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Project 2015/13

E-Retail in South Africa and the Impact on Skills Development in the South African Retail Sector

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APPLIED RESEARCH
LEADERSHIP DEVELOPMENT
SERVICE TO RETAIL COMMUNITY

Project 2015/13:

E-Retail in South Africa and the Impact on Skills Development in the South African Retail Sector

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"Collaboration opens the window to a world of opportunities"

W&RSETA

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EXECUTIVE SUMMARY

This study provides a broad overview of e-Retail implementation and its impact on skills development within the South African retail sector. The study interrogates the readiness of the South African retail sector for e-Retail on the basis of a selection of technology, marketing, operations and business imperatives.

The study provides in particular a predictive analysis of the technical skills requirement to sustain a viable e-Retail industry in the country. In this regard, a set of salient e-Retail functions, skills and services are identified that pragmatically define a set of baseline competencies for implementation. Furthermore, a proposed framework for a professional qualification in e-Retail Management is provided as a possible Higher Education curriculum intervention.

The study deploys a Design Science Research approach that informs the design and construction of various knowledge artefacts that describe the South African e-Retail experience and aspirations by highlighting salient aspects relating to (1) traditional versus e-Retail, (2) global e-Retail trends, (3) e-Retail technologies and platforms, and (4) e-Retail training imperatives. The research furthermore elucidates the environment for e-Retail deployment in South Africa with respect to e-Retail functions, services and job skills requirements and prospects of e-Retail as a career.

The research methodology deployed in the study centres around the establishment of a change agenda for e-Retail within the South African landscape. The study is duly cognisant of the socio-techno-economic divide that characterises the South African society and therefore foregrounds the training imperative as a vital aspect of the viability of e-Retail in South Africa.

The first round of data gathering was conducted using an online survey instrument directed at the broader retail management community to establish the general perspective of the "South African e-Retail readiness". Focus group sessions informed the refinement of the landscape and skills profile for e-Retail in South Africa; and an expert group ultimately provided the definitive detail of potential training strategies.

The e-Retail Readiness Survey sought to ascertain the general perception of anticipated opportunities and challenges around large-scale implementation of e-Retail in South Africa. The online survey returned results that may be considered to be somewhat counter intuitive: The findings from the target group indicated a significant lack of confidence in both the technology readiness and business readiness. The former would have been predictable whereas the latter perhaps not! Further specific aspects emerged from the survey that provided substantial points for deliberation within the subsequent focus group sessions.

The focus groups addressed a wide range of substantive matters relating to the viability of e-Retail within the South African developing economy within the aforementioned categories of technology, marketing, operations and business imperatives. The salient points of declaration of e-Retail in South Africa emanating from the focus group discussions were synthesised into a suite of distinct propositions. These points were then further deliberated

on by an expert group who validated the design of a process model to drive the change agenda for e-Retail in South Africa.

It proved to be quite challenging to secure the participation of persons who have an established business interest in e-Retail. The majority of the participants in the initial online survey and many of the focus group participants have an academic interest rather than a business interest in e-Retail. This is probably not unusual for a proverbial crystal ball study. The expert group were comprised entirely of persons who have a business interest in e-Retail. A critical interpretivist strategy was deployed to drive the research so that the data and submission could be moderated on the basis of context and relevance to the central theme of the study.

The study identified a comprehensive suite of key and breaking technologies that inform the successful implementation of e-Retail in South Africa. The nature and limitations of the data gathering process places a practical limitation on the value of the research in that generalised conclusions are not possible and information is relevant only for the purpose and within the context that it was mined. The study also uncovered essential business process elements that are required to drive the change agenda for e-Retail in South Africa.

The study also highlights aspects of business and social change associated with the global phenomenon of e-Retail and recognises the evolution of e-Retail functions, skills and services. In this regards the study draws from salient international case studies as well as relevant national case studies.

The study makes significant knowledge contributions with respect to the delineation of salient issues to be addressed with regard to the practical implementation of e-Retail in South Africa. The study makes a novel methodological contribution by deploying a Design Science approach to establish the process logic for the research and a Critical Interpretivist approach of information synthesis. This strategy allowed the research to be both suggestive of and receptive to opportunities and challenges within a complex environment of change and transformation.

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INTRODUCTION

This report is referenced in a study commissioned by the Wholesale and Retail Leadership Chair (WRLC) at the Cape Peninsula University of Technology in 2015. The study sought to elucidate the "e-Retail in South Africa and the impact on skills development in the South African retail sector". The aforementioned research extends an earlier WRLC commissioned study entitled "e-Business development and skills requirements" which presented a global perspective on e-Retail (Klaiber & Hermanus, 2014).

The global retail industry has undergone spectacular transformation in recent times driven both by almost constant innovation of technology for enterprise and increasing virtualisation of social spaces. The transition to e-Retail as the dominant provision within the South African retail sector is not yet a “fait accompli” and many challenges remain; and this is probably true for many emerging economies characterised by unequal economic and infrastructure distribution. This paper however will specifically pursue a business agency perspective and will provide only general analysis of the broad socio-techno-political environment.

Online shopping from a business-to-consumer (B2C) perspective is typically the purchase (or procurement) of goods and services over the internet using a web browser. It is known by various names, including, electronic retail, e-Retail (the term used in this paper) or eRetail, e-shopping, e-Tail or eTail, and online retail. There are also other terms in use, including, web shopping, internet shopping or virtual shopping. And with the proliferation of mobile commerce, also known as m-commerce, there would probably be an "m version" for each of the aforementioned "e-versions". It is instructive to note that e-business, e-commerce, and m-commerce typically refers to the use of information and communication technology (ICT), including the internet, to support the broader functions of business, which might include e-Retail but not limited to it.

A word cloud of some of alternative terminology for e-Retail is depicted in Figure 1 below.

Figure 1: e-Retail word cloud

The report is conventionally organised and presents a narrative that details an unfolding analysis of the inquiry into "e-Retail in South Africa and the impact on skills development in the South African retail sector".

The report starts by providing a chapter on the "Business Context for the Research" that presents a discourse around the Business Process Framework, the imperative for e-Retail, a global perspective on e-Retail, and the context for the research is presented.

Next, an overview of selected "Literature on the e-Retail Phenomenon" is presented that informs the "Key Tenets of the Research".

The report then presents a "Methodology" chapter that presents a discourse around the Change Agenda, the Design Science Research approach adopted for this research, and the formal scientific research engagement leading to the subsequent chapter dealing with the "Research Findings". The research design, methodology and instruments are discussed and the approach in using survey, focus group and expert group methods is detailed in the Methodology chapter.

The findings of the research are presented as reports on each of the activity areas, namely, the "Scoping Group Report" detailing the e-Retail Technologies, the e-Retail Skills Map, and the e-Retail Change Drivers; the "Online Survey Report"; the "Focus Group Report"; and the "Expert Group Report".

The concluding chapter deals with the conditions for supporting the "e-Retail Change Agenda" and proposes the introduction of a Professional Qualification in e-Retail Management curriculum model.

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1. CONTEXT FOR THE RESEARCH

1.1 INTRODUCTION

This chapter deals with the environment for the research. In some respects e-Retail can be considered to be merely an extension of the traditional business environment but it might also be considered to be a "disruption" of the traditional business environment or even a combination of the two perspectives. In this chapter a business context for the research is provided as opposed to a technology or social aspect.

A generalised and comprehensive view of the broader functions of business is provided by Brown (2008) in her article entitled "Business processes and business functions: A new way of looking at employment". She identifies five core business processes and three support business processes that define a generalised business practice framework.

Brown's Business Process Framework is detailed in Table 1 below.

1.2 BUSINESS PROCESS FRAMEWORK

The business process framework, as illustrated in Table 1 below, defines the range of core and support business processes for traditional retail. A comprehensive range of business process functions within the framework is suggested by Brown (2008). Based on the definitional logic presented, it is argued by abductive logic (presumed) that the same functionality would pertain also to e-Retail. It is instructive to note that even within a traditional retail paradigm that technology already has a significant role. Brown (2008) notes that technology and process development support a wide range of activities, including, process management and systems automation. Increasingly all aspects of the business process are supported by computer applications.

Table 1: Business process framework (Taken from Brown 2008)

Core Business Processes	Procurement, logistics, and distribution	Those activities associated with obtaining and storing inputs, and storing and transporting finished products to customers.
	Operations	Those activities which transform inputs into final outputs, either goods or services.
	Product or service development	Activities associated with bringing a new, improved, or redesigned product or service to market. Among these activities are research, marketing analysis, design, and engineering.
	Marketing, sales, and customer accounts	Activities aimed at informing existing or potential buyers. These activities include promotion, advertising, telemarketing, selling, and retail management.
	Customer and aftersales services	Support services provided to customers after they purchase the good or service. Such activities include training, help-desk services, call-centre services, and customer support for guarantees and warranties.
Support Business Processes	General management and firm infrastructure	Corporate governance (legal, finance, planning, and public and government relations), accounting, building services, management, and administrative support.
	Human resource management	Activities associated with recruiting, hiring, training, compensating, and dismissing personnel.
	Technology and process development	Activities related to maintenance, automation, design or redesign of equipment, hardware, software, procedures, and technical knowledge.

1.3 OBJECTIVES OF THE RESEARCH

The original mandate for the research is provided as Appendix 3 of this document.

The statement of objectives of the research, as presented here, is strictly based on the original mandate but it was subsequently extended and now restated to achieve improved alignment with the unfolding research process. It is hoped that more credible outcomes emanate from the extended mandate.

This W&RSETA project was mandated by a Letter of Allocation issued by the Wholesale and Retail Leadership Chair (WRLC) Operations Management Committee e-Meeting of 5-9 February 2015, giving effect to Research Project Number 2015/13, on 17 February 2015, to investigate “e-Retail in South Africa and the impact on skills development in the South African Retail Sector”, in pursuance of the following objectives:

- To establish the profile of the South African e-Retail sector based on the earlier W&RSETA commissioned international study, Project 2014/04, “e-Business Developments and Skills Requirements in the Retail Sector” and further exploration of the extant literature and relevant empirical engagement to uncover insights specific to the South African e-Retail landscape,
- To identify the current and predict future technologies and practitioner skills required to support, sustain and develop the South African e-Retail sector towards global competitiveness,
- To establish suitable training interventions, supported by the W&RSETA, academic institutions, and industry role players, towards skills development in support of the local e-Retail industry, and
- To produce a 5-year e-Retail trajectory by evaluating e-Retail markets and salient technology trends in South Africa.

1.4 E-RETAIL

E-Retail, simply stated, is retail that is largely facilitated by Information and Communication Technology (ICT) and specifically cyber technology. It is therefore logical that the expansion of e-Retail is closely coupled to trends within these related technologies.

The e-Retail proposition could be seen to be a natural consequence of the universal digitisation phenomenon that has impacted almost all aspects of human endeavour. E-Retail, as discussed earlier, could be considered both to be simply an extension to traditional retail or as a "disruption" of traditional retail. It could be argued that e-Retail that plays out entirely in cyberspace could be read to be one end of the retail continuum; whereas traditional retail with no electronic support would be the other end of the continuum. E-Retail more commonly is probably considered to be retail that is facilitated by cyber technology at a sales transactional level.

A collage of some of the established e-Retail business in South Africa is depicted in Figure 2 below.

Figure 2: Sample of South African e-Retailers

1.5 GLOBAL PERSPECTIVE ON E-RETAIL

This section interrogates the global perspective on e-Retail and we will rely entirely on the work of Klaiber & Hermanus (2014) entitled "e-Business developments and skills requirements in the retail sector" in this regard.

The Klaiber & Hermanus (2014) study "analyses the influences of IT development on retail businesses" from a global perspective. They furthermore interrogate the impact of skills development resulting from the "disruption" of traditional retail from a global perspective. They argue that the impact on skills development extends beyond just the impact on sales and argue that the impact in fact will be felt across all of the business process functions.

They raise concern about the threats of cybersecurity and information privacy in the modern era and that systems need to be evolved that data and data transactions can be done securely. They argue that for e-Retail to be properly nurtured into existence, care should be taken with the "efficacy of logistics" and that special care needs to be taken especially with regard to the integrity of financial transaction infrastructure and logistics.

Klaiber & Hermanus (2014) declare that a convergence of private and business environments is starting to become commonplace. They further argue that geography is no longer a major consideration in retail as far as access to goods and services are concerned. There will of course logically still be some impact on the delivery of goods.

They further contend that there is an increasing number of IT applications to support e-Retail and even enhance business functioning. They however caution that there are risks associated with introducing technology at the rate and as intensively as required to establish an e-Retail footprint. There remains much concern about the risk of poor ROI (return on investment) in some cases where operational complexity might counteract the advantages that might potentially accrue from e-Retail.

The proliferation of mobile technologies is an astonishing phenomenon that seems to cut across even class borders. There is a significant penetration of smart mobile technology into

rural and poorer communities. This coupled with the proliferation of social media have created an exciting opportunity for embedding e-Retail. The discourse is beyond just increasing volumes but it is more about the tailoring of products and services because data emanating from social networks could provide insight into consumer needs and social behaviour patterns.

Klaiber & Hermanus (2014) suggest that the transition towards e-Retail is inevitable and that "the retail sector is confronted with substantial changes". They however reflect that there does not yet exist a "consistent understanding" of e-Retail as a new discipline and therefore there is no consistent view on the skills and training requirements to support the emerging e-Retail industry.

The Platt Retail Institute Report of 2012 is referenced in Klaiber & Hermanus (2014) where they support the contention that "rapid technological innovation has touched on almost all areas of commercial activities globally" and this has resulted in wide ranging business transformation. Although technology innovation brings about new opportunities for business, it also requires investment to participate, comes with risk, and inevitably requires new business and technical skills to support the opportunity. It is almost self-evident that the risk for e-Retail implementation would be "significantly around cybersecurity" both as an operational imperative and as a skills imperative.

The Klaiber & Hermanus (2014) report clearly establishes two perspectives of e-Retail. The first relates to using technology to build the efficiency of the business while the second perspective is about realising a new business model in response to the technology-sponsored "disruption" of the traditional retail industry. It appears that no matter which perspective is held that businesses will need to respond to consumer demands for more "flexibility, platform integration and individualisation of the retail experience". The "ICT platform and human capital development" imperative is clear whether the business strategy for e-Retail adoption is informed by a drive to improve competitive advantage or to transform the business. Some degree of socio-technical transformation of the company will be required since "technological innovation drives strategies in retailing"!

It is therefore quite axiomatic that much of the value of this research will be about informing the key challenges relating to job skills and training approaches.

1.6 CONCLUSION

This chapter dealt with the environment for the research. It presented a pragmatic view on the motivation, aim, and focuses of the project and presented a scientific strategy for realising sensible outcomes. As with most socio-technical research, the potential contribution of the research often becomes clear only during engagement of the project. It was no different in this project.

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2. LITERATURE PERSPECTIVE ON THE E-RETAIL PHENOMENON

2.1 INTRODUCTION

This chapter provides a window into the discourse around e-Retail that has (not surprisingly) been sustained on the Internet rather than in scholarly publications. The lack of scholarly publications is indicative of the sub-discipline of e-Retail still being in its infancy. There however is a rich discourse or "buzz" in the popular media that very authentically conveys the sentiments of industry practitioners rather than that of scholars. These perspectives are generally presented in a more colourful style and definitely not in an academic writing style that typically is more measured. In order to convey also some of the affective underpinning of the writings, it was considered prudent to present a précis of these publications but to retain some of the original phrases. A selection of publications from a cross-section of mainly Internet publications is presented here.

2.2 PROFILE OF THE SOUTH AFRICAN E-RETAIL SECTOR

Some key statistical insights are provided here to help define the size and shape of the South African e-Retail sector. The profiling of the South African e-Retail sector however is not only located within this section. The profiling of the South African e-Retail sector is a majority consideration of this report and the entire discourse of the research is about profiling e-Retail and its manifestation within the South African landscape.

In the previous chapter, the state of the global e-Retail sector was explored by drawing from an earlier W&RSETA commissioned international study, Project 2014/04, “e-Business Developments and Skills Requirements in the Retail Sector”.

In this chapter, the inquiry into the state of the global industry is extended through further exploration of the extant literature towards establishing key tenets for this study by drawing relevant contributions and insights from the literature on a structured basis. In further chapters the unfolding research process seeks to establish empirical engagement to uncover further insights into the dynamics of the South African e-Retail landscape.

In this section, we review a number of recent online publications provided by leading South African “digital commerce” commentators with the view of bringing “authentic” insights into the current state of the industry.

The World Wide Worx research organisation is headed by its founder Arthur Goldstuck. As validation of the international standing of World Wide Worx, it is noted that the “International Telecommunications Union uses statistical research data provided by World Wide Worx when providing Internet data for South Africa”. The World Wide Worx website is widely regarded as an authoritative source of information on technology trends in general. The organisation also specifically focusses on “Web commerce in South Africa, the impact of IT on small businesses, the role of mobile technologies in business and government and the technology challenges of the financial services sector”.

World Wide Worx (2016) declares in its Online Retail in South Africa 2016 report that "online retail in this country will reach 1% of overall retail during 2016". The report further states that "online retail continues to grow at a high rate in South Africa" and continues to grow at a rate of more than 20% per annum. The current market share of e-Retail in South Africa is around R9 billion of a total retail sector share of around R900 billion. "Forecasts by World Wide Worx for the next five years, from 2016 to 2020, show online retail sales almost exactly doubling over this period".

Arthur Goldstuck, in the report, raises concern that "online retail in South Africa is often characterised as being undeveloped, behind the curve and lagging behind Western markets" and further laments that "even retailers themselves" support this view despite indications of healthy industry growth. He however intimates that there are two realities of e-Retail in South Africa. There is a high performing sector of major retailers and then there is a struggling majority e-Retail sector. An opportunity for development clearly lies with the latter sector.

The World Wide Worx (2016) report crystallises the notion of "opportunity for development" into two key points. The first point being that there is an ever-increasing "number of experienced Internet users in South Africa who are ready to transact online". The second point is more ominous and suggests that "South African e-commerce has not attained the sophistication of major Western markets". The report further suggests that the South African e-Retail sector should become more innovative and less conventional in its approaches.

The Euromonitor International (2016) report on "Internet retailing in South Africa" confirms the position advanced by the World Wide Worx (2016) report that e-Retail is generally healthy and growing. The actual performance figures are also generally comparable with those provided by World Wide Worx.

The Euromonitor International report further declares that e-Retail or "Internet retailing" in recent times has been the "most dynamic channel" for retail business. The report however asserts that the South African "internet retailing channel is still in its infancy" by global standards. The report declares the South African e-Retail landscape as being quite competitive but indicates that "numerous new players" have entered into the fray in recent times.

The Memeburn (2015) report publishes lists that it refers to as "seven fast facts about the South African e-Commerce space" that capture the essence of consumer level demographics of the sector. The list is based on "statistics gathered from over 90000 respondents during the 2015 South African e-Commerce Awards survey" (reproduced verbatim):

- The majority of online shoppers were women aged between 18 to 39 years;
- The majority of South Africans spend between R250 and R1000 when making a purchase online;
- 33% of those surveyed made 10 or more purchases online per year;
- 28% of shoppers make online purchases using their mobile phone;

- The busiest times for online stores were after the 25th of each month;
- The average basket size in South Africa stood around R725 per order; and
- That 70% of all online transactions were paid for with a credit/cheque card.

The Memeburn (2015) report quotes Andy Higgins of uAfrica.com who commented on the survey and stated that "e-Commerce in constantly evolving in South Africa". He further contends that "the way consumers shop online and what they buy defines what they expect from online stores. We are seeing online merchants taking up the challenge and evolving with their customers".

The BusinessTech (2015) blog titled "SA online shopping only 1% of retail sales" quotes and confirms all the demographics and statistics provided by the World Wide Worx (2016) report. An earlier associated blog however provides some insight into the drivers of e-Retail in South Africa. The key drivers, as reported, are (1) Lower product costs, (2) Faster delivery, (3) Flexible delivery options, and (4) Safer ways to pay. The blog furthermore suggests that the payment related issues are the major barrier to consumer participation in e-Retail. Consumers have indicated that they do not want to continuously provide the same information such as credit card details and delivery address; and that insecurity around online payments is the main reason for not wanting to shop online.

The research however indicates that the proliferation of mobile devices will drive future increases in online shopping in South Africa. There is a definite shift in e-Retail from desktop and browser based engagement to mobile and specifically "mobile app" based e-Retail. Consumers are however still generally not satisfied with the quality of the mobile interface provision.

Convenience and comfort appears to be the order of the day. In the interest of creating a caring environment, care needs to be taken to service consumer needs. Extending the sentiments of the blog, it is self-evident that multi-lingual platforms need to be explored in a multi-cultural environment such as South Africa, as an example.

The Deloitte (2015) report on "African powers of retailing – New horizons for growth" provides a comprehensive and detailed overview of the African continental e-Retail landscape. It declares the African market to be "diverse, complex, interesting, and characterised more by informal than formal retail". It is a market of great opportunity with "a rising middle class (which) is contributing to the modernisation of retailing and greater consumer market opportunities". The African market "has become a laboratory for experimentation in mobile and e-Commerce, and presents a challenging opportunity with many African economies transitioning towards consumption driven markets". The report highlights "the rise of the middle class, exponential population growth, the dominance of youth, rapid urbanisation, and fast adoption of digital technologies".

The report articulates an ongoing tension between opportunity and challenge. There appears to be keen international interest in Africa that also includes an interest to participate in the development of the fledgling African e-Retail economy. There is a keen sensitivity to not simply build African e-Retail on a Western template but rather to be highly

cognisant of African business and cultural preferences to evolve an e-Retail sector that is truly African. There are of course some serious barriers to "retail success", including, "a shortage of high-end retail space, infrastructure issues, and political instability and currency challenges."

The Deloitte (2015) report declares the six most definitive trends for the African and South African e-Retail sector to encompass are (reproduced verbatim):

- The informal retail market is still significant,
- Increasing omni-channel strategy informing the rise of e- and m-Commerce,
- International retailers enter Africa,
- South African retailers focus on expansion outside the continent,
- Forecourt retailing grows, and
- Grocery retailing drives the industry.

The e-Commerce Industry Report (2016), based on the survey of 12000 South African Internet users, provides insight into their shopping habits and provides the following statistical information (reproduced verbatim):

- 58% of respondents prefer to pay by card and 23% would prefer to pay on delivery.
- Guaranteed returns at 41% is the overriding assurance that would make them feel most comfortable shopping online.
- They felt most comfortable doing their first online payment with bill payment merchants and least comfortable with automobile merchants.
- Travel tickets and books were the items most online shoppers purchased last.
- 45% received their online purchases within 1-2 working days. 74% received their purchase within 5 working days. 58% were very satisfied with the speed of delivery.
- 49% pay for delivery and 38% did not pay any delivery fee. Of those that paid, 58% paid between R200-299.
- Saving time, access to product reviews, special offers and price comparisons are the four main reasons online shoppers like to shop online.
- 72% use price comparison sites.
- Cheaper or free delivery, a payment method they can trust and an easy return policy are the three most important improvements that would make them shop online even more.
- Credit cards, bank transfers and debit cards are their preferred method of payment.
- Purchase discounts are the overriding incentive which would motivate online shoppers to do online shopping with a card.
- 65% shop online occasionally or only for certain products or services. 60% are happy with the level of online shopping they are doing at the moment.

2.3 E-RETAIL LITERATURE REVIEW

A large volume of Internet-published resources were considered from which a number of salient publications were selected for review. The references presented here, we believe, make a distinctive contribution to the unfolding discourse around e-Retail by highlighting novel and sometimes unconventional aspects that need to be considered in realising efficacious e-Retail solutions.

Accenture Digital (2015) report in their annual review of trends in design and innovation refers to what they call "meta themes" of development impacting society and business. They declare that "software is now becoming embedded in the environment" while at the same time people and their needs are again being prioritised. Their report suggests that “new synergies between services and devices and people” need to be established so that “truly digital businesses” are allowed to evolve that will promote interfaces where people again are at the centre of business. It is therefore imperative that the interfaces to digital businesses and e-Retail specifically, be designed to place people and not technology at the centre of the experience.

The Accenture Digital (2015) report further suggests that training for "deep social skills" are carefully contemplated and then put in place for effective transitioning to digital platforms. They further advise that cognisance be taken of the evolving new reality that spans the “real world” and the “digital world" and that digital services in the modern era must be provided in a manner that promotes positive experiences for consumers. With this understanding, it is obvious how sometimes basic environmental constraints like poor connectivity bandwidth could render a negative experience.

The Accenture Digital (2015) report is emphatic that the interface design should be absolutely pragmatic! It is crucial that the technology takes care of transactional complexities and not cause consumers any "cognitive workload" by having them unduly having to commit time and effort to engage. The report therefore suggests that "services aggregation" be seriously considered so that consumers can navigate digital platforms to produce a seamless, intuitive and integrated experience.

The Accenture Digital (2015) report advances the view that a “digital platform” is more than just about deploying technology. They suggest that it is really more about "building an ecosystem comprised of relevant services". It is therefore apparent that they see e-Retail not as a "one-stop shop" but rather to have e-Retail integrated into the personal spaces of individuals.

The Accenture Digital (2015) report further suggests that in a world of increasing digital interaction and identity, businesses will evolve their own "digital personalities" beyond mere branding. As the gap between the real and virtual worlds is shrinking for both personal and business interactions, the challenge for businesses is to authentically move beyond mere branding and "evolve a personality" to support "more natural human-machine interactions".

It is incumbent on digitally-enabled businesses to be intensely analytical about their functioning and services if they are to be successful in the modern age. Digitally-enabled

businesses are required to increasingly invest in business intelligence to support predictive consumer behaviour.

The Retail Coach (2015) report introduces the “bricks vs clicks” debate from its 7th annual financial forecast forum, and declares that "retailers are feeling the effects of high occupancy costs including higher rent and insurance costs".

The Retail Coach (2015) report project that e-Retail will grow at an annual rate of 10% and that "by 2017 e-Retail will account for 10% of US retail sales". Although this addresses the US and not the South African situation, these figures are indicative of the extent of the swing towards e-Retail. They further anticipate that in future traditional retail will support mainly "small intimate stores" while e-Retail will account for the rest.

The Retail Coach (2015) report however emphasises that physical retail will "still be king" for the foreseeable future. An interesting forecast is that e-Retail might in particular hold promise for the extremities of the economic spectrum. E-Retail, in their opinion, best supports the luxury market sector quite logically but it also holds major potential for supporting the discount market.

The Retail Coach (2015) report contends that product and lifestyle branding could become even more important within the e-Retail space. But since the consumer is sensorially removed from the product or service, it presents a significant interface challenge. It is anticipated that the drive towards e-Retail will create new impetus to develop also traditional retail as the industry reconceptualises itself with respect to all aspect of the business model. For example, employment opportunities within the retail industry might almost counter-intuitively be enhanced as decentralisation to enhance tailoring of services and products to consumer needs drives strategy.

The proliferation of social media spaces and the reality of "a third place other than home and work" for more and more people make the shift towards e-Retail an almost natural shift. Both e-Retail and traditional retail will require more sophisticated consumer behaviour analysis systems and tools to support and manage the complex consumer environment.

The Mintel (2015) report on consumer trends in the UK raises an interesting proposition that retail has shifted from being supply-driven towards being demand-driven. They declare that "we inhabit a digital era of instant gratification” in retail. Consumers are demanding unprecedented levels of online service provision. They want to be able to “browse and buy at speed” and have bought firmly into the online service-on-demand mind-set. They argue that the general improved connectivity allows for purchasing to be anywhere and anytime.

The Mintel (2015) report declares that around 15% (and increasing) of consumers collect the items that they've purchased online which indicates that for this group the online platform is preferred for reasons other than accessibility or logistic convenience.

The Mintel (2015) report raises another interesting proposition of the emergence of the era of smart technologies where everything is not only connected but integrated and intelligent. They argue that this will spawn an era of technology driven consumerism that will span the home, education, work, leisure, health, fitness ...well everything! And it is suggested that

this will "save time and money and promises convenience and control" and allow for a degree of self-analysis that was not previously possible.

The Mintel (2015) report also makes reference to the emergence of new trends in wearable technologies. In a recent UK survey, it appears that there is strong approval for wearable and pervasive technologies. Indications are that this trend will have a significant impact on e-Retail as attitudes and behaviour and integration of technology into our lives continue to manifest.

The Mintel (2015) report raises the notion that consumers are increasingly becoming more environmentally aware. They require more information about products over and above the usual provisions of chemical composition, and the efficacy of product or service. Consumers are now interested also in environmental impact and political context. It is clear that this level of informatics can best be provided on an online platform. The report declares that the logical consequence of the demand for enhanced product informatics is that it will spawn the need for increased agency for market intelligence.

The Chiles & Dau (2005) paper, although now somewhat dated, references e-Retail as a relatively new retail endeavour that has not yet matured in its conception or reporting. This has relevance to the South African e-Retail context that is currently probably at the developmental stage consistent with when their paper was published. Upon reflecting on the emergence of the e-Retail industry suggests that there are three types of retail configuration in the modern era, namely - (1) traditional or "brick and mortar" retail, (2) traditional retailers operating also one or more online channels or the so-called "click and mortar" retail, and (3) and e-Retail or "pure play" operations that support only online operations.

The Chiles & Dau (2005) paper refers to a significant shift towards embracing the opportunities that e-Retail offer. They suggest that the measure and extent of the transition from traditional retail is not yet clear, and that the profitability data for e-Retail is rather difficult to capture. It would not be surprising if some of this rings true to emergent South African e-Retailers. The paper however confirms that a general perception nevertheless exists that e-Retail will improve the profitability of businesses.

The Chiles & Dau (2005) paper declares that as in all retail, the success of e-Retail is about "excellence in supply chain management". This coupled with the proliferation of the internet have supported "revenue growth and profitability".

The long term success of e-Retail will be assured by its efficacious engagement and leveraging of retail principles, namely, "leveraging brand awareness and brand loyalty", competitive pricing, selection and availability of products and services. So it all comes down to recognising opportunity and excellence in supply chain management.

The UKCES (2010) report on "skills for jobs - today and tomorrow" makes the case for “right skilling” for an emergent e-Retail industry. They declare that in order sustain an e-Retail industry and to extract optimum performance that it is imperative that individuals with the right skills be developed. They argue that business success is a direct function of the right

skilling of individuals. The changing needs of the retail industry require a corresponding commitment to “economically valuable skills".

The Hass Avocado Board (2015) report details experiences and projections around consumer behaviour related to a most fundamental aspect of humanity, that is, the acquisition of food. They believe that the procurement of healthier food options will be a key driver for the adoption of e-Retail as a major channel within this market sector. They warn however that for retailers to remain competitive they have to differentiate themselves in the marketplace. They suggest that the multichannel option will probably be the route to go.

The Hass Avocado Board (2015) report suggests that there is a new and growing consciousness about quality and environmental concerns. Consumers are demanding more information about the origins of their food and the trends are towards “local, organic and natural” products. The key opportunities will come with authentic, convenient and perceived value of products and services. The report suggests that convenience and immediacy are key values within the emerging e-Retail space for food. The report declares that it is expected that "technology will be the most critical catalyst of change” within the food e-Retail space.

Mobile technologies have already become commonplace within our work and social spaces and is destined to also transform the e-Retail experience. It is foreseen that new mobile apps will be developed to support convenience shopping by facilitating schemes such as “personalised shopping lists, brand savings alerts, mobile checkout, recipe services, and product ratings and reviews".

It appears that technology could impact especially the "just in time" purchasing of perishables to optimise procurement for quality, freshness and/or price. Food safety is another area where e-Retail can carve a niche for itself where filtering of safe food types for individual consumers can be managed on the basis of participatory profiling. Millennials are the targeted demographic grouping to usher in e-Retail for food shopping on a completely novel platform.

Basha Pillay (2015) sites Marc Weiser when she proclaims that "the most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it". She succinctly declares that "our world has changes, our competition has changes, our customer has changes, our risks have changed, and the way we work has changed"!

Basha Pillay (2015) argues that the nature of enterprise will be changed fundamentally by the emergence of enterprise mobility technologies. The impact of the transformation of enterprise will be felt at organisational, leadership, strategic, procurement, vendor and customer levels. Organisational structures will evolve from being typically hierarchical into network configurations; the leadership model will consequently shift from a control modality to empowerment; strategy will move towards platform and away from product and/or service; procurement will move from CAPEX to OPEX; and the customer will become a co-creator and not simply a consumer.

The future of enterprise mobility lies within "Everything as a Service", "the Social Internet of Everything", "Enterprise Wearables", and "Technology Abstraction" as the new catch phrases in the technology space and by extension the e-Retail space.

Brett Kaplan, one of the contributing authors of Biz Trends (2014), says that South African retailers should focus on how to provide efficient and effective online retail services. E-Retail services and access must be provided to South African consumers in line with global trends while remaining mindful of and guided by local preferences. He suggests that global trends need to be interpreted and adapted to suit local market conditions. He further contends that although South African e-Retail not yet operating at the levels of “more advanced markets such as Europe and the United States”, there is an increasing number and a general upward trend in the engagement of e-Retail. He notes that “the relationship between consumer and technology” in effecting purchasing decisions is the key to unlocking the South African e-Retail sector. The e-Retail sector in South Africa is still “focussed on food” although younger customers are starting to be more diversified and are exploring “digital platforms” to access especially clothing and fashion items. At this juncture, the youth market appears to be using online channels mainly for research but in main still prefers to make purchases in the tradition way. Multichannel retailing is the order of the day in South Africa.

This sentiments expressed by Brett Kaplan above is underscored by Chris Moerdyk, another contributing author of Biz Trends (2014), who declares that South African consumers will follow global trends and increasingly participate in online shopping if connectivity improves and becomes more affordable. The South African e-Retail industry will experience growth and will more and more also source goods from global providers. The key driver to the growth of the South African e-Retail sector is the experience of quality of service. Customers need to experience the superior availability and affordability of products provided through online platforms and especially that online transactions are secure. Delivery time and costs are also important aspects of the online shopping experience that need to be factored into the customer experience although the convenience of “door-to-door” service is a major plus for online shopping.

Dave Nemeth, contributing author of Biz Trends (2014), coins the phrase "showrooming" for the phenomenon in e-Retail that is the opposite of what Chris Moerdyk (above) explained about the youth market and the purchase of clothing. Whereas the Moerdyk approach refers to viewing online and purchasing in-store; “showrooming” refers to viewing in-store and purchasing online. Nemeth suggests that the “showrooming” phenomenon will have a marked effect on the retail landscape and especially on stores focussing on “technology, clothing and accessory markets”. He furthermore suggests that the transition to “showrooming” will continue as more people become comfortable with online shopping. Simply put: More and more consumers will go to brick and mortar stores to see the physical product but then make the purchase online. This logic appears to be somewhat counter intuitive. If this is the case, then delivery logistics become extremely important “as goods are sent nationally as well as internationally from strategically placed depots and distribution points".

Dion Chang and Raleen Bagg, contributing authors of Biz Trends (2014), make the case for "retail disruption" and explain that the proliferation of online shopping has become a major

“game changer” for the retail industry. They contend that e-Retail has not only changed consumer behaviour but has impacted entire “value chains of the retail industry". The choice between traditional retail and e-Retail is now premised on how to best service the needs of a "more complicated hybrid shopper”. Retailers now have to contend with a myriad of new challenges including the “showrooming” phenomenon (above) where “customers try on merchandise in-store but make the final purchase online".

Gary Hadfield, contributing author of Biz Trends (2014) and CEO of one of the largest e-Retail companies in South Africa, says that "South African retailers continue to operate in a fast changing environment, where customers now have a wider selection of merchandise to choose from and the possibility to shop around by just a few clicks of a button. With access to an increasing number of media platforms and easier and cheaper mobile accessibility, customers become more informed, opinionated and ultimately this can lead to them either being brand advocates or critics”.

