking of the supplier and customer reservation systems through a Channel Management system is called an API link. Some of the key channel management software in South Africa includes but is not limited to SiteMinder, Nightsbridge, Eres, ResRequest, Activitar, Synexis, and Semper. Suppliers that choose to embrace the right channel management technology can reap the benefits of increased accurate information such as rates and eliminate double bookings. They can also increase bookings, reduce acquisition costs, increase business efficiency which can ultimately lead to higher profit margins. However, when a supplier is selecting a channel management technological solution for their business, they need to consider a system that can adjust automatically and across all sites. There should also be minimal to no transaction fees or a flat monthly charge, and they should have control over updating the information on their own website as well as on the third-party booking sites. Additionally, all supplier's own product developments need to be in-house (Ackers 2010). Through evaluation methodologies, researchers would be able to create a set of guidelines to assist practitioners in making this decision. ICTs and the digital world are still relatively new to South Africa, and the country still has opportunities for growth and development in this regard. There are a variety of new computerised systems, designed to facilitate the integration of management and communication, from which businesses can choose (Aurélien and Desiré 2014). The

transactions on these new computerised systems which are web based are often called Business to Business, and suppliers use these tools as a source of distribution.

2.1.6 Automatic tracking

Automatic Tracking systems operate or control any processes automatically, meaning that it is fully electronic and requires little input from an operator. This reduces the need for human intervention to a minimum.

ICTs are an integrated system of networked equipment and software that automatically collects, processes and communicates data which is greatly beneficial for organisations (Buhalis and Law 2008). Information can be collected at various stages of service, before, during, and after, to better understand the traveller's choices, behaviour, and determinants. This information can then be used to communicate, make suggestions, provide information, and encourage future travel. Werthner and Klein (1999) define this as interoperability, it is the provision of a well-defined end-to-end service which is consistent and predictable. Lastminute.com (2021) collects suitable information to personalise a weekly newsletter sent to consumers and identifies what parts of the newsletter are accessed by consumers to personalise their offerings even further.

Modern businesses can also choose from a wide range of products on the market to communicate with their customers. These machine learning, new human machine interfaces are cutting edge technology. The automated travel system software in the TDC can save companies time, money, and human resources. Slesar (2021) identified the following benefits of implementing an automated travel system:

1. Faster Sales

Immediacy, urgency, and accuracy in sales are critical to tourism businesses survival. These systems can perform multiple functions such as reservation management, creation of travel packages, booking of travel products from third parties, and communication with suppliers. An ideal travel management system should cover the entire sales process, whilst ensuring a wide

range of inventory options and provide a smooth booking experience for the customer and employees.

2. More Sales

Automated systems are generally available twenty-four hours a day, seven days a week, therefore, businesses are able to generate more sales than those only operating during business hours. The systems allow for faster turnaround which means more time to do more bookings.

3. Happier customers

Customers have more freedom and control over their own bookings. Online and mobile access to all travel products allows customers to search at their convenience for best prices, personalised offers and any other options powered by automation.

4. More productive employees

All procedures can be streamlined from bookings to yearly reports. In an automated work flow a number of forms of communication can be automated for example, automatic inquiry emails, invoices, reminders, and alerts. This optimises human resources for more meaningful and creative tasks.

5. Increased efficiency

In many areas of a business, for example, in the accounting process, these automatic software programmes make invoicing customers, verifying invoices sent by suppliers, tracking of invoices and payments much simpler.

6. Money saving

Automation can result in a cost saving of approximately 40 to 75 percent.

7. Centralised data and documentation

Information and data from business communications, sales histories of interactions, customer profiles, travel policies, and service fees, to name a few, can be maintained and accessed from a centralised point.

8. Reduction of errors and risks

The automatic generation of invoices, quotes, and other related business documents, minimises the risk of input errors. Travel software can help mitigate the risks related to currency

fluctuations as it automatically calculates and reflects the difference in charge for the customer immediately.

9. Smarter decisions and strategies

Insightful reports can be generated related to sales, marketing, products, suppliers, customers, and even employees. This information can be used to find critical areas for improvement and drive the businesses in the right direction.

10. Increased online presence

A number of these software programmes have integrated web marketing tools which can enable businesses to create user-friendly URLs, and which also provide tools to track search engine optimisation (SEO) which can increase website traffic.

In summary, the challenges that the new economy present are focused on the implementation of “first world” technologies that are not possible for all. DMCs are faced with issues of rate parity, which is not regulated yet in South Africa, and being undercut by suppliers. Suppliers need to manage their demand through dynamic pricing by implementing BAR strategies which is challenging for DMCs. DMCs are compelled to consider DMSs which are costly and often require expert knowledge and skills in order to ensure optimal function and integration. Automated tracking systems can give businesses a more holistic view and greater control of all processes and procedures. Moving into the new economy, automation and tracking is becoming an essential requirement to remain competitive. There is still room for DMSs to be further developed, in terms of information and content analysis through the various stages of service, to understand customer choices and behaviour determinates. This data is used to provide suggestions and information and encourage future travel plans. South Africa is adapting rather slowly to e-procurement advancement and there is scope for massive development, applications, and knowledge acquisition in terms of DMSs. The development of e-commerce channels is going to allow for greater diversification in distribution for all entities in the TDC, and focus is now on the Consumer Protection Act (CPA) for guidance on ethical practices, which is still not well defined in South Africa.

2.2 ICTs using Wi-Fi and internet for communications

In this section we will investigate the new economy elements that are affected by ICTs using Wi-Fi and the Internet for communications.

Web-based communication is defined by 'Your Dictionary' as "the sharing of information, words or ideas over a network of computers known as the internet" (Your Dictionary 2015). In today's world the primary means of web-based communication in business is the internet and related digital platforms, such as email, social networking, online forums, instant messaging, online services, information sites, and virtual communities, to name but a few.

Lopez Cordova (2020) states that digital platforms are increasingly used by both businesses and travellers. Among these digital tools are OTAs, social networking platforms and search engines. Perhaps one of the most interesting areas of new technology adoption is the extensive use of mobile and wireless technology channels. Techopedia (2016) explains that wireless communications work through electromagnetic signals between two or more devices using a wireless signal in various forms, such as, satellite communication, mobile communication, wireless network communication, infrared communication, and Bluetooth communication. The use of mobile technology has increased drastically over the last few years with Amazon.com Inc. reporting that mobile sales more than tripled to \$8.1 billion in the first three months of 2021, thus, exceeding the record set in the fourth quarter of 2020, and sales increased internationally by 60 percent (Digital Commerce 360 2021). Many mobile devices in use today are internet enabled with high quality speed. As you are using your personal mobile, smart satellite technologies record what you are searching for and then recommends information based on previous searches, making information search easier. It is therefore not surprising that research in this field is gaining momentum (Guterres 2019).

2.2.1 B2B and B2C communications

There are several on-line services available through tourist portals such as e-commerce and e-bookings, with the leading application in e-business being Business to Consumer (B2C) with a 40 percent share of all e-commerce (Zelenka 2009). B2C is not the ideal application when considering the tourism distribution channel as this entails cutting out intermediaries. In tourism, the focus needs to be

on B2B ecommerce growth. The likes of Expedia, Last minute.com, Booking.com and Travelocity are known as Online Travel Agents (OTA) or Online Tour Operators (OTO) which are all B2C applications, and are rapidly gaining market share (Papatheodorou 2006) at the expense of the traditional operators. These OTAs and OTOs have hundreds of alliances with tourism related product and service providers, which provides them with access to a multitude of resources. These resources are required in order for them to compete successfully, but also in order to maintain flexibility in a rapidly changing competitive environment (Capasso, Dagnino and Lanza 2005). Considering this, one can see that strategic alliances play a vital role in the new economy. Numerous new economy companies have already implemented strategies whereby they retain control of critical business functions, while still taking advantage of opportunities to manage segments of their business activities through alliances. These alliances may be joint ventures, for example, communities and tourism investors working together, or equal share business partnerships. There are also non equity strategic alliances where certain countries align to form a partnership or they might entail joining up internationally, like implementing the KAZA Univisa. "The question is whether digital economy is key to a company's success. The answer is no for a simple reason: on one hand, high technological ventures lacking specific strategic resources have proven to be unsuccessful; on the other hand, in many successful cases sustained competitive advantage is achieved thanks to the whole range of strategic resources and competences, connected or not with new technologies" (Capasso, Dagnino and Lanza 2005). According to travel click (Zelenka 2009), the upward trend showed a positive sign for online bookings and was expected to exceed \$500 billion in the year 2016, with online sales accounting for 46.25 percent of travel bookings. The upward trend in online bookings continues to increase due to COVID-19. Consumers are in search of contactless services and thus, are becoming more tech-savvy (Lamont 2021). The trend towards digitalisation, e-procurement and e-commerce continues to grow, with a predicted annual growth rate of 9.2 percent in revenue between 2020 and 2025 in Southern Africa (Rumushu 2021).

2.2.2 Buyer centric

Buyer centric means that business approaches and strategies are organised from the perspective of the customer experience. In a buyer centric approach, it is all about the customer. The supplier aims to listen and understand what the customer wants, and then supports the customer to achieve their goals

whilst, simultaneously achieving its own (Mitchell 2004). In a supplier-centric approach the supplier aims to provide information to the customer regarding their products or services, focussing on what they can offer the customer in terms of product information, operations, and unique selling points. (Mitchell 2004).

Ashari, Heidari and Parvaresh (2014) and Buhalis, Leung and Law (2011) explain that with the technological revolution and the introduction of the internet, buyers have gained bargaining power due to ease of access to information enabling them to better understand market offers and conditions. Suppliers have invested a significant portion of their marketing and communications strategies to online business, thus ICTs place users in the middle of this functionality and product delivery. The use of the internet has given consumers direct access to suppliers across the globe. Consumers have been described as becoming more active, knowledgeable, and postmodern, meaning that this is a new type of consumer that interacts on a high level. It is for this reason, that emerging ICTs are changing the way consumers accept and adopt new technologies, thereby affecting their buying behaviour (Claffey 2008). The end consumer, in this instance specifically the traveller, can at any stage make a booking with a supplier, however the responsibility then lies with the consumer to know and understand the advantages and disadvantages of making direct bookings. Gloria Travel Services (n.d), Tech ICT (n.d) and Buhalis and O'Connor (2005) identify these pros and cons of ICTs for tourism customers.

Advantages:

- Consumers can pay online for services without having to go to a physical location.
- Credit card payments or wireless transfers are accessible and user friendly.
- Consumers compare prices on a range of hotels and find the best offer available to them from multiple platforms.
- Consumers can receive immediate confirmation of their booking.
- Less bureaucracy and paperwork.
- Alleviation of double booking or over booking as bookings are made on the supplier's real time booking system.
- Reduction of language barriers.

The disadvantages/challenges that consumers need to consider include:

- Exposing personal information and valuable data to unauthorised people.
- Suppliers, at times, do not accept online payments and travellers may need to pay directly at the hotel, however this is often in order to avoid potential online fraud.
- Consumers are unable to get advice from an expert.
- Consumers cannot ask for assistance when errors occur.
- DMCs have representation on the ground, and should consumers book directly they may battle to get the assistance they need.

There are also five stages in the buyers decision-making process as to whether a purchase will be made online or offline, as explained by Kotler, Bowen, Makens and Baloglu (2017) and Buhalis, Leung and Law (2011):

1. Need Recognition

Customers do not want to wait, they want fast, efficient, comprehensive, and personalised turnaround, therefore the key to success is identifying the customers' needs swiftly. With the popularity of the internet to search for information, tourism organisations must both publicise their offerings as well as collect customer data, to ensure smart technology is able to make recommendations and assist with customer searches.

2. Information search

Universal search refers to the integration of additional media to ICTs. These are elements such as videos, images, graphs, and maps. The aim being to minimise a user's time and effort when searching for further information, making a tourism product more tangible and thus, meeting the needs of the user (Search metrics, 2007). Buhalis and Law (2008) and Buhalis, Leung and Law (2011) agree that information search is a significant part of the purchasing decision process. A well-informed consumer can interact better with local resources, they can reduce any uncertainty or perceived risk and enhance the quality of their trips as they are able to find products and services that meet their requirements. Research conducted by Luo, Feng and Cai (2004) found that tourists who did research on the internet tended to spend more time at their

destinations than those who consulted other forms of information sources. Different demographic characteristics such as age, gender, and nationality display different patterns for searching information. While some consumers are more comfortable with the internet others prefer to still use the traditional TDC. Travellers also require different information at different stages of travel, for example, before departure they may seek information about availability, accommodation options, activities to do, transportation and so forth. They may further seek information, for reassurance from review sites and they may join virtual communities to share their own feedback. According to Swarbrooke and Horner (2007) there are four major factors that influence information search in tourism, namely, the composition of the traveller, whether there are family and friends at the destination, whether they have visited the destination before and lastly, the degree of novelty associated with the destination. As tourists become more sophisticated and comfortable with ICTs, they will use a wider set of tools available to them such as reservation systems, online travel agencies such as Expedia, search engines and meta search engines such as Google, DMS, social networking, Web 2.0 portals such as TripAdvisor, comparisons sites such as Trivago, and sites of individual suppliers and intermediaries (Buhalis 1998).

3. Evaluation of alternatives

The emergence of ICTs has drastically increased the number of products and services available online, and consumers now have a wide range of choices available to them and they are now able to evaluate and compare different offerings. The internet has also enabled consumers to engage directly with suppliers and are therefore challenging the roles of the various stakeholders in the traditional TDC. It is for this reason that tourism organisations and destinations manage their online reputation in order to project a desirable image with regard to all aspects of their online presence. According to Wolfe, Hsu and Kang (2005), the reason that some consumers do not purchase travel products online is the lack of personal service, security issues, lack of experience, and the fact that online purchasing can be time consuming.

4. Purchase decision

More consumers are starting to purchase tourism products and services online, and as such understanding customers' perceptions and their online behaviour is crucial to the development

of a successful website. Recommender systems can provide valuable information and identify customer requirements to assist them in their decision-making process. Visuals are another significant motivating factor which have a direct influence on customer decisions. Reaction and response times from organisations also influence customer decisions and satisfaction. Understanding customers' online behaviour increases the possibility of an online transaction being completed.

5. Post purchase behaviour

Post purchase behaviour is the reaction of the consumer, it gives an idea of their likes and dislikes, preferences, attitudes, and satisfaction towards the product. It is important to know whether a consumer's purchase motives have been achieved as this can predict possible further and continued business. Once the traveller has returned home, they may wish to share their experience and exchange information. Tourism organisations should have a feedback handling section on their websites for customers to provide negative or positive feedback, creating a formal channel of communication between management and customers. A leading review site for hotels and destinations is TripAdvisor. Customers can share their experiences and provide electronic "word-of-mouth" reviews in an open forum, holding organisations accountable in public. Virtual travel communities (VTCs) have also become one of the most popular areas to post about travel experiences. Travellers want to meet and share experiences with other travellers who share the same attitudes, interests, and way of life. As Buhalis, Leung and Law (2011) explain, if one analyses the valuable information and content provided by travellers on VTCs and review websites, tourist organisations are then able to understand customers' satisfaction levels and behaviours and take corrective actions to improve their offerings.

From the above we can recognise the importance of ICTs and how e-tourism is at centre of the tourism consumer purchasing process. Múgica and Berné (2020) advise that customers have changed their booking patterns away from the traditional TDC and are now making more purchases through online distribution channels. Minghetti and Buhalis (2010) statement is therefore quite true in that tourism businesses, especially SMTEs and DMCs, with low ICTs will cut themselves off from electronic

distribution and e-commerce. Approximately 73 percent of the European Union are currently purchasing tourist services online (Eurostat 2020).

Minghetti and Buhalis (2010) have identified four categories of tourism markets, which are described as follows:

1. High-digital-access tourists

These are tourists who are extremely comfortable with the internet and have high online transaction conversion rates. They have a high socioeconomic status and live-in countries that are at the top of the information society. These tourists have no problem navigating their way through the web searching for the information they need and are confident making online payments. Van Dijk's model explains these tourists as the "information elite".

2. Upper-digital-access tourists

These are tourists who have a good level of access but their acceptance and capacity to ICTs are strongly influenced by psychographic characteristics such as age, race, and education, as well as their connectivity issues. This group is influenced by the behaviour of the high access community but are more lookers than bookers. There is indication however, that they are starting to trust bigger brands with online transactions.

3. Medium-digital-access tourists

These are tourists with medium to low motivation to access and use ICTs. Reasons for this may include limited or no private access to the Internet, they may not trust online providers and are afraid to use credit cards online, a shortage of hardware or software infrastructure, connectivity issues and/or low economic development.

4. Low-digital-access tourists

These are tourists with minimal structural (technological, economic, political) access to ICT infrastructure. ICTs are irrelevant in their realities and therefore their digital skills are also poor. Tourists in this category, in many instances, do not even have credit cards to make online purchases and may reside in a developing region. These tourists are disconnected and excluded with limited understanding of the benefits of ICTs.

2.2.3 Global sourcing

Global sourcing is a procurement strategy whereby companies and buyers source goods from both inside and outside their countries borders to take advantage of global efficiencies and ensure competitiveness (Agarwal n.d).

As consumers become more worldly and technologically savvy the demand for more and better products and services grows, therefore companies must keep up with rapidly changing technology to ensure they are constantly improving customer service. Suppliers and DMCs need to work together to ensure that they can offer not only the product, but the destination, at a competitive price and provide customers with a clear and compelling reason to visit (Agarwal n.d).

Buhalis (1998) has indicated that there are certain drivers for tourism and hospitality globalisation. These drivers are divided into four categories. First, cost drivers, which echo the above-mentioned benefits such as increased efficiency, and low distribution costs, because they do not have to print brochure material and thereby save on communication and labour costs. Second, market drivers can satisfy sophisticated demands by conceptualising an offering, and corporate intelligence can be gathered by tourism bodies who can then drive business based on information gathered. Accurate information is challenging when things can change every day, and if there is still inventory left, suppliers can introduce last minute deals and other incentives. Third, government and regulatory drivers can influence tourism. There may be deregulation, which is the reduction or elimination of government involvement with the liberalisation of tourism laws or, alternatively, there may be more government involvement or government grants and supported initiatives. Lastly, competitive drivers include managing the networks of enterprises and value-added skills building. In addition, strategic tool barriers need to be high so that viewer competitors do not enter the market too easily. All this implies that ICTs have revolutionised the management of contemporary organisations and have thus introduced a transition in the way businesses operate (Aurélien and Desiré 2014).

Global sourcing in comparison to domestic sources has the following advantages:

- Taps into skills and resources that are not available in the home country

- Can seek a wider variety of suppliers
- Meet competition
- Shorter lead times
- Learning global business skills
- Utilises efficient supply chain management systems

Global sourcing does also come with its own set of disadvantages namely:

- Hidden costs related to time zone differences
- Managing long distance with a complex TDC
- Language barriers
- Long lead times
- Cultural differences
- Financial and political risks associated with emerging economies
- Weaker relationships with suppliers
- Foreign currency fluctuations
- Distance issues
- Increased risk of data loss
- IT security

Previous forecasts by Lock (2021) state that the market share of e-services will equate to 30 percent of all transactions in the European tourism domain. In 2011 the numbers of online travel bookings were at 39 percent in the USA, and 38 percent in Europe with revenue of \$340 billion. As of January 2021, there were already 38.13 million active internet users in South Africa, indicating that more and more people are turning to digital era ICTs and e-services to finalise their travel arrangements (Johnson 2021). Suppliers need to look at digital distribution and what the functions are, namely, providing information, packaging, and payment. Procurement plays an especially important role in these three functions. As a result, brand direct sites may not be successful, because consumers want all-inclusive packages. Werthner (2002) states that systems must become “active” to allow users to access information at any time from any place, guide users in the decision and travel process, whilst allowing product bundling.

Operators need to be “aggregators” because bundling is seen as a “new” product and packaging is one of the functions of distribution.

Dof (2001) and DelVecchio (2019) explain the reasons suppliers are making use of e-procurement as follows:

1. To promote competition among suppliers with broader options while maintaining reliable sources of supply.
2. To optimise inventory levels with shorter transaction times through the adoption of efficient procurement practices.
3. To ensure effective use and increased productivity of human resources in the procurement process.
4. To promote the use of e-commerce in the wider economy as e-procurement software supports multiple currencies, languages, and international taxations.
5. To improve procurement expenditures. E-procurement can reduce transaction costs, can provide, or receive spot discounts, and allows for the consolidation of suppliers.
6. To be progressive in the adoption of procurement related ICTs.

2.2.4 Paperless

Due to the use of computers and other electronic media, data can now be recorded, conveyed, and stored entirely by electronic means, without hard copy documents thus promoting paperless offices.

