

Consumer savvy: conceptualisation and measurement

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CONSUMER SAVVY: CONCEPTUALISATION AND MEASUREMENT

EMMA K. MACDONALD

PH.D

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Consumer savvy:
Conceptualisation and measurement

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2009

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Against the backdrop of the interconnected global marketplace and the resulting decrease in consumer-firm information asymmetry, an increasingly prevalent assumption is that consumers are "empowered" and "savvy". However there are contrary findings that consumers are not empowered but feel "trapped", "victimised" and "manipulated" in interacting with firms. Additionally, while the notion of a growing base of increasingly competent consumers has captured the collective imagination, it is important with any social trend to consider variance that may occur due to individual characteristics. With the aim of establishing the truth-status of "consumer savvy" this study addresses the following questions: (1) What are the dimensions of consumer savvy? (2) Is savvy invariant across genders and age groups? 3) Does savvy affect consumers' approach to the consumer-firm interaction?: (3a) Does it relate to desire for co-creation? (3b) Does it relate to perceptions of value in interacting with the firm? (3c) Does it increase the likelihood of consumer activism activities? (4) Are the effects of consumer savvy moderated by: (4a) the hedonic-utilitarian characteristics of products? or (4b) the technological innovativeness of products?

In addressing these questions, the initial emphasis is on establishing a conceptualisation of the characteristics of the savvy consumer. These characteristics are operationalised as a six dimensional "SAVVY" scale which becomes the focus of validation, assessment and application. The new scale's factorial (item-level) measurement equivalence is established for gender. However, measurement non-invariance is found for Gen X versus Baby Boomer consumers, hence caution is required when using it as a generational profiling tool. A vignette experiment to test the scale's predictive validity found that high-savvy consumers have significantly greater desire to engage in co-creation, are significantly more likely to perceive value in the interaction, and are significantly more likely to engage in word-of-web, but are not more likely to complain, than low-savvy consumers.

The findings have implications for researchers and practitioners interested in the potential for consumer-centric marketing approaches. The two key contributions are the development of a framework for conceptualising consumer savvy and the operationalisation and validation of the SAVVY scale as a tool for prediction and population profiling.

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Abstract

Against the backdrop of the interconnected global marketplace and the resulting decrease in consumer-firm information asymmetry, an increasingly prevalent assumption is that consumers are “empowered” and “savvy”. However there are contrary findings that consumers are not empowered but feel “trapped”, “victimised” and “manipulated” in interacting with firms. Additionally, while the notion of a growing base of increasingly competent consumers has captured the collective imagination, it is important with any social trend to consider variance that may occur due to individual characteristics. With the aim of establishing the truth-status of “consumer savvy” this study addresses the following questions: (1) What are the dimensions of consumer savvy? (2) Is savvy invariant across genders and age groups? (3) Does savvy affect consumers’ approach to the consumer-firm interaction? (3a) Does it relate to desire for co-creation? (3b) Does it relate to perceptions of value in interacting with the firm? (3c) Does it increase the likelihood of consumer activism activities? (4) Are the effects of consumer savvy moderated by: (4a) the hedonic-utilitarian characteristics of products? or (4b) the technological innovativeness of products?

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The findings have implications for researchers and practitioners interested in the potential for consumer-centric marketing approaches. The two key contributions are the development of a framework for conceptualising consumer savvy and the operationalisation and validation of the SAVVY scale as a tool for prediction and population profiling.

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List of Publications

Sections of this thesis have previously appeared in the following double-blind, peer-reviewed publications and include two conference “best paper” awards.

Academic journal:

1. Macdonald, Emma K. and Uncles, Mark (2007), ‘Consumer savvy: Conceptualisation and measurement’, *Journal of Marketing Management*, 23 (5-6), 497-517.

Conference proceedings:

1. Macdonald, Emma K. and Uncles, Mark (2008), ‘Consumer SAVVY: Generational divide’, *Academy of Marketing Conference 2008: Reflective Marketing in a Material World*, Conference proceedings, Aberdeen, U.K.
2. Macdonald, Emma K. and Uncles, Mark (2007), ‘A conceptualisation and analysis of the "savvy" consumer’, *Academy of Marketing Conference 2007: Marketing Theory into Practice*, Conference proceedings, Kingston, U.K.

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3. Macdonald, Emma K. and Uncles, Mark (2007), ‘Is Savvy a Gender Issue?: An Empirical Study’, *ANZMAC 2007 Conference: Reputation, Responsibility, Relevance*, Conference proceedings, Australian New Zealand Marketing Academy, Dunedin, New Zealand.

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4. Macdonald, Emma K. and Uncles, Mark (2005), ‘An Investigation of the Savvy New Consumer in Australia’, *ANZMAC 2005 Conference: Broadening the Boundaries*, Conference proceedings, Australian New Zealand Marketing Academy, Fremantle, Australia.

Glossary – Acronyms and Terms Used

ABS	Australian Bureau of Statistics
avatar	A virtual character, which has human characteristics, created by technology. An avatar is a caricature, not a realistic photo and can be a simple image or a bizarre fantasy figure.
CFA	confirmatory factor analysis; A statistical technique for testing how well measured variables represent a smaller number of constructs. ¹
CRM	Customer relationship management – usually refers to technology driven interaction with consumers.
CS	Consumer savvy: A form of pragmatic marketplace intelligence which enables consumers to achieve beneficial outcomes from their engagement with firms. In this thesis consumer savvy is operationalised as <i>a multi-dimensional, self-perception measure of an individual’s consumer competency and expectations within the consumer-firm interaction.</i>
e-publishing	Refers to online activities such as blogging and setting up / publishing to a website. Includes provision of content for an audience. In terms of offline activities, it is more similar to publishing and editorialising than it is to conversation. Is distinguished from WOW (below)
EFA	Exploratory factor analysis. An interdependence statistical technique which defines the underlying structure among a set of variables. ¹
hedonic goods	Goods that provide experiential consumption, fun, pleasure and excitement. (See for comparison, utilitarian goods) ² .
infomediary	A new kind of intermediary organisation which focuses on managing ‘information’ in the channel between firms and their consumers.
ITC	Information, technology and communications
meganet	This term comes from Iacobucci (1998) who defines a network as “ <i>a collection of nodes in a system and their interconnections</i> ” (p11). She depicts the meganet as a network of networks with interconnections between consumer networks and firm networks (see Figure 2 in Iacobucci 1998, p11) The important implication is that the “ <i>pairwise, dyadic relations between these various nodes can convey unlimited content</i> ” (Iacobucci 1998, p11).
MO	Market orientation

permission-based direct marketing	A form of direct marketing where the consumer: (a) provides permission for the collection of their personal data, (b) provides permission to receive marketing communications, and (c) where the consumer responds to only those communications that they deem to be of interest. Usually run through a technology platform, such as the internet. In addition, the consumer may be directly rewarded for their time and their attention, either with a “points incentive” or with cash payments.
PureProfile	<i>PureProfile Pty Ltd</i> is a permission-based direct-marketing firm based in Sydney, Australia and in London, UK, as well as a new office in the USA.
reverse auctions	Where a buyer names a price which a seller may accept, e.g. PriceLine.com obtained a patent for an online business model using reverse auctions (see McMillan 2002).
reverse marketing	Reverse marketing views markets and marketing activities explicitly from the <i>consumer</i> viewpoint, whilst acknowledging the importance of mutual relationship exchange and value-creation between the firm and the consumer; reverse marketing provides new modes of customer transaction and relationship (Lawer and Knox 2004).
SEM	Structural equation modelling (in this study implemented using the AMOS 7 software package)
utilitarian goods	Goods that are primarily instrumental and functional. (See for comparison, hedonic goods) ² .
WOM	Word-of-mouth: consumer-to-consumer communication. Traditionally a consumer’s WOM connections have included relatives, friends and colleagues.
WOW	Word-of-web (sometimes referred to as eWOM or word-of-click which more comprehensively includes wireless/mobile enabled connectivity.) This includes activities where consumers engage in conversations online or where they pass on information to other consumers using technology as a medium. (See for comparison e-publishing).

1. Hair, Black, Babin, Anderson and Tatham (2006).
2. Dhar and Wertenbroch (2000).

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1 Introduction

1.1 Overview

The rapid increase in the availability and power of enabling information technologies and the speed of information flow is impacting upon the interaction of marketing and consumers. The internet provides consumers with the potential to source valuable information in any node of the globally-connected information network (Iacobucci 1998, Day and Montgomery 1999). In addition, the two-way interactive properties of many of these information technologies means that each individual consumer has the potential to be “*heard*” by firms, organisations and institutions (provided they are listening), or any other third party with whom the consumer chooses to connect (Mitchell 2004). And even if the organisations are not paying attention, the online world provides consumers the opportunity to make contact with and join forces with other consumers (Pralhalad and Ramaswamy 2004b, 2004c).

The accelerating pace of technological development in the Western world is undeniable; the evidence is visible around us everyday and is captured in a variety of statistics. For example, in 1996 in Australia, it was estimated that only 300,000 home computer users accessed the internet, and 200,000 used email (ABS 1996). Forty per cent of Australian households in 1996 did not own a computer because they had “*no use for one*” and 30 % because “*the costs were too high*” (ABS 1996). After massive growth, a decade later the number of households connected to the internet was 64% in 2007 (ABS 2007a). The most popular use of the internet is email (89%) followed by general surfing for information (57%) (DCITA 2006). Purchasing via the internet has also increased significantly; for instance in 2005, 31% of Australian adults were purchasing or ordering goods online compared to 5% in 1998 (ABS 2005).

Usage of high-bandwidth internet applications is set to be the next area of growth if the increase in broadband usage is any indicator – household broadband take-up in Australia increased from 2.3 million in 2006 to 3.5 million in 2007 (or 43% of households) (ABS 2007). This increase reflects global trends. Gartner (in *Electronics News* 2008) reports that in 2007, worldwide consumer broadband connections penetrated 18% of households; in addition, five countries (Canada, Netherlands, Switzerland, South Korea and Hong Kong) exceeded 60% household broadband penetration. By 2012, it is predicted that seventeen countries, including Australia, will surpass 60% home broadband penetration (*Electronics News* 2008).

As with any process of rapid change, there is a great deal of uncertainty regarding what stage of the change timeline we are on now, to what extent complete disruption can be expected, or whether the result will be ‘more of the same’. When the change involves some significant new technology, such as the printing press or electricity, then it is often the case that “*the important applications of any new significant technology are usually unthinkable in advance*” (Haeckel 1998, p.66). This is the case with interactive technologies which provide “*the potential for collaboration on a scale and kind we are only beginning to appreciate*” (Haeckel 1998, p.71).

The ‘known truth’ of increasing levels of consumer ‘savvy’, such that consumers are informed, connected and demanding, makes a frequent appearance in the practitioner-focused and academic-based marketing strategy literature of recent years (Day and Montgomery 1999, Szmigin 2003, Harker and Egan 2004, Prahalad and Ramaswamy 2004a, 2004b, 2004c, 2004d, Dupuy 2004, Vargo and Lusch 2004, Lawer and Knox 2004, Lafley and Charan 2008, Li and Bernoff 2008). As a result, firms are being urged to become more consumer-centric (Sheth, Sisodia and Sharma 2000, Parasuraman and Grewal 2000, Prahalad, Ramaswamy and Krishnan 2000, Vargo and Lusch 2004, 2006). The implications for marketing processes include the need for a new truly consumer-focused engagement with consumers (Wind and Mahajan 2002, Szmigin 2003, Urban 2004, 2005) and marketing processes which increase consumer consultation and encourage consumer engagement with the firm (Urban 2004, 2005, Prahalad and Ramaswamy 2004b). Yet, despite the concept of universal consumer savvy gaining such prevalence, the empirical evidence is of variable quality, with the exception of recent qualitative studies by Harker (Harker 2004, Harker and Egan 2004).

In this dynamic environment, characterised by high uncertainty, there are many who seem prepared to make ‘predictions’ and it will become evident from the literature review that these predictions are increasingly focusing on the role of the ‘new’ consumer. The problem for marketing practitioners and academics alike is to determine which of these predictions are most valid, and this is extremely difficult in a situation where very little empirical evidence is in existence. The marketing discipline, like the broader field of management, is replete with trends where the “*ratio of hyperbole to hard evidence is high, with over-reliance in the literature on expert opinion, anecdote, case studies, and unpublished proprietary surveys*” (Zeidner, Matthews and Roberts 2004). New management and marketing trends frequently emerge from observations of one particular situation, are then rapidly adopted by managers across multiple industries

and organisations, and may be just as quickly discarded once it becomes clear that there was little basis to the generality of the claims in the first place. The concept of ‘new’ consumers enabled by enhanced skills and knowledge who are over-running the marketplace and usurping the firm from its place at the centre of things (Szmigin 2003, Dupuy 2004, Urban 2004, 2005) may be one such notion.

The change in the interaction between the consumer and the firm is viewed by many as an *evolutionary* process – “*from print to electronic media; from mass to individual behaviour; from one-way to two-way communication; from passive to interactive reception of information*” (Berthon, Holbrook and Hulbert 2000, p.51). Firms are evolving in their uses of technology (Hoffman and Novak 1996) and consumers are gradually adapting to the ubiquity of technology and using the increased availability of information in creative ways (Szmigin 2003).

However, other commentators suggest that it is also resulting in *revolutionary* changes in the role of the consumer (Blattberg, Glazer and Little 1994, Szmigin 2003, Mitchell 2004, Dupuy 2004) and the firm (Achrol and Kotler 1999, Day and Montgomery 1999, Prahalad and Ramaswamy 2003, 2004a, Mitchell 2004). With respect to the consumer, firms are being alerted to the emerging and growing force of consumer power (Szmigin 2003) where consumers are increasingly acting without the input or control of the firm (Day and Montgomery 1999). It is claimed that marketers who do not prepare to meet this increasingly demanding ‘new’ consumer on their terms are in danger of losing their customer base to firms that *will* listen to the consumer and deal with them as equals (Szmigin 2003, Lawer and Knox 2004, Urban 2004, 2005, Hopewell 2006).

To add to the confusion and uncertainty, a contrasting perspective of the consumer has emerged over the past decade. Qualitative research has found that, rather than empowered, consumers feel “*confused*”, “*stressed*”, “*manipulated*”, “*trapped*” and “*victimised*” (Fournier, Dobscha and Mick 1998). In particular, this view questions marketing’s wholesale adoption of database and CRM technology, where marketers are “*skimming over the fundamentals of relationship building in [their] rush to cash in on the potential rewards of creating close connections with [their] customers*” (Fournier, Dobscha and Mick 1998, p.44). This view of the consumer claims that the current use of ‘relationship marketing’ techniques and de-humanising technologies *dis-empowers* the consumer.