Gary Hadfield argues for “operational friction” to be minimised within the supply chain since e-Retail is a critical performance industry that demands that “e-Retailers and their general merchandise partners” have to collaborate to realise an attractive and competitive provision for their existing customers but also create a market for new customers. The ultimate aim is to provide a “great online shopping experience” that provides consumers with “more options, better services and lower prices”. This can only be achieved through prudent supply chain management and creative retailing.

Gary Hadfield further professes that “big data” will become a major factor in e-Retail by providing intelligence that is not generally available within a traditional retail setting. The efficacy of a business can be improved by fine tuning into consumer needs and big data can enable this. Within an e-Retail environment supported by big data, it would be possible to provide “more targeted and relevant suggestions to shoppers”. This will “create the feeling of a company that cares, listens and knows what its customers want”.

Gary Hadfield argues that “business mobility” on a multiple platforms and significantly shifting towards mobile devices has become an imperative for success in e-Retail as the dominance of “the traditional desktop and laptop is diminishing". The rapid increase in mobile phone and particularly smart phone and tablet availability will increasingly stimulate the adoption of e-Retail in South Africa.

Daymon Worldwide (2014) warns that the retail industry needs to "address the widespread retail industry fragmentation and increased global e-commerce competition impacting future retail success". They predict a number of "mega trends" that is destined to change the retail landscape. The first mega trend is said to be the micro-sizing of retail as "curated offerings" to satisfy consumer needs are explored. These "curated offerings" will be realised through the establishment of "small format stores in three key segments, namely, discounters, ethnic food retailers and small box fresh-focused retailers". E-Retail is perfectly suited to taking advantage of the predicted mega trends within the global retail sector.

The Deloitte (2015) report continues with the thematic approach of “embracing innovation” to respond to the “disruptive” forces currently shaping the retail sector and “impacting the

marketplace". The report then provides sagely advice that on how retailers might respond to the disruption of the marketplace by declaring that while disruption is threatening it also presents opportunity. E-Retailers who embrace the opportunities that come with disruption by being "nimble, adaptive and innovative" could strategically redirect these forces into success!

The report furthermore advises that retailers will be required to facilitate access to the "aggressively" growing mobile platform and will be expected to support the availability and affordability of Wi-Fi access and definitely "free in-store Wi-Fi". The modern consumer needs "real-time, relevant, and personalised information and offers" in an environment that is private and secure. The report also proposes that "faster retailing" will be a logical consequence of the interconnected retail space which will be characterised by "limited-time-only products and flash sales to drive urgency and immediate purchase; pop-up establishments to quickly get products and services to market".

The Deloitte (2015) report also refers to what it terms "experience retailing" where the provision goes beyond mere product or service but includes "entertainment, education, emotion, engagement and enlightenment". This of course means complete transformation of the retail environment for customers and consumers. The need for a tailored experience needs to be balanced with the need for privacy; the reality of proliferation of information needs to be balanced with providing individual attention. This is an equation of massification vs personalisation that could be solved only with big data and analytics. The report also declares that "the near future of the retail industry is about adaptation and embracing change. The speed of innovation and the disruption it causes won't cease, and the demands of customers will continue to escalate".

Douglas Smith (2015) makes the case for aligning mobile strategies to business objectives from a business perspective. He suggests that "smart, connected devices enable productivity from anywhere" and as consumers engage retail around the clock, it becomes imperative for business to be available and interacting. He argues for a comprehensive mobility strategy which integrates the business imperative by "reducing complexity to drive breakthrough moments". These breakthrough moments are those points of interface where the business satisfy customer needs in a definitive manner.

The e-Skills UK (2011) report on the skills requirements for establishing e-Commerce in Scotland, although now a little dated, provides some pragmatic guidelines for e-Retail implementation in South Africa. The report addresses itself to Scotland becoming a "significant global player" in e-Retail. The report focusses particularly on structuring training interventions to support the implementation of a national e-Retail strategy, much the same as the reach of this report. The report in particular seeks to identify a unique set of skills that enable e-commerce and e-Retail.

The Scottish model is "predicated on factors such as the quality of IT and communication infrastructure" being provided at a national level and industry providing the environment for successful e-commerce or e-Retail. The report also recognises the essential role of "specialist digital agencies to provide consultancy services to build e-commerce systems".

According to the e-Skills UK (2011) report, research has shown that the skillsets needed to support e-commerce and e-Retail are not just technical in nature. The essential skillsets have to incorporate a unique business skillset to enable e-commerce and e-Retail such as "digital marketing and customer behaviour".

A major challenge for training institutions to deliver suitably qualified professionals to the e-commerce and e-Retail industry is that traditional training programmes generally separate IT technology training and marketing training. This fragmentation needs to be addressed by offering purpose-designed integrated e-commerce or e-Retail programmes at several levels of application. The report laments that training providers of integrated IT-marketing programmes suggest that "companies who might benefit have shown poor demand". It is not yet clear why this is the case.

The report concludes that further investment and effort need to be applied to raise "the awareness of business owners" that might benefit from engaging and adopting e-commerce in general and e-Retail specifically. The promotion and adoption of e-commerce or e-Retail however happens at sectorial level rather than a company level. Development agency should therefore be directed at sectorial level.

Frost & Sullivan (2014) define "mega trends as being global forces that define the future world with their far reaching impacts on businesses, societies, economies, cultures and personal lives". With respect to the dimensions of interest to this study, they predict dominant trends within their mega trend matrix with respect to "New Business Models", "Connectivity and Convergence" and the "Future of Mobility" with varying degrees of impact on the global economy and degree of certainty. In particular, they predict "new business models" within various contexts. Within the business-to-consumer (B2C) context, they predict the emergence of a phenomenon which they call "co-creation of on-demand services"; within the business-to-business (B2B) context, they predict a proliferation of online platforms, such as, e-Rental, e-Distribution, e-Exchanges, e-Travel; at a peer-to-peer or customer-to-customer (C2C) level, they predict consolidation of e-Auction interactions; while at the government-to-business level (G2B), they see the evolution of open business models to support online bidding for projects, etc.; and at the government-to-government (G2G) level, they predict consolidation of e-Records, e-Consultancy and other information systems.

So in the opinion of Frost & Sullivan (2014) the prospects for e-commerce and e-Retail are looking good!

The Harris Poll (2014) Retail Outlook report notes a number of headlines based on market research and notes "innovation, marketing and mobile" as the key performance indicators therefore must be given priority. The report also interestingly notes that the need for constantly reviewing and renewing the technology platform as a "key threat" to the implementation and sustainability of e-Retail. The report however declares that "brick-and-mortar stores" are also "unsustainable in the future". This opinion is reportedly "shared by many brick-and-mortar retailers themselves".

There is clear endorsement that the age of e-Retail has arrived but there is also clear "acknowledgement that the online world is a major hurdle that (many) retailers have yet to overcome".

The majority of retailers believe that the shopping mall in its current configuration is under threat but that "one-stop shops will become the stores of the future". The biggest concern amongst retailers however is their inability to deal with the technologies that drive the new wave of online retailing. Innovation appears to be the counter measure to the disruption that is underway and "most retailers highlight the importance of investing in new product development, marketing, online presence and social media". A growing perspective is that integration and synergies around multi-channel strategies are the prudent way to address the uncertainties and the opportunities that come with transformation to e-Retail.

The JWT (2014) on future trends and changes to watch (in 2015) raises an intriguing reality that Amazon will be opening a "physical mega store" in New York as a consequence of consumers demanding "compelling in-store experiences" while increasingly engaging in online and mobile shopping behaviour. The report suggests that Amazon is in fact "late to the game" in establishing a physical presence since "a slew of online retailers have (already) opened physical spaces. The report suggests that the proliferation of online retail has created so many options for consumers that it might have introduced uncertainty and discomfort in the marketplace. The report further suggests that "customisation" of the online shopping experience will become a required value and performance aspect in order to tailor the "engagement platform" for consumers. They suggest that tools to dynamically monitor the emotions of shoppers as they engage, such as the BuzzFeed platform, will become commonplace within the online retail spaces.

The EY Global publication, Megatrends (2015), declares that "digital transformation and a proliferation of data are fundamentally changing the relationship between businesses and their customers". They cite the "rapid advances in cloud computing, connected devices, mobile, social media and data analytics" as driving a reconceptualization of retail where every aspect of traditional practice is challenged and review. The drivers of the change agenda are emanating from all role players within the retail ecosystem. There is a push from the supply side as online opportunities promises to open up opportunities for new revenue streams. There similarly is a pull from the consumer side as the virtual reality platforms increasingly become integrated into everyday existence. The ever-increasing embeddedness of data science into all aspects of human endeavour in the modern world will no doubt also impact the e-commerce and e-retail. The report cautions that the online world will "amplify the voice of the customer" and as such will expose both good and poor practices. It is evident that companies that are aware of the relevance of information in the new era will "extract value and benefit greatly" by deploying data analytics as central to their business proposition.

2.4 KEY TENETS OF THE RESEARCH

Academically speaking, a sub-discipline of e-Retail can be considered to be an adhocracy, that is, it is still a loosely defined trans-disciplinary field that draws from several fields, including, Business, Information Technology, Psychology, and more. It therefore requires some creativity to establish specific pathways of inquiry to analyse the state of the discipline.

We need to draw relevant contributions and insights from the literature on a structured basis; we furthermore need to ascertain whether such contribution would elucidate the study; and we need to judge how valid the author's perspective is in supporting the unfolding analysis and developing understanding of the subject of e-Retail in South Africa.

The key tenets of this study therefore emerged through the application of abductive logic. Four key tenets are drawn from the review of mainly Internet publications, namely, (1) e-Retail skills, (2) e-Retail technologies, (3) e-Retail change drivers, and (4) e-Retail and enterprise mobility.

2.4.1 E-Retail skills

Harris Poll (2014) declares that the biggest concern around the implementation of any e-Retail venture is the "threat" of having to engage in new technologies. They suggest that often the first response is to consider "new product development, marketing and establishing an online presence" but the many retailers find the technology aspect of e-Retail to be quite daunting.

E-Skills UK (2011) makes a compelling case for providing the necessary IT skills to support e-Retail. Although this paper is somewhat dated, it remains relevant since South Africa is now probably at the same level of technological readiness as Scotland at the time of writing the paper. It is suggested that significant investment needs to be made into training of a wide range of IT skills. The report suggests that the traditional approach of separating IT and marketing is not effective and the case is therefore made for integrating IT and marketing training as a specialist e-Retail offering.

Accenture Digital (2015) urges that the customer should be prioritised within e-Retail. Often the environment for e-Retail is dominated by technology considerations. So they highlight the need for social skills development within the virtual reality of e-Retail.

Mintel (2015) declares that the increasing need to support and drive consumer demand sensibly that "product informatics" and "market intelligence" will become central to the efficacy of e-Retail. It is therefore axiomatic that these skills should be provided and nurtured.

UKCES (2010) underscores the need for proactive engagement in providing for future skills requirements to support the economy. In an environment of radical change in its operating platform such as e-Retail, it is imperative that skills needs are prioritised.

Chiles & Dau (2005) report that e-Retail is fundamentally still retail and that all the performance considerations would therefore still apply. Although this reference is now dated, it still has a ring of sobriety when it declares that success in retail is achieved through "recognising opportunity and excellence in supply chain management".

Deloitte (2015) makes the case for e-Retail as "experience retailing" and suggests that special skills will be required to make the e-Retail experience "entertaining, educational, emotional and engaging".

2.4.2 E-Retail technologies

Accenture Digital (2015) suggest that the basic technologies for e-Retail are well established but that the user-interface provisions are still not intuitive enough and this creates frustrations for consumers. They suggest that technology should reduce the complexity of operations and that the notion of "services aggregation" be explored towards creating a more "natural" experience for consumers. Connectivity remains a major comfort factor in an environment of ever-increasing demand for bandwidth.

Mintel (2015) underscores the need for improved bandwidth to support the "purchase anywhere, anytime" mantra that defines the e-Retail phenomenon. They furthermore profess that we need to think even beyond open networks and to consider the opportunity that wearable technologies will bring in extending the quality of consumer data to even an individual level.

Pillay (2015) declares that the future of enterprise mobility in support of e-Retail lies with new technology thinking, such as, the Internet of Everything, Everything as a Service, and Technology Abstraction.

Biz Trends (2014) declares that South African e-Retail sits within the global e-Retail space and profess that "Big Data" will become increasingly important in supporting the tailoring of products and services both globally and nationally.

Megatrends (2015) supports the view that "data science will become increasing embedded in all aspects of human endeavour" and believes that other (new) technologies, such as, "connected devices" and "data analytics" will contribute to the shaping of e-Retail.

2.4.3 E-Retail change drivers

Accenture Digital (2015) argues that the next evolution of e-Retail is for the interface between the consumer and the company to become more "natural" as the real and virtual worlds start to merge. They argue that a new ecosystem for transactions be evolved where the consumer and the company are digital equals within a conducive environment. They further argue that the next wave of e-Retail would be supported by artificial intelligence that predicts consumer trends with the view of improving the quality of service.

The Retail Coach (2015) concurs that e-Retail "will require more sophisticated consumer behaviour analysis" as the environment for e-Retail becomes more "natural" and more pervasive and competitive. It also noted in the report that the proliferation of social media is indicative of a "natural shift" towards e-Retail as an inevitable consequence of digital migration.

Mintel (2015) makes the case for pervasive Smart technologies as the next trend to drive e-Retail that will not only improve the quality of service to consumers but will actually "spawn an era of technology driven consumerism".

Douglas Smith (2015) supports the view that Smart technologies and the notion of "e-Retail anytime, anywhere" to support consumer needs, define the change agenda for e-Retail.

Hass Avocado Board (2015) propositions that specialist providers will benefit most from e-Retail since this platform provides for effective business to customer engagement; and they, not surprisingly, suggest that the speciality foods market sector could be completely transformed by e-Retail.

Biz Trends (2014) contends that South Africa follows global trends and suggests that the decision to participate and the extent of participation will depend on the assimilation of technology and the consumer into the e-Retail ecosystem. They lament however that the South African e-Retail industry is still typified by "showrooming" where consumers explore products and services on the Internet but then often affect the purchase at a traditional retail outlet. The purely e-Retail aspect however is on the increase. They further suggest that mobile and smart phone technologies are vitally important for the South African e-Retail market.

Daymon Worldwide (2014) advocates for the global integration of e-Retail platforms to reduce the fragmentation of the industry. As a second salient point, they suggest that e-Retail is the ideal platform for niche markets set up for specific target markets.

2.4.4 E-Retail and enterprise mobility

Accenture Digital (2015) makes the case for e-Retail to be seamlessly integrated into the "natural" lives of consumers. They make the case for availability of services on multiple platforms so that the experience for consumers is "seamless, intuitive and integrated".

Hass Avocado Board (2015) declares that mobile technologies have become commonplace within the daily lives of citizens and are now transforming e-Retail. The landscape is changing as consumers are demanding quality in every respect of the retail experience.

Pillay (2015) argues that successful enterprise mobility is achieved when the platform becomes invisible to the consumer; and when the consumer is a co-creator of the system. E-Retail structures need to be evolved as "network configurations" beyond the hierarchical structures that most e-Retail operations currently support.

Frost & Sullivan (2014) profess about the "future of mobility" and the emergence of the phenomenon which they call "co-creation on demand". They predict that this will result in a wide range of tailored service networks to support service ventures, such as, "e-Rental" and "e-Travel". They believe that "co-creation on demand" will also become the benchmark for e-Retail.

The JWT (2014) report confirms that "customisation" or "co-creation on demand" and "tailoring of the engagement platform" will become a central value that defines quality of the online shopping experience.

Biz Trends (2014) highlights the move in South Africa towards mobile based e-Retail. They furthermore suggest that consumer advocacy underpins consumer participation rates.

Deloitte (2015) concurs that the future of e-Retail lies with enterprise mobility and suggest that the dominance of the mobile platform will drive a need for pervasive Wi-Fi that will also extend into the traditional retail spaces.

2.5 CONCLUSION

This chapter details the literature perspective on the e-Retail phenomenon. The emergence of e-Retail as a sub-discipline is deliberated and the key tenets of e-Retail as pertaining to this research have been established based on the review of a selection of salient Internet publications. The articulation of the key tenets provides a considered framework for engagement of the empirical aspect of this research.

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3. METHODOLOGY

3.1 INTRODUCTION

In framing the research into e-Retail in South Africa, it was important to first establish a paradigm for the research. Based on Burrell & Morgan's (1979) seminal work on research paradigms, the options were to locate the research in one of four classical quadrants. The choices were to address the research from (either) an Interpretivist, Functionalist, Radical Structuralist or Radical Humanist perspective. It is beyond the scope of this report to comprehensively treat the merits of each one of the paradigms.

The quadrants are no longer considered to be mutually exclusive in the modern interpretation but nevertheless help to establish the intentionality of the research. In socio-technical research, paradigm refers essentially to the nature of the change agenda and the dominant orientation of the research that will be pursued. In this study the Functionalist paradigm is indicated. The ultimate agenda for the Functionalist paradigm is to develop an artefact. The research was initially launched within an Interpretivist paradigm but it soon became apparent that an intervention was required to support the skills gap around e-Retail. The Functionalist paradigm was therefore adopted so that an intervention towards realising an academic curriculum to support a training agenda was conceived.

The basic logic of the Functionalist paradigm declares that rational observers come to the same conclusions about a situation because of an objective reality and logic inherent in that situation. Notions (data) about the objective reality can therefore also be gathered through interview, survey and focus group methods. Functionalists purport that a scientific approach supported by empirical evidence can realise cohesive and stable outcomes. In order to achieve consensus about the so-called objective reality, it sometimes requires that individual dissenting opinions be moderated in the interest of advancing a generally acceptable solution.

The aim of the research is therefore to create a curriculum artefact to inform the scope of training that will be required to support the emerging e-Retail industry. At one level, therefore, this is a developmental study. At another level, the study seeks to explore in depth the scope and nature of the tensions and consequent implications for a change agenda for e-Retail and this makes it also a descriptive study.

The literature review of Chapter 2 provides relevant contributions and insights from the literature and media that support an articulation of a Change Agenda as detailed in the next section, Section 3.2 below. The purpose of "Literature Study" as a deployed method within the Methodology of this study is provided here in Section 3.3.

The nature of Design Science Research as the methodology of choice for this study is described in Section 3.4 and defines the logical sequence of events for gathering and processing empirical data. A process model for the research is provided, the research objectives are articulated and a pragmatic approach to the operational management of the research is presented.

3.2 CHANGE AGENDA

The thematic approach of this study is to interrogate a change agenda for the South African retail sector. The focus of the study is to provide analysis of new enabling production platforms, new job skills, and training and development imperatives, in support of the emerging South African e-Retail sector. In this regard a comprehensive socio-econo-techno implementation model is presented to integrate salient aspects of environment, strategy, innovation and implementation. This is mainly informed by a critical literature review of enterprise and technology trends, and an empirical study of the local industry based on a stratified industry survey and the perspectives of selected key role players. The strategic importance of sectoral culture, structure (human and infrastructure provisions) and agency for change are specifically explored.

The methodology of the project was twofold. The first strategy was to undertake a comprehensive literature study of e-Retail to inform the scope and reach of the study; and the second was to engage a Design Science Research (DSR) strategy to realise the specific objectives or artefacts of the research as is the focus of DSR research.

This was an exploratory study, seeking to elucidate the state of the South African e-Retail sector against a backdrop of trends within the global e-Retail industry. The study also sought to explore the separation between traditional retail and e-Retail. The research also addressed the following specific considerations of e-Retail within a South African context, namely, e-Retail functions and services, e-Retail job skills, e-Retail as a career, and e-Retail training imperatives.

The key tenets of the research are illustrated in Figure 3 below:

Figure 3: Key tenets of the South African e-Retail landscape

3.3 ABOUT THE LITERATURE STUDY

Literature review is "a systematic search of published work to find out what is already known about the intended research topic" (Robinson & Reed, 1998: 58).

A systematic review of the extant literature covering the above mentioned tenets was undertaken to expose the latest developments within the e-Retail field of study as reported in Section 3 above.

Both popular and scholarly literature resources were accessed in order to evaluate the status of the e-Retail field of study. This allowed for the generally greater currency and relevance of information provided by popular resources, and more scientifically validated information typically provided by academic resources. In this regard, open internet searches were conducted; and Google Scholar, in particular, was accessed to establish the popular perspective. Several electronic research databases were consulted but there currently appears not to be a vital academic discourse around e-Retail within the scientific literature.

As mentioned before, the WRLC commissioned study by Klaiber & Hermanus (2014) entitled "e-Business development and skills requirements" which presented a global perspective on e-Retail provided the launching platform for this study.

3.4 DESIGN SCIENCE RESEARCH (DSR)

DSR is a research methodology that defines a systematic design and evaluation process of creating viable technology-based solutions or constructions (artefacts) using pragmatic strategies (Hevner et al, 2004, p83). This study is more specifically based on the "three cycle view of DSR" as proposed by Hevner (2007).

3.4.1 The DSR design

Hevner (2004) provides some guidelines for the implementation of a DSR strategy. An important consideration of DSR is that it is directed at producing (creating) technology-based artefacts or solutions from the research process. The efficacy of the solution in making a contribution to the problem environment has to be rigorously evaluated.

The “relevance cycle” seeks to iteratively connect the “design and construction” of the artefact to the “application domain” while the “rigour cycle” ensures that the contribution to the knowledge base is premised on a rigorous “evaluation of the artefacts and processes” of this study.

The DSR design is illustrated in Figure 4 below, depicting the key tenets of the study.

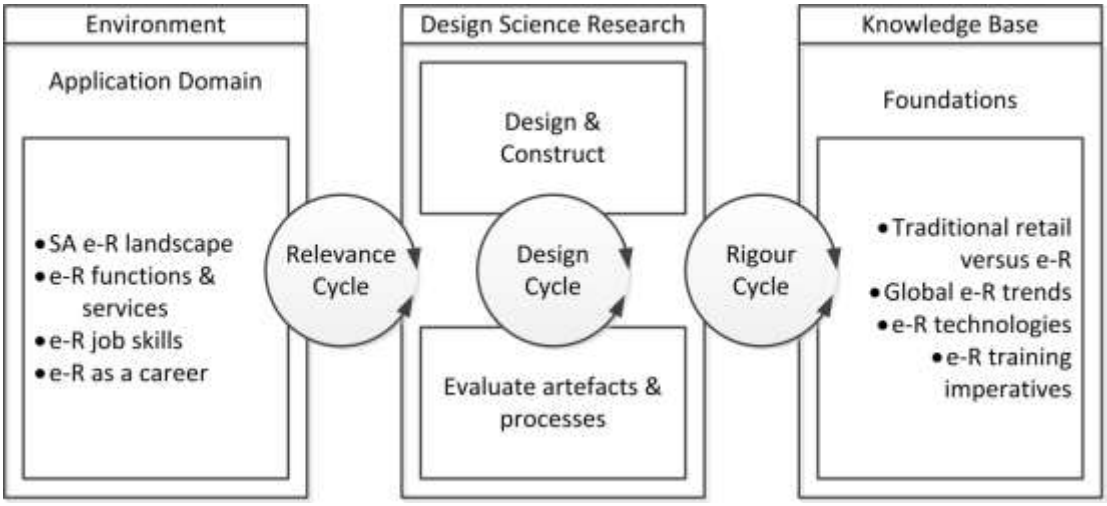

Figure 4: The DSR design (Adapted from Hevner 2007)

The "design cycle" of the DSR design is comprehensively explained by Peffers et al (2008) in their work entitled "a DSR methodology for information systems research". They profess that the "design cycle" is an iterative process as follows: (1) identify problem and motivate, (2) define objectives of a solution, (3) design and develop artefacts, (4) demonstrate efficacy of artefact, (5) evaluate effectiveness and efficiency of artefact, and (5) communicate outcomes.

The implementation of the "relevance cycle" and the "rigour cycle" within the context of this study suggests a strong relatedness to participatory design (to be distinguished from co-design). Participatory design (or participatory action research) is a form of action research in which researchers operate as full collaborators with role players within the study to transform the environment. It is an ongoing learning process, a research approach that emphasises co-learning, participation, and organisational transformation. Among the key features of participatory design are – (1) collaboration, (2) incorporation of local knowledge, (3) eclecticism and diversity, (4) case orientation, (5) emergent process, and (6) linking scientific understanding to social action (Greenwood et al, 1993).

3.4.2 The DSR methodology

The DSR methodology is the pragmatic implementation of the research concept as proposed in the DSR design. The methodology describes both the data gathering methods deployed and the information process flow in realising the artefacts of the research study. The data gathering methods deployed in the study include literature study, online survey, and focus group methods, including the expert group method.

The DSR methodology of this study is illustrated in Figure 5 below.

The research at its core is about interrogating the disruption of the South African retail ecosystem and the related interpretation of imperatives for transformation of the sector towards e-Retail as a viable and sustainable practice.

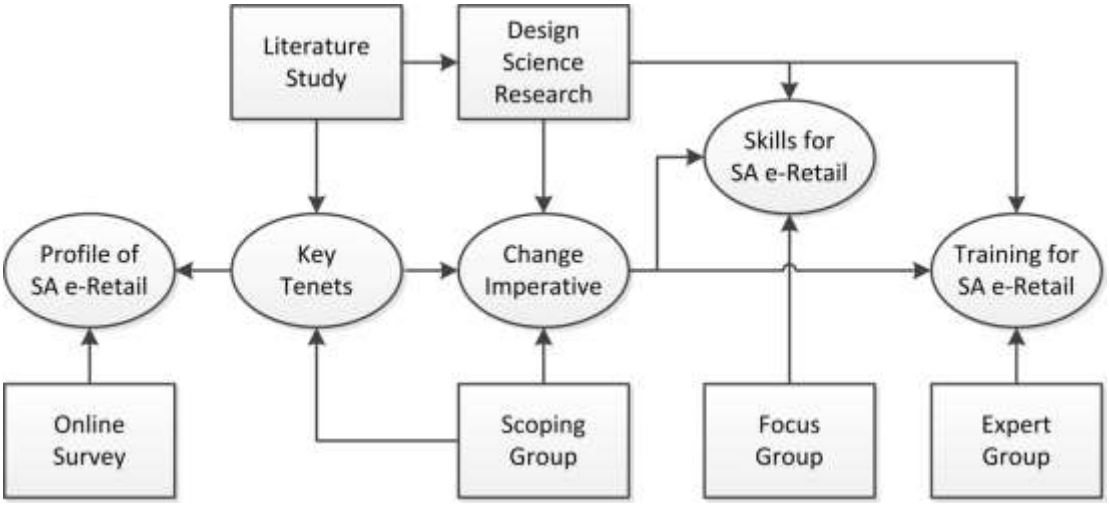

Figure 5: The DSR methodology

Review of the extant literature on e-Retail and the transformation of traditional retail launched this study. As mentioned before, the work of Klaiber & Hermanus (2014) in scoping a global perspective was seminal in providing context for this research. It is further noted that there currently is a dearth of scholarly engagement of e-Retail as a disruption of the traditional retail ecosystem; and much of the discourse was accessed from more informal online blogs and content packages for commercial consumption. The lack of a coherent e-Retail body of knowledge was the main reason for adopting DSR as the research platform.

The change imperative for the South African retail landscape has been noted as a core focus of the research. It was therefore deemed prudent to conduct a “scoping group” session to establish the “key tenets” and the dimensions of “change imperatives” for the research, as two of the artefacts to be delivered by the research. The aforementioned artefacts, in turn, are essential in guiding understanding and definition of three further research artefacts, namely, “profiling the South African e-Retail” industry, establishing the “priority skills requirement”, and establishing the “training needs” requirement.

DSR is a creative process where the researchers go beyond deductive and inductive reasoning approaches to realise research outputs. DSR specifically encourages the use of retroductive and abductive reasoning to establish creative propositions to be tested in the environment. The online survey method was used to validate the profile of the South African e-Retail industry; the focus group method was used to validate the skills requirement; and the expert group method was used to validate the training requirement (refer to Figure 5 above).

The online survey method refers to the use of the internet for the sociological investigation that seeks to establish statistical information about the perspectives of a community of interest.

3.4.3 Focus Group

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging (Henderson, 2009). In this study an extended focus group modality was deployed, where a core grouping was initially engaged within a traditional focus group session but then interaction within the target group was continued after the initial event.

3.4.4 Expert Group

The expert (or Delphi) method is a structured communication technique originally developed as a systematic, interactive forecasting method which relies on a panel of experts. In the standard version, the experts answer questionnaires in two or more rounds. After each round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. It is believed that during this process the range of the answers will decrease and the group will converge towards the "correct" answer. Finally, the process is stopped after a pre-defined stop criterion (e.g. number of rounds, achievement of consensus, and stability of results) and the mean or median scores of the final rounds determine the results (Rowe & Wright, 1999).

3.5 DATA COLLECTION AND SAMPLING

As discussed earlier, the e-Retail proposition could be seen to be a natural consequence of the universal digitisation phenomenon that has impacted almost all aspects of human endeavour. Smith et al (2009) state that "phenomenology" as a research approach is basically about developing a philosophy of shared experience. So in an Interpretivist study of the phenomenon of e-Retail, both the individual and shared experiences of the e-Retail community are important in establishing perspective and knowledge.

Smith et al (2009) advise that the process of uncovering knowledge is essentially about "seeking meaningful and symbolic content in the qualitative data". The research process is directed towards exposing relevant empirical data to synthesise into novel perspectives and knowledge about the phenomenon of e-Retail in South Africa.

Guest et al (2013) elucidates the data gathering process by proposing that data mining should be focussed on two distinct strategies. The first approach is to "deploy text as a proxy for human experience", and the second to "focus on individual experiences, beliefs and perceptions". Both these strategies are deployed in this study. They further suggest that "face-to-face in-depth interviews" are ideal for data collection but make provision for alternative less personal engagement, as is evidenced by their approval of the use of "text as proxy for human experience". This study extensively explored the latter option.

Bhattacherjee (2012) states that a sample is a subset of a population of interest selected to represent the perspectives and behaviour patterns of the population. The process of selection is a science in its own right but the aim is to select a sample that most accurately

and compressively reflects the diversity of the population. In this study the samples for the Scoping Group, the Focus Group, and the Expert Group, were established to reflect a cross-section of the broader e-Retail community, including, retail and IT practitioners, academics and strategists. This type of sampling is referred to as purposive sampling as opposed to random sampling. The latter approach is often quite difficulty to achieve within social research.

The ideal of a balanced sample was not always possible and often a more pragmatic approach to constituting the participants needed to be adopted, as is often the case in academic research. Appendices 6, 7 and 8, confirm that reasonably balanced panels were constituted for the purposes of this study.

Sample size is also a key consideration. Nastasi (2008) says that sample size cannot be predetermined but that it is an in-process consideration. He states that the ideal sample size needs to "display the variation in the population" and allow "data saturation or redundancy to be reached". Bowen (2008), cited in Marshall et al (2013), suggested that data saturation is achieved when "the research gathers data to the point of diminishing returns".

The sample size and composition of each of the data gathering interventions of the study are provided in Table 2 below:

Table 2: Sample size and composition

	Retail practitioners	**IT practitioners**	**Academics**	**Strategists**	**Total**
On-line survey	33	17	14	0	64
Scoping group	5	3	4	2	14
Focus group	9	4	3	4	20
Expert group	9	2	0	4	15
Total	56	26	21	10	113

It will become evident that, in this study, research processes were effectively managed to achieve data saturation in all respects.

3.6 CONCLUSION

This chapter provides the framing of the research and introduces a Design Science Research methodology as the approach that informs the scientific inquiry of the research. The chapter declares the research paradigm that informs the nature of the data mining undertaking that drives the research. It furthermore articulates the core strategy for creating knowledge to support the change agenda of the research.

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4. RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter details the findings of the data gathering activities of the study based on the Methodology declared in Chapter 3. The findings are arranged in the four areas of methodological engagement, namely, the (1) Scoping Group, (2) e-Readiness Online Survey, (3) Focus Group, and (4) Expert Group. The fifth area relates to be creation of a curriculum model.

A first proposal for a curriculum is presented in Chapter 5 as a logical consequence of the change agenda of the research that responds to the key tenets of the research as identified in Chapter 2, namely, e-Retail skills, e-Retail technologies, e-Retail change drivers, and e-Retail and enterprise mobility.

4.2 SCOPING GROUP REPORT

The scoping group met on an open agenda basis to discuss the implementation of an e-Retail implementation strategy in concert with global trends to augment traditional retail engagement. The discussion was referenced in the Business Process Framework of Brown (2008) which provided a considered platform to interrogate various aspects of an e-Retail implementation strategy.

The primary concern of the scoping group was to establish the key tenets and change agenda to govern the reach of the study. The key tenets were discussed in the Methodology section above and the change agenda will be discussed in the Conclusion section of this report.

The scoping group was furthermore charged with delineating salient e-Retail functions and service and the e-Retail job skills needed to bring the industry to maturity within a South African context. A secondary aim of the scoping group was to interrogate a potential e-Retail career pathway model that extends the current traditional retail career pathway model of the Wholesale and Retail Seta (W&RSETA).

Various literature resources and e-Retail job advertisements were consulted and juxtaposed during the scoping group session. These resources are indicated in Table 3 below which summarises the understanding of the breakdown of e-Retail functions, services and skills.

Table 3: e-Retail functions, skills and services

	The Smriti Chand Perspective[1]	**The Soumya Singh Perspective**[2]	**Scoping Group on Traditional Retail**	**W&RSETA on e-Retail Functions**	**Scoping Group on e-Retail Skills**	**Scoping Group on e-Retail Services**
	Website: www.yourarticlelibrary.com	*Website: www.preservearticles.com*	*Empirical data*	*Taken from: W&RSETA SSP Update 2014/15 Stakeholder Consultation Workshop, Gauteng*	*Empirical data*	*Empirical data*
Technical	• Services to wholesalers • Services to customers	• Transportation	• Services	• e-Retail Software Developer • e-Retail Frontend Developer • e-Retail Backend Developer	• e-Commerce Architecture • e-Commerce Hosting • Cybersecurity • IT Services Management	• B2B and B2C networks • Supply Chain Management • Web platform • Internet connectivity • Anti-malware strategies • Anti-hacking strategies • IT environment maintenance & support

[1] The Smriti Chand: A random "services perspective" on retail…

[2] The Soumya Singh: A random "management perspective" on retail…

Marketing	• Helps in introducing new products • Windows display and advertising	• Sales promotion	• Marketing • Customer relations	• e-Retail Sales & Marketing Manager • e-Retail Marketing Manager • e-Retail Marketing Assistant • e-Retail Analyst	• e-Retail Catalogue	• Graphic design • Web design
Operations	• Buying & assembling • Warehousing & storage • Selling • Grading and packing	• Buying • Storage • Selling • Grading and packing	• Management • Buying • Planning • Space • Sales • Merchandising • Security • Housekeeping	• e-Retail Operations Manager	• e-Retail Distribution • e-Retail Logistics • Enterprise Management • Operations Management • Transactions Management	• Product and Services delivery
Business Intelligence	• Credit facilities • Risk bearing • Collection and supply of market information	• Financing • Risk bearing • Information	• Finance • Merchandise function • Logistics	• Business Analyst	• Financial Management • Business Analysis • Merchandise Planning	• Data Management

The choice of the "Smriti Chand" and "Soumya Singh" as random perspectives on the delineation of retail as a commercial practice serves purely to illustrate the diversity of opinion that manifests. The diversity of opinion in declaring e-Retail functions, services and skills is further testimony to the reality that the discipline has not yet matured in its understanding of its operating logic.