Ahiabenu (2017) describes a paperless system as an operation in which paper is reduced significantly or eliminated to save costs. A paperless system makes information and knowledge more accessible, saves space, provides better security of information, reduces manual keying, improves processing quality, and increases overall effectiveness and efficiency.

Paperless operations through digital transformation requires advanced technology and leadership. Mobility and cloud computing technologies have led to a digital explosion and consumers now have access to any data, anytime, anywhere and across multiple devices (Dev and Baishnab 2014). The

selection of the right process management system or electronic content management system is therefore crucial and can provide a substantial boost to an organisation. These systems run on software and hardware that promote workflow processes, manage creation, storage, and control of content electronically. There are several advantages and disadvantages to going paperless which are identified by Ahiabenu (2017), Gupta (2015) and Dhumne (2017) as follows:

Advantages

- Improved productivity as information can be quickly located and understood
- Meet customer demands for speed and service
- Reduce operating costs as physical storage is no longer required
- Easier collaboration both internally and externally
- Increased security by adhering to new data compliance requirements like the General Data Protection Regulation
- Environmentally sound as the organisation would significantly reduce consumption of valuable resources
- Limits the loss of important documents when scanned and filed
- Opens the opportunity for employees to work remotely
- Ensures greater accuracy
- Organisations can become more flexible
- Real time access to data

Disadvantages

- Cost of introducing a paperless system is high
- Costly and continuous hardware and software upgrades
- Staff attitudes, culture, and practices towards a new system
- System failure
- Requires investment of electronic security and privacy protection mechanisms
- Potential human input errors
- Number of different languages and vocabularies

- Limits creative freedom
- Training is required
- Ongoing back up procedures

Ahiabenu (2017) states that paper will give way to electronic means of recording information. This statement is backed up by the International Data Corporation who predicts that by 2025 160 trillion gigabytes of data will have been created worldwide. However, Marsh (2018) advises that workplaces are far off from the paperless offices they had hoped for, but that digital technology has helped reduce paper consumption. Most businesses still rely heavily on printing hard copies and going paperless is unrealistic. Clements (2017) reports findings indicating that the portion of companies actively accessing the processes which reduce paper use has almost doubled in size since the previous year, which indicates that organisations are making the shift from the old economy to the new economy.

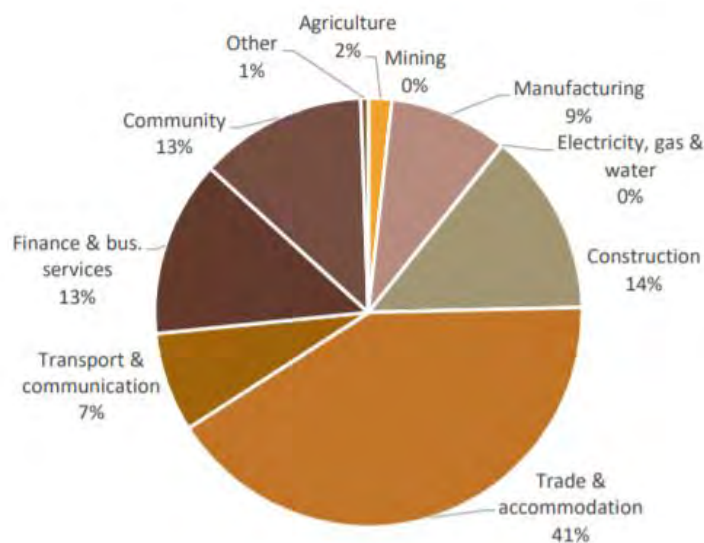
2.2.5 Inexpensive systems

Inexpensive systems are those ICTs that have been designed for communication purposes ensuring that their functioning provides the most effective use of money or effort invested for companies, thus ensuring affordability for them. These inexpensive systems are suitable for SMMEs.

Tourism is a major component of the economy in South Africa compared to other sectors, which can be seen in Diagram 4 below. Statistics provided by the Small Enterprise Development Agency (SEDA (2019) reports that the number of Small, Medium and Micro Enterprises (SMMEs) in South Africa grew by 4.4 percent year-on-year to 2.55 million in 2019. The percentage of these operating in trade and accommodation in 2019 was 41.3 percent which is a two percent year-on-year growth from 2018.

Diagram 4: SMMEs by industry in 2019 Quarter 1

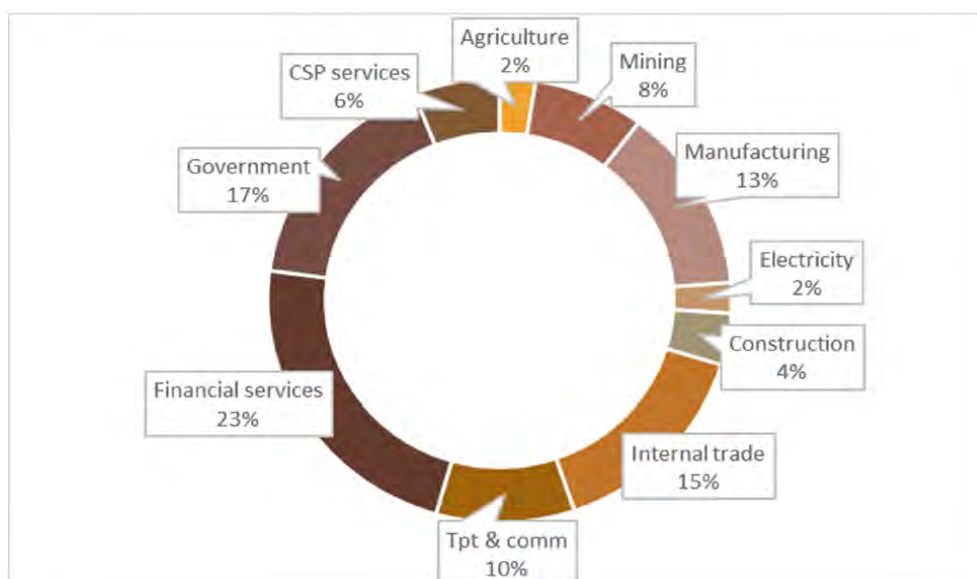
Source: SEDA (2019)



SMMEs collectively have considerable influence on the South African economy, and particularly within the tourism and hospitality industry. This can be seen in Diagram 5 which shows that transport and accommodation accounts for ten percent towards South Africa's GDP, thus making it one of the largest contributors to the South African economy. For this reason, SMMEs should be given greater consideration, to help them innovate and adopt systems such as DMSs that will help them expand and survive in this digital revolution.

Diagram 5: South Africa GDP by main economic sectors in 2019, Quarter 1

Source: SEDA (2019)



SMMEs would particularly benefit from DMSs as it will allow them to pool their resources and assist in competing with other larger industry players. Crystal, Leung and Law (2011) indicate that SMMEs seem to have not made a concerted effort to use ICTs within their businesses. The main challenge according to Ashari, Heidari and Parvaresh (2014) is that SMMEs focus on dealing with human resource management and ICT is not prioritised. Furthermore, SMMEs want to see immediate returns on investments, which is prioritised over long term returns.

DMSs have emerged in the tourism industry to take advantage of e-tourism, e-services, and e-commerce and in doing so acquire a competitive advantage (Abdal-Fadeel 2011). DMSs are managed by DMCs, who are responsible for managing and marketing tourism in a region, there are however many internal and external factors that contribute to the effectiveness of such systems (Buhalis, Leung and Law 2011).

DMSs use ICTs for several functions, including integrating all partners in the TDC both overseas and locally, administrating a wide range of requests, providing information on an ever-increasing supply of tourism products, collecting tourist data (before, during and after travels), sale of the tourism products and services through an online booking facility, co-ordinating operational functions, promoting tourism policies and assisting with the management of DMCs. It is for these reasons that DMSs are a critical tool for the marketing, communication, and improvement of the destination competitiveness of a DMC (Buhalis, Leung and Law 2011).

Youcheng and Russo (2007) and (Sigala 2012) describe five important components of a DMS as follows:

Virtual information space (VIS)

VIS provides comprehensive and quality information regarding products and services about a destination through internet-based channels. This can be done via multimedia forms of information such as text, photographs, videos, live webcams, 3D pictures, and videos. Customers rely on timely, accurate, efficient, and fast exchanges of information. Without this the customers motivation, ability to

travel, expectation and experience can be severely limited (O'Connor and Frew 2002). Tourism products are intangible, diverse, and often not purchased in isolation, thus the provision of comprehensive and relevant travel information in a virtual environment are required to assist in making a travel decision. Xiang, Wang, O'Leary and Fesenmaier (2015) and (Sigala 2012) state that satisfactory content should always include the following:

1. Provision of quality specialised content and interactive media on a destination's "4A's" being amenities, accommodation, attraction, and accessibility.
2. Multiple and interactive ways for searching and filtering information.
3. Provision of personalised information and recommendations.
4. Content and or mini portals development for specific segments such as individual travellers, business travellers, and tourism suppliers, among others.

Virtual communication space (VCS)

VCS provides effective and constant communication with consumers. Abdal-Fadeel (2011) describes this component as an additional space where customers can get together to exchange information, ideas, experiences, engage in relationships and build unique virtual communities.

Rheingold (2008: 3) describes a virtual community as "a group of people who may or may not met one another face-to-face, and who exchange words and ideas through the mediation of computer bulletin boards and networks". These channels are available to various stakeholders namely customers, suppliers, or strategic allies. However, they are becoming increasingly popular for like-minded individuals to communicate and influence each other's decisions and opinions. Consumers trust their peers more than any marketing strategies or messages. Companies find these channels the least attractive because of the very nature of communication, as advised by Ridings and Gefen (2004). Tourism practitioners should therefore attempt to understand VTC users' behaviours and motivations to assist with amendments and applications of their policies, operations, and management. Driven by consumer centric markets, suppliers need to adapt or risk losing business. Other communication channels used in businesses are email, texts, chats, forums, fax to email and lastly, social media such

as Facebook, Twitter, LinkedIn, TripAdvisor and YouTube, which attract millions of internet users (Parvez et al. 2018).

Virtual transaction space (VTS)

The VTS function enables DMSs to generate revenue both internally and externally for their stakeholders. Business transactions include payments, orders, and invoices but the predominant use of this space in e-commerce is for payments to be carried out online. Karanasios (2008) found that the transaction space was the least used among small tourism enterprises in developing countries, as they face challenges such as poor logistical systems, financial institutions that cannot handle online transactions, lack of IT knowledge and security risks related to online payments. Sigala (2012) provides a list of features a booking engine VTS should feature:

1. Secure sock layers and technology to ensure secure online transactions.
2. Privacy policies and technology guarantees that ensure the appropriate collection, storage, and analysis of personal data.
3. Multiple payment options such as credit and debit cards, PayPal, and direct money transfers.
4. Booking engines with multiple search engines through which the traveller can find, filter, and compare various products.
5. Personalisation using recommender systems to promote cross selling, up selling, and substitution of products in the case of unavailability.
6. Dynamic packaging tools so that customers can build their itineraries and diffuse their expenditure and visitation in more destinations, and with multiple suppliers.
7. Online advertising opportunities for tourism suppliers.
8. A section where last minute deals and online promotions can be advertised.

Virtual distribution space (VDS)

Travellers are increasingly becoming more mobile device driven and therefore DMSs must ensure that their information and services are easily accessible and distributable on various devices and media. DMSs should therefore follow a multiple distribution strategy which can include:

- Internet
- Mobile devices
- Navigation tools and devices
- Digital TV
- Information kiosks
- Blue ray and DVDs
- Printed material
- Call centres
- Information centres and offices
- Profiles on social media

Virtual relationship space (VRS)

VRSs facilitate appropriate and sustainable relationship building mechanisms with tourists. This can be achieved with the introduction of an (e) Customer Relationship Management (CRM) system. (e) CRM allows DMCs to interact with their customers in a personalised way by providing them with customised solutions and offers. These strategies may include loyalty programs, special offers, club memberships, incentive programs, free news updates, secure transactions, and building social community functions. An (e) CRM system can therefore have multiple positive impacts on a destination, as well as DMCs, by increasing the loyalty of travellers and ensuring a larger percentage of repeat visitors as they return to exchange their points or get their special price.

Having established the important components for DMSs above, Buhalis and Spada (2000) conducted surveys to identify the most important influencing factors for customers, travel agents and suppliers when using DMSs. The following are the top 10 items identified for each.

Top 10 factors for customers when using DMS:

1. User friendly and easy to understand
2. Comprehensive destination info before, during and after a trip
3. Online booking facilities and confirmations

4. Speed of transaction
5. Range of prices available
6. Late availability information
7. Secure payment method
8. Option to conduct virtual tours
9. Ability to book a product through a variety of distribution channels.
10. Online help functionality

Top 10 factors for suppliers when using DMS:

1. Reliability and accuracy of services
2. User friendly and easy to understand
3. Distribution of information globally
4. Collection and compilation of market information
5. DMS commission fees charged on booking
6. DMS increased awareness and visitor levels
7. Impact of cost on membership
8. Reduction of cost on computer equipment
9. Need to receive guaranteed booking
10. Interface, and sharing information with other suppliers

Top 10 factors for travel agents using DMS:

1. Accurate and reliable
2. Quick and reliable responses
3. Instant online reservations
4. User friendly and easy to understand
5. Depth of information and product range
6. Guaranteed booking
7. Real time availability of information
8. Booking commissions

9. Unbiased destination information
10. Tour operator terms of commission revenue

Each party within the TDC whether supplier, travel agent, or consumer, have different requirements in terms of using a DMS, as highlighted above. Furthermore, for DMSs to be successful there are various criteria that they need to meet as highlighted in Diagram 6 below.

Diagram 6: Success criteria for DMSs stakeholders

Source: Information Technology & Tourism (Buhalis and Spada, p44. 2000)



The major roles of DMSs are e-distribution, e-marketing and e-sales for wholesale destinations and its suppliers. To elaborate, DMCs coordinate activities to form packages for onward selling by Tour Operators. They promote the services of their selected partners (suppliers), aim to attract tourists to their destinations, support suppliers in increasing the quality of their offerings, assist local tourism and

public authorities in the acquisition of global tenders, as well as ensure international market competitiveness (Petti and Passiante 2009). In addition to these roles is that of e-procurement. As the hotel industry grows into a more technologically advanced industry they need to understand and adopt e-procurement practices (Aikins et al. 2014). The goal is to move the entire procurement process online, bringing together distributors and operators to enable a streamlined automated purchasing cycle. This has resulted in the emergence of an e-procurement concept (Aikins et al. 2014). This electronic form of doing business has been somewhat slow to be adopted (Mozeik 2004).

It is therefore essential to develop e-business strategies and DMSs that support operation management processes which integrate e-supply chain management and e-procurement, from the formulation to implementation of an internet-based purchasing system (Sitar 2011). Larger companies are more open to adopting e-procurement as they are able to generate more volume (Papatheodorou 2006).

DMCs are regarded as an emerging complementary distribution channel as well as a strategic tool to re-establish equity in the distribution of power and profit between tourism distribution channel members, and to enable the host population to maximise the positive impacts (Aikins et al. 2014). In addition, DMCs makes use of ICTs as a strategic business tool, and it is therefore important to purchase the correct DMS for their business model (Roman and McCue 2012: 212-238). A number of DMS portals have proven to be highly successful owing to their networks and the capabilities existing behind them, for example, Tiscover and Gulliver's (Capasso, Dagnino and Lanza 2005). DMS will be a leading and significant body to manage a destination, developing into a total destination management system (Aurélien and Desiré 2014). A total destination management system through ICT has the following advantages and disadvantages for DMCs as expressed by Bang, Han, Animesh and Hwang (2014), Buhalis and O'Connor (2005), Ma, Buhalis and Song (2003), Annan (2005), Rita (2000), Buhalis and Spada (2000) as well as Petti and Passiante (2009).

Advantages

- Can develop and reinforce local tourism, entrepreneurship, and activities.
- Develop genuine offerings and enable direct promotion and commercialisation.

- Provide opportunity to reduce the traditional disadvantages of small operators for example, enabling SMTEs to overcome their dependence on monopolistic tour operators, who currently control the marketing & distribution channels of smaller tourism organisations.
- Provide multiple distribution channels for niche markets.
- Improve online presence (visibility).
- Reduce cost by, for example, decreasing promotional material.
- Reduce times for undertaking activities, for instance, systems can automatically collect, process and store data which can be used to support research monitoring and evaluation.
- Increase quality; any distributed material can easily be edited.
- Increase effectiveness through targeted approaches.
- Provide comprehensive and accurate information, marketing research and statistical analysis capabilities.
- Facilitate technology access by providing training.
- Work on increasing the satisfaction level of all involved in the TDC through information and communication technology.
- Provide a reliable electronic online booking and payments platform to increase business.
- Support policy and strategy formulation by providing collaborative areas where staff can work together.
- Serve as an inventory of all tourism products and services.

Disadvantages/Challenges

- Lack of infrastructure which is divided into different segments:
 - Fear of business processes changing relationships and structure within a business;
 - Human infrastructure which includes skilled people, vision, and management;
 - Legal infrastructure are challenges around regulations, subsidies or legal framework around online advertising or marketing.
- Security of information; ensuring that all business information is safe from cyber security risks.
- Strategic and efficient implementation.
- Lack of IT experience, this includes:

- IT education and training;
 - Lack of systems knowledge;
 - Challenges with upkeep of data, websites, and content;
 - Establishing electronic linkages or integration between all related sectors.
- In general, there also seems to be a lack of interest and lack of standardisation in the industry, as well as a lack of concentration of market efforts in the local markets.
 - Conflicting interests of different players in the tourism industry.

The tourism industry is unique in its sector because it is made up of different organisations that complement each other such as, transportation, hospitality, activities, and travel agents to mention a few. Due to the industry's uniqueness, adopting new ICTs takes time, careful consideration, and strategic planning. The complexity of the industry makes it difficult to critically analyse the sector (Capasso, Dagnino and Lanza 2005). According to Bang et al. (2014), the digital economy evolution and processes in various countries show that, since the inception of online activities, it takes approximately three years for hyper growth to take place.

Bang et al. (2014), Buhalis (1998) and Petti and Passiante (2009) further argue that, in spite of the challenges in adopting ICTs, there are also many benefits that can be gained by suppliers, which are elaborated further in the advantages and disadvantages of ICTs for suppliers below.

Advantages of ICTs for suppliers

- The convenience for customers being able to gain access to booking sites 24 hours a day, seven days a week, 365 days a year, no matter where they are located, whether they are at the office or at home, thus increasing and providing speed to market.
- There are a variety of different ICT software programs and channels available for suppliers. These systems can be used for bookings and sales purposes, which increases the speed of transactions. Examples of such software programs are E-res, Opera, Tourplan, Travel Studio and Travellogic, among others.

- These ICT software programs can be moulded to meet each organisation's requirements, for example, currency choices, mark up or margins, and so forth. The customisation and personalisation of ICTs are what will differentiate one service from another. The ability to customise the ICTs can also significantly reduce operational costs.
- When purchasing ICT software programs many of the processes are automatic, logged and saved. When the time arises to analyse and collect data, information will have been captured in a central point making the extraction of the information easier, quicker, and more accurate.
- The software systems usually contain a front-end and back-end portal. The back-end portal is where companies populate information, make bookings, and amendments. This information is then pulled through to a front-end portal which the customers see. The front-end portal can be either a B2B or B2C. These front-end portals contain all the information the customers may need. It is continuously updated with accurate, real-time information and is available to them at any time.
- These software program systems assist companies with regards to yield management. What this means for companies is that they can sell rooms and get the maximum rate for each room category sold. When demand is low and there are many rooms available there will be a lower rate in the system. As the demand increases and the number of available rooms decreases, suppliers can apply higher rates for these rooms. The management of the rooms and which rate to charge is called yield management.
- There is an increase in efficiency, for instance, through the delivery of targeted promotional campaigns for specific, high-value segments or individuals (using CRM applications). The marketing message can be spread at a rapid rate.
- The high quantity of information available to customers, provides them with a feeling of being empowered, and they can make decisions when suitable.
- Systems are very often cloud based, allowing for worldwide access.
- Service providers can switch offers on and off for certain target markets, enabling suppliers to do direct promotions.

- Being accessible around the world means geographical barriers are eliminated, service providers can improve their online presence eliminating the necessity of one-on-one physical interaction.
- ICTs can act as drivers for tourism development. They create job opportunities in multiple fields such as, web developers, data capturers, and trainers, among many others.
- It enables value chain partnerships in that, suppliers can link systems with operators, and operators can link to other operators, forming a web of partnerships suitable to each business.

