

CHAPTER 4 Information communication technology

4.1 INTRODUCTION

Up until this point discussions have concentrated on needs for enterprises to become more customer-centric in their approach to marketing. In the previous chapter advances in information communication technology was singled out as a significant driver of change in marketing, particularly in marketing communication. This chapter draws on properties of information communication technology. It considers how people are using computer-mediated communication and the potential implementation opportunities of these channels in the context of marketing communication.

The implications of recent information communication technology developments resonate in an early statement from McLuhan:

"The medium is the message. This is merely to say that the personal and social consequences of any medium—that is, of any extension of ourselves—result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology" McLuhan (2006:107).

Computer-mediated media have not only introduced new forms of media but also new methods of communicating (like interactivity) as well as synchronous and asynchronous communication. Digitalisation of information effectively produces liquid content that can flow across different digital media platforms, unlike traditional media, where content was restrained to a single media format. Thus, in reference to the first part of McLuhan's quote, does the medium still remain the message in light of content digitisation? Given the introduction of digital media offerings like social media and mobile phone media which exert both personal and social consequences, in McLuhan's context the medium is perhaps still the message. These innovations impact on the communication mix, particularly in relationship and micro-marketing applications. Although digital distribution



channels and commerce aspects do not form part of this discussion, they too have impacted on marketing practices and customer behaviour, especially with respect to the acquisition of virtual offerings. New technology creates both new markets and new opportunities (Kotler & Armstrong, 2010:107).

Innovative development in information technology communication systems is continuous and as such when addressing aspects of technology delimitations are necessary to border the parameters of discussion, in both time period and specific technology sectors. It is for this reason that implementation suggestions, to contextualise this discussion, will be restricted to two recent prevalent consumer technological developments in the market place, namely a) social network systems and b) mobile phones. Electronic social network systems have shown prolific rates of adoption, which hints at a possible transformation in social communication (Hjorth, 2008:91). Mobile phones have been highlighted for three key reasons, a) widespread penetration and permeation into everyday life (May & Hearn, 2005:195); b) fast-paced developments, for example, smartphones are characterised as technology convergence devices expanding capabilities of devices to perform utilitarian and non-utilitarian operations (Hjorth, 2008:95); and c) in the South African context, mobile phones represent the leading digital medium (AMPS 2010-2011), refer to Table 4.1.

Table 4.1: Telecommunication penetration of South African adult population

PARAMETER		PERCENTAGE PENETRATION OF SOUTH AFRICAN ADULTS
Own/rent/use cell phones		80%
Own laptop or computer in home		25%
Accessed the Internet in the:	-Past 12 months	20%
	-Past 4 weeks	18%
	-Past 7 days	16%
	-Yesterday	11%
Place accessed the Internet from:	-Home	10%
	-Educational institution	2%
	-Internet café	3%
	-Office	5%
	-Elsewhere	5%
Use social media networks		11%
Use cell phone/GPRS/Edge to acce	ess the Internet	6%

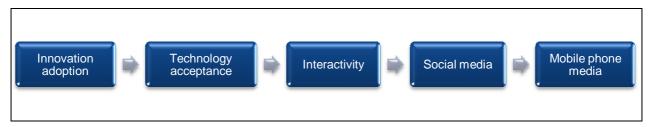
Source: All media product survey July 2010-June 2011 (AMPS 2010-2011)



VA PRETORIA CHAPTER 4 Information communication technology

Furthermore, because technology developments are ongoing in the information communication arena, it is arguably important, for parallel academic progress, to explore concepts, when studying digital media, which go beyond the limits of each medium. Figure 4.1 provides the framework for the structure of this chapter.

Figure 4.1: Chapter framework of Chapter 4



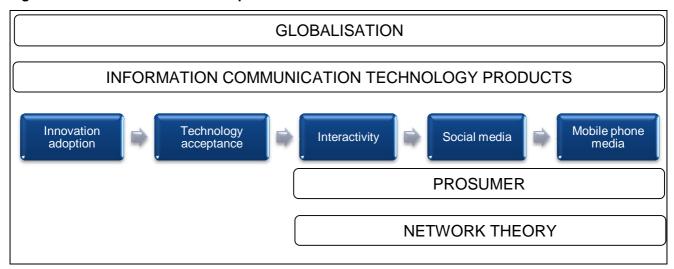
Information communication technology (ICT) is an expansive area of study, growing continuously with society's increasing dependence on its application in contemporary living. It is therefore impossible to include all aspects of this domain into a single study. There are however certain subjects which although related to the topics under discussion are considered peripheral to this study, and for this reason will not form part of the research. These specific subjects are: a) globalisation (as a significant driver of change) (Giddens, 1991), b) products of ICT (hardware and software develop and obsolesce rapidly) (Moore, 1998), c) prosumption (the notion that production and consumption is simultaneous) (Ritzer & Jurgenson, 2010), and d) network theory (specifically the concepts of many-to-many marketing and the interactions between nodes within the network) (Gummesson, 2008b). Their assumed positions relative to the contents of the chapter are indicated in Figure 4.2.



CHAPTER 4

Information communication technology

Figure 4.2: Contextualisation of Chapter 4



4.2 INNOVATION ADOPTION

The success of an innovation is contingent upon its adoption. New innovations are seldom adopted overnight. Customers carefully process decisions about adopting them. Some of the factors influencing these decisions include: lifestyle, life stage, affordability, needs, wants and social pressures. Three prominent models that help to explain adoption of innovation with respect to new product offerings are a) the adoption process, b) adoption stages, and c) innovation characteristics, which respectively address process of adoptions, differences in human characteristics towards innovation and characteristics of the innovation. The models are outlined below and applications to information communication technology media are noted.

4.2.1 Adoption process

The decision to use new media platforms as well as the devices used to access new media is comparable to the adoption process customers apply when considering the purchase of new products. According to Kotler and Armstrong (2010:182) customers pass through a five stage adoption process when adopting a new product (see Table 4.2).

CHAPTER 4

Information communication technology

Table 4.2: Five stage adoption process when adopting a new product

STAGE

DESCRIPTION

1 AWARENESS

The consumer becomes aware of the new product, but lacks information about it.

2 INTEREST

The consumer seeks information about the new product.

3 EVALUATION

The consumer considers whether trying the new product makes sense.

4 TRIAL

The consumer tries the new product on a small scale to improve his or her estimate of its value.

5 ADOPTION

The consumer decides to make full and regular use of the new product.

Source: Kotler and Armstrong (2010:182)

Based on these stages of the adoption process one could reasonably conclude that in South Africa uptake of mobile phones has already occurred with penetration figures of 80% (AMPS 2010-2011). Therefore the relevance of the model has little bearing on adoption of this platform. However, the extent of intra-adoption of specific applications and functionality offered by mobile phones is uncertain.

4.2.2 Differences in innovation

Individuals have different propensities to adopt new products or ideas, some adopt innovations at the outset, others take much longer to accept new ideas. It is important to recognise that different people have different levels of adoption. Individuals' differing adoption rates can be classified into five adopter categories as outlined in Table 4.3. The adoption categorisation, based on innovativeness, originated from Rogers (1983:247).

Table 4.3: Adoption categories

CA	TEGORY	DESCRIPTION
1	INNOVATORS	This segment tries new ideas at some risk. They are the first 2.5% of people to adopt a new idea.
2	EARLY ADOPTERS	This segment are opinion leaders who adopt new ideas early but cautiously. Early adopters account for the next 13.5% to adopt an idea.
3	EARLY MAJORITY	This segment tends to adopt new ideas before the average person. This segment accounts for the next 34% of people to adopt the innovation.
4	LATE MAJORITY	This segment only adopts an idea after it has been accepted by the majority and its members consist of the next 34% to adopt the new idea.
5	LAGGARDS	This segment does not accept change easily and only adopt the new idea when it becomes mainstream and make up the last 16% to take up the idea.

Source: Kotler and Armstrong (2010:182)

Kotler and Armstrong (2010:183) describe innovators, in comparison to later adopters and non-adopters, as people who are typically younger, more educated and earning a higher

CHAPTER 4 Information communication technology

income. Innovators are more open to novel things and rely on self judgement to make decisions, which may be perceived as riskier than other adopters. Generation Y resembles these innovator attributes. These characteristics are just as pertinent to new media developments as they are to new products, which infers that Generation Y are part of the forefront of digital media adopters.

The innovator segment is a critical group because they represent the first stage of adoption, from which there is potential for the offering to go mainstream. However, innovators pose challenges to marketers, whilst they may be responsible for helping to ignite new ideas and spread them to a broader market by trying new ideas early on, this characteristic implies that as quickly as they try something new, they leave it behind moving on to experiment with the next innovation that appeals to them. Thus they are likely to be less brand loyal than their counterparts (Kotler & Armstrong, 2010:183).

4.2.3 Influence of product characteristics on rate of adoption

The adoption of an innovation is also dependent on the appeal of its characteristics to prospective users. See Table 4.4 for an overview of five key characteristics that play a role in the rate of adoption.

Table 4.4: Innovation characteristics

CH	ARACTERISTICS	DESCRIPTION
1	RELATIVE ADVANTAGE	Innovation superiority. How does the innovation rate in comparison to other products?
2	COMPATIBILITY	The extent that the innovation synergises with the user's values and expectations.
3	COMPLEXITY	This concerns the level of difficulty in understanding the innovation and using it.
4	DIVISIBILITY	This characteristic is orientated around risk, it concerns the degree to which a user can experience the innovation on a limited basis prior to committing to it.
5	COMMUNICABILITY	The extent to which the user can communicate their experience of the innovation to others.