4.2.1 E-Retail technologies

The e-Retail Technologies map of the "e-Skills UK Sector Skills Council of 2011" was used as the baseline information for discussion by the scoping group. The "product-internal-external technology" mapping was used as the first framework for deliberation.

The deliberations on determining e-Retail technologies relevant to the South African landscape, unsurprisingly, confirmed in main the UK mapping. It was however instructive that several categories of technology were deemed less relevant to a South African context.

The e-Retail technologies proposed to be relevant to the South African context are illustrated in Figure 6 below.

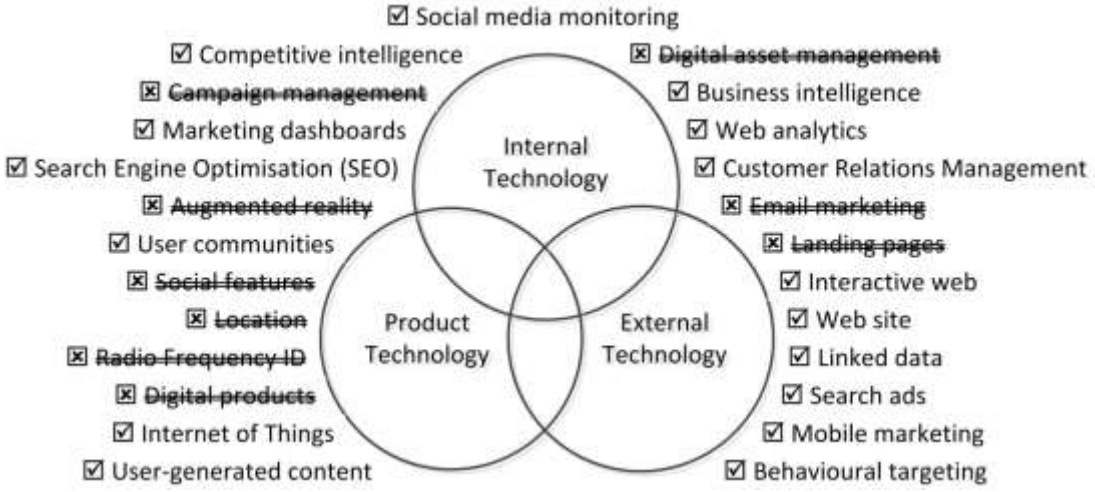

Figure 6: The e-Retail technologies (Referenced to e-Skills UK Sector Skills Council 2011)

Note: The items struck through in the above diagram are those that the scoping group considered to be not or not yet relevant to the South African context. The struck through items have been retained in the diagram to illustrate the separation between the UK and South African mappings. There appears to be no obvious thematic linkage between the struck through items from the UK mapping to the South African context.

4.2.2 E-Retail skills map

Similar to the process of extracting a South African e-Retail technologies mapping from the UK mapping, the process for evolving a South African e-Retail skills mapping was based on the mapping of the "e-Skills UK Sector Skills Council 2011".

The e-Retail skills proposed to be relevant to the South African context are illustrated in Figure 7 below.

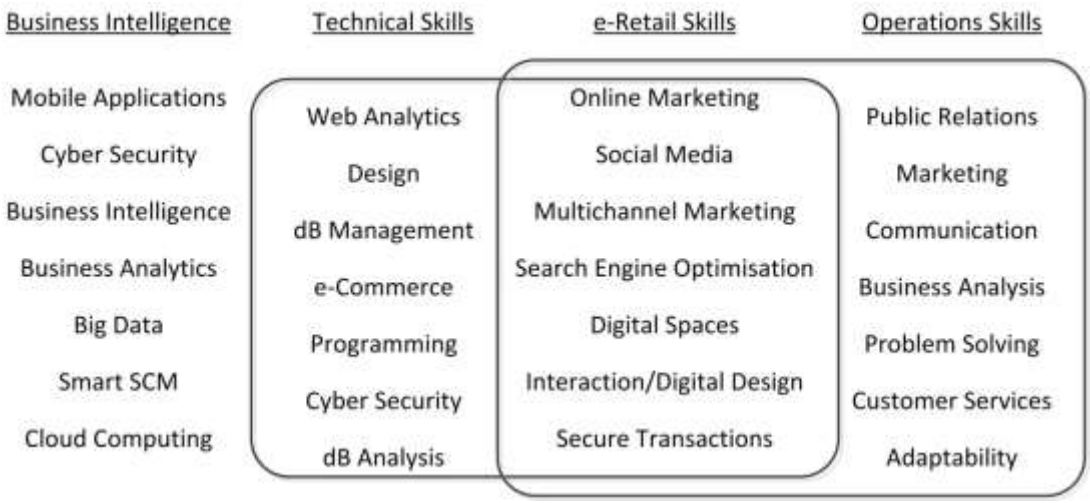

Figure 7: The e-Retail skills map (Adapted from e-Skills UK Sector Skills Council 2011)

Again unsurprisingly, the scoping group returned a mapping similar to that of the UK in respect of technical skills, e-Retail skills, and operations skills. The scoping group however proposed the introduction of a completely new category, namely, “Business Intelligence”, as a key skills area for the South African context. This is probably more indicative of the rapidly changing (advancing) nature of the e-Retail skills rather that a separation of South African and UK approaches to e-Retail skills.

4.2.3 E-Retail Change Drivers

The third aspect of the work of the scoping group was to interrogate the e-Retail change drivers that might inform e-Retail skills development and the capacity of the South African e-Retail sector.

The “e-Retail Change Drivers” concept map of the “UK Commission for Employment and Skills of 2012” was used as the baseline information for discussion by the scoping group. The scoping group concurred fully with the articulation of the concept map and declared that the South African perspective is completely in line with the UK (and perhaps global) perspective.

The fact that the UK model was adopted without any modification is indicative that the macro considerations for e-Retail appear to be universal. The detailed implementation could of course lift out aspects of uniqueness based on the specifics of the socio-techno-economic dimensions of the environment.

The e-Retail change drivers relevant to the South African e-Retail sector are shown in Figure 8 below.

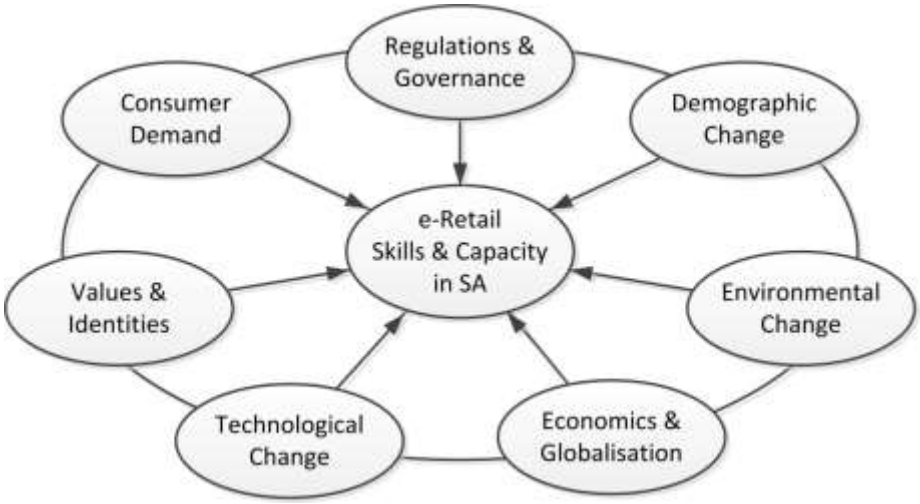

Figure 8: e-Retail Change Drivers (Taken from UK Commission for Employment and Skills 2012)

4.3 ONLINE SURVEY REPORT

The scoping group established the revised key tenets for this study to support the implementation of an e-Retail strategy for South African to be (1) Technical, (2) Marketing, (3) Operations, and (4) Business Intelligence, and these formed the main categories of inquiry for the research.

Further insights provided by the scoping group, together with the data emanating from the review of the literature, allowed for the establishment of several subcategories of inquiry.

An online survey instrument was evolved to support each of the subcategories to determine the readiness of the South African e-Retail sector to effectively participate in the e-Retail revolution. A set of statements were provided to which respondents indicated their bias on a binary basis, that is, “yes” or “no”. This strategy was adopted to bring about clarity in response and also to make the process of collating data easy.

The online survey was designed to explore the perspectives of the broader South African retail sector on its readiness for e-Retail against the aforementioned key tenets. Therefore no specific target group was identified within the sector. The initial invitation to participate was broadcasted within the established retail networks of the researchers and these included members of special interest groups and the Retail programme advisory committees of the Cape Peninsula University of Technology and Sol Plaatje University.

When the response to the initial call for participation did not yield adequate participation, further calls to participate were directed to specific persons and organisations with the aforementioned networks. This may or may not have compromised the integrity of the data in that coercion to participate is not ideal. This step however was deemed necessary since data saturation was not established after several weeks of the online survey being launched against the first open invitation. Data saturation was indeed achieved after the second more directed call for participation.

The online “e-Retail Readiness Survey” instrument and the responses are shown in Table 4 below.

Table 4: e-Retail Readiness Online Survey

	Keywords	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
Technical	Technology	• I am knowledgeable about a wide range of e-Retail-supporting technologies, e.g. Cloud and Big Data.	2	6	17	39
	e-Platform	• I have had interaction with e-Commerce hosting platforms to support B2B and B2C transactions.	0	0	18	46
	Frontend	• I have the aptitude for the frontend development of virtual shopping environments.	4	18	27	15
	Backend	• I have the aptitude for the backend development of a web platform for e-Retail.	0	0	9	55
	Security	• I am knowledgeable about cybersecurity, malware and anti-hacking strategies.	7	19	24	14
Marketing	Online	• I have experience and/or competency to be successful in online marketing.	21	29	14	0
	e-Catalogue	• I would be able to direct the development of an industry standard e-Catalogue.	27	33	4	0
	Dashboard	• I am familiar with the use of marketing dashboards to enhance the efficacy of e-Retail operations.	15	23	21	5
	Channels	• I am aware of the importance and implementation of multichannel marketing approaches.	25	38	1	0

	Social Media	• I know how to perform social media monitoring to provide insights into product or service acceptance.	3	11	37	13
Operations	Enterprise	• I am competent to meet the challenges of enterprise and operations management of an e-Retail business.	13	29	15	7
	e-Logistics	• I would be able to direct an e-Logistics and Smart SCM scheme to support a medium sized e-Retail business.	2	5	41	16
	CRM	• I believe that customer relations management (CRM) is similar in e-Retail and traditional retail.	2	32	19	11
	Transaction	• I would be able to direct the implementation of a secure transactions environment for e-Retail.	51	13	0	0
	ITSM	• I am familiar with the various aspects of IT Services Management as related to e-Retail.	17	34	10	3
Business Intelligence	Merchandise	• I am knowledgeable about merchandise planning within an e-commerce or e-Retail environment.	3	22	35	4
	BI	• I am knowledgeable about the deployment of business intelligence to optimise the performance of a business.	0	8	37	19
	Analytics	• I am knowledgeable about the deployment of web analytics to access business trends and opportunities.	0	0	44	20
	Competition	• I am familiar with competitive intelligence to support executive decision making within an organisation.	6	16	31	11
	Data	• I am aware of specific schemes for data management of mission critical data within the business operation.	4	7	41	12

The outcome of the online survey on e-Retail Readiness in South Africa is illustrated in Figure 9 below where positive (above zero) values imply “readiness”, whereas negative (below zero) values imply “not ready”.

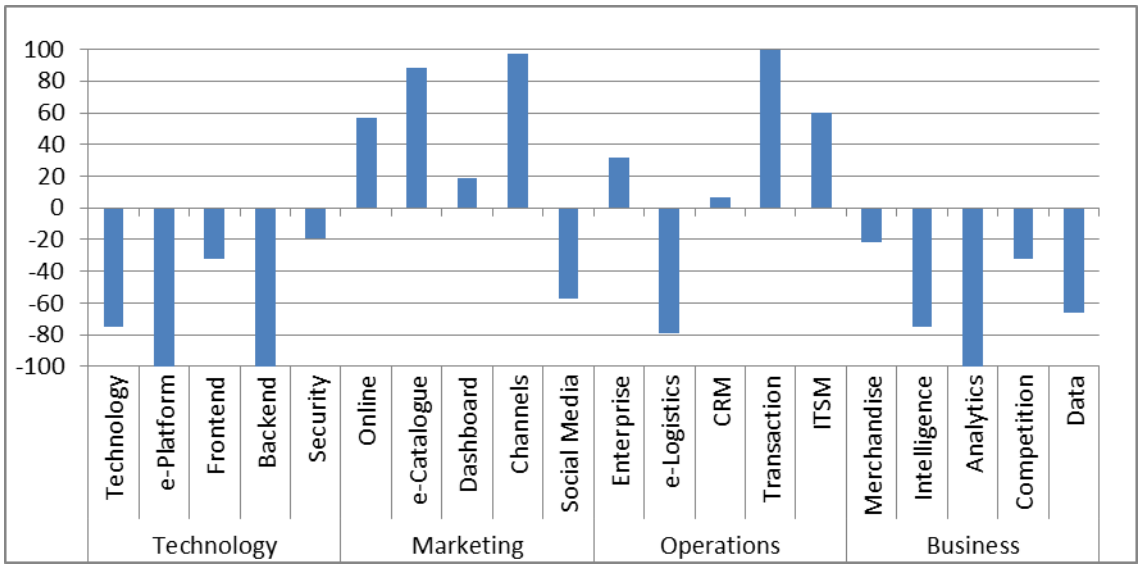

Figure 9: South African e-Retail Readiness Survey

The South African e-Retail Readiness (Online) Survey returned rather interesting results. It should be reemphasised that data collection process was not specifically targeted and that some pressure was brought to encourage respondents to participate. We will therefore not draw too fine a conclusion from the survey results.

It is however not uncommon in survey research for researchers to have to contend with some reluctance in securing participation.

The survey results indicate a clear separation between perceptions of readiness in those areas based on human interaction and those that are reliant on technology provisions. The former aspect is also more aligned to traditional retail while the latter aspect comes with the new e-Retail phenomenon.

It is interesting but understandable that the “technology” and “business intelligence” aspects returned consistently negative perceptions of readiness; while the “marketing” and “operations” aspects returned mixed but significantly positive perceptions of readiness.

Perhaps the strongly negative perception of readiness for the incorporation of “social media” and “e-logistics” is most surprising.

The indications around “dashboards” and “customer relations management (CRM)” are probably insignificant within the provisions of the online survey since these indications fall within the sampling-error band. Based on the informal management approaches to the survey, a sampling-error band of +/- 20% has been adopted for the online survey.

The significant positive perception reported on “IT Services Management (ITSM)” is somewhat surprising.

The results of the online survey were then refined within the subsequent “Focus Group” and “Expert Group” interventions.

4.4 FOCUS GROUP REPORT

After several unsuccessful attempts, over a prolonged period of time, at setting up a comprehensive face-to-face focus group session with a representative group of participants, it was decided that a more pragmatic approach was indicated. The data of the several “non-quorate” focus groups was collated and synthesised into an information grid that was subsequently presented to all participants using an online platform as an “online focus group session”.

As with the face-to-face focus group sessions, the moderator seeks to promote exchange between participants to promote deeper engagement of the subject matter. The online focus group session takes place over a predetermined period of time.

Online focus groups are deemed to be valid if sufficient interaction between participants is made possible (Hughes & Lang, 2004). The online focus group event was conducted using Google Forms, which allowed information to be updated and published as participants made their individual contributions. In some cases where participants experienced some difficulty with connectivity or access, the moderator engaged the participants via email and then posted these contributions.

A record of contributions to the Focus Group is provided as Appendix 1.

An analysis of contributions per category is provided here:

4.4.1 Category: Technical, Topic: Technology

What are the core technologies that are driving e-Retail as a discipline in South Africa?

The responses were quite varied given the diverse application environments that participants represented. So the perspectives were naturally also quite diverse and therefore in aggregation probably represent a good cross-section of the e-Retail industry.

The dominant submission to the focus group raised an intriguing question about whether subscription to a particular e-Retail technology was based mainly on functionality or mainly on cost; and submits that larger organisations are probably motivated by the functional status of the technology platform while smaller companies probably consider price and functionality.

The core technologies that are currently driving e-Retail in South Africa as determined by the focus group, with full definitions provided in Appendix 4, are as follows:

- Cloud computing: Internet-based computing services…
- Content as a Service (CaaS): Content provided to consumers on demand…
- E-Commerce Payment: Electronic payment for online transactions…
- Hybris: Multichannel e-commerce…
- Kanban development approach: Visual process-management system…
- LAMP: Linux operating system, the Apache server, MySQL database, PHP language…

- Magento: Open-source e-commerce platform…
- Mobile Technology: Cellular communication devices…
- Oracle ATG: E-commerce software …
- Ruby on Rails: A web application development framework…
- Software as a Service (SaaS): Software licensed on a subscription…
- Web Analytics: Analysis and reporting of web data…
- Web Services: Communication services via the World Wide Web…
- Web Technology: World Wide Web development software…
- XAMPP: Cross-platform web server solution similar to LAMP…

4.4.2 Category: Technical, Topic: e-Platform

What e-commerce platforms are used within and/or dominating the national e-Retail environment?

It was quite evident from the focus group that a handful of e-platforms have emerged as "favourites" in the South African e-Retail industry. There may have been some confusion about what constituted e-Retail technology and what constituted an e-Retail platform. This issue however was resolved and good consensus on the matter was reached.

The dominant view has it that Oracle ATG and Magento would be the most popular e-commerce platforms for larger organisations and Shopify and WooCommerce would be more appropriate for smaller organisations. But many different schemes are currently being engaged.

The e-commerce platforms that are currently deployed within the national e-Retail environment as determined by the focus group, with full definitions provided in Appendix 4, are as follows:

- BigCommerce: E-commerce software...
- Ecwid: E-commerce platform…
- Joomla: Content management system (CMS) for web publishing...
- Magento: Open-source e-commerce platform…
- PrestaShop: Open-source e-commerce platform…
- Shopify: E-commerce platform…
- uAfrica.com: E-commerce platform…
- WooCommerce: Open-source e-commerce platform…

4.4.3 Category: Technical, Topic: Frontend

What frontend development skills are required for advancement of the national e-Retail industry?

One of the focus group contributions succinctly captures the skills requirement for frontend development by declaring that it is "skills enabling the understanding and business

development of an e-commerce business". It was declared that "a sound understanding of buying trends, both internationally and locally, as well as identifying the enablers for the local market is required". The submission further advises that "the frontend development team must have a sound knowledge of the current business processes; and that this knowledge must not restrict but must enable leading edge lateral thinking process ideas".

The frontend development ICT tools and skills required for advancement of the national e-Retail industry as determined by the focus group, with full definitions provided in Appendix 4, are as follows:

- ASP (Active Server Pages): Server-side scripting language for generating web pages…
- C++: A general-purpose programming language…
- CSS (Cascading Style Sheets): Mark-up language for visual styling of web pages…
- HTML (Hyper Text Mark-up Language): Standard mark-up language for creating web pages…
- JavaScript: Programming language for the World Wide Web…
- JSP (JavaServer Pages): Technology for dynamically generated web pages…
- PHP: Server-side scripting language for generating web pages…
- Python: A general-purpose programming language…
- Web Analytics: Analysis and reporting of web data…

4.4.4 Category: Technical, Topic: Backend

What backend development skills are required for advancement of the national e-Retail industry?

Two of the focus group contributions provide the essence of the focus group perspective on backend development:

"Backend development skills are programming and inventory skills enabling the programmatic development of the web site along lines suggested by the frontend development team. The backend development team should ideally consist of developers with a development lead and a business interface person that can sit in meetings and assist with strategy formulation while providing feedback of the correct strategic drive and direction to the development team", as the first key contribution.

The second key contribution suggests that Big Data and Cloud Computing can be used effectively to optimise the acquisition of business data from customers; and then to deploy strategies "to enhance their consumer experience".

Note: All frontend development tools are relevant to backend development.

The backend development ICT tools and skills required for advancement of the national e-Retail industry as determined by the focus group, with full definitions provided in Appendix 4, are as follows:

- .Net: A software development framework…
- API: Set of routine definitions and protocols for building…
- MS Server: Microsoft server products…
- Oracle Application Server: Oracle server products…
- PL/SQL: Procedural Language/Structured Query Language for database management…
- SQL: Structured Query Language is a programming language designed for database management…

4.4.5 Category: Technical, Topic: Security

What is the general approach to Cybersecurity within the national e-Retailing industry? And what is the skills requirement?

The focus group responses confirmed that the notion of cybersecurity seems to be understood albeit at a rather elementary level. There clearly however is not an established culture of cybersecurity and therefore it was not surprising that the conception of cybersecurity is poorly developed and not at all entrenched as was evidenced in the discourse of participants. As one participant bluntly put it - “Businesses do not appreciate the importance of cybersecurity”.

The discussion however highlighted the cybersecurity concerns for payment and financial transactions. There is awareness about secure transactions and the related supporting technologies, such as, PCI DSS, Thawte and 3-D Secure. There is also awareness of online payment tools and schemes, such as, PayPal and Pay Google Wallet.

Note: All these acronyms are explained below.

A clear sense of the importance of the protection of personal information was evident within the focus group. In this regard, the importance of software tools, such as, SIEM, SIM, SEM, FIM, and SSO, and the POPI act, was highlighted.

There was evidence in the focus group of basic appreciation of the types of threats that might bring risk to an e-Retail environment, including, phishing, malware (viruses and Trojans), and other vulnerabilities. There was also basic appreciation for firewalling and encryption as counter measures.

There however was rather poor and inconsistent appreciation for policies, tools, technology platforms, and strategies to address security needs.

The ICT tools and skills deployed for cybersecurity purposes within national e-Retailing as determined by the focus group, with full definitions provided in Appendix 4, are as follows:

- 3-D Secure: Software for secure online credit and debit card transactions…
- FIM (Federated identity management): Policies for electronic identity systems…
- Firewalls: Security system to monitor and control information network traffic…
- GoDaddy: World Wide Web domain registrar and web hosting company…

- PCI DSS: The Payment Card Industry Data Security Standard (PCI DSS) to reduce credit card fraud…
- POPI: Protection of Personal Information (POPI) Act for protection of personal information…
- Secure Socket Layers (HTTPS): Transport Layer Security (TLS) to secure all communications between their servers and web browsers…
- SIEM, SIM and SEM: Security information and event management (SIEM) software products…
- SSO: Single sign-on (SSO) systems allow a single user authentication process…
- Thawte: A certificate authority (CA) that issues certificates to approve authenticity…

It is clear that cybersecurity awareness, threats, policy, tools, technology platforms, and strategies to address security needs, need to be firmly placed on the agenda for e-Retail in South Africa.

4.4.6 Category: Marketing, Topic: Online

How is online marketing different from traditional marketing? And what is skills requirement?

The focus group was unequivocal in its declaration that online marketing is significantly more complicated than traditional marketing. Online marketers need to be familiar with a far more complex environment in discharging their professional duties. Online marketers need both marketing and ICT skills. They need knowledge of ICT tools that would allow them to direct activities relating to product search, social media environments, web-based media, mobile media opportunities, the monitoring of online marketing performance, and much more.

Online demands a people-centeredness almost at an individual level for efficacious delivery of the online marketing mandate. The proliferation of social networking has made it possible for consumer data to be harvested in a manner that traditional marketing is simply not able to match. The profiling of individuals and the extrapolation of individual data to achieve target community profiling using mathematical aggregation algorithms are just some of what have to be contended with by the online marketer. Online marketing also makes provision for individual consumers to declare their preferences and as such now has some control over the marketing function.

Pricing based on comparative analysis of online competitor prices has become the order of the day. Online pricing often has delivery as a built in service so the target community is far less geographically located. This demands that innovative approaches be evolved to attract consumers beyond the mere locality imperative.

The effects of online marketing often happen in the moment. Online consumers can leave the environment quite easily. Capturing consumer interest is therefore vital and this places a new demand on e-Retail to be dynamic in its approach and this requires agile thinking.

The focus group agreed that online marketing is mainly distinguished from traditional marketing in its approaches, tools and skills sets required to support online targeting, multichannel marketing, and search engine optimisation.

Since online marketing is directed mainly within the online environment, the effectiveness of marketing campaigns is reasonably objectively measurable and could be relatively cost effective if properly focussed. The use of tools such as Google AdSense and Google AdWords are becoming increasingly important in monitoring the performance of online marketing campaigns.

Note: Online marketing is regulated by Communication and Information Act and the Consumer Protection Act.

The ICT tools and skills deployed for online marketing purposes within the national e-Retailing as determined by the focus group, with full definitions provided in Appendix 4, are as follows:

- Google AdSense: Enables targeted interactive media advertisements to site content and audience…
- Google AdWords: An online advertising service that enables advertisers to compete to display brief advertising…
- Multichannel marketing: The ability to interact with potential customers on various platforms…
- Online targeting: Online advertising to a specific group of people…
- SEO (Search engine optimisation): Process of automatically promoting the visibility of a website or a web page…

4.4.7 Category: Marketing, Topic: e-Catalogue

What are the quality considerations for an e-Catalogue? And what skills are required to create a winning e-Catalogue?

The focus group experienced some difficulty in responding to the issue of "quality considerations for an e-Catalogue". Several of the participants felt that the notion of an "e-Catalogue" is outdated and that it is no longer used within e-Retail in any signification way.

There however were some members of the focus group that had some regard for "e-Catalogue" as a feature within the broader e-Retail provisions.

The focus group position on "e-Catalogue" is perhaps best summarised by the following submissions"

"An e-catalogue is not really widely used in the industry anymore albeit traditional marketing teams still look to it as a means to create that catalogue type look and feel. In effect, your website is your catalogue so there is still a lot of work to be done with integrating content into the online product catalogue. When using an e-catalogue, it is incredibly important to add functionality to transact directly from the catalogue as well as implementing sharing functionality", as the first perspective; and "e-Catalogues should be dynamic with items linked to user-interest bubbling to the top. Search engines are critical

and search criteria must be provided to filter catalogues according to the requirements of the user. Skill sets required will include the ability to develop standard templates for display of goods", as the second perspective.

4.4.8 Category: Marketing, Topic: Dashboard

How could a marketing dashboard add value to an e-Retail business? And what is the skills requirement?

The exchanges within the focus group session were somewhat subdued on the topic of the marketing dashboard. Participants in general acknowledge the function and the potential importance of the dashboard but generally did not consider it to be a priority issues within the discourse on e-Retail.

The focus group position on "the marketing Dashboard" is perhaps best summarised by the following submissions:

"Dashboards should provide direction-giving analytics at a glance where sales trends, pricing analytics, and consumer profiling are foregrounded", from a company perspective; and "a marketing dashboard is an area on the e-commerce site that presents the consumer with an updated quick reference guide to past purchases with recommended future purchases", from a consumer perspective.

Dashboard is integral to operationally managing a company's business intelligence. A software platform like Klipfolio will allow a company to "quickly and easily see its successes, failures, top customers and products and compare your actual profit to your expected profit".

"Dashboards can give key insights into business segments which can be optimised to drive growth for that business and offer scalability to what is working well in certain aspects of the business".

The Dashboard related concepts as referenced by the focus group, with full definitions provided in Appendix 4, are as follows:

- Dashboard: An easy-to-read real-time user interface showing a graphical presentation of the current status and historical trends of business activity…
- Data visualisation: Visual representation of data to communicate information clearly and efficiently via statistical graphics, plots and information graphics…
- Klipfolio Dashboard: An online dashboard platform for building real-time business dashboards…

4.4.9 Category: Marketing, Topic: Channels

How important is multi-channel marketing in establishing an e-Retail operation? And what is the skills requirement?

The pronouncement of the focus group on the subject of multi-channel was quite clear as is evident from the selected submissions to the focus provided here:

"Multi-channel marketing is imperative. People access various platforms for various purposes. Marketing materials are often channelled towards the nature of the platform. For example, people may be in different mind-spaces when accessing business platforms as opposed to social platforms".

"Multi-channel marketing is extremely important, for the pure e-retailer as well as the e-retailer with a physical shop presence. While the pure e-retailer is focused on multi-device marketing channels the hybrid operation is focused on multi-channel devices as well other avenues, such as e-commerce catalogues bringing customers into the physical shop".

"Omni-channel marketing solutions are the future. It allows the retailer to penetrate the market simultaneously across all channels, and when there are more impressions within the same market/consumer, there is naturally a higher engagement with the brand".

Note: It is instructive that in many of the e-Retail categories, the focus group tended to be quite knowledgeable on the technology requirement but was generally unable to articulate, in refined detail, the skills requirement. This is perhaps not surprising since the focus group was constituted almost entirely of e-Retail industry practitioner representatives and only one or two training oriented professionals.

The Multi-channel vs Omni-channel concepts as referenced by the focus group, with full definitions provided in Appendix 4, are as follows:

- Multichannel marketing: The ability to interact with potential customers on various platforms…
- Omni-channel: A cross-channel business model that companies use to increase customer experience…

4.4.10 Category: Marketing, Topic: Social Media

How important is social media monitoring in developing competitive advantage for an e-Retail business? And what is the skills requirement?

The focus group was unequivocal in its pronouncements on the importance of social media in sustaining e-Retail as a competitive retail endeavour. The focus group perspective on the role of "social media" in advancing e-Retail interests is succinctly summarised by the following salient submissions:

"The world has embraced social media and a fundamental strategy for e-Retailers would be to go where the people are... Through integration with social media platforms, a number of strategies can be adopted including customer surveys, determining brand reach, determining ranks of competitor products, sharing case studies, integrating with blogs, developing stores integrating with social media platforms, etc. Social Media platforms have APIs that allow for developing plug-ins that provide for automated monitoring. It is also possible to leverage third-party sources such as e-Marketer".

"It is critical (to be engaged in social media)! You need to measure Facebook, Twitter, and Instagram, and constantly to respond to queries. Companies (should) use Online Reputational Management (ORM) tools to help them with this".

Social media can also be quite risky! Because social media sites are so accessible, customers could do serious reputational damage to companies if they believe a company is not performing to standard. So care must be taken when using social media as a marketing vehicle. It is therefore no surprise that "good writing skills" have been identified as the key skill required for supporting social media marketing.

Social media however provides a unique opportunity for data gathering on consumer preference and customer satisfaction with specific products and services, which provides a very relevant opportunity for gathering "analytics, statistics, and brand demographics". Statistical and analytical skills are therefore also extremely important to make sense of data that reflect consumer engagement and behaviour.

The term "reputation management" as referenced by the focus group, with a full definition provided in Appendix 4, is as follows:

- Online Reputation Management: This refers to influencing and controlling an individual's or business's reputation…

4.4.11 Category: Operations, Topic: Enterprise

How different is enterprise and operations management of an e-Retail business to that of a traditional retail business?

The focus group submissions support the view that the "enterprise and operations management" of e-Retail and traditional retail on balance requires the same basic skillset. In both cases the business framework of procurement, logistics, distribution, market analysis, CRM, and infrastructure management, remain as the key performance areas.

The focus group perspective on the differences and similarities of e-Retail and traditional retail is summarised by the following selected submissions:

"Traditional retail is focused on bringing customers into a physical shop and selling to customers within that environment only. Operations management is based around physical store security, presentation of goods, replenishment of goods, and sale of goods and sometimes the delivery of those goods directly to a consumer. An e-retail business is focused on bringing customers into their e-commerce site and selling to them within that or similar environments. Operations management is based more around logistics as well as presentation of goods, replenishment of goods, sale of goods and mostly the delivery of goods directly to the consumer".

"These are very general terms, as many traditional retail businesses now have online facets to them. Further to that, certain online stores run very differently themselves, e.g. some hold stock while others sell on consignment. Based on these facts, it will be almost impossible to provide an accurate answer without assuming and generalising".

"The operations management is much more robust in e-Retail than in general brick and mortar retail, for the main fact that stock needs to be managed for an online customer with courier and logistics factors in place, and inaccurate inventory means that product availability fluctuates and can make or break turnover".

"Besides the obvious information technology demands, I would imagine that it calls for the same basic approaches".

The skills required to sustain an e-Retail operation is however quite specific, namely, "knowledge and practice competencies relating to online development tools, product tracking tools, online tracking for logistics and distribution, online sales and advertising, online customer purchase and feedback tools".

4.4.12 Category: Operations, Topic: e-Logistics

Competent execution of e-Logistics and Smart SCM (supply chain management) appear to be essential aspects of an e-Retail operation. If it is, why is it so?

The focus group pronouncements on e-Logistics were clear and consistent and declared that e-Logistics is the crux of any e-Retail operation. There was a similar endorsement of Smart SCM but participants seemed to focus on the "SCM" aspect and not the "Smart" aspect of the concept. The notion of "Smart" is clarified below.

The focus group perspective on the execution of e-Logistics and Smart SCM within an e-Retail environment is summarised by the following selected submissions:

"These are critical aspects. The logistics from pre-sales to order placement to payment to order processing to delivery to after sales is a massive undertaking. From a product offering perspective, choosing the correct products, the marketing, pricing, calculation of costs, availability, lead time determination, supplier selection, etc., are all massive undertakings. Various systems need to work in tandem to ensure that logistics and supply chain management run efficiently and effectively. This process will include integration between the various business systems, multiple supplier systems, and banking systems. Business is about making a profit that thus the right pricing, optimal processes and cost management are key".

"Supply chain management is critical. A pure play e-commerce provider cannot hold excess stock (as it is expensive), so you typically need a JIT model and that means accurate supply chain data as well as making sure your suppliers deliver to you on time. Timing is everything. A late supplier means a late customer order".

"There are different types of e-Commerce models, and the one that is used often is JIT (just-in-time) or back-to-back models. This implies that the goods are not with the retailer at the moment, but are available to order; and due to this, logistics has much room for failure. Extended lead times for the consumer can also make or break a sale. And it is the job of the logistics department to ensure that stock is managed both on-site and off-site and that the movement of stock from supplier to warehouse to customer happens in as short a turnaround time as possible within the SLA".

"Supply chain management is critical. A 'pure play' e-commerce provider cannot hold excess stock (as it's expensive), so you typically need a JIT model and that means accurate supply chain data as well as making sure your suppliers deliver to you on time. Timing is everything".

The terms referenced by the focus group with regards to e-Logistics and Smart SCM, with full definitions provided in Appendix 4, are as follows:

- JIT: Just-in-time (JIT) is a methodology aimed primarily at reducing flow times within production as well as response times from suppliers and to customers…
- Smart SCM (Supply chain management): The notion of Smart (an acronym) SCM simply refers to the SCM being a Self-Monitoring, Analysis and Reporting Technology…
- SLA: A service-level agreement (SLA) is part of a standardized service contract where a service is formally defined…

4.4.13 Category: Operations, Topic: CRM

How different is customer relations management in an e-Retail setting versus traditional retail?

The consensus view in the focus group was that at the core there is no major difference in the fundamentals of the two environments and that "customer comes first" and "knowing your customer" apply equally to both environments. All the usual considerations therefore still apply whether providing CRM in the traditional way or providing CRM within an e-Retail environment with due consideration for the uniqueness of each of the environments.

Some of the salient comments returned by the focus group were:

"There is probably little difference in CRM within the two environments. The only thing is that with traditional retail you sometimes meet your clients in person however in e-retail you deal with them via a phone call or email".

"There is no face-to-face communication in e-Retail, and that makes personalising the interaction with the customer that much more difficult. On the flip side of the coin, companies can make use of mass emails to reach a large audience with minimal effort, which often plays to their advantage". Another submission supports the view that CRM in traditional retail and e-Retail are "not much different, except you can assume that all of your customers are online so you can communicate to them using email as a default". Another view has it that in e-Retail "more information is available and user actions are far more trackable".