The proposed research study addresses the problem of understanding the consumer in the context of a changed marketplace which is impacted by technological change and global connectivity. It does this firstly by focusing on the concept of the savvy ‘new’ consumer with the objective of defining what is meant by consumer savvy. The study will define the domain, dimensions and outcomes of consumer savvy, by reviewing the literature and using secondary studies to understand the broad consumer population. It then develops a measure of consumer savvy with the aim of establishing empirically whether the ‘savvy consumer’ concept has any legitimacy or currency in marketing today. The newly developed scale will be used to conduct a much needed evaluation of the existence and extent of the ‘savvy new consumer’ in the direct marketing context. In developing this new scale, consideration will be given to the relationship and distinctiveness of the savvy construct from other related consumer constructs, such as consumer expertise (see Chapter 2).

1.2 Importance

Consumer¹ empowerment and the resulting requirement for more consumer-centric approaches to marketing are increasingly prevalent themes amongst academics and practitioners (Sheth, Sisodia and Sharma 2000, Prahalad and Ramaswamy 2000). In academe, Vargo and Lusch (2004) have brought a number of these concerns to the fore with their influential “*new service-dominant logic for marketing*”. One of their key premises is that the consumer now plays a much more important role in the marketing process as a *co-producer*. This is a distinct change from the traditional marketing perspective where even the terminology implies that the consumer is prey, a hunted *target*, rather than an equal and engaged co-producer. The themes identified in the current study are emerging in a number of literature streams. A brief overview of how these literatures inform this study is provided below.

The *Interactive Marketing* literature examines the on going and dynamic interaction between the firm and the consumer. Service marketing researchers have a long history of investigating consumer participation in the service exchange (Bitner, Faranda, Hubbert and Zeithaml 1997). This approach has only recently been extended

¹ For purposes of this thesis, the terms buyer, consumer and customer are used interchangeably, but all refer to interactions with and among final consumers as opposed to business-to-business interactions.

to marketing of goods (Vargo and Lusch 2004) such that consumers can play a part in the specification, production, delivery and distribution processes (Wind and Mahajan 2002, Prahalad and Ramaswamy 2004b). To illustrate this point, the phrase ‘customer as co-producer’ has been increasingly prevalent in the marketing and management literature over the past decade (for a review see Wikstrom 1996, more recently see Prahalad and Ramaswamy 2004a). Journalist and business commentator Alan Mitchell’s (2004) interactive marketing paper on the “*buyer-centric revolution*” provides insight on how direct marketing processes will be altered as a result of consumer empowerment. The trends identified include the predicted changes in distribution of “*buckets of activity*” between consumers and sellers, and the rise of reverse marketing where the consumer will become the initiator and controller of marketing interactions (Mitchell 2004).

Writers in the *Strategic Management* field have been saying for some time that, in order to remain competitive, firms need to work more closely with and be more responsive to other stakeholders, including consumers (e.g. Prahalad and Ramaswamy 2004a). Changes in the business-to-consumer space are predicted to mirror those that have been occurring for some time in the B2B sector with ECR (efficient customer response) processes widely implemented between manufacturers and suppliers (Mitchell 2001). If firms cannot manage to make these changes then new information intermediaries known as ‘infomediaries’ are predicted to take this role (Day and Montgomery 1999). In order to achieve better engagement with consumers, the *Marketing Strategy* literature in recent years has shifted focus from transactions to relationships (Coviello, Brodie, Danaher and Johnston 2002). Importantly, this literature has brought us a view of marketing where the consumer plays a bigger role in the specification, production and delivery of consumer products and services (Vargo and Lusch 2004, 2008).

The *Customer Equity* literature, led by Blattberg (Blattberg, Getz and Thomas 2001) and his colleagues, argues that the dominant brand-driven perspective of marketing is giving way to a customer-equity perspective, because of changes from both the firm and the consumer viewpoint: from a firm’s point of view there is a convergence between the technological trends of affordable information technology, low-cost communications, sophisticated statistical modelling and flexible fulfilment; from a consumer viewpoint the availability of near-perfect information on alternatives enables consumers to claim greater control from the firm over the channel system (Blattberg,

Getz and Thomas 2001). Despite its recognition of changing consumer behaviour, the customer equity literature's focus on '*retention equity*' (Blattberg, Getz and Thomas 2001) demonstrates that, like the marketing strategy literature, it has as its main focus and beneficiary, the firm.

With regards to consumerism, Hilton (2007) observes that the modern consumer movement – spear-headed by comparative-testing organisations – has been largely neglected by scholars. This is due to the "*popularly imagined penny-pinching habits of a Which? Or Consumer Reports reader*" (Hilton 2007, p132). Yet alliances of consumer organisations have been successful in raising issues such as pesticide use and the dumping of pharmaceutical products in the third world, and this is a trend which has been trans-national. A new and fragmented 'body' of work which might collectively be described as the *Empowered Consumer* literature, is emerging from a variety of different fields, and specifically aims to describe the consumer side of the consumer-firm interaction. This literature is fairly limited at present (Bazerman 2001) but includes recent work by Szmigin (2003), Dupuy (2004), and Urban (2004, 2005); as well as the recently launched *Journal of Consumer Research for Consumers*. The latter aims to provide a "*small counterbalance to the quantity of consumer research that is currently published in the interests of marketers*" (<http://www.jrconsumers.com/about>, accessed 29 April 2006).

Relevant papers from all of these literatures will be explored in more detail in Chapters 3 and 4. However, what is apparent from reviewing these various literatures is that the theme of empirically examining the 'savvy new consumer' concept has importance for academics, practitioners and consumers. Each of these needs will be addressed briefly in turn in the following section.

1.2.1 Academic importance of the research topic

While commentators have been 'talking up' the importance of consumer-centricity in the context of a fully-informed and empowered new consumer for the past five to ten years (Blattberg and Glazer 1994, Day and Montgomery 1999, Lehmann 1999, Achrol and Kotler 1999, Wind and Mahajan 2002, Szmigin 2003, Mitchell 2004, Urban 2004, Dupuy 2004, Harker and Egan 2004, Prahalad and Ramaswamy 2004, Lawer and Knox 2004, Vargo and Lusch 2004), there is at present little formal and systematic evidence to support the assertions. The few exceptions include anecdotal

cases, isolated qualitative studies (such as those by Harker and Egan 2004, Harker 2004) and government statistics on technological adoption (as discussed in Section 1.1). Despite the widespread assertions and predictions for the future, little empirical work has been conducted to examine the need for or impact of a consumer-centric approach to marketing.

Underlying the calls for consumer-centricity is the observation of a ‘sea change’ in consumer behaviour (Urban 2005, p.155) which has seen at least some consumers become better informed, connected and more demanding. At present there is no agreement on exactly what set of skills or behaviours these ‘new’ consumers possess, and no existing measurement of their existence. It appears that the conceptualised ‘new’ savvy consumer has what the ancient Greeks described as *metis* or “*local knowledge, commonsense, cunning, practical skills, know-how*” (McMillan 2002, p.153). The anthropological concept of *metis* consists of a “*wide array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment*” (Scott 1998, in McMillan 2002, p.153). A more current term for the acquired skills and behaviours, which allow consumers to make the best of their interactions with firms in a changing environment, is ‘consumer savvy’.

In conceptualising savvy, some links can be made to the concept of persuasion knowledge (initially presented by Friestad and Wright 1994) which examines consumers’ beliefs about the mental states and psychological change processes used by those (individuals or firms) who are trying to influence them. Persuasion knowledge is a sub-domain in the broader field of “*marketplace meta-cognition*”, defined as everyday individuals’ thinking about the marketplace (Wright 2002). Drawing on the fields of evolutionary psychology, theory of mind and folk-theoretic models of intentionality, Wright (2002, p.681) observes that marketplace meta-cognition can be viewed as “*an evolved potentiality and a fluid pragmatic intelligence that individuals grow and refine somehow over a lifespan*”. Savvy can be conceived of as another sub-domain in understanding how consumers manage and adapt to the marketplace.

A need exists to identify the dimensions of consumer savvy in order to better understand this construct, and to allow measurement and investigation of its impacts on consumer expectations of marketing and outcomes. The lack of formal evidence is significant because it means the truth status of the ‘savvy consumer’ concept is still very unclear. In general, it is desirable to build marketing knowledge from well-established concepts and empirical findings whose ‘truth status’ is known (Uncles 2002). The

importance of the study reported here is that it provides a first step in quantifying the existence and extent of savvy consumer characteristics in a direct marketing consumer context.²

1.2.2 Managerial importance of the research topic

The power of connected networks and the ‘megane’ means that once hard-to-reach knowledge in isolated nodes becomes universally available (Iacobucci 1998). The consequences of the ‘network society’ (Achrol and Kotler 1999) and the ‘connected knowledge economy’ include the faster and freer flow of information (Day and Montgomery 1999). This means that a greater volume of information is reaching not just the firm, but the consumer as well. Enhanced information flow and connectivity are responsible for blurring the boundaries between the firm and their consumers (Glazer 1991). With more information available real-time to consumers than previously, practitioners are being warned about the informed consumer who has greater knowledge of the firm’s internal workings. Instead of being told what product specifications to accept, these consumers are in a much stronger position to negotiate terms and to demand their preferred product designs. This is having a disruptive effect on communications, channels, corporate knowledge management, and perceptions of value such that: *“as the power of information and the database is extended to the consumer, a new division of information labour is taking root. In the process, many of the familiar features of the old world are being turned on their heads”* (Mitchell 2004, p.13).

In practice this means, for communications, that *one-way*, mass communication is no longer necessarily the only form of firm-to-consumer interaction. Consumers increasingly expect *one-to-one* communication (Pine, Peppers and Rogers 1995, Peppers, Rogers and Dorf 1999, Peppers and Rogers 1997, 2000, Wind and Mahajan 2002). Furthermore, consumers are able to communicate *back* to the firm more easily as a result of technology and connectivity (e.g. Wind and Mahajan 2002, Szmigin 2003, Mitchell 2004). The potential benefit for the firm is to capture technologically-enabled real-time information from consumers when they are in a state of buyer readiness (Mitchell 2004). This is a situation that has often been difficult for firms to achieve in

² The approach taken in this thesis is most closely aligned to the Realist tradition which maintains that there exists an objectively knowable, mind-independent reality, whilst acknowledging the roles of perception and cognition (Sayer 1992).

the past. Traditionally firms have employed techniques such as market research, direct marketing, promotional ‘calls to action’ and other incentives in order to understand and capture the consumer’s attention at the point of purchase decision. For this reason, technology is being credited with reducing the costs of reaching, interacting with and transacting with the ‘expensive nuisance’ of consumers³ (Mitchell 2004).

There are further implications for product design, production and pricing. Consumers are increasingly obtaining their information from non-firm-controlled sources, via the internet (Day and Montgomery 1999). As technology moves markets away from distinct, self-contained national markets to linked global markets, consumers are increasingly able to obtain valuable information *wherever* it is in the world (Day and Montgomery 1999). Being better informed places consumers in a stronger position to negotiate pricing (McMillan 2002), and it is claimed that this impact can be observed already in the existence of reverse auctions. However, a far more revolutionary impact of interactive technology is its potential to allow consumers to engage fully in the processes of product specification, production and delivery, or ‘co-creation’ (Prahalad 2004, Prahalad and Ramaswamy 2004a, Jaworski and Kohli 2006). This will greatly shift power to the consumer and will supposedly result in more consumers who “*seek to exercise their influence in every part of the business system*” (Prahalad and Ramaswamy 2004a, p.6).

As a result of all these changes, some serious threats are being made to practitioners about a marketplace which “*now belongs to the consumer*” (Szmigin 2003, p.185) and a soon to erupt “*veritable earthquake*” of consumer power (Dupuy 2004, p.28). Practitioners are alerted to the need to develop the capability to attend to and respond to consumer initiated communications (e.g. Day and Montgomery 1999, Prahalad and Ramaswamy 2004a). In practice, of course, the changes that are being urged on firms are extremely disruptive and costly. After their negative experiences with implementation of CRM programs⁴, many firms would be hesitant to embrace the new approaches to marketing, even if the evidence was compelling. As for the compulsion for business change, most of these claims are based on anecdotal evidence. In an environment of such uncertainty where the possibility of disruptive change is

³ Mitchell bases this claim on a McKinsey study which found that half of all labour costs are “interaction costs” (Butler, Hall, Hanna, Mendonca, Auguste, Manyika and Sahay 1997).

⁴ Several studies by McKinsey consultants show that more than half of all companies investing in CRM consider it a disappointment (Agarwal, Harding and Schumacher 2004). While the technology itself has been effective, firms have had difficulty getting all sections of the organisation – including frontline staff, back of house, IT, partners and suppliers – to agree on the implementation and use of these systems.

highly likely, it is vital for managers to keep “*an eye on research which can help [them] understand how people will change the way they think and work with each other and with machines*” (Haeckel 1998, p.71). This will assist managers to gain competitive advantage through becoming part of consumers’ online information search, through harnessing the potential of word-of-mouth via new technologies, and through engaging in partnership with consumers to obtain win-win outcomes. The current research project contributes to answering practitioners’ need to understand how consumers’ characteristics might be changing and the implications of these changes.

1.2.3 Consumer importance of the research topic

This study has significance for consumers because it provides a tool for assessing their consumption effectiveness in the technologically-enabled marketplace. In his historical overview of the changing rights and duties of consumers since the 18th century, Hilton observes that: “*The consumer movement has always recognised that it is hard to be a consumer*” (Hilton 2005, p10). Firstly, ever since the end of World War II consumers have faced an ever increasingly complex and technical marketplace where it is difficult to exercise informed choice. Secondly, it has traditionally been difficult for consumers to exercise their rights because they have lacked the time or energy to fight for their rights on a daily basis. Third, the hardest role consumers have is exercising their rights and responsibilities, as shown in the fair-trade movement’s 30:3 ratio – a third of consumers profess to care about companies’ ethical policies, but ethical products rarely achieve more than 3 per cent market share (Hilton 2005).

As well as the difficulties of being a consumer, a consideration might be the constraining effect of economic factors on consumers’ ability to engage with technology and hence in a technologically-connected marketplace. A topic which could be examined in further detail (but which will not be covered in this thesis) is how economic factors moderate the effects of consumer savvy. While it might be argued that technological sophistication is economically-determined, as technology becomes more and more affordable, evidence from emerging countries including Brazil, Russia, India, and China indicates that these (and other) less-developed countries are “*fertile fields*” for emerging tech markets (Forrester 2008).

The vast majority of consumer research is conducted and published for the benefit of marketers (Bazerman 2001). Yet if one is to believe the commentaries,

consumers are becoming more militant about demanding that their personal information be used for *their* benefit. The findings of this study confirm an increased ‘savvy’ amongst consumers, providing a ‘wake up call’ to practitioners that they need a new approach which acknowledges the knowledge and skill of their consumers. This is of benefit to consumers by providing a ‘nudge’ to managers who are not yet operating in the way that the savvy consumer prefers.