Source: Kotler and Armstrong (2010:183)

YA PRETORIA CHAPTER 4 Information communication technology

In general terms it is fair to assume successive innovations in digital media are expected to rate highly against all the aforementioned innovation characteristics, for the following reasons:

- It is likely to enhance features of an existing product or launch new ones. The
 market is accustomed to product upgrades and the general improvements they
 introduce (relative advantage).
- Digitised products are a reality of modern living, so it is probable that new digital media types will readily integrate into customer lifestyles (compatibility).
- At the risk of alienating their customers most developers tend not to interfere with successful operating systems. Thus customers do not have to unlearn and relearn operations. However people are increasingly likely to interact with a variety of digital products, which broadens their knowledge of different digital products. This increased familiarity improves general understanding of digital media (complexity).
- Software applications usually allow free trial downloads for use over a limited period, thus aiding trial-ability (divisibility).
- Digital media addresses the characteristic of communicability from two perspectives. Firstly, from a product or offering perspective, for the reason that digital media form an integral part of society, therefore innovations in this domain are topical points of discussion. Secondly, from a media perspective, digital media are platforms of communicability, through which customers are likely to use to express and share their opinions with others. Depending on the specific application customers have access to alternative means of communicating (text, multi-media) as well as the opportunity to broadcast or narrowcast the communication (communicability).

Other factors also affect the rate and degree to which a new product, idea or behaviour is adopted. For instance, social acceptance, risk associated with behaviour, accessibility, and financial requirements. Some products, for example, social networks require critical mass to be effective. A social network cannot function in its intended way unless it has secured sufficient subscribers who additionally have social affiliations for one another.



4.3 TECHNOLOGY ACCEPTANCE MODEL

Continuing the theme of innovation adoption models, but emphasising technology adoption is the technology acceptance model (TAM) that applies specifically to technology acceptance or rejection.

Davis, Bagozzi and Warshaw (1989:983) mention that research progress in the area of understanding individuals' propensity to accept or reject computer technology was hindered by the fact that, at the time, researchers were approaching the topic from different perspectives without a central point of reference. This is in direct support of Kuhn's (1970:13) observation that advancement in an area of research requires a unifying paradigm to ground the research.

Perhaps the general adoption of the technology acceptance model (TAM) by researchers has contributed to the advancement of technology acceptance research by way of providing a common approach.

TAM and its various derivatives have been widely used in marketing in the context of customer acceptance and adoption of new technology systems (Bauer, Barnes, Reichardt & Neumann, 2005; Hsu & Lin, 2008; Kim, Chan & Gupta, 2007; Kwon & Wen, 2010; López-Nicolás, Molina-Castillo & Bouwman 2008; Varnali *et al.*, 2011;Wu & Wang, 2005; Yang, 2005; Zhou, 2008). As one of the principle models deployed in empirical research it deserves discussion. A chronological account covering academic milestones in the formation and evolution of TAM follows. Note TAM does not form a critical component of this study hence the brevity of the following account which has been limited to salient developments.

4.3.1 The technology acceptance model: understanding users' acceptance of technology

Davis (1985) developed the technology acceptance model (TAM) to address user acceptance of computer-based information systems, in an organisational context. TAM



was designed to deal with two objectives, a) to advance understanding of user acceptance processes, with the intention to use this knowledge to the betterment of designs and implementation of information systems; and b) to test user acceptance of designs prior to implementation (Davis, 1985:7). This thesis is orientated around the first objective; it is anticipated that the insights obtained through improved understanding of how customers relate to digital media can be applied to improve the way practitioners design and implement their promotions and or applications via digital media.

TAM is an adaptation of the theory of reasoned action (TRA) model (Davis, 1985:13). Where TRA has general applicability, to explain almost any human behaviour, TAM specifically accounts for human behaviour towards information systems use (Davis *et al.*, 1989:983). TAM asserts that two beliefs, *perceived usefulness* and *perceived ease of use* are most significant for technology acceptance behaviour (Davis *et al.*, 1989:985). Davis (1989:320) defines *perceived usefulness* as "the degree to which a person believes that using a particular system would enhance his or her job performance"; and *perceived ease* of use as "the degree to which a person believes that using a particular system would be free of effort". According to Davis (1989:320) the likelihood of people using an application depends on the degree to which they believe the application will enhance their job performance. Davis (1989), through empirical research, derived three clusters for each construct, listed in Table 4.5.

Table 4.5: Perceived usefulness and perceived ease of use constructs and their respective substrata clusters

PERCEIVED USEFULNESS	PERCEIVED EASE OF USE
Job effectiveness	Physical effort
Productivity / time saving	Mental effort
Importance of system to one's job	Ease of learning

Source: Davis (1989)

In TAM behavioural intention to use an application is the sum of perceived usefulness and attitudes towards using the application (Davis *et al.*, 1989:988). Figure 4.3 denotes the linkages between, external variables, beliefs, attitudes towards use, behavioural intention to use and finally actual system use. (Refer to Davis *et al.*, 1989:985-989, for a comprehensive explanation of relationships between variables in the TAM). Note in this



discussion only the architecture of the initial TAM will be depicted (Figure 4.3) on account that this model does not form part of this study's investigative procedures.

Perceived Usefulness (U) Attitudes Behavioral Actual System External towards using Intention to Variables Use Use (BI) (A) Perceived Ease of Use (EOU)

Figure 4.3: Technology Acceptance Model (TAM)

Source: Davis et al., (1989:985)

4.3.2 TAM evolves to TAM2: Expanding determinants of perceived usefulness

Venkatesh and Davis (2000) developed TAM2 as an extension of TAM to explain perceived usefulness and intent to use through additional determinants of *social influences* and *cognitive instrumental processes*.

The social factors used in TAM2 are: a) subjective norm, b) voluntariness, and c) image. The decision to elaborate on the subjective norm factor is twofold. Firstly, its inclusion in TAM2 was partly motivated by the TRA model, which was the foundation of the initial TAM, and secondly, its aspect of social influence. Subjective norm in this context relates to an individual's decision to behave in a particular way on the basis of how they think people who are important to them would expect them to behave, even if this behaviour goes against their personal belief structures (Venkatesh & Davis, 2000:187). This author believes that the original TAM was deficient by excluding social influence on individuals' behaviour; conforming to behaviour that is aligned to group norms contributes to an individual's acceptance by their community. The adoption category model (Section: 4.2.2) recognised the influence certain people exert on others to adopt an offering. Venkatesh and Davis (2000:189) suggest that the effects of social norms lessen over time as users

VA PRETORIA CHAPTER 4 Information communication technology

gain more experience of the application in question. It could be argued that this thinking aligns with stages of adoption of innovation, because as the new innovation becomes absorbed into a society, it becomes an accepted social norm. It is conceivable that the emergence of new social norms are outcomes of anti-foundationalism and the processing of forming a social norm involves the notion of pastiche perhaps a blending of different aspects to construct the norm.

The cognitive instrumental determinants applied in TAM2 are: a) job relevance, b) output quality, c) result demonstrability, and d) perceived ease of use (Venkatesh & Davis, 2000:186). The rationale for including cognitive instrumental determinants of perceived usefulness into the model is that people evaluate the capabilities of a system in accordance with the needs they require to fulfil their tasks (Venkatesh & Davis, 2000:190).

4.3.3 Expanding determinants of perceived ease of use

Venkatesh (2000) expanded on determinants of perceived ease of use to understand how perceptions evolve with increased familiarity of a system. In reference to TAM, the construct of perceived usefulness is influenced by perceived ease of use, because technologies that are easy to use are more useful (Venkatesh, 2000:343). The two determinants Venkatesh (2000:343) proposed are: anchors which comprises of a) computer self-efficacy, b) perceptions of external control, c) computer anxiety (emotion), and d) computer playfulness (intrinsic motivation); and the adjustments, which consists of a) perceived enjoyment and b) objective usability (Venkatesh, 2000:346). Venkatesh's (2000:360) empirical research of the determinants proposed for perceived ease of use revealed that an individual's overall beliefs about a system were the strongest determinants of perceived ease of use of the system, even after significant use of the system. Venkatesh (2000:360) concluded that greater emphasis should be placed on educating individuals about technology in general, to affect their general belief of systems, as this has a greater influence on perceived ease of use than actually interacting with the system. Arguably as a more technologically astute generation entering the workforce with greater knowledge of technology they will have an advantage over their predecessors and will be more inclined to accept new technology systems in the workplace.

VA PRETORIA CHAPTER 4 Information communication technology

In recognition of Venkatesh's finding that overall beliefs are more important to perceived use of a system than actual experience of it, potentially a high prevalence of electronic gaming (computers, consoles, mobile phones and other devices) amongst youth contributes positively to their overall beliefs of technology systems. Conceivably the experiences acquired through this play and experimentation with gaming products, make interactions with almost any technology feel like second nature to this generation. The logic behind the latter point relates to the concept of *perceived affordances* (Norman, 1999:39), where relationships between people and objects in their environment appear to exist naturally, so that people are able to interface with systems they have not had prior exposure to. Norman (1999:39) maintains that people are able to use new systems or programmes that they have never had prior exposure to, because they relate the functionality of these offerings to their pre-existing knowledge, where they may have confronted a similar phenomenon.

Are TAM constructs still valid?

TAM's usefulness comes into question, particularly the construct of perceived ease of use, as barriers to technology are lowered, and society becomes more technologically literate? Perhaps this is reason to adapt TAM further by possibly excluding the construct of perceived ease of use from the model?