Disadvantages and challenges of ICT for suppliers

- The systems used for retailing services to the DMCs, direct customers, and so forth are expensive. For this reason, the ability to purchase this offering by small bed and breakfast establishments (B&Bs), guest houses, boutique hotels, just to mention a few, becomes limited.
- Once the system is purchased, the directors/business owners also need to look at return on investment. For example, will these systems ease workload and increase sales?
- There are multiple options with regards to purchasing a system and there is a general lack of knowledge regarding options, and which is most suitable to a particular business.
- When new software is installed, the required skills may not be available to work these systems.
- There may have to be changes to an organisation's structure to accommodate the characteristics of the new technology.
- With information continuously changing, it is difficult to keep systems accurate and up to date, ensuring that the most correct information is always available and displayed.
- Software systems have specific requirements to operate effectively. This could mean that a business may need to acquire new, or augment, hardware to handle processing capability requirements.

Ashari, Heidari and Parvaresh (2014: 13) succinctly state that the "industry needs professionals who are technically trained to deal with ICT tools, systems and information sources". Tourism professionals also need profound knowledge in areas of marketing, finance, management, statistics, and distribution trends as their roles also involve rigorous revenue management. Successful navigation is possible only

if professionals have the skills to identify efficient combinations of distribution channels and opportunities for cross promotion and cross selling. Therefore, the provision of online travel services is the single most successful business-to-consumer (B2C) segment on the Internet.

There are several authors namely, (Buhalis and Spada 2000; Rita 2000); Buhalis (2003); (Collins, Buhalis and Peters 2003; Youcheng and Russo 2007) who have all asserted the importance of comprehensive and consistent information which DMCs do not have. At the time of writing, management of information as well as bookings/reservation functions, are the key for effective DMSs. Generally, the more powerful ICTs and DMSs become the more accessible and user-friendly they appear, resulting in organisations revolutionising their strategies, competitiveness, and operational processes (Aurélien and Desiré 2014). The revolutionisation of ICTs has changed the way that businesses operate (Aurélien and Desiré (2014). However, some say that larger companies are often more open to adopting ICTs and e-procurement as they have the capital to invest in the software and hardware required (Batenburg 2007). However, Aurélien and Desiré (2014) state that small independent local tourism enterprises stand to gain the most. Emphasis in the future needs to be on how DMSs can provide stakeholders with the “5Cs” benefits namely, choice, convenience, confidence, consistency, and competitive pricing.

In summary, the lessons and issues taken from all the information above on ICTs using Wi-Fi or Internet for communications are that entities within the TDC may have different needs. Suppliers and DMCs will need to find ways to work together efficiently and with greater collaboration to take advantage of the opportunities open to all parties such as cost saving, lower distribution, and corporate intelligence. Funding will always be a critical challenge as the TDC in South Africa still finds the technology to be too expensive. ICTs are therefore not a priority for DMCs and SMTEs as they want to see immediate return on investment, which is understandable, but by not investing they will cut themselves off from electronic distribution and e-commerce. This may result in B2Cs such as OTOs and OTAs dominating with approximately 40 percent of the market share. The Internet has given buyers direct access to suppliers around the globe. Buyers are gaining bargaining power as they can also now make reservations in a fraction of the time, cost, and more conveniently than what is required through the traditional TDC. The trend and goal are to move the entire procurement process online, bringing together distributors and

operators to enable a streamlined automated purchasing cycle. DMS is a critical and significant tool for marketing, communication, destination management and to improve destination competitiveness of DMCs. Mobile, wireless and cloud technologies, have led to a rapid digital upsurge and customers now have access to data anytime, anywhere, and across multiple devices which has further led to the promotion of e-commerce.

2.3 ICTs for the use of social media

Social networking platforms are powerful tools in tourism. Using these tools for travel related purposes has grown, with Facebook and Instagram being the most popular. According to the study "Digital Channels in Travel" conducted by Deloitte Leisure Travel, companies are failing to fully capitalise on the business opportunities offered by social networking platforms. These opportunities include sourcing new customers, fun and interactive technologies to promote offerings, effective communication, management of online reputations, access to global audiences, and the ability to partner with brands anywhere around the world that complement companies and business (Morais et al. 2016).

Social marketing, unlike traditional media channels, provides the capacity for interactive communication. Facebook, Twitter, Instagram, and YouTube are the most popularly ranked social networks in the tourism industry (TourismReview News 2020). Tourism Review News has further identified multiple social marketing strategies that can be implemented such as, article marketing, whereby you promote travel destinations, travel trade events, or unique articles. Social bookmarking is also used, and this is the process whereby internet users organise, share, and manage web resources as a Search Engine Optimisation tool. Lastly, video marketing has become essential with more than 3.7 billion search queries being done on YouTube per month.

Social media can affect the bottom line. Carnoy (2017) and Pabel and Prideaux (2016) have identified ways that tourism has been impacted by social media. The most profound effect social media has had on tourism is democratisation of online reviews. Approximately 89 percent of millennials are making their travel plans based on content posted by peers online. People are browsing the Internet for inspiration and validation on social sharing sites such as Instagram and TripAdvisor. The second impact

is the rise of social sharing, with 97 percent of millennials sharing photos and videos of their travels online. Many hotels and resorts have turned to running social media contests and campaigns to ensure they get credit for their guests' social activities. The idea is to create user generated content for a brand that is free, authentic, and repurposed across marketing channels. Third, is enhanced customer service and satisfaction. Companies can respond to complaints and in the process develop a strong reputation with current and potential customers. By responding to and answering questions, complaints and compliments, the brand becomes humanised and shows customers that they are valued. Fourth, social media has had a major impact on the travel agency model. Travel agents have had to adapt to a more digital model to ensure the survival of their businesses, however, they do still retain the advantage of a personal touch. Fifth, social media allows companies to monitor their competition. The tourism industry is hugely competitive and in the last decade major players such as Thomas Cook have collapsed. Social media allows businesses to observe and monitor what the competition is doing thereby identifying and taking advantage of social media marketing opportunities. Lastly, is the effect social media has had on loyalty programs, a core piece of the travel business model. More than 25 percent of millennials that participate in loyalty programs are willing to post about their experience in exchange for loyalty points. Companies can therefore leverage social media to build brand awareness, increase brand loyalty, get positive reviews, encourage social sharing, and promote services and products offered.

Virtual communities are growing and becoming markedly influential in terms of tourism consumers and their decision-making processes. It has been shown that social media users trust their peers more than marketing campaigns. An example of a virtual community is a leading review site called TripAdvisor. The site allows consumers from around the world to review tourism products and services, and start forum discussions where they can share thoughts and ideas, obtain information, develop relationships, and make travel-related decisions (Buhalis and Law 2008). The success of the site is due to enthusiastic travellers wanting to meet other travellers that share similar attitudes, interests, travel experiences and to make recommendations (Wang, Yu and Fesenmaier 2002). Rheingold (2008: 3) explains that "a virtual community is a group of people who may or may not meet one another face to face and who exchange words, ideas through mediation of computer bulletin boards and networks". A unique social media strategy is virtual tours which are proving to be one of the most attractive features of tourism

portals. Virtual tours can make a product that seems intangible come to life using 3D models of buildings, panoramic photos, interactive maps, videos, and live web cams. The virtual tours help with promoting a destination, product, or service and can revolutionise a previously unseen product.

In summary the use of social media is becoming more popular, it has the capability to affect a business's bottom line. Virtual communities such as TripAdvisor are growing by the day as it allows for two-way communication but more in that, peers tend to trust each other's feedback more than marketing representation companies. The challenge with social media and online reviews is that it can, at times, be one dimensional and may only portray one point of view. Suppliers need to ensure that they invest enough resources to ensure swift and appropriate responses to reviews.

2.4 ICTs use of satellites

Automatic tracking can serve various functions and take many forms. For example, when travellers share their experiences on social media and Web 2.0 it automatically generates a tourist destination, the data is then further analysed using machine learning approaches. These include K-Nearest Neighbor (KNN), which is used for creating labelled datasets called Semantic tagged tokens, Doc2vec, which is used to represent documents as vectors and to predict the document context, and Convolution Neral Network (CNN) which is used for classification of various tourist spots based upon travel, safe and convenience labels Mishra, Lata, Llavoric and Srinathand (2019). Another form of tracking is by means of a GPS system, which has become quite an influential and lucrative area of business in travel and tourism. Vehicle Tracking Systems (2018) explains that GPS tracking systems can assist travellers with their trips and route planning which brings with it gains for the tourism industry such as:

1. Obtaining accurate trip details, such as estimated time of arrival, information regarding points of interest, and locations of emergency centres, among other essential location sites.
2. Improved route allocation: through proper route selection resources can be optimised, operating costs minimised, and user satisfaction enhanced.
3. Aware of delays: with real time alerts travellers can be made aware of any delays and diversions, and even assign a different route to avoid such delays.

4. Generate reports effortlessly: detailed reports of journeys can be extracted quickly and simply.
5. Discover unauthorised use of vehicles: Geo fencing is a provision that can be activated in any instance where a hired vehicle is used without permission. An instant notification is relayed via the GPS tracking system to notify individuals and companies of unauthorised use.
6. Real time alerts: GPS systems can notify vehicle users of speed limit violations.
7. Reduce the number of disappearance cases: often travellers may get lost, GPS tracking can aid in tracking their history and current locations.
8. Save money spent on a tourist's guide: no longer need to appointment a tourist guide.

The use of satellite technology is still a new but with growing application in the tourism industry. More research is required to fully understand the capabilities and benefits it has for the TDC in South Africa.

2.5 The future

Technology will continue to advance as industry is driven by increased demands, needs and innovation.

Poon (1993) identifies several developments that have caused transition in the industry:

1. Direct selling to customers is increasing.
2. Increase in new intermediaries through internet portals.
3. Customers have more direct access to suppliers through the internet.
4. Companies can more regularly alter products and services based on customer needs and expectations.
5. Increased transparency with all parties in the TDC.
6. Change in consumer behaviour.

It is believed that mobile technology will be accelerated in 2020 and beyond, thus transforming procurement for the next generation of young adults, as it is enabling people to work remotely and facilitating faster response times. Shanker (2008) predicted the above statement adding that mobiles will continue to advance with increased power, storage, connectivity, position, and capabilities. With this comes a greater need for cloud-based applications as on-premises procurement software will not meet

the required needs of e-procurement professionals. Cloud based management applications will bring along unlimited storage facilities and will thus have a great impact on data. In the past, gathering valuable data was difficult to manage and secure but, moving forward these platforms will allow for the capturing of structured data in an actionable format. Furthermore, it is predicted that the cloud will facilitate better collaborations between various departments within organisations, resulting in the collection of valuable data related to intelligence secured on market trends, supplier capacity, returns on investment, among other essential data collection areas. E-procurement managers should encourage this cross departmentalisation as it will lead to better decision-making and greater confidence in the procurement decision-making process. Current ICTs have many limitations such as highly fragmented information, as one example, and there is a need for a well-structured Information System or Intelligent System as advised by Shanker (2008). It is expected that procurement systems will become so evolved that organisations will no longer require procurement professionals, but instead they will have process experts ensuring a company's best practices are adhered to. Then there are software systems that will be able to predetermine market requirements and finalise negotiation strategies without any human intervention as orders would be based on pre-set minimum and maximum levels. Last, but not least, predictions are that when the digitalised supply chain arrives, the "digital nervous system" or "supply tube" will need to be reconsidered. It is expected that when an order is placed it will trigger a domino effect from reservations, front desk, accounts, inventory, all with zero intervention. All the above predictions have been made for the future by authors namely, Samuels (2016) and Johnson (2015) who agree that this is what is in store for the industry.

Revfine Optimising Revenue have also identified a few new opportunities and tourism trends as follows:

- Solo Travel: Family travel, multi-generational travel, and couples travel is still exceedingly popular however, solo travel is a growing market. The freedom to travel without distraction, finding other single travellers along the way for social activities and even with the elderly using long term stay hotels or cruises as an alternative to conventional elder care is becoming increasingly popular.
- Eco Travel: Around the globe consumers are becoming more aware of their actions on society and the earth. More consumers are opting for ethical and sustainable tourism options in this

increasingly relevant marketplace. Eco Travel includes simple changes, such as looking for fair trade accredited products and services, offering conservation and humanitarian volunteer programme travels and finding suppliers using green initiatives.

- **Local Experience:** Travellers do not want to be insulated from locals; in fact, there is an increasing demand for tourism packages which involve spending a day in the life of a local or even staying with a host family, enjoying homemade local cuisine, and celebrating and joining in on local festivities and holidays.
- **Personalisation:** Tourism marketing can be done in the same manner as other platforms using cookies and IP address tracking, thereby personalising marketing and advertising to customers' personal preferences.
- **Bleisure Travel:** This is a new concept which combines business and leisure travel, previously known as "bizcations". This can be an employee choosing to engage in a tourist activity in their downtime or arranging to stay on after their work duties have been completed for a few days.
- **Robots, chatbots and automation:** This is the implementation of robotics to handle certain functions, product, or services. For example, Connie, the Hilton Hotel chain's robot concierge. Many customers now also book holidays with the help of internet chatbots, with specifically tailored Artificial Intelligence (AI) to handle queries and assist customers with useful information.
- **Artificial intelligence:** AI is becoming increasingly valuable in smart hotels whereby guests' needs are identified, and environments and services are fine-tuned fit guests' preferences. A new AI concept that has come to the forefront in the last few years is the evolution of virtual guides tours.
- **Recognition technology:** This is one of the biggest growing trends and one of the most familiar applications of recognition technology are those at border posts, airport security access points and immigration. Guests or tourists can scan in their identification documents which are then matched to their faces using a camera and facial recognition technology. Another popular trend is that of voice recognition which is also becoming a more popular method of control.

- Internet of things (IoT): These are devices that are attached to equipment. For example, IoT is used to integrate services in hospitality, a hotel guest can book an activity, spa treatment, and book room services all in the comfort of their room via a hub or smartphone application.
- Virtual reality (VR): These include high end entertainment applications, such as sport simulators, virtual baseball, skiing, snowboarding or any other extreme activity. Essentially a traveller can “visit” destinations that they may not be able to physically access for various reasons, or destinations which may be too fragile for physical tours such as archaeological sites.
- Augmented reality (AR): Virtual reality stimulates entire environments and experiences whereas augmented reality combines real word experiences and virtual elements. AR smartphone apps for example, can show tourists information about an area that they are exploring. Museums frequently make use of AR. Virtual internet enabled maps are another form of increasingly used AR in tourism.
- Healthy and organic food: A new form of traveller with a demand for excellent cuisine and nutrition is driving new tourism trends. The organic food movement, and various types of diets such as, vegan, vegetarian, paleo, and pescatarian are all having an impact on tourism trends.
- Customer Experience: This has always been at the centre of the tourism industry, but with new technologies and an even broader array of options enhancing the customer experience it has become more vital.

Tourism is finally receiving the recognition it deserves, and it is becoming increasingly apparent that the new economy is emerging. The new economy is a service-based economy, and it is creating a new wave of service and human activities which no longer fit the standard definition of a service-based economy. Tourism continues to grow and leaders from around the world need to ensure they make tourism a strategic pillar of their country's future, as expressed by Dr. Taleb Rifai, at the Nueva Economia Forum in Madrid, Spain.

Dr Taleb has highlighted five reasons why tourism should be the strategic pillar of any sustainable economic future Ali (2013):

1. It creates jobs in tourism at a higher rate than any other sector, furthermore tourism creates wealth and jobs in other sectors as well. Tourists use local transport, buy local produce, and visit local attractions that may have related small business economies.
2. Tourism is one of the most resilient economic sectors, with the capacity and flexibility to adapt to changing conditions and recover from setbacks. An example of this would be the tourism sector recovery after the September 11th attacks in 2003, and the severe acute respiratory syndrome (SARS) outbreak in 2009, in the middle of the worst global economic crises of our time. International tourism demand has always bounced back stronger with above average growth rates.
3. Tourism reduces poverty and supports development. Tourism accounts for 45 percent of exports in developing countries and often these developing countries have an abundance of natural resources, which gives them a competitive advantage. In this respect, tourism is an increasingly important and effective tool aiding development.
4. Tourism is a major contributor to a more environmentally sustainable economy. A report by the United Nations identified tourism as one of the ten sectors that are vital to the greening of the global economy.
5. Tourism can contribute to world peace and understanding. Tourism brings people of different cultures, lifestyles, and backgrounds together and this alone has immense potential.

Capasso, Dagnino and Lanza (2005) provides the following example to show what elements are required for successful e-procurement in this digital world. They explain that, in 2005, Thomas Cook had been in the industry for more than 160 years. It started off as a single agency and today the group consists of 33 tour operators, about 3600 travel agencies and a portfolio of 76000 controlled bed nights, a fleet of 87 aircraft and a workforce of about 28,000 people. So, what is it that has made this company and brand so successful in the past is the travel culture that permeates through the whole group and at different levels of the value chain? These elements are:

1. Relationships with suppliers: Use new technology to gain access to low-cost suppliers and identify key suppliers that you want to build long term relationships with.
2. Relationships with customers.
3. Relationship with employees. Encourage relationships with employees and develop stable relationships with crucial employees.
4. Gaining and sustaining competitive advantage in this New Economy by taking advantage of competitive strengths in the old economy and linking it to new economy operations. Execute non-new economy parts of your business and ensure development of strong brand awareness. Rely on strategic alliances with partners to execute business activities, establish relationships with numerous other companies, of which some may give you an advantage whilst others will find it costly to imitate.

South Africa's three biggest challenges that will need to be overcome in the future when it comes to ICTs have been identified by BusinessTech as follows:

1. More Transparency: There must be more transparency on ICT investments made, especially in terms of infrastructure and capital expenditure.
2. POPI act compliance: This is a key policy relating to the protection of personal information act. Businesses need to ensure they are compliant and that they are protecting the information of anyone involved in the TDC.
3. Corruption: According to the Cape Chamber of Commerce corruption remains the number one issue facing ICT and business in South Africa. If this cannot be turned around South Africa will continue to see large capital expenditure in ICT being compromised.

Buhalis and Law (2008) and Buhalis, Leung and Law (2011) all confirm that it is evident that the future of eTourism will be focused on interactions with consumers and the consumer centric technology that will support these functions. As ICTs expand the impacts are becoming clearer, destinations and DMCs need to embrace ICTs and DMSs to improve their strategic positioning, competitiveness and optimise the benefits it presents to tourism. For DMCs to succeed in the future they will need to combine both

technological and management innovation DMSs to satisfy the entire traditional TDC. Only then will they emerge as an essential tool for both demand and supply in tourism.

2.6 Conclusion

This chapter has presented the literature on a number of operations in the travel industry worldwide. Almost none of it refers to how changes in these operations affect South Africa and at what pace. This is the gap in the literature that this research aims to fill by investigating in more detail how these changes affect DMCs.

3. CHAPTER 3 RESEARCH METHODOLOGY

This chapter explains the qualitative paradigm of research used in this thesis and gives details of the sample of informants and how the information was gathered.

The study was based on qualitative methodologies, as the researcher aimed to explore and better understand the human mind and behaviours with regard to the complexity of the phenomenon. Qualitative methodology, as described by Frochot and Batat (2013); (Ren 2016; Mohajan 2018), is research that relies primarily on human perception, exploration, interpretation, and understanding whilst applying a range of qualitative methods.

Qualitative research is inductive in nature and is often used in tourism to study different aspects of tourism experiences, such as understanding tourists' behaviours, attitudes, expectations, and perceptions. This type of social science research is non-numerical, instead it investigates people's experiences, perceptions, relationships, and social processes in a natural setting and interpreting meaning from these data can help us understand the phenomena (Frochot and Batat 2013; Ren 2016; Mohajan 2018).

There are various methods and approaches available within qualitative research, but some of the main methods may include: open-ended interviews, individual in-depth interviews, participant observation, case studies, secondary research and focus group discussions (Frochot and Batat 2013). Interviews and survey questionnaires were utilised in this research.

Qualitative research methods in the travel and tourism field have been a highly contested subject matter due to the complexity of the industry and its sometimes-intangible issues. Questions have been raised around the credibility and truth of findings and whether relevancies can be transferred to similar situations. Furthermore, tourism has both business-driven (quantitative) and socially oriented (qualitative) aspects, and therefore both quantitative and qualitative methods can be appropriately applied, inclusively or exclusively of each other. Qualitative research in tourism is continuously

expanding its selection of research tools, opening to new paradigms and subsequent methodologies to better accommodate and connect to the complexity and multiplicity of tourism (Ren 2016).

In this study qualitative methodologies were used to examine various ICTs, in the form of DMSs in the traditional TDC, to assess challenges, identify possible solutions, and to predict possible future trends in e-procurement in this new economy. The question we aim to answer through this research is:

How are DMCs handling the growth in demand for e-procurement, whilst having to constantly adjust with new phenomena and challenges due to the use ICTs? The methodology was suited to the study as it allowed for causal inferences based on observations.