"CRM is much more sensitive in e-Commerce, since the notion of e-Commerce is shopping for price and convenience. If an e-Retailer cannot be competitively priced, it is expected to go above and beyond to ensure a quick turnaround time with a good logistics partner. Any failure on either one of these usually results in an unforgiving customer, with the ability to slander the retailer's name on a multitude of online channels". But the converse is also probably true!

4.4.14 Category: Operations, Topic: Transaction

Transactions management assumes critical importance in e-Retail given the physical separation of the client from the business. What are the most important considerations in building a trust relationship?

The focus group was single minded on the importance of prudent management of transactions within an e-Retail environment, and summarised by the following submissions:

"Trust relations are built on the power of reputation. If one has not purchased previously from an e-retailer that is not known, what assurances can be provided to increase the levels of comfort? Some of the important aspects are: The site should convey reputational information that can be verified by a customer. This could include the company/site's registration as a vendor on supplier web-sites. Trust-logos and/or certificates from regulatory bodies that verify the reputation of the site should be displayed. The site should be well-designed and professional looking. Branded products from reputable companies should be included. The site should provide clear contact details and an address. E-Commerce websites should use secure communications protocols".

"The most important considerations in building trust are to offer a secure trading environment and to appear to be professional and to offer the consumer an easy communications path for any queries. The consumer must be able to easily communicate and then be offered accurate information and assistance. Common queries are around failed transactions, unfinished transactions, order delivery, cancelled orders, price discrepancy and returns of items purchased".

4.4.15 Category: Operations, Topic: IT Services Management (ITSM)

It is imperative for e-Retail as a virtual shopping experience to provide continuity of access for clients. How important is ITSM within the e-Retail operation?

Several members of the focus group did not have the slightest idea what ITSM was while some others had only a rather limited understanding of the ITSM function within e-Retail. Those members who knew about ITSM agreed that it was a very important aspect of any e-Retail operation.

The ITSM concept can be defined as follows, with a full definition provided in Appendix 4:

- IT service management (ITSM) refers to the implementation of IT services that meet the needs of customers…

4.4.16 Category: Business Intelligence, Topic: Merchandise

What are the essential aspects of the merchandise function for an e-Retail business? And what is the skills requirement?

It was surprising that the focus group was not more adventurous in exploring novel interpretations of the merchandise function to the e-Retail environment. In the era of Artificial Intelligence and almost unbounded computing power, it would not be unreasonable to predict that algorithmic and computational support of the merchandise function would be seen as important.

The limited extent to which the merchandise function for e-Retail has been elucidated by the focus group can be summarised by the following submissions:

Only one of the focus group submissions sought to contextualise and nuance the merchandise function within an e-Retail setting and explored the potential of an automated or computationally supported approach.

"There needs to be understanding of the content management system and effective imagery. E-retail requires customer friendly naming and descriptions and effective detail to enhance SEO so understanding of the technology landscape is required. Traditional retail systems and processes don't necessarily provide this and often work is duplicated to provide the required customer facing data".

The majority of contributions supported a conservative view of the application of the merchandise function into the e-Retail space.

"Merchandising involves amongst others, the determination of which goods should be bought and sold, determination of product lines or associations, product promotions, determining product quality versus pricing, which products should be stored in-house. This covers a broad spectrum of multi-disciplinary skill sets that include market analysis, product knowledge, pricing determination, marketing, product sales and movement analysis".

"Merchandising functions for either the e-retailer or a physical shop are different but equally imperative. A consumer walking through a shop can see the length of portions of the shop and merchandising can lead the consumer in certain directions. In the e-retail environment, merchandising differs greatly in that the consumer is presented with a much smaller selection of product at a time, and if this small selection does not catch the consumer's interest, the consumer may leave the site and go elsewhere. The skills requirements are a sound knowledge of marketing, business processes and a very good understanding of the target market and local buying patterns".

4.4.17 Category: Business Intelligence, Topic: Business Intelligence

How would business intelligence (BI) be deployed in building competitive advantage for an e-Retail business? And what is the skills requirement?

It was quite evident in attempting to deal with this category that the focus group lacked deep insight into this topic. Participants demonstrated a basic understanding of the importance of BI but were generally not able to articulate much about methodologies and tools that might be deployed in harvesting BI.

The following selected submissions were ventured which provides insight into the extent of knowledge available within the focus group:

"Every aspect of the business has to be measured and direction-giving analytics have to be generated at the click of a button. Customer profile analysis, sales trends, product comparative analysis, market trends, operational analysis, have to be provided and understood to ensure that the business remains healthy in a highly competitive, global market. The skills requirements areas are: the ability to identify the information requirements, the ability to draw data from multiple sources and to build the analytical reports, the knowledge in the use of technologies that enable the production of reports including spreadsheets, graphs, diagrams, maps, etc. and also the ability to interpret the results. Learning organisational approaches that adopt double loop learning (test outcomes

based on assumptions/rules but also examine assumptions/rules upon which the outcomes are derived) are imperative".

"In an e-retail environment, all customer purchases are recoded electronically and data of consumer habits and geographic purchasing trends can be and should be used to present special offers to the consumer as well as to populate the consumer marketing dashboard. Encouraging the consumer to return to the e-retailer as well as to encourage the spread of the site availability to other potential customers is the key. The skills requirements are marketing and data analysis".

"BI is critical. In a digital world everything is tracking and you need to constantly look at the numbers to understand traffic to the website, conversion rates, average order values, revenue, cancellation rates, fulfilment rates, customer service complaints etc. Usually BI leaders have a background in maths or databases and are very comfortable with numbers".

"Growing one's subscriber base is a great way to increase sales – but the normal BI rules don't apply here. There are a number of ways and competitions one can run to achieve the above, and the more creative you can do this, the more likely you are to break through to the customer and appeal to them on a base level".

"Funnel analysis is useful in focussing the business by considering customer segmentation and optimisation of departments. It however requires strong business and data analysis skills".

The Business Intelligence related concepts as referenced by the focus group, with full definitions provided in Appendix 4, are as follows:

- Business intelligence: BI can be described as a set of techniques and tools for the acquisition and transformation of raw data into meaningful and useful information for business analysis purposes…
- Funnel analysis: It involves analysis of the series of events that lead towards a defined goal…

4.4.18 Category: Business Intelligence, Topic: Web Analytics

How could web analytics be used to enhance the performance of an e-Retail operation? And what is the skills requirement?

As was the case with the previous category relating to the conception of business intelligence within e-Retail, it was again quite interesting that the focus group seems not to have a firmly established command of the potential of web analytics to build the efficacy of e-Retail. Many participants appeared to have only an intuitive appreciation of web analytics. A number of participants however demonstrated a basic understanding of the importance of web analytics but again were not able to articulate much about methodologies and tools in this regard.

The following selected submissions were ventured which provides insight into the extent of knowledge available within the focus group:

“Web analytics and BI would form part of the same division. However, the interpreting of the data might be done by different skill sets. Web analytics include technical information that the back office development team would require for making the e-retail site available on more platforms while more general BI would be used for the rest of the business”.

“A good way to use web analytics is to do multivariate testing – this means that you test two different versions of a feature on the same day, but to a split audience. That way you can see which feature works best to convert to sale. There are many other ways to test though, using benchmarks and measuring performance, doing usability testing in person, or using UX tools like Tree Jack”.

“Web analytics is deployed in much the same way that a marketing dashboard could be used. Info such as when your site sees the most traffic, which is your most popular product and whether your site might be experiencing a problem is all very easy to see through web analytics, such as Google Analytics” and “tools such as Google Analytics, Tag Manager and Crazy Egg are good for monitoring site behaviour”.

The Web Analytics related concepts as referenced by the focus group, with full definitions provided in Appendix 4, are as follows:

- Google Analytics: A Google tool for analysis and reporting of web data…
- Treejack: Software utility deploying artificial intelligence to analyse the clustering of specific keywords that informs the logic of the information provision…
- Tag Manager: A tag management system to manage JavaScript and HTML tags used for tracking and analytics on websites…
- Crazy Egg: Analytics software which allows website owners to analyse behaviour on their website through "heatmaps" of visitors clicks…

4.4.19 Category: Business Intelligence, Topic: Competition

What is competitive intelligence within the context of an e-Retail business? And what is the skills requirement?

Not dissimilar to the responses returned within the focus group, the participants were again divided on their comfort and knowledge on the notion of competitive intelligence within the context of an e-Retail business. Several of the members of the focus group simply declared that they did not know of, or enough about, the topic. However several other members of the focus group provided rather succinct inputs, as is evidenced by the comments below:

“The e-Retail offerings far exceed the available purchasing power and competitive advantage is vital to ensuring the sustainability and growth of the e-Retail business. Competitive intelligence can be derived from BI with a special focus on marketing trends and offers to consumers from competing companies. The skills requirements are marketing, business processes enablement with a focus on logistics”.

“Digital moves quickly and keeping an eye on competitors is important. This includes international competitors. This can be done quite easily by understanding commonalities or common features, and measuring each one against those. From the way their site looks, the

features offered, to the types of products, speed of delivery, and extra services like click and collect, and gift registries".

The key lies within "understanding the market and the market needs, using the digital tools to optimise business practices to suit production efficiency and customer experience".

4.4.20 Category: Business Intelligence, Topic: Data

Data integrity issues could undermine the client trust relationship. What are the best practices for data management within an e-Retail environment?

The submissions to the focus group discussion on data integrity issues were not necessarily on data integrity but spanned across a wide range of data related concepts, including, data management, data security and information security. The aforementioned topics are quite distinct within the Data Science field. The prevalence of misconception within the focus group is not surprising since participants were mainly retail practitioners and data integrity would generally be regarded as an environmental factor by retail practitioners. Their views are therefore that of non-experts.

The submissions on "data integrity" nevertheless yielded some interesting commentary on general data issues, as is evidence by the following contributions:

"Data integrity practices must include data encryption within a database as well as across the internet. For system users it's important to ensure access control privileges, input validation, transaction processing, i.e., ensuring that the entire transaction is completed before committing to the database. Data backups that store data in alternate locations are vital".

"Data must always be accurate and readily available. Data integrity checks must be regularly done, including recalculation of customer balances and purchase history. Inventory pricing must be checked daily against a control environment".

"Data management is critical. To get a single view of a customer is nirvana, but many retailers still do not have this. Then you have to keep your data clean. You need to make sure that all records are up-to-date and that there is little duplication. It's a full time job and various different database tools can be used".

"As is the with case payment protection, the very best way to do this is to outsource your data management to a third party. If someone does something specialised for a living, chances are they do it better than you could if you tried to apply it to your own online store yourself".

The Data related concepts as referenced by the focus group, with full definitions provided in Appendix 4, are as follows:

- Data integrity: This refers to maintaining and assuring the accuracy and consistency of data over its entire life-cycle…
- Information security: The practice of defending information from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction…

- Data security: Security that emphasises the security of the data itself rather than the security of networks, servers, or applications…

4.5 EXPERT GROUP REPORT

The data that was mined during the Scoping Group, the Online e-Retail Readiness Survey, and the Online Focus Group session, was analysed and synthesised into a set of twelve (12) theses by the moderator. The theses are presented below with commentary on the level of consensus reached by the panel as well as any other comment deemed relevant to the elucidation of the subject.

For the same reasons as presented with regards to the Focus Group Sessions, it was decided to also run the Expert Group as an open-ended online expert group. The Google Forms platform was again deployed to reach consensus on each of the theses.

A record of contributions to the Expert Group is provided as Appendix 2.

The outcome of the online expert group session for each thesis is provided here:

4.5.1 Thesis: E-Retail as a hybrid discipline

E-Retail is hybrid discipline that draws mainly from the disciplines of retail management and ICT to support a diverse set of business and technological skills.

The expert group provided the following selected comments in affirmation of the thesis:

- “There needs to be a good integrated approach with the marketing team and data analyst and IT teams, to make sense of the information you are gaining through people using your website”.
- “Multi-disciplinary skills involving the intersection of business and technology skills are vital”.
- “Technologies can turn any traditional business into an e-Commerce business. It does so by merely transferring (migrating) the general day-to-day operations onto a digital channel that is live and current”.

There were no negative comments.

The following selected comments were made in declaration of some degree of reservation to the thesis:

- “It is more nuanced than that. Digital Marketing and Social Marketing are also skills that are needed”.
- “Drawing from the skills of retail management is all good and well but e-Retail is not physical retail and a very different set of skill sets must exist”.
- “It draws from traditional retail management from a financial discipline however through technology and analytics it is no longer as traditional retail is post transactional analytics and dependent on marketing campaigns”.

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 15
- Number of negative declarations: 0
- Number of conflicted declarations: 0
- Outcome: The thesis of "e-Retail as a hybrid discipline" is affirmed on the basis of total consensus having been established.

4.5.2 Thesis: E-Retail a preferred platform?

E-Retail technology platforms are not universally accessible by the majority of South Africans and e-Retail is therefore currently not the preferred platform for retail in South Africa.

The expert group provided the following selected comments in affirmation of the thesis:

"Not all people have access nor understand the new technological world we live in as yet".

"E-Retail is not a first choice option for many South Africans, mostly due to lack of Internet access. This will hopefully improve in the future when internet access improves and becomes less expensive".

"The problem is more along the lines of most of the public not having access to credit cards, a fixed address for delivery and the disposable income to shop online".

"Fewer than half of SA citizens have access to the Internet, so therefore you're limited in terms of your audience".

"The ZA online market is small due to the volume of people accessing the internet compared to the rest of the population, but is growing steadily".

The following selected negative comments were submitted:

"Any retail platform will be made available using the Web. A consumer just needs access to the web to access the retail platform".

The following selected comments point to a changing scenario and were made to declare a degree of reservation to the thesis:

"The focus should be on mobile commerce as most users have access to the internet and platforms using the smart mobile devices".

"This is growing as more people get connected, and as businesses begin marketing to suit consumer needs. The "gogo" (grandmother in isiXhosa) in the rural area who can get items delivered to her home, which in the past was not available to her, now she can buy online and have it delivered".

"The growth potential is huge and increasing at a rapid pace. Many of the larger retail stores have e-retail offerings. Market possibilities could open for smaller enterprises with specialised goods and services. Tools and technologies are becoming increasingly available".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 13
- Number of negative declarations: 2
- Number of conflicted declarations: 0
- Outcome: The thesis of "e-Retail as a preferred platform" is affirmed on the basis of a supermajority view having been established.

4.5.3 Thesis: E-Retail Body of Knowledge (BOK)

E-Retail requires unique and advanced knowledge, practice and metacognitive skills for its effective engagement as a professional business endeavour.

The expert group provided the following selected comments in affirmation of the thesis:

"E-Retail by its very nature is a fast changing and evolving environment requiring focus, lateral thinking and the ability to be agile in all aspects of the business".

"The behind the scenes portal is a complicated process. It's not as easy as to just set up a website. SEO and SEM are part of the behind the scenes practices which the ordinary consumer does not understand".

There following selected negative comments were submitted:

"Specialised skills are not necessarily a prerequisite because there are many opportunities out there for entrepreneurs to easily build and manage their own e-commerce websites".

"There are many tools in the market and on the internet that can assist any person wanting to setup an online e-commerce platform with little knowledge. It all depends on how they choose to use these tools to educate themselves".

The following selected comments were made in declaration of some degree of reservation to the thesis:

"It depends on the scale. If you are an entrepreneur running in small scale, then the operation could be launched without specialised skills".

"In general it depends on the complexity of the business. If I have a small business retailing a single or a few unique products, then the barrier to entry may not be that great. I could build a website using a product such as WordPress with an e-Commerce plug-in".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 10
- Number of negative declarations: 4
- Number of conflicted declarations: 1
- Outcome: The thesis of "e-Retail requiring a unique BOK" is affirmed on the basis of a strong (double) majority view having been established.

4.5.4 Thesis: E-Retail sub-disciplines

E-Retail can be considered to be comprised of several distinct sub-disciplinary spaces, namely, e-Retail Technology, e-Retail Marketing, e-Retail Operations, and e-Retail Business Intelligence.

The expert group provided the following selected comments in affirmation of the thesis:

"If the e-Retail systems of the company involve multiple products from multiple suppliers, systems integration, complex logistics, BI, etc., then these must also be considered".

"As in any traditional business as well, there are several functional areas that need to be combined and work together in order to have a successful business".

"Absolutely and the more you have in each department, the better you can do as an e-Retail business. This is why many online stores operate in sub-departments, with those department heads coming together to form the nucleus of the company".

There were no negative comments.

The following selected comments were made in declaration of some degree of reservation to the thesis:

"This is true however to effectively manage this you need to have a good understanding of the overall life-cycle as all these are elements of the customer's journey with the retailer which is the most critical to ensure no breakdown. Often the current operational constraints impact the seamless journey of customers and impacts on repeat purchases".

"This is generally how e-Commerce is divided, however, there are many more nuanced sub-disciplinary spaces that drive any e-Commerce business, and they include Customer Support, Category and Content Management as well as Financial Departments controlling the buying departments and profit and loss".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 15
- Number of negative declarations: 0
- Number of conflicted declarations: 0
- Outcome: The thesis of "the constituent sub-disciplines of e-Retail" is affirmed on the basis of total consensus having been established.

4.5.5 Thesis: The whole brain nature of e-Retail

E-Retail is a whole brain endeavour that requires practitioners to be both creative and logical in delivering innovative solutions to the challenges and opportunities in the environment.

The expert group provided the following selected comments in affirmation of the thesis:

"Creativity in e-retail is certainly very important to make the business stand out from the crowd. With thousands of websites operating, it is important to be creative to ensure the

business does not get lost in the crowd"; and "It is probably also analytical more than anything else".

"As with any industry or business, a degree of creative and even innovative thinking is required to ensure that your e-Commerce business is moving ahead of its time and breaking boundaries all the time".

There were no negative comments.

The following selected comments were made in declaration of some degree of reservation to the thesis:

"It is seldom that one person would be strong in both creative and logical thought processes. A successful e-Retail business would most likely consist of a team of people possessing the required different abilities and focuses in order to grow the business. The departments as mentioned above, i.e. e-Retail Technology, e-Retail Marketing, e-Retail Operations including logistics, and e-Retail Business Intelligence would be separate departments linked by a common management thread and focus".

"It doesn't have to be, but it is definitely better for the company if it is. Logic trumps creativity in terms of finding something that could work, but creativity comes to the fore when you're looking for something that will work – and not just that, but will work better than any other possible solution".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 15
- Number of negative declarations: 0
- Number of conflicted declarations: 0
- Outcome: The thesis of "the whole brain nature of e-Retail" is affirmed on the basis of total consensus having been established.

4.5.6 Thesis: E-Retail specialised training

Various employment and career opportunities are presented within each of the e-Retail sub-disciplines where training would be task and level appropriate. Specialist tasks however would require advanced training.

The expert group provided the following selected comments in affirmation of the thesis:

"We have a comprehensive specification document available showing the types of skills that are needed for the setup of an e-Retail store"; and "there are certainly many career opportunities within the various sub-disciplines and each one would require specialised training".

"E-Business specialised tasks would be e-Retail Technology, e-Retail Marketing, e-Retail Operations and e-Retail Business Intelligence while basic warehousing, finance and accounts receivable would not differ much from a traditional store"; and "advanced training and experience would be vital to support success for e-Retail".

There were no negative comments.

The following selected comments were made in declaration of some degree of reservation to the thesis:

“Picking and packing on a warehouse floor to fulfil customer orders require very little skill and forethought. Designing a warehouse to maximise space usage and increase work flow on the other hand requires a logistics background and, ideally, some experience in that area. And this goes for all other departments”.

“Depending on the core systems that operate all or the main parts of day-to-day business operations, it is perfectly acceptable that training across these platforms be done in-house and thereby creating career opportunities from within the organisation allowing staff to become multi-skilled”.

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 15
- Number of negative declarations: 0
- Number of conflicted declarations: 0
- Outcome: The thesis of “the specialist training requirement for e-Retail” is affirmed on the basis of total consensus having been established.

4.5.7 Thesis: Professional qualification in e-Retail Management

Specialist e-Retail practitioners should be competent across the declared e-Retail sub-disciplines and specialist training might best be delivered via a professional qualification in e-Retail Management programme.

The expert group provided the following selected comments in affirmation of the thesis:

“A professional qualification in e-Retail Management programme would have to be highly focused on e-commerce outcomes as a direct ROI from the programme”.

“If this qualification is available, then it should certainly be pursued by the specialist e-retail practitioners to always stay on top on the latest developments in the industry and formalised their education”.

There was also one negative comment and one apparently conflicted comment (respectively quoted here):

“I have seen many people with little to no tertiary education become quite successful in their tenure at large e-Commerce corporations. This industry has got nothing to do with education, but rather the ability to learn, a degree of cognitive thinking and people with a good set of problem-solving skills”.

“Most big online stores in SA started long before any qualifications were offered in the field, and they now dictate the market. This would stand to suggest that it can be done without any training, but if the training exists (in this day and age) it makes absolute sense to use it”.

The following selected comments were made in declaration of some degree of reservation to the thesis:

“These skills may also be acquired by self-study and using the tools. Also a specialist e-retail practitioner should be competent across various sub-disciplines, but should also be taught to be continually learning as the technology keeps changing”.

“There should however be a greater degree of specialisation. Rather focus on one function/discipline within e-commerce and form a diploma/degree around the one discipline. E-commerce recruiters are after specialists, not generalists”.

“If these qualifications are available, then they should certainly be pursued by the specialist e-retail practitioners to always stay on top on the latest developments in the industry and formalised their education”.

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 13
- Number of negative declarations: 1
- Number of conflicted declarations: 1
- Outcome: The thesis of “a professional qualification in e-Retail Management” is affirmed on the basis of a supermajority view having been established.

4.5.8 Thesis: Core e-Retail ICTs

The current core ICT technologies of the e-Retail Technology sub-discipline are e-Commerce Platforms, Search Engine Optimisation, Cybersecurity, and the Internet of Things.

The expert group provided the following selected comments in affirmation of the thesis:

“Logistics using digital tools, production using digital tools, analytics, Cloud Computing, online marketing and social media, should also be included in the programme”.

“There are still many more facets and technologies that drive leading e-Commerce businesses, such as HTML coding, JavaScript, accounting platforms, logistics tracking technology, and barcode scanners, that should be integrated into the programme”.

“The programme should also include, digital marketing, social media marketing, user experience, digital design, and analytics, as well”.

There was one negative comment:

“The Internet of Things is not necessarily a key driver in retail unless specific to the product offering”.

The following selected comments were made in declaration of some degree of reservation to the thesis:

"There are also things like warehouse management systems, order management systems, internal search engines (e.g. Endeca) that are critical. Internet of things is not currently directly related to e-retail specifically".

The term "Endeca" is referred to here, and is defined as follows as adapted from Wikipedia:

"Endeca is a software utility that supports e-Commerce search, customer experience management, enterprise search, and business intelligence applications".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 14
- Number of negative declarations: 1
- Number of conflicted declarations: 0
- Outcome: The thesis of "current core ICT technologies of the e-Retail" is affirmed on the basis of a supermajority view having been established.

4.5.9 Thesis: Core Marketing Technologies

The current core technologies of the e-Retail Marketing sub-discipline are e-Retail Catalogue, Marketing dashboards, Multichannel marketing, and Social media monitoring.

The expert group provided the following selected comments in affirmation of the thesis:

"Performance marketing, PAID searches, and SEO, should be included" and "Digital Marketing, Social Media Marketing, User Experience, Digital Design, and Analytics, should also be included".

"There's also a degree of word of mouth, as outdated as it may sound, influences more than ever. This drives marketing and business in the direction of retailers and other businesses daily. Some success stories in this regard are Suzelle DIY, Grant Heinz and more".

There were no negative comments.

The following selected comments were made in declaration of some degree of reservation to the thesis:

"Not sure what an e-Retail Catalogue implies within the modern era. Marketing sub-disciplines would be search engine marketing, social media marketing, programmatic marketing, remarketing, mobile marketing, email marketing and then the usual brand marketing".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 14
- Number of negative declarations: 0
- Number of conflicted declarations: 1
- Outcome: The thesis of "core marketing technologies for the e-Retail" is affirmed on the basis of a supermajority view having been established.

4.5.10 Thesis: Core Operations Technologies

The current core technologies of the e-Retail Operations sub-discipline are e-Retail Logistics, Customer Relations Management (CRM), secure transactions, and IT Services Management.

The expert group provided the following selected comments in affirmation of the thesis:

“Warehousing technology and product and parcel tracking is also essential for e-Commerce. Online Customer support technologies such as Zendesk and OS Tickets are essential for integrating customer service into Transaction Software as well as Logistics Tracking Technology”.

“Warehouse management or store picking management, as well as courier management, should be included”.

“The strategy should also include partnering with a reliable courier company. The ‘last mile’ and face-to-face interaction that the customer experiences often happens with something that doesn’t even work for the relevant online company! Ensuring that the person who delivers your goods is competent is a very necessary step to take”.

There were no negative comments.

There were no expressions of reservation to the thesis.

The terms “Zendesk” and “osTicket” are referred to here, and are defined as follows as adapted from Wikipedia:

“Zendesk software is a cloud-based customer service and support ticketing platform, giving companies the ability to handle customer calls, emails, and other tech support inquiries without needing physical help centre equipment. Because Zendesk software is cloud-based, a customer service representative can respond to clients through different phone numbers and email addresses all on the same interface. In addition, customers can contact the business directly through the company’s website or app, making the help process both easier and quicker”.

“osTicket is a widely-used and trusted open source support ticket system. It seamlessly routes inquiries created via email, web-forms and phone calls into a simple, easy-to-use, multi-user, web-based customer support platform. osTicket comes packed with more features and tools than most of the expensive (and complex) support ticket systems on the market”.

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 15
- Number of negative declarations: 0
- Number of conflicted declarations: 0
- Outcome: The thesis of “the core operations technologies of e-Retail” is affirmed on the basis of total consensus having been established.

4.5.11 Thesis: Core BI Technologies

The current core technologies of the e-Retail Business Intelligence sub-discipline are Business intelligence, web analytics, competitive intelligence, and data management.

There were no substantive affirmative comments.

There were no negative comments.

There were no expressions of reservation to the thesis.

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 15
- Number of negative declarations: 0
- Number of conflicted declarations: 0
- Outcome: The thesis of "the core BI technologies of e-Retail" is affirmed on the basis of total consensus having been established.

4.5.12 Thesis: Industry-referenced Training

Industry-referenced skills training could enhance the capacity of the e-Retail industry in South Africa and certification courses, such as, SAP Retail Associate and CISCO Cybersecurity could be useful.

The expert group provided the following selected comments in affirmation of the thesis:

"The training should also concentrate on PHP for Magento and Shopify. Way more sites in SA built with these platforms" and "making more people proficient in e-Retail can only serve to further e-Retail as a whole. And if not, which I don't believe is true, it definitely cannot limit it".

"If there were baseline SEO and Performance Marketing courses available that could be useful" and "there should be continuous quality enhancement of the industry and wherever possible skills need to be improved!"

There were no negative comments.

The following selected comments were made in declaration of some degree of reservation to the thesis:

"Although SAP and CISCO are widely used in general retail and supply chain management as well as inventory, it is not commonly used in e-Commerce. Most e-Commerce businesses are using technologies built within their core platform, such as Magenta and WooCommerce which have modules for every facet of the business, or are building their own bespoke systems such as Hybrid and Kalahari DB and more with graphic user interfaces making front end UX simple. SAP would not integrate seamlessly into common e-Commerce platforms, as it is very much an 'all or nothing' platform that does not like being integrated with anything else".

"The challenge of sound basic business knowledge still exists. We need to overcome this challenge before embarking on any e-business training. E-Business training, no matter how sound, would be largely ineffectual without basic business knowledge, including inventory and finance".

The expert group returned the following review statistics and outcome on the thesis:

- Number of respondents: 15
- Number of affirmative declarations: 14
- Number of negative declarations: 0
- Number of conflicted declarations: 1
- Outcome: The thesis of "industry referenced training for e-Retail" is affirmed on the basis of a supermajority view having been established.

4.6 CONCLUSION

The gathering of empirical data was described in this chapter.

This chapter exposed a rich tapestry of perspectives submitted by various categories of contributors in four areas of methodological engagement, namely, the (1) Scoping Group, (2) e-Readiness Online Survey, (3) Focus Group, and (4) Expert Group.

An unfolding analysis of information and insights were presented in this chapter towards the synthesis of a first draft of an e-Retail curriculum. This will be further treated in the next chapter where a curriculum proposal will be presented for consideration.

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5. CURRICULUM PROPOSAL

5.1 INTRODUCTION

A first draft proposal of a curriculum for e-Retail is presented here. Much more detailed treatment is required to mature the curriculum model and to address the complexities of the environment. Such detailed treatment is beyond the scope of this research. The submission here is merely intended to provide a platform to seed further discourse towards a more formal curriculum design process.

A pragmatic approach was adopted to realise a macro curriculum model for e-Retail training that incorporates e-Retail skills, e-Retail technologies, e-Retail change drivers, and e-Retail and enterprise mobility considerations. The method involved an iterative engagement of the curriculum development task using a design-and-review approach. In this manner, objectives, structure, practice, and implementation mechanisms for establishing a sensible e-Retail curriculum were considered. At this stage, only inputs from academics have been considered. It would, of course, be important to within the more formal process also consider inputs from the e-Retail industry.

All formal curricula that are offered by the university and TVET (Technical Vocational Education and Training) college sectors need to comply with the prescriptions of the South African "Framework for Qualification Standards in Higher Education". The framework details the need for vocational and professional curricula to cover "knowledge skills, technological (application) skills, and metacognitive (attitudinal, thinking and creative) skills". The aim of this broad education agenda is to provide for a skill set that is relevant to current practice and to prepare students to also be prepared for possible future challenges.

Curricula in e-Retail should promote the transfer of knowledge and practice competency of specific technical concepts and practices that define the e-Retail sub-discipline and industry. The curriculum should also support the development of effective communication, teamwork, and problem solving approaches that are demanded by the e-Retail vocation. The curriculum must promote skills transfer that would allow the e-Retail practitioner to act professionally and ethically in delivering services and/or products.

5.2 INTERPRETATION OF NQF LEVELS

Academic standards should be rigorously pursued to ensure NQF compliance and relevance to the e-Retail industry and need to be established. Table 5 below provides an interpretation of the NQF levels (CHE, 2004); and illustrates a continuum of academic engagement across the first four levels of Higher Education:

Table 5: Interpretation of NQF Levels (Adapted from CHE 2004)

	Level 5 Higher Certificate	**Level 6 Diploma**	**Level 7 Advanced Diploma**	**Level 8 Postgraduate Diploma**
Scope of Knowledge	Core Knowledge	Detailed Knowledge	Integrated Knowledge	Cutting-edge Knowledge
Knowledge Literacy	Knowledge System	Schools of Thought	Contested Knowledge	Knowledge Interrogation
Method & Procedure	Standard Methods	Appropriate Methods	Range of Methods	Complexity & Uncertainty
Problem Solving	Familiar Contexts	Unfamiliar Contexts	Critical Reflection	Systematic Analysis
Ethics & Practice	Accountability	Implications of Decisions	Justification of Decisions	Critical Reflection
Info Management (Gather, Analyse, Synthesize)	Multiple Sources	Task Appropriate	Source Validation	Critical Review
Information Production & Communication	Intellectual Property	Professional Conventions	Logic & Argument	Creativity & Rigour
Context & Systems	Intra-systems Operations	Inter-systems Decisions	System Integration	Sub-system Interrelations
Learning Management	Self & Peer Evaluation	Criterion-based Evaluation	Self-direction & Collaboration	Learning Strategy & Critique
Accountability	Self & Peer Supervision	Defined Context Supervision	Open Context Supervision	Full Accountability

Table 6 below provides a more detailed task orientation framework required to establish academic programmes at the various NQF levels (CHE, 2004). It specifically provides a recommended yet pragmatic interpretation of curriculum differentiation strategies for the Diploma, Bachelor degree, the Postgraduate Diploma and Bachelor Honours degree:

Table 6: Curriculum Differentiation Strategies

	Level 5 Higher Certificate	**Level 6 Diploma**	**Level 7 Advanced Diploma**	**Level 8 Postgraduate Diploma**
Focus	Vocational Focus	Professional Focus	Academic Focus	Research Focus
Scope of knowledge	Core knowledge as required by e-Retail Industry standards and best practices	Detailed knowledge based on the underpinning e-Retail body of knowledge	Integrated knowledge focussed on advanced e-Retail concepts	Cutting-edge knowledge at the cutting-edge of the e-Retail industry
Knowledge Literacy	Recognise and apply key concepts and terms in the field showing an awareness of how they are related to one another	Use key concepts and terms in the field to interpret and map out new knowledge	Interpret and evaluate concepts for particular contexts	Interpret and evaluate concepts for particular contexts drawing on specialist knowledge in the field
Methods and procedures	Use procedures as indicated in the context of work	Select and use appropriate techniques and procedures	Select and use techniques in order to solve or pose queries	Make informed decisions to select accepted and current procedures in the field
Problem solving	Identify and solve typical industry-based problems by analysing and applying evidence-based approaches	Identify and solve typical problems within the e-Retail discipline by analysing and applying theory-driven arguments	Optimally solve industry-based problems by synthesizing sustainable solutions	Optimally solve problems within the e-Retail discipline by synthesizing research-based solutions

Producing and communicating information	Produce and present information related to the e-Retail industry based on acceptable reporting formats	Produce, present, and defend structured argument and ideas related to the e-Retail industry – consistent with a professional discourse	Produce and present information related to the e-Retail discipline using well-formed arguments and incorporating own ideas – consistent with an academic discourse	Produce, present, and defend substantive ideas and information related to the e-Retail discipline – consistent with research best practices
Ethics and professional practice	As appropriate to other outcomes	As appropriate to other outcomes	As appropriate to other outcomes	As appropriate to other outcomes
Accessing, processing and managing information	Information Literacy related to the retrieval and synthesis of well-defined data structures	Information Literacy related to decisions based on data relevance of multiple data sources; Development of data structures to facilitate information management	Information Literacy related to decisions based on data relevance of multiple data sources, including - scholarly papers	Information Literacy related to the critical engagement of information and data sources
Context and systems	Selection of appropriate ways of working in a familiar context	Assessment and interpretation of appropriate ways of working in unfamiliar contexts	Knowledge of different ways of working within a system and making informed choices	Knowledge of different ways of working within a system and making informed choices
Management of learning	Assessment of tasks against specific knowledge transfer criteria	Reflection and identification of requirements for professional growth	Assessment of tasks against academic performance criteria and cognitive development needs	Reflection and identification of requirements for intellectual growth

Accountability	Self-evaluation of capacity to perform tasks within structured environments	Self-evaluation of capacity to perform within a professional environment	Self-evaluation of capacity to perform tasks within structured environments and to initiate improvement as required and team performance	Self-evaluation of capacity to perform within an academic environment and to take critical decisions for self-efficacy and the attainment of outcomes

5.3 PROPOSED E-RETAIL TOPICS

A draft proposal for an e-Retail curriculum is presented in Table 7 below. The technology and professional skills that define the e-Retail sub-discipline have been deliberated and scientifically established in Chapter 4:

Table 7: Proposed Curriculum Topics

	Level 5 Higher Certificate	**Level 6 Diploma**	**Level 7 Advanced Diploma**	**Level 8 Postgraduate Diploma**
Curriculum coverage / **Topics**	• Awareness • Taxonomy • Phenomenology • Tools	• Practices • Technologies • Governance and Policy • Ethics	• Change Agenda • Strategy • Integration • Evaluation	• Ontology • Metacognition • Innovation • Reflexivity
Technical	• Technology and process development • Cloud computing • Web technologies and services	• E-Commerce architecture • E-Commerce hosting • E-Commerce payment	• Cybersecurity • IT Services Management • E-Commerce platforms	• B2B and B2C networks • Web platform and connectivity • Secure transactions

Marketing	• Marketing, sales, and accounts • Customer and aftersales services • Multi-channel marketing	• E-Retail Marketing • Marketing dashboards • Online targeting	• Media and communication • Search Engine Optimisation • Online reputation management	• E-Retail media design • Mobile marketing
Operations	• Procurement, logistics, and distribution • General management and infrastructure • Human resource management	• Supply Chain Management • Products and services delivery	• E-Retail distribution • E-Retail logistics • Transactions management	• Operations management • Enterprise management • Smart SCM
Business Intelligence	• Product and/or service development • Merchandise planning	• Risk analysis • Funnel analysis • Data integrity	• Business analysis • Financial management • Information security	• Data analysis and management • Data visualisation • Web analytics

5.4 DRAFT PROPOSAL FOR AN E-RETAIL CURRICULUM

Curriculum development is an exacting process. It is beyond the scope of this research to formally evolve a comprehensive e-Retail curriculum. It should be noted that what is proposed here is for illustrative purposes only.