4.3.4 United theory of acceptance and use of technology

By 2003 several information technology acceptance models had evolved, each featuring different sets of acceptance determinants. In *User Acceptance of Information Technology: Toward a Unified View*, Venkatesh, Morris, Davis, and Davis (2003), after evaluating eight information technology acceptance models, proposed a unified model for information technology acceptance research, called the *Unified Theory of Acceptance and Use of Technology* (UTAUT). UTAUT integrates critical aspects from the analysed models (Venkatesh *et al.*, 2003:468). Bagozzi (2007:245) also supports the drive for a unified theory.

CHAPTER 4

Information communication technology

Are consolidated models sensible?

This author supports the synthesis of existing knowledge into an alternative consolidating research model, but in view of today's postmodern society questions if a unified approach is desirable or even realistically achievable, especially in a rapidly evolving field like information technology.

4.3.5 Expansions and adaptations of TAM

Several researchers of recent studies have modified TAM, either through expansion or integration with other models to pursue explanation and understanding of their research problems, some of which are highlighted below:

- Bauer et al. (2005), developed a model of consumer acceptance for mobile marketing with an emphasis on innovation-based and consumer-based acceptance drivers. They found entertainment and information value to be the most significant factors for customer acceptance of advertising on mobile phones.
- Hsu and Lin (2008), developed a model which integrated TAM, knowledge sharing and social influences to study what motivates people to participate in blogs.
- Kim et al. (2007), examined the adoption of mobile Internet from the value perspective and developed the value-based adoption model (VAM) to explain customers adoption of mobile Internet from the value perspective.
- Kwon and Wen (2010), modified TAM to address social identity, altruism, telepresence and encouragement to study factors affecting social network use.
- López-Nicolás *et al.* (2008), developed a conceptual model integrating TAM and diffusion theory, similarly to Wu and Wang (2005).
- Wu and Wang (2005), integrated innovation diffusion theory, perceived risk and cost into TAM to research determinants of users' acceptance of mobile commerce.
- Zhou (2008), like López-Nicolás *et al.* (2008), and Wu and Wang (2005) integrated diffusion of innovation theory with TAM. Zhou's (2008) research investigated journalists' adoption of the Internet.

New models are an outcome of de-differentiation

Arguably the process of reconstructing models is aligned with the postmodern characteristic of dedifferentiation.



4.3.6 Short-comings of TAM

Bagozzi (2007), despite being one of the early scholars to write about TAM, points out several deficiencies of TAM in the current climate.

- Too simplistic. Although TAM has been a successful model it is relatively simplistic, which has been part of its appeal to researchers. However, it is because of its simplicity that Bagozzi (2007:244) contests TAM's limitations to provide explanations in increasingly complex situations and various technologies. Perhaps this short-coming of TAM has been responsible for various extensions and adaptations to the model referred to previously.
- Insufficient factors for decision making purposes. Bagozzi (2007:247) indicates that
 the failure of TAM to adequately address social and culture factors impacts on
 decision-making processes.
- *Too deterministic*. Bagozzi (2007:249) TAM is a completely deterministic model ignoring the effects of self-regulation in the process of decision-making.
- Lacks depth. Bagozzi (2007:244) criticises the lack of theory to explain how variables of perceived usefulness and perceived ease of use achieve their outcomes.
- Gaps between linkages. Bagozzi (2007:245) challenges the intention-behaviour linkage in the model, because primarily TAM treats behaviour as an outcome and does not consider "that many actions are taken not so much as ends in and of themselves but rather as means to more fundamental ends or goals" (Bagozzi 2007:245).

In Bagozzi's (2007:252) opinion, a deeper understanding of technology acceptance theory is required to overhaul TAM. Bagozzi believes the limitations of TAM need to be overcome and suggests this could be achieved by including aspects of psychology into the model, particularly in the area of decision making.



VA PRETORIA CHAPTER 4 Information communication technology

Further limitations of TAM

This author suggests four additional limitations of TAM. Firstly, the model was developed in an organisational context, where technology systems were adopted by individuals for work functions. In today's society people have a propensity to be more frequent users of technology applying it to their personal needs (such as entertainment or enjoyment) and in the role of services outside the workplace (such as, drawing cash from ATMs, or paying for airline tickets online), which warrants the question of how applicable TAM is beyond organisational situations? Secondly, the model was orientated around use of computing systems. Today multiple different types of technology systems exist (such as social networks sites, and various applications like navigation and gaming programmes). Each new technology has its own set of barriers for acceptance or rejection. Can the model be universally applied to all these technologies? Thirdly, people are becoming more technology literate, as technology becomes common place in their daily lives. Fourthly, perhaps one could consider adaption of TAM from technology acceptance to technology rejection. It was previously noted in Chapter 2 that rejection choices are just as important as acceptance choices in terms of individuals' characteristics.

Although Bagozzi (2007) seems to chastise the various augmentations made to TAM, arguably these expansions have been a necessity to overcome some of the model's limitations and account for the situational context of individuals as well as specific factors of the technology under investigation. It is also because of these complexities and multiple variables that this author considers the motivation of a unified model of technology acceptance to be unfounded. The recent adaptations to TAM appear to maintain the model's relevance to contemporary research.

4.4 INTERACTIVITY

In the previous chapter, interactivity, resulting from development of information technology communication, was highlighted as a significant feature of technology mediated communication as an important attribute and differentiator to using digital media in marketing communication programmes. This section will attempt to clarify the potential roles of interactivity through technology mediated communication in the context of marketing communication by examining the multi-dimensional aspects of interactivity and its various interpretations, which are contingent on context, situational factors, and perspectives of user or developer and scholars.



VA PRETORIA

CHAPTER 4

Information communication technology

Interactivity: new possibilities

The potential for interactivity, offers novel and alternative means of communicating with customers. Thus digital media presents new tools for marketing communication. It is suggested that the domain of interactivity is a possible avenue of research which could be pursued academically in tandem with technology developments.

Interactivity, in the context of marketing communication, as the ensuing discussion will reveal, requires the application of multiple perspectives for successful implementation. Namely:

- An understanding of customers, their technological abilities and expectations of interactive experiences.
- A need for developers to incorporate these customer insights into their designs.
- The mechanisms marketers use to implement interactivity into marketing communication strategies.

This section serves to introduce the phenomenon of interactivity as an underlying concept of the possibilities afforded through the use digital media in marketing communication. It commences with defining the concept of interactivity.

4.4.1 Definitions of interactivity

There is no apparent universal definition of interactivity disclosed in the literature. Interactivity would appear to be a multi-dimensional construct as evidenced by its numerous definitions. The different interpretations of interactivity are a result of its broad applicability to various fields and contexts. To comprehend interactivity in the context of marketing communication, it should be explored in this context.

The challenge to defining *interactivity* is delineating its dimensions, even after narrowing the concept to a single domain, namely that of marketing communication. Several scholars intent on defining interactivity in the context of marketing communication have categorised definitions of interactivity into three groups: a) process of interaction, b) user perceptions, and c) features of technology (Kiousis, 2002:356, McMillan & Hwang, 2002:29)



Interestingly these categories somewhat mirror the themes of the three innovation adoption models introduced previously, which are a) adoption process (process), b) characteristics of adoption segment (user perceptions), and c) characteristics of the innovation (features of technology).

Jensen (1998) has suggested that the populism of interactivity and mass adoption of the term has distorted its definition and argues for a re-definition of interactivity. A search of definitions of interactivity from various scholars was undertaken and these definitions have been assigned to assumed groups of process, features and perceptions in Table 4.6, under the heading *orientation*. These groupings are representative of the categories of interactivity described earlier (which reproduce the themes of some of the innovation models). This list, by no means exhaustive, demonstrates the expansiveness of interpretations of interactivity.

Table 4.6: Definitions of interactivity

DEFINITION	ORIENTATION	SOURCE
"In my view, the most helpful definition for interactivity would be one predicated on the issue of responsiveness. The distinction called for is between interactive, quasi-interactive (Reactive, and noninteractive communication sequences. Quasi- and fully interactive sequences differ clearly from noninteractive communication in requiring that sender and receiver roles be interchangeable with each subsequent message."	Process Perception	Rafaeli (1988:118)
"An interaction is an episode or series of episodes of physical actions and reactions of an embodied human with the world, including the environment and objects and beings in the world. These actions and reactions are actual interactions, a subset of the range of potential interactions of the human and the world at that time and place."	Process	Heeter (2000:7)
"Interactivity should be defined in terms of the presence of specific ontological characteristics (e.g., control, choice, contingency) in the interface."	Feature	Sundar (2004:386)
"Interactivity is defined as the degree to which media allows the user to influence the content and/or form."	Process	Sundar <i>et al.</i> (2010:2247)
Interactivity is "a measure of a media's potential ability to let the user exert an influence on the content and/or form of the mediated communication."	Feature Process	Jensen (1998:201)
"Interactivity is defined as the extent to which users can participate in modifying the form and content of a mediated environment in real time."	Feature Process	Steuer (1992:14)
"The extent to which the communicator and the audience respond to, or are willing to facilitate, each other's communication needs."	Process	Ha and James (1998:461)



OF PRETORIA CHAPTER 4 Information communication technology

DEFINITION	ORIENTATION	SOURCE
"Interactivity can be defined as the degree to which a	Feature	Kiousis
communication technology can create a mediated environment in	Process	(2002:372)
which participants can communicate (one-to-one, one-to-many,	Perception	
and many-to-many), both synchronously and asynchronously, and		
participate in reciprocal message exchanges (third-order		
dependency). With regard to human users, it additionally refers to		
their ability to perceive the experience as a simulation of		
interpersonal communication and increase their awareness of		
telepresence."		