3.1 Application of design and data collection methods in social research

There are a number of philosophical questions that relate to ontology, including, what the nature of the social world is, and what we know about it. Epistemology is concerned with ways of knowing and learning about the world. Epistemology aims to answer: how can we learn about the social world, and what is the basis of our knowledge (Ritchie et al. 2013)? The first of these relate to knowledge acquirement, the view thus being, that knowledge is based on induction which is a “bottom-up” process derived from observations, such as the ones conducted in this research. This deductive process uses the information as support in the conclusion. The second being, knowledge acquired through deduction, which is the view that knowledge is received as a “top-down” process. This is where propositions or hypotheses are tested against observations, in other words, involving evidence as the genesis of a conclusion (Soiferman 2010; Ritchie et al. 2013).

The qualitative methodology is reliant on interpretivism and constructionism as knowledge is produced by exploring, understanding, and interpreting the social world. The researcher has therefore constructed meaning and interpretations based on the feedback received from the participants in this study. This research is largely inductive in the sense that the interpretation is grounded in the data, though it is recognised that the conversations are “theory-laden” because they are mediated by the researcher who is embedded in the field of study. The researcher acknowledges that reality can be affected by the research process. Although the researcher has been transparent, she has also embraced subjectivity to become more personally engaged in the research.

In-depth interviews, being one of the main methods of data collection in qualitative research, as well as conversations were used in this study. It is important to note that sample size in qualitative research is usually small in size. This can be seen by the researcher choosing to only interview eight suppliers and seven DMCs as stipulated in Tables 5 and 6. There were three main reasons for this. Firstly, with data being properly analysed there comes a point where very little new evidence is obtained. Secondly, the sample does not need to be large to support statements of prevalence or incidence. Thirdly, the type of information yielded is rich in detail (Ritchie et al. 2013).

The researcher first used purposive sampling when selecting the first set of respondents namely, the suppliers for her study. Suppliers were selected based on specific criteria such as size of company, number of properties within the portfolio, and number of years in business, among other criteria noted in Chapter 3, section 3.1. Thereafter, the snowball or chain sampling method was employed to select the second set of respondents, namely, the DMCs. Due to the TDC following a specific chain, it was necessary to identify DMCs that work with suppliers and therefore, it was upon recommendation from the suppliers that DMCs were selected.

3.2 Population

The population consisted of DMCs as well as tourism suppliers, based in South Africa. The unit of analysis consisted of a convenience sample as individuals were identified prior to the study. Suppliers were selected based on the following criteria: 1) larger hotel chains with more than five properties or routings within their portfolio; 2) established tourism suppliers with DMCs; and 3) industry leaders that have been in the industry for over ten years. Suppliers that met the above criteria which were included in the study were: a marketing representation company (wished to remain anonymous), Avis Car Rental, Extraordinary, Fairmont, Isibindi, Legend Lodges, Protea Hotels and Red Carnation Hotels.

The researcher has, however, excluded many other services provided in the industry such as transportation services which includes transfers and day tours, activities, ticketing, owner run establishments, smaller or family run B&Bs, guesthouses, individuals, and any other services that do

not form part of a hospitality chain or marketing and management company. These smaller establishments were also excluded from the study as they may not have the financial and human resources to utilise the full spectrum of ICTs, including smart data usage. Certain suppliers also elected not to partake in the survey due to unclear strategies and for fear of communicating details that may upset the DMCs, thus showing that relationships are key in the industry. Lastly, some DMCs excluded themselves as they felt they were too small or did not have a depth of knowledge to comment constructively with regard to new technological e-procurement environments.

The study included hospitality chains and established services, each chain featuring several properties. Within the group, over 136 tourism services were investigated. The researcher elected to select DMCs through a process of recommendation by industry suppliers, and the DMCs with which they work. The reasons for this decision were due to the researcher's knowledge that not all suppliers work with DMCs, but rather take a very direct strategy, and/or, they focus on the domestic market. Furthermore, as the researcher was focusing on the distribution channel of, Supplier – DMC – Operator -Agent – Customer, a possible outcome was to recommend DMCs to suppliers. The DMCs included in this study comprise of Matriarch Africa, African Twist Travel, Midday in Africa, Elite Africa, Africa Pass, a large DMC (wishes to remain anonymous) and Giltedge Africa.

The researcher has excluded DMCs/SMTEs that are new to the industry and who are still building relationships with suppliers. Some DMCs do not work with the larger hotel chains who form part of the selected sample population, they choose to work with smaller guesthouses and B&Bs which are perhaps family or owner run.

The respondents are those dealing with marketing, reservations, or general management elements of hospitality, but not those working in finance. The use of ICT for financial accounting in the hospitality industry does therefore not feature. Only one supplier and one DMC wished to remain anonymous.

The sample population of both suppliers and DMCs has been broken down to provide, where relevant, names, descriptions, size of the company, the markets they specialise in or focus on, as well as service type. The following is the breakdown of the suppliers:

Marketing representation companies: The first company is referred to as Company 1 as they wish to remain anonymous. According to Landman (2020) from Xotels.com a marketing representation company works for property or service owners, promoting and managing the products and services through its sales force. They can lead in their respective markets, so marketing is a great deal more than just promotion. Company 1 has 28 products and services in its portfolio. The second marketing representation company in this study is Extraordinary and their portfolio of products consists of Black Rhino Game Lodge, Cape Milner Hotel, Clifftop Exclusive Hideaway, Country Boutique Hotel, Hamiltons Tented Camp, Hoyo-Hoyo Tsonga Lodge, Imbali Safari Lodge, Ingwenyama Sports Centre, Khaya Ndhlovu Manor House, Kwafubesi Tented Safari Camp, Mabula Game Lodge, and Mjejane River Lodge.

Independent product: Landman (2020) from Xotels.com explains that these suppliers are independently owned and run, that is, they do not belong to a chain of products or services. The products and services that fall into this category are Avis Rent a Car in Southern Africa (South Africa, Zimbabwe, Botswana, Zambia, and Eswatini).

Hotel chains: Baliedu tours and travel (2018) from Baliedutours.com explains that hotel chains are responsible for the administration and management of several products in different locations. They may be total or partial owners of the products they manage, market, and promote. Some are global chains with products and services worldwide. The suppliers mentioned below were questioned solely on their Southern African based products and services.

The suppliers that were included are:

- Fairmont Zimbali
- Legend Lodges consisting of Brenaissance Wine & Stud Estate, Critchley Hackle, Dugong Lodge, Entabeni Safari Conservancy Legend Golf & Safari Lodge, Montpellier Wine Farm,

Mountain View Boutique Lodge, Whalesong Hotel and Spa, Zandvlakte Nature Reserve, and Zebra Country Lodge.

- Red Carnation Hotels consisting of Bushman's Kloof Wilderness, The Oyster Box, and Twelve Apostles.
- Protea Hotels which consists of 15 on Orange, Arabella Hotel & Spa, Audacia Manor, Crystal Towers, Irene Country Lodge, Melrose Arch, Protea Hotel Amani Beach, Protea Hotel Balalaika, Protea Hotel Bloemfontein, Protea Hotel Breakwater Lodge, Protea Hotel Burning Shore, Protea Hotel Cairo Road, Protea Hotel Cape Castle, Protea Hotel Centurion, Protea Hotel Chingola, Protea Hotel Chipata, Protea Hotel Clarens, Protea Hotel Courtyard Dar es Salaam, Protea Hotel Cumberland, Protea Hotel Dorphuis & Spa, Protea Hotel Durbanville, Protea Hotel Edward, Protea Hotel Entebbe, Protea Hotel Fire & Ice! Cape Town, Protea Hotel Fire & Ice! Melrose Arch, Protea Hotel Fire & Ice! Menlyn, Protea Hotel Franschhoek, Protea Hotel Furstenhof, Protea Hotel Hatfield, Protea Hotel Hazyview, Protea Hotel Hilton, Protea Hotel Kampala, Protea Hotel Karridene Beach, Protea Hotel Kimberley, Protea Hotel King George, Protea Hotel Knysna Quays, Protea Hotel, Protea Hotel Kruger Gate, Protea Hotel Kuramo Waters, Protea Hotel Livingstone, Protea Hotel Long Beach, Protea Hotel Lusaka, Protea Hotel Lusaka Towers, Protea Hotel Manor, Protea Hotel Marine, Protea Hotel Mbweni Ruins, Protea Hotel Midrand, Protea Hotel Mossel Bay, Protea Hotel Mowbray, Protea Hotel Ndola, Protea Hotel Nelspruit, Protea Hotel North Wharf, Protea Hotel Oasis, Protea Hotel Ondangwa, Protea Hotel OR Tambo, Protea Hotel Outeniqua, Protea Hotel Oysterbay, Protea Hotel Parktonian All Suite, Protea Hotel Pelican Bay, Protea Hotel Rimpie Estate, Protea Hotel Ryalls, Protea Hotel Safari Lodge, Protea Hotel Saldanha Bay, Protea Hotel Sea Point, Protea Hotel Sea-View Zum Sperrgebiet, Protea Hotel Select Emotan, Protea Hotel Select Ikeja, Protea Hotel Select Takoradi, Protea Hotel Stellenbosch, Protea Hotel The Ranch, Protea Hotel Thuringerhof, Protea Hotel Transit OR Tambo, Protea Hotel Tygervally, Protea Hotel Umhlanga, Protea Hotel Umhlanga Ridge, Protea Hotel Victoria Junction, Protea Hotel Walvis Bay, Protea Hotel Wanderers, and Protea Hotel Zambezi River Lodge.
- Isibindi consisting of Isibindi Zulu Lodge, Kosi Forest Lodge, Rhino Ridge Safari Lodge and Thonga Beach Lodge.

Table 5 below equates to 136 products and services as broken down above. These offerings are represented or managed in Southern Africa and are used in this study. Table 5 provides an overview of each supplier's service type, size of company (determined by the number of products and services within their portfolio in Southern Africa), the regions they are in, and how they are represented in the market.

Table 5: Suppliers

Supplier	Service Type	Size of Company	Regions covered	Representation
Avis	Car Rental	Large	Throughout South Africa, Zimbabwe, Zambia, Botswana, and Eswatini. Their worldwide locations include the United States of America, Canada, the Middle East, the Caribbean, Australia Pacific, Europe, and Latin America.	Independent
Company 1 (anonymous)	Accommodation and Transfers	Medium	Botswana, Madagascar, Namibia, Zambia, Zimbabwe, and South Africa	Marketing Representation Company
Extraordinary	Accommodation	Medium	South Africa, Zimbabwe, and Botswana	Marketing Representation Company
Fairmont Zimbali	Accommodation	Large	KwaZulu Natal in South Africa. Their worldwide locations include North America, Canada, Mexico, Europe, the Middle	Hotel Chain

			East, and Africa, as well as Asia Pacific	
Legend Lodges	Accommodation and Activities	Medium	South Africa, Mozambique, and Botswana	Hotel Chain
Red Carnation Hotels	Accommodation	Large	KwaZulu Natal and Cape Town in South Africa. Their worldwide locations include England, Ireland, Geneva, Guernsey, and Florida	Hotel Chain
Protea Marriott Hotels	Accommodation	Large	30 brands covering 120 countries and nearly 6000 hotels. Please view their website for all the details (www.marriott.com)	Hotel chain
Isibindi	Accommodation	Medium	Kruger National Park, Battlefields, Hluhluwe iMfolozi Park, and iSimangaliso Park in South Africa	Hotel chain

The Destination Management sample population breakdown is as followings:

Table 6: Destination management companies

Destination Management Company	Size of company determined by revenue per annum: Under R20 million in sales = Small R21 – R80 million in sales = Medium R81+ million in sales = Large	Location	Markets in which they operate and/or specialise
Africapass	Small	Cape Town	Europe and United States of America
Matriarch Africa	Medium	Johannesburg	Worldwide

Giltedge Africa	Medium	Cape Town and a branch in the United States of America	United Kingdom, Scandinavia, United States of America, and Australia
African Twist Travel	Small	Cape Town	German market
Midday in Africa	Medium	Cape Town	Spanish and French markets
Elite Africa	Small, new start-up company	Johannesburg	Worldwide
DMC Company	Large	Head office in KwaZulu Natal with an office in Cape Town	United States of America, United Kingdom, Spanish and French markets

3.3 Data collection

Individual and direct in-depth telephonic conversations and emailed questionnaires were conducted with the seven destination management companies and the eight suppliers. Contact in this regard was with individuals who were primarily responsible for negotiations with the TDC, and included revenue managers, contract managers and international sales managers. Questions for the in-depth questionnaires were accidentally labelled pilot questions on the forms, however, they were only shaped after the pilot study's initial observances and conversation. The researcher, working in the field, shares an office space with four DMCs namely Ilanga Travel, Tour D'Afrique, Triumph Travel and XO Africa DMC. Of these four DMCs Tour D'Afrique and Ilanga belong to a group called Travel Smart Crew, the unit of analysis to which Africapass and Giltedge also belong. This shared office space, with multiple boardrooms, accommodates a number of meetings attended and hosted by suppliers from the unit of analysis, such as Protea Hotels, Avis, Extraordinary and Red Carnation Hotels, which the researcher sits in on. Being in this shared travel office space had enabled the researcher to interact with colleagues

and watch operations from a DMCs point of view, looking at interactive systems, challenges with rate negotiations, inventory allocations, special offers, rate parity, and how the suppliers protect DMCs regarding the TDC. Furthermore, it assisted the researcher to identify questions for data collections by means of questionnaires and interviews, and to interpret what were salient in the findings. Although the questionnaire was accidentally labelled pilot questionnaire the respondents were aware that the feedback provided would be used in the research due to previous conversations and investigations that were had. A significant amount of data was received from these questionnaires, accidentally labelled pilot questions, and therefore would not have made a difference to the quality of feedback received by the researcher as she is also so close to the field of study.

Furthermore, prior to the final research questions being drafted, the researcher called all relevant parties within the unit of analysis to discuss the research topic, explain the reasoning behind it, to indicate what type of questions would be included in the research questionnaire, and to ascertain what challenges and new experiences were being faced. The telephonic conversations lasted between 20 and 50 minutes. The researcher spent time with the DMCs and suppliers in their natural settings to gain information on the research topic and to shape questions for the questionnaires, which were relevant and pertained to the research.

While every respondent was asked generic questions, there were also specific questions asked based on findings specific to that respondent's use of e-procurement and the TDC. The difficulty with this type of study is trying to find answers in a continuously changing industry and therefore the following validity and reliability methods were used.

3.4 Validity

Issues are often raised about achieving rigour in qualitative research and is often a subject of debate. In this study the researcher has elaborated and theoretically conceptualised strategies congruent with a qualitative perspective to ensure validity and to establish credibility of the study. Cypress (2017) advises that the concepts of reliability and validity are overarching constructs that can be appropriately used in both quantitative and qualitative methodologies. Validity, for Cypress (2017), means to investigate, to question, and to theorise which are all activities that ensure rigour in a qualitative inquiry.

(Cypress 2017) further highlights that a synthesis of validity criteria has been developed. Merriam (1995) states that validity criteria are stated as internal validity, triangulation, member checks, peer examination, statement of researcher's biases, assumptions presenting the orientation, and submersion/engagement in the research situation. Similarly, for Aspers and Corte (2019), the term validity in a qualitative sense means gaining knowledge and an understanding of the nature of the phenomenon under study.

The method in this study is based on internal validity as the researcher is close to reality, spending large amounts of time in the field, collecting multiple data sets and therefore the gaps will be reduced.

Data collection was done through naturalistic inquiry, in the natural setting of the interviewee. This was a systematic, professional, and accurate process conducted in a manner that would ensure a yield of high-quality data. The researcher furthermore increased the validity of the responses by:

- Ensuring informants were informed, clearly and precisely, on the nature of the research, of the researcher's role, what the researcher's aim and objectives were within the study, and how the data would be collected, analysed, and disseminated.
- Receiving consent from respondents.
- Having multiple respondents.
- Building and maintaining a trust relationship with the subjects.
- Interviewing and making observations more than once.
- Comparing results obtained with other evidence.
- Keeping accurate and detailed notes.

Triangulation was used by gathering data via different data collection methods. These were emailed questionnaires and telephonic conversations, to build a coherent justification. Triangulation is achieved firstly, by constant comparative methods being used to check if a label appears repeatedly so that the researcher is satisfied with the existence, thus triangulation is achieved. Secondly, with regards to the variety of participants to ensure validity of the study, there were a sufficient number of suppliers and

DMCs used in the study. When interpreting the qualitative data, the researcher analysed the sample units' points of view along with the comprehensive data and then tabulated the results.

3.5 Reliability

Joppe (2000) defines reliability as, "The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability, and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable".

Merriam (1995: 5) states that, "The more times the findings of a study can be replicated, the more stable or reliable the phenomenon is thought to be." In other words, repeatability, replicability, consistency, and stability are key to ensuring reliability in a qualitative study. Cypress (2017) explains that reliability is based on consistency and care in the application of the research. Visibility of research practices, analysis, and conclusions need to be reflected in an open account that remains mindful of the partiality and limits of the research findings.

In this study repeatability is practiced by interviewing eight suppliers and seven DMCs and not just one of each. Replicability is practiced by providing the same survey questionnaires to each sample. Consistency is adhered to as each survey was conducted in the same format and manner. For stability, all survey questionnaires were analysed to make sense of the data, by investigating and analysing the verbatim responses, noting, and summarising trends, and then highlighting further points of discussion. A full record of the research path is kept throughout the study to ensure transparency. The researcher, therefore, through internal validity, triangulation, and a systematic approach with a full audit trail, establishes trustworthiness which is credible and dependable.

3.6 Ethics and confidentiality

Each supplier and DMC that agreed to partake in the study were given a letter of information attached as Annexure 3. Participants were also advised that they could opt to receive a copy of the research transcript on completion of the thesis. They could further opt to be contacted for future interviews.

Several of the respondents are major players in South Africa and any knowledgeable reader would be able to speculate as to who the respondents are, for this reason a copy of the letter above along with a consent letter were provided to suppliers and DMCs for completion (attached as Annexure 3). In order for the researcher to utilise their information for the research the respondent had to complete the forms and return a signed copy (attached as Annexures 4 and 5).

4. CHAPTER 4 DATA ANALYSIS

This chapter reports the findings from each respondent in the unit of analysis and then furthermore discusses the results.

4.1 Findings

This section reports the findings from all the informants interviewed in two parts: from the suppliers and from the DMCs. As this contains rich detail, the report uses the verbatim data which was all gathered in English.

4.1.1 Review of supplier's questionnaire and feedback

This section consists of feedback from suppliers, being a “person or entity that is the source for goods or services” (Your Dictionary 2015).

The keywords used by suppliers in their feedback to the questionnaire were tour operator, DMC Channel, direct enquiries, destination, Facebook, TripAdvisor, online, online platforms, and relationships. Table 7 presents the supplier questionnaire together with each supplier's verbatim feedback on the questions asked.