1.3 Research questions

As discussed in the previous section, the importance of consumer-centricity in the context of *fully-informed and empowered savvy new consumers* is an increasingly prevalent theme in the marketing and management literatures. The breadth of claims about savvy consumers and diversity of claimants means that this concept is at high risk of the ‘*text book effect*’ (Rotfeld 2000) where the concept of consumer savvy becomes a widely known fact despite its truth status being unclear (Uncles 2002, Rossiter 2002, Brodie 2002, Uncles and Wright 2004). Consumer savvy appears to be a form of pragmatic marketplace intelligence which enables the consumer to achieve beneficial outcomes from their engagement with the firm. This study addresses the need for empirical evidence of consumer savvy. In addressing this deficit the following key questions are addressed: Firstly, what are the characteristics of the empowered and savvy new consumer in the information-rich technology-enabled marketplace? The claims about the savvy consumer appear to indicate a multi-dimensional skill set and range of behaviours which independently and in combination allow the consumer to achieve maximum value from their consumption in a rapidly changing and increasingly complex modern environment. Thus it is vital to define and understand the concept of consumer savvy, by asking:

RQ 1: What are the dimensions of consumer savvy?

Before a new measurement tool can be used as a profiling mechanism for populations, it is prudent to establish whether the measure is invariant across population sub-groups. That is, does the measure have the exact same meaning across groups or are there any differences in how the items, constructs and construct relations are understood by different sub-groups of respondents? In this particular study, we are

interested in the extent to which consumer savvy is invariant across genders and across age groups. Thus the second research question is:

RQ 2: Is consumer savvy invariant across gender and age groups?

In addition, it is necessary to examine the impact of savvy in order to qualify the claims that consumers' expectations of marketing have changed (e.g. Wind and Mahajan 2002, Szmigin 2003, Dupuy 2004) to such an extent that *"the future of competition...lies in an altogether new approach to value creation, based on an individual-centred co-creation of value between consumers and companies"* (Prahalad and Ramaswamy 2004b, p.5). Consumers are said to expect firms to provide open-access to the firm's internal workings, unbiased product information, ready access via multiple channels and opportunities for consumer input via co-creation. Prahalad and Ramaswamy (2004a) imply that creating more opportunities for co-creation will create greater consumer satisfaction, increased trust and relationship commitment, and positive WOM. This study will examine consumer expectations of marketing and the impact on likely outcomes of interaction.

The outcomes of savvy are not only predicted to be positive but increased savvy is said to have a potentially 'dangerous' and 'frightening' side for firms who fail to satisfy the expectations of savvy consumers. Szmigin (2003) observes that, should a consumer become dissatisfied, then the consumer: *"can become a 'terrorist' in business terms if they feel they have not been dealt with fairly, they can bombard companies with complaints, letters, telephone calls and tell others about their experiences"* (p.76). Thus the third set of research questions intends to measure the outcomes of the savvy consumer concept by asking about the impact of savvy on consumers' approach to the consumer-firm interaction.

RQ 3: How does savvy affect consumers' approach to the consumer-firm interaction? (3a) Does savvy relate to consumers' desire for co-creation? (3b) Does savvy relate to consumers' perception of value in interacting with the firm? (3c) Does savvy increase the likelihood of consumer activism activities?

It is not yet known whether consumer savvy is a universal trend or whether it is relevant only in specific product contexts. Existing knowledge of consumer

involvement indicates that differences in consumer behaviour may occur depending on the perceived importance of the product, the perceived risk associated with its purchase, the symbolic value of the product or its hedonic value (Laurent and Kapferer 1985). As an initial examination of the moderating effect of product context on the effects of consumer savvy, analysis of *between* individual variance will be conducted across (a) the hedonic-utilitarian continuum and (b) the high-tech versus low-tech product continuum. Hence the fourth set of research questions ask:

RQ 4a: Are the effects of consumer savvy moderated by the hedonic-utilitarian characteristics of products?

RQ 4b: Are the effects of consumer savvy moderated by the technological innovativeness of products?

1.4 Scope of the research

As will be detailed later in Chapter 5, the approach taken in this study is broad which means that aspects of consumer behaviour are examined in the context of strategic issues facing contemporary consumers and businesses. The main focus of this research is on *consumers*, their expectations of marketing processes, and the consumer outcomes of the consumer-firm interaction. The context of this study is *direct marketing* because it offers three advantages. Firstly, the area of interactive direct marketing is growing in absolute terms and as a proportion of marketing spend. In an examination of interactive marketing⁵ across seven nations (USA, Japan, Germany, UK, France, China and Brazil), Barwise and Farley (2005) found expenditure on interactive marketing is growing fast, already accounting for over eight per cent of total marketing spend. This rapid growth was found to be coming mainly at the expense of traditional media advertising and seems likely to continue for the foreseeable future (Barwise and Farley 2005).

Secondly, an emerging sub-theme in direct marketing research and practice is that of permission-based direct marketing. This is said to be the embodiment of consumer-centric marketing because of its ability to interact and respond one-on-one

⁵ Includes permission e-mail, online promotions/incentives, web advertising and sponsorship, marketing web sites and extranets, and new media such as wireless and iDTV (Barwise and Farley 2005).

with the consumer and because of its mechanisms for obtaining consumer permission (Lawer and Knox 2004, Mitchell 2004). It is a context where, if consumers have truly become savvier, one would expect to observe the savvy consumer phenomenon occurring to a greater extent.

Finally, a key dimension of consumer savvy is claimed to be technological savvy, including consumers' readiness to switch effortlessly between online and mobile technologies (Wind and Mahajan 2002), so one would expect to find a high incidence of consumer savvy within the technologically-advanced online consumer marketplace. A self-perception approach will be used. This approach is common both in consumer and business research. Less common is the focus on self-perceptions of consumers, rather than managers, with regards to strategic marketing issues. Ideally I would obtain perceptions from both sides of the consumer-marketer 'dyad' but, as with many strategic marketing studies (which measure just manager perceptions), neither costs nor resources allow the coverage of both sides of the dyad, aside from the practical difficulties of implementing such an approach.

1.4.1 Units of analysis

There are two 'units' of interest in this study: the consumer, and the consumer-firm interaction.

The unit of analysis in Phases 1 and 2 of this study is the individual adult consumer. Whereas much of the literature on consumer literacy focuses on novice consumers⁶, the scope of this study is adult online direct marketing consumers (that is, 18 years old or above). Consumers are asked to provide their self-perceptions of the extent that they possess savvy characteristics, their perceptions of marketing processes, and their predicted behaviours during their interactions with firms. The outcomes of savvy are examined amongst consumer-members of an online permission-based direct marketing firm. This context is likely to include consumers across the full range from high to low savvy, aside from those of the most disadvantaged groups of Australian society who do not have access to connective and interactive technologies, such as computer technology and internet access.

The focal unit of analysis in the Phase 3 vignette study will be the consumer-perceived interaction between the consumer and the firm. This is any consumer-

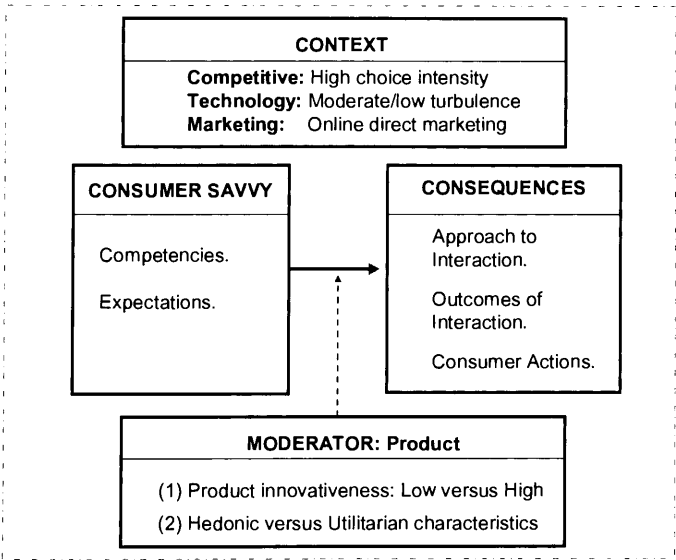
⁶ That is, children. See for example a review by John (1999).

perceived interaction between an individual consumer and the firm, including pre-, during and post-purchase. From the firm’s perspective, the interaction might include personalised or mass communication; however, it is up to the consumer whether they perceive either of these (or neither) as a personalised communication. In addition, the interaction may be initiated by the consumer or by the firm, but importantly again it is based on consumer perceptions of the interaction. This focus on the interaction as a unit of analysis is consistent with predictions that marketplace interaction will be increasingly treated as the focus of our research through the parsing down of the two current and distinct streams of consumer behaviour and marketer behaviour research (Wright 2002).

In order to standardise the nature of the interaction in the third phase of the study, a vignette-style experiment is used. A hypothetical unbranded firm is presented in the vignettes.

1.5 Contextual issues

Figure 1.1 Contextual and moderating factors



1.5.1 Reverse marketing

The traditional linear decision-making models of consumer choice (such as Engel, Blackwell and Miniard 1995) present a view of how marketers should ‘act on’ consumers at various stages of their decision making process. These models have little

applicability in the current study where we are examining an actively involved consumer who ‘acts on’ as much as being ‘acted on’ and where interaction occurs continuously pre-, during and after purchase.

As opposed to a traditional context where the business model lets the firm operate on a “*make, sell and tell*” basis, the context for reverse marketing is where the firm needs to “*listen, serve and customise*” (Lawer and Knox 2004, p.5). The specific context for this study is permission-based direct marketing where the consumer gives permission to receive marketing communication from the firm *on their terms*, such that they only receive communication and offers from firms or categories that they have previously indicated their interest in. The consumers’ ability to ‘give permission’ extends to: allowing firms to collect their information; allowing permitted firms to use their information to tailor offers; permitting firms’ targeted communications to reach them (that is, they can refuse to receive and open any offer that is sent to them); and finally, to being recompensed for the effort involved in opening a communication, and also potentially for responding to a communication (Mitchell 2004).

1.5.2 The moderating impact of product category

Few of the predictions about the rise of consumer savvy and increasing requirement for consumer-centric marketing specify the product context. It is apparent that those who advocate a coming ‘revolution’ believe it will be universal (Mitchell 2004, Prahalad and Ramaswamy 2004a). However, our existing knowledge of the consumer indicates that there will likely be differences in consequences across product types depending on the perceived importance of the product, the perceived risk associated with its purchase, the symbolic or sign value attributed by the consumer to the product, and the hedonic value of the product (Laurent and Kapferer 1985). For instance, we know from the consumer involvement literature that consumers who experience high product category involvement are more likely to carefully evaluate the merits and weaknesses of a purchase and pay more attention to communication from the firm (Cacioppo and Petty 1982). It might also be assumed that this greater level of interest includes wanting a higher degree of engagement with the firm, such as engaging in dialogue and complaining when things go wrong.

It is expected that, should differences in savvy be found, they will occur across the dimensions of high- versus low-technologically innovative products, and across the

hedonic-utilitarian product continuum. Product categories were selected across these continua in Phase 3 of this study.

1.5.3 The environmental context

The phenomenon of increasing consumer empowerment is influenced by broad changes in the environment (discussed in more detail in Chapter 2). In this study the following environmental changes are considered and controlled for: *choice intensity* (the number of competing offers available to consumers); and *technological turbulence* (the rate of technological change) (Jaworksi and Kohli 1993).

1.6 Methodology and key findings

This study comprises three key phases of methodology with the aim of answering four sets of research questions (Table 1.1).

Table 1.1 Phases of methodology

		PHASE 1	PHASE 2	PHASE 3	
		Conceptualisation and operationalisation	Measure invariance analysis	Consequences of consumer savvy	Moderating effect of product category
		RQ 1	RQ 2	RQ 3	RQ 4
Sample 1	n=223 students	X			
Sample 2	n=537 online consumers	X	X		
Sample 3	n=187 online consumers			X	X

Firstly, it was necessary to conceptualise the notion of ‘consumer savvy’ into a measurable construct to facilitate its testing and analysis in order to establish its truth status. Thus Phase 1 of the methodology aimed to answer *RQ 1: What are the dimensions of consumer savvy?* This involved a conceptualisation of the dimensions of consumer savvy from a synthesis of the academic and managerial literature. These six dimensions – including four consumer competencies (technological sophistication, marketing literacy, online network competency, offline network competency) and two expectations (expectations of the firm and consumer self-efficacy) – were then operationalised as a new scale. Appropriate scale development and purification

procedures (Churchill 1979) including evaluations by experts (Rossiter 2002) were implemented. Analysis was conducted using SPSS 15 to ensure reliability and validity of measures including the use of a development sample (Sample 1: n=223 students) followed by a validation sample (Sample 2: n=537 consumers). The output of this first phase of the study was a definition of consumer savvy and a validated measure of the savvy construct (Chapters 5 and 6).

The second phase of the study addressed the research question *RQ 2: Is consumer savvy invariant across gender and age?* In addressing this research question, analysis was conducted for two potential covariates of SAVVY – biological gender and generational age (Chapter 7). The technique used was multi-group invariance analysis in SEM (AMOS 7.0). The SAVVY scale was found to have item-level invariance but some structural non-invariance between the genders. This means that the SAVVY scale demonstrates item-level measurement equivalence between the genders, such that the items have the same meanings between males and females. However, it demonstrates some structural non-equivalence between the genders, whereby the relationships between the expectations dimension and the other dimensions of the SAVVY scale differ between males and females.

Following generational age invariance analysis, the SAVVY scale was found to have item-level non-invariance between Baby Boomer and Generation X age groups. Whereas the measurement model demonstrated measurement equivalence between some of the age groups examined - such as consumers aged 40–49 (Late Baby Boomers) and those aged 50–59 (Early Baby Boomers) – it does not demonstrate equivalence between those aged 40–plus years (Baby Boomers) and those aged 25–39 years (Generation X). These differences in item meanings occur particularly for the self-confidence and the technological sophistication dimensions of the measurement model.

Both sets of non-invariance findings indicate that managers and practitioners must use caution if intending to use the SAVVY scale as a profiling tool, particularly across the gap between Baby Boomer and Generation X consumers.

The third phase of the study aimed to answer the research question *RQ 3: Does savvy affect consumers' approach to the consumer-firm interaction?* In addressing this question, the newly developed 19-item SAVVY scale was used in a vignette experimental design (Sample 3: n=187 consumers). The use of vignettes in this phase of the study helped overcome the problems associated with survey research when

it seeks to examine consumer behaviours and attitudes by “*posing vague questions [such] that each respondent will answer in terms of his own mental picture of the task before him*” (Alexander and Becker 1978, p.93). This method applies ideas from multivariate experimental design and has the advantage that each version of the vignette serves as a control for the others (Rossi and Anderson 1982). Thus it provides a method of assessing inter-group differences in judgements about situations and the contingencies that influence such judgements (Wason, Polonsky and Hyman 2002).