Source: Ha and James, 1998:461; Heeter, 2000:7; Jensen, 1998:201; Kiousis, 2002:372; Rafaeli, 1988:118; Steuer, 1992:14; Sundar, 2004:386; Sundar *et al.*, 2010:2247

The logic behind the formulation of some of these definitions now follows, in the order of author according to Table 4.6. For purposes of clarity, the various sections will be preceded by a heading to distinguish the author under discussion and publication.

Rafaeli - Interactivity: from new media to communication - 1988

Rafaeli (1988:118) defines interactivity according to levels of responsiveness (noninteractive, quasi-interactive and fully interactive) of the on human communicators. Rafaeli (1988:119) does not consider interactivity to be an attribute of a medium, stating that media may provide conditions which are conducive for interaction, but the existence of this potential does not qualify the media as interactive. Rafaeli's (1988) position on interactivity would appear to be dependent on the dimension of human behaviour.

Interactivity is a multi-dimensional concept

This author is in partial agreement with Rafaeli's (1988) perspective that human operators are responsible for initiating interactivity through media, but considers that the level of interactivity achieved by a human operator is dependent on and limited by the features or capabilities of the media they utilise.

Rafaeli (1988:119) refers to three levels of interactivity, *non-interactive*, *quasi-interactive* and *interactive*. At the non-interactive level there is no interactivity (no reaction); at the quasi-interactive level (reactive) a user reacts directly to another user; and at the fully interactive level (responsive) when users respond to a communication, their response takes into account multiple prior exchanges.





Information communication technology

Interaction of human activity corresponds to 6th and 7th FPs of S-D logic

Rafaeli's (1988:119) view that the process of interaction is dependent on human activity is an important observation in the context of using interactive marketing communication strategies, which synergise with the point that it is the customer who determines if he or she wants a relationship with a brand or enterprise, as raised in discussions about the 6th and 7th foundational premises of service-dominant logic in Chapter 3 (6th FP: The customer is always a co-creator of value; 7th FP: The enterprise cannot deliver value, but only offer value propositions).

Heeter - Interactivity in the context of designed experiences - 2000

Heeter (2000:4), like Rafaeli, follows the behavioural view by considering the term interaction to encompass anything an individual does to or with another individual or individuals. Heeter (2000:4) further describes *mediated human interactions* as human interactions that use media, and *human-computer interactions*, as everything a person does to or with a computer.

Heeter – Implications of interactivity for communication research – 1989

Heeter (1989:221), in an earlier writing, identified six dimensions of interactivity:

a) The extent to which users are provided with a choice of available information. The
greater the choice of content (fragmented offerings) the smaller the given audience
consuming each type of content for a given time. This leads to audience selectivity
(Heeter 1989:222).

Media fragmentation reduces each mediums' audience through audience selectivity

Conceivably, as a result of fragmented media, which have increased the volume of content offerings to consumers, the ratio of content offerings to consumers has increased exponentially; therefore the natural outcome is a reduction of audiences per medium.

Further implications of increased user choice include:

- o Users actively seeking information (Heeter, 1989:228).
- o Different media requires different levels of activity from users (Heeter, 1989:228).
- Just as different media have different levels of interactivity, users have different capabilities of activity (Heeter, 1989:228).





- b) The amount of effort users must exert to access information. How much effort are users required to apply to access information (Heeter 1989:222). In this context information includes any kind of media content.
- c) The degree to which a medium can react responsively to a user (Heeter, 1989:223). The extent to which the communication exchange mirrors human exchanges. This dimension is orientated towards the design of interactivity features of a medium to react to human inputs.
- *d) The potential to monitor system use* (Heeter, 1989:224). Feedback systems assessing audience usage. Back end infrastructure of Internet equipped with cookies and other programmes actively track and monitor user activity, without the user even being aware.
- e) The degree to which users can add information to the system that a mass undifferentiated audience can access (Heeter, 1989:224). User generated content such as blogs, social networks, forums, bulletin boards and other commentary represent examples of users contributing content for public consumption.
- f) The degree to which a media system facilitates interpersonal communication between users (Heeter, 1989:225). This facilitation concerns the processing abilities of the media system and the types of delays between communication transmissions, for example, if they provide synchronous or asynchronous communication.

The six-dimensions proposed by Heeter (1989) seem to be biased towards computermediated responses to human-machine interactions as opposed to human-computerhuman exchanges, where humans use the medium as a platform of exchange to communicate or interact with other humans via the content that the post on the medium for the use of other humans.

Sundar - Theorizing interactivity's effects - 2004

Sundar (2004:385) on the other hand, states that interactivity is a characteristic of technology and not that of the user, which is seemingly in direct contrast to Rafaeli (1998) and Heeter (2000). However Sundar (2004) does not disagree with the idea that the potential of a media to be interactive requires human intervention. Sundar (2004) recognises that different media have different capacities for interactivity. It could be



OF PRETORIA CHAPTER 4 Information communication technology

surmised that Sundar's (2004) perspective resonates with developers of interactive experiences, who seek to develop an interactive proposition that will evoke hypothesised interactions from users, as an outcome.

Perceived interactivity versus perceived usability

If interaction was defined purely on user perceptions, it would be relative to each individual user. Since users possess varying skills and knowledge about systems, their perspectives will differ, and because of this fact Sundar (2004:386) considers that users' perceived interactivity is confused with perceived usability. Sundar considers the perceptual approach to interactivity to be limiting to improving understanding of technical contributions to media interactivity, stating that whilst it contributes to knowledge about people and their perceptions of interactivity, it does not build knowledge about media and interactivity (Sundar, 2004:386).

Jensen – Interactivity: tracking a new concept in media and communication studies - 1998

Jensen's (1998:201) definition of interactivity, like Heeter (1989), follows a multidimensional approach incorporating both features and process orientations. It is based on four dimensions of communication patterns: a) transmission, b) consultation, c) conversation, and d) registration. Using a three-dimensional model Jensen categorised up to twelve different types of interactive media.

Steuer - Defining virtual reality: dimensions determining telepresence - 1992

Steuer's (1992:3) perspective of interactivity is that it is one of two technological dimensions of telepresence (the second dimension being vividness) in the context of virtual reality. Thus, like Jensen (1998), Steuer's (1992) definition of interactivity is also a feature and process orientated definition. Steuer (1992:11) defines telepresence "as the experience of presence in an environment by means of a communication medium" and clarifies presence as, "the sense of being in an environment" (Steuer, 1992:5). The environment in this context is the user's perception of a mediated environment.

Steuer's interpretation of interactivity has been included in light of the growing popularity of mediated social network systems, which make virtual reality an important aspect of society. *Facebook* (*Facebook*, 2011), by way of example, announced in July 2011 that it has more than 750 million active users (an active user is classified as someone who

CHAPTER 4 Information communication technology

accesses his or her *Facebook* account at least once a month). According to Taylor (2011) *Twitter* has in excess of 200 million users, of which 50% are active, logging into the microblogging service at least once a month. Virtual worlds like *Second Life* and *World of Warcraft* are other platforms which provide opportunity for participation in virtual communities. Participation in the virtual reality space requires users to engage (interact) with the media as an instrument to produce an effect (interaction) in the virtual environment. One of the outcomes of participation in these environments is the production of user generated content, which populates virtual spaces. According to Steuer (1992:11), interactivity comprises of speed, mapping and range.

"speed, which refers to the rate at which input can be assimilated into the mediated environment; range, which refers to the number of possibilities for action at any given time; and mapping, which refers to the ability of a system to map its controls to changes in the mediated environment in a natural and predictable manner" (Steuer 1992:15).

Steuer's (1992) definition of interactivity leans more towards a process orientation, as he addresses the relationship between the user and the interactive environment. Developments in technology have increased speed substantially, so speed is perhaps less of a consideration today, compared to twenty years ago, when Steuer conceptualised his definition of interactivity.

Ha and James – Interactivity reexamined: A baseline analysis of early business web sites - 1998

Ha and James (1998:461), define interaction in the context of website communicators and the audiences of these sites. Their perspective differs from other definitions, in that they allow for difference in each party's' communication needs. They proposed five dimensions to accommodate these differences: a) playfulness, b) choice, c) connectedness, d) information collection, and e) reciprocal communication.

Kiousis - Interactivity: a concept explication - 2002

Kiousis's (2002:372) definition assimilates all three categories and attempts to integrate many of the preceding scholars' contributions to his definition of interactivity. He clarifies that the



OF PRETORIA CHAPTER 4 Information communication technology

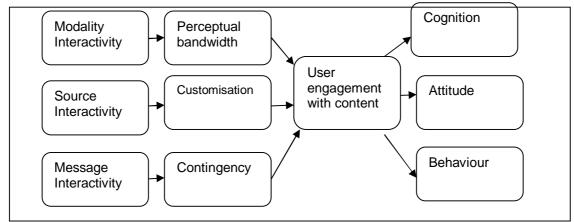
term communication technology is broad, ranging from telephones to computing systems and the same is true of the term mediated environment.

In the context of this study, Kiousis's (2002) definition of interactivity is the most relevant, in consideration of its inclusiveness of the three categories of interactivity (feature, process and perception). These categories are not mutually exclusive and bear relevance, although not an equal weighting, to interactive marketing communication. Kiousis's (2002) definition considers the perspective of the user, the process of the interaction, and the features of the media channel that provide the interaction. The rationalisation for considering all three categories together derives from a practitioner implementation perspective. If a system's features are beyond the scope of its users, there is little merit in investing into the features and deploying them with the system, because the user does not have the skills to operate the system to induce the interaction sought.