Table 7	
Supplier Questionnaire and Feedback	
Supplier	Feedback
How do you as a supplier of tourism services perceive the growth of e-procurement among your customers and is it of importance to your business?	
Avis	Procurement is a better way of appointing suppliers and not merely because I know or like someone. It ensures appointment of suppliers is made in the best interest of the customers' company. It is important to us as a supplier as we are gearing to be more compliant with BEE etc.
Company 1 (wishes to remain anonymous)	As Southern Africa is a long-haul destination as well as seen to be “an exotic” destination with certain logistical and possible safety challenges for many of the source market travellers of our represented

	products, we have found that the majority of consumers still tend to book Southern Africa Safari Lodges through the tour operator / DMC channel. Products in certain cities like Cape Town as an example are seeing a rise in direct enquiries due to consumers' confidence in booking products in these cities themselves.
Extraordinary	E-procurement is indeed the present and future, as the world becomes smaller with better connectivity and new technology, we find that our customers are more than willing to move towards this channel and growth has been phenomenal in this market segment over the past few years.
Fairmont Zimbali	This is a fast growing and extremely competitive environment. The benefits to both supplier and procurement alleviate a lot of administrative restrictions. The process saves time and money. Our ability to reach a global market is vastly improved and can be immediate.
Legend Lodges	The growth of e-procurement has been quite significant and is of importance to our business.
Red Carnation Hotels	Definitely – it is the way of the future. For us as a service provider it is also easy for distribution.
Protea Marriott Hotels	Important part of our business being part of a global company.
Isibindi	24/7 real-time online availability has become essential in order to stay competitive in the marketplace.
What strategies and resources do you as a supplier use to develop e-procurement strategies in the tourism industry of South Africa?	
Avis	Unanswered
Company 1 (wishes to remain anonymous)	Some reservations systems like Nightsbridge assist product with API channel management (booking.com etc.) as well as to start generating more direct booking leads. Products that have used Wix to design and

	manage their website maintenance also have the benefit of Wix providing consumers targeting SEO and booking platforms for products. Some products have also entered into paid business' "preferred" product agreement listings with the likes of booking.com. Moving forward I also feel that products will use the paid Facebook listings for more targeted consumer markets as well as dabble in their own and word campaign marketing strategies dependant on product size and budget.
Extraordinary	We actively pursue all avenues that allow us to enter the market from an online perspective. These include contracting through OTA and developing and implementing our own online system and pricing policies follow a yielding model.
Fairmont Zimbali	Collaborate with partners on Online platforms. We generally use their services for periods of low demand with short lead in business.
Legend Lodges	All of our strategies are a lot more focused on online/digital aspects than ever before. From booking online through various travel agents or on our own website, to granting operators access online to our inventory or even giving the option to book on our social media platforms – we are focused on making it as easy as possible for potential clients to find us online and make use of our services.
Red Carnation Hotels	We work on a level playing field when it comes to e-procurement, although we do try and ensure that our website is where all the bookings etc. are driven. We work with a variety of online distributors, but this is all controlled via our revenue management system which dictates the rates.
Protea Marriott Hotels	We follow a global strategy aligned for all markets.
Isibindi	We have recently designed new websites for all our lodges to ensure that tour operators and direct bookings can check availability and book

	online 24/7. We also spend a lot of time ensuring that our properties are listed on all the major booking portals.
How do you as a supplier perceive the cost, advantages, and opportunities of e-procurement in the tourism industry of South Africa?	
Avis	E-procurement might put some of the one-man companies or mommas and poppas as we refer to the small guesthouses or adventure tour operators at a disadvantage as they will not be spending the money on E-procurement and might not have the training or the means to compete with larger organisations. There is an actual cost, as we had to employ a team and ensure they are qualified in the processes. But, long-term, this will be beneficial when the right suppliers are contracted with.
Company 1 (wishes to remain anonymous)	Marketing, Sales and PR are expensive and are one of the biggest cost items for most products from an annual budget perspective. Right now, the products still invest most of this budget into targeting the trade for reasons given in question 1, above. But if, as and when South and Southern Africa opens up and becomes easier and safer to book by the consumer directly, I'm sure that products will begin to amend their direction of a % of their marketing, sales and PR spend towards targeting consumers directly.
Extraordinary	The costs of this system are attractive with it being almost entirely down to manpower to set up a new supplier, no overhead or marketing costs and then smaller commissions are also attractive.
Fairmont Zimbali	As mentioned before, the cost saving on printed material as well as time spent on the process gives us a good cost saving.
Legend Lodges	From a costs perspective it gives you much more value for your money, as you are able to reach a global audience, whilst also being able to track exactly how your money was spent and what your ROI

	was. It provides us as suppliers with the advantage of more effective day-to-day operations, whilst also increasing growing our target audience substantially.
Red Carnation Hotels	The real advantage is efficiency and ease of booking. It certainly does not save on staffing costs, due to a certain level of service that is still required for bookings. The advantage is that ideally there is little human intervention. But because of the nature of the services we offer, there does need to be some level of human intervention.
Protea Marriott Hotels	Channel cost reduction.
Isibindi	<p>The costs vary greatly. We have got to a point where we will not pay for online listings but rather operate on a commission only basis. We feel that the major online booking sites are creating a monopoly and beginning to take advantage of their position by charging exorbitant commissions.</p> <p>However, we have seen an enormous increase in revenue from these sites and our nett rate is higher than if the bookings came through our bigger tour operators and ground handlers.</p>
In your opinion what is the supplier's challenges and disadvantages associated with the implementation of e-procurement in the TDC and digital era communication tools in the tourism industry of South Africa?	
Avis	Entry level systems for the smaller companies and access and speed of internets.
Company 1 (wishes to remain anonymous)	As per question 1 answer.
Extraordinary	Our challenges are to ensure updated content, excellent feedback on product on all platforms as this directly affects sales, ensuring our pricing structures still benefit our old economy suppliers and don't undercut the traditional channels.

Fairmont Zimbali	There is less human interaction, and it can be impersonal. This is a direct contradiction to what most of us are trying to achieve in our business models of relevant, target focussed experiences for our guests and suppliers. Relationships are key and they are compromised to a degree when using purely electronic processes.
Legend Lodges	As South Africa is still developing its infrastructure when it comes to the availability of Wi-Fi and fast, reliable internet, it can be a challenge to use any e-procurement tools or systems to its full potential. Also, system failures do sometimes occur, which could lead to overbookings or loss of information. It is also a daunting task to try and manage all the information listed online about your properties online and also being able to respond to all requests from different platforms within 24hours.
Red Carnation Hotels	I do not think there are any disadvantages, there can only be positives. The challenge is that the DMCs and some markets are still antiquated and do not move with the digital times. So still require static pricing and this requires the manual loading of rates. They cannot even work off a discount off the BAR.
Protea Marriott Hotels	Cost is a big challenge. Implementing a new process is challenging in a market that is used to a certain way.
Isibindi	The biggest challenge is keeping the information up to date across all platforms. This becomes virtually impossible as the information is listed in so many places that one has no control over this. It takes a lot of resources to keep the information up to date and sometimes clients are misinformed and end up being bitterly disappointed because they have incorrect expectations of the property due to it being misrepresented on the web.
What are the possible solutions to these challenges and disadvantages?	

Avis	Government to assist on training and funds.
Company 1 (wishes to remain anonymous)	South and Southern Africa need to become politically consistent and stable as well as reduce levels of crime first and foremost. Secondly, the entire geographical, logistical and transport chain needs to be easily understandable and bookable by the direct consumer, which is not currently the case.
Extraordinary	Implementing dynamic pricing and yielding tools.
Fairmont Zimbali	I have no idea.
Legend Lodges	Invest in systems that make the management of online platforms easier and appoint a specific trained staff member to deal with this full time.
Red Carnation Hotels	There is nothing we as a supplier can do to change these antiquated systems. Unfortunately, it is the very large consortia who are the biggest culprits. What we can do is focus more on the clients that can save money on the costs involved in the manual way of working. This is easy to say, if you do not rely on this sort of business to run the day-to-day business of the hotel.
Protea Marriott Hotels	Some clients refuse to change and we lose revenue, unless you show the positive effects.
Isibindi	One would need to engage resources and technology to trawl the internet and check every single listing of one's property.
As a supplier, how is your business currently managing and performing the elements of the new economy above?	
Avis	Due to the type of business and suppliers, we are not always able to use a procurement process example a certain car manufacturer can only supply x amount of vehicles and this cannot be based on procurement processes. All based on supply and demand in the industry.

<p>Company 1 (wishes to remain anonymous)</p>	<p>Buyer centric – website build, and commerce aligned websites like Wix, reservations systems, which are linked to various e-commerce platforms. Using mailing systems with relevant consumer facing content to entice repeat and referral business.</p> <p>Dynamic Pricing – currently not running dynamic pricing.</p> <p>Real time info – most products are set up with comprehensive reservations systems with bookings and operations facing segments with real time information available.</p> <p>Global Sourcing – Geographical targeted Facebook campaigns and the like are becoming more commonplace, but conventional marketing and sales to the supply channel source market wholesalers and retailers is still the most utilised Global Sourcing mechanism.</p> <p>Universal search – unanswered.</p> <p>Web based communication – consistent and regular website updates are generally now managed in house by the products themselves. This means websites are generally always relevant and fresh, rather than becoming outdated and obsolete as was the case when products relied on a website designer to make paid changes to their websites. Most products also now have bulk mailing systems with professionally managed “lists” to target depending on the email campaign.</p> <p>Reduced inventory – My represented products are all relatively small and have limited inventory compared to bigger hotels etc. but reduced inventory vs inventory over capacity are dependent on the products location and geographical position. (Sabi Sands reduced available inventory for operators year-round due to high occupancies whereas KZN products inventory over capacity for large parts of the year as occupancies are relatively low).</p> <p>Aggregated buys – unanswered.</p> <p>Paperless – big move to paperless.</p>
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	Automatic tracking – both manual and automatic tracking are in play. Inexpensive systems – with the development of the cloud and app market, most systemisation can now be achieved in a simpler, safer, and more cost-effective manner and it is the rule, not the exception, that most of my products have moved across to inexpensive cloud and app based systemisation.
Extraordinary	We are showing good growth annually in this segment.
Fairmont Zimbali	We are embracing online platforms and electronic marketing channels. Reservations Managers and Revenue Manager use the online platforms extensively for immediate market related information that allows for them to act quickly in any situation as they can manage their areas themselves and immediately.
Legend Lodges	Although there is always room for improvement, our business is currently doing very well in this region, and we are also investing time and money into further improving this.
Red Carnation Hotels	We are working well with this, and our business model has changed with the huge influence of the e-channel. We are working even harder to encourage this business. It is at a higher ADR and has a bigger influence on this part of the profitability than any other. We constantly redesign the pages of the website to keep up with the way the web works for optimum exposure on the SEO.
Protea Marriott Hotels	Regular engagement with our client to get market and relevant feedback.
Isibindi	We have seen huge growth in our occupancies over the past two years attributable to both a greater online presence but also the favourable exchange rate in SA.
Is the “protection” of the Tourism Distribution Channel important to you as a service provider? And why?	

Avis	<p>It is critical as we are allowing many global players into the e-space, which unfortunately is becoming more difficult to control in the e-space.</p> <p>These companies are spending big budgets on search engines and is leading to cutting out smaller companies in the distribution channels.</p>
Company 1 (wishes to remain anonymous)	<p>Yes. My company's sole purpose is to target and increase supply from the DMC (Southern African Tour Operator) from a sales and marketing perspective on behalf of my clients. Without the trade, my business would cease to exist unless we diversified into offering online marketing and sales management solutions. On average 70% of the beds to my products are still supplied by the trade. Given my answer to question 1 above and the fact that crime and political instability plague South and Southern Africa, the trade remains very relevant and consumers feel assured and safer to book Southern Africa through a reputable operator for safety, security reasoning as well as necessity as it's not easy for a consumer to try and figure out how to build an itinerary with transport logistics thrown in etc.</p>
Extraordinary	Yes.
Fairmont Zimbali	<p>Absolutely. We still rely heavily on the relationships and the knowledge and expertise that our suppliers offer the guests travelling. With SA being so vast with so much to offer, it is only through educated and experienced suppliers that we trust our product is being made relevant to the correct market.</p>
Legend Lodges	<p>Yes, it remains a particularly important factor. We believe that all the parties involved in the Tourism Distribution Channel have an important part to play and there needs to be mutual respect, trust, and partnerships. One cannot solely rely on one party; whether it be the different e-procurement channels or other parties within the distribution channel, there needs to be a balance and all parties need to benefit from this channel in the long run.</p>

Red Carnation Hotels	It is on a personal level because I have worked both sides. But for HO in London this is not of huge importance. They have seen the demise in the DMC, which will soon happen in South Africa if the changes that are required are not made.
Protea Marriott Hotels	It is very important and is a large part of our business.
Isibindi	It is obviously important for us that the TDC is protected because this is our main source of business.
In your opinion, what are the future trends in South Africa for Tourism Distribution Channels in this Digital Era, what do you predict the future to have in store?	
Avis	Business will move mainly to online as the new generations prefer online. It will be only very specific, or speciality tailor made solutions that will survive.
Company 1 (wishes to remain anonymous)	I think it is inevitable that South Africa will move forward with its digital distribution channels, as this is the nature of the world today driven by the consumer. But given the challenges listed in question 1 it is hard to say what the future holds in store for future trends etc.
Extraordinary	We believe that the traditional channels will move towards utilising the e-procurement channels entirely to obtain both inventory and rates.
Fairmont Zimbali	I feel that the online channels are going to continue to grow rapidly and will continue to be a big challenge for the traditional distribution channel. I fear balance needs to be found to do the country justice as a Tourism Destination.
Legend Lodges	Although the use of various e-procurement platforms will increase as more and more people prefer booking online, I believe that the Tourism Distribution Channel as a whole will remain intact – the way of doing business will just become more digital.
Red Carnation Hotels	The trend is going to just get stronger. The business has to make money and if the costs carry on increasing as they are. We cannot

	make the required amount of profit out of the cheaper static rates. We need to focus on how we can maximise our revenue to ensure that the profitability is at its maximum. There is also very little understanding of the DMCs of the costs involved in the hotel, so there is a constant attempt to beat the rate down so that the DMC's client looks good, one is expected to offer cheap prices and also not compromise on service.
Protea Marriott Hotels	All hotels are showing signs of offering a dynamic structure and integrated systems.
Isibindi	We believe that there is still a need for the traditional tour operator, ground handler and DMC in SA, as one will always need the in-depth knowledge that destination experts have. Since SA is still perceived as a "dangerous" country and many internationals do not want to self-drive they need to book through an expert who can help them with logistics etc. We believe that a lot of tourists do their research online but still prefer to book a destination like SA with an expert.
What is your future strategy and vision for e-procurement, e-business/e-tourism, and sales?	
Avis	We will be moving to a robotic solution on digital platforms as human intervention and decisions take too long. In the USA we already do rate changes on digital platforms more than 5 million times per day. It is the way our industry is moving as it is all based on supply and demand. Unfortunately, the demand of consumers has become immediate, and we have to move with this.
Company 1 (wishes to remain anonymous)	To keep tuned in regarding moves made by some of the bigger players in the industry, and to say ahead of the game regarding the services that we offer.
Extraordinary	We are always cautious and whilst considering dynamic pricing strategies we will service and respect all distribution channels.

Fairmont Zimbali	We will continue to support the online distribution channels without compromising the relationships with our traditional operators. Sales efforts with traditional channels need to be strategic, market focussed and relevant to the type of traveller the product attracts. Collaboration in achieving mutual business goals needs to take more focus and blanket approaches need to be absolved for a mutually beneficial business relationship.
Legend Lodges	We will be investing the bigger portion of our budget in digital marketing and invest in new technologies at our properties as well to keep up with the ever-changing market.
Red Carnation Hotels	It is a focus and will continue to grow. We plan to ensure that when someone googles for any of our products, they will be driven to the website to make the booking on BAR, thus ensuring a more profitable business. We will never undercut the operator, but we will be promoting perceived value. Perceived value is something that a DMC is not interested in and cannot work with.
Protea Marriott Hotels	Unanswered.
Isibindi	We have been in business for 21 years and tour operators make up 60% of our business with booking sites making up about 10%. We will continue to work closely with our tour operators, by educating them on our properties and nurturing good relationships. We are a people-based company and believe that people want to deal with people. Our new websites seem to be attracting more direct bookings, which obviously results in a better nett rate for ourselves but that is not our focus. We are going to be using technology more and more to reach our tour operators for product training e.g., through webinars and building up a library of online training videos.

What strategies do you as a supplier perceive to be required for the successful implementation of e-procurement within the tourism industry of South Africa?

Avis	We have moved to revenue yield for dynamic rates as it is not relationship based anymore but purely driven by demand and what the market or competitors dictate. We require highly skilled analytical staff to monitor and build these systems if we want to survive versus the fast-moving systems of other suppliers like Uber, which is real time and very simple to use.
Company 1 (wishes to remain anonymous)	<ol style="list-style-type: none"> 1) Clean up crime. 2) Political stability linked to positive foreign investment and positive international opinion of South and Southern Africa. 3) Improved logistics, more mainstream airports with scheduled flights into and out of parts of KZN, Eastern Cape, North West, and Northern Cape. 4) Better and seamless integration of being able to plan and book an entire itinerary with transport on various reputable online platforms or eventually off a products website itself.
Extraordinary	No idea.
Fairmont Zimbali	Respect and consideration of where we are as a country in the e-tourism food chain, the change will come, but it will take time. In the process, we need to still be observing, maintaining, and respecting the relationships in place, working in collaboration to find workable solutions to challenges.
Legend Lodges	Suppliers need to provide real time availability of their inventory and must make sure that it is easy for users to book or find them online quickly, with the most competitive rate possible.
Red Carnation Hotels	The update in system from the DMC perspective. This is a huge challenge for them simply because of the vastness of the products that

	they sell and the variety of services and the various Terms and Conditions that each supplier requires.
Protea Marriott Hotels	You must do it step by step and allow for time for phases to be adopted.
Isibindi	Businesses need to ensure they have the infrastructure in terms of staff, technology, and good communications.
How does Digital communication tools such as TripAdvisor, DMCs/Tour Operators Branding, search engines etc. affect your distribution strategies in the new economy of e-procurement.	
Avis	The trip advisors of this new era make services very transparent, and consumers can do in-depth research before they buy a product/tour etc. to establish if they will have a good experience. The e-platforms involving social media also requires support in the new era as a company needs to monitor any flagged responses. This takes turnaround time on queries or complaints to a new realism as we now have chat teams on social media as many questions and complaints are moving to social media and not coming via our traditional channels such as call centres.
Company 1 (wishes to remain anonymous)	TripAdvisor is clearly a successful online consumer driven information and now booking platform. But it is very flawed in many aspects – see The Shed at Dulwich. Due to the nature of human beings being hyper focused, it loses individuality and as a result credibility. Consumers also use is a massive flaw in these platforms, given that a subjective opinion on someone's business is then open for the world to pass judgement on. DMC/Tour Operator branding has nothing to do with direct business channels. Search engines are valuable if a business keeps up to date with SEO (Organic reach) changes and what to tweak when SEO parameters change. PPC campaigns are also very effective but very costly and have become too expensive for most small businesses.

Extraordinary	The communication tools mentioned play an extremely important part in ensuring the consumers feel comfortable to use this channel.
Fairmont Zimbali	Each tool has to be understood for what its purpose is and what it aims to achieve. Each require a different approach based on the platform they represent and market they target. TripAdvisor can be subjective as it is based on personal preference or personal perception. DMCs/Tour Operators Branding should be in alignment with your product offering to classify yourself correctly. Search engines are informative with little personal experience and knowledge impacting the decision-making process.
Legend Lodges	If utilised correctly, it can greatly benefit your business and become a means of reaching your target market globally. If not managed or utilised correctly, it can become your worst enemy by leaving a bad impression with consumers when compared to other products.
Red Carnation Hotels	I would not put TripAdvisor and DMCs in the same category. The DMCs in South Africa really rely on their clients for promotions. They are not proactive and simply take orders and place business where they are going to earn more money. It is a bit like the hotel promoting their business where they are going to earn a higher ADR. TripAdvisor has become a booking engine and so should be put in the same bracket as Booking.com, hotels.com etc. The DMCs hardly warrant a discussion about e-procurement because of the lack of IT investment in this part of their business. The investment any DMC has made has not been for the working off the BAR; it has rather been made to pull through their STO rates first.
Protea Marriott Hotels	Has positive and negative effects. If inventory and rates are not maintained properly the brand and strategy may suffer.

Isibindi	We believe these tools increase our marketing reach exponentially and relatively low cost and we rely heavily on these to market our properties.
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4.1.2 Review of destination management companies' feedback

For this portion of the survey various types of DMCs were selected. They are different sizes, some smaller than others in terms of revenue turnover per annum. They are in Johannesburg and Cape Town, respectively. Some have been operating for years whilst others have just recently started up. They also operate or focus on different markets. Some focus on the US market, whilst others on the UK market and so forth. Table 5, on page 75, summarises each of the DMCs that have taken part in the survey. Table 8 presents the DMC questionnaire together with verbatim feedback on the questions asked.

Table 8	
DMCs Questionnaire and Feedback	
DMC	Feedback
How do you as a DMC perceive the growth of e-procurement and is it of importance to your business?	
Africapass	As a small company with older directors, we have acknowledged that everything electronic and paperless is the way of the future, but we have not embraced this due mainly to the cost factor and the ease of quoting manually when one has more complex booking situations. In our company, it is not imperative to have e-Systems in place for everything.
Matriarch Africa	e-Procurement is essential to the growth of our business and for any business for that matter. Its primary function of saving huge amounts of time results in a significant increase in efficiency, and a decrease in costs. In turn, this allows a lean expansion in the company.