A formal curriculum development process will involve a systematic process of interrogation that covers the following aspects:

- The specific issues and requirements that need to be addressed within the South African e-Retail landscape must be identified,
- The characteristics and needs of trainees, i.e. the target audience, must be determined,
- The objectives or intended outcomes of the curriculum must be established,
- The important content that is relevant to the training of e-Retail practitioners within the target group must be identified,
- The training methodology and methods to achieve the intended outcomes must be established, and

- Evaluation strategies and performance standards must be determined to set the benchmark standard for the training.

This report will no doubt contribute to the understanding of several of the above referenced elements of curriculum development. It is however imperative that a formally constructed effort be launched to do justice to the importance of e-Retail curriculum and training as has been indicated in this report.

The following values are recommended: academic and industry benchmarking, vocational focus, and integrated internship strategies. It is important to develop real practice skills that provide unique occupational context for e-Retail practitioners as distinct from information technology and traditional retail practitioner training within a broader occupational continuum. It is foreseen that internships would become a most relevant strategy for promoting quality and practice performance standards.

A curriculum framework is provided in Table 8 below for the purposes of reference as a first draft curriculum. The broader curriculum considerations and values are more tentatively offered since these have not yet been formally established.

Table 8: Features of the proposed professional qualification in e-Retail Management

Curriculum Focus	Academic Exposure	Industry-referenced Certification	Value Proposition
• Vocational Focus • e-Retail Technology • e-Retail Marketing • e-Retail Operations • e-Retail Business Intelligence	• e-Retail Technology • e-Commerce Platforms • Search Engine Optimisation • Cybersecurity • Internet of Things	• SAP Retail Associate • Retail basics • Organisational structure • Requirements planning • Purchasing basics • Logistics • Retail master data (*) • Store connection (Retail store) • Merchandise distribution • Promotion management • Retail pricing (Multichannel) • Sites & business partners	• University – W&RSETA Collaboration • Innovative multi-sectoral curriculum development
• Student Experience • Focused and relevant engagement • Adult education • Interactive environment	• e-Retail Marketing • e-Retail Catalogue • Marketing dashboards • Multichannel marketing • Social media monitoring	• CISCO Cybersecurity • Introduction to Information Security • Operating system & network security • Cybersecurity policies, plans & procedures • Cybersecurity design & management	• Articulation within HEQSF • Formal mainstream programme accessible from both the Diploma in Retail Management and the Diploma in Information Technology
• Teaching Methodology • Blended teaching approach • e-Retail Simulation	• e-Retail Operations • e-Retail Logistics • Customer Relations Management (CRM) • Secure transactions • IT Services Management	• PRINCE2 Foundations (*) • Key principles • Structure of a PRINCE2 project • The PRINCE2 process model • Process, activities, risk and information flow	• Exit Level Qualification • NQF 7 Level compliance based on performance rubrics and validated data sets

• Assessment Approach • Online formative assessment • Controlled summative assessment • Competency-based assessment • Performance monitoring	• e-Retail Business Intelligence • Business intelligence • Web analytics • Competitive intelligence • Data management	• PRINCE2 Practitioner • Business case simulation • Organisation simulation • Quality simulation • Management of risk simulation	• Academic Standard • Curriculum development subject to CHE and SAQA provisions • Quality review and assurance based on HEQC systems • Academic performance management based on CPUT systems • Train-the-trainers provided by CPUT
• Delivery Platform • Computer-based instruction • Real & virtual classrooms • LMS (Blackboard or Moodle) • Web Portal • Mobile Technology	• e-Retail Project • Work-integrated Learning (WIL) project • Service Learning Project	• ITIL Awareness (*) • Basic ITIL for IT managers	• Industry Participation • Broad industry participation from both the corporates and SMEs • Placement agreements to be negotiated • Practice-directed curriculum focus • Industry advisory committee to inform implementation strategy
• Courseware Provision • Information brochures • Learner guides • Textbooks and Reference Books • Course Manuals • Rich Media (Multimedia), incl. simulation, animation & video • Online Portfolio of Evidence	• Quantitative Techniques • Mathematics for e-Retail • Problem solving using MATLAB	• ITIL Foundations • Basic ITIL for IT practitioners	• HEICTA-endorsed Programme (*) • Well-established national organisation

	• Strategic Communication • Professional development • Information Literacy • Portfolio of Evidence		
	• Business Practice • Introduction to Commerce • Retail Management • e-Retail Case Studies • e-Retail Trends		

***Notes**

- Retail master data: The business objects focussed on retail which are agreed on and shared across the enterprise…
- PRINCE2: An acronym for "Projects in Controlled Environments", version 2; the project-management methodology encompasses quality management, control and organisation of a project with consistency and review to align with project objectives…
- ITIL: An acronym for Information Technology Infrastructure Library; it is a set of practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business…
- HEICTA: The Higher Education ICT Association…

5.5 SAMPLE SYLLABUS FOR CYBERSECURITY

It was considered prudent to provide some detailed insight into one of the important and perhaps challenging topics within the proposed e-Retail curriculum to illustrate the potential depth of engagement required to meet the technology challenge.

As declared in the Focus Group session, it is evident that cybersecurity will need to be given special consideration within an e-Retail curriculum. It is important that cybersecurity awareness, threats, policy, tools, technology platforms, and strategies to address security needs, need to be firmly placed on the agenda for e-Retail in South Africa.

A sample syllabus for cybersecurity is provided here for consideration (Leenen, 2016):

- Introduction to cybersecurity: Overview of threat landscape and terminology and definitions
- Types of breaches, attacks, threats and vulnerabilities: Discussion of prevalence; Impact; and Protection
- Securing the environment: Includes responsible use of social media; Own devices; and Browsing.
- Authentication methods: User ID; Pin; Password; Smartcard; Biometrics
- Password management: System; Password hashes; Two-factor authentication
- Access Control: Access Control Systems; and Access control attacks; Password cracking, Password hacking
- Malicious Software Types: Virus; Worm; Trojan; Adware; Spyware; Ransomware
- Malicious Software Classification: Signatures; Sandboxes; Protection
- Malware Software Distribution: Phishing; Spam; Spoofing; Click fraud; Netbots
- Networks Basics: Understand the Internet; Security of routers; Packet routing; Domain names; TCP/IP protocols
- Networks Attacks: Man-in-the–middle; DOS; SQL injection
- Cryptography: Overview – plaintext and cypher-text; Encryption – keys, key distribution, asymmetric, protocols; Encryption tools; Digital signatures – protecting identity
- Network security: Firewalls - personal and other; Practical - Setting up a firewall; VPN and VPN protocols; Intrusion Detection - Anomaly and misuse detection; Honeypot
- Governance and Legislation: Overview of governance and legislation in South Africa
- Cybersecurity Management: Frameworks and Information security management
- Risk Analysis and Management
- Cybercrime & Cyber warfare: Identity theft
- Social engineering
- Hacking: Open Source Tools; Groups such as Anonymous; Ethical hacking and penetration testing
- Trends: Discussion of current attacks or incidents

5.6 CONCLUSION

This chapter provides insight into the development of a new curriculum for e-Retail and provides commentary on the scoping of the curriculum and reflects on the skills development requirement.

The curriculum development of an e-Retail qualification as presented in this chapter was mainly for illustrative purposes. A more exact process will be required to do justice to the e-Retail curriculum and training imperative.

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6. CONCLUSION

6.1 INTRODUCTION

This study provides a broad overview of e-Retail implementation and its impact on skills development within the South African retail sector. The study interrogates the readiness of the South African retail sector for e-Retail on the basis of a selection of technology, marketing, operations and business imperatives.

The study provides in particular a predictive analysis of the technical skills requirement to sustain a viable e-Retail industry in the country. In this regard, a set of salient e-Retail functions, skills and services are identified that pragmatically define a set of baseline competencies for implementation. Furthermore, a proposed framework for a professional qualification in e-Retail Management is provided as a possible Higher Education curriculum intervention.

The study deploys a Design Science Research approach that informs the design and construction of various knowledge artefacts that describe the South African e-Retail experience and aspirations by highlighting salient aspects relating to (1) traditional versus e-Retail, (2) global e-Retail trends, (3) e-Retail technologies and platforms, and (4) e-Retail training imperatives. The research furthermore elucidates the environment for e-Retail deployment in South Africa with respect to e-Retail functions, services and job skills requirements and prospects of e-Retail as a career.

The research methodology deployed in the study centres around the establishment of a change agenda for e-Retail within the South African landscape. The study is duly cognisant of the socio-techno-economic divide that characterises the South African society and therefore foregrounds the training imperative as a vital aspect of the viability of e-Retail in South Africa.

The first round of data gathering was conducted using an online survey instrument directed at the broader retail management community to establish the general perspective of the “South African e-Retail readiness”. Focus group sessions informed the refinement of the landscape and skills profile for e-Retail in South Africa; and an expert group ultimately provided the definitive detail of potential training strategies.

The e-Retail Readiness Survey sought to ascertain the general perception of anticipated opportunities and challenges around large-scale implementation of e-Retail in South Africa. The online survey returned results that may be considered to be somewhat counter intuitive: The findings from the target group indicated a significant lack of confidence in both the technology readiness and business readiness. The former would have been predictable whereas the latter perhaps not! Further specific aspects emerged from the survey that provided substantial points for deliberation within the subsequent focus group sessions.

The focus groups addressed a wide range of substantive matters relating to the viability of e-Retail within the South African developing economy within the aforementioned categories of technology, marketing, operations and business imperatives. The salient points of declaration about e-Retail in South Africa emanating from the focus group discussions were synthesised into a suite of distinct propositions. These points were then further deliberated

by an expert group who validated the design of a process model to drive the change agenda for e-Retail in South Africa.

It proved to be quite challenging to secure the participation of persons who have an established business interest in e-Retail. The majority of the participants in the initial online survey and many of the focus group participants have an academic interest rather than a business interest in e-Retail. This is probably not unusual for a proverbial crystal ball study. The expert group were comprised entirely of persons who have a business interest in e-Retail. A critical interpretivist strategy was deployed to drive the research so that the data and submission could be moderated on the basis of context and relevance to the central theme of the study.

The study identified a comprehensive suite of key and breaking technologies that inform the successful implementation of e-Retail in South Africa. The nature and limitations of the data gathering process places a practical limitation on the value of the research in that generalised conclusions are not possible and information is relevant only for the purpose and within the context that it was mined. The study also uncovered essential business process elements that are required to drive the change agenda for e-Retail in South Africa.

The study also highlights aspects of business and social change associated with the global phenomenon of e-Retail and recognises the evolution of e-Retail functions, skills and services. In this regards the study draws from salient international case studies as well as relevant national case studies.

The study makes significant knowledge contributions with respect to the delineation of salient issues to be addressed with regard to the practical implementation of e-Retail in South Africa. The study makes a novel methodological contribution by deploying a Design Science approach to establish the process logic for the research and a Critical Interpretivist approach for information synthesis. This strategy allowed the research to be both suggestive and receptive to opportunities and challenges within a complex environment of change and transformation.

6.2 5-YEAR TRAJECTORY FOR E-RETAIL IN SOUTH AFRICA

One of the declared objectives of this study was to produce a 5-year trajectory of the South African e-Retail industry by evaluating e-Retail markets and salient technology trends.

The trajectory or predictive trend analysis of the South African e-Retail sector is a majority consideration of this report and the entire discourse of the research was about analysis of e-Retail and its manifestation within the South African landscape. The trajectory of the South African e-Retail sector therefore is not only located within this section but embedded through the discourse of this report.

Chapter 2, the Literature Review chapter, in particular, provides insight into global and local market trends with specific reference to e-Retail Skills, Technologies, Change drivers, and Enterprise mobility, based on perspectives from the extant literature.

Chapter 4, the Research Findings chapter, provides a detailed expose of empirical data that elucidates the context of the South African e-Retail industry with specific reference to e-

Retail technologies, Marketing approaches, Operations management, and Business intelligence imperatives.

Chapter 5, the Curriculum Proposal chapter, provides a detailed conceptualisation of technology and skills development to support the e-Retail industry where a wide range of key performance aspects are noted, including, e-Commerce Platforms, Search Engine Optimisation, Cybersecurity, Internet of Things, e-Retail Marketing, Multichannel marketing, IT Services Management, Web analytics, Competitive intelligence, and much more.

It would certainly not be sensible to attempt to provide an analysis of the potential trajectories of each of the many underpinning aspects of e-Retail as detailed above. It is therefore considered prudent to rather focus on the proposed “mega trends” that might inform the medium to long term trajectory of e-Retail in South Africa.

6.2.1 Growth of the sector

The dominant mega trend for the South African e-Retail sector is that it will continue growing. The Euromonitor International (2016) report further declares that the South African “internet retailing channel is still in its infancy” by global standards. World Wide Worx (2016) predicts that online retail sales will grow at a rate of more than 20% per annum and double over the next five years, from 2016 to 2020.

6.2.2 Following the trend

Another mega trend for the South African e-Retail sector in the medium term is that it will probably continue to follow global and Western e-commerce trends. Brett Kaplan, of Biz Trends (2014), says that South African retailers should focus on how to provide efficient and effective online retail services. He suggests that global trends need to be interpreted and adapted to suit local market conditions. He further contends that although South African e-Retail is not yet operating at the levels of “more advanced markets such as Europe and the United States”, there is an increasing number and a general upward trend in the engagement of e-Retail.

6.2.3 Skills development

A mega trend and imperative for developing, sustaining, and building competitive capacity within the South African e-Retail industry is to invest in training. The UKCES (2010) report on "skills for jobs - today and tomorrow" makes the case for “right skilling” for an emergent e-Retail industry. They declare that in order to sustain an e-Retail industry and to extract optimum performance that it is imperative that individuals with the right skills be developed. They argue that business success is a direct function of the right skilling of individuals. The changing needs of the retail industry require a corresponding commitment to “economically valuable skills".

6.2.4 Mobile

The proliferation of mobile devices is another mega trend that will continue to shape the e-Retail industry. Klaiber & Hermanus (2014) declared the proliferation of mobile technologies to be an astonishing phenomenon that seems to cut across even class borders. There is a significant penetration of smart mobile technology into rural and poorer communities. This coupled with the proliferation of social media have created an exciting opportunity for embedding e-Retail. The BusinessTech (2015) report indicates that mobile devices will drive future increases in online shopping in South Africa.

6.2.5 Cybersecurity

Another mega trend impacting the e-Retail industry in South Africa has to be cybersecurity. It is imperative that dynamic new systems need to be evolved to ensure that data management and financial transactions can be done securely. The Expert Group concurs and unequivocally declared that “industry-referenced skills training could enhance the capacity of the e-Retail industry in South Africa and certification courses, such as, SAP Retail Associate and CISCO Cybersecurity could be useful”.

6.2.6 Big Data

A strongly emerging mega trend that impacts all digital platforms is “Big Data” and Data Science. Gary Hadfield of Biz Trends (2014) professes that “big data” will become a major factor in e-Retail by providing intelligence that is not generally available within a traditional retail setting. The efficacy of a business can be improved by tuning into consumer needs and big data can enable this. Within an e-Retail environment supported by big data, it would be possible to provide “more targeted and relevant suggestions to shoppers”.

6.2.7 Wearables

The “breaking” mega trend that will start impacting the South African e-Retail sector in the next period is “wearable technologies”. The Mintel (2015) report also makes reference to the emergence of new trends in wearable technologies. In a recent UK survey, it appears that there is strong approval for wearable and pervasive technologies. Indications are that this trend will have a significant impact on e-Retail as attitudes and behaviour and integration of technology into our lives continue to manifest. Basha Pillay (2015) argues that the nature of enterprise will be changed fundamentally by the emergence of enterprise mobility technologies. The impact of the transformation of enterprise will be felt at organisational, leadership, strategic, procurement, vendor and customer levels. The future of enterprise mobility lies within "Everything as a Service", "the Social Internet of Everything", "Enterprise Wearables", and "Technology Abstraction" as the new catch phrases in the technology space and by extension the e-Retail space.

6.3 E-RETAIL CHANGE AGENDA

This study delivers a praxis model for enhancing service delivery, sustainability and competitiveness of the South African e-Retail sector within a disruptive global environment. The model provides a comprehensive and systematic framework for specifically evaluating the potential impact of disruptive social, business and technology trends.

The schema for the e-Retail change agenda is shown in Figure 10 below.

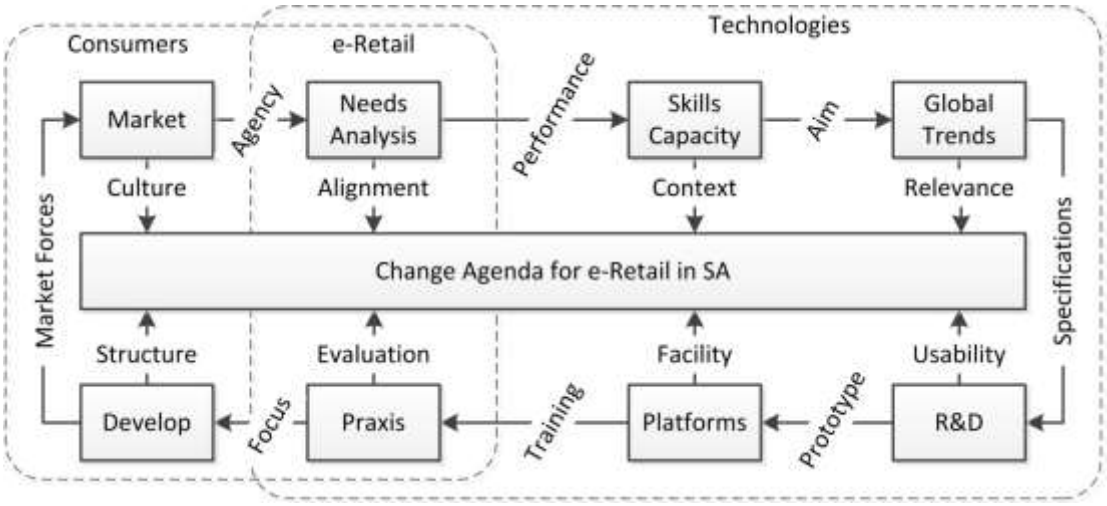

Figure 10: e-Retail Change Agenda

The relationship model supporting a “Change Agenda for e-Retail in South Africa”, as illustrated in Figure 10 above, brings into clear focus the complexity of the environment. It is evident from the model that the realisation of an efficacious e-Retail industry demands that new synergies be established between “new age” consumers and constantly evolving technology platforms - with e-Retail being forged at the interface and melting pot of socio-econo-techno engagement. It is therefore not at all surprising that innovation is the order of the day as new technology platforms drive new opportunities for e-Retail as it develops into dominance within the global retail sector. The Change Agenda cuts across all aspects of the continuum. As technology evolves, so consumers will evolve, and so the e-Retail industry will redefine itself.

On the consumer front, market forces will shape structures and establish new consumer cultures. With the Internet having turned the world into the proverbial “global village”, it is foreseen that these dynamics will play out within niche, local, regional, national and global networks. Consumer and market demands will provide the agency for the retail industry to respond. E-Retail becomes an extremely competitive endeavour within the aforementioned networks and has to respond to consumer needs and align to best practices that are now readily communicated over said networks.

E-Retail, at every level, needs to establish a praxis that becomes the tacit and de facto service level agreement between the industry and consumers. The praxis is continuously evaluated and adjusted to the industry benchmark standards and the evolving change

agenda. The industry through its praxis focusses on developing novel infrastructure to support consumers. This then makes consumers co-designers of the e-Retail experience.

On the technology front, the e-Retail needs analysis and performance requirement drive the skills demand for technological intervention. The sustainability of the South African e-Retail industry will be defined by its ability to match relevant global trends. The competiveness of the local industry will be a function of its R&D prowess that will be focussed on bringing innovative utility and usability to bear within the change agenda for the South African e-Retail industry. Prototypes will evolve into new platforms, and new platforms will require a new training regime, that in-turn brings about praxis renewal.

This report establishes a starting point for engagement of a very complex unfolding discourse on e-Retail in South Africa.

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REFERENCES

Alexander, B.M. (2012) Towards a new undergraduate ICT curriculum for universities of technology in South Africa. *Proceedings of the INEER ICIT Conference, Saratov, Russia.*

Alexander, B.M. (2013) A collaborative University of Technology and Further Education and Training curriculum development project. *Proceedings of the INEER ICEER Conference, Marrakesh, Morocco.*

Bhattacherjee, A. (2012) *Social science research: principles, methods, and practices*. Open Access Textbooks. Available from: http://scholarcommons.usf.edu/ [10 September 2015].

Bloom, N. and Van Reenen, J. (2007) Measuring and explaining management practices across firms and countries. *BNER Working Paper No.12216. May 2006.* National bureau of economic research. Massachusetts.

Brown, S. (2008) Business processes and business functions: A new way of looking at employment. *Monthly Labour Review*, December 2008.

Burrell, G. and Morgan, G. (1979) *Sociological Paradigms and Organizational Analysis*. Heinemann, London.

BusinessTech. (2015) SA online shopping only 1% of retail sales. Available from: http://www.businesstech.co.za/

Canada. (2003) Survey methods and practices. *Statistics Canada Catalogue No. 12-587-X.* National Library of Canada Cataloguing in Publication Data.

Chandi, S. (2015) Retailers: functions and services provided by retailer's management. Available from: http://www.yourarticlelibrary.com/

Chatterjee, S. and Hevner, A. (2010) Design science research in information systems. *Theory and Practice.* XXVIII, p320, ISBN: 978-1-4419-5652-1.

Chiles, C.R. and Dau, M.T. (2005) *An analysis of current supply chain best practices in the retail industry with case studies of Wal-mart and Amazon.com*. Masters dissertation, Georgia Institute of Technology and Massachusetts Institute of Technology.

Commission for Higher Education (CHE), Higher Education Quality Committee (2004) Criteria for programme accreditation

Davydd, G.J., William F.W. and Ira, H. (1993) Participatory action research as a process and as a goal. *Human Relations*, 46 (2) 175-192.

Daymon Worldwide News Release. (2015) Global consumables retailing and private brand leader Daymon worldwide releases 2015 and beyond global retail trend predictions to address global trend predictions to address "the year of retail fragmentation". *Daymon Worldwide*. Available from: http://www.daymon.com

De Boer, W. (2012) Hevner et al.'s DSR framework and guidelines. *wedesignict*. Available from: http://www.wedesgnict.org

Deloitte. (2015) African powers of retailing: New horizons for growth. Available from: http://www2.deloitte.com/

Deloitte. (2015) *Global powers of retailing 2015: Embracing innovation*. Deloitte Touche Tohmatsu Limited, London.

E-commerce Industry Report. (2016) E-commerce industry report 2016. Available from: http://www.effectivemeasure.com/

Euromonitor International. (2016) Internet retailing in South Africa. Available from: http://www.euromonitor.com/

EY Megatrends. (2015) Megatrends 2015: Making sense of a world in motion. *EY Global Building a Better Working World*.

Fjord™ Trends. (2015) Trends 2015: Trends impacting a design & Innovation. *Fjord™ Design and Innovation from Accenture Interactive*.

Fouche, D. and Wilkinson, J. (2012) *South African retail and consumer products outlook 2012-2016*. South African Edition.

Frost and Sullivan Analysis. (n.d.) World's Top Global Mega Trends To 2025: Implications to Business, Society and Cultures. Available from: http://www.palgrave.com/

Global Powers of Retailing. (2015) *Embracing innovation*. Deloitte.

Global Trend Briefing. (2014) The future of customer service: Five trends that will redefine great service in 2015 and beyond. Available from http://www.trendwatching.com [September 2014].

Guest, G., Namey, E.E. and Mitchell, M.L. (2013) *Collecting qualitative data: A field manual for applied research*. Thousand Oaks, SAGE Publications.

Harris Poll. (2015) 2015 Retail outlook. Available from: http://www.cit.com/

Hass Avocado Board. (2015) *2014 – 2015 Annual Trends Report: Retail outlook and forecast to build Hass Avocado retail sales*. Hass Avocado Board.

Henderson, N. R. (2009) Managing moderator stress: Take a deep breath. You can do this. *Marketing Research*, 21(1), 28-29.

Hevner A.R., March S.T., Park J. and Ram S. (2004) Design science in information systems research. *MIS Quarterly*, 28(1), 75-105.

Hevner, A.R. (2007*)* A three cycle view of design science research. *Scandinavian Journal of Information Systems*, 19(2), 8792.

Hughes, J. and Lang, K. (2004) Issues in online focus groups: Lessons learned from an empirical study of peer-to-peer filesharing system users. *Electronic Journal of Business Research Methods*. 7(2), 95-110.

JWT Intelligence Report. (2014) The future 100: Trends and change to watch in 2015. Available from: http://www.jwtintelligence.com

Klaiber, U. and Hermanus, T. (2008) E-business development and skills requirements in the retail sector. Wholesale and Retail Leadership Chair, Cape Peninsula University of Technology, Cape Town.

Leenen, L. (2016) A proposed undergraduate cybersecurity syllabus. [Note]

Livari, J. (2007) A paradigmatic analysis of information systems as a design science. *Scandinavian Journal of Information Systems*, 19(2), 3964.

Marshall, B., Poddar, A., Fontenot R. and Cardon, P. (2013) Does sample size matter in qualitative research? A review of qualitative interviews in is research. *Journal of Computer Information Systems*, 54, 11-22.

McParlim, S. and Dugal, L.F. (2010) Understanding how US online shoppers are reshaping the retail experience.

Memeburn. (2016) 7 fast facts about the South African ecommerce space. Available from: http://www.memeburn.com/

Miller, R.L. and Brewer, J.D. (1998) *The A-Z of Social Research*.

Mintel. (2015) UK consumer trends 2015. Available from: http://www.mintel.com/

Mlitwa, N.B.W. and Alexander, B.M. (2014) Exploratory enunciation of IT related graduate courses: The M-BIS and the M-ICT degrees at the Cape Peninsula University of Technology. *Proceedings of the 7th International Conference of Education, Research and Innovation (iCERI),* Seville, Spain.

Money Web. (2015) Digital natives: Key to retail future survey. Available from: http://www.moneyweb.co.za/ [Accessed 10 March 2015].

Mosley, P., Winters. G. and Wood, S. (2012) *Skillsmart retail: Skills for logistics*. The Institute of the Motor Industry.

Nastasi, B. (n.d.) Qualitative research: Sampling and sample size considerations. Available from: https://my.laureate.net/ [Accessed 10 October 2015].

Nielsen Report. (2014) Ecommerce: Evolution or revolution in the fast moving consumer goods word. August 2014.

Peffers, K., Tuunanen, T., Rothenberger, M.A. and Chatterjee, S. (2008) A Design Science research methodology for Information Systems research. *Journal of Management Information Systems,* 24(3), 45–78.

Pillay, B. (2015) The future of enterprise mobility. *Enterprise Mobility Forum 2015*. [PowerPoint presentation]

Price Water Coopers. (2006) Sector skills audit questionnaire.

Price Water Coopers. (2015) Retailing 2015: New frontiers. Available from: http://www.PricewaterhouseCoopers/

Price Water Coopers. (n.d.) Understanding how US online shoppers are reshaping the retail experience. PWC.

Price Water Coppers. (2016) South African Retail and consumer products outlook 2012-2016. South African Edition. Available from: http://www.pwc.co.za/

Retail Industry Outlook Survey. (2013) Tech innovation leads to brighter future. Available from: http://www.kpmg.com/

Retailer Benchmarking. (2014) Technology trends in retail. *The 2014/2015 Retailer Benchmarking Report*. Worldwide Business Research, A WBR Industry Benchmark Whitepaper, August 11-14, 2014. Philadelphia.

Roibis. (2013) Retailer trends and future prospects to 2015. *Roibis Point of View*, January 2013.

Rowe, G. and Wright, G. (1999) The Delphi technique as a forecasting tool: issues and analysis. *International Journal of Forecasting*, 15(4), 353-375.

Singh, S. (2015) What are the functions of a retailer? Available from: http://www.preservearticles.com/

Smith J.A., Flower P. and Larkin M. (2009) *Interpretative phenomenological analysis: Theory, method and research*. London: Sage.

The Retail Coach. (2015) The future of retail. *The 7th Annual Financial Forecast Forum. NIU Naperville Conference, January 30, Naperville, Illinois.*

UK Commission for Employment and Skills. (2010) Skills for jobs today and tomorrow. *The National Strategic Skills Audit for England 2010*. Volume 1: Key Findings.

UK Commission for Employment and Skills. (2012) Wholesale and retail: Sector skills assessment.

Van den Berg, I., Moerdyk, C., Baker, R., Levin, T., Cooper, R. and Grey, J. (2014) Biztrends 2014: Multi-industry business trend predictions.

Walker Sands Communications. (2015) Reinventing retail: What business need to know for 2015. Available from: http://www.walkersands.com/

Walter Patterson Consultancy. (2011) Skills requirements for e-commerce and their provision in Scotland. *E-Skills UK Sector Skills Council for Business and Information Technology*.

World Management Survey. (2010) Retail Survey Instrument. Available from: http://www.worldmanagementsurvey.org/

World Management Survey. (2015) Methodology. Available from: http://www.worldmanagementsurvey.org/

World Wide Worx. (2016) SA online retail to pass 1% of total. Available from: http://www.worldwideworx.com/

Zhuang, Y. and Lederer, A.l. (2003) An instrument for measuring the business benefits of e-commerce retailing. *International Journal of Electronic Commerce.* 7(3), 65-99.