4.4.2 A model of interactivity effects

Interactivity includes multi-sensorial modalities of interactivity, such as audio and visual. In the process of interactivity information exchanges occur, where users are both receivers and senders of information (Sundar, 2004:385). Figure 4.4 depicts a model of interactivity effects. This model connects system interactivity with user psychology concepts (Sundar *et al.*, 2010:2247). The inclusion of psychology concepts into a technology based model was a recommendation from Bagozzi (2007) when he looked for opportunities to overcome decision-making limitations of the technology acceptance model.

Figure 4.4: Model of interactivity effects



Source: Sundar et al. (2010:2247)

Sundar *et al.* (2010:2253) approach interactivity from a feature and process perspective for designs of interactive systems. They recommend that customers should be presented with tools for customisation at the user media interface. In this way customers will choose the level and extent of interactivity according to their desires and capabilities.

4.4.3 Interactivity - an important property of digital media

Social media (branded or unbranded) provide brands or enterprises with opportunities through these platforms to interact directly or indirectly with their customers or prospects. Marketers that succeed in securing a relevant presence for their brands or enterprises within their customers' or prospects' media repertoire, manage to fulfil one of the IMC charters as addressed in Chapter 3.

Beyond tangible value creation

Following the value-in-use concept, introduced in discussions concerning service-dominant logic, communications that provide value to customers are likely to generate meaning to customers. This presents opportunities for brands to interact with their customers through the provision of relevant applications or offerings that are reflective of their brand's equity to provide users with an experience of the brand (directly or indirectly). In this way individuals do not have to physically experience the brand, but are able to do so mentally or emotionally.



CHAPTER 4
Information communication technology

Self-disclosure does not necessarily imply self-importance

Heeter (2000:6) remarks that people make sense of their worlds through the construction of stories; past, present and future episodes of their lives. This fact provides reasons behind individuals' motivation to share events and occurrences in their lives on social network sites. This insight infers that personal revelations on social network sites, like *Facebook*, are not necessarily depictions of perceived self-importance but rather self-affirmation. Peer or public recognition is another motivation for self-disclosure (Samuels, 2008:234). Perhaps the aspect of storytelling could be used to trigger personal narratives about brand experiences, such as attendance at an event hosted by a brand, with the intention that the consumer will communicate the experience of an event to members of their social networks.

Interactive properties of digital media enable organisations to deploy *pull* marketing communication strategies; mainly through searches both natural and paid. Active audiences pull information or brands directly to them through narrowcasting and search. Active audiences also determine if content is relevant to them (Marwick & Boyd, 2010:129). Perhaps active audiences in this context should be considered as controlling audiences, because they control the content they wish to consume and for how long they wish to use it for (Poster, 2006:537). Social data or user generated content, like customer reviews and *Facebook* "likes", have been incorporated into search engines like *Google*, thus providing a human touch to the previously purely algorithmic engine powering searches (Snow, 2011).

The concept of interactivity provides another dimension to marketing communication programmes. Just as with other tools in the communication arsenal it should be used as and when required. Schembri (2006:387) raised the issue that not all customers want to participate. This is an important point. Developing innovative marketing plans embedded with interactivity may not justify returns on investment if the audience does not interact as expected.

If one considers the contribution rate to user-generated sites like *Wikipedia*, where only 2.5% of users contribute to 80% of the content (Rafaeli & Ariel, 2008:248), a rate of activity which is apparently representative of other similar sites (Rafaeli & Ariel, 2008:248), then interactivity levels for user-generated content sites are very low. Incidentally, the figure of



VA PRETORIA CHAPTER 4 Information communication technology

2.5% corresponds with the innovator segment for innovation adoption, according to Kotler and Armstrong (2010:182) (see Table 4.3), which infers that contributions to *Wikipedia* are still at the innovator stage of adoption. It would be interesting to compare the ratio of users versus user-contributors for other sites reliant on user generated content for public consumption.

Disproportionate levels of interactivity

Considering the Wikipedia user-contributor rate of 2.5% (Rafaeli & Ariel, 2008:248) as a barometer for interactivity (in the form of user-generated content) and hence adoption of interactivity raises pertinent questions in the context of innovation adoption, such as:

- What are the rates of interactivity defined as the ratio of contributors to users in other interactive scenarios; and how does this ratio compare to categories for diffusion of innovation as an indication of adoption of interactivity as an innovation?
- Could the fact that interactivity is still at the innovator level (2.5%) account for low response rates to interactive marketing communication efforts?
- What is the profile of content contributors? Perhaps content contributors should be identified to
 assess if it is the same individuals that engage with interactive campaigns (duplication) or different
 people (unique users). By knowing the percentage of individuals using an innovation one would be
 able to assess the adoption stage of an innovation, based on the adoption categories outlined in
 Table 4.3.

Benchmark interactivity levels to improve campaign sufficiency planning

Answers to these questions would help address a knowledge gap, namely the development of benchmarks for anticipated threshold levels when using innovative platforms for marketing communication campaigns. By understanding the penetration of an innovative communication platform against the population one has an indication of the type of reach the new platform could be expected to achieve against a given target population. In this way one could potentially estimate the degree of exposure required by a brand on a particular platform to attain minimum sufficiency levels to effectively reach its target audience via the platform in question; and correspondingly calculate the financial investment required to meet these levels of reach; and plausibly anticipate response levels from customers that interact with the communication.

This point links back to remarks made in Chapter 3, which called for revised approaches to the media planning process to measure outcomes as opposed to delivery, as measures of success factors.

Public postings of user-generated content on sites like *Wikipedia* show low levels of interactivity in terms of the contributor to user ratio. However at the other extreme are the

VA PRETORIA CHAPTER 4 Information communication technology

predominantly peer-to-peer social network sites with high interactivity. *Facebook* has in excess of 750 million active subscribers (*Facebook*, 2011) and *Twitter* as of September 2011 (Taylor, 2011) announced that it has 200 million registered subscribers, 100 million are active users logging into the service at least once a month (that is 50% of registered

Every medium has its own unique properties. Therefore, arguably different forms of interactivity will achieve varying levels of engagement and response.

users), whilst 50 million are reported to use the service daily.

In closing, interactivity is a complex phenomenon. Interactive systems afford their users different levels of interactivity and people demonstrate different levels of interaction with digital media. Their activities are dependent on technical, social and cultural habits (Horst, Herr-Stephenson & Robinson, 2010:36). Developments between the three orientations of interactivity, namely: a) features, b) process, and c) user perception have given rise to new interactive communication platforms, which fall into the general classification of *social media*.

4.5 SOCIAL MEDIA SIMPLIFIED

The preceding section introduced three key features of interactivity in the context of information communication technology. One of the outcomes of developments in information communication technology is interactive media, specifically social media.

At the outset it must be declared that this is by no means a technical account of social media and its respective associations, it merely offers an unsophisticated overview to contextualise the discussion.

Social media and other information communication technology innovations have been made possible through new functionality introduced into Web 2.0 (Kaplan & Haenlin, 2010:61). Kaplan and Haenlin (2010:61) differentiate Web 2.0 from Web 1.0 by stating, that it is "a platform whereby content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and



CHAPTER 4 Information communication technology

collaborative fashion." This is not to say that people are no longer publishing content, but that the functionality of Web 2.0 now gives individuals the possibility to adapt existing content or applications, to better fulfil their needs. The collaborative aspect resonates with postmodern trait of de-differentiation.

The creation and posting of content falls into the category of *user generated content* (UGC). UGC is defined by the OECD (2007:4) as "i) content made publicly available over the Internet, ii) which reflects a certain amount of creative effort, and iii) which is created outside of professional routines and practices." Social media is the creation and exchange of user generated content, which contributes to shared meaning (Correa *et al.*, 2010:247; Kaplan & Haenlin, 2010:61; Multisilta & Milrad, 2009; Zhao, 2011:87), sometimes in real-time.

Kaplan and Haenlin (2010:61) classified different social media formats against dimensions of social presence/media richness and self-presentation/self-disclosure. These are reflected in Table 4.7. This classification is an attempt to combine both media and social aspects of social media. Whilst this endeavour has been achieved by Kaplan and Haenlin (2010:61), the classification could perhaps be deepened with the inclusion of a dimension for user need states, in terms of content contributions for private and public selves, which are not sufficiently addressed by the dimensions of self-presentation or self-disclosure alone, arguably different motivations come into effect. Social media users have to negotiate between public and private selves (Marwick & Boyd, 2010:131), in terms of the content they share, with an understanding that generally what is posted onto the Internet has the potential to remain there indefinitely.

CHAPTER 4

Information communication technology

Table 4.7: Classification of social media by social presence/media richness and self-presentation/self-disclosure

		SOCIAL PRESENCE / MEDIA RICHNESS				
		LOW	MEDIUM	HIGH		
LF- TATION / CLOSURE	HIGH	Blogs	Social networking sites (e.g., Facebook)	Virtual social worlds (e.g., Second Life)		
SEI PRESEN' SELF-DIS(LOW	Collaborative projects (e.g., Wikipedia)	Content communities (e.g., YouTube)	Virtual game worlds (e.g., World of Warcraft)		

Source: Kaplan and Haenlin (2010:62)

For the purposes of aiding interpretation of the six types of social media classified in Table 4.7 a richer description of each of type is provided in Table 4.8, together with some everyday examples. These descriptions also help to contextualise the self-presentation/self-disclosure and social presence/media richness aspects of the different social media types.