Giltedge Africa	<p>E-procurement has become the cornerstone of our business practice. The global trend of tourism has moved from a “supplier centric” to “buyer centric” market, which demands the following from all DMCs if they are to remain relevant and competitive:</p> <ul style="list-style-type: none"> • They need to have immediate access to live availability and dynamic pricing, which has been implemented by many suppliers. While STO rates are still distributed by many hotels, these are slowly being phased out and replaced by dynamic rates, which facilitates their yield management. If DMCs aren’t on top of this trend, they can easily outprice themselves when the existing / set STO rates are more expensive than what is available online. • Dynamic rates allow easy access to inventory and rates, which are especially important when working with different time zones. Clients want immediate answers; they are not interested in hearing that reservations office in South Africa have closed for the day. Our move to e-commerce has been instrumental in overcoming this obstacle both by our local and US-based consultants. • Access to suppliers’ live availability / BAR rates does not cost us anything – it is free, reliable, and effective. We are no longer bound by having to wait for suppliers to sign off on / distribute STO rates. • It is also a cost effective and eco-friendly business model because it is paperless.
African Twist Travel	<p>Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.</p>

Midday in Africa	It is a two-edged sword, as it definitely eases the purchasing process making it much faster and direct, but the worldwide accessibility tends to make us, tour operator, redundant as clients can access rates and contracts as easily as we do (in some cases).
Elite Africa	It has grown in the last 5 years and as a newly started operator, I have made it an important part of my business.
DMC Company (wishes to remain anonymous)	It is pivotal to the business and the requirements of what the tourism industry globally is demanding. The tourism industry is approx. 60% e-procurement /mass market and 40% tailor-made; therefore, the business must include an important strategy on e-procurement.
What strategies and resources do you as a DMC use with regards to e-procurement in the tourism industry of South Africa?	
Africapass	Unanswered.
Matriarch Africa	Our entire business and systems rely heavily on e-procurement. Our business strategy is to invest in automation and integration of systems, again to save time, reduce human error and cut down costs. We utilise integration APPS, such as Zapier to automate workflow, sale funnels and customer relationship management as well as online booking software.
Giltedge Africa	Giltedge Travel is a member of Travel Smart Consortium of DMCs – all independent, owner-run companies who have pooled their buying power for negotiations with suppliers. Ours is an aggregated buying strategy, which makes us competitive in a very tough playing field.
African Twist Travel	As above, in previous question.

Midday in Africa	<p>We do not have an in-house system that directly links us to e-procurement, unlike some of our competitors and we don't feel the need is that drastic. So, for the time being we only use the tools that are put in place by the various suppliers.</p>
Elite Africa	<p>Elite Africa is a new company with no old-fashioned systems, structures, and policies. This has made it easier to implement new systems and strategies that allow for e-procurement.</p> <p>I have invested in systems and technology that are more suited for the internet/web-based communications. As the company does not have various departments, the entire e-procurement system is still in its infant phase, and it has no necessity to implement internal control systems to manage the process.</p>
DMC Company (wishes to remain anonymous)	<p>Strategy would be development focused:</p> <p>Get the system to work closely together with suppliers who similarly work with online systems. Improve your database of suppliers.</p> <p>System development – get it booking faster and available soonest to meet the customer requirement.</p> <p>Further systems development would include the system not just being a booking channel, but a booking, information, and review (e.g., Trivago). Not quite sure how to explain this and pressed for time. What I am trying to say is: first we had booking.com, then Expedia, then Lekkeslaap.... etc. Trivago brought all of this together. As a DMC, once the foundation is sorted and your customers have bought into the system, you then work on further development to bring whatever the OTAs are doing into your one system.</p>

How do you as a DMC perceive the cost, advantages, and opportunities of e-procurement in the tourism industry of South Africa?	
Africapass	I think in big companies this probably works well as there are many staff members and operations need to run quickly and efficiently. Bigger companies also have the resources to employ people to maintain the systems that are in place.
Matriarch Africa	In the long run, the investment of e-procurement is a fraction of the cost of manual procurement. We as a business feel it is a necessary investment that allows scalability even in a small business, within the tourism segment. E-procurement expands your market to a global audience opposed to a local audience. You can answer the demands of your market almost immediately shortening your lead-time and increasing your conversation rate.
Giltedge Africa	With the way the global tourism trend is going, I think every DMC must be looking at e-procurement to remain relevant. I have listed the advantages and opportunities of this in point #1. In terms of cost, it is a costly exercise if you want to get a system such as Tourplan integrated. If, on the other hand, a DMC goes the route of working through individual properties' links, there is no cost and provisional bookings can be made online. It also eliminates the cost of many costly phone calls to check availability.
African Twist Travel	Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.
Midday in Africa	For me, the biggest advantage is the time we gain. The accessibility to rates, less contracts to sign, and, very importantly, the fact that we can secure bookings at any time of day or night, is a huge help in this industry.

Elite Africa	The costs are lower than traditional procurement systems. Advantages are cost reduction, improved time efficiency, increased product offering.
DMC Company (wishes to remain anonymous)	Initial cost factor outlay – huge, return of investment around 3 years – the opportunity is the new business. As mentioned above, the market is demanding it so you could become a “leader” of offering what market wants – the advantage is the efficiency of having an online system versus a fully traditional method.
In your opinion, what is the DMCs’ challenges and disadvantages associated with the implementation of e-procurement in the TDC and digital era communication tools in the tourism industry of South Africa?	
Africapass	Again, the cost, the manpower to update and maintain the systems. One of the main disadvantages is lack of communication between people. No-one seems to read mails thoroughly and so important aspects of a booking are missed. I also find that there are no longer good, working relationships with peers in the tourism industry as everything is done on email and person-to-person contact is being lost.
Matriarch Africa	The main issue we are facing is a multitude of systems that don’t necessarily integrate with one another. With so many solutions on the market and so many suppliers using different systems, it is hard to consolidate a central solution that services and integrates all these systems.
Giltedge Africa	Set of STO rates were easier / quicker to work with. They got loaded into any costing system and pulled through automatically for quotes. Quick and easy. Depending on the volume of business a DMC gave to any supplier, the STO rates were tiered and the DMCs could push specific properties to keep the preferential rates

	<p>and have an edge on competitors. With e-procurement, all DMCs see the same BAR rates. Some properties are negotiable in terms of commission off these rates, but that is not the norm of the playing field is more level and some advantages of aggregated buys may be reduced. Another challenge with the digital era is that clients will see the same BAR rates, which the DMC is seeing (granted they do not get commission off these). These naturally fluctuate due to yield management so there may be times where the client will see a better rate than the DMC, which then poses the question (in the client's mind) as to why the service should be booked through a DMC. A price war often ensues, which doesn't benefit the supplier nor the perception of South African Tourisms as a whole.</p>
African Twist Travel	<p>Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.</p>
Midday in Africa	<p>I feel that more and more suppliers provide their services directly to our clients, squeezing out the DMC entirely and, even though the clients still want our service and knowledge, those suppliers make it impossible for us to propose competitive packages that include them. So, we have to offer a more limited portfolio.</p>
Elite Africa	<p>It requires an open mind for change as systems will need to change. In addition, controls will have to tighten as all audit trails will be electronic. Strict authorisation policies for the various departments to ensure validity of transactions.</p>
DMC Company (wishes to remain anonymous)	<p>E-procurement, by definition, implies that a static platform drives products and service sales.</p> <p>To achieve this generally requires a high staff compliment to maintain this.</p>

	<p>Very often it also means that negotiations for discounts are difficult to manage and therefore updates would be infrequent and possibly even outdated.</p> <p>I also do not believe that e-procurement allows for the latitude in negotiating market specific products and services as these are always changing.</p> <p>Apart from the nature of obtaining required data, a rift ensues in the relationship building process with suppliers and customers. In my view, these relationships are what set a tricky destination like Southern Africa apart from other tourism destinations worldwide. Our destination requires local experts to guide prospective customers in the right direction whereas, in more mature destinations, the information is easier to disseminate on a digital platform.</p>
What are the possible solutions to these challenges and disadvantages?	
Africapass	Solutions could be in having more flexible systems, cheaper software options and a central point for consultants from many different companies to access.
Matriarch Africa	We as a business feel what would be a breakthrough in the industry is to have a central system that can aggregate all hotel rooms, activities, transfers, and packages automatically or with little human input.
Giltedge Africa	There are some properties which have a trade portal giving BAR rates to DMCs only. This should be the norm for all suppliers. E-procurement should be managed very strictly to ensure that the local DMCs are always protected. The BAR rates, which a client can see on a supplier's website, should always be higher than the

	<p>BAR rates which are given to DMCs... although we earn commission on those rates.</p> <p>We've also come across suppliers who have given big room allocations to companies such as booking.com yet when we want to book, we're told that there is no availability and that they have no control over the stock they've allocated to them. This makes the DMC look inefficient in front of the client who is looking at the availability in front of him and cannot understand why we can't book it for him. Hotels should reserve the right to withdraw a portion of the allocations if they have not been sold on booking.com / similar and they are receiving requests from DMCs. Now the only way we can get around it – to avoid losing the client – is to book it ourselves on booking.com</p> <p>It is a lot more time consuming to have to make provisional bookings (to hold BAR rates to avoid fluctuation) when quoting than it was when using the old model of STO rates. If we do not have electronic tracking systems on our end, it's quite possible that a consultant could forget to cancel that provisional booking based on the number of quotes that he/she is doing at any one time. I feel that the hotels need to up their IT support in prompting these reminders to avoid this from happening and incurring cancellation fees.</p>
African Twist Travel	<p>Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.</p>
Midday in Africa	<p>Centralisation and regulations could be a solution, even though I am not sure that it would be a good one. Maybe better yet, it would be useful to include those suppliers to the industry and help them to understand where DMCs feature and why we are so important.</p>

	I think that when the actors understand everybody's roles, the TDC is then fair and balanced.
Elite Africa	Investment in proper internet-based systems.
DMC Company (wishes to remain anonymous)	<p>Based on the above, it's important for each DMC to have a balance of traditional and e-procurement in order to satisfy all customers.</p> <p>A B2B system that allows human intervention by a reservations team.</p> <p>Reservations team that are strong and able to upsell/make recommendations.</p> <p>Connection to XML to ensure updated rates and discounts are continually updated</p>
As a DMC, how is your business currently managing and performing the elements of the new economy above?	
Africapass	Our business is still in the last century and we have not moved forward significantly with E-Systems, so continue to work on a manual basis but to good effect.
Matriarch Africa	As a business, we are constantly trying to find ways to automate as many business processes as possible. We are also trying to automate business to consumer interactions without losing a human element.
Giltedge Africa	Yes, we are to a certain extent, but we still have quite a way to go because our costing system (Travellogic) is not integrated into suppliers' live portals. Many of our preferred suppliers still work with set STO rates, which are loaded into our system making for quick quote turn-around, but this falls short of giving us a quick and easy tool to check the BAR rate at all properties simultaneously at the time of quoting. A change over to Tourplan software (which

	allows for this functionality) would be an awfully expensive process and investment for a company of our size.
African Twist Travel	Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.
Midday in Africa	We sometimes must link ourselves up with bigger operators that have access to better rates than us. I feel that this breaks the TDC but it's our only choice sometimes.
Elite Africa	I am continuously re-evaluating the systems to make sure that they are taking new practices into account.
DMC Company (wishes to remain anonymous)	We are taking all the challenges into account whilst constantly developing B2B. Mindful of the fact that we need our system to be dynamic as this market is ever changing and developing
What are you as a DMC / Tour Operator doing to ensure that the traditional tourism distribution channel is followed? And is the “protection” of this channel important to you?	
Africapass	We keep contact with our suppliers and we have people employed to keep the avenues of communication and discussion open with suppliers. Yes, it is important to protect our basic channel, this being the source of our business operations.
Matriarch Africa	The traditional tourism distribution channel we feel is especially important in the support role that it plays, especially to international travel agents / tour operators that don't necessarily have the knowledge or expertise in the areas they are selling to the direct public. The protection of this channel is extremely important as it influences the direct consumer and educates the market.
Giltedge Africa	As a member of the Travel Smart Crew Group of companies, we have their MD who negotiates rates with all preferred suppliers for

	<p>us. The rates are sent to her to check and ensure we are being protected as local DMCs / Tour operators in terms of rates as well as T's & C's.</p>
African Twist Travel	<p>Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.</p>
Midday in Africa	<p>Yes, especially important. I feel that our best chance to protect this channel is to create very strong bonds with the right suppliers who understand our place and support us and, even though it limits us in our offering, drop the others.</p>
Elite Africa	<p>Yes, it is important as there is still a place and a need for traditional tourism practices.</p> <p>But Elite Africa is more focusing on the new economy tourism practices and less on traditional tourism practices.</p>
DMC Company (wishes to remain anonymous)	<p>Firstly, yes, the distribution channel is particularly important if you chose to be a 'traditional' DMC. Keeping pricing channels honest and clear is important to relationships – that being with suppliers and with customers – you do not want to be seeing going after your customer's customer!</p> <p>We attend all relevant trade shows both domestically and internationally exhibiting not only our products and services but our destination as a whole.</p> <p>We also spend a healthy investment on sales managers who actively participate in road shows all year round. The face-to-face interaction is vitally important for us to remain 'relevant'. Protection of this distribution channel or 'ecosystem' as we call it is of paramount importance.</p> <p>We invest heavily in bringing identified source markets to us in the form of collaborative familiarisation trips where the customer gets</p>

	<p>to see, taste, touch and smell the products and services we offer.</p> <p>This is vitally important because if they have the experience, they have the confidence to sell.</p> <p>Also ensuring our digital E-procurement etc. is always directed to the tour operator globally and not to the consumer/travel agent.</p>
<p>In your opinion, what are the future trends in South Africa for Tourism Distribution Channels in this Digital Era; what do you predict the future to have in store?</p>	
Africapass	<p>I do believe that the role of the tour operator is going to have to change as our biggest competitor is the internet and as older generations die out, the younger, more adept digital users, will lean more toward checking rates and accommodations online and then booking online.</p>
Matriarch Africa	<p>We predict the future of tourism will rely heavily on customisation, innovation, and cooperation. Travellers and locals will be more and more involved in the creation of new tourism itineraries, services, and experiences through technology. As the technology to aggregate these local tour packages and multi-destination itineraries increases, it will create the opportunity to build seemingly complex and customised itineraries online with real time availability and dynamic pricing.</p>
Giltedge Africa	<p>With the digital era upon us, the rates negotiated for the Travel Smart Crew group of companies are no longer distributed to members via email for individual reference. They are stored on Papertrail, which is a central point for all members – which means that we have reduced inventory on our local server. As a company, our IT systems have developed a lot over the past year to allow for automatic tracking of booking / quotes / invoicing / pending payments / sales etc. We are quickly becoming a paperless</p>

	<p>business. The digital era also allows for us to have sales consultants working remotely within Cape Town as well as abroad in the USA and in France. I think business is moving that way given digital resources making it easy to work anywhere. It can potentially alleviate office costs and give us a bigger pool of consultants to consider for positions within the company. In terms of suppliers – they are most definitely all working towards online BAR rates and phasing out STO rates.</p>
African Twist Travel	<p>Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.</p>
Midday in Africa	<p>I think apps are leading towards automating the whole process of reserving a trip (client side). There are already, overseas apps and websites that will imitate a DMC, but as far as I have seen they are not very efficient, and people still appreciate a personal service. So, I think, the future will bring such platforms, but the right actors will remain in the industry. Especially in Africa, where we do not only sell a hotel room, but strive for conservation and community upliftment, I feel that the need for human involvement in our interactions will be preserved.</p>
Elite Africa	<p>With the “older” generation being much more computer and internet literate and South Africa not as isolated/unknown as 10 years ago, I predict that e-procurement and internet based economic activities will increase.</p> <p>But I do also think that there is still a need for traditional procurement techniques with your main/preferred suppliers. Face-to-face meetings, communication and negotiations can still get better results in many industries.</p>

DMC Company (wishes to remain anonymous)	Sadly, it's not looking good for traditional DMCs – more and more OTAs are opening up locally selling aggressively direct to consumers.
What is your future strategy and vision for e-procurement, e-business/e-tourism, and sales?	
Africapass	Go with the flow. Sales are important as this continues to build on one's relationship with clients and suppliers in the industry.
Matriarch Africa	Automation, machine learning and artificial intelligence are going to be key strategic areas to focus on.
Giltedge Africa	For e-procurement, we will continue to support the MD of the Travel Smart Crew group in her negotiations, which will protect us regardless of the supplier's distribution channel / yield management processes. In terms of e-tourism and sales, we've redeveloped our website, launched an APP and we continue to develop our social media marketing. All of this is in line with demands of the new digital era. Suppliers should be having open and honest discussions with local DMCs / Tour Operators regarding their plans and to get input as what will and won't work. It's pointless implementing a blanket policy, which doesn't protect their local partners because we'll simply avoid using them. We have been their "bread and butter" over the years and it's unacceptable that they don't take our requirements into consideration. Communication between role players is key for a successful and full implantation of e-commerce within our tourism industry.
African Twist Travel	Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.

Midday in Africa	We are busy putting a strong effort on marketing and social media to revamp our brand and access to new clients. We have reshaped our banking system to new platforms that make our e-business/procurement more direct and less expensive.
Elite Africa	The company is more focused on e-business and e-tourism from a sales perspective and so its strategies are focused on those areas. For e-procurement, the company still relies on traditional procurement systems and traditional supplier negotiations, but it has implemented more dynamic systems.
DMC Company (wishes to remain anonymous)	Strategy would be to keep the business traditional but bring in a bit of what the future is asking for and keep up with OTA competitors. Keep pricing channels traditional but target direct consumer via remote offices with my own branding.
What strategies do you as a DMC perceive to be required for the successful implementation of eProcurement within the tourism industry of South Africa?	
Africapass	Unanswered.
Matriarch Africa	The strategies are similar to that of question 9. The challenge will be keeping a human element and building trust and authenticity with your clients.
Giltedge Africa	Unanswered.
African Twist Travel	Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.
Midday in Africa	Linking with other existing platforms when it comes to e-procurement and focusing on our brand, our original offering to compete on another court.
Elite Africa	Good question - not sure?

DMC Company (wishes to remain anonymous)	Make sure my B2B systems were efficient with regards to speed to market and accuracy of information
How does digital communication tools such as TripAdvisor, Suppliers Branding, search engines etc. affect your decision-making in the new economy of e-procurement?	
Africapass	Tools such as TripAdvisor have a negative and positive aspect. Negative in that every traveller sees their accommodation with different eyes depending on a host of factors e.g., are they well-travelled people, are they living in the same country that they are reviewing, are they after a family holiday, what is the level of their expectations. Often the places shown look far more glamorous than they actually are when one gets to the hotel / lodge etc. On the positive side, one can get a generalised overview of a place and see what comparative options there are on the same page without having to know where to look for alternatives. I might say I am a bit sceptic as I have had very mixed experiences when booking accommodation based on TripAdvisor reviews.
Matriarch Africa	In today's world, if a company does not have a digital strategy, they will not be keeping up to date with current trends. Therefore, companies that utilise digital communication tools and embrace the new economy of e-procurement undoubtedly affect our decision-making process.
Giltedge Africa	Some markets are more influenced by TripAdvisor reports than others. For example, many of our US agents and clients will be swayed by travellers' reviews, unless we're able to give our input based on personal experience. We've never received a negative review so I can't comment on that. Search engines can make a DMC's / Tour operator's business exceedingly difficult. Clients are becoming increasingly IT savvy and will compare rates to what

	<p>they're able to find online. Even if we do not offer itemised costs as per our contractual agreements with suppliers, they can sometimes cost an itinerary we've offered using search engines such as booking.com. They will often undercut local tour operators with their online rates based on inventory and yield management. In terms of suppliers, we know which suppliers are using BAR rates aggressively in the marketplace, which often undercut our existing STO rates. We then simply avoid them where possible.</p>
African Twist Travel	<p>Unfortunately, my little business is too small to follow any of those (marketing) strategies, which means I cannot answer your questions.</p>
Midday in Africa	<p>They affect our decision strongly as well as our clients'.</p>
Elite Africa	<p>It is extremely important as my clients use these sites in their decision-making process.</p>
DMC Company (wishes to remain anonymous)	<p>These tools are a double-edged sword. Whilst they help DMCs to stay aware of pricing, it causes a problem with traditional customers.</p>

5. CHAPTER 5 DISCUSSIONS

This chapter analyses the findings from all the informants interviewed in two sections: from the suppliers and from the DMCs. What this thesis does is investigate what is generally known from the worldwide literature applied specifically to South Africa.

5.1 Supplier discussions

The supplier feedback is analysed whilst concentrating on the elements of the new economy. These elements have been categorised into the three main strands of ICT developments that affect the tourism industry in the electronic era. The fourth strand, namely ICTs being used with Satellite technology was not brought up by suppliers and is therefore not discussed.

5.1.1 ICTs using computer systems for smart data

Reduced inventory

The feedback received is that much still needs to be done before the implementation of e-procurement, the change will come but it will take some time. When suppliers are ready to implement e-procurement it will need to be on a step-by-step basis and allow time for phases to be adopted. In the process, suppliers should continue to observe, maintain, and respect relationships already in place. They will need to collaborate to find workable solutions to challenges. Hope for the future is for suppliers to be able to provide real time availability of their inventory, and to make sure that it is easy for users to book or find them online quickly with the most competitive rates. The collaboration with partners who have online platforms is important as suppliers can use them to push out their services during periods of low demand with short lead times. This will also provide the suppliers with the advantage of more effective day to day operations.

Dynamic pricing

The majority of the feedback revolved around financial gain in one way or another, including, channel cost reduction, cost saving on printed material, and value for money reaching a global audience. There is a mix of strategies used by suppliers. Some are purely focusing their efforts on direct online

distribution; others have a combination of delving into direct e-commerce whilst still protecting the traditional TDC.