The use of the vignette technique makes it unnecessary to ask respondents to recall past incidents and hence reduces the biases that are introduced from memory lapses, rationalisation tendencies and consistency factors (Johnson and Ford 1996, Grewal, Hardesty and Iyer 2004). The contrastive method of vignettes was used thus allowing this study to assess differences in judgements caused by facts that differ across vignette versions (Wason, Polonsky and Hyman 2002). The findings from this phase were that high savvy consumers have significantly greater desire to engage in co-creation, are significantly more likely to perceive value in the interaction, and are significantly more likely to engage in WOW, but are not more likely to complain or protest than low-savvy consumers.

Phase 3 of the study also addressed the fourth research question, *RQ 4: Are the effects of consumer savvy moderated by product type?* No significant moderating effect for product was found across the four product examples used in the study including hedonic (electronic games console), utilitarian (external hard drive), high tech (internet-enabled fridge freezer) and low tech (frost-free fridge freezer) product categories.

1.7 Contributions of this study

The contributions of this study include the following:

1.7.1 Conceptual contribution

This study provides a conceptualisation of the savvy consumer construct which is being increasingly taken for granted even in academic research (for example, Day and Montgomery 1999, Achrol and Kotler 1999). While there is statistical evidence concerning the growth in technology usage by consumers (see beginning of this chapter), there has been very little research to explore how consumers are adapting to

their environment in the ‘information age’. There is an urgent need to understand the pragmatic marketplace intelligence of consumers as, up until now, consumer marketplace and social intelligence “*has not been treated as a competency in the same way that other essential life topics are treated*” (Wright 2002, p.680).

Therefore the first conceptual contribution of this study is the provision of a unifying framework which identifies and describes the overall construct of the savvy consumer, and distinguishes it from other related consumer constructs (RQ 1). The second conceptual contribution is an explication of the consequences of consumer savvy following a consumer-firm interaction (RQ 3) and identification of potentially moderating effects of product category (RQ 4).

1.7.2 Empirical contribution

The extent that savvy exists within the direct marketing population will be measured from the combined methodologies of Phase 1 and Phase 2. The study examines consumer savvy in a typical high-choice intensity environmental context. By focusing on measurement (RQ 1, RQ 3 and RQ 4), this study allows the ‘truth status’ of the savvy consumer concept to be established, hopefully, before the text book effect takes a firm hold.

Even though this study does take a strategic perspective of the consumer-firm interaction, it is consumer perceptions (rather than manager perceptions) that are central to measurement. Thus the key concepts measured in this study are consumer savvy and consumer perceptions of the outcomes of consumer-firm interaction. The findings from the current study will assist researchers in understanding consumers’ self-perceived competence and how this affects their perceptions of how direct marketing processes should be managed, as well as their perceptions of marketing processes in general.

1.7.3 Measurement contribution

This study makes several measurement contributions. Firstly in the absence of any other appropriate measures of consumer savvy, this study develops and validates a new multi-dimensional SAVVY instrument for measuring the construct of savvy (RQ 1). This includes use of appropriate scale purification, development and validation procedures to establish the SAVVY measurement model’s fit, reliability, and validity.

The model fit statistics indicate that online consumers can be described by the 6-construct, 19-item SAVVY scale. The new measurement model offers the flexibility that it can be used as a 6-dimensional composite measure or can be broken down to enable the evaluation of single dimensions of consumer savvy. This has benefits for other researchers and practitioners needing to examine marketer-consumer interactions. By being able to measure overall savvy or dimensions of savvy, marketers will have a much better ability to understand and deal with consumers in practice and in research.

This study goes a step further than many other marketing studies which develop a new measurement scale. By borrowing the measure invariance analysis technique typically used in the education and cross-cultural studies literatures (Byrne 2004), this study assesses the scale invariance of the newly developed SAVVY tool for two key potential covariates – biological gender and generational age (RQ 2). Model fit statistics show that while these demographic sub-groups can be satisfactorily described by the 19-item, six construct SAVVY scale, there are some significant between-group differences in the measurement model fit. Firstly, there are gender-based structural differences in the measurement model fit – which implies that the relationship between the six SAVVY dimensions is slightly different for males than females. Secondly, there are significant differences between Generation X and Baby Boomer consumers in the meanings of particular items of the SAVVY scale. In particular these generations differ in meanings attached to items in the Technological Sophistication and Consumer Self-Efficacy dimensions.

As a further measurement contribution, the composite SAVVY scale is applied in a hypothetical interaction context which measures the effect of SAVVY on the consumers' approach to the consumer-firm interaction (RQ 3). The context for the current study is online direct marketing; however, the validated scale has the potential to be used subsequently to examine the existence of savvy consumers in a number of marketing interaction contexts including traditional – such as bricks-and-mortar retail settings or call centres – and emerging – such as location-based mobile marketing or retail websites that include avatars, human-like characters created by technology (Wang, Baker, Wagner and Wakefield 2007, Kirkpatrick 2008). Thus this study goes some way to bringing about greater understanding of both the nature of and extent of the impacts of consumer savvy in various marketplace contexts.

1.7.4 Managerial contributions

If the ‘buyer-centric revolution’ (Mitchell 2004) is becoming a reality, it will have major implications for consumers and for society in general. For business as a whole the changes are far-reaching. There are repercussions for marketing, communications, media, IT, distribution and customer service. Greater equality in information flow means that businesses will need to be smarter with consumer data and be perceived as supporting informed consumer decision-making. Businesses will need to put more emphasis on their customer interfaces and possibly embrace new business models in a spirit of collaboration with the consumer.

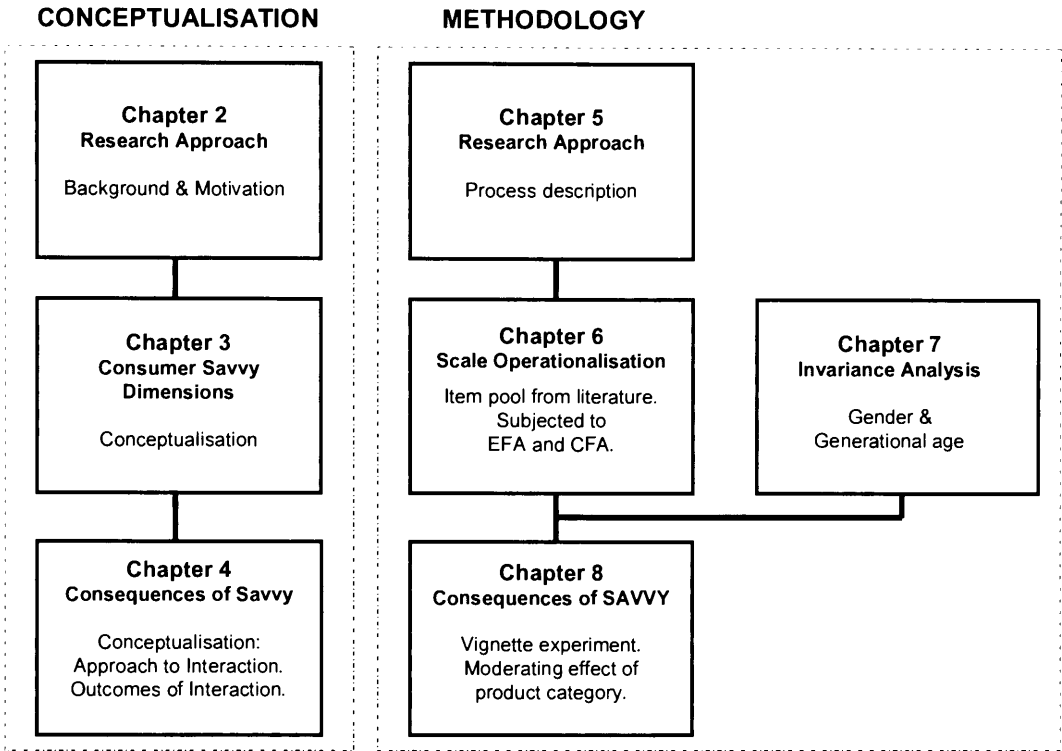
Findings from the context of a permission-based direct marketing environment are of particular benefit to managers. Managers are being forced by government legislation and by technological developments to consider how consumer permission can be incorporated into their business models. It is highly likely that many managers are struggling with how to respond to increasing calls for improved permission-based marketing and consumer-centricity in their business. From past experience (such as the dot.com boom and bust) we know that managers are often pressured to implement new strategies without fully understanding their implications or limitations. This study provides valuable empirical evidence to allow managers to commence their assessment of the extent to which they should engage in *“the co-creation of value through personalized interactions that are meaningful and sensitive to the specific consumer”* (Prahalad and Ramaswamy 2004b, p.6).

1.8 Thesis structure

The structure of this thesis is as follows (Figure 1.2): Chapter 1 provides a brief introduction to the research topic and very brief overview of the research approach. Chapter 2 summarises the key management trends and identifies the gap in knowledge which is driving this research. Chapter 3 provides a conceptualisation of consumer savvy. Chapter 4 conceptualises the potential impacts of consumer savvy. Chapter 5 provides an overview of the multi-phase research approach that is used, including an outline of the scale development approach. Chapter 6 provides an operationalisation of the new SAVVY scale. Chapter 7 presents results of the invariance analysis. Chapter 8 presents the methods and results of an experimental vignette-based study which applies

the SAVVY scale. Chapter 9 details the conclusions and contributions of this study as well as potential extensions and limitations.

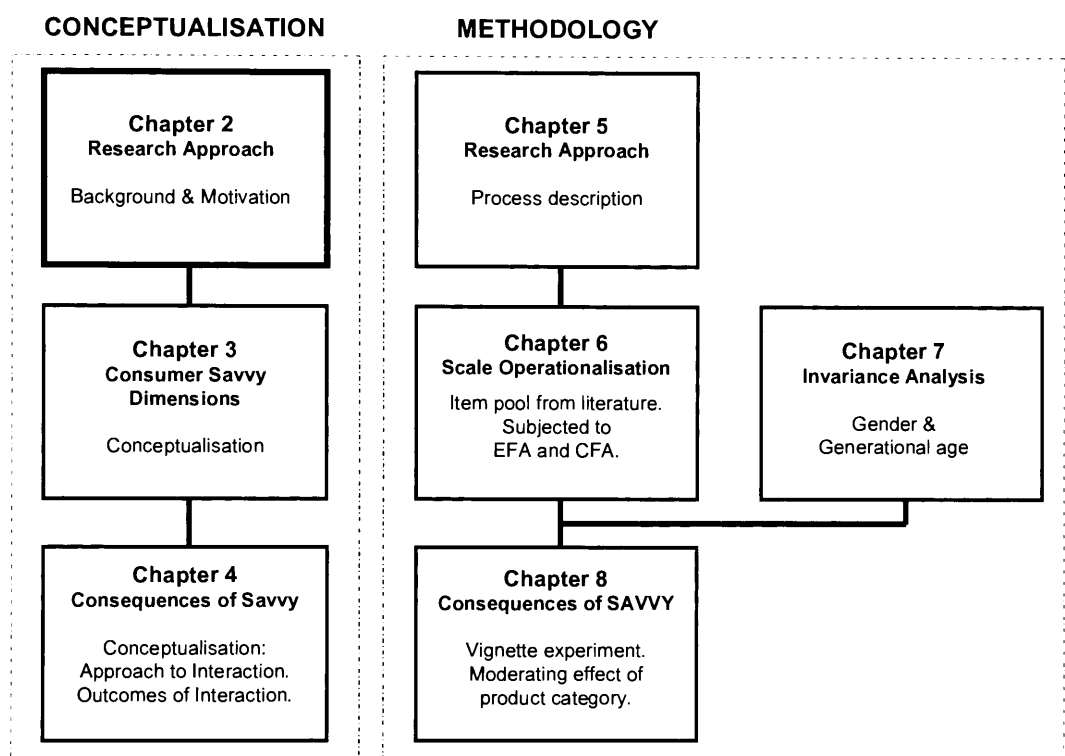
Figure 1.2 Chapter outline: Conceptual and methodological sections



2 Background

This chapter identifies the themes that have motivated this study of consumer savvy (Figure 2.1). It finishes with a comparison of the proposed consumer savvy concept with existing measures of consumer competency.

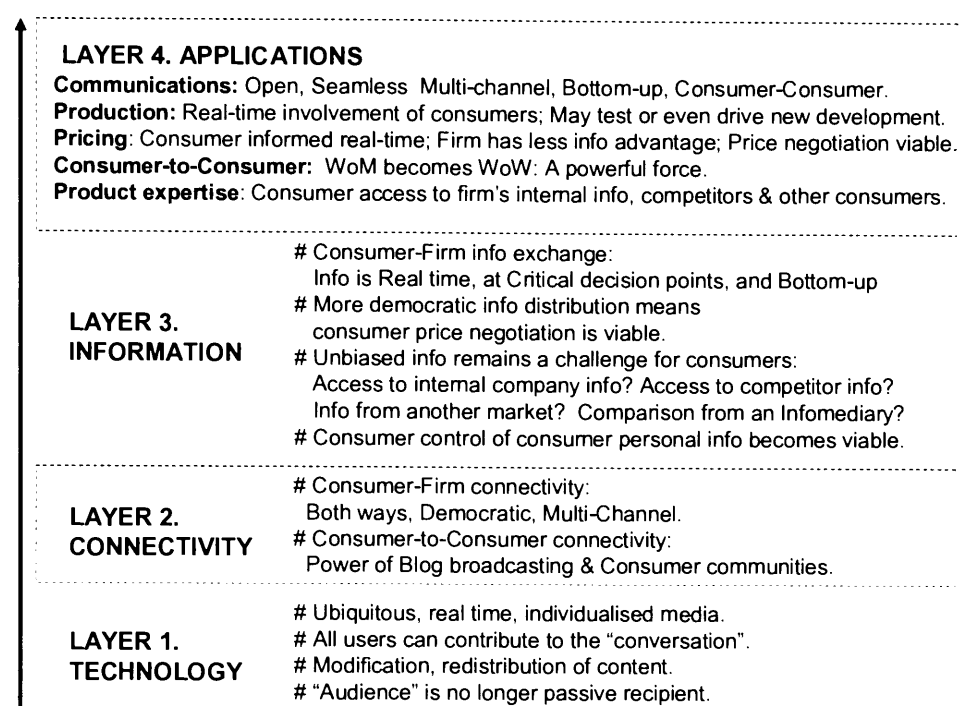
Figure 2.1 Chapter outline: Conceptual and methodological sections



2.1 Background: Technology, connectivity and information

Technological advances, the growth of the internet, channel proliferation and explosion of information networks have all had an impact on the way consumers and marketers interact with each other (Day and Montgomery 1999) in the ‘information age’ (Blattberg, Glazer and Little 1994). In the next section, this overview borrows a ‘layers’ analogy¹ from the ITC (information technology and communications literature) (Zimmerman 1980, Lovelock and Ure 2004) to organise the underlying trends identified from the marketing and management literatures. These trends and the changes they imply for consumers reach across the layers of technology, connectivity, information and ‘applications’ (see Figure 2.2) (Lovelock and Ure 2004). Described are the implications of changes for consumers and for marketing in each of these layers.