Table 4.8: Definitions of six types of social media

CLASSIFICATION	DESCRIPTION
Collaborative projects	Collaborative ventures result in the creation of content by multiple contributors. <i>Wikipedia</i> is a noticeable example of a collaborative project. <i>Wikipedia</i> is also an example of a <i>wiki</i> , which is a website that allows people to add, change or delete content from it. The principle behind <i>wikis</i> is the belief that the sum of inputs from multiple contributors is greater than any single individual contribution.
Blogs	Blogs are typically chronological personalised web pages, generally maintained by one person. Blog content ranges from personal journal type entries to editorial type content on particular topics. Blogs take on a range of different multi-media formats.
Content communities	Content communities provide platforms where users can share multi-media content with other users. (Examples include <i>YouTube</i> , <i>Flickr</i> , <i>LinkedIn</i> and <i>Slideshare</i> .)
Social networking sites	Social networking sites are applications which allow users to connect to other users. Users typically generate personal profiles and permit who has access to their information. Social networking sites support multiple media formats. Companies and brands have also moved into the social networking site territory, to establish brand communities. (Examples include <i>Facebook</i> and <i>myspace</i> .)
Virtual game worlds	Virtual worlds are virtual constructions of three-dimensional environments where users are able to participate in the virtual world with other users as avatars. In virtual game worlds users participate by adhering to rules of the game. (<i>World of Warcraft</i> , for example.)
Virtual social worlds	The virtual world definition stated above also applies to virtual social worlds. However in virtual social worlds there are no prescribed rules of engagement. Users are relatively free to do whatever they choose to do. (Second Life, for example.)

Source: Conceptualised from Kaplan and Haenlin (2010:62-64)



CHAPTER 4 Information communication technology

People participate in different social communities for various reasons. Some communities are formed around common interests such as politics, sport, hobbies, support groups, charity foundations, to mention a few. Pre-Internet participation in these communities of interest was probably restricted to geographic proximity and communication interaction amongst members was likely to have consisted of either physical face-to-face, telephonic exchanges or letters distributed through postal services. Corporate communications may have been issued in the form of letters sent to members via postal services or placed on community notice boards. Post-Internet these communication practices still exist, and communities that do not have access to the Internet or lack the skills to use it accordingly have no option but to continue with traditional communication methods. However for those that do have access to the Internet, this platform has provides a space for online communities to thrive. Membership in online communities is not constrained by boundaries of time and place. People have the opportunity to participate in multiple communities for various purposes such as entertainment, expert opinion, and self-expression. Membership across multiple communities could be considered a postmodern act of fragmentation.

Social media provides outlets to explore different aspects of the self (Marwick & Boyd, 2010:124), which is important in identity development. There is evidence that relationships in online social network sites are supported by offline relationships (Hennig-Thurau, Malthouse, Friege, Gensler, Lobschat, Rangaswamy, & Skiera, 2010:319; Odom *et al.*, 2011:1492), and youth in particular migrate seamlessly between offline and online environments (Odom *et al.*, 2011:1497). Actions in the online realm like the creation and sharing of content constitute part of relationship building. It is a way of continuing to connect, bond and interact when not physically present (Hennig-Thurau *et al.*, 2010:313; Horst *et al.*, 2010:37). Multi-media tools enable individuals to creatively express themselves in ways that non-computer mediated media cannot.

Social media differs from traditional media by the fact that postings are liberal and cost free, there are no gatekeepers controlling content to screen what is transmitted in cyberspace. In spite of this there are some protocols for effective communication using social media, which are proposed in the subsequent section.



VA PRETORIA

CHAPTER 4

Information communication technology

4.5.1 Integrating brands into social media

Whether marketers like it or not consumers are talking about brands in social media (Hennig-Thurau *et al.*, 2010:312) positively and negatively. Some consumers are passionate brand advocates. Marketing practitioners have the option to reach and respond to customers in these spaces, either by participating in existing social media communities or to create their own communities around their brand (Firat & Dholakia, 2006:141; Kotler & Armstrong, 2010:40,537). Organisations are increasingly using their online communities to develop customer relationships (Hennig-Thurau *et al.*, 2010:319) and be relevant to customers or prospects.

Table 4.9 outlines ten points of advice to practitioners intending to utilise social media in campaigns. These points are divided into a) media and b) social points and are conceptualised in Table 4.9. The optimal purpose of using social media is about leveraging its capabilities for participation, sharing and collaboration, rather than hard sell advertising drives (Kaplan & Haenlin, 2010:65).

Information communication technology

Table 4.9: Practitioner social media considerations

MEDIA SOCIAL

- Be selective over the choice of social media application deployed by the organisation.
 Different applications fulfil various objectives. The choice of application depends on how well it delivers on specific marketing objectives; relevance to the target audience and reach of this audience.
- Buy or share an application. One option is to join an existing well performing social media application, which has already secured an audience. Alternatively an organisation could develop its own application according to specific needs.
- Aligning social media activities. A brand's communications should not be contradictory irrespective of the touchpoints utilised.
- Media integration. As per the previous discussion concerning IMC (in Chapter 3), all brand communication should be integrated across brand touch points both traditional and nontraditional formats.
- Accessibility. Not all members of a target audience have equal accessibility to social media. Some depend on the infrastructure of their office environment to access the Internet. Furthermore, some employers may restrict their employees from accessing to certain social media sites in an effort to maintain productivity in the workplace.

- Be active. The main purpose of social media is to share and interact with content. Therefore active participation from organisations is required.
 Organisations need to keep their content fresh and should participate in dialogues with their customers.
- Be interesting. Organisations need to give customers a reason to engage with the organisation's social media content. If the content is boring customers are unlikely to be interested and will probably not interact with the content, which would defeat the purpose of a social media campaign.
- Follow the rules of the medium. Organisations
 need to understand the etiquette behind the social
 media platforms they intend to use and follow the
 rules accordingly. This also implies a degree of
 modesty, social media is about communicating
 and connecting with people in communities not
 talking at them.
- An amateur style is appealing. The informal nature of most social media platforms makes allowances for posting unprofessional content. Kaplan and Haenlin (2010:67) consider this approach helps practitioners to blend in with other users
- Be authentic. Post honest content and follow the rules of each social media platform that is used.

Source: Adapted and conceptualised from Kaplan and Haenlin (2010:65-67)

When using social media, organisations also need to consider. The type of value exchange they offer customers to build and maintain a relationship with them? If and how to react to content generated about the organisation or brand by the public, for example parodies of the organisation's commercials? These parodies demonstrate significant brand engagement epitomising a brand experience between a customer and a brand, which could be considered brand value generation (Jenkins, 2006:557) with the customer determining the value (Grönroos, 2005:2) and proudly wanting to display and share their creation with others. Although customers may want to interact with brands through user generate content, the image cultivated by the customer may not be one desired by the organisation to share with the public. Organisations need to identify methods whereby customers can "play" with brands but not harm them. Chapter 3 remarked on the value of the brand as an asset to organisations and emphasised brand communication as

VA PRETORIA CHAPTER 4 Information communication technology

competitive advantage in a competitive environment. If the brand is an organisation's most important asset is it any wonder that organisations are so protective over the way their brand is managed and perceived?

Hennig-Thurau *et al.* (2010:312) highlight the importance of companies measuring consumer interactions, brand engagement and purchase patterns with respect to not only marketing *per se* but more specifically customer relationship management. Understanding different individuals' activities not only helps to manage these specific relationships but may be generalised across other customer relationships.

Social media is a new tool in organisations' marketing communication arsenals, but like any tool other requires skill and understanding to use appropriately. Incorrect use could be detrimental. At this stage the instruction manual is constantly being rewritten. Hennig-Thurau *et al.* (2010:313) use an apt metaphor of pinball playing to the use of social media and consequences thereof. Once the pinball (brand and brand communication offerings) is released into the pinball machine (universe) levers (brand management) try to keep it in play, bumpers (new media exchanges) add elements of chaos, which results in a changed offering. These effects are consequences of a postmodern society. In a controlled system, closed brand communications were distributed and brand owners controlled the shape of their brands and what they said about brands. Social media has opened the system to external exchanges. Boundaries between brand management and customers have become diffused and customers are starting to define brands in their terms. In the words of Scott Cook (Procter & Gamble, 2008:11), "A brand is no longer what we tell the consumer it is – it is what consumers tell each other it is".

Social media activities are increasingly being accessed through mobile telephones as advancement in wireless technologies progress (Kaplan & Haenlin 2010:67; Multisilta & Milrad, 2009). This trend is considered significant for several reasons:

Firstly, mobile access to the Internet and its respective media offerings presents
accessibility opportunities to communities in territories that have been traditionally
underserved by wired communication networks and also lack the financial means to
purchase equipment to access the Internet. However the availability of a wireless



CHAPTER 4 Information communication technology

network infrastructure provides opportunities for people to access sustainable wireless connectivity. Thus allowing previously technology disadvantaged individuals the chance to participate in social media.

- Secondly, an advantage of using mobile devices to participate in social media allows users to share their experiences whenever they choose to do so, in real-time or time delayed.
- Thirdly, mobile phones are typically personal devices, as such they do not fall under the constraints of employment policies which may block employees from using certain sites.
- Fourth, this presents an alternative way for marketers to engage with customers in different contexts, for example directly in the retail space.

Mobile media and its various applications will be discussed in section 4.6.