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APPENDIX 1:
FOCUS GROUP RESPONSES

The focus group responses are provided in Table 9 below:

Table 9: Focus Group responses

Question	Comments
Category: Technical **Topic: Technology** What are the core technologies that are driving e-Retail as a discipline in South Africa?	• E-Retail is expensive to implement. Costs are comprised of bandwidth, software acquisition, product maintenance, e-Retail customer maintenance, delivery of articles purchased as well as site support. Is site support going to be in-house, outsourced or smart sourced? There are many hidden costs, such as inventory maintenance, customer returns, non-moving stock, etc. An established trading company who is not doing e-Retail may be better placed to being trading in the e-Retail space in that the core inventory and financial operations are already in place. Many companies are making use of e-Retail solutions such as Magento and other e-Retail solutions offering a core infrastructure already in place and working, thereby offering a lower cost to entry into the market. Are core technologies drivers due to price or due to technology advantages? For larger well established companies, core technology drivers are the ability to interface with customers electronically with e-Retail being one solution and business to business being another solution, but both technologies are often being built on similar platforms. For the smaller entry level company, core technology drivers seldom have impact, with price and functionality being of primary consideration… • Cloud, Web and Mobile technologies are the core technologies. Many systems are integrated with supplier databases for automated stock management, lead time determination, profit optimisation, etc. • Linux, Apache, MySQL, PHP. Maybe some Ruby on Rails… • Some etailers have built their own retail solutions using the LAMP stack (e.g Takealot) https://en.wikipedia.org/wiki/LAMP_(software_bundle). Others use Hybris, ATG or Magento… • Internet accessibility and speeds. If someone has fast and reliable Internet available to them, they WILL shop online. Similarly, being able to stay online is critical to any e-Retail store, as thereafter the operation runs very much like any other retail store… • Although mobile browsing is still a fairly new concept to Africa, with even fewer engagements from an e-Commerce to customer perspective, mobile browsing is quickly becoming a faster growing medium for e-Commerce transactions every day, but not as much as desktop engagement… • Safe Payment software, mobile and pc internet access… • Many South Africans are still struggling with internet access but I think that mobile phone operators will play a critical role in giving more South Africans affordable and faster internet access… • Improved access to the Internet by way of increased roll-out and reduced costs… • Enterprise Resource Planning, Kanban communication system, Material Requirement Planning, E-commerce…

	• Smartphones supported by prolific internet access… • Mobile Devices and the availability of internet access… • SaaS, Open Source, CaaS… • Open source, Internet, Mobile internet, Mobile devices … • E-commerce platforms such as Oracle commerce, Magento, etc. Search engine optimisation and operational excellence in fulfilment and logistics. There is a lot of work to be done in the operational space such as warehousing and logistics to make retailing cost effective and these need to be delivered through technology… • Use of mobile - apps on the devices / Businesses are beginning to explore using Analytics / Safe online purchasing, time saver: delivery to your home… • Apps and Web Analytics…
Category: Technical **Topic: e-Platform** What e-commerce platforms are used within and/or dominating the national e-Retail environment?	• Oracle ATG for the huge Enterprise deployments (Woolies, PnP, Turworths, Foschini); Magento for the bigger ones who know what they're doing (Edcon, Mr Price, Cape Union Mart), mid-level and smaller players; Shopify for the real smaller players. WooCommerce for the Mom and Pop stores… • Shopify, uArica.com, WooCommerce, Magento, PrestaShop, and Ecwid… • Magento, Shopify, Wix eCommerce, WooCommerce with WordPress.org, Prestashop. There are also a great number of bespoke sites built on Microsoft and Linux platforms… • Magento, Joomla (free, which makes it great for smaller start-up sites), Shopify, BigCommerce… • With most small/informal businesses looking for economic ways to take their retail business online, Shopify has filled this gap. However, many e-Commerce stores are built on Magenta platforms, WooCommerce as well as PrestaShop… • Facebook pages, Twitter, Instagram and company websites… • Shopstar (free platform), Wordpress, Shopify… • (Such as that could support) Olx.co.za; takealot.com; Gumtree.co.za • Kanban communication system… • Gumtree, Apple Store, Play Store, Kalahari… • Magento, Shopify and WooCommerce… • Magento, Woocomerce, Shopify… • Magento ecommerce, Shopify, Woocommerce… • Magento, Oracle Commerce (Previously is taking to the market, .Net, Hybris and Microsoft Commerce Server. This is very dependent on the type of technology stack chosen. This is very dependent on budget and deciding between in-house vs package development approach…

	• Google search, Amazon, Takealot, facebook, / Online retail websites: Woolworths, Pick 'n Pay, Edgars Online banking… • Takealot, Superbalist, Spree, Runway Sale and Zando…
Category: Technical **Topic: Frontend** What frontend development skills required for advancement of the national e-Retail industry?	• Frontend development skills are skills enabling the understanding and business development of an e-commerce business. A sound understanding of buying trends, both internationally and locally as well as identifying the enablers for the local market is required. The frontend development team must have a sound knowledge of the current business processes. This knowledge must not restrict but must enable leading edge lateral thinking process ideas… • Some platforms provide plug-ins to popular Content Management systems such as WordPress. This makes it possible for non-technical persons to create e-Commerce sites… • PHP, JavaScript… • Usually CSS, JavaScript, HTML coding skills… • The more you know, the better – but it's not an exact science. Most sites can be built and maintained using HMTL, JavaScript or C++. Because it's still such a new sales medium in SA, many sites operate with what works for them and their developers, as opposed to following a strict do's and don'ts procedure… • Magenta makes layout configuration very easy from a UI perspective, however, WooCommerce is one of the most dynamic ways of creating robust frontend interfaces… • Sales and Marketing consultants… • Besides the obvious HTML it would be CSS and JavaScript… • Sector skills development, Training, Research… • Java, HTML5, PHP… • Usually CSS, JavaScript, HTML coding skills… • Understanding how digital marketing ties in with a good website design and understanding the end users requirements to make it as easy as possible… • UX Design, HTML+CSS Mastery, JavaScript Mastery, Optimisation… • Mastery of frontend technologies such as Html, CSS JavaScript, Frontend analytics, and User experience design… • Html5, CSS, JavaScript, JSP, ASP, jQuery, PHP. Again this depends on the technology stack being used… • Developing programming languages skills (HTML, Java, and Python), Cloud Computing (Big data analysis) and analytics, Cybersecurity platforms / programmes, online marketing skills…

	• HTML, CSS, Java Script and Python…
Category: Technical **Topic: Backend** What backend development skills required for advancement of the national e-Retail industry?	• Backend development skills are programming and inventory skills enabling the programmatic development of the web site along lines suggested by the frontend development team. The backend development team should ideally consist of developers with a development lead and a business interface person that can sit in meetings and assist with strategy formulation while feeding back the correct strategy drive and direction to the development team… • Understanding of big data and cloud computing and how to use that effectively to optimise the data businesses acquire from customers to enhance their consumer experience, as well as programming languages (HTML, Java, Python), Cloud Computing (Big data analysis), Cybersecurity platforms / programmes. As well as web development, Wi-Fi networks and development of secure payment portals… • If standard plugins are used as described above, then there should be no need for backend skills. Backend skills will be needed if a retailer has its own database of products and requires integration for banking purposes or if inter-operability is required with supplier or other external systems… • PHP, API development… • Java, dot Net, Python, PHP… • The more you know, the better, but it's not an exact science. Most sites can be built and maintained using HMTL, JavaScript or C++. Because it's still such a new sales medium in SA, many sites operate with what works for them and their developers, as opposed to following a strict do's and don'ts procedure… • A fair knowledge of HTML and JavaScript are generally required, however, one needs to understand data and information as well as content and category management in order to really understand how data and product category structures need to be set up… • Sales and Marketing degrees and digital marketing courses/degrees… • On the server-side of the web application skills like SQL, PHP and Python… • Research, Hands-on experience… • Oracle, SQL… • Understanding the business requirements and logistics… • Domain Driven Design, OOP Design, Unit + Integration Testing, Database Administration… • OO Programming (object orientated), Domain driven design, PHP, Java, dot Net… • Java, .Net, SQL, PL/SQL, MS Server, Oracle… • HTML, CSS, Java Script and Python…

Category: Technical **Topic: Security** What is the general approach to Cybersecurity within the national e-Retailing industry? And what is the skills requirement?	• Most businesses do not appreciate the importance of cybersecurity and are mostly only reactive to legislation or threats and at the prompting of the e-business team. Cybersecurity does not only include firewall security but also includes virus and Trojan security, physical access and encryption at the URL level. Hackers have gained access to URLs similar to the one below by simply guessing the last part of the example URL, which is 'staff': http://www.thishugecompany.com/staff. Hackers gain access via Trojans more often than by directly brute force attacking a site. Skills required include knowledge of sound business practices, virus and Trojan skills sets, end user training, firewall and DMZ setups, router configurations as well as VPN and other general security sets… • Security threats include Denial of Service, privacy, including aversion of identity theft and impersonation, phishing, identity authentication between sender and recipient as well as confirmation of receipt of the data. Some of the security features include Secure Socket Layers (HTTPS), digital signatures, biometric authentication, anti-virus, anti-spyware, firewalls, etc. Systems Security involves multiple layers and the levels of complexity are varied… • Lackadaisical. High level Systems administration skills are required… • Cybersecurity is incredibly important. Pages must be encrypted using certificates such as Thawte. All e-tailers must also implement 3D secure by June 2016. This means you'll have to enter your pin code in order to checkout, which reduces the risk of fraud. There is also PCI compliance that has to be adhered to… • This is a big deal for many shoppers. 3D and GoDaddy provide excellent credit card security, and operate as a separate entity altogether. These types of companies allow online stores to provide their customers with safe and secure shopping, while at the same time assuming none of the risk… • Thanks to more information being made visible about internet security, especially pertaining to payment gateways and information, users are becoming more aware about technologies such as 3D Secure for Card Payments, as well as SSL Certificates required to secure the content on servers/browsers… • The general approach is that online purchases are safe especially knowing that you use tools such as PayPal… • Cybersecurity remains a critical concern for many online shoppers. Payment gateways such as PayFast and PayPal are continuously working on improving their cybersecurity… • The greatest concern for any e-commerce platform would probably be hacking in which information and money is stolen. This would lead to a drop in confidence from the customer that would ultimately mean a reduction in revenue for the business. Skills like data protection would be essential… • Back-up systems… • A general concern of the threat of online security breaches. This calls for advancement of information security

	skills, firewall, data protection and privacy. Protection skills… • Cybersecurity is incredibly important. Pages must be encrypted using certificates such as Thawte. All e-tailers must also implement 3D secure by June 2016. This means you'll have to enter your pin code in order to checkout, which reduces the risk of fraud. There is also PCI compliance that has to be adhered to… • To ensure the website is PCI DDS compliant at all time and secure all customer and payment details… • Firewalls, end to end encryption, capturing the least amount of data possible in order to perform operations. Degree in information systems… • Hear no evil, see no evil… • A lot of compliance legislation such as PCI-DSS and POPI is driving business to implement more than just secure protocols such as https and firewalls. Technologies such as SIEM & FIM as well as additional encryption for card data… • This is of great importance, as customer details, and if purchasing online - banking credentials, would be at risk if security is not in place. Companies try to optimise security so that customers feel secure and willing to engage on their platforms. Various universities, as well as corporates offer courses for developers on cybersecurity, to train and upskills Network server administrators, Firewall and Systems administrators, Application developers and general IT security developers, in the areas of authentication procedures, encryption standards and implementations, ports and protocols that hackers manipulate, corporate network security policies and procedures, proactive hacker detection, response and reporting methods to these issues, as well as preventing and managing hacker penetration…
Category: Marketing **Topic: Online** How is online marketing different from traditional marketing? And what is skills requirement?	• The internet has been "re-written" to be people-centred. Hence the proliferation of social networking sites, etc. Retailers are now better able to target marketing material based on their ability to profile individuals more accurately. Retailers also use marketing platforms such as Google AdSense that can then extend reach across multiple web-sites that allow site owners earn income by providing the service. Some of the skills sets required include the ability to build individual profiles based on areas of interest derived from web sites they visit and information they access, alternatively to allow users to capture their areas of interest thereby allowing advertisements suited to their areas of interest, to develop algorithms that link marketing material to the appropriate profile, or even the ability to incorporate google ad-sense into a site… • Online marketing should differ in that the end user has immediate access to the online site from any device as well being able to immediately compare prices of other online companies. The consumer has the convenience in that they can then order from any location and the goods are delivered directly to them. Online marketing skills differ greatly from traditional marketing in that the consumer can more easily leave the shopping

	environment and is able to more easily make use of other shopping sites. Capturing the consumer's interest with products that lend themselves more easily to e-commerce is the key. The e-Commerce environment is fast changing and lateral agile thinking is required… • Much more instant and analytical. Results of each and every ad are measurable immediately… • Online marketing requires knowledge of marketing tools such as paid for search, paid social media, programmatic media buying, mobile media buying. The principles of brand marketing are the same but the technical skills required to run and measure campaigns are different. There is much more tracking available and a different measure on return on investment… • Online marketing needs to appeal to the online user. As such print ads are normally not used as it's far easier to target an Internet user through the Internet itself. YouTube ads and space bought on other popular sites are utilised to increase direct foot-traffic to any e-Retail store… • E-Commerce marketing, as with any digital marketing, is governed by the Government Communications & Information Act, and is strictly governed by the CPA (Consumer Protection Act) and Advertising Standards Authority of SA. Any misrepresentations may have heavy consequences, especially for e-Commerce… • Online Marketing is easy accessible and has a wider reach with different media platforms… • Online marketing has the potential to reach many more people when compared to traditional marketing… • The traditional people and paper-based marketing approach was often one-dimensional driven by a company via people in a physical space at a particular time. Online marketing through social media for instance occurs anytime and anywhere with very little people intervention from the business side. Skills consisting of both marketing management combined with ICT skills… • Online is quicker… • Online differs from traditional marketing by way of the fact that in the former "people" are often missing in the interaction. Online marketing therefore requires skills to substitute for the "people" factor via social media platforms… • Online marketing allows you to access a larger audience at less cost and the user comes looking for you, it is important to have a clear understanding of SEO and ensure you website allows for easy ranking in search engines. Online Marketing also allows you to target and reach the correct audience where as traditional marketing is costly and the marketing is not targeted… • Very performance driven. Results are measurable on daily basis. Analytical skills are core. Numerical skills are important. Need to understand traditional marketing core elements, but need to be able to understand it from a numerical perspective. Online is numerically and analysis focused. Actual skills/roles, such as, SEO (web development as an additional skill needed her); PAID/Pay per Click (numbers orientated) (ABC accounting

	concepts understanding will help – e.g. ROI); CRM. Additional practical skills required: Managing GOOGLE AdWords campaign; Understanding how GOOGLE analytics and tracking works; Basic SEO skills (onsite opt); Understanding GOOGLE webmaster tools; Technical side of CRM (not seeing CRM as a customer loyalty program)… • Online marketing is a lot more fluid. With a traditional campaign there is no ability to adapt the campaign if it is not effective. Technology enables you to swap out banners and change the flow relatively easy to adapt to how the consumer is reacting to the campaign… • Online marketing uses digital platforms to engage with customers via devices they use to connect to the internet. Companies should use these platforms to understand consumer trends, and needs, measure results and develop areas which appeal directly to their consumers. Online marketing should provide relevant digital advertising to entice new customers and hold onto the existing customer base. These digital platforms data, is easily measured and used to enhance the customer experience. Traditional marketing is paper based, sign boards and/or TV - these forms of media are targeting the general consumer, rather than optimising to the need of the customer or the target market. These traditional methods are also not easily nor accurately measured - assumptions are made about number of views, papers handed-out. No data can be collected from these adverts and therefore actual customer needs can't be addressed… • Online marketing, is measured and optimised based on the performance of digital advertising platforms being used to gain new customers an service existing ones, whereas traditional media measurement is not as accurate and easily measured…
Category: Marketing **Topic: e-Catalogue** What are the quality considerations for an e-Catalogue? And what skills are required to create a winning e-Catalogue?	• An e-catalogue is not really widely used in the industry anymore albeit traditional marketing teams still look to it as a means to create that catalogue type look and feel. In effect your website is your catalogue so there is still a lot of work to be done with integrating content into the online product catalogue. If using an e-catalogue it is incredibly important to add functionality to transact directly from the catalogue as well as implementing sharing functionality… • E-Catalogues should be dynamic with items linked to user-interest bubbling to the top. Search engines are critical and search criteria must be provided to filter catalogues according to the requirements of the user. Skill sets required will include the ability to develop standard templates for display of goods…. • A consumer will normally only wait for a few seconds for a site to load before moving elsewhere. An e-commerce catalogue must be fast and then firstly present items that are easily purchased using an e-commerce platform. However, many e-commerce catalogues are representations of a brick and mortar shop stock items, and as such, are focused differently on the consumer…

	• Not sure what you mean… • What do you mean by e-catalogue? This isn't really a commonly used term… • It mostly works across all devices (PCs, tablets, mobile phones). A clean layout and good product grouping always helps, and any customer must be able to peruse, select and purchase any item without thirty seconds to ensure you don't lose your customer… • E-Catalogues have a much higher engagement when approached with a combination of product and lifestyle layouts. More often than not a consumer has a higher propensity to buy when sold a lifestyle rather than a product. It takes a keen eye for merchandising to understand the fine balance. • Have enough but not overloading on information. E.g. Price, stock available… • Picture quality plays an important role in any catalogue. Being able to zoom on pictures or having pictures of various angles of each product also helps customers… • Data accuracy is crucial to the quality of the catalogue. I would imagine that front-end design skills coupled with back-end development skills are important… • Advertising skills… • Listing the correct product for your target market. Aiming use of the correct platform to ensure the catalogue is easily available and is appealing to your audience. Good product knowledge is required… • We no longer work with terminology such as e-Catalogue; you could say design, copy writing and SEO… • An e- catalogue makes products available, in the form of electronic product content so customers can buy items electronically. Regularly updated, should attract the customer, user-friendly, easy to navigate, secure and easy payment methods. Skills required, include, Analytics, cloud computing… • Not-sure if e-catalogues are relevant in online retail world, it is imperative to have a good website and an even better mobile web experience and apps in the digital world…
Category: Marketing **Topic: Dashboard** How could a marketing dashboard add value to an e-Retail business? And what is the skills requirement?	• Dashboards should provide direction-giving analytics at a glance. Sales trends, pricing analytics, consumer profiling, etc. are important factors. The key is to identify what needs to be measured, what analytical methods should be used, the type of data modelling, the type of distribution, what formats (e.g. Spreadsheets, graphs, and Maps). Technical skills include building data marts and data warehouses, ETL, etc. Then building the front end reports by using appropriate tools. Knowledge of using a BI tool may also be important… • A marketing dashboard is an area on the e-commerce site that presents the consumer with an updated quick reference guide to past purchases with recommended future purchases. Most e-commerce sites will offer recommended items with particular reference on the consumers' past purchases. This marketing dashboard adds value in that it presents to the customer that the e-business company has knowledge of the customer and

	is able to offer guided purchase suggestions. The skills required are frontend development skills… • If it's coupled with analytics from Google and shows all relevant conversion and performance data it would be great… • Marketing dashboards are a great way to see quickly how well your marketing "spend" is doing, every day or every week. If certain channels are underperforming then you should change the "spend" or fix the problem… • You can very quickly and easily see your successes, failures, top customers and products and compare your actual profit to your expected profit. There are a number of free trial sites one can use to this effect, including Klipfolio… • The most important piece of information to a category/department manager is to understand the statistics around engagement of their marketing campaigns. This includes Click-Through ratios and conversions. This will essentially inform a retailer of what types of goods and advertising strategies engages better or worse… • To monitor the business marketing efforts… • A marketing dashboard's value lies in its ability to give a visual representation of the data being collected. Again front-end design skills coupled with back-end development skills are important… • Marketing dashboards can demonstrate the direct impact of a marketing project and whether its objectives are being met. Business Analysis skills along with advanced MS Excel and/or Data Visualisation skills… • Marketing dashboards are a great way to see quickly how well your marketing "spend" is doing, every day or every week. If certain channels are underperforming then you should change the "spend" or fix the problem… • A dash board can allow you to analyse data that you collect to ensure you market the right product to the correct audience… • Critical – online marketing is performance driven. Without dashboards you are unable to operate. For reading them – analytical skill. For building them – BI and coding… • Implementing a dashboard is not as important as using analytics such as google as well as being able to do real time A/B testing to test campaign effectiveness real time and adapting the campaign. • Customer knowledge - buying patterns, favoured items, manner of acquiring items - delivery or collection, Cloud Computing, analytics, marketing advertising… • Dashboards can give key insights into business segments which can be optimised to drive growth for that business and offer scalability to what is working well in certain aspects of the business…
Category: Marketing **Topic: Channels**	• Multi-channel marketing is imperative. People access various platforms for various purposes. Marketing materials are often channelled towards the nature of the platform. For example, people may be in different mind-spaces when accessing business platforms as against social platforms. The key is to discern which a

How important is multi-channel marketing in establishing an e-Retail operation? And what is the skills requirement?	product or service will work within which environment. Product analytics / profiling will be necessary… • Multi-channel marketing is extremely important, for the pure e-retailer as well as the e-retailer with a physical shop presence. While the pure e-retailer is focused on multi device marketing channels the hybrid operation is focused on multi-channel devices as well other avenues, such as e-commerce catalogues bringing customers into the physical shop. The skills requirements are marketing and business process skills… • Extremely. SEO, PPC, SEM, Social marketing… • It's very important. Just because you're an online business doesn't mean you shouldn't use offline channels to build brand – this includes TV, radio, print catalogues, and billboards. If you have the budgets, of course. The most efficient spend is in digital… • The more channels you can use to reach your audience, the more sales you can generate. Facebook, Twitter and Instagram are all easy platforms to use, but cost considerable amounts to maintain. Partnering with other online sites can be a great way to extend your reach without much additional development… • Omni-channel marketing solutions are the future. It allows the retailer to penetrate the market simultaneously across all channels, and when there are more impressions within the same market/consumer, there is naturally a higher engagement with the brand. This requires a team of marketing and merchandise managers and tools… • It should be very important. If you only focus on selling via your website and not use other media tools such as Social Media you are limiting traffic to you website… • Multi-channel marketing is essential to reach as many new customers as possible. The more channels used the better the chances that customers will see it and respond… • It is very important. Again skills consisting of both marketing management combined with ICT skills… • Competitive advantage… • Hugely important. Diverse set of business and ICT skills… • Multi-Channel is very important as it allows for an Omni Channel approach when the user purchase from you. Users can browse online and shop in store or the other way around. It could also convert your traditional shopper to move online… • Critical – online marketing is performance driven. Without dashboards you are unable to operate. For reading them – analytical skill. For building them – BI and coding… • It is one of the most critical elements of marketing. The different generations interact with a retailer through the different channels. The older generation still likes the traditional interaction such as paper vouchers and catalogues but are adapting to technology at a rapid pace. The younger generation is very much driven by the digital world, however will interact across all channels. A customer often will start the journey with the retailer on the digital platform and either purchase online or move to the physical once a decision has been made…

	• Multi-channel Marketing (or distribution channel) is very important for online retail to succeed, as it's the manner in which products and services are moved from producers to consumers (end-users) - it involves production, distribution and retailing. Channel marketing is primarily a business to business (B2B) marketing strategy. The marketing channel affects the way a product is sold, the product's price point will largely depend on where it is sold; and customised training and advertising will need to be created to suit the seller. Perception of a product would be affected by the manner in which it is presented by the channel partners. Using the best skills of the various companies in the chain to create an effective and pleasing customer experience. One company doesn't normally do all the various steps, to for a company to choose the right partners are very important. Skills: logistics, advertising, consumer understanding, software development, packaging, production, distribution, consumer feedback… • We are living in a world of "And" and not a world of "Or"! Multichannel is the only way forward, businesses need to be where their customers are online and that is everywhere, hence, you need to be offline "and" online, "and" all the platforms your customers are engaging with content…
Category: Marketing **Topic: Social Media** How important is social media monitoring in developing competitive advantage for an e-Retail business? And what is the skills requirement?	• The world has embraced social media and a fundamental strategy for e-Retailers would be to go where the people are. Through integration with social media platforms, a number of strategies can be adopted including customer surveys, determining brand reach, determining ranks of competitor products, sharing case studies, integrating with blogs, developing stores integrating with social media platforms, etc. Social Media platforms have API's that allow for developing plug-ins that provides for automated monitoring. It is also possible to leverage third-party sources such as e-Marketer… • Social media should be used by offering products to consumers, encouraging consumers to share knowledge of the product and using social media to monitor the success or failure of the marketing and sales of the product range. It is important that the utilisation of social media as a marketing tool grows quickly. The skills requirement are marketing, social media and business process skills… • Huge. Not sure what skills, must have common sense and be able to use a PC… • This is critical. You need to measure Facebook, Twitter, and Instagram etc. constantly to respond to queries. Companies use Online Reputational Management tools (ORM) to help them with this. There are quite a few on the market… • Social media can be dangerous. Because everything on social media sites is so transparent, customers can call out big companies on an even playing field if they feel the company is not maintaining a code of conduct. It's all too easy for a customer to reference an online site in a damaging way, so one needs to be careful when advertising on social media…

	• Social Media monitoring gives a retailer a more direct set of analytics and statistics on their brand's demographic, engagement and behaviour. Based on the types of content, time of day of engagement, and click through ratios, one can usually ascertain what propensity a consumer has to make a purchase and how… • Social Media monitoring assists your organisation to know exactly what your competitors are doing. Someone who is studying Social Media marketing… • Social media does play a very important role in creating a competitive advantage for any e-business. It could also create both positive or negatives perceptions of the brand and thus do need to be carefully monitored… • It is extremely important to enable the business to gauge on the success of the project. I would imagine that Business and Data Analysis skills are required… • Viewers and buyers… • Very important to measure the success of a campaign. Advanced Social media skills and Data Analysis skills… • Very important, it could be beneficial to your online reputation and have a negative impact if not attended to. You do not want users to post anything bad about your online shop on social media, so you need to monitor and be available to respond at all times. It also makes it easy for a user to reach you. Good writing skills are required and have to be unemotional responses but at the same time not generic, the end user want to know and feel that they are interacting with a human on the other side. Social media needs to actioned with urgency in order to maintain your online reputation. Social Media can also be used to reach and interact with the correct audience and obtain new users… • Fairly important but expensive for the ROI… • Social media is an important part of the retail landscape but it requires a different approach to the way we speak to our customer. It is a very reactive environment but retailers must be very careful how they engage with customers socially. It is not the platform for conflict resolution unless through private chats. It is a very powerful tool if you can effectively target the influencers in the social space… • Social media monitoring does provide the competitive advantage, if used effectively - using social media monitoring tools hear and listen what consumers are saying on the internet via the many social media websites. Skills requirement: online analytics, social media measurement and management skills and social listening skills… • Social Media has fast become one of the primary ways for Brands to engage with their target audience. The advantage is that Brands can quickly engage and listen to their customers…
Category: Operations	• The general operations for traditional general retail businesses involve product determination, store decoration, store sales points, stock management including the determination of optimum in-store stock levels,

Topic: Enterprise How different is enterprise and operations management of an e-Retails business to that of a traditional retail business?	warehousing, numbers of personnel, physical security, cash management, etc. On-line retailing has much fewer overheads in many of these areas and thus the charge to the client should generally be less. On-line retailing can provide much more variety of items. Direct bank transfers, direct stock movement to the customer from a warehouse or even the supplier, etc., streamline the operations considerably… • A traditional retail business is focused on bringing customers into a physical shop and selling to the customers within that environment only. Operations management is based around physical store security, presentation of goods, replenishment of goods, and sale of goods and sometimes the delivery of those goods directly to a consumer. An e-retail business is focused on bringing customers into their e-commerce site and selling to them within that or similar environments. Operations management is based more around logistics as well as presentation of goods, replenishment of goods, sale of goods and mostly the delivery of goods directly to the consumer. However, many e-commerce businesses have suppliers that deliver directly to consumers on their behalf… • Similar, but e-Commerce is much quicker and you are able to make changes and see their results immediately… • By operations are you meaning logistics? Philosophically it's the same – you need to get your product from the supplier, into your warehouse and store, make sure you have enough product, make sure the product is presented in a quality way. However, the way you do this and the logistics in doing this is different… • These are very general terms, as many "traditional" retail businesses now have online facets to them. Further to that, certain online stores run very differently themselves (some house stock while others sell on consignment). Based on these facts, it's almost impossible to provide an accurate answer without assuming and generalising… • The operations management is much more robust in e-Commerce than in general brick and mortar retail, for the main fact that stock needs to be managed for an online customer with courier and logistics factors in place, and inaccurate inventory means that product availability fluctuates and can make or break turnover. Especially through logistics. Logistics and courier also, sadly, eats into the bottom line and margins due to exorbitant costs… • A traditional retail business already has a stand-out clientele who they target. E-Retail has a wider clientele which they can access worldwide… • Besides the obvious IT demands, I would imagine that it calls for the same basic approaches… • More structured… • Not much except that online can be managed with less overheads and employees… • In retail the customer has to go to the shop to purchase the items, in e-retail, the customer places an order online and the items gets delivered to the Customers address. The customer only takes possession of their

	purchase once it gets delivered… • Traditional retail operations are moving large volumes of product to the physical stores. In the case of online it is moving a fewer products to many more individual customers. A lot of retail businesses are not geared for this as the supply change caters for the former… • By using digital online tools and software, and other online options to drive or develop a business, compared to traditional paper and offline tools - from tracking the product through development and production, all the way to sales and even getting customer feedback. Skills: Online development tools, Product tracking tools, online tracking for logistics and distribution, online sales and advertising, online customer purchase and feedback tools…
Category: Operations **Topic: e-Logistics** Competent execution of e-Logistics and Smart SCM (supply chain management) appear to be essential aspects of an e-Retail operation. If it is, why is it so?	• These are critical aspects. The logistics from pre-sales to order placement to payment to order processing to delivery to after sales is a massive undertaking. From a product offering perspective, choosing the correct products, the marketing, pricing, calculation of costs, availability, lead time determination, supplier selection, etc., are all massive undertakings. Various systems need to work in tandem to ensure that logistics and supply chain management run efficiently and effectively. This process will include integration between the various business systems, multiple supplier systems, and banking systems. Business is about making a profit that thus the right pricing, optimal processes and cost management are key… • An e-Retail business mostly delivers goods directly to the consumer, and the ability for them to do so, is to a large extent, their business model. SCM is the enabler that will have the goods available and then deliver those goods on time and at the correct price to the consumer… • The customer loses sight of the "product" once they've paid for it online. Logistics need to be reliable so that trust is not lost before the item arrives… • Supply chain management is critical. A pure play e-commerce provider cannot hold excess stock (as its expensive), so you typically need a JIT model and that means accurate supply chain data as well as making sure your suppliers deliver to you on time. Timing is everything. A late supplier means a late customer order… • Simply put, people need to get their goods. Retail stores allow the customer to grab and go, but online stores are a "pay first, get later" operation. That means that the logistics and communication thereof to the customer need to be highly competent to ensure the customer feels comfortable making a second purchase… • Firstly, there are different types of e-Commerce models, and the one that is used often is JIT (Just in Time) or back-to-back models. This implies that the goods are not with the retailer at the moment, but are available to order; and due to this, logistics has many rooms for failure. Extended lead times for the consumer can also make or break a sale. And it is the logistics department's job to ensure that stock is managed both on-site and

	off-site, and that the movement of stock from supplier to warehouse to customer happens in as short a turnaround time as possible - basically within SLA… • If you don't have a competent e-Logistics and SCM team there won't be any order in the operation from the sale of goods to the client receiving it… • Customers getting their goods within the stipulated time period will make or break the e-business. Most e-businesses have focused their efforts on the last leg of the journey, i.e. - ensuring that customers receive their goods timeously… • Supply chain management is critical. A "pure play" e-commerce provider cannot hold excess stock (as it's expensive), so you typically need a JIT model and that means accurate supply chain data as well as making sure you're suppliers deliver to you on time. Timing is everything. A late supplier means a late customer order… • Yes, it is. The consumer expects to receive the correct item in the proposed time frame. If this is not met the user will be unhappy and possibly not return to your site. They might also interact on Social Media and advise of bad or good service which will have an impact on our your business is perceived… • It's about trust more than anything else. The Customer trusts the brand name and the process (early adopters). From a convenience perspective, Customers know what they want but don't feel it necessary to go to a Mall or a shop to actually purchase the items. Through Logistics they trust that what they have purchased and paid for online will be delivered to their address. Once an e-tailer breaks that trust through poor execution, you have literally lost that Customer's trust… • Competent execution of e-Logistics and Smart SCM (supply chain management) appear to be essential aspects of an e-Retail operation. If it is, why is it so? It's definitely a critical part to ensuring the business is successful. Customer experience is everything; it must be an efficient, enjoyable experience for the customer from start to finish. From the time they place their order to delivery and possible return. Processes and systems must be continually assessed to stay ahead and continually improve customer satisfaction and keep up with the fast past business. If your SCM is not competent your customer experience will not be up to standard… • This is becoming the biggest stumbling block to effective and cost effective operations. Most large retailers supply chains and warehousing systems don't cater for single customer picks so it is very difficult to plug in the B2C functionality into the traditional systems… • Time saving, accurate production and sales knowledge, quick knowledge of errors or successors…
Category: Operations **Topic: CRM**	• Much of the CRM in an e-Retail environment can be automated. It is important for an e-Retail business to be able to track the interests of the customer. For example, which products did the customer click on? General customer profiling is also essential and much can be gained through building a database of customer interests,

How different is customer relations management in an e-Retail setting versus traditional retail?	etc. So, when a customer visits the on-line store, prior information gathered should assist in shaping the customer on-line experience. This will include arranging products suited to the customer profile. Once a customer purchases a product, it will be necessary to electronically provide the customer with periodic information of the processing status of the purchase. For example, an email can be sent giving information about expected delivery dates, etc. Post-delivery customer satisfaction surveys are also important. The CRM is similar in terms of ensuring that quality services are ensured. E-Retail can potentially obtain much more data and the customer satisfaction index can potentially be better determined… • CRM is equally vital in both environments, but is forced upon the e-retailer as without CRM they cannot trade efficiently… • You have far more info and user actions are far more trackable in e-Commerce… • Not much different, except you can assume that all of your customers are online so you can communicate to them using email as a default… • Very. There's little face-to-face communication with e-Retail, and that makes personalising the interaction with the customer that much more difficult. On the flip side of the coin, companies can make use of mass emails so reach a large audience with minimal effort, which often plays to their advantage… • CRM is much more sensitive in e-Commerce, since the notion of e-Commerce is shopping for price and convenience. If the retailer cannot be competitively priced, it is expected to go above and beyond to ensure a quick turnaround time with a good logistics partner. Any failure on either one of these usually results in an unforgiving customer, with the ability to slander the retailer's name on a multitude of online channels. Also, e-Commerce retailers are more susceptible to the accolades or slander received on online forums such as My Broadband, and these communications go viral very quickly… • I don't think there is a difference the only thing is that with traditional retail you sometimes meet your clients in person however in e-retail you deal with a phone call or email… • It is more challenging in an e-retail business because of the lack of face-to-face interaction. Customers become more sceptical of the business, due to not being able to interact face-to-face… • In an e-commerce environment customers need to and expects to be managed 24x7x365… • With online you can obtain a lot more information about the user and customer and you can easily observe a pattern on their online behaviour such as what they buy, when they buy, where they are and what they look at. This way you can interact with the user in such a manner to keep their interest and keep them coming back… • In e-retail there is no real human interaction until delivery takes place. Therefore the Courier has to be trained to the same ethical and tact level as in-store assistants, be able to assist customers, answer questions and have sufficient product knowledge. Currently, in South Africa, delivery agents are not properly trained to deal with

	B2C deliveries (business to consumer)… • It is a lot more technical and automated (although it is still all about the customer)… • Currently I don't see a huge amount of difference purely because all the information about the customers' interaction is not being provided to the teams who perform this function. There is a lot of integration work required to give the agents a single view of the customer and how they are interacting across all channels… • CRM for e-Retail requires tech savvy, good social media reporting and responses, affective responses to complaints or compliments, positive engagement…
Category: Operations **Topic: Transaction** Transactions management assumes critical importance in e-Retail given the physical separation of the client from the business. What are the most important considerations in building a trust relationship?	• Trust relations are built on the power of reputation. If one has not purchased previously from an e-retailer that is not known, what assurances can be provided to increase the levels of comfort? Some of the important aspects are: The site should convey reputational information that can be verified by a customer. This could include the company/site's registration as a vendor on supplier web-sites. Trust-logos and/or certificates from regulatory bodies that verify the reputation of the site should be displayed. The site should be well-designed and professionally looking. Branded products from reputable companies should be included. The site should provide clear contact details and an address. E-Commerce websites should use secure communications protocols… • The most important considerations in building trust are to offer a secure trading environment and to appear to be professional and to offer the consumer an easy communications path for any queries. The consumer must be able to easily communicate and then be offered accurate information and assistance. Common queries are around failed transactions, unfinished transactions, order delivery, cancelled orders, price discrepancy and returns of items purchased… • Deliver on your promises… • Brand equity is important. You need to convey this on your website. Then you also need to show that your products are of good quality – this is done using quality imagery and copy descriptions. If products have a seal of approval or an award you would also detail this. Then you also need to make sure that customers know their payment details are safe and that their delivery will be on time and safe. This is also communicated on the website and through emails… • Get the first transaction right. A customer is far more likely to return if their first experience was a good one. Good pricing, free shipping and flashy sales are all undermined if the customer does not feel satisfied as a whole using an e-Retail outlet… • Your first step to building trust on your e-Commerce store would be to make it quite visible that your site is secure. Good SSL Certificates with Extended Validation is a good start, as well as trusted payment gateways,

	such as VeriPay, PayFast, SnapScan, and using 3D-Secure. A solid privacy policy, returns policy and FAQs all tell a new and existing customer that you have made considerations for when/if things should go wrong… • Competence in sales, delivery and customer satisfaction. If you are not doing that then your customers will make their voices heard and with social media at their fingertips, your business might fail if they not happy… • Always ensure the customer always receive their goods as promised, otherwise they will never transact with the business again. Ensure that customers feel their online transactions are being safely processed. If they feel it's too risky, they will never want to transact with you again… • Make sure the correct product is provided at the correct time and also ensure that the user journey especially at the checkout is clear and secure to the user… • Firstly the process of convincing a potential customer to buy from your secure e-retail "shop". The product being advertised must be relevant and the perceived quality known to the consumer. The selling price must be acceptable to the consumer to convince them to rather purchase online than going to a bricks and mortar shop. The payment methods must be secure and trusted. The delivery time-lines must be adhered to. Once delivered on time, the packaging and contents of the said packaging must be of high-quality and all product items should be identical to what the customer ordered. If not, the returns process must be seamless and strictly adhered to the refund process… • The main elements are providing the customer with the comfort that their online journey with the retailer is as safe as the physical journey; Customers are still hesitant to part with their personal and financial details without the product. This is changing so it is incredibly important to build and maintain trust… • Security and safety of transactions. Ease of use by the consumer. Trust, gained by quick, dependable responses. Good social media responses…
Category: Operations **Topic: ITSM** It is imperative for e-Retail as a virtual shopping experience to provide continuity of access for clients. How important is ITSM within the e-Retail operation?	• E-Retail is fundamentally dependant on integrating Information Technology into its processes. ITSM methodologies that represent best practices to manage IT services have to be applied… • ITSM is vital to ensuring the availability of the e-retail operations. Important considerations are around speed, data accuracy and availability… • Not sure what ITSM is… • Not sure what you mean by ITSM? Not a commonly used term in the industry. But a digital footprint is important for even a traditional retailer as many customers browse online even though they buy on store… • Ironically, when you get it right, people barely notice. It just "flows". It's far easier to see when a company gets this wrong, as the customer is immediately inconvenienced and irritable as a result. That having been said - this is a part of any e-Retail company that can be constantly tweaked and upgraded depending on need…