Figure 2.2 Changes occurring at each layer of communication infrastructure



Layers analogy adapted from OSI (Zimmerman 1980)⁷

2.1.1 Layer 1: Technology layer

As discussed at the start of Chapter 1, consumers are widely exposed to, indeed have readily embraced, new technology devices and technology applications (collectively referred to from this point as ‘technology’). The extent of exposure to technology globally is illustrated by statistics about the incidence of internet at home (exceeding 60 per cent in many Western nations) and mobile phone penetration rates (exceeding 70 per cent) (Table 2.1).

⁷ The concept of layers which “divides the total problem into smaller pieces” (Zimmerman 1980 p.426) is adapted from the widely used OSI (Open-System Interconnect) network model (or seven layers model) of the ITC sector. The model was first published by the ISO (International Standards Organisation) in 1977 and reviewed by Zimmerman in 1980. The seven layers build from the physical media at the bottom up to the applications that are used by end-users (Zimmerman 1980). The basic principle of layering is that each layer allows the subsequent layers to build upon it without further need to consider that particular aspect of interaction (Zimmerman 1980). This analogy condenses these seven layers down to four as follows (OSI layers shown in brackets): **1. Technology** (i. *Physical layer*, ii. *Data-link layer*), **2. Connectivity** (iii. *Network layer*, iv. *Transport layer*, and v. *Session layer*; the latter layer assists connectivity by “binding two presentation entities into a relationship and unbinding them” (Zimmerman 1980, p.43)), **3. Information** (provided by the vi. *Presentation layer* which enables the top-level applications layer “to interpret the meaning of data exchanged” (Zimmerman 1980, p.430)) and **4. Applications** (vii. *Applications layer* which “directly services the end user by providing distributed services appropriate to an application, its management and system management” (Zimmerman 1980, p.30)).

Table 2.1 Technology adoption across Western nations

	Access to a mobile phone ^a (%)	Internet via home PC ^b (%)
Sweden	84	66
Italy	80	46
Netherlands	79	63
UK	76	58
Hong Kong	75	61
Australia	72	56
Germany	72	47
US	64	68
Canada	55	64

Source: Department of Communications, Information Technology and the Arts (DCITA) 'Information Economy Index' 2004

a. Persons aged 16 years and over.

b. Households

Some of the technologies encountered daily by consumers include, for example, ATMs and e-kiosks, SMS and iPhones, GPS and Blackberries, and MP3 players and Wii games. Much of this technology is having an impact globally and in politics, economics and culture because it facilitates interactivity among users or between users and information. That is, not only do humans create technology, but technology in turn impacts society; the social commentator McLuhan (1967) observed that with regard to new technology-enabled media: “*we shape our tools and they in turn shape us*” (p.149).

Borrowing from the IT communications literature this next section summarises the key characteristics of these new consumer technologies. (For a thorough review of information and communications technologies, see Lievrouw and Livingstone 2004; the next section draws heavily from this paper, which is denoted L&L).

Compared to the broadcast nature of traditional mass media, these new technologies are “*demassified*” (L&L, p.6) and create an “*individualised, targeted quality*” (L&L, p.9) to communication. New media technologies allow any user to ‘speak’ and thus “*call for a reconceptualization of the notion of audience*” (L&L, p.7).

These new technologies are characterised by “*undetermination*” (L&L, p.7) which means that they give users an unprecedented ability to modify and redistribute content. New technologies and media systems are “*recombinant*” (L&L, p.8); that is, they are products of a continuous process of “*hybridization*” of existing technologies with new innovations. The persistent sense of newness of technologies is a result of this continuous change.

These new technologies are ubiquitous, which means that even though not everyone may use the technologies, they affect everyone in society. An outcome of all of these changes is that these new technologies convey a sense of interactivity to

consumers by giving “*users more selectivity in their choices of information sources and interactions with other people*” (L&L, p.9).

2.1.1.1 Technology layer – Summary

To summarise what is known about technology in relation to the consumer-firm interaction: ubiquitous technology is affecting all consumers and firms, even if they do not actually adopt it themselves. ‘Demassified’ technology allows individualised communication between the firm and the consumer. In addition, these technologies allow all users to contribute to the conversation and are therefore changing the notion of ‘audience’ from one of passive recipient to engaged and active participant. The ‘undetermination’ of these technologies now makes it possible for all users to modify and distribute content. These characteristics facilitate the subsequent layers of connectivity, information flow and applications (reviewed in the following sections).

In addition, the ‘recombinant’ nature of these technologies creates a feeling of constant change and uncertainty in the environment.

2.1.2 Layer 2: Connectivity layer

The second layer of interaction is connectivity. Greater connectivity is associated with the rapid increase in the number of information channels available; Mitchell (2003) cites a TBWA study in the UK which identified more than 60 possible channel connections between a consumer and a brand. Through these greater numbers of channels, individuals and firms in all corners of the world might be instantly linked together, thus facilitating the feeling that the “*world is getting smaller*” (Iacobucci 1998, p.9). Specifically, from the point of view of the consumer, connectivity: (1) enables access to nodes of information right across the global network, and (2) enables the formation of geographically dispersed communities.

2.1.2.1 Connectivity provides access to information nodes

From networks theory we know that the power of connected networks and the ‘meganeet’ means that once hard-to-reach knowledge in isolated nodes becomes universally connected (Iacobucci 1998). For consumers this means that information sources are readily available, should they have the interest and the competency to find and use them. Information sources might include knowledgeable third party

information sites, experts, suppliers in different geographic locations, consumer groups and individuals.

2.1.2.2 Connectivity enhances horizontal communication

Finally, connectivity enables consumer-to-consumer connectivity without regard to social and geographic boundaries. This ‘horizontal communication’ is enabled by the internet to an extent that was not practical via mass communication technologies (Rosen 2004). Out of this consumer-to-consumer connectivity two key themes emerge: firstly, the feasibility for an individual to publish their ideas to the entire world (Kirkpatrick, Roth and Ryan 2005), and, secondly, the creation of new forms of community.

(a) *The power of the individual.* Online blogging enables “*peer to peer, stranger to stranger, voter to voter, reader to reader*” (Rosen 2004) communication. Thus the internet allows an individual consumer to publish their thoughts, feelings and attitudes to others via weblogs. A single individual consumer weblog, including the thoughts feelings and ideas of one person, can become extremely powerful as it has the potential to be read by, and thereby to influence, many other consumers (Li and Bernoff 2008).

(b) *The theme of community.* Increased connectivity has seen the emergence of the “*global village*” (McLuhan and Fiore 1968) and the development of the “*network society*” (Drucker in Achrol and Kotler 1999) where “*new kinds of ‘spaces and places’ for sociality and culture have been created*” (Lievrouw and Livingston 2004, p.9). Across these “*meeting places*” consumers engage in “*textual conversations*” and engage in social interaction (Burnett 2000). These spaces can be based around communities of transaction (e.g. eBay), communities of interest (e.g. mountain biking association – www.imba.com), communities of fantasy (e.g. Red Dragon Inn, Adventure Quest, Second Life) and communities of relationship (e.g. Attention Deficit Disorder online support group – www.adders.org) (Armstrong and Hagel 1996).

Virtual communities offer consumers the promise of communing with large numbers of like-minded individuals who share specialised interests, without geographical constraint (Kozinets 1999, Burnett 2000). Of particular interest to marketers is the consumer-driven brand community (Muniz and O’Guinn 2001, Kozinets 2002). While initially perceived of as disconcerting for companies affected (Day and Montgomery 1999), some firms now actively embrace such communities. Apple, for example, encourages customers to participate in user-founded Macintosh

communities by promoting them on their corporate websites and in mailings to their customers. Members of brand communities develop a social identification with the community which influences their WOM behaviour and their purchase intentions (Algesheimer, Dholakia and Herrmann 2005, Brown, Barry, Dacin and Gunst 2005). In addition, the normative pressures of the brand community may result in loyal behaviour to the brand and the expression of oppositional loyalty to other brands (Thompson and Sinha 2008). Thus, as well as protecting the ‘loved’ brand, consumer brand communities do also have a dark side. This can have a significant and ‘frightening’ impact on marketers if a connected network of dissatisfied customers becomes activated (Szmigin 2003).

2.1.2.3 Connectivity layer – Summary

To summarise, the ubiquity of technology in the technology layer is enabling greater connectivity than existed even a decade ago. Enhanced connectivity combined with new technologies “*give users the means to generate, seek and share content selectively and to interact with other individuals and groups, on a scale that was impractical with traditional media*” (Lievrouw and Livingston 2004, p.9). Connectivity enables the consumer to access information anywhere in the networked world, enhances the sense of connectedness between the individual consumer and the firm, and facilitates the formation of consumer communities. The combined impact is that consumers have more vehicles available to obtain and share ideas, feelings and information and more opportunities to influence greater numbers of other people (Iacobucci 1998, Prahalad and Ramaswamy 2004b). In order to cope with these changes, consumers require a new set of *digital literacies* that emphasise “*relations of collaboration, participation, dispersion and distributed expertise*” (Lankshear and Knobel 2006, p.27).

2.1.3 Layer 3: Information layer

The third layer is *information*. Information that was previously retained by only a few (usually the firm) is now much more readily available to all and this information asymmetry has resulted in the ‘democratisation’ of information (Berthon, Holbrook and Hulbert 2000). Previously, information has mostly flowed in one direction from firm to consumer, and reached consumers *en masse* (Mitchell 2004). Today’s ‘connected

knowledge economy’ (Day and Montgomery 1999) means that information flows easily to the firm and to the consumer in *both* directions and across the many channels between them. Enabled by the layers of technology (Layer 1) and connectivity (Layer 2) consumers now have the ability to communicate *back* to companies, making bottom-up signalling from an individual consumer viable (Mitchell 2004, Lawer and Knox 2004). As a result, the possibility exists for consumers to have more say in and to be more involved across a variety of marketing processes (which will be addressed when ‘applications’ are examined in Section 2.2). Connectivity also enables information to flow readily from consumer to consumer, making the ‘publication’ of individual consumer opinions (via blogs), as well as within consumer communities, viable and potentially powerful.

2.1.3.1 Connectivity allows the consumer to access the firm in real time

Connectivity has the potential to change the balance in the consumer-firm interaction. It allows the consumer to initiate communication and to access the firm directly and via multiple technology-enabled channels (Mitchell 2004). This changed direction of information flow has created the potential for consumers to share real-time information with firms at the precise point when the consumers are most ready to act (Mitchell 2004). In response to this reverse flow, it is predicted that marketers will develop a new set of skills to more fully understand consumers through ‘market sensing’ (Achrol and Kotler 1999) and the implementation of ‘sense-and-respond strategies’ (Day and Montgomery 1999). Not all firms may be ready for this kind of communication (Prahalad and Ramaswamy 2004a). Regardless of whether firms are responsive to consumer-initiated communications, connectivity also allows consumers to ‘see in’ to the workings of the firm, and become more informed about what goes on ‘backstage’ (Harker and Egan 2004). If firms do not develop a market-responsiveness capability, then commentators predict that other infomediary players will fill this consumer need (e.g. Mitchell 2004). The concept of the infomediary will be discussed shortly.

2.1.3.2 Consumer knowledge

Consumers’ access to information from a variety of sources – including people that they have not met and have no prior relationship with – means that their level of market and product knowledge is now potentially much higher than it was prior to the

widespread usage of the internet (Day and Montgomery 1999, Prahalad and Ramaswamy 2004b, Weiss, Lurie and MacInnis 2008). Information sources can include the media, industry bodies, competitors, suppliers, the company itself, other consumers (satisfied *and* dissatisfied), experts, and any of these sources might be across national boundaries (Prahalad and Ramaswamy 2004b). Much of the unprecedented amounts of information now accessible to consumers may previously have only been available to the firm, removing the information asymmetry which was exploited by firms through differential pricing and service (McMillan 2002). Information now available to consumers includes company strategies and plans, as well as product strengths, limitations and competitive (dis)advantages. Information availability empowers consumers to make better-informed selections across and within product categories. It also puts them in a much stronger position to demand attention from the firm and to negotiate the features, offers and pricing that they require; it is claimed that, as a result of this empowerment, many consumers will “*increasingly look for and get equity and value through tackling companies head-on*” (Szmigin 2003, p.63).

2.1.3.3 Consumer information costs support the rise of infomediaries

While information asymmetry is less of a constraint to the consumer today, *uneven* supply of information continues to be a challenge (McMillan 2002). An abundance of information exists online but it varies greatly in quality and trustworthiness. There are parallels between the situation in which consumers find themselves today and in the “*age-old*” Middle-Eastern bazaar (McMillan 2002). In the bazaar, “*the search for information – laborious, uncertain, complex and irregular – is the central experience of life*” (anthropologist Geertz 1978 quoted in Alexander 1987, p.189). The same might be said for information search online (McMillan 2002). In both situations consumers face a large number of competing offerings and availability of uneven information. As in the bazaar, information in the “*new world*” is intensely valued but the difference is that, rather than being poor and scarce it is potentially available real-time, in-depth and in abundance to the point of being excessive (McMillan 2002). Finding *quality* information is the real challenge for consumers in this situation (McMillan 2002).

Information search and evaluation costs continue to exist in the online world, despite ready availability of information. This is demonstrated from studies of price disparity which find that, when measured as a percentage of the overall

product price, online prices for books (for example) may vary by 37 per cent and for compact discs by 25 per cent (Brynjolfsson and Smith 2000). This means that the internet does not provide a “*perfect information*” market (McMillan 2002)⁸. Subtle transaction costs remain – these include comparison costs, the difficulty of finding someone to trade with, and more particularly in the online world, the need for buyers to be able to trust sellers (McMillan 2002). The costs involved can be described as: search costs (time, effort and money spent learning what is available), and evaluation costs (arising from the difficulty for buyers in assessing quality of information) (McMillan 2002). The continuing existence of search and evaluation costs in the online environment is said to be further evidence that infomediaries will come to play an important role in the market.