4.5.2 The effectiveness of user generated content

Zhao (2011:87) cites five key motivations for publishing online: self-expression; interaction; acknowledgement; professional development; and remuneration. Zhao (2011) discusses user generated content from the perspective of story writing on subscription websites that have been set up specifically for the pubic to post stories online. These motivations are considered to be generally applicable to content postings. People tailor their content to suit their situational context and the audience they address (Marwick & Boyd, 2010:114), both in online and offline situations. In the online realm the contributor addresses an imagined audience that is usually a reflection of self. A challenge with online audiences is that the imagined audience is not necessarily the actual audience, because generally anyone can read, watch or listen to posted content. The decision for individuals to read, act and value content depend on their knowledge of the author and how they value the author's contributions (Hennig-Thurau et al., 2010:315). Furthermore, the fact that user generated content is created by amateurs, means that quality of content cannot be assured. Some contributors have been successful, for example, juicystar07's channel on YouTube generates in excess of 400,000 views within three days of posting (juicystar07 posts video reviews of cosmetic products).



VA PRETORIA Information communication technology

From a marketing communication perspective the decision to place advertisements in user generated content environments can be risky. Most organisations would be unwilling to promote their brands in unpredictable environments hosting content of questionable quality (Lacy, 2009). On the other hand there would be less reluctance when associating with prominent credible contributors, like *juicystar07*.

Social networks, blogging and micro-blogging sites like *Twitter* provide direct contact between entities and audiences. Marwick and Boyd (2010:121) refer to the term *micro-celebrity*, where individuals use the media to inflate their popularity amongst their audiences. People publicise what they have done or are going to do. *Twitter* has been used in this way by organisations and individuals to communicate with their followers (Marwick & Boyd, 2010:121). Sites like *Twitter* potentially offer implementation opportunities for diffused marketing and feedback.

Twitter perhaps exemplifies, the *two-step flow hypothesis* (Littlejohn & Foss, 2005:308), which considers that most people are influenced by other people rather than media. This theory posits that media informs opinion leaders in society who then influence the rest of their community (Littlejohn & Foss, 2005:308). Opinion leaders are often members of the same social grouping as their opinion followers, and hence opinion leader influence is horizontal within societal order rather than vertical. Opinion leaders tend to have different personal attributes which distinguish them from their peers; these include greater media consumption and higher social activity (Baran & Davis, 2003:136). Two-step flow theory has been criticised for its linear one-dimensional approach; it does not take into account behavioural changes and other variables for example message content being transmitted and social situation.

An important dimension of social media is the communication that takes place amongst members. Marwick and Boyd (2010:130) consider networked audiences to connect to others within a network as well as the content generator. In the case of *Twitter*, followers link to other followers and talk back to the originator. This is representative of a many-to-many communication model (Gummesson, 2008a:3; Marwick & Boyd, 2010:130).



VA PRETORIA CHAPTER 4
Information communication technology

4.5.3 Chaos and complexity properties of social media, notably social network systems

Instability was noted as a significant condition of chaotic systems, during discussions on postmodernism in Chapter 2, implying that these systems are extremely sensitive to even the slightest change that could dramatically alter the overall state of the system. This point hints at epidemic possibilities. When applied to social network systems, like *Twitter* and *Facebook*, these have provided catalytic roles in the recent uprisings in Egypt and Tunisia (Ingram, 2011; Miladi, 2011) as well as riots in the United Kingdom (Ball, 2011), in terms of self-organisation. When an issue matters significantly to individuals they tend to express themselves to members of their networks (online and or offline). If this issue is also important to other members of the networks, these people will in turn inform other people. Thus in a relatively short time this positive feedback effect amplifies the original issue across the networks it was introduced to. Different patterns of behaviour may arise depending on the types of connections within the network (Stapleton, 2008:21).

Learn to navigate and negotiate complex adaptive systems

From a marketing perspective, marketers are able to target social network systems through advertising, however, it has been suggested by Kaplan and Haenlin (2010:65) that advertising is not the best approach to use when targeting social network systems, rather a more participative approach to communication should be taken. Perhaps given the various nuances of social media, social media deserves an independent position in the marketing mix rather than simply be considered as a vehicle to deliver other aspects of the marketing mix. Irrespective of this consideration specific marketing communication strategies should be developed to target members of social network systems and perhaps these strategies should be based on concepts of chaos and complexity systems combined with motivational theory. The logic behind this recommendation is to better understand social media systems and motivations for use. Furthermore, perhaps, in an analogous way to translating the 4P model into 4Cs, for customer perspective, motivational factors should be translated into marketer terms for a marketing perspective. Table 4.10 compares properties of complex adaptive systems and derives possible marketing communication applications from these properties.

YA PRETORIA Information communication technology

Table 4.10: Properties of complex adaptive systems compared to social network systems **PROPERTIES OF** PROPERTIES OF MARKETING APPLICATIONS **COMPLEX ADAPTIVE SOCIAL NETWORK SYSTEMS SYSTEMS** They comprise of Identify network communities, possibly aggregate numerous agents acting at through behavioural types. Acknowledge that the random, not hierarchical. organisation will not be able to control behaviour. They continuously re-Identify key influencers. organise forming as many levels as needed. They require energy to Energise networks through content. sustain them, if they are Give members permission to play with brands not sustained they will to sustain energy through content regeneration dwindle out. and relevance to the network. They have capacity to Some patterns may be predicted, because the system is still bounded so will exhibit patterns of learn. behaviour and order. Perhaps look at the boundary posts. "Listen" to networks to understand what they want and need.

Source: Own conceptualisation

4.6 MOBILE MEDIA – DIGITAL UNPLUGGED

The growing trend for individuals to use mobile phones to participate in social media has been recognised (Kaplan & Haenlin 2010:67; Multisilta & Milrad, 2009). Mobile phones provide a range of communication applications that can be used for marketing communication.

Firstly, an important characteristic of mobile phones is mobility (Stald, 2008:144). Consider how the aspect of mobility transformed the way individuals communicate from fixed telephony to mobile telephony. Now imagine the possibilities of mobile Internet offerings compared to fixed Internet? Discontinuous innovation in technology has leapfrogged development in hand held mobile phones, both in terms of hardware and software propositions (Varnali *et al.*, 2011:1).

Through technology convergence, new generation mobile phone devices have evolved to more than mere communication devices, into multi-functional devices fulfilling the utilitarian and non-utilitarian needs of people (Stald, 2008:145). The increased functionality of mobile phones transitions them into smart mobile media devices (SMMDs) (O'Reilly & Duane.

CHAPTER 4

Information communication technology

2010:188), more commonly known as smartphones. O'Reilly and Duane (2010:188) define SMMDs as:

"an electronic mobile networked device that provides network subscribers with phone, SMS, MMS, GPS navigation, photo and video cameras, digital format music players/recorders, local and web based radio stations, email and Internet access, pre-loaded and web based gaming applications, calculators, calendars, electronic notes, task reminders, and a whole plethora of downloadable free and fee based applications including referencing, organisational, decision support, content and information feeds".

Undoubtedly this list will expand as SMMDs acquire greater functionality.

If one reviews mobile phones against the two key constructs, perceived usefulness and perceived ease of use, of the technology acceptance model; then in terms of perceived ease of use, the system of mobile phones has been accepted and understood by the consumer, as evidenced by the ubiquity of their adoption, thus possibly contributing to the individuals' overall perspective of perceived usefulness of the system. Based on this observation the author is of the opinion that adjuncts to the system will possibly be perceived more favourably, achieving a higher rating of usefulness and have a greater likelihood of acceptance.

By using mobile phones as a personal media and communication tool people have the ability to make individual choices about the content they engage with (Groening, 2010:1332). Using mobile phones to access or interact with content provides people with convenience. People have increased flexibility in terms of the time and place they access content as well as the time they spend consuming content.

4.6.1 Marketing communication through mobile phones

According to Varnali et al. (2011:5) "mobile marketing is the creation, communication, and delivery of customer value through the wireless, mobile medium." Mobile marketing



VA PRETORIA CHAPTER 4 Information communication technology

enables organisations to enact marketing using applications powered by hand-held portable mobile phones (Varnali *et al.*, 2011:4). Mobile marketing efforts must remain part of the integrated marketing communication plan. They enhance operations adding another dimension to marketing communication, especially in direct marketing and relationship marketing efforts.

Mobile media an intra-marketing mix platform

The suggestion to include mobile media as a channel available to all elements of the marketing mix contrasts the proposal for social media to occupy a distinct category within the marketing mix. The reason for this approach is that the mobile medium is flexible and possesses multiple capabilities which provide a means of implementation across the current marketing mix spectrum.

Table 4.11 defines various applications available to mobile phone marketing communication, summarises their potential use, success factors, limitations and customer benefits. This list provides a general overview, it is by no means exhaustive of the millions of software applications available to individuals, ranging from business to leisure, informative to entertainment offerings.