For the suppliers to stay competitive, real time online availability has become essential and channel managers like Nightsbridge are used to facilitate bookings into supplier reservation systems, whether it is from sites such as booking.com, directly through their own webpage, or through any DMCs/DMSs.

Suppliers respect the traditional TDC, and they endeavour to create a level playing field when it comes to e-procurement. However, the trend that was brought to light is that many of the suppliers are looking at ways in which they can generate more direct leads and bookings, as this channel provides them with a higher average daily rate (ADR) and makes them more profitable. Currently websites are built around e-commerce and comprehensive reservation systems, with bookings and operation facing segments with real time information, which are linked to these online platforms. Reservation and revenue managers then use these online platforms extensively for immediate market related information that allows them to act quickly in any situation. This results in businesses generating higher ADR which has a bigger influence on profitability. Suppliers are therefore driving leads to their own websites for bookings to be made on a BAR, instead of having to sell a room at a static STO rate or pay exorbitant commissions over to an OTA or DMC.

Supplier participants in this research believe that DMCs lack IT investment in their businesses and are therefore not set up for e-procurement sufficiently. Suppliers on the other hand are all focusing on implementing dynamic pricing and yielding models, as they cannot make the required profit from cheaper static rates. The focus is placed on how they can maximise their revenue and provide perceived value to customers. Therefore, individuals in the TDC need to invest in IT, e-procurement channels, and integrated systems to manage and obtain both dynamic pricing and inventory from the suppliers, if not they will be left behind.

Aggregated buys

The most vital point to mention is that, despite its importance, and as mentioned in the review of

literature, the adoption of e-procurement revealed that virtually little to no academic research has been conducted to investigate the application of e-procurement in the hospitality supply chain management (Aikins et al. 2014). The objective of this thesis is to look at e-procurement in DMCs through suppliers using ICTs/DMSs whilst concentrating on elements of a new economy. SA is adapting rather late to the new e-procurement movement but there are more signs of innovation. Reservation and Revenue Managers are using the online platforms extensively for immediate market related information which allows them to act quickly in any situation as they can manage their areas themselves and immediately.

Real time information

Many of the bigger suppliers are already set up with comprehensive reservations systems with bookings and operations providing real time information. Suppliers are finding various communication tools and platforms to provide this real time information to travellers, either through travel agents, granting operators access online to suppliers' inventories, through social media platforms, or by means of their own websites.

The challenges are to ensure that content is always up to date, and this is then exacerbated by the fact that there may be various platforms to keep updated. This daunting task of ensuring accuracy of content takes up a lot of company resources, but it is essential to ensure that potential customers are not misinformed. The quality of content on all platforms is essential as it can directly affect sales. This is particularly important in ensuring that the pricing structures still benefit the traditional channels but also allow for the new economy. There is a risk of loss of information due to system failures, which is of great concern too. Trawling the internet and managing advanced systems that provide real time information requires highly skilled analytical staff to monitor and build these systems.

Suppliers, therefore, need to weigh the cost of systems versus human resources costs, and identify where the benefits of a system can create more value in terms of efficiency, day-to-day operations and ease of booking, less overheads or marketing costs, and smaller commissions. With systems there is little human intervention, and the time spent on processes is decreased but, due to the nature of their offering, there does need to be some level of human intervention. Lastly, suppliers are also able to do

a full audit on what funds have been spent and what returns on investment there have been. Real time information, if utilised correctly, can greatly benefit organisations and if not, it can be at their own demise.

Automatic tracking

Automatic Tracking is mentioned by the majority of the suppliers. Some see it as an advantage because little human intervention is required, whilst others see it as a disadvantage due to the lack of personal contact. Tracking systems are attractive due to the cost saving segment and time spent on the processes. By just improving business efficiencies based on those two aspects, the result is, faster and increased sales, happier customers, and more productive employees.

Car rental companies such as Avis make use of automatic tracking quite significantly. All their rental cars have Vehicle Tracking Systems installed. These tracking systems automatically collect and store information with regard to a vehicle's location, the vehicle's mileage, they provide real-time monitoring, detailed route histories, and the ability to access a full online history. Customers are provided with access to GPS tracking systems, and with suppliers making these available to travellers, it also means that less money is now spent on expensive and soon to be outdated tourist guides. GPS systems are particularly important for foreign visitors to our country as the GPS systems assist them with route planning, directions, and they provide alerts regarding delays and diversions.

The future for car rentals would be moving to a robotic solution on digital platforms, as human intervention and decision-making is taking too long.

The USA already have rate changes on digital platforms numerous times per day, as the industry demand and supply changes constantly. The demand by the consumers has become immediate and the suppliers will have to move with these requirements.

5.1.2 ICTs using Wi-Fi and internet for communication

With regards to web-based communication, geographically targeted Facebook campaigns are becoming common place, but conventional marketing and sales strategies, to the supply channel source

market wholesalers and retailers, are still the most utilised global resourcing mechanism. Most products now have bulk mailing systems with professionally managed lists to target specific groups of customers, depending on the email campaign. Many products now also have in-house staff managing content, which allows for more up to date content that is relevant and fresh. Then there is also the development of cloud facilities and mobile applications (apps), which allow companies to save information in a simple, safe, and cost-effective place.

It is agreed by the various suppliers that communication tools play an important role, but they need to be understood and used efficiently with regard to the suppliers intended purpose and the aim. For example, TripAdvisor can be subjective, as it is based on personal preference or personal perception. DMC's branding can be aligned to the supplier's product offering to classify themselves correctly. On the other hand, search engines are informative, with little personal experience and knowledge impacting the decision-making process. Therefore, each company requires a different approach based on the platform the suppliers represent and market. Communication tools do have benefits such as increasing marketing reach exponentially at a relatively low cost, using channels for promotions, and being able to generate higher profits. That being said, they also come with their own set of negative impacts in those instances where customers are not comfortable with, or lack an understanding of, the communication channel, which may result in negative impressions. Furthermore, if inventory and rates are not maintained properly the brand and strategy may suffer. Search engines are valuable if a business keeps up with changes.

Lastly, DMCs as a communication tool are not proactive enough. One supplier participant namely, Red Carnation Hotels (RCH) advise that they simply take orders and place business where they are going to earn more money. RCH also states that DMCs hardly warrant a discussion about e-procurement because of the lack of IT investment in this part of their business, and the investment any DMC has made, has not been made for the working of the BAR system, it has rather been implemented to pull through their STO rates first.

The general feeling from the suppliers is that the various e-platforms will continue to grow rapidly as more people and newer generations prefer to book online. It is believed that the traditional TDC will remain intact but the way of doing business will become more digital which will continue to be a big challenge and a balance will need to be found. All these digital platforms require support and businesses need to monitor any flagged responses.

Buyer centric

The consensus is that e-procurement is growing quite significantly in South Africa, the connectivity is improving, new technologies are constantly being produced, and ICTs are indeed the present and the future. Suppliers are in favour of the buyer centric approach as it eliminates appointment by DMCs based on favouritism, but rather relies on appointment based on customer needs. Suppliers are finding more customers are willing to move towards online purchasing, especially over the last few years, as information and bookings online are available to them twenty-four hours a day, every day of the week. It is a competitive environment and the benefits of e-procurement include online availability, ease of distribution, and alleviation of administration, which saves time and money. There is also the ability to have global reach with immediate effect. All the suppliers see the importance of e-procurement in their businesses and are focusing their efforts and budgets on making it as easy as possible for potential customers to find and book their products and services online, whether it's through an OTA, DMC or directly through their own websites.

The only concern raised is that South Africa is still seen as a long-haul exotic destination, which comes with its own set of challenges such as logistics and concerns around safety. The entire geographical, logistical and transport chain needs to be easily understandable and bookable by the direct consumer which it is currently not the case. It is for these reasons that customers will still book through DMCs and the traditional TDC.

It is important that the traditional TDC is protected as they are substantial marketers for South Africa and are still the main source of business for many suppliers. However, there will be a demise in DMCs if they do not evolve along with the technological advancements that are taking place by making themselves visible and bookable online. It is inevitable that South Africa will move forward with digital

distribution channels, as it is the nature of the world today, driven by the consumer. Minghetti and Buhalis's (2009) statement is therefore quite true in that tourism businesses, especially SMTEs and DMCs with low ICTs, will cut themselves off from electronic distribution and ecommerce.

Universal search

Universal search refers to the integration of additional media to ICTs, it includes the use of graphs, photos, and videos, which is also known as multimedia. Multimedia is becoming one of the key areas of development to influence tourism. Suppliers are aware of this and are annually budgeting and investing a large portion of finance toward marketing, sales and PR which is costly. Suppliers are constantly re-designing and managing their website maintenance to ensure they get optimum exposure through Search Engine Optimisation (SEO) when targeting consumers. The challenge is that this is resulting in smaller companies being cut out of the distribution channel.

Some suppliers highlighted that DMCs make up large portions of their business, some up to 50 percent, and a number of those are still from the TDC. These suppliers will therefore continue to work closely with the TDC, by educating them and nurturing good relationships. However, in saying this, these suppliers also advised that they would continue to use technology and digital marketing for such purposes as geographically targeted Facebook campaigns, direct bookings from websites, product training, and building up a library of images and training videos.

Global sourcing

A challenge that was brought to light was South Africa's readiness for e-procurement and e-commerce. South Africa is still developing its infrastructure and technology. As mentioned in the literature review, global sourcing can be divided into four categories, the first being cost drivers. From the feedback received by suppliers the challenge is using any e-procurement tools or systems to their full potential. As these tools are fairly new, the systems and software come at an astronomical cost, which is often too expensive for smaller businesses. Some DMCs and markets are however still antiquated and do not want to move with the digital times.

The second drivers are market drivers, relating to gathering accurate information, which can be used by suppliers. This can be challenging when things are changing daily. With the introduction of ICTs and booking systems suppliers can practice e-procurement which alleviates administrative restrictions and saves time and money. These systems also give suppliers the ability to reach global markets immediately. This direct interaction is greatly beneficial for suppliers in those instances where there is inventory available that can be reduced by last minute deals or special offers. Suppliers can also very easily track exactly how much money was spent and what their Return on Investment (ROI) is.

Thirdly, there are government and regulatory drivers that influence tourism. The suppliers highlighted that South Africa is still perceived as a dangerous country and many international visitors do not want to self-drive. Therefore, crime levels need to be addressed to reduce this kind of concern related to logistics and safety. Overall, logistics needs to be improved on the road but also with more scheduled flights into mainstream airports. The political stability of South Africa linked to positive foreign investment and positive international opinion of both South, and Southern, Africa needs to improve to see greater foreign investment. South Africa is still developing its infrastructure, and attention needs to be paid to factors such as availability of Wi-Fi, faster internet speeds, and government assistance with training and funding, so that global sourcing can be utilised effectively.

Lastly, competitive drivers look at how suppliers differentiate themselves from their competition. One element that was mentioned by a few suppliers is the use of social media platforms. For example, using paid Facebook listings for more targeted consumer markets. Suppliers are focused on making it as easy as possible for potential customers to find and book their products and services.

Paperless

Similar to the growth and use of ICTs, DMSs and other online digital solutions, the strategies to move to paperless environments is more of a focus than ever before. As the literature review points out there are many advantages and disadvantages to going paperless. The suppliers highlighted the following advantages: firstly, spending less money on printed material is an advantageous cost saving element. Secondly, having documents and material accessible from a single digital location reduces the risk of

losing documents and information and the need for physical storage is no longer required. Thirdly, time spent on document processing is reduced, and lastly little human intervention is required.

Although the advantages sound very appealing, the suppliers also recognise that together with advanced technology, leadership is required for environments to be digitally transformed and paperless. The tourism industry is reliant on creativity, meeting customer demands for speed and service as well as easy collaboration. For this reason, and due to the nature of the services that are offered, there does need to be some level of human intervention. Training of staff would be required in order to back up data efficiently and effectively as well as to deal with system failures or errors. This is essential to ensure that information is not lost, and that updated information is always accessible to everyone that requires real time information.

Inexpensive systems

Systems are the way of the future, whether it is a reservation system, like Nightsbridge that assists with API channel management, or online platforms, or DMSs that provide avenues for ease of distribution. Suppliers want their products and services to be as easy as possible for potential customers to find and book. Therefore, various channels are used, such as travel agents, social media platforms, or suppliers' own websites granting operators access to their inventory. This indicates that the traditional TDC is not always followed, and rates are being dictated by revenue management systems which takes away from the human element and the personal touches they provide.

E-procurement may put small, owner-run businesses, or small family establishments, at a disadvantage as they may not have the financial means to invest in expensive systems and training to compete with larger more financially stable organisations. Systems, in the long term, are beneficial but the initial start-up cost and employing staff who are qualified to manage systems can be costly. When looking at the benefits these systems offer such as ease of booking, increased efficiency, reduced overheads and marketing costs, and smaller commissions, suppliers certainly do feel that the cost of these systems is a worthwhile investment. On the other hand, these systems may not save on staffing costs due to the level of personal service that some suppliers wish to maintain for bookings.

The suppliers mentioned the following challenges that they are facing with systems: the internet speed available in South Africa; the degree to which key relationships are compromised when purely focusing on electronic processes; system failures which can result in over bookings; loss of information; required training of staff, and lastly, the initial start-up costs.

The solutions that suppliers presented included appointing a specifically trained staff member to deal with systems full time, focussing on customers, which can save money on the costs involved in the manual way of working, and lastly, with the development of the cloud and app market most systemisation can now be achieved in a simpler, safer and more cost-effective manner and more suppliers can look at these options available to them.

5.1.3 ICTs for the use of social media

The main concern for suppliers around social media is ensuring that they have the resources, in terms of staff with good communication skills, for swift turnaround on queries and complaints, or, for team chats on social media, a form of communication that is rapidly growing in popularity in this new digital era.

5.2 Destination management companies' discussions

5.2.1 ICTs using computer systems for smart data

Reduced inventory

Inventory is creating numerous challenges for DMCs to overcome. Some suppliers are giving big room allocations to companies such as booking.com yet when other DMCs want to book, they are told that there is no availability, and DMCs have no control over the stock that has been allocated to booking.com. An allocation or allotment in the tourism industry is when suppliers designate a certain block of pre-negotiated seats or rooms to a travel organiser, such as OTA's or larger DMCs, with large buying power. It is only a couple of days prior to departure of travel that any unsold seats or rooms may be released back to the supplier, and this is causing discontent with the traditional TDC, as often stock is low and there is a struggle with regards to availability, but larger operators still have unsold room

stock. This makes a DMC appear inefficient to customers who are looking at the availability online and who then cannot understand why the DMC cannot book it for them.

It is more time consuming to have to make provisional bookings (to hold BAR rates to avoid fluctuation) when quoting prices now than it was when using the old model of STO rates. If DMCs do not have electronic tracking systems, it is quite possible that a consultant could forget to cancel provisional bookings based on the number of quotes that they are doing at any one time. The solution suggested is that hotels need to improve their IT support, in terms of providing reminder prompts regarding provisional bookings, in order that consultants are continually aware and can avoid companies incurring cancellation fees.

Dynamic pricing

The main deciding factor is the cost of systems that allow DMCs to link directly with suppliers. It is a costly exercise if DMCs want to get a system such as Tourplan that can integrate with suppliers and therefore, some smaller DMCs may opt to work through individual property website links as there is no cost and provisional bookings can still be made online.

DMCs can opt to work with an integrated system that can connect via a channel manager to supplier software systems to retrieve BAR and STO rates, no system, or reservations/quoting system that is manually populated with only static STO rates. DMCs are reliant on a set of STO or BAR that are loaded into a costing system and pulled through automatically to generate quotes. Depending on the volume of business a DMC does with a supplier, the DMC is given a tiered STO rate. This encourages the DMC to promote specific properties to maintain the preferential rates, which gives them an edge over competitors. Some smaller, owner run DMCs have decided to group their buying power and undergo contract negotiations, such as Travel Smart Crew. The hope is that suppliers, due to relationships and the fact that DMCs have been loyal and reliable suppliers over the years, will continue to protect DMCs regardless of distribution channels or yield management processes. Communication and open and honest discussions between parties are key for a successful and full implementation of e-commerce within the tourism industry. Many suppliers are also providing the TDC with live availability, instant

booking options through a channel manager like Nightsbridge, to assist those that do not have an integrated system.

Those DMCs that are working with interactable systems have an advantage over their competitors. They are able to pull through STO, BAR and live availability directly into their systems from the suppliers. They can provide a web platform for customers to see their rates and to make instant bookings through the DMCs. Suppliers are advertising public BAR rates and giving DMCs wholesale BAR rates. The wholesale BAR rates are commissionable rates thus ensuring that DMCs are still rate protected. The challenge faced by DMCs is that due to yield management, there may be times when a customer will see a better BAR online than what the DMC supplied to them. This may then result in a customer questioning why the service should be booked through the DMC. This results in an overly competitive market which does not benefit the customer.

A possible solution suggested, by one DMC, is that properties which have a trade portal can give BAR rates to DMCs only. Another advised that E-procurement should be managed very strictly to ensure that the local DMCs are always protected. The BAR rates, which a customer can see on a supplier's website, should always be higher than the BAR rates which are given to DMCs, allowing DMCs to add mark up to the services they are going to provide to the customer.

The conclusion is that suppliers are working towards online BAR, and phasing out STO, which may have a negative impact on traditional DMCs. There are also increasingly more OTAs opening and selling aggressively to direct consumers, which also affects the traditional TDC. Customers are becoming more IT savvy and are comparing rates, information, and availability to ensure they find the best offer online.

Aggregated buys

Giltedge Travel, Midday in Africa and Africapass Travel do not have in house systems that link them directly to e-procurement, unlike some of their competitors. These smaller, owner run DMCs have pooled together their buying power and are contracting together for negotiations with suppliers. This

strategy of aggregated buying provides this set of DMCs with a competitive edge in the industry.

There are DMCs who feel that, by linking themselves to larger operations who have access to better rates, they are contributing to the breakdown of the TDC. However, they also feel that there is little choice in the matter as they need to remain competitive. The prediction is that the future of tourism will rely heavily on customisation, innovation, and cooperation. Travellers and locals will be increasingly involved in the creation of new tourism itineraries, services, and experiences through technology. As the technology to aggregate these local tour packages and multi-destination itineraries increases, it will create the opportunity to build seemingly complex and customised itineraries online with real time availability and dynamic pricing.

Real time information

The biggest advantages of real time information are the amount of time DMCs save by having immediate access to rates, less contracts to sign, and critically, they are able to secure bookings at any time, day or night.

The challenges with real time information are ensuring that content is always up to date, and managing various XML connections on different channel managers, for all the various suppliers, which are also continually being updated with discounts or specials. The DMCs must ensure, whether it is their B2B platform or B2C platform, that they are efficient, accurate and able to ensure speed to market as best as possible.

The future of real time information is related to the growth of mobile technology access around the world enabling consumers to access content at any time of the day or night from wherever they are. Timely and relevant information is at the core of customer satisfaction and the lack thereof can affect a

customer's perception of a company.

Automatic tracking

Businesses are constantly trying to find ways to automate as many business processes as possible. The challenge is in trying to find the balance between automating a business whilst maintaining consumer interactions and not losing the human element. IT systems have developed significantly over the past few years and systems now allow for automatic tracking of bookings, quotes, invoicing, pending payments, as well as sales.

The future is automation, machine learning and artificial intelligence (AI) which are going to be the key strategies to focus on. "Artificial Intelligence is when machines or computers are recruited to perform tasks that would usually require human intelligence" (Mathieu 2019). AI offers travel services that are automated, customised, and insightful but should be used as a complementary dimension. AI has created the opportunity for mechanisms such as facial recognition, virtual realities, chatbots, robots, google maps, language translators and service optimisation. Although AI is expanding rapidly its use by DMCs is limited but, as emerging technologies and computer savvy buyers grow so will the demand for AI.

5.2.2 ICTs using Wi-Fi and internet for communications

Web based communication

The key for DMCs is relationships and communication with suppliers as this is the basic channel and source of business operations. There is still a need for the traditional TDC as it plays an important role in supporting international travel agents and operators that do not have knowledge or expertise in the areas they are selling to the direct consumer. More working relationships are being established on email and face-to-face meetings, which brings better results in negotiations. The belief is that the role of the DMC is going to change and that their biggest competitor will be the internet, especially as younger and more adaptable digital users lean towards checking rates and accommodation information online, and then booking online.

DMCs therefore, need to invest in proper internet-based systems. Some DMCs have already invested in systems and technology that are suited to the internet. Others are looking to apps to lead and automate the whole process of reserving a trip. There are already apps and websites that imitate a DMC.