2.1.3.4 How infomediaries will change the consumer-marketer dynamic

The internet is characterised by an abundance of information which varies greatly in quality and reliability. Consumers need to find ways to deal with this abundance of information including “*a new set of skills [to] include how to locate and use information needed for problem-solving and decision-making efficiently and effectively*” (American Library Association 1989 cited in Eisenberg, Lowe and Spitzer 2004). In a situation where the consumer experiences difficulty in evaluating information quality, firms have the opportunity to establish themselves as an aide to the consumer in making decisions by acting as an agent for the buyer (Mitchell 2004, Achrol and Kotler 1999). A genuine choice tool should make the process easier for consumers and “*help the buyer achieve his go-to-market goals more efficiently and effectively – regardless of the seller benefits*” (Mitchell 2004, p.3). While firms may believe they already fulfil this role through their internet retail sites these sites are frequently unhelpful and together function as an “*unwieldy collection of electronic catalogs*” (Alba, Lynch, Weitz, Janiszewski, Lutz, Sawyer and Wood, 1997, p.38).

It has been said about information in the current environment that “*Information wants to be free. Information also wants to be expensive*” (Stewart Brand 1987 in McMillan 2002, p.46). The implication is that, when quality information is not readily available then, despite its ubiquity, information becomes extremely valuable. Because of the consumers’ need for complete, trustworthy, unbiased information and many

⁸ The reduction in information asymmetry in today’s market should mean a situation which more closely approximates the “perfect information” market. Economic theory states that in a market situation where perfect information is available there should be reduced price dispersion. (McMillan 2002).

firms' apparent inability or reluctance to satisfy this requirement, it is widely predicted that the role of agent to the buyer will be filled by a new kind of *infomediary* firm (e.g. Hagel and Rayport 1997, Wind and Mahajan 2002, Blattberg and Glazer 1994, Mitchell 2004, Sarkar, Butler and Steinfield 1998)⁹. Infomediaries are predicted to help consumers with one or more of the key challenges of decision making in the information age. This includes: (a) sourcing useful information, (b) comparison and evaluation of options, (c) negotiating with providers, (d) transactions, and (e) needs articulation (Mitchell 2004). Delivering all of these solutions requires a range of capabilities and it is probable that infomediaries will specialise in particular competencies (Mitchell 2004). In addition to providing information to the consumer, the infomediary will provide information that the firm requires as well.

2.1.3.5 Information Layer – Summary

To summarise, changes occurring at the information layer, enabled by the technology and connectivity layers, allow consumers greater interaction with the firm. This includes the ability to communicate directly back *to* the firm, rather than simply being the recipient of mass communication *from* the firm. This provides the potential for consumers to signal 'bottom-up' to the firm, such that consumers can communicate with the firm in real time and at critical points in their decision making (Mitchell 2004).

It is likely that in "*the ... world of post-millennial marketing, the mastery of information-based skills will be the key*" to business and to consumer success (Berthon, Holbrook and Hulbert 2000, p.64). Despite information being more accessible to consumers than in the past, information costs will continue to exist as a result of the difficulty in evaluating information quality. As consumers continue to face challenges in sourcing and evaluating information, it is predicted that in many industries the role of information provider will be taken over by a third-party infomediary.

⁹ In the B2B sector, intermediaries manage information going in both directions and make a market work better by acting as a hub of information (McMillan 2002). Offline in the B2C sector retailers make it efficient for consumers to shop because they offer hundreds or thousands of product categories and brands in the one spot. Online infomediaries provide the same advantages by offering a range of competing brands and marketers go through these infomediaries to contact the consumer.

2.2 Layer 4: ‘Applications’ layer

Riding on top of the information, connectivity and technology layers is the extensive, fourth layer referred to as ‘applications’. This refers to marketing processes that directly relate to the end-user in this case, the consumer. As a result of the changes described at the technology, connectivity and information layers, this upper applications layer is also subject to substantial changes. For example, Glazer (1999, p.2) claims that “*all marketing is, or soon will be, interactive marketing*”. As a result of changes at each of these levels, marketing applications need broadening to: (a) include the view of the consumer as an active individual in an interactive process, and (b) view effective business strategy in an emerging many-to-many medium as a cooperative (rather than competitive) effort, and which involves the consumer (Hoffman and Novak 1997). While a number of societal and economic changes result from the changes previously discussed, the focus in the following discussion will be on six key consumer-firm processes that are affected by trends occurring in the technology, connectivity and information layers. These include segmentation, consumer knowledge, communications, distribution channels, production, pricing, and consumer-to-consumer interaction. Each of these areas is said to be experiencing substantial, even “*revolutionary*”, changes (Mitchell 2004).

2.2.1 The segment of one

Marketing management has traditionally “*responded to the difficulty of the unruly, irrational, and often changeable individual through aggregation*” (Szmigin 2003, p.3). The marketing processes of segmentation and targeting are used by firms to reduce complexity and make the market simpler to deal with (Prahalad and Ramaswamy 2004a, Szmigin 2003). However, increasingly individualised media and technology makes individualised marketing possible. The changes in consumer access to information and technologies which allow direct communication mean that “*the traditional approaches to market segmentation and consumer typology [break] down [and] it is not enough to divide and rule, to segregate and aggregate*” (Szmigin 2003, p.4).

The emergence of “*connected, informed, empowered, and active consumers*” resulting from the layers of technology, connectivity and information previously discussed, challenges the notion of aggregated markets (Prahalad and Ramaswamy

2004a, p.6). In responding to this challenge, firms are being urged to “*seek to co-create value with customers through an obsessive focus on personalized interactions between the consumer and the company*” (Prahalad and Ramaswamy 2004a, p.7). Totally individualised marketing includes offering consumers “*customized products, individually addressable commercial messaging, and two-way, one-to-one dialogues between marketers and consumers as well*” (Peppers and Rogers 1997, p.28). Both processes of communication and production will be addressed in the sections that follow: consumer-firm communication will be addressed in Section 2.2.3; the issue of ‘customized products’ will be addressed in Section 2.2.4.

2.2.2 Communications

With regards to consumer-firm communication, substantial changes are predicted as a result of trends in the lower levels of interaction (discussed in Section 2.1). These changes are having an impact on communications at each of the three layers including: (a) technology layer – consumers’ rapid adoption of new technology devices, (b) connectivity layer – the growth of the ‘meganet’ (Iacobucci 1998) and (c) information layer – the increased availability of information to consumers. The internet provides a means for consumers and sellers to attain “*strong interactivity at high levels of information intensity*” (Berthon, Holbrook and Hulbert 2000). As a result firms need to become more open and transparent in their communication with consumers (Urban 2004, Mitchell 2004). In addition, it is predicted that consumers will adopt the latest technological devices at the same time as, or perhaps even before, the firm, such that the consumer-firm relationship will eventually reach a stage where they “*exist in a state of information-driven symbiosis*” (Berthon, Holbrook and Hulbert 2000, p.65). Firms will also need to become more proficient in attracting and using consumer-initiated communications by “*elicit[ing] rich, timely, volunteered information from (their) customers and potential customers*” (Mitchell 2004, p.13).

2.2.3 Distribution channels

Consumers’ ready access to information previously in the domain of the organisation means that firms have more difficulty in differentiating their service offerings across channels (Urban 2004). Technologically and socially well-connected

consumers expect to be able to access the same service seamlessly across all channels (Wind and Mahajan 2002). The need to manage multi-channel customers creates several challenges for firms including the need to integrate data across channels, understand consumer behaviour across channels, evaluate channel effectiveness, allocate resources across channels, and coordinate channel strategies (Neslin, Grewal, Leghorn, Shankar, Teerling, Thomas and Verhoef 2006). Firms are currently struggling to integrate service across multiple channels as evidenced by findings that multi-channel firms perform worse than internet-only firms (Voss 2003). Firms need to become more proficient in providing integrated multi-channel solutions (Wilson, Street and Bruce 2008).

2.2.4 Production

In the academic literature there is increasing talk of consumer engagement in production, either through *customisation* and *specification*, or through *co-creation* (Vargo and Lusch 2004, 2008, Prahalad 2004, Prahalad and Ramaswamy 2004a, Wikstrom 1996). The same themes are occurring in the practitioner literature, where Saren (2006) talks about ‘prosumers’ instead of consumers, as consumers engage in co-production. The American Marketing Association warns its practitioner-readers that a ‘revolution’ is ‘sneaking up’ on them so that now “*somebody else is pulling the strings. The tipping point¹⁰ has been reached and your future lies in customers’ hands as they take charge of the marketing and brand experience*” (Hopewell 2006, p.13).

During the traditional transaction process, the seller and buyer meet briefly, exchange finished products and services, and then go their separate ways. By comparison, the conceptualisation of the customer as a co-producer sees the interaction between the parties involving more of a relationship, the occurrence of multiple interactions (including information exchange) and the generation of more value than a traditional transaction process (Wikstrom 1996). The key differences between the new co-production approach and the traditional transaction approach includes: (a) *Length of relationship* – co-production assumes a longer relationship between buyer and seller. This will in turn create opportunities for the firm to acquire more knowledge, thus making the firm better able to adapt to the customer and to provide higher quality

¹⁰ The reference to a “tipping point” is presumably based on Malcolm Gladwell’s (2000) definition of social change which refers to a point of no return where the change becomes irreversible and unstoppable.

service, which in turn benefits the consumer (Wikstrom 1996); (b) *Process is compressed* – with the consumer involved in production, the whole co-production process will move more quickly since the sequential transaction process (idea creation – production – delivery – consumption) becomes compressed in both time and place when the customer is involved as co-producer (Wikstrom 1996); (c) *Generative knowledge* – interaction between buyer and seller will generate more creativity on both sides, thus giving way to new ideas and ways of doing business. In this way it will enable the development of general knowledge (Wikstrom 1996).

2.2.5 Price negotiation becomes viable for consumers

In order to be in a good position to negotiate the terms and price of a product offering, consumers need information and in the ‘information age’ this is now more readily available. Information asymmetry traditionally meant that the firm was the price-setter and resulted in Western society’s widespread adoption of single-price transactions as the norm in consumer markets (McMillan 2002). However, the growth of the internet has started to change this with the opportunity for consumers to engage in negotiation via online auctions. Symmetry of information access, access to real-time information, as well as the ability to communicate directly with the firm enhances the ability of the consumer to engage in negotiation and to play one competitor off against another using reverse auctions (McMillan 2002).

2.2.6 Consumer-to-consumer interaction

A final area of change is that of consumer-to-consumer interaction. While WOM has always been an important force and is an important component in theories of diffusion, its impact is magnified by the multiplicative network effects of the web (Lehmann 1999, Godes and Mayzlin 2004a, 2004b, Ward and Ostrom 2006, Luo 2007). The connected world provides consumers with the opportunity to access information and opinions from other consumers in different geographic markets, market segments and at different stages of engagement with the firm.

For firms this means that differential marketing strategies and maintaining a ‘front-stage versus backstage’ approach will be more difficult, since consumers will quickly learn about any discrepancies (Harker and Egan 2004). In addition, there is the

possibility that consumers will realise the power in their numbers and take action against firms that they believe have wronged them. For example, textbook claims include: “*the consumers are revolting*” and “*are no longer content with push media-orientation advertising and Henry Ford-style ‘any product you like, as long as it is a product we are prepared to give you’ attitudes*” (Dann and Dann 2001, p.64). In response, firms will apparently be required to find strategies to keep up with, engage with and, possibly, defend themselves against this increasingly powerful groundswell of consumers (Szmigin 2003, Li and Bernoff 2008).¹¹

2.2.7 Applications layer – summary

As a result of the changes identified at each of the layers of interaction, marketers are increasingly facing hyper-competitive environments where it is difficult to gain effective results using traditional marketing-mix management (Hamel and Prahalad 1994). Instead ‘relationship marketing’ is the buzzword for marketers. However, in reality this is frequently implemented by management as ‘managing customer touch-points’ rather than the broader definition suggested by the paradigm (Harker and Egan 2004). True relationship marketing principles get lost when transformed into customer management software but neglect human aspects of relationships (Gummesson 2004, Fournier, Dobscha and Mick 1998). For example, loyalty cards are intended to be an implementation of relationship marketing, but are in fact essentially transactional in nature, designed to collect data about consumer buying behaviour; and further, consumers are completely aware of this usage (Harker 2004).

Instead a ‘deep relationship’ approach is required which is characterised by: (a) products integrated with services for a complete bundled offer, (b) two-way interaction, (c) co-production, (d) tailoring, and (e) some absorption of the customer’s risk (Day 2003). The ability to achieve this deep relationship is enhanced by the availability of information. As a result, the transactional approach to consumer marketing will give way to a new service-dominant logic (Vargo and Lusch 2004, 2008). The “*service revolution and information revolution are two sides of the same coin*” (Rust 2004,

¹¹ Firms may do this by tapping into existing consumer networks or by attempting to create new company-supported networks, but in choosing the latter they will face the challenge of juggling the social and economic elements of consumer communities (Wind and Mahajan 2002, Urban 2004). Research has shown that WOM that is created exogenously to the firm is more effective (Godes and Mayzlin 2004b).

p.24), and this new approach to consumer marketing will “*closely resemble the business-to-business/service/relationship marketing of today*” (p.24).

2.3 Consumer empowerment and increasing “savviness”

The consumer themes emerging from the literature include ‘transformation’, ‘empowerment’ and ‘victory’ (Dupuy 2004, Prahalad and Ramaswamy 2000). Today’s consumer apparently has a much more powerful position in the exchange process because, in addition to having access to unprecedented information and networks, the proliferation of brands in many markets means that “*we are moving from a long-standing period in which what was scarce was the product, to a period where what is scarce is the customer*” (Dupuy 2004, p.28). This overturning of the scarcity relationship is creating a “*veritable earthquake*” and leading to the “*customer’s victory*” (p.28).

Commentators urge marketers to adapt quickly to this new balance in market power by no longer treating the consumer as a ‘target’ but as an equal and a partner. Firms that fail to adapt their approach may find that “*the hunter can become the hunted if companies don’t recognize the dramatic transformation of the role of consumers*” (Prahalad and Ramaswamy 2000, p.68).

This section now introduces the four research questions which are driving the study. The first question relates to defining the construct of consumer savvy. As a result of the changes identified in the layers of interaction and in consumers’ sense of empowerment (Sections 2.1–2.2), consumers are said to have “*become increasingly savvy in a complex marketplace*” (Szmigin 2003, p.80). These increasingly ‘savvy new consumers’ are said to have a range of skills and abilities which they use to their advantage in engaging with firms. Lewis and Bridger (2001) provide a comparison of ‘Old’ versus ‘New’ consumers: “*Old Consumers*” often bought out of habit and were strongly influenced by the convenience of mass-marketing and mass-consumption, while “*New Consumers*” adopt a more “*individual, involved, independent and informed approach to consumption*” and in the new millennium their financial power and influence dominate the markets of the developed world (Lewis and Bridger 2001, p21). Consumer savvy is said to imbue consumers with characteristics which give them advantage at each of the four layers of interaction identified in section 2.1, and make them more powerful than traditional consumers (Figure 2.3). These characteristics

apparently include technological sophistication, literacy, network competency, empowerment, and higher expectations of the firms with which they interact.