	• It is the nature of e-Commerce to be online all the time, and therefore multiple servers and backup drives are essential to keep the wheel turning. Customers abhor long page load times, and even more so, broken links. If payment gateways aren't up and running efficiently, thousands of sales can easily be lost… • Yes it is because when doing virtual shopping there are no open and close times for purchases so having a company that manages the e-retail operation is important to ensure that services remain available at all times… • Don't know… • ITSM can help the e-commerce platform to remain stable and available for business… • Very… • Very important for continuity of business and reduced downtime… • Extremely, as this ensures uptime and sufficient resources is allocated to your website… • ITSM is the one function that keeps everything together – it is crucial! Whether desktop, laptop, mobile – the process has to be seamless and familiar to the customer. No matter what platform is used, the outcome must remain the same. Simplicity is the ultimate sophistication… • Policies must be available to consumers and retailers must be able to demonstrate compliance. The relationship with the consumer is broken down if any breaches and compliance are found with the retailer… • Excellent mobile friendly sites and experiences - sites which look good on whatever device you are shopping. Ease of use and security. ITSM is very important - from the policy development, all the way through to the tools used to create a successful e-Retail operation… • Not sure…
Category: Business Intelligence **Topic: Merchandise** What are the essential aspects of the merchandise function for an e-Retail business? And what is the skills requirement?	• Merchandising involves amongst others, the determination of which goods should be bought and sold, determination of product lines or associations, product promotions, determining product quality versus pricing, which products should be stored in-house. This covers a broad spectrum of multi-disciplinary skill sets that include market analysis, product knowledge, pricing determination, marketing, product sales and movement analysis… • Merchandising functions for either the e-retailer or a physical shop are different but equally imperative. A consumer walking through a shop can see the length of portions of the shop and merchandising can lead the consumer in certain directions. In the e-retail environment, merchandising differs greatly in the consumer is presented with a much smaller selection of product at a time, and if this small selection does not catch the consumers interest, the consumer may leave the site and go elsewhere. The skills requirements are a sound knowledge of marketing, business processes and a very good understanding of the target market and local buying patterns…

	• Single view of the product showing all product details, inventory levels, volumetric weights… • General retail experience is a plus. Understanding the product lifecycle (from stock to store) as well as pricing and margin analysis is important. In a digital world, what are also important are the principles of selling online – navigation, taxonomy facets – all of these drive customer conversion so it must be tested until the right solution is in place… • Again, this depends on the specific online store. Some sites specialise in coupons and vouchers, and this makes sales a very easy transaction to conclude. Flower sites, such as Netflorist, need to spend a great deal of care on their merchandise as perishables (much like any brick and mortar store) can be one of the hardest items to sell… • Good category management is the start of good merchandising. Since an e-Commerce store doesn't have the traditional product display stands/racks, it is up to the Content Management Solution to create sleek layouts, and the category and content managers to lay them out in a manner that makes it easy for the user to shop. Good deals, promotions, and other value propositions should always be front and centre to ensure a higher click through ratio and higher conversions… • To ensure that there are enough stock available and on hand to distribute. Merchandisers, Merchandise managers… • The physical stock the business carries must always accurately respond to what is indicated on the website. Too many out of stock items could either be a positive or negative for the business. If customers see items are out of stock, it could indicate that the goods were very popular (positive) or the retailer is not making an effort to obtain more "inventory" (negative)… • Correct and clear product description, product information and images. Also product availability… • The understanding of a content management system and effective imagery. E-retail requires customer friendly naming and descriptions and effective detail to enhance SEO so understanding of the technology landscape is required. Traditional retail systems and processes don't necessarily provide this and often work is duplicated to provide the required customer facing data… • Quality goods (products and/or services)… Skills: quality assurance tools and analysis - during production, distribution and after sales…
Category: Business Intelligence **Topic: BI** How would business intelligence be	• Every aspect of the business has to be measured and direction-giving analytics have to be generated at the click of a button. Customer profile analysis, sales trends, product comparative analysis, market trends, operational analysis, have to be provided and understood to ensure that the business remains healthy in a highly competitive, global market. The skills requirements areas are: the ability to identify the information

deployed in building competitive advantage for an e-Retail business? And what is the skills requirement?	requirements, the ability to draw data from multiple sources and to build the analytical reports, the knowledge in the use of technologies that enable the production of reports including spreadsheets, graphs, diagrams, maps, etc. and also the ability to interpret the results. Learning organisational approaches that adopt double loop learning (test outcomes based on assumptions/rules but also examine assumptions/rules upon which the outcomes are derived) are imperative… • In an e-retail environment, all customer purchases are recoded electronically and data of consumer habits and geographic purchasing trends can be and should be used to present special offers to the consumer as well as to populate the consumer marketing dashboard. Encouraging the consumer to return to the e-retailer as well as to encourage the spread of the site availability to other potential customers is the key. The skills requirements are marketing and data analysis… • BI is critical. In a digital world everything is tracking and you need to constantly look at the numbers to understand traffic to the website, conversion rates, average order values, revenue, cancellation rates, fulfilment rates, customer service complaints etc. Usually BI leaders have a background in maths or databases and are very comfortable with numbers… • Growing one's subscriber base is a great way to increase sales – but the "normal" BI rules don't apply here. There are a number of ways and competitions one can run to achieve the above, and the more creative you can do this, the more likely you are to break through to the customer and appeal to them on a base level… • The BI departments in an e-Commerce business are purely there to mine data across all departments, analyse it, then assess what each department struggles with on a daily basis and creates intuitive solutions that speed up operations, and thereby creates a faster, smoother running machine. This in essence improves customer service. Therefore, good data mining and analysers are essential for this role… • Research into knowing your competitor… • Analysing what is sold, when and to who is important which also includes the logistics. BI can assist in monitoring these aspects and ensure the Data and Information is available… • Predictive modelling of customers, real time analytics of buyer behaviour. Real time supply chain analysis in order to optimise warehouse stock levels. Skills required: Analytics, Statistics, Information Systems… • Funnel analysis is a useful in focussing the business by considering customer segmentation and optimisation of departments. It however requires strong business and data analysis skills … • Traditional BI is post-transaction. BI now needs to cater for pre-transactional information about how our customer interacts. This also creates the advantage of being able to adapt both product and execution approach based on data we would never have had before… • As described previously, you would know your customer, you would understand your production lines, times,

	transportation and distribution rates, and your successes - each aspect of the process and be monitored to improve business optimisation and savings. Skills: Cloud computing, analytics, market analysis, comparative e-studies of products, production and sales… • Understanding your Business from a data driven perspective allows you to identify strengths and weakness and make actionable informed decisions. Dashboard Building and coding skills…
Category: Business Intelligence **Topic: Analytics** How could web analytics be used to enhance the performance of an e-Retail operation? And what is the skills requirement?	• I assume this to mean analysing how people use the web. As mentioned previously, it is important to profile customers. From a web perspective, it is possible to know the location of persons, to use integration with social networking to obtain information from what people are posting, determining the sites that they are visiting, determining which products they are searching for on your website. A substantial amount of knowledge can be gained from mining this data… • Web analytics and BI would form part of the same division. However, the interpreting of the data might be done by different skill sets. Web analytics include technical information that the back office development team would require for making the e-retail site available on more platforms while more general BI would be used for the rest of the business… • A good way to use web analytics is to do multivariate testing – this means that you test two different versions of a feature on the same day, but to a split audience. That way you can see which feature works best to convert to sale. There are many other ways to test though, using benchmarks and measuring performance, doing usability testing in person, or using UX tools like Tree Jack… • In much the same way that a marketing dashboard could be used. Info such as when your site sees the most traffic, which is your most popular product and whether your site might be experiencing a problem is all very easy to see through web analytics, such as Google Analytics… • As mentioned before, consumer engagement can be monitored by assessing Click Through ratios and conversions. And vice versa - if a certain section of your e-Commerce store is not gaining any momentum, this should also tell you what appeals to your customer base, and what doesn't. Tools such as Google Analytics, Tag Manager and Crazy Egg are good for monitoring site behaviour… • To understand the buying behaviour of customers. Getting all those data patterns… • It is important to know how often your website is visited, problem links or pages and providing details on where the most visitors reside in the world. These details can be used to fix problem areas and target customers with appropriate goods… • I would imagine that understanding who, when and from where clients use the e-platform is important to the success of the business. Again, I would imagine that Business and Data Analysis skills are required…

	• Analytics will provide insight on the volume of traffic, what is viewed in terms of products, pages, who is viewing what and when. It will allow you to align your sight with your audience and have clear call to actions… • Optimise conversion rate, run experiments to determine best checkout funnel design, determine customer market segments/demographics… • Critical. There is a programming and a statistical side to web analytics. Understanding marketing needs and having a maths/stats background in order to help drive marketing performance… • Analytics are incredibly important to understand how the site is performing, how the defined funnels are performing and adapting the customer journey based on bounce rates… • Web analytics helps you would know your customer, you would understand your production lines, times, transportation and distribution rates and success - each aspect of the process and be monitored to improve business optimisation and savings… • Understanding your customers better, allows you to scale the success of your online business. Google Analytics Certification is a great place to start…
Category: Business Intelligence **Topic: Competition** What is competitive intelligence within the context of an e-Retail business? And what is the skills requirement?	• Competitive intelligence can be obtained by establishing who the competitors are, determining their sales and service offerings, their sales methodology, their suppliers, their pricing. The key is to determine one's competitive advantage over the competition… • The e-Retail offerings far exceed the available purchasing power and competitive advantage is vital to ensuring the sustainability and growth of the e-Retail business. Competitive intelligence can be derived from BI with a special focus on marketing trends and offers to consumers from competing companies. The skills requirements are marketing, business processes enablement with a focus on logistics… • Digital moves quickly and keeping an eye on competitors is important. This includes international competitors. This can be done quite easily by understanding commonalities or common features, and measuring each one against those. From the way their site looks, the features offered, to the types of products, speed of delivery, and extra services like click and collect, and gift registries. No specific skills needed… • Recognising your competitor's strengths and weaknesses, and trying to use those to further your own operation. Price undercutting is commonplace. Experience plays a bit part here. The longer you've been in the industry, the more you pick up and can apply to your own e-Retail store… • It is important to understand what makes your competition's business unique, and the differences between your business and theirs, as well as the dynamics across the e-Commerce industry as a collective, to start understanding what breeds success and what does not… • Knowing exactly what your competitors are doing, what their weaknesses are…

	• Don't know… • Unable to comment on this… • The ability to optimally analyse the market in order to maximise any campaign. Data Analysis and Data Visualisation skills… • Make sure you know what your competitors are doing and then do better… • It is a common theme for retailers to do competitor analysis and focus groups to determine what is working for them as well as their competitors and discovering journeys that offer that advantage… • Programming skill and using logic… • Understanding the market and the market needs, using the digital tools to optimise business practices to suit production efficiency and customer experience…
Category: Business Intelligence **Topic: Data** Data integrity issues could undermine the client trust relationship. What are the best practices for data management within an e-Retail environment?	• Data integrity practices must include data encryption within a database as well as across the internet. For system users it's important to ensure access control privileges, input validation, transaction processing, i.e., ensuring that the entire transaction is completed before committing to the database. Data backups that stores data in alternate locations are vital… • Data must always be accurate and readily available. Data integrity checks must be regularly done, including recalculation of customer balances and purchase history. Inventory pricing must be checked daily against a control environment… • Data management is critical. To get a single view of a customer is nirvana, but many retailers still do not have this. Then you have to keep your data clean. You need to make sure that all records are up-to-date and that there is little duplication. It's a full time job and various different database tools can be used… • As with payment protection, the very best way to do this is to outsource your data management to a third party. If someone does something specialised for a living, chances are they do it better than you could if you tried to apply it to your own online store yourself… • Always try to vet products before taking them online. This allows you to assess the accuracy of the product information, even if it's coming straight from the supplier or source. Find out what other sources have written up on the same product lines, and you can start getting a better understanding of the information presented… • Not to sell customers details to third parties, making sure all their info is kept under strict security… • Customer data should never be shared with external parties unless they specialise in data management… • As stated earlier, the quality of the data by way of its accuracy is important for any e-commerce platform. Again, I would imagine that Business and Data Analysis skills are required. • Ethics…

	• Make sure all data is secure and make sure you do not spam the users… • Master-master data replication, offsite data replication, master data concept… • Having single customer view… • The most important element from my perspective is effective data integrity management with the chosen database such as oracle, MySQL or SQL Server… • Security, safety and developing trust. Complying with all legislation requirements for digital marketing and e-retail…

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APPENDIX 2:
EXPERT GROUP RESPONSES

The expert group responses are provided in Table 10 below:

Table 10: Expert Group responses

Thesis	**Comment**
1. E-Retail is hybrid discipline that draws mainly from the disciplines of retail management and ICT to support a diverse set of business and technological skills.	• Agreed. Multi-disciplinary skills involving the intersection of business and technology skills are vital. • Agreed. More importantly there needs to be a good integrated approach with the marketing team and data analyst and IT teams, to make sense of the information you are gaining through people using your website. • Agreed. Many of the traditional methods should change and become digital for an effective system to be developed and maintained. • Agreed. It draws from traditional retail management from a financial discipline however through technology and analytics it is no longer as traditional retail is post transactional analytics and dependent on marketing campaigns. Technology enables you to adapt campaigns real time whereas traditionally you would only adapt the next campaign based on past learnings. • Agreed. It can be considered to be a hybrid discipline. With technologies such as Shopify and WooCommerce, can turn any traditional business into an e-Commerce business. It does so by merely transferring (migrating) the general day-to-day operations onto a digital channel that is live and current. • Agreed. Industry typically talks about ecommerce and digital marketing instead of e-Retail and e-Retail Marketing. • Agreed. I agree with the statement that e-retail is made up of a combination of retail management and ICT. • Agreed. Drawing from the skills of retail management is all good and well but e-Retail is not physical retail and very different set of skill sets must exist. ICT skill sets are also very different. IT skills may include the synchronisation of data from a physical store information repository to the e-Retail site and the transactions from the e-retail site back into the physical repository. Further synchronisations may exist between customer and supplier systems. • Agreed. But it is more nuanced than that. Digital Marketing and Social Marketing are also skills that are needed.

	• Agreed. As a whole the statement isn't wrong. But like any rule, is can be broken if the need calls for it. Certain online stores did start and continue to operate in that manner, but it's not true for all of them. Netflorist, for example, started up simply to see if an online site could work, and now 13 years later they are one the most successful online stores in SA. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
2. E-Retail technology platforms are not universally accessible by the majority of South Africans and e-Retail is therefore currently not the preferred platform for retail in South Africa.	• Disagree. This is not necessarily true. In 2013, in Southern Africa alone, the e-Commerce industry was worth $51 Billion alone in comparison to the $128.4 Billion of total retail revenue, according to Nielsen statistics. At that time, South Africa's e-Commerce revenue was around $436.8 Million, and in 2015 was worth $587.2 Million. • Disagree. This doesn't really make sense. I don't understand this. Any retail platform will be made available using the Web. A consumer just needs access to the web to access the retail platform. • Agreed. This is true although the growth potential is huge and increasing at a rapid pace. Many of the larger retail stores have e-retail offerings. Market possibilities could open for smaller enterprises with specialised goods and services. Tools and technologies are becoming increasingly available. • Agreed. This is growing as more people get connected, and as businesses begin marketing to suit consumer needs. The gogo in the rural area who can get items delivered to her home, which in the past was not available to her, now she can buy online and have it delivered. Online buying services. Money can be transferred easily to those far away. • Agreed. This is changing rapidly in South Africa as more and more retailers are adopting the best in breed technologies to build on the bricks business. It is a large investment for retailers as the market is not as mature as certain international markets but it is proving critical to have the capability to not lose on market share. • Agreed. There are plenty of free platforms such as Magento or WooCommerce which are available for free to anybody that want to start up an online shop. • Agreed. The focus should be on mobile commerce as most users have access to the internet

	and platforms using the smart mobile devices. • Agreed. Not all people have access nor understand the new technological world we live in as yet. • Agreed. It is not the preferred platform yet. But it is almost universally accessible. Almost all SA websites have mobile sites; almost all users are able to access them. The problem is more along the lines of most of the public not having access to credit cards, a fixed address for delivery and the disposable income to shop online. • Agreed. I agree with this sentiment. Unfortunately, e-Retail is not a first choice option for many South Africans, mostly due to lack of Internet access. This will hopefully improve in the future when internet access improves and becomes less expensive. • Agreed. Fewer than half of SA citizens have access to the Internet, so therefore you're limited in terms of your audience. But, as far as most online stores are concerned, that's not a major issue as the members that do have Internet are also the people that have the money to spend. • Agreed. E-Retail is not the preferred platform for retail in South Africa for all products. Is it the preferred platform in any country? A good example is DELL whose main income used to be web based. Are most cell airtime and data purchases in South Africa made electronically without physically visiting a store? What about pre-paid electricity? E-Retail supplies certain products easily to the consumer, but most consumers will want to see the actual product before purchase. The trend is now for consumers to visit a physical store to investigate a product while going on site to look for the best price or availability. E-Retail is also used by many consumers to search for products and then going to the physical store to purchase. A visit to a shopping centre can be a family outing with a break for coffee, etc. • Agreed. Currently the ZA Market is serviced by local online retailers who are providing an excellent service to shoppers, traditional bricks and mortar stores are coming online to service the growing demand of online shoppers. The ZA online market is small due to the volume of people accessing the internet compared to the rest of the population, but is growing steadily. • Agreed. • Agreed.
3. E-Retail requires unique and advanced knowledge, practice and metacognitive skills for its effective engagement as a professional business endeavour.	• Disagree. There are many tools in the market and on the internet that can assist any person wanting to setup an online e-commerce platform with little knowledge. It all depends on how they choose to use these tools to educate themselves.

	• Disagree. Specialised skills are not necessarily a prerequisite because there are many opportunities out there for entrepreneurs to easily build and manage their own e-commerce websites. • Disagree. It is generally preferred that top-level management with financial decision making powers should be experienced in the retail economy and industry, however, skills can be acquired and so can resources, so this is by no means a prerequisite. • Disagree. In truth, anybody can start up an Internet store today if they wanted to, and with relative ease. Whether that becomes successful however comes down to its niche, and a little bit of luck in the beginning. But advanced and unique knowledge? Not really. • Conflicted. Many entrepreneurs have not had formal education; they have learned to code and have built businesses because of their passion for coding. In traditional retail businesses then yes, you do need advanced skills and experience. But that is not to stop someone at school learning to code and building a business. It has been done before. • Agreed. The behind the scenes portal is a complicated process. It's not as easy as to just set up a website. SEO and SEM are part of the behind the scenes practices which the ordinary consumer does not understand. • Agreed. But it depends on the scale. If you are an entrepreneur running in small scale, then the operation could be launched without specialised skills. • Agreed. In general it depends on the complexity of the business. If I have a small business retailing a single or a few unique products, then the barrier to entry may not be that great. I could build a website using a product such as WordPress with an e-Commerce plug-in. • Agreed. E-Retail by its very nature is a fast changing and evolving environment requiring focus, lateral thinking and the ability to be agile in all aspects of the business. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed
4. E-Retail can be considered to be comprised of several distinct sub-disciplinary spaces, namely, e-	• Agreed. This is true however to effectively manage this you need to have a good understanding of the overall life-cycle as all these are elements of the customer's journey with the retailer

Retail Technology, e-Retail Marketing, e-Retail Operations, and e-Retail Business Intelligence.	which is the most critical to ensure no breakdown. Often the current operational constraints impact the seamless journey of customers and impacts on repeat purchases. • Agreed. This is generally how e-Commerce is divided, however, there are many more nuanced sub-disciplinary spaces that drive any e-Commerce business, and they include Customer Support, Category and Content Management as well as Financial Departments controlling the buying departments and profit and loss. • Agreed. If the e-Retail systems of the company involve multiple products from multiple suppliers, systems integration, complex logistics, BI, etc., then these must also be considered. • Agreed. As in any traditional business as well, there are several functional areas that need to be combined and work together in order to have a successful business. • Agreed. Absolutely and the more you have in each department, the better you can do as an e-Retail business. This is why many online stores operate in sub-departments, with those department heads coming together to form the nucleus of the company. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
5. E-Retail is a whole brain endeavour that requires practitioners to be both creative and logical in delivering innovative solutions to the challenges and opportunities in the environment.	• Agreed. It is seldom that one person would be strong in both creative and logical thought processes. A successful e-Retail business would most likely consist of a team of people possessing the required different abilities and focuses in order to grow the business. The departments as mentioned above, i.e. e-Retail Technology, e-Retail Marketing, e-Retail Operations including logistics, and e-Retail Business Intelligence would be separate departments linked by a common management thread and focus. • Agreed. It doesn't have to be, but it is definitely better for the company if it is. Logic trumps creativity in terms of finding something that could work, but creativity comes to the fore when

	you're looking for something that will work – and not just that, but will work better than any other possible solution. • Agreed. Creativity in e-retail is certainly very important to make the business stand out from the crowd. With thousands of websites operating, it is important to be creative to ensure the business does not get lost in the crowd. • Agreed. At it is probably also analytical more than anything else. • Agreed. As with any industry or business, a degree of creative and even innovative thinking is required to ensure that your e-Commerce business is moving ahead of its time and breaking boundaries all the time. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
6. Various employment and career opportunities present within each the e-Retail sub-disciplines where training would be task and level appropriate. Specialist tasks however would require advanced training.	• Agreed. Yes, skills like managing PAID advertising and SEO should now longer be considered as specialist training beyond the realms of tertiary education. • Agreed. We have a comprehensive specification document available showing the types of skills that are needed for the setup of an e-Retail store. • Agreed. There are certainly many career opportunities within the various sub-disciplines and each one would require specialised training. • Agreed. Picking and packing on a warehouse floor to fulfil a customer orders require very little skill and forethought. Designing a warehouse to maximise space usage and increase work flow on the other hand requires a logistics background and, ideally, some experience in that area. And this goes for all other departments. • Agreed. E-Business specialised tasks would be e-Retail Technology, e-Retail Marketing, e-Retail Operations and e-Retail Business Intelligence while basic warehousing, finance and accounts

	receivable would not differ much from a traditional store. • Agreed. Depending on the core systems that operate all or the main parts of day-to-day business operations, it is perfectly acceptable that training across these platforms be done in-house and thereby creating career opportunities from within the organisation allowing staff to become multi-skilled. • Agreed. As with traditional retail as well. • Agreed. Advanced training and experience would be vital to support success for e-Retail. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
7. Specialist e-Retail practitioners should be competent across the declared e-Retail sub-disciplines and specialist training might best be delivered via a professional qualification in e-Retail Management programme.	• Disagree. I have seen many people with little to no tertiary education become quite successful in their tenure at large e-Commerce corporations. This industry has got nothing to do with education, but rather the ability to learn, a degree of cognitive thinking and people with a good set of problem-solving skills. • Conflicted. Possibly, but it's not set in stone. Most "big" online stores in SA started long before any qualifications were offered in the field, and they now dictate the market. This would stand to suggest that it can be done without any training, but if the training exists (in this day and age) it makes absolute sense to use it. • Agreed. These skills may also be acquired by self-study and using the tools. Also a specialist e-retail practitioner should be competent across various sub-disciplines, but should also be taught to be continually learning as the technology keeps changing. • Agreed. There should however be a greater degree of specialisation. Rather focus on one function/discipline within e-commerce and form a diploma/degree around the one discipline. E-commerce recruiters are after specialists, not generalists. • Agreed. If these qualifications are available, then they should certainly be pursued by the specialist e-retail practitioners to always stay on top on the latest developments in the industry and formalised their education.

	• Agreed. If there is one and it covers the relevant issues. • Agreed. However, the professional qualification in e-Retail Management programme would have to be highly focused on e-commerce outcomes as a direct ROI from the programme. • Agreed. As with traditional retail as well. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
8. The current core technologies of the e-Retail Technology sub-discipline are e-Commerce Platforms, Search Engine Optimisation, Cybersecurity, and the Internet of Things.	• Disagree. The Internet of Things is not necessarily a key driver in retail unless specific to the product offering. • Agreed. Yes, also include logistics using digital tools, production using digital tools, analytics, Cloud computing, online marketing and social media courses. • Agreed. There are still many more facets and technologies that drive leading e-Commerce businesses, such as HTML Coding, JavaScript, Accounting Platforms that can be fully integrated into the e-Commerce Platform, 3rd Party Logistics Tracking Technology, Barcode Scanners and other Hardware. • Agreed. There are also things like warehouse management systems, order management systems, internal search engines (e.g. Endeca) that are critical. Internet of things is not currently directly related to e-retail specifically. • Agreed. Digital Marketing, Social Media Marketing, User Experience, Digital Design, Analytics Interpretation as well. • Agreed. Also includes other areas such as cloud computing/environments, systems integration, mobile/web application development (definitely for add-ons). • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.

	• Agreed. • Agreed. • Agreed. • Agreed.
9. The current core technologies of the e-Retail Marketing sub-discipline are e-Retail Catalogue, Marketing dashboards, Multichannel marketing, and social media monitoring.	• Conflicted: Not sure what an e-Retail Catalogue implies within the modern era. Marketing sub-disciplines would be search engine marketing, social media marketing, programmatic marketing, remarketing, mobile marketing, email marketing and then the usual brand marketing. • Agreed. There's also a degree of word of mouth, as outdated as it may sound, influences more than ever. This drives marketing and business in the direction of retailers and other businesses daily. Some success stories in this regard are Suzelle DIY, Grant Heinz and more. • Agreed. Digital Marketing, Social Media Marketing, User Experience, Digital Design, and Analytics, should also be included. • Agreed. But performance marketing, PAID searches, and SEO, should be included. • Agreed. But in the least creative way possible. Competitions (online or otherwise) are also a great way to get your name out there, as people will be more than happy to advertise, in the loosest sense of the word, for you in the way win something in return. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
10. The current core technologies of the e-Retail Operations sub-discipline are e-Retail Logistics, Customer Relations Management (CRM), secure	• Agreed. Warehousing technology and product and parcel tracking is also essential for e-Commerce. Online Customer support technologies such as Zendesk and osTicket are essential for integrating customer service into Transaction Software as well as Logistics Tracking Technology.

transactions, and IT Services Management.	• Agreed. Warehouse management or store picking management, as well as courier management, should be included. • Agreed. The strategy should also include partnering with a reliable courier company. The "last mile" and face-to-face interaction that the customer experiences often happens with something that doesn't even work for the relevant online company! Ensuring that the person who delivers your goods is competent is a very necessary step to take. • Agreed. The scope should also include and warehouse management or store picking management, as well as courier management. • Agreed. All of these will be beneficial to the customers' ease of mind. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.
11. The current core technologies of the e-Retail Business Intelligence sub-discipline are Business intelligence, web analytics, competitive intelligence, and data management.	• Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.

	• Agreed. • Agreed. • Agreed.
12. Industry-referenced skills training could enhance the capacity of the e-Retail industry in South Africa and certification courses, such as, SAP Retail Associate and CISCO Cybersecurity could be useful.	• Conflict. Although SAP and CISCO are widely used in general retail and supply chain management as well as inventory, it is not commonly used in e-Commerce. Most e-Commerce businesses are using technologies built within their core platform, such as Magenta and WooCommerce which have modules for every facet of the business, or are building their own bespoke systems such as Hybrid and Kalahari DB and more with graphic user interfaces making front end UX simple. SAP would not integrate seamlessly into common e-Commerce platforms, as it is very much an "all or nothing" platform that does not like being integrated with anything else. • Agreed. The training should concentrate on PHP for Magento and Shopify. Way more sites in SA built with these platforms. • Agreed. Making more people proficient in e-Retail can only serve to further e-Retail as a whole. And if not, which I don't believe is true, it definitely cannot limit it. • Agreed. If there were baseline SEO and Performance Marketing courses available that could be useful. • Agreed. However, the challenge of sound basic business knowledge still exists. We need to overcome this challenge before embarking on any e-business training. E-Business training, no matter how sound, would be largely ineffectual without basic business knowledge, including inventory and finance. • Agreed. Fully agree with this statement; there should be continuous quality enhancement of the industry and wherever possible skills need to be improved! • Agreed. Consideration should also be given providing e-Retail capabilities to multiple inter-connected small business sectors. • Agreed. But there are many other courses that could be offered. • Agreed. • Agreed. • Agreed. • Agreed. • Agreed.

	• Agreed. • Agreed.

◊

APPENDIX 3:
DETAILED RESEARCH PLAN

Title:

E-Retail in South Africa and the Impact on Skills Development in the South African Retail Sector

Research Objectives:

Mandate

As per the Letter of Allocation of 17 February 2015 assigning Research Project Number 2015/13, "e-Retail in South Africa and the impact on skills development in the South African Retail Sector", as provided for by the WRLC Operations Management Committee e-Meeting of 5-9 February 2015, the objectives of the project will be as follows:

Develop a profile of the South African (SA) e-Retail sector, based upon the earlier International e-Retail Report, Project Number 2013/04, "e-Business Developments and Skills Requirements in the Retail Sector";

Develop a prediction of the trajectory of e-Retail over the next 5 years;

Identify the current and predicted skills needs that could result from the above prediction, resulting in a planned requirement of scarce skills over the next 5 years; and

Identify the interventions required of the W&RSETA, and other role players in the retail sector, to fill these skills gaps.

Detailed Research Plan:

Defining Subprojects

As highlighted in the declaration of the research objects (above), there are four distinct deliverables that define the scope of this research project and could be regarded as subprojects of the overall project, namely:

- Profile of the SA e-Retail Sector;
- Global Trajectory of e-Retail;
- SA e-Retail Job Skills Analysis; and
- Meeting the SA e-Retail Challenge.

The Gantt chart below provides the overarching logic of the research and an overview of the research plan.

Table 11: Gantt Chart: Implementation of the research

		February 2015				**March 2015**				**April 2015**				**May 2015**				**June 2015**				**July 2015**			
#	Activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Constitute the project team and its operations	X	X																						
2	Develop Detailed Research Plan (this document)			X	X	X																			
3	Ethics Clearance for research based on CPUT Policy						X	X	X																
4	Project No. 2013/04 implications for this project						X	X	X																
5	Identify Key Role Players of the SA e-Retail Sector									X	X	X	X												
6	Report on Subproject 1: Profile of the SA e-Retail Sector													X	X	X	X								
7	Literature Review in Support of Subproject 2									X	X	X	X												
8	Report on Subproject 2: Global Trajectory of e-Retail													X	X	X	X								
9	Focus Group in support of Subproject 3									X	X	X	X												
10	Report on Subproject 3: SA e-Retail Job Skills Analysis													X	X	X	X								
11	Delphi Group in support of Subproject 4									X	X	X	X												
12	Report on Subproject 4: Meeting the SA e-Retail Challenge																	X	X	X	X				
13	Final Report																					X	X	X	X

Each of the activities of the research plan is detailed below in order to provide the rationale for the implementation of the research.

Reference Project Number 2013/04

It is evident from the earlier International e-Retail Report, Project Number 2013/04, that the environment for e-Retail is complex, variable, and also continuously and rapidly changing. It is reasonable to assume that the South African e-Retail case would in general be consistent with the global experience. The data mining in support of this study will therefore follow a similar strategy to that of Project Number 2013/04. This study will therefore engage in both literature review and empirical data gathering.

Identify Key Role Players

The first order of business will be to establish a list of the leading role players within the South African e-Retail sector. It is important for the purposes of this study that we access a representative sample of the personalities and companies that reflect the current and aspirational state of the South African e-Retail sector. We should therefore seek to engage both the commercially dominant role players and the thought leaders in the industry. It is important that we also access relevant government departments and other agencies supporting the development of the industry.

Subproject 1: Profile of the SA e-Retail Sector

It is anticipated that Subproject 1 could be dealt with purely as a desktop research exercise.

The research team will study the earlier International e-Retail Report, Project Number 2013/04, and then contextualise all relevant aspects to the South African condition.

A key aspect of Subproject 1 will be to identify the key e-Retail role players within the South African context.

Literature Review

Taken from Robinson & Reed, 1998

Taken from Bless, 2000

Literature review is a systematic search of published work to find out what is already known about a topic. A literature review is intended to – (1) inform the theoretical framework of the research, (2) expose the latest developments around the topic, (3) identify gaps and weaknesses in previous research, (4) establish connections between related studies, (5) note emergent trends that might inform definition and treatment of the topic, and (6) evaluate research methodologies used in previous studies.

It is imperative that the body of knowledge for each of the subprojects identified above be recognised through comprehensive review of the extant literature. This will enable informed contextualisation of the performance of the South African e-Retail sector; and inform the scope of this research. The identification of relevant literature resources will be achieved by

using both popular and scholarly approaches, including – Google, Google Scholar, and various other academic databases. This will allow for the generally greater currency and relevance of information provided by popular resources, and more scientifically validated information typically provided by academic resources.

Subproject 2: Global Trajectory of e-Retail

The scope of Subproject 2 will in general be defined by the state-of-the-art of the global e-Retail industry as evidenced in the literature.

Using the Literature Review strategies detailed above, the research team will identify the trajectories of salient technological and business imperatives that could potentially impact and/or disrupt the SA e-Retail sector.

The findings of Subproject 2 however will specifically be based on the input derived from the key role players in the industry – constituted, as declared above.

Key role players will either be polled directly using a semi-structured survey instrument; and/or a multiple-choice survey instrument will be developed and deployed using a web-based survey management tool, such as – Survey Monkey. The final decision about the specific strategy to be deployed will be decided on the basis of the unfolding complexity of the initial data.

The steps of a survey are: Formulation of the Statement of Objectives; Selection of a survey frame; Determination of the sample design; Questionnaire design; Data collection; Data capture and coding; Editing and imputation; Estimation; Data analysis; Data dissemination; and Documentation.

Focus Group

Taken from Henderson, 2009

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, idea, or experience.

Subproject 3: SA e-Retail Job Skills Analysis

It is proposed that Subproject 3 will best be dealt with using the Focus Group method described above. The quality of the findings from this subproject will be dependent on the quality of participation and facilitation that we manage to put into effect.

Delphi Method

Taken from Rowe & Wright, 1999

The Delphi method is a way of working towards alignment of views. The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. In the standard version, the experts

answer questionnaires in two or more rounds. After each round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. It is believed that during this process the range of the answers will decrease and the group will converge towards the "correct" answer. Finally, the process is stopped after a pre-defined stop criterion (e.g. number of rounds, achievement of consensus, and stability of results) and the mean or median scores of the final rounds determine the results.

Subproject 4: Meeting the SA e-Retail Challenge

Looking into the proverbial crystal ball and doing justice to the requirements of Subproject 4 falls within in the domain of the experts; and the Delphi Method described above is therefore indicated.

Methodology:

Research Specification

The following methodological requirements are specified as part of the project brief:

Provide a profile of the South African e-retail sector, based upon e-retail project number 2014/04.

Based upon literature, secondary data and primary data (probably interviews), develop a prediction model/framework for e-retail in South Africa over the next 5 years

Identify the scarce skills that will result from this prediction, both in qualitative and quantitative terms.

Suggest interventions, by both the W&RSETA and other role players in the retail sector, necessary to increase availability of these skills in the sector, both via recruitment from outside the industry and capacitation of existing sector employees.

Process Design Logic

Adapted from Varney, 1996

The partitioning of the project into four subprojects has been discussed and detailed in the Gantts chart above.

The subprojects can be executed as separate projects but there is an interdependence which demands that the Process Design Logic supporting these subprojects be integrated.

It is furthermore conceivable that findings from a particular subproject might inform conception of another thereby necessitating revision of the affected subproject.