While there is still a need for human involvement and interaction, with consumers being more computer and internet literate, the prediction is that e-procurement and internet based economic activities will increase. Many DMCs are therefore putting added effort into marketing and social media to revamp their brands and access new customers. Digital communication tools can have simultaneous favourable and unfavourable consequences. Tools, such as TripAdvisor, can positively help DMCs stay aware of pricing but at the same time may cause problems with traditional customers later. They also provide generalised overviews and comparisons of travel options allowing for easy assessment and high visibility to customers, however, these comparisons are also rated by customer experience, which can either negatively or positively influence the potential customers purchasing decision.

Buyer centric

All the DMCs indicated that they are aware that e-procurement has become the cornerstone of any business due to the efficiencies it creates. The global trend of tourism has moved from being supplier centric to buyer centric. The buyers' market now demands immediate access to live availability and dynamic pricing from the DMCs. This means customers want immediate answers, and as DMCs deal with customers in different time zones they have to find e-commerce solutions to ensure they can meet these needs. While STO rates are still being distributed by many hotels, these are slowly being phased out and replaced by dynamic rates with live availability and inventory, which is suited to this new era.

The challenges are that if DMCs do not remain constantly aware and well-informed of trends they can easily outprice themselves when the existing set of STO rates are outdated and more expensive than what is available online. Smaller DMCs agree that the new era is much faster and direct but worldwide accessibility trends are beginning to make the DMCs redundant, as customers can access rates and contracts easily online. Furthermore, the smaller DMCs state that their businesses are too small to

follow e-commerce strategies as the initial cost of setting up systems is too expensive, and it is easier to quote manually.

Based on the above, it is important for each DMC to have a balance of both traditional and e-procurement to satisfy all customers. The protection of the traditional TDC is especially important as they need pricing channels to be honest and clear. Numerous actions are taken to ensure this, for example, keeping avenues of communication and discussion open with suppliers as they are the source of business operations. Midday in Africa echoes this statement by advising that the best chance to protect this channel is to create extraordinarily strong bonds with the right suppliers who understand the DMC's place and support it. DMCs are particularly important to international operators, as they do not necessarily have the knowledge or expertise in the areas they are selling. There is still a place and need for traditional tourism practices, but some DMCs like Elite Africa are focusing more on the new economy tourism practices and less on the traditional tourism practices.

Universal search

As tourism products and services are intangible prior to actual consumption of the products, heavy investments are made by DMCs to bring identified source markets to them in the form of collaborative familiarisation trips. The customer then gets to see, taste, touch and smell products and services offered. This is vitally important because if they have experienced it then they will have the confidence to sell it.

Customers are essentially buying promises, due to the intangibility of tourism services, therefore it is crucial to sell products and services through videos, images, graphs, and maps. It is imperative that the offering being portrayed is reliable and accurate to ensure customer satisfaction.

Global sourcing

For global sourcing to occur effectively a DMC's strategy would need to include getting a system to work closely with an improved database of suppliers who similarly work with online systems. E-procurement expands a DMCs market to a global audience as opposed to a local audience. In terms of global trends

DMCs should be looking at e-procurement to remain relevant.

The challenge remains that Southern Africa is a complex destination compared to other tourism destinations around the world. Southern African destinations require local experts to guide prospective customers in the right direction with product and service selection, assist with logistics, and make recommendations. For more mature destinations, such as first world countries, the information online is easier to disseminate on a digital platform.

There are a large number of global trade shows around the world annually for buyers to attend. The main events that take place in South Africa are:

- Africa's Travel Indaba is Travel and Tourism Trade Show hosted in Durban, KZN.
- World Travel Market Africa is an African Travel and Tourism Exhibition, Networking Event and Conference that is the leading B2B exhibition for the inbound and outbound African Travel and Tourism markets.
- Meetings Africa which is a Business Tourism Exhibition.
- International Luxury Travel Market Africa is a specialist invitation-only event, where the best travel agents and advisors from across the world meet Africa's most spectacular luxury travel experience providers.
- IBTM Africa is a trade show for Africa's incentive, meetings, and business travel industry.
- Sports and Events Tourism Exchange is an exhibition and conference dedicated to sports and events tourism in South Africa. The sports and events tourism exchange is attended by pre-qualified international hosted buyers who you get the opportunity to meet.

The three co-located shows, namely WTM Africa, IBTM Africa and ILTM Africa, make up what is known in the travel industry as Africa Travel Week, as they all occur in close proximity and date to one another. The travel week encompasses Africa's inbound and outbound markets for general leisure travel, luxury tourism and the MICE/business travel sector. The purpose of these trade shows is to facilitate networking amongst people from various sectors of the travel industry and to showcase the latest

tourism-related products, services, operators, and DMCs. Some of these trade platforms are ideally set up for those looking to get into the industry as well as to support SMMEs in promoting their name and brand out to the world.

The last form of investments that DMCs make to ensure their global footprint is the hiring of sales manager, who actively participate in road shows all year round. Face to face interaction is vitally important for DMCs to remain relevant to B2B customers. Protection of this distribution channel is of paramount importance.

Paperless

There is a general acknowledgement that there is a global trend towards paperless environments however, some DMCs feel that they are not in a position to adapt to paperless environments, predominantly due to the cost factor, but also due to the ease of quoting manually when one has more complex bookings. Going paperless requires an open mind for change as systems and structures need to change. In addition, controls need to be tightened as all audit trails will be electronic, therefore strict authorisation policies have to be in place for the various departments to ensure validity of transactions.

The digital era allows companies to be paperless and they can then broaden their research capabilities, this brings about many benefits for smaller companies. For example, Giltedge are now able to have consultants working remotely within Cape Town as well as abroad in the USA and in France, furthermore all their negotiated rates, done by Travel Smart Crew through their aggregated buying, are stored in a central point via a system called Papertrail which makes them almost completely paperless. Digital resources can potentially alleviate traditional costs and give DMCs the financial ability to acquire a greater number of consultants for positions within the companies.

Inexpensive systems

There are many different systems available to DMCs and it does not necessarily have to be a DMS. Each DMC's strategy is slightly different in one form or another. For those who heavily rely on e-procurement, such as Matriarch Travel, the strategy is to invest in automation and integration of

systems. Apps such as Zapier can automate workflows, create sale funnels, and assist with customer relationship management as well as assist with online booking software. All of the above can reduce human error, cut costs, and save time.

There are two main challenges with systems. Firstly, there is system integration and human resources to ensure maintenance. There are a multitude of systems available that do not all necessarily integrate with one another. With so many solutions on the market, and so many suppliers all using different systems, it is hard to consolidate a central solution that services and integrates all these systems. A system should not just be a booking channel, but also an information and review system. For example, booking.com, Expedia and Lekkeslaap are all booking platforms, and TripAdvisor is an information and review system. Ideally systems that can integrate all steps in the process from the enquiry phase right up to and including reviews are required. To achieve and maintain this requires employing highly trained staff. This salary cost expenditure needs to be considered together with the cost of the initial financial investment in the system.

The second main challenge faced is the initial cost. Systems are expensive and DMCs only start seeing a return on investment once the system has been in place for at least three years. Africapass advises that systems will most likely work well for bigger companies as they have large numbers of staff, and operations need to run quickly and efficiently. Bigger companies also have the resources to employ more people to maintain the systems that are put in place. For smaller companies such a system at this stage is not an option.

Concerns relate to the integration of systems, the working relationships with peers in the tourism industry, and whether person-to-person contact is being lost. Previously, negotiations and discussions were held related to set STO rates that were loaded into a costing system and pulled through automatically. Now DMCs such as Midday in Africa feel that more suppliers are providing their services directly to their customers forcing the DMC out entirely and, even though the customers still want their services and knowledge, those suppliers make it impossible for them to propose a competitive package.

The buying centric era is demanding that DMCs become a leader of offering. The investment made on e-procurement is a fraction of the cost of manual procurement and allows for scalability even in small businesses. There are a world of benefits that the investment will bring in the long-term such as improved time efficiency, increased product offering, increased conversion rate, immediate access to live availability and dynamic rates, reliability, access twenty-four hours a day, seven days a week and markets can be expanded to a global audience.

A solution provided by the DMCs, to try and overcome the above-mentioned challenges, is to find more flexible systems. This would ideally entail having a central system with cheaper software that can aggregate all hotel rooms, activities, transfers, and packages automatically with little to no human input, and which can be accessed by consultants from multiple companies. There are still some businesses that are stuck in the last century and have not moved forward yet. Several DMCs advised that they are continuously finding ways to automate B2B and B2C without losing the human element and ensuring that all new practices are considered.

5.2.3 ICTs for use of social media

DMCs understand the importance of social media to their business. They need to ensure that they are actively interacting on the various platforms available to protect their brand and to keep communication channels open. Some DMCs have employed social media managers to manage and maintain social media platforms, as this can generate more direct leads.

The one social media platform that was frequently discussed amongst the DMCs was TripAdvisor. TripAdvisor can have both a positive and negative influence on a business. Negative in that every traveller sees accommodation with different eyes, and it is then rated based on perception. Some markets are also more easily influenced by TripAdvisor reports than others, such as the USA market. Unless a DMC can provide input based on personal experience operators or agents may not be swayed. On the positive side, customers can get a generalised overview with comparative options all on one page without having to look for alternatives elsewhere.

5.3 Conclusion

This discussion covers too many salient points to repeat in a chapter conclusion, but it seems to the researcher that DMCS must inevitably cope with the pace of change in the travel industry. What the implications of the pace of these changes will be are indicated in the next chapter which concludes this thesis.

6. CHAPTER 6 CONCLUSIONS

The objective of this thesis was to look at e-procurement in DMCs using DMSs within a TDC in South Africa, whilst focusing on the relationship with the supplier and concentrating on the elements of a new economy. Furthermore, through investigation and evaluation, to predict new phenomena in this ever-changing field whilst assessing the challenges that DMCs experience because of suppliers using ICT, with possible solutions or recommendations for e-procurement.

6.1 E-procurement in DMCs and the new economy

There is still much to be done before the successful implementation of e-procurement. South Africa needs to gain political stability and consistency, logistics and transportation need to be improved. Yielding tools and dynamic pricing needs to be understood, and resources need to be utilised. However, one thing that inevitable is that South Africa will move forward as the e-procurement trend gains momentum with demand driven by the consumer.

In summarising the old economy versus the new economy in tourism, the old economy had long product life cycles which were static and easily outdated. The technology was slow in evolving, which also meant communication was slow and systems were extremely expensive. The old economy did not cater for global reach which meant the shifts in customer patterns and tastes made it possible for firms to vertically integrate into a wide range of offerings. Competition was also generally sufficient enough to ensure the costs of operating was covered, and for a company to gain all the advantages of controlling the full vertical chain of production. The new economy is about short product life cycles with up-to-date information and dynamic pricing. The rapid change in technology also means that software systems are constantly changing, but both suppliers and DMCs still find technology and systems expensive. However, customer demands, and tastes are constantly changing and are therefore more unpredictable. The stability and predictability of vertical integration may simply be impossible to realise in the new economy due to an organisation's need to ensure that they remain flexible and up to date with the latest trends. This suggests that companies can no longer solely rely on vertical integrations, a few different strategies will need to be used. Joint ventures, strategic alliances, as well as finding and learning to work with partners are a critical organisational skill in this new economy. The e-procurement

movement is still growing with signs of innovation, whilst DMSs are still new in SA with space to grow and develop.

6.2 Prediction of new phenomena

Throughout the literature review it was established that various software systems are available for bookings, and the trends are to increase automation and integration. There is a focus on yield management and BAR to obtain maximum rates for inventory available, to increase efficiency and accessibility through a global reach, and to grow web-based applications. The data analysis confirms that customers are more willing to move towards the e-channel and the growth of e-procurement is therefore inevitable. If the TDC cannot ensure that the suppliers' requirements are being met and the customers' demands are being seen to, then there will be a decline in DMCs as more OTAs sell directly to fill this requirement.

Despite the importance, a review of literature on the adoption of e-procurement revealed that very little academic research has been conducted to investigate the application of procurement in hospitality Supply Chain Management. There is a lack of available data and no common indicators for e-business and e-commerce, but new phenomena include bringing about a full ICT driven e-procurement cycle. This means that DMSs will be further equipped to use information and content to analyse various stages of service such as before, during, and after, to understand customers' needs and wants. This information can then be used to provide suggestions, information and encourage travel.

All the above is now leading to a whole new era of phenomena to be investigated and discovered in tourism, such as how artificial intelligence can replace traditional human cognitive functions using, for example, robotic solutions. Smart data collection is being used to personalise information presented to potential tourist customers to enhance travel planning and travel experiences of potential guests, and to automatically track customer information. An example of this is often seen when one searches for a holiday destination, and thereafter automatic advertisements and pop-ups appear related to your search. Large amounts of data are being collected in the process of automatic tracking and through the use of fully integrated software systems. However, South Africa has recently introduced the POPI Act

which officially came into effect on 1 July 2020. This Act provides for the protection of customer information being saved on clouds and apps. The tourist industry will have to find a way to balance privacy with the use of smart data. Satellite technology will increasingly be used in Africa, with satellites increasing internet usage in countries with poor internet connectivity, which might bring new intra-African travellers to South African tourist destinations. The use of satellites for co-ordinates, use of GPSs, obtaining satellite imagery, or for example, tracking of animals that have been tagged for conservation purposes, and for tourist guided viewings might also increase in South Africa. The use of Google Maps by tourists, along with advertisements for popular “hang-outs”, might increase tourist footfall in those locations.

6.3 Challenges for DMCs and possible solutions for e-procurement

The introduction addresses challenges perceived by the DMCs such as rate negotiations, having access to inventory and the selling thereof, ensuring rate parity, suppliers putting out special offers last minute, protection of the TDCs, technological advances, expensive systems, relaying of accurate information and content, and the concern of the disintermediation of the TDCs as a result of these challenges. Whilst reviewing various previous journal articles further challenges were identified regarding the security of information and what ROI there is on expensive systems that also directly sell to the customer. The challenge with systems is that system integrations need to be made, and a certain amount of expert systems knowledge is required, together with knowledge required for understanding a destination to sell it. The respondents echoed the concerns raised by the author and information from the literature review. In summary, the greatest challenges for the respondents are the multitude of systems and digital platforms that are available not necessarily integrating with one another; the human resource cost associated with having to remain technologically updated, and OTAs and direct services that are undercutting the DMCs, by providing worldwide accessibility, which is squeezing out the DMCs and making them redundant.

DMCs will need to overcome the traditionalist view that these new applications only serve larger companies as they can reduce transaction and operational costs for all. DMCs need to focus their attention on applications and solutions appropriate to their size and position in the market, as well as

be innovative in providing knowledge, information, diverting resources, and adding value to their transactions. Specifically, using DMSs to resolve many of the challenges DMCs currently face with regards to rate parity, dynamic pricing, and inventory. The developments in search engines, carrying capacity and the speed of network have all enabled the tourist travellers to source much more information for themselves which makes them harder to please.

Due to every changing technology, the rapid shift from the old economy to the new economy and with the slow uptake of e-procurement there is still considerable research required in various sections of e-tourism. Further research is required on the constantly changing software systems that allow for e-procurement especially considering up-to-date data collection and distribution, integrations, and automation.

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Annexures

Annexure 1

Supplier Questionnaire

QUESTIONS FOR INTERVIEW WITH SUPPLIER

1. How do you as a supplier of tourism services perceive the growth of e-procurement among your customers and is it of importance to your business?
2. What strategies and resources do you as a supplier use to develop e-procurement strategies in the tourism industry of South Africa?
3. How do you as a supplier perceive the cost, advantages, and opportunities of e-procurement in the tourism industry of South Africa?
4. In your opinion what is the supplier's challenges and disadvantages associated with the implementation of e-procurement in the TDC and digital era communication tools in the tourism industry of South Africa?
5. What are the possible solutions to these challenges and disadvantages?
6. As a supplier how is your business currently managing and performing the elements of the new economy above?
7. Is the "protection" of the Tourism Distribution Channel important to you as a service provider? And why?
8. In your opinion, what are the future trends in South Africa for Tourism Distribution Channels in this Digital Era, what do you predict the future to have in store?

9. What is your future strategy and vision for e-procurement, e-business/e-tourism and sales?
10. What strategies do you as a supplier perceive to be required for the successful implementation of eProcurement within the tourism industry of South Africa?
11. How does Digital communication tools such as TripAdvisor, DMC's/Tour Operators Branding, search engines etc. affect your distribution strategies in the new economy of e-procurement.

Annexure 2

DMC Questionnaire

QUESTIONS FOR INTERVIEW WITH DMC / TOUR OPERATOR

1. How do you as a DMC perceive the growth of e-procurement and is it of importance to your business?
2. What strategies and resources do you as a DMC use with regards to e-procurement in the tourism industry of South Africa
3. How do you as a DMC perceive the cost, advantages and opportunities of e-procurement in the tourism industry of South Africa?
4. In your opinion what is the DMCs challenges and disadvantages associated with the implementation of e-procurement in the TDC and digital era communication tools in the tourism industry of South Africa
5. What are the possible solutions to these challenges and disadvantages?
6. As a DMC how is your business currently managing and performing the elements of the new economy above?
7. What are you as a DMC / Tour Operator doing to ensure that the traditional tourism distribution channel is followed? And is the “protection” of this channel important to you?
8. In your opinion, what are the future trends in South Africa for Tourism Distribution Channels in this Digital Era, what do you predict the future to have in store?
9. What is your future strategy and vision for e-procurement, e-business/e-tourism and sales?

10. What strategies do you as a DMC perceive to be required for the successful implementation of eProcurement within the tourism industry of South Africa
11. How does Digital communication tools such as TripAdvisor, Suppliers Branding, search engines etc. affect your decision making in the new economy of e-procurement?

Annexure 3

Template Letter of Information and Consent Form



LETTER OF INFORMATION

Title of the research study:

E-Procurement for Destination Management Companies within the Tourism Industry of South Africa:
Digital Era trends, Challenges and Responses.

Principal Investigator/s/researcher: Lucy Berndt

Brief introduction and purpose of the study:

South Africa is adapting rather late to the new digital era of ICTs and the paradigm shift to e-business, e-commerce, and e-procurement. ICTs have created opportunities of globalisation of information, providing consumers with direct access and changing their buying pattern. Consequently, this creates challenges of breaks in the tourism distribution channel which can lead to job loss, moreover, placing pressure on the Tourism Distribution Channel to find new and innovative concepts; otherwise, they will fall behind the rest of the pack. In a fast-changing field the aim of the study is to determine what upcoming trends and phenomena there will be, whilst investigating and examining the current challenges and solutions that Tourism Destination Management companies' procurement teams in South Africa face in the current digital era ICTs world.

Outline of the Procedures:

Participation in the study involves completion of an interview that asks you basic questions about Tourism Distribution Channels, e-business, e-procurement, and future strategies, which will last

approximately one hour. The interviews along with survey will be conducted by Lucy Berndt, audio-taped and later transcribed for the purpose of data analysis.

Benefits: The participant will contribute to the researcher's findings; assist with identifying possible trends, challenges, and solutions in the digital era in terms of e-procurement in the Tourism Distribution Channel.

Confidentiality: The information gathered during this study will remain confidential in secure premises during this project. Only the researcher will have access to the study data and information. Should you wish to remain anonymous please advise such during the interview and questionnaire transcripts.

Persons to Contact in the Event of Any Problems or Queries:

You are welcome to ask the researcher any questions that occur to you during the interview. If you have further questions once the interview is completed, you are encouraged to contact the researcher using the contact information given below. If, as a result of participating in this study you feel the need to withdraw comments or elaborate further, please contact Lucy Berndt at lucy.strydom1@gmail.com or the Institutional Research Ethics administrator on 031 373 2900. Complaints can be reported to the DVC: TIP, Prof F. Otieno on 031 373 2382 or dvctip@dut.ac.za.

General:

The research will consist of interviewing 20 Suppliers and 20 Destination Management Companies or Operators. Once thesis is completed the below options are available to participants, please indicate if you are interested in receiving any of the following:

If

(a) you would like a copy of your interview transcript once it is available

(b) you are interested in information about the study results as a whole

and/or

(c) if you would be willing to be contacted again in the future for a possible follow-up interview,

please provide contact information below:

Check those that apply:

Yes / No - I would like a copy of my interview transcript

Yes/ No - I would like information about the study results

Yes / No - I would be willing to be contacted in the future for a possible follow-up interview

Write your address clearly below. Please also provide an email address if you have one.

Mailing address:

Email address:



CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Lucy Berndt (name of researcher), about the nature, conduct, benefits, and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read, and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be processed into a study report unless you wish to remain anonymous
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant

Date

Time

Signature

I, _____ (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher

Date

Signature

Full Name of Witness (If applicable)

Date

Signature

Full Name of Legal Guardian (If applicable)

Date

Signature

Annexure 4

Completed Supplier Consent Forms

Annexure 5

Completed DMC Consent Forms