Despite the increasing number of claims and assertions about the ‘savvy’ consumer, there is little empirical evidence to date. The lack of theoretical conceptualisation and empirical evidence means that marketers do not know whether the dominant logic for marketing needs to change across all market contexts (Vargo and Lusch 2004), or whether the market is facing just a familiar set of contingencies.

For this reason, the first question for this research study aims to define the characteristics of a savvy consumer and looks to the managerial literature as well as the academic literature for guidance in answering:

RQ 1: What are the dimensions of consumer savvy?

Figure 2.3 Comparison of ‘Traditional’ versus ‘Savvy’ consumer characteristics

Environmental Changes	“Traditional” Consumer	“Savvy” Consumer	
<div>↑</div> <div>LAYER 4. APPLICATIONS</div> <div>Consumer product knowledge:</div> <div>Consumer co-production:</div> <div>Consumer price-setting:</div> <div>Comms: Firm-Consumer:</div> <div>Comms: Consumer-to-Consumer:</div>	<div>Limited to company info.</div> <div>Limited to mass offers.</div> <div>Price-taker.</div> <div>Consumer little control,</div> <div>WOM communication</div>	<div>Literate about product</div> <div>competitive (dis)advantages.</div>	<div>Specifying product design,</div> <div>production, delivery, pricing.</div>
<div>LAYER 3. INFORMATION</div> <div>Amount / channels / flow</div> <div>Consumer personal info</div>	<div>Disadvantaged by</div> <div>information</div> <div>asymmetry</div>		<div>Empowered (with</div> <div>knowledge, contacts</div> <div>and ability to</div> <div>communicate back</div> <div>to the firm, and to</div> <div>other consumers).</div> <div>Demanding.</div>
<div>LAYER 2. CONNECTIVITY</div> <div>Consumer-Firm</div> <div>Consumer-World</div> <div>Consumer-Consumer</div>	<div>WOM (Word-of-</div> <div>mouth) networks</div> <div>mainly friends,</div> <div>family, colleagues.</div>		<div>Controlling:</div> <div>info received from firm</div> <div>info provided to firm,</div> <div>info usage by firm.</div>
<div>LAYER 1. TECHNOLOGY</div> <div>Ubiquitous. Real-time.</div> <div>Individualised. Demassified.</div> <div>Redefining “audience”.</div>	<div>Access and adoption</div> <div>often lags the firm</div>		<div>Networked to whole world if</div> <div>choose to be. Networked to firm,</div> <div>other consumers, experts,</div> <div>infomediaries. Can choose to</div> <div>engage in Word-of-Web (WOW).</div>
			<div>Technologically Sophisticated.</div> <div>Adoption at same time, even ahead,</div> <div>of firm. New apps may come from</div> <div>consumers. Beta-testing with firm.</div>

Having detailed several potential benefits for consumers arising from their increased connectivity and the availability of information in the consumer-firm interaction, it is important to observe that this dynamically changing environment also presents challenges. The rapid pace of change and resultant uncertainty that this creates, as well as ever-changing technologies can create apprehension, fear and even

phobia amongst those who feel less competent (Mick and Fournier 1999). Importantly, this means that consumers' awareness and readiness to adopt new ways of doing things is not universal, and *not all consumers are adapting to the new environment in the same way(s) and at the same pace*. Some demographic groups, in particular, might be more prone to a positive or a negative understanding of changes in the marketplace, and self-perception of their ability to deal with it. Therefore, prior to conducting any profiling of consumers using the newly developed multi-dimensional conceptualisation of consumer savvy, it is important to examine the potential systematic impact of demographic differences. Several sources of variation could be investigated (e.g. educational attainment, IQ/ability, professional needs, culture), but these are set to one side and left for future research. Two demographic groupings which are known to have a socialising impact on a consumer's competency are gender and generational age. Thus the second research question asks:

RQ 2: Is savvy invariant across genders and age groups?

2.4 Consequences of consumer savvy

Having defined the construct of consumer savvy, and begun to measure it across the consumer base, the third series of questions investigates the outcomes of consumer savvy. This is of vital importance because the implications of rapid environmental changes (discussed earlier in this chapter) for the marketer-consumer relationship, and especially with respect to the consumer, are subject to conflicting explanations/predictions of consequences. For example, consumers are variously depicted as forthright, demanding co-creators of value with the firm (Prahalad and Ramaswamy 2004a), or as despondent, powerless victims of firms (Fournier, Dobscha and Mick 1998). If one believes those who preach the 'empowered consumer' view (Dupuy 2004, Szmigin 2003) then the outcomes should include a significant number of positives for the consumer including greater sense of control, self-confidence, increased value achievement, and greater satisfaction/well-being. For the firm it should include increased commitment and trust, and potentially create advocates out of the firm's consumers. The third set of research questions looks at the outcomes of enhanced consumer savvy by asking:

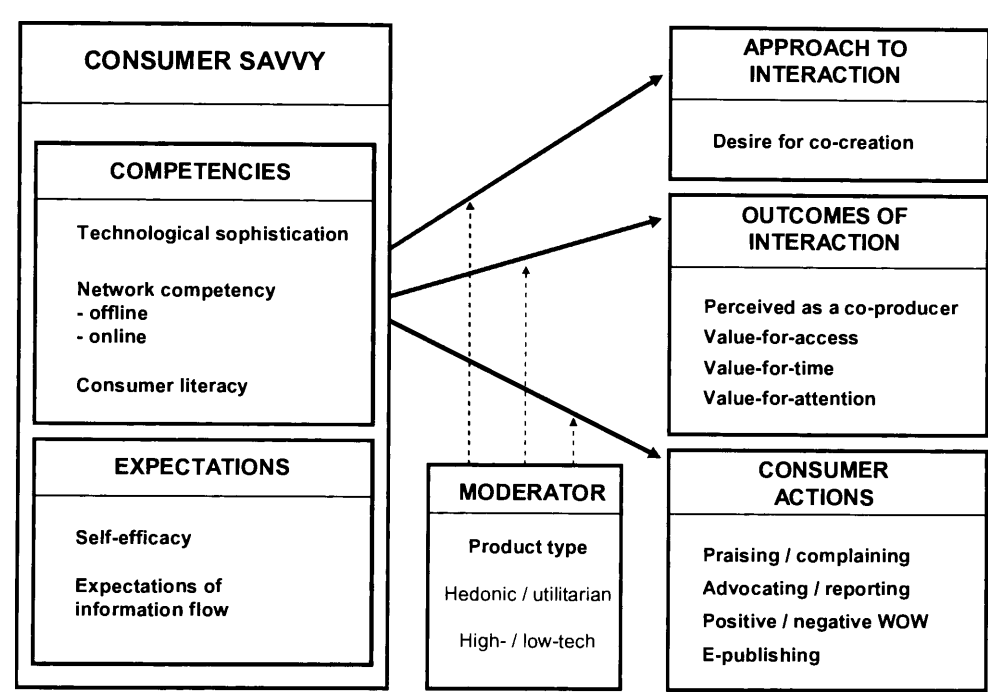
RQ 3: Does savvy affect consumer’s approach to the consumer-firm interaction?

RQ 3a: Does it relate to desire for co-creation?

RQ 3b: Does it relate to perceptions of value in interacting with the firm?

These themes are summarised in Figure 2.4.

Figure 2.4 Consequences of consumer savvy



In addition, if one takes on board all of the predictions, then it appears that firms are at most risk from the ‘savvy’ consumer when the consumer is dissatisfied. It is in these circumstances, if one believes the literature, that the strongest difference between low- and high-savvy consumers will appear. In a situation where the consumer is dissatisfied with the outcome of an interaction with the firm, there is more likelihood of negative behaviours such as complaining, negative WOM, third-party complaining, retaliation and negative word-of-web (WOW) (Huefner, Parry, Payne, Otto, Huff, Swenson and Hunt 2002).

Therefore a further research question is:

RQ 3c: Does consumer savvy increase the likelihood of consumer activism activities?

2.5 The moderating impact of product category

Consumer savvy is asserted to be a global trend impacting all marketing activities and therefore has broad market relevance (Prahalad and Ramaswamy 2004a, Mitchell 2004, Szmigin 2003). Any number of product categories could be examined in this study; however, a limited number of categories are selected to be representative across the hedonic-functional continuum (a portable games device versus an external hard drive) and the high-tech low-tech continuum (highly innovative latest product versus a product which offers similar technology to other products in the market). It is likely that product category will have some moderating impact on consumer motivation to ‘co-create’ / ‘co-produce’ and on consumer demand for value. For example, because of the ‘fun’ or ‘entertainment’ aspect of hedonic products, consumers may be more willing to engage in co-creation in these product categories. In addition, product type is likely to moderate consumer expectations of marketing processes and consequently their satisfaction levels. Finally, product type is likely to moderate the outcomes of consumer-firm interaction, for example, consumer likelihood of engaging in positive consumer behaviours, such as consumer recommendation or negative behaviours, such as complaining, retaliation and negative WOM.

RQ 4a: Are the effects of consumer savvy moderated by the hedonic-utilitarian characteristics of products?

RQ 4b: Are the effects of consumer savvy moderated by the technological innovativeness of products?

2.6 Environmental context

The phenomenon of increasing consumer empowerment is influenced by broad changes in the environment (as captured by the technology-connectivity-information layers discussed previously). Briefly, these changes include the diffusion of technology and the emergence of ubiquitous internet access, which together have changed the world of consumers, as well as how they interact with the firm, the marketplace and with each other. However, the changes described in Section 2.1 are not having uniform impacts on all markets and consumers. Two conflicting forces – ‘homogenisation and fragmentation’ (Day and Montgomery 1999) – are determining the relationships in each market. The homogenisation of markets is a result of globalisation; this is facilitated by global communication and diffusion of technology (Day and Montgomery 1999). At the same time, markets are fragmenting as a result of proliferation of products, media and channels (Day and Montgomery 1999). These two forces acting against each other will have varying effects in different markets and product sectors. Therefore, the environment is likely to be an important consideration in examining the effects of consumer savvy.

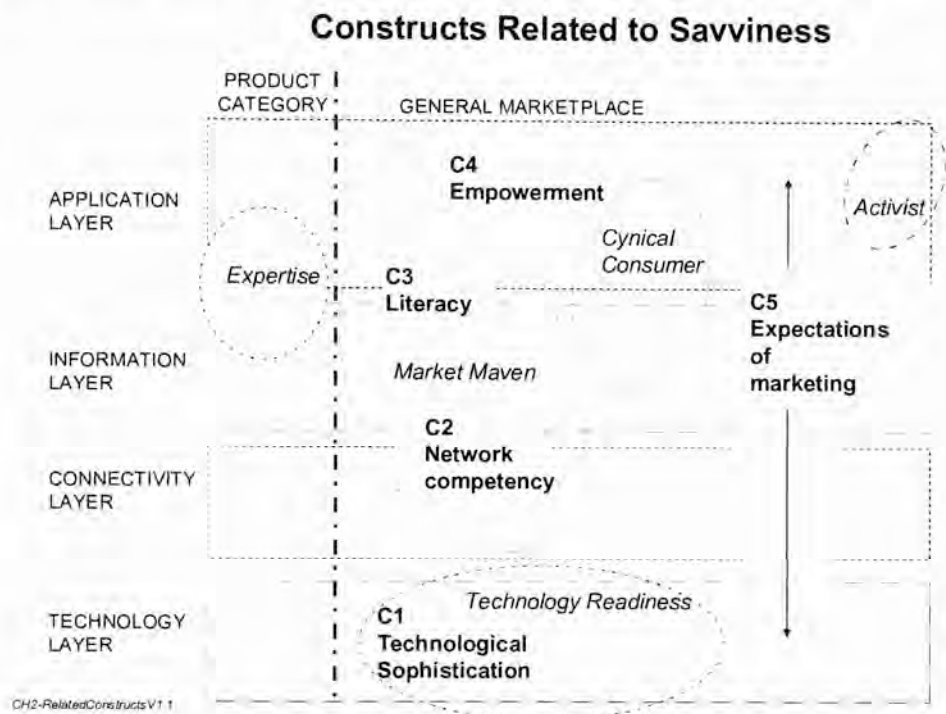
Previous research in the *market orientation* (MO) literature has found some support but also mixed results for the moderating impact of environment (see review in Dawes 2000) based on manager perceptions. Based on these findings from the MO literature, the following environmental factors are manipulated as context for the Phase 3 experimental study: (a) a high ‘choice intensity’ environment (the number of competing offers available to consumers); and (b) moderate ‘technological turbulence’ (the rate of technological change) (Jaworski and Kohli 1993). More discussion about these contextual factors is presented in Chapters 4 and 8.

2.7 Related constructs

Consumer savvy is the consumer’s know-how, cunning and ability to achieve the best outcomes from interaction with the marketplace in a context of a dynamic environment. As discussed in Chapter 1, it includes an array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment. Related constructs include consumer expertise, as well as other constructs which concern one or more dimensions of savvy: technology readiness, cynicism,

consumer activism and market mavenism (Figure 2.5). These concepts and their similarities/differences to consumer savvy are briefly discussed below.

Figure 2.5 Relationship of consumer savvy and related consumer constructs



(a) *Consumer expertise* is the consumer’s ‘ability to perform product-related tasks successfully’ (Alba and Hutchinson 1987). High consumer expertise means that the consumer has much greater knowledge of the product-market and the products available, including the specific features of individual product offerings (Mitchell and Dacin 1996, Alba and Hutchinson 1987). It is related to the consumer’s ability to effectively search and process information in the marketplace (Park, Mothersbaugh and Feick 1994). Consumer expertise is a multi-dimensional construct, generally measured as a combination of self-assessed knowledge, objective knowledge and product-related experiences/product ownership (Mitchell and Dacin 1996, Alba and Hutchinson 1987).

The similarities between expertise and consumer savvy include their emphasis on consumer ability or competence. They can both assist the consumer to be more effective in their consumption. However, the key difference is that expertise is about ability at the *product* or *category* level. Consumer savvy is assessed at the market level and is focused on the consumer’s ability to deal with and adapt to changes in the marketplace in *general*.

It is quite conceivable that the individual consumer may have both high consumer expertise and high consumer savvy. However, there are exceptions such as where experts' entrenched knowledge structures (including consumer expertise) inhibits their ability to adopt and understand new information about discontinuous innovations or really new products (Moreau, Lehmann and Markman 2001). This is because, while consumer expertise can promote efficiency, the construct is about the past (i.e. what has the consumer learnt over time? How well have they stored the learning from these past experiences? How well can they recall the information from these previous experiences?). When market conditions are stable and the market is populated by consistent market-players producing generation after generation of slightly improved products, then this ability is extremely valuable. However, should environmental or market conditions change substantially, then this learnt knowledge and expertise can become redundant overnight. By contrast, the consumer savvy construct potentially provides an assessment of a consumer's readiness to cope in/adapt to the marketplace going forward.