Table 4.11: Definitions of mobile marketing applications

MOBILE APPLICATION	DEFINITION	MARKETING USE	SUCCESS FACTORS	LIMITATIONS	CUSTOMER BENEFIT / VALUE EXCHANGE
SMS (Short message service)	Text messaging 160 character format	 Passive brand advertisements Interactive response-seeking. messages, independently and used in conjunction with other media, such as responding to a call to action publicised in another media. Personalised special offers Sponsoring subscribed content such as weather, traffic, news or finance reports with branded slogans. Revenue generation in the form of micropayments activated through premium rate SMS for customers to pay and download mobile content. 	 Supported by all manufacturer handsets and network operators. Permission-based messages Incentive offered (free airtime, branded mobile content {like music, video, games, wallpapers, ringtones}, competition entries, votes. Highly personalised Appropriate delivery. Use the right time, place and context. 	 Restricted to 160 characters. Text only Negative customer reactions if communications are unsolicited. 	 Stored for future reference. Value in downloaded content
EMS (enhanced messaging service	Extension of SMS with additional functionality. Supports special text formatting and basic graphics.	 Potentially mobile bar-coding for mobile coupons, if network and handset compatibility issues are resolved. In addition distributors will have to secure appropriate equipment to redeem coupons. Mobile ticketing would also make use of bar-coding function and the same limitations for use would apply. 	Innovative and data rich Environmentally friendly	 Not supported by all handset manufacturers and network operators. Appropriate delivery. Use the right time, place and context 	Convenient and easy to use comparable to paper based coupons.
MMS (multi- media messaging service)	Supports text, pictures, audio and video clips.	 Customise marketing communication with the inclusion of audio and visual material. 	Data rich content	 Not supported by all handset manufacturers. Message compatibility issues, due to different screen dimensions. 	Stored for future reference.Value in downloaded content



CHAPTER 4 Information communication technology

MOBILE APPLICATION	DEFINITION	MARKETING USE	SUCCESS FACTORS	LIMITATIONS	CUSTOMER BENEFIT / VALUE EXCHANGE
The mobile Internet	Wireless Internet-based content	 Commerce-based applications that are interactive (e.g., mobile shopping, mobile banking, e-ticketing. Content-based applications which provide information only (e.g., weather, traffic, news or finance reports). Community-based applications, which allow users to interact with each other building social relationships (chat, email, SMS, forum, instant message, Social network systems). Mobile Internet site: Use to advertise and to gather information on users' preferences. 	Data rich content Interactive Real-time	 Rendering of computer accessed sites for mobile access. High data charges to access content from mobile phones. Longer downloading times of applications and mobisites. Not supported by all devices. 	Convenience Access to content branded or unbranded.
RBT (Ring back tone)	The tone a caller hears whilst waiting for the called party to answer.	 Offer subscribers opportunity to have a personalised ring tone. Consider offering brand signature songs, e.g.: Pantene previously used the song Unwritten in its television commercials. 	The intention behind using RBT as a communication tool is that it is anticipated that people belong to networks of similarly minded individuals. Therefore the ring tone should appeal to them too.	 Not supported by all devices. Customers are subject to change their RBT to suit their needs, or will probably not change it because they are unlikely to call their own phones. Individuals do not necessarily receive telephone calls from people that belong to one specific group. Hence the RBT might not be relevant to all callers. 	Customised ringtones, representative of the customer.



CHAPTER 4 Information communication technology

MOBILE APPLICATION	DEFINITION	MARKETING USE	SUCCESS FACTORS	LIMITATIONS	CUSTOMER BENEFIT / VALUE EXCHANGE
USSD (Unstructured Supplementary Service Data)/ content subscription	Two-way exchange of data – usually through coded sequences.	Develop applicationsServe content based on subscription.	 Mostly free to customers. Mechanism of interaction. Few devices restrictions, operates on almost all devices. 	 Can be tedious for customers to navigate Cannot store information on the USSD system itself. 	InformationConvenientReal-time
Mobile games	Interactive single or multiplayer games	Build brands into games, branded games, offer games from a brand.	Convenient entertainment, social connection.	Unable to change creative.	Entertainment Time filler
Mobile tags / QR codes (Quick response codes)	Two dimensional barcode – read by mobile phone through its camera	 Directs user to url online without having to enter the url. Provide product information, such as nutrients on tins of food or promotion of events. 	Convenient Easy to use	 Not supported by all devices. Relatively sophisticated product, may need to educate customers. 	Information
Mobile payment systems	Micropayments deducted from account or prepaid airtime	 Promote subscription based services. Consider using the mobile platform as a distribution channel. E.g., trade virtual goods – like software applications for mobile devices. 	ConvenientInstantIncome generating	Not supported by all devices.	InformationConvenientReal-timeEntertainment
Location based services	Geolocation services	 Use location and other customer information serve relevant content to customers. Push and pull services Pull – customers search what is near them/offers. Call to action (e.g., promote time limited offers.) 	Real-time Innovative	 Not supported by all devices. Needs to be contextually relevant. 	InformationEntertainment



CHAPTER 4 Information communication technology

MOBILE APPLICATION	DEFINITION	MARKETING USE	SUCCESS FACTORS	LIMITATIONS	CUSTOMER BENEFIT / VALUE EXCHANGE
Mobile TV	Streamed TV or broadcast mobile TV – use operating networks infrastructure to stream TV to mobile devices.	Brand commercials scheduled for broadcast television will also feature in the mobile transmission.	 Innovation Subscribers have access 24/7. 	 Not supported by all devices. Does not yet apply to all television networks. In South Africa for example, product offered by DStv mobile Drifta. Expense – restricts application to high income households. 	Convenience Time and place Time filler
Mobile social networks	To assist with access, also have widget downloads which are software compatible with the device.	A variety of options for instance: Establish specific communities orientated around the brand. Target existing communities or individuals that share interests that resonate with the brand's equities and positioning. Interact with customers Relationship building	 Data rich content Interactive Real-time Relevant 	 Social content – time bound because of real time effects. Delays with content may limit relevance. 	 Fulfil individuals' needs to access social networks whenever they choose too irrespective of time or location. Convenient any time access and immediacy.

Source: Conceptualised and adapted from Varnali et al., 2011



4.6.2 How should organisations communicate with customers through mobile phones?

Many of the guidelines outlined in Table 4.9 for organisations to execute social media campaigns extend to the use of mobile phone media for marketing communication efforts. The following additional observations have been made:

- Whilst the penetration of mobile phones into the South African market is high (80%, according to AMPS 2010-2011) there is a wide variety of handsets ranging from simple feature phones to smart phones. These devices differ widely in their functionality. Therefore not all the applications listed in Table 4.11 are viable for all devices and hence accessible to the market. Therefore, mobile marketing communication campaigns should consider the potential need to cater to handsets of the lowest common denominator, according to the mobile handsets utilised by their target audiences. Mobile services or product applications will continue to be developed and this limitation may be overcome in time.
- Different operating systems require different software. This provides challenges for application developers and marketers, who must simultaneously develop software for compatibility across multiple handsets. It is unlikely given the competitive nature of the mobile phone device manufacturer market that they would unite behind a common standard, as this is not in their best interest. Ideally handset manufacturers would like all customers to convert to their specific brand of device.
- Using mobile phones for marketing introduces a new set of stakeholders. This
 includes mobile network operators, device manufacturers, marketers, customers,
 advertising agencies and content providers like application developers as well as
 any of the aforementioned stakeholders (O'Reilly & Duane, 2010:188). Joint
 ventures between some of these parties may benefit the user experience. The
 network operators hold significant personal data on their customers, which
 potentially places them in a unique position as gatekeepers between advertisers
 and customers (O'Reilly & Duane, 2010:191).
- Although mobile phones are ubiquitous these devices are typically personal devices and their users do not necessarily welcome the receipt of non-permission based advertising or content on their mobile phones.

The order of the o

Table 4.12 offers some suggestions to implement marketing communication through mobile phones.

Table 4.12: Suggestions for using mobile phones in marketing communication

SUGGESTIONS FOR USING MOBILE PHONES IN MARKETING COMMUNICATION

- Use permission-based marketing. Seek permission from customers to communicate with them.
- Personalise messages. Mobile is a personal medium, by having customers opt in to receive communication (as per the first point) the organisation acquires some of their personal information, which should be used to tailor communication to suit the customer.
- Be relevant and meaningful.
- Make exchanges interactive.
- Integrate with other marketing activities. Use mobile media as a means to connect customers to
 other marketing activities. For example, as a voting mechanism for televised reality contests or in
 alternative spaces like events, encourage people to register via their mobile phones to have
 content from the event streamed to them in real-time. Make use of the camera functionality of
 mobile phones, invite people to take photographs of themselves at events and upload directly to
 a specific site for a competition or to their social network sites (Odom et al., 2011:1497) to create
 personally valuable experiences.
- Value exchange is important. Reward customers with tangible or non-tangible offerings, for example, virtual offerings like ring tones or skins, games, free downloads.
- Acknowledge the limitations of mobile devices. Creative may need to be downscaled to accommodate the small screen size and download times.
- Give customers something to talk about it, better still get them to talk about the brand or organisation to experience the brand or organisation in a personal way that is relevant to the individual.

Source: Own conceptualisation

4.7 CONCLUSION

This chapter has suggested some of the possibilities technology affords marketing communication through the way technology has become integrated into society. Some may wonder if technology has overtaken society, to dictate its shape. This is the perspective of *technological determinism*, which suggests that technology is responsible for shaping society. The opposite perspective is that of *social constructive* which declares that people are responsible developing technology and adjusting technology to suit their needs. These perspectives represent polarised viewpoints and a median perspective incorporating aspects of both is likely to be more representative of the roles of technology in society today.

Interactivity has been highlighted as a significant property of information communication technology development in the context of marketing communication. The generation of



OF PRETORIA CHAPTER 4 Information communication technology

interactive media platforms presents new ways for organisations to communicate with existing and prospective customers, especially in the area of relationship marketing. Communication advantage is the new competitive advantage. Information technology presents numerous new means of communication platforms and innovative mechanisms of communicating, thus opening opportunity for competitive communication advantage.

The next chapter focuses on the *who*, Generation Y, the subject population of this research.