The implementation of the research project will be done in a staged fashion as illustrated in Figure 1 below:

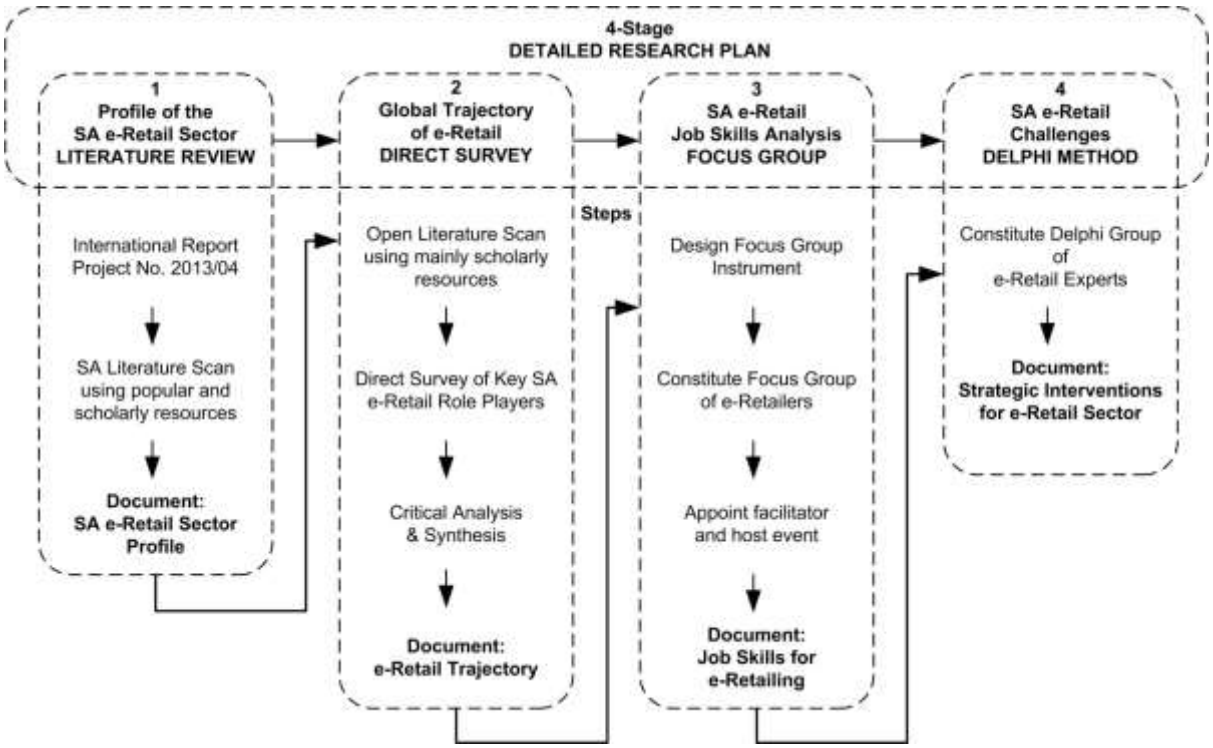

Figure 11: Staged project implementation

Thematic Approach

Adapted from Molenda, 1996

Further to the discussion on the Process Design Logic presented above, the Thematic Approach of the research is presented here.

The central focus of this research is to elucidate in pragmatic terms the standing of the SA e-Retailing sector. The interrogation will therefore be conducted to include global technology and business trends and also SA challenges and opportunities. So the central theme of the research will be to provide a Gap Analysis of the SA e-Retailing sector relative to the global condition; and establish the required Change Agenda for the SA industry to be competitive.

The study will therefore deal with the environment and strategies to promote efficacious engagement. Culture (and politics), Infrastructure, (Development) Agency, Support Systems and Resources will be considered within the strategic alignment of the environment.

Development Agency would be particularly important in informing Job Analysis and the Scarce Skills Profile that might present within the sector.

It is conceivable that the thematic approach of the study will adjusted to reflect pragmatic considerations that emerge from the empirical process.

The overarching thematic approach of the project is illustrated in Figure 12 below:

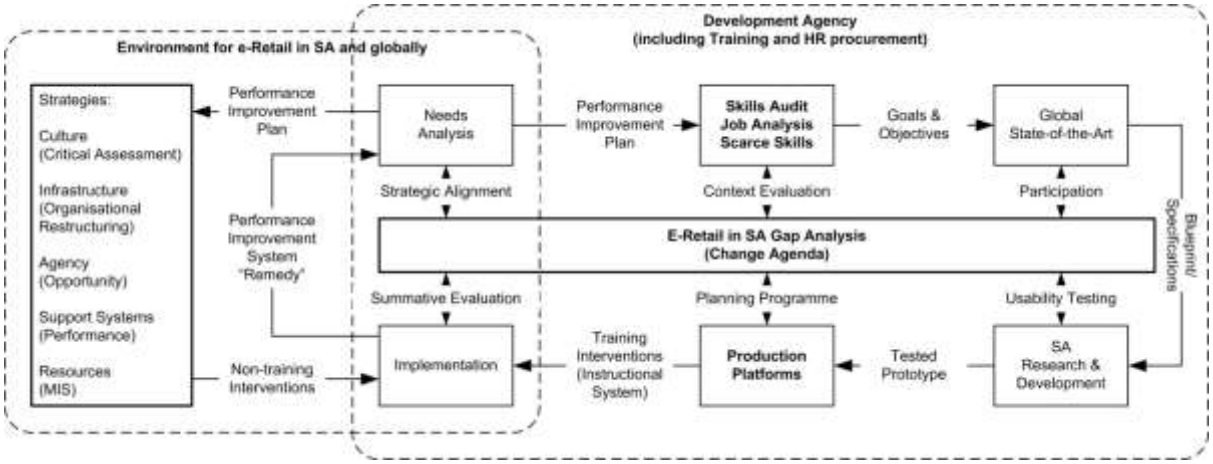

Figure 12: Thematic approach towards e-Retail gap analysis and change agenda

Research Outcomes:

Mandate

As per the Letter of Allocation of 17 February 2015 assigning Research Project Number 2015/13, “e-Retail in South Africa and the impact on skills development in the South African Retail Sector”, as provided for by the WRLC Operations Management Committee e-Meeting of 5-9 February 2015, the required research outcomes will be as follows:

Research Report

The research report will provide the following:

Profile of the South African e-retail sector, based upon e-retail project number 2014/04:

Based upon literature, secondary data and primary data (probably interviews), develop a prediction model/framework for e-retail in South Africa over the next 5 years

Identify the scarce skills that will result from this prediction, both in qualitative and quantitative terms.

Suggest interventions, by both the W&RSETA and other role players in the retail sector, necessary to increase availability of these skills in the sector, both via recruitment from outside the industry and capacitation of existing sector employees.

Conditions

The following conditions will apply in the execution of the research project:

Understand that the proposal will have to be approved by the CPUT Ethics committee and that all research must be conducted according to the CPUT Ethics policy.

Include, and facilitate participation by, a CPUT staff member in the research team as suggested by the Chair

Provide evidence of the final report having been professionally edited

If applicable, provide evidence from a statistician that the statistical methods have been checked

Submit the report for assessment by Turn-it-in, or understand that it will be assessed by Turn-it-in.

Submit a comprehensive report in electronic format plus a hard copy for evaluation by WRLC before final publication

Submit a draft copy of an article on the research which will be submitted to an accredited journal.

Work with a design specialist (who will be paid separately by WRLC) to develop an 8–12 page “visual communication” summary, ready for hard copy printing

Work with a journalist, appointed and paid by WRLC, to develop a press release on the research

Present the research at a conference organised, nominated or agreed to by the retail chair.

Research Team

Team leader

Dr Joey van Vuuren

Research Group Leader, CSIR

Lead researcher

Prof Bennett Alexander Pr Eng, DTech

Head: Department of Information Technology, CPUT

Researcher

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Bibliography

Bless, C. (2000) *Fundamentals of social research*. Lansdowne. Juta.

Canada. (2010) *Survey Methods and Practices*. National Library of Canada Cataloguing in Publication Data.

Henderson, Naomi R. (2009) Managing moderator stress: Take a deep breath. *You Can Do*

This! Marketing Research, Vol. 21 Issue 1, p28-29.

Molenda, M. (1999) Designing Instructional Systems. *In:* Craig, R., (ed). *The ASTD training and development handbook: A guide to human resource development*, Boston, Massachusetts: McGraw-Hill, pp266-293.

Robinson, D. and Reed, V., eds. (1998) *The A-Z of Social Research Jargon*. Brookfield, Vermont: Ashgate.

Rowe & Wright. (1999) The Delphi technique as a forecasting tool: issues and analysis. *International Journal of Forecasting*, Volume 15, Issue 4, October 1999.

Varney, G.H. (1996) Organisation Development and Change. *In:* Craig, R., (ed). *The ASTD training and development handbook: A guide to human resource development*, Boston, Massachusetts: McGraw-Hill, pp601-621.

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APPENDIX 4:
GLOSSARY OF TECHNICAL TERMS

A glossary of technical terms that were referenced within the Focus Group and/or Expert Group sessions is provided here, with definitions adapted from Wikipedia:

- **(Oracle) ATG:** E-commerce software provided by the Art Technology Group (ATG) featuring on-demand commerce optimisation applications and solutions that cover merchandising, marketing, content personalisation, automated recommendations, and live-help services…
- **.Net:** A software framework developed by Microsoft that runs primarily on Microsoft Windows. It includes a large class library known as Framework Class Library (FCL) and provides language interoperability (each language can use code written in other languages) across several programming languages. Programs written for .NET Framework execute in a software environment (as contrasted to hardware environment) known as Common Language Runtime (CLR), an application virtual machine that provides services such as security, memory management, and exception handling. As such, computer code written using .NET Framework is called "managed code". FCL and CLR together constitute .NET Framework…
- **3-D Secure:** An XML-based protocol designed to be an additional security layer for online credit and debit card transactions…
- **API:** In computer programming, an Application Programming Interface (API) is a set of routine definitions, protocols, and tools for building software and applications. A good API makes it easier to develop a program by providing all the building blocks, which are then put together by the programmer. An API may be for a web-based system, operating system, database system, computer hardware, or software library. An API specification can take many forms, but often include specifications for routines, data structures, object classes, variables, or remote calls. POSIX, Microsoft Windows API, the C++ Standard Template Library, and Java APIs are examples of different forms of APIs. Documentation for the API is usually provided to facilitate usage. The status of APIs in intellectual property law is controversial…
- **ASP:** Active Server Pages (ASP), later known as Classic ASP or ASP Classic, is Microsoft's first server-side script engine for dynamically generated web pages…
- **BigCommerce:** E-commerce software for businesses that offers its shopping cart product at three different levels of pricing, features, and service; and a custom enterprise-level plan...
- **Business intelligence:** BI can be described as a set of techniques and tools for the acquisition and transformation of raw data into meaningful and useful information for business analysis purposes. The term “data surfacing” is also more often

associated with BI functionality. BI technologies are capable of handling large amounts of structured and sometimes unstructured data to help identify, develop and otherwise create new strategic business opportunities. The goal of BI is to allow for the easy interpretation of these large volumes of data. Identifying new opportunities and implementing an effective strategy based on insights can provide businesses with a competitive market advantage and long-term stability. BI technologies provide historical, current and predictive views of business operations. Common functions of business intelligence technologies are reporting, online analytical processing, analytics, data mining, process mining, complex event processing, business performance management, benchmarking, text mining, predictive analytics and prescriptive analytics. BI can be used to support a wide range of business decisions ranging from operational to strategic. Basic operating decisions include product positioning or pricing. Strategic business decisions include priorities, goals and directions at the broadest level. In all cases, BI is most effective when it combines data derived from the market in which a company operates (external data) with data from company sources internal to the business such as financial and operations data (internal data). When combined external and internal data can provide a more complete picture. This represents an "intelligence" that cannot be derived by any singular set of data. Amongst myriad uses, BI tools empower organisations to gain insight into new markets, assess demand and suitability of products and services for different market segments and gauge the impact of marketing efforts…

- **C++:** A general-purpose programming language. It has imperative, object-oriented and generic programming features, while also providing facilities for low-level memory manipulation. It was designed with a bias toward system programming and embedded, resource-constrained and large systems, with performance, efficiency and flexibility of use as its design highlights. C++ has also been found useful in many other contexts, with key strengths being software infrastructure and resource-constrained applications, including desktop applications, servers (e.g. e-commerce, web search or SQL servers), and performance-critical applications…
- **Cloud computing:** Internet-based computing that provides shared processing resources and data services on demand…
- **Content as a Service:** CaaS is a service oriented model, where the service provider delivers the content on demand to the service consumer via web services that are licensed under subscription; Content is hosted by the service provider centrally over cloud and offered to numbers of consumers who need the content delivered into any applications or systems, hence content can be demanded by the consumers as and when required…

- **Crazy Egg:** Analytics software which allows website owners to analyse behaviour on their website through "heatmaps" of visitors clicks. The software was developed by Advanced Consulting Services (ACS), an online marketing firm. ACS also developed KISSmetrics, another online analytics platform…
- **CSS:** Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a mark-up language. Although most often used to set the visual style of web pages and user interfaces written in HTML and XHTML, the language can be applied to any XML document, including plain XML, SVG and XUL, and is applicable to rendering in speech, or on other media. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications…
- **Dashboard:** In management information systems, a dashboard is "an easy to read, often single page, real-time user interface, showing a graphical presentation of the current status (snapshot) and historical trends of an organisation's or computer appliance's key performance indicators to enable instantaneous and informed decisions to be made at a glance." Dashboards often provide at-a-glance views of KPIs (key performance indicators) relevant to a particular objective or business process (e.g. sales, marketing, human resources, or production). In real-world terms, "dashboard" is another name for "progress report" or "report." Often, the "dashboard" is displayed on a web page that is linked to a database which allows the report to be constantly updated. For example, a manufacturing dashboard may show numbers related to productivity such as number of parts manufactured, or number of failed quality inspections per hour. Similarly, a human resources dashboard may show numbers related to staff recruitment, retention and composition, for example number of open positions, or average days or cost per recruitment…
- **Data integrity:** This refers to maintaining and assuring the accuracy and consistency of data over its entire life-cycle, and is a critical aspect to the design, implementation and usage of any system which stores, processes, or retrieves data. The term data integrity is broad in scope and may have widely different meanings depending on the specific context – even under the same general umbrella of computing. This article provides only a broad overview of some of the different types and concerns of data integrity. Data integrity is the opposite of data corruption, which is a form of data loss. The overall intent of any data integrity technique is the same: ensure data is recorded exactly as intended and upon later retrieval, ensure the data is the same as it was when it was originally recorded. In short, data integrity aims to prevent unintentional changes to information. Data integrity is not to be confused with data security, the discipline of protecting data from unauthorised parties. Any unintended changes to data as the result of a storage, retrieval or processing operation, including malicious intent, unexpected hardware failure, and human error, is failure

of data integrity. If the changes are the result of unauthorized access, it may also be a failure of data security. Depending on the data involved this could manifest itself as benign as a single pixel in an image appearing a different colour than was originally recorded, to the loss of vacation pictures or a business-critical database, to even catastrophic loss of human life in a life-critical system…

- **Data security:** An approach to security that emphasises the security of the data itself rather than the security of networks, servers, or applications. Data-centric security is evolving rapidly as enterprises increasingly rely on digital information to run their business and big data projects become main stream. Data-centric security also allows organisations to overcome the “disconnect” between IT security technology and the objectives of business strategy by relating security services directly to the data they implicitly protect, a relationship that is often obscured by the presentation of security as an end in itself…
- **Data visualisation:** It is viewed by many disciplines as a modern equivalent of visual communication. It involves the creation and study of the visual representation of data, meaning "information that has been abstracted in some schematic form, including attributes or variables for the units of information". A primary goal of data visualisation is to communicate information clearly and efficiently via statistical graphics, plots and information graphics. Numerical data may be encoded using dots, lines, or bars, to visually communicate a quantitative message. Effective visualisation helps users analyse and reason about data and evidence. It makes complex data more accessible, understandable and usable. Users may have particular analytical tasks, such as making comparisons or understanding causality, and the design principle of the graphic (e.g. showing comparisons or showing causality) follows the task. Tables are generally used where users will look up a specific measurement, while charts of various types are used to show patterns or relationships in the data for one or more variables. Data visualisation is both an art and a science. It is viewed as a branch of descriptive statistics by some, but also as a grounded theory development tool by others. The rate at which data is generated has increased. Data created by internet activity and an expanding number of sensors in the environment, such as satellites, are referred to as "Big Data". Processing, analysing and communicating this data present a variety of ethical and analytical challenges for data visualisation. The field of data science and practitioners called data scientists have emerged to help address this challenge…
- **e-Commerce Payment:** The acceptance of electronic payment for online transactions that is also known as a sample of Electronic Data Interchange (EDI); e-Commerce payment systems have become increasingly popular due to the widespread use of internet-based shopping and banking and include systems such as Net Banking, PayPal, Paymentwall, Google Wallet, Mobile Money Wallets, and more…

- **Ecwid:** An e-commerce platform enabling individuals and businesses to create online stores or add online stores to existing websites; it has focussed on mobile commerce but has been criticised for not being an end-to-end CMS platform…
- **FIM:** Federated identity management, in information technology (IT), is about having a common set of policies, practices and protocols in place to manage the identity and trust into IT users and devices across organisations. A federated identity in information technology is the means of linking a person's electronic identity and attributes, stored across multiple distinct identity management systems…
- **Firewalls:** In computing, a firewall is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules. A firewall typically establishes a barrier between a trusted, secure internal network and another outside network, such as the Internet, that is assumed not to be secure or trusted. Firewalls are often categorised as either network firewalls or host-based firewalls. Network firewalls are a software appliance running on general purpose hardware or hardware-based firewall computer appliances that filter traffic between two or more networks. Host-based firewalls provide a layer of software on one host that controls network traffic in and out of that single machine…
- **Funnel analysis:** It involves analysis of the series of events that lead towards a defined goal. The funnel analysis is an “effective way to calculate conversion rates on specific user behaviours". This can be in the form of a sale, registration, or other intended action from an audience. The origin of the term funnel analysis comes from the nature of a funnel where individuals will enter the funnel, yet only a small number of them will perform the intended goals. For more emphasis, it makes sense why a funnel in analytics is called a funnel. An actual funnel, like the ones from a kitchen or garage, gets narrower along its length, allowing less volume to pass through it. An analytics funnel represents a very similar idea, just in regards to users on an e-Commerce platform, application or online game…
- **GoDaddy:** A publicly traded domain registrar and web hosting company that is currently purported to have had more than 61 million domain names under management…
- **Google AdSense:** A programme run by Google that allows publishers in the Google Network of content sites to serve automatic text, image, video, or interactive media advertisements, that are targeted to site content and audience. These advertisements are administered, sorted, and maintained by Google. They can generate revenue on either a per-click or per-impression basis…
- **Google AdWords:** An online advertising service that enables advertisers to compete to display brief advertising copy to web users, based in part on cookies, keywords, predefined by the advertisers that might link the copy to the content of web pages

shown to users. Web pages from Google and from partner websites are designed to allow Google to select and display this advertising copy. Advertisers pay when users divert their browsing to seek more information about the copy displayed, and partner websites receive a portion of the income they generate…

- **Google Analytics:** A freemium web analytics service offered by Google that tracks and reports website traffic. It is now the most widely used web analytics service on the Internet. Google Analytics is offered also in two additional versions: the subscription based Google Analytics 360, previously Google Analytics Premium, targeted at enterprise users and Google Analytics for Mobile Apps, an SDK that allows gathering usage data from iOS and Android Apps. Integrated with AdWords, users can now review online campaigns by tracking landing page quality and conversions (goals). Goals might include sales, lead generation, viewing a specific page, or downloading a particular file. Its approach is to show high-level, dashboard-type data for the casual user and more in-depth data further into the report set. Google Analytics analysis can identify poorly performing pages with techniques such as funnel visualisation, where visitors came from (referrers), how long they stayed and their geographical position. It also provides more advanced features, including custom visitor segmentation. Google Analytics e-commerce reporting can track sales activity and performance. The e-commerce reports show a site's transactions, revenue, and many other commerce-related metrics. Google Analytics now supports analytics in real time…
- **HTML:** Hyper Text Mark-up Language, commonly abbreviated as HTML, is the standard mark-up language used to create web pages. Along with CSS, and JavaScript, HTML is a cornerstone technology used to create web pages, as well as to create user interfaces for mobile and web applications. Web browsers can read HTML files and render them into visible or audible web pages. HTML describes the structure of a website semantically and, before the advent of Cascading Style Sheets (CSS), included cues for the presentation or appearance of the document (web page), making it a mark-up language, rather than a programming language…
- **Hybris:** Multichannel e-commerce and product content management (PCM) software provided by a subsidiary of SAP…
- **Information security:** The practice of defending information from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take, e.g. electronic, physical…
- **IT service management:** ITSM refers to the entirety of activities – directed by policies, organised and structured in processes and supporting procedures – that are performed by an organization to plan, design, deliver, operate and control information technology (IT) services offered to customers. It is thus concerned with the implementation of IT services that meet customers' needs, and it is performed

by the IT service provider through an appropriate mix of people, process and information technology. Differing from more technology-oriented IT management approaches like network management and IT systems management, IT service management is characterized by adopting a process approach towards management, focusing on customer needs and IT services for customers rather than IT systems, and stressing continual improvement…

- **JavaScript:** A high-level, dynamic, un-typed, and interpreted programming language. It has been standardised in the ECMAScript language specification.
  Alongside HTML and CSS, it is one of the three core technologies of World Wide Web content production; the majority of websites employ it and it is supported by all modern Web browsers without plug-ins. JavaScript is prototype-based with first-class functions, making it a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles. It has an API for working with text, arrays, dates and regular expressions, but does not include any I/O, such as networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded…
- **JIT:** Just-in-time (JIT) is a methodology aimed primarily at reducing flow times within production as well as response times from suppliers and to customers. In e-Retail, the JIT concept refers to order fulfilment. In the most general sense, JIT order fulfilment refers to the complete process from point of sales inquiry to delivery of a product to the customer. Sometimes Order fulfilment is used to describe the narrower act of distribution or the logistics function, however, in the broader sense it refers to the way firms respond to customer orders…
- **Joomla:** A free and open-source content management system (CMS) for publishing web content that is built on a model–view–controller web application framework that can be used independently of the CMS...
- **JSP:** JavaServer Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types. JSP is similar to PHP and ASP, but it uses the Java programming language…
- **Kanban development approach:** Kanban in the context of software development provides a visual process-management system that aids decision-making concerning what to produce, when to produce it, and how much to produce and although the method originated in software development and IT projects, the method is more general in that it can be applied to any professional service, where the outcome of the work is intangible rather than physical…
- **Klipfolio Dashboard:** An online dashboard platform for building real-time business dashboards. It allows business users to connect to many data services, automate data retrieval, and then manipulate and visualise the data. Klipfolio uses a schema-less architecture that allows non-technical end users to more easily connect to data sources, and separates data from presentation to more efficiently use and reuse

data sources throughout the platform. Klipfolio Dashboard Online has built-in formula editing, allowing end-users to transform, combine, slice, and filter any data before visualising it. Users are able to access the dashboard from their desktop, tablet, TV, and mobile phone, and share it with colleagues by granting access to the dashboard, or by scheduling email reports…

- **LAMP:** A web service solution stack, named as an acronym of the names of its original four open-source components: the Linux operating system, the Apache HTTP Server, the MySQL relational database management system (RDBMS), and the PHP programming language, that is suitable for building dynamic web sites and web applications…
- **Magento:** An open-source e-commerce platform written in PHP and provides new ways to heighten user engagement, smooth navigation, conversion rates and overall revenue generation, it has well-organised business user tools that speed up build up time and enhance productivity…
- **Mobile Technology:** Cellular communication devices that can be used as mobile phones, GPS navigation devices, an embedded web browser and instant messaging client, a handheld game console, and more…
- **MS Server:** Microsoft Servers (previously called Windows Server System) is a brand that encompasses Microsoft's server products. This includes the Windows Server editions of the Microsoft Windows operating system itself, as well as products targeted at the wider business market. Unlike Microsoft Dynamics or Microsoft Office product lines, most of the products sold under this brand are not intended to be line-of-business services in and of themselves…
- **Multichannel marketing:** The ability to interact with potential customers on various platforms. In this sense, a channel might be a print ad, a retail location, a website, a promotional event, a product package or even word of mouth. Multichannel marketing is about choice. The objective of the companies doing the marketing is to make it easy for a consumer to buy from them in whatever way is most appropriate…
- **Omni-channel:** A cross-channel business model that companies use to increase customer experience. The approach has verticals in (say) - healthcare, government, financial services, retail, and telecommunications industries, including channels such as physical locations, FAQ webpages, social media, live web chats, mobile applications and telephone communication. Companies that use an omni-channel approach contend that a customer values the ability to be in constant contact with a company through multiple avenues at the same time…
- **Online Reputation Management:** This refers to influencing and controlling an individual's or business's reputation. Originally a public relations term, the expansion of the internet and social media, along with reputation management companies, has made it primarily an issue of search results. Online reputation management,

sometimes abbreviated as ORM, is primarily concerned with managing the results on websites that evaluate products and services and make recommendations and referrals. Ethical grey areas include mug shot removal sites, astroturfing review sites, censoring negative complaints or using search engine optimisation tactics to influence results…

- **Online targeting:** An online advertising approach where advertisers use a series of methods to showcase a particular advertisement to a specific group of people. Advertisers use these techniques in order to find distinct individuals that would be most interested in their product or service. With the social media practices of today, advertising has become a very profitable industry. People are constantly exposed to advertisements and their content, which is the key to their success. In the past, advertisers had tried to build brand names with television and magazines advertising; however, advertisers have been using audience targeting as a new form of medium. The rise of internet use and its wide availability has made this possible for advertisers. Targeting specific audiences has allowed advertisers to constantly change the content of the advertisements to fit the needs and interests of the individual viewer. The content of different advertisements is presented to each consumer to fit their individual needs…
- **Oracle Application server:** The popular Oracle Application Server 10g (the "g" stands for grid), consists of an integrated, standards-based software platform. It forms part of Oracle Corporation's Fusion Middleware technology stack. The heart of Oracle Application Server consists of Oracle HTTP Server (based on the Apache HTTP Server) and OC4J (Oracle AS Containers for Java EE) which deploys Java EE-based applications. Oracle Application Server became the first platform designed for grid computing as well as with full life-cycle support for service-oriented architecture (SOA)…
- **PCI DSS:** The Payment Card Industry Data Security Standard (PCI DSS) is a proprietary information security standard for organisations that handle branded credit cards from the major card schemes, including, Visa, MasterCard, American Express, Discover, and JCB; The standard was created to increase controls around cardholder data to reduce credit card fraud…
- **PHP:** PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. The PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive acronym PHP Hypertext Pre-processor. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the

interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications…

- **PL/SQL:** Procedural Language/Structured Query Language is Oracle Corporation's procedural extension for SQL and the Oracle relational database. PL/SQL is available in Oracle Database and IBM DB2. Oracle Corporation usually extends PL/SQL functionality with each successive release of the Oracle Database. PL/SQL includes procedural language elements such as conditions and loops. One can create PL/SQL units such as procedures, functions, packages, types, and triggers, which are stored in the database for reuse by applications that use any of the Oracle Database programmatic interfaces…
- **POPI:** Protection of Personal Information (POPI) Act was signed into law in South Africa. This legislation is designed to bring the country's laws in line with international standards surrounding the protection of personal information…
- **PrestaShop:** A free, open source e-commerce solution published under the Open Software License (OSL) and is written in the PHP programming language with support for the MySQL database management system; it is currently used by 250,000 shops worldwide and is available in 60 different languages…
- **Python:** A widely used high-level, general-purpose, interpreted, dynamic programming language. Its design philosophy emphasises code readability, and its syntax allows programmers to express concepts in fewer lines of code than possible in languages such as C++ or Java. The language provides constructs intended to enable clear programs on both a small and large scale. Python supports multiple programming paradigms, including object-oriented, imperative and functional programming or procedural styles. It features a dynamic type system and automatic memory management and has a large and comprehensive standard library…
- **Ruby on Rails:** A web application framework, written in Ruby under the MIT License, that provides a model–view–controller (MVC) framework for providing default structures for a database, a web service, and web pages…
- **Secure Socket Layers (HTTPS):** Transport Layer Security (TLS) and its predecessor, Secure Sockets Layer (SSL), both of which are frequently referred to as "SSL", are cryptographic protocols that provide communications security over a computer network. Several versions of the protocols are in widespread use in applications such as web browsing, email, Internet faxing, instant messaging, and voice-over-IP (VoIP). Major web sites use TLS to secure all communications between their servers and web browsers…
- **SEO:** Search engine optimisation (SEO) is the process of affecting the visibility of a website or a web page in a web search engine's unpaid results — often referred to

as natural, organic, or earned results. In general, the earlier (or higher ranked on the search results page), and more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users, and these visitors can be converted into customers. SEO may target different kinds of search, including image search, local search, video search, academic search, news search and industry-specific vertical search engines. As an Internet marketing strategy, SEO considers how search engines work, what people search for, the actual search terms or keywords typed into search engines and which search engines are preferred by their targeted audience. Optimising a website may involve editing its content, HTML and associated coding to both increase its relevance to specific keywords and to remove barriers to the indexing activities of search engines…

- **Shopify:** E-commerce software for online stores and retail point-of-sale systems currently supporting around 275 thousand merchants using its platform with total gross merchandise volume exceeding $10 billion…
- **SIEM, SIM and SEM:** In the field of computer security, security information and event management (SIEM) software products and services combine security information management (SIM) and security event management (SEM). They provide real-time analysis of security alerts generated by network hardware and applications…
- **SLA:** A service-level agreement (SLA) is part of a standardized service contract where a service is formally defined. Particular aspects of the service – scope, quality, responsibilities – are agreed between the service provider and the service user. A common feature of an SLA is a contracted delivery time (of the service or performance). As an example, Internet service providers will commonly include service level agreements within the terms of their contracts with customers to define the level(s) of service being sold in plain language terms…
- **Smart SCM:** In commerce, supply chain management (SCM), the management of the flow of goods and services, involves the movement and storage of raw materials, of work-in-process inventory, and of finished goods from point of origin to point of consumption. Interconnected or interlinked networks, channels and node businesses combine in the provision of products and services required by end customers in a supply chain. Supply-chain management has been defined as the "design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronising supply with demand and measuring performance globally. The notion of Smart simply refers to the SCM being a Self-Monitoring, Analysis and Reporting Technology…
- **Software as a Service:** SaaS is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted; SaaS is typically accessed by users using a thin client via a web browser; SaaS has become a common

delivery model for many business applications, including office and messaging software, payroll processing software, DBMS software, management software, CAD software, development software, gamification, virtualisation, accounting, collaboration, customer relationship management (CRM), management information systems (MIS), enterprise resource planning (ERP), invoicing, human resource management (HRM), talent acquisition, content management (CM), antivirus software, and service desk management; SaaS has been incorporated into the strategy of nearly all leading enterprise software companies…

- **SQL:** Structured Query Language is a special-purpose programming language designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, data manipulation language, and Data Control Language. The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. Although SQL is often described as, and to a great extent is, a declarative language (4GL), it also includes procedural elements…
- **SSO:** Single sign-on (SSO) systems allow a single user authentication process across multiple IT systems or even organisations. SSO is a subset of federated identity management, as it relates only to authentication and technical interoperability; Related to federated identity is single sign-on (SSO), in which a user's single authentication ticket, or token, is trusted across multiple IT systems or even organisations. SSO is a subset of federated identity management, as it relates only to authentication and is understood on the level of technical interoperability…
- **Tag Manager:** A tag management system created by Google to manage JavaScript and HTML tags used for tracking and analytics on websites…
- Thawte: A certificate authority (CA) that issues certificates to approve authenticity and security of transactions; Thawte was founded in 1995 by Mark Shuttleworth in South Africa and is the fifth largest public CA on the Internet…
- **Treejack:** Tree testing is a usability technique for evaluating the findability of topics in a website. It's also known as "reverse card sorting" or "card-based classification". The Treejack software utility deploys artificial intelligence to reduce websites to its text content only by removing all graphic content. The text is then analysed on the basis of the clustering of specific keywords that informs the logic of the information provision…
- **uAfrica.com:** A technology company providing cloud based e-Commerce services to SMEs across Africa that supports a centralised inventory and order management system that allows retailers to list their products in one central place, and have those products automatically synchronised across multiple sales channels, both online and offline, across multiple devices...

- **Web Analytics:** Web analytics is the measurement, collection, analysis and reporting of web data for purposes of understanding and optimising web usage. However, Web analytics is not just a process for measuring web traffic but can be used as a tool for business and market research, and to assess and improve the effectiveness of a website. Web analytics applications can also help companies measure the results of traditional print or broadcast advertising campaigns. It helps one to estimate how website traffic changes after the launch of a new advertising campaign. Web analytics provides information about the number of visitors to a website and the number of page views. It helps gauge traffic and popularity trends which is useful for market research…
- **Web Services:** Services offered by one electronic device to another, communicating with each other via the World Wide Web…
- **Web Technology:** Development software that includes – content management systems, search engine software, web development software, web accelerators, portal software, web server software, and more…
- **WooCommerce:** An open source e-commerce plugin for WordPress designed for small to large-sized online merchants using WordPress and became popular for its simplicity to install and customise and free base product…
- **XAMPP:** A free and open source cross-platform web server solution stack package developed by Apache Friends, consisting of a cross-platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P) as a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes…

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APPENDIX 5:
ETHICS CLEARANCE

Cape Peninsula University of Technology

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Symphony Road Bellville 7535

Office of the Chairperson Research Ethics Committee	**Faculty:** **BUSINESS**

At a meeting of the Research Ethics Committee on 25 March 2015, **Ethics Approval**

was granted to Dr O Janse van Vuuren (CSIR) **for research activities Related to the:** WRLC (Wholesale & Retail Leadership Chair) within the RETAIL BUSINESS MANAGEMENT DEPARTMENT, Business Faculty **at the Cape Peninsula University of Technology**

Title of Project:	E-Retail in South Africa and the impact on skills development in SA retail sector Supervisor: Prof RB Mason

Comments:

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	**25 March 2015** **Date**
Signed: Chairperson: Faculty Research Committee	**Date**

Clearance Certificate No | 2015**FBREC258**

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APPENDIX 6:
FOCUS GROUP

#	Organisation	Designation	Role in Research
1	University	Business academic	Academic
2	Research Agency	Cybersecurity specialist	Academic
3	University	Disruptive technology researcher	Academic
4	IT SME	CEO / Tech expert	IT
5	IT SME	CEO / Tech expert	IT
6	IT SME	Software entrepreneur	IT
7	IT SME	CEO / Business and IT specialist	IT
8	National Retailer	e-Retail specialist	Retail
9	National e-Retailer	e-Retail specialist	Retail
10	Consultant	e-Retail specialist	Retail
11	Consultant	e-Retail specialist	Retail
12	National Retailer	Digital marketing specialist	Retail
13	Consultant	Digital marketing specialist	Retail
14	National Service Company	Sales and marketing consultant	Retail
15	Digital Marketing Company	CEO	Retail
16	Innovation Agency	Retail business management	Retail
17	National Retailer	Market research analyst	Strategist
18	Global Internet Provider	Industry analyst	Strategist
19	Global Internet Provider	Program manager: Education	Strategist
20	International Digital Services Provider	Strategist	Strategist

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APPENDIX 7:
EXPERT GROUP

#	Organisation	Designation	Role in Research
1	IT SME	CEO / Tech expert	IT
2	IT SME	CEO / Business and IT specialist	IT
3	National Retailer	e-Retail specialist	Retail
4	National e-Retailer	e-Retail specialist	Retail
5	Consultant	e-Retail specialist	Retail
6	Consultant	e-Retail specialist	Retail
7	National Retailer	Digital marketing specialist	Retail
8	Consultant	Digital marketing specialist	Retail
9	National Service Company	Sales and marketing consultant	Retail
10	Digital Marketing Company	CEO	Retail
11	Innovation Agency	Retail business management	Retail
12	National Retailer	Market research analyst	Strategist
13	Global Internet Provider	Industry analyst	Strategist
14	Global Internet Provider	Program manager SSA	Strategist
15	International Digital Services Provider	Strategist	Strategist

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APPENDIX 8:
CURRICULUM DEVELOPMENT TEAM

#	Organisation	Designation	Role in Research
1	University 1	Head: Department of Retail Business Management	Academic
2	University 1	Senior Lecturer: Department of Retail Business Management	Academic
3	University 1	Lecturer: Department of Retail Business Management	Academic
4	University 2	Head: Department of Retail Business Management	Academic
5	University 2	Lecturer: Department of Retail Business Management	Academic
6	University Agency	Materials Developer	Academic

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