(b) *Technology readiness* is the consumer's "*propensity to embrace and use new technologies for accomplishing goals*" (Parasuraman 2000, p.308). It is measured by four factors: optimism about technology, innovativeness, discomfort and insecurity about technology. Technology is constantly changing and frequently involves discontinuous change. Like the overall higher-order consumer savvy construct, TR examines the consumer's state of mind with the purpose of evaluating their readiness for change and subsequent propensity to adopt it. Since much of the change that consumers are experiencing in the marketplace is being wrought by new technologies, the TR construct and the lower-order construct of *technological sophistication* are clearly related. The TR construct is focused specifically and only at the technology layer and on the *adoption* of technology applications which have a direct consumer interface technology. The *technological sophistication* dimension of consumer savvy, which examines a consumer's self-assessed ability to use technology to assist their consumption, should correlate highly with dimensions of the technology readiness index (Parasuraman 2000).

(c) *Cynicism*: savvy consumers are often described as cynical about marketing and sceptical about product claims (Szmigin 2003). *Cynicism* is defined as "*scepticism of others' motives, faithfulness or goodwill*" (Kanter and Wortzel 1985 in Obermiller and Spangenberg 1998, p.166). Its measures include: people lie, they are not honest,

they only pretend to care, they do not stick to ethics, they are out for themselves, and they dislike making sacrifices for others. Aside from the fact that the consumer savvy construct is broader and takes into account consumer behaviours and expectations, the cynicism and consumer savvy constructs share similarities. They both refer to a state of mind which is likely to give the consumer some protection in the marketplace. It is highly likely that neither savvy consumers nor cynical consumers will believe information from 'just any' source. Both types of consumers are unlikely to be misled by advertising claims, the cynic because of the view that the advertising is motivated by desire to sell rather than inform (Obermiller and Spangenberg 1998) and the savvy consumer because they can confirm information from other sources. However, a key difference is that, for cynics, the cynical belief that 'all people lie' and that 'everyone is out for themselves' can lead to negative reactions such as paranoia and inertia (Obermiller and Spangenberg 1998). By contrast, consumer savvy is more likely to be associated with an optimistic mindset which can lead to greater adaptability and willingness to cope with change.

(d) *Persuasion knowledge*: Friestad and Wright (1994) proposed that persuasion knowledge acts as a defence against unjustified persuasion attempts by firms. It is measured by items, such as 'I can tell when an offer has strings attached', and, 'I know when a marketer is pressuring me to buy'. Consumers use their persuasion knowledge to make judgements about advertising and personal selling. In this sense it is a measure of consumer advantage, such that consumers who have high persuasion knowledge are less easily manipulated by marketing messages (Bearden, Hardesty and Rose 2001).

(e) *Consumer activism*: The savvy consumer is often described as 'active' (Prahalad and Ramaswamy 2004a), 'demanding' (Wind and Mahajan 2002) and 'complaining' (Szmigin 2003). While this might appear similar to the concept of *consumer activism*, it has distinct differences. Consumer activism is associated with consumer activities such as complaining, reporting (to third parties or the media), boycotts, placard-waving protests, disputes or attacks. This form of negative consumer activity is a subset of the *empowered consumer* dimension. Savvy consumers who exhibit empowerment are more effective at engaging with the marketplace and the firm. This might include negative behaviours such as complaining, but may also include positive behaviours such as engaging in co-creation, and actively promoting the firms they favour. In addition, with regard to the 'activist' consumer, it is quite feasible for an

activist consumer to be weak in terms of *technological sophistication* and *connectivity*, and consequently *non-savvy* in their ability to adapt to the changing marketplace.

(f) *Market mavens*: the *market maven* collects and disseminates market information because they enjoy it; the maven knows about products to buy, places to shop, and initiates discussions and takes requests from consumers (Feick and Price 1987). The maven construct is measured by items such as: enjoyment of introducing friends to new products, helping people with information, tendency to be consulted about marketplace information, requests for recommendations, self-perception as being a good source of information, and marketplace knowledge sharing. The maven is characterised by “*general market experience and influence*” (Feick and Price 1987, p.83). Like the savvy consumer, the maven’s competencies include *literacy* and *network competency*. Further similarity occurs because both of these competences apply at a general marketplace level rather than in a specific product category. These constructs are therefore quite strongly related and there will be overlap between the measures of consumer savvy and market mavens. However, the maven construct is not a complete match for consumer savvy, because it does not consider all dimensions of consumer savvy. Clearly the maven construct was developed by managers in order to understand how to use this particular type of consumer’s natural tendency to best advantage the *firm*. By contrast the consumer savvy construct is about understanding how an individual consumer can use their competencies, self-empowerment and expectations to engage with firms more effectively so that they derive greater value from their interactions with firms. Thus, an understanding of consumer savvy benefits managers, researchers *and* consumers.

The conclusion from this analysis of related constructs is that while consumer savvy is related to a number of existing and established constructs in market research, there is no equivalent construct in existence.

2.8 Benefits of this study

As demonstrated in the previous section, the concept of consumer savvy is not entirely new. Marketers have always known a *select group* of consumers are smarter at understanding the workings of the market. Marketers have made use of this when it suited – for instance, by attempting to harness market mavens or innovators, and by using buzz-creation techniques to promote new products or new technologies.

However, firms have generally operated on the basis that the vast *majority* of consumers are ‘passive’ takers of whatever they are offered. With this in mind, the traditional approach has been for marketers to act as “*the hunter with binoculars trying to get a better view of the prey – the targeted consumer*” (Prahalad and Ramaswamy 2000, p.6). However, today firms are increasingly being urged to change this attitude and recognise the potential power of consumers to engage with the firm, to talk to others, and to work together in influencing the marketplace. In understanding this new mass of active consumers, marketers are finding that existing concepts, while potentially related, do not fully explain the concept of consumer savvy in the context of a dynamic technologically-connected marketplace.

The next chapter addresses the first research question by presenting a conceptualisation of the dimensions of consumer savvy.

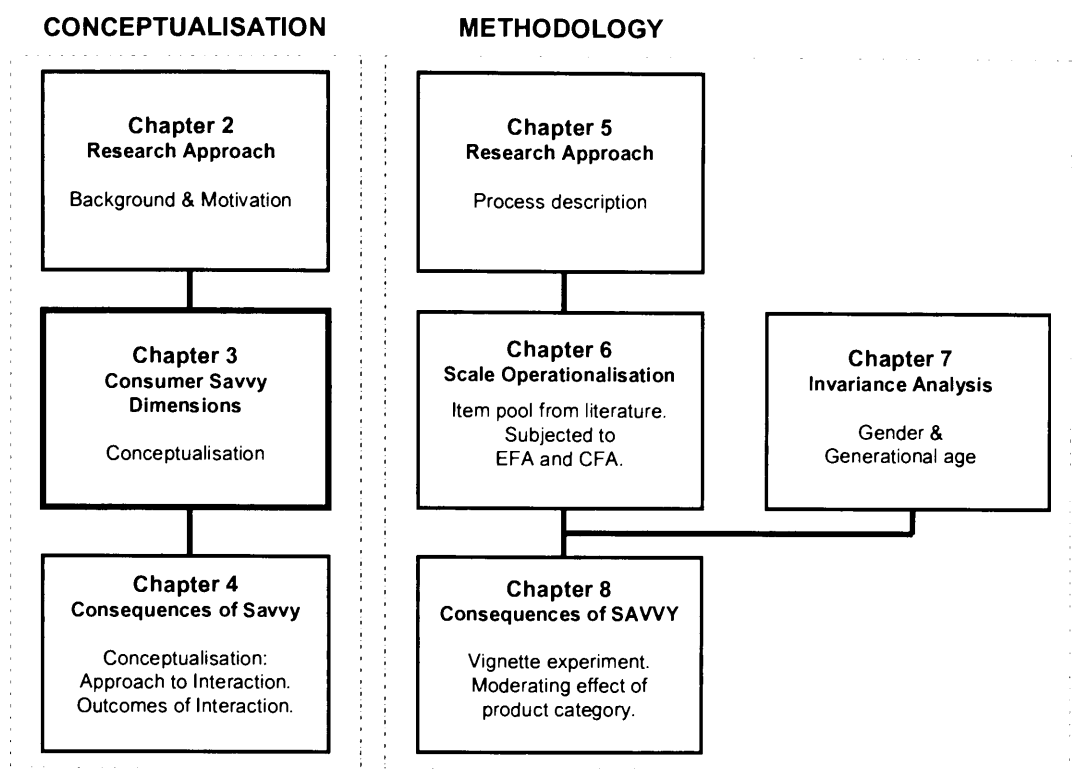
3 Conceptualising Consumer Savvy¹²

This chapter presents the first of two phases of conceptualisation (Figure 3.1): it commences with the aim of answering the research question: *RQ 1: What are the dimensions of consumer savvy?* As discussed in Chapter 2, existing measures of consumer competency (e.g. *market mavenism* and *persuasion knowledge*) do not capture the notion of consumer savvy as it is increasingly taken for granted in various marketing and management literatures. To address this lack of understanding about consumer savvy, a synthesis of academic and managerial literatures is provided. The themes that emerge have frequently arisen from management consultants and academics working with businesses who have directly observed the impacts of technological development, democratisation of information and information networks on the consumer-firm interaction. Some of the studies discussed are quite formal, but many are only supported with anecdotal evidence. It is important to point out that the inclusion of a particular source does not necessarily indicate agreement with the claims. The intention at this point in the review is to derive the key themes of consumer savvy emerging from the (mostly) practitioner- and commentary-based literature into an assessable framework that can be tested as part of a scale development process.

Having identified the themes of consumer savvy that emerge from the literature, the final section of this chapter then presents a brief discussion of how gender and generational age might lead to non-invariance in any new measure of consumer savvy that is developed as part of this study. Through this review it poses the question: *RQ 2: Is savvy invariant across genders and age groups?*

¹² Sections of this chapter have previously appeared in published papers. The consumer savvy conceptualisation appeared in a *Journal of Marketing Management* paper (Macdonald and Uncles 2007) and in conference proceedings for the *Academy of Marketing 2007 Conference, U.K.* Parts of Section 3.9 Invariance were published in conference proceedings of the *ANZMAC 2007 Conference, N.Z* (gender invariance) and *Academy of Marketing 2008 Conference, U.K.* (age invariance).

Figure 3.1 Chapter outline: Conceptual and methodological sections

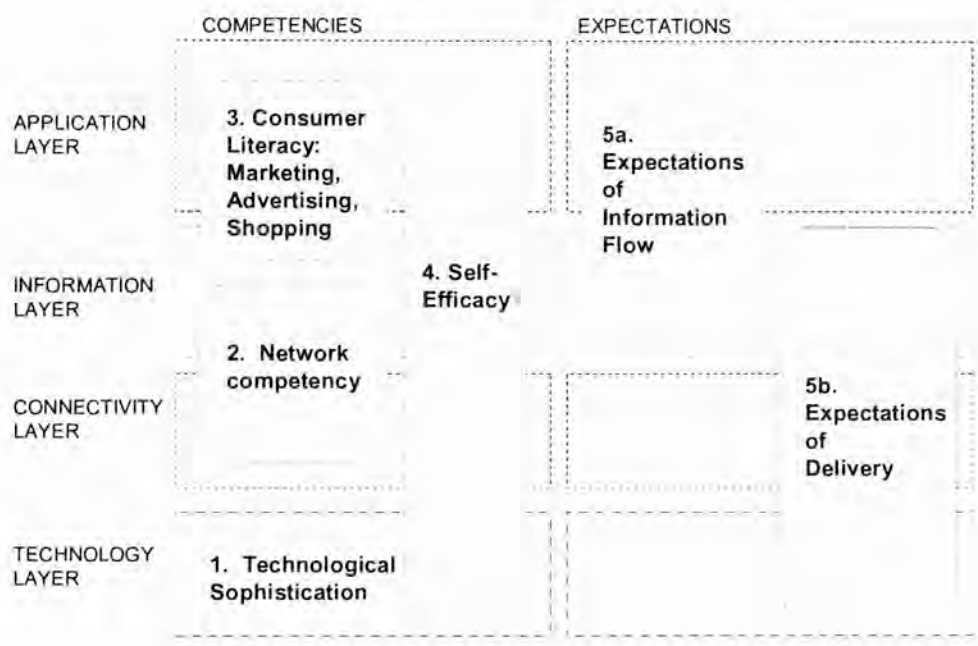


3.1 Conceptualising consumer savvy

In order to have the adequate abilities or “*general fitness ... to survive, grow and thrive*” in a changing environment (Savolainen 2002, p.213) consumers require competencies or skills which they can bring to problem solving. From a synthesis of the literature, this chapter presents a conceptualisation of the consumer competencies that comprise consumer savvy (Figure 3.2). The consumer competencies identified are: (1) *technological sophistication*, a type of *tools mastery* which includes the ability to use technology to their advantage, (2) *network competency*, which comprises two sets of skills that enable consumers to use networks of contacts to their advantage – *offline network competency* and *online network competency*, and (3) *consumer literacy*, including marketing, advertising and shopping literacy. In addition, (4) the savvy consumer has a sense of personal *self-efficacy* in applying the above competencies. Finally, consumer savvy also includes (5) *expectations* of free flow of information between the firm and the consumer, and of ready access to the firm via multiple channels (Dupuy 2004, Prahalad and Ramaswamy 2004a, Lawer and Knox 2004, Szmigin 2003, Wind and Mahajan 2002, Day and Montgomery 1999, Hagel and Rayport 1997).

All five dimensions of consumer savvy are outlined in more detail below. Note that this review is conducted critically because, over the past decade, some extraordinary claims have been made about the magnitude of change in the consumer. Partially to illustrate the extremity of some of the assertions, and in part to show how widespread these claims are, each section starts with a quotation which helps illustrate that theme.

Figure 3.2 Savvy consumer characteristics



3.2 Technological sophistication

“New technologies, such as the Internet, provide easy access to tremendous amounts of information, and people have been *taking advantage* of that to *become smarter shoppers*” (Urban 2004, p.77).¹³

“...consumers have many more choices, are *better informed through expanded media*, and have more ways to acquire their choices” (Day and Montgomery 1999, p.8).¹⁴

The first theme underlying almost all descriptions of the savvy consumer is that of consumers’ technological sophistication and their ability through expanded media to realise their choices (see quote from Day and Montgomery 1999 at the start of this section). Statistics of consumers’ adoption of new and increasingly complex

¹³ Italics added.
¹⁴ Italics added.

technologies (Sections 1.1 and 2.1.1) are frequently cited as evidence of their technological sophistication. For instance, the almost ubiquitous mobile phone technology enables *real-time* information and applications¹⁵; the internet gives consumers easy access to vast amounts of information from many sources, and the growth in online shopping¹⁶ shows that consumers are successfully harnessing technology as a *tool* to assist their consumption outcomes. Additionally, evidence of their sophistication is said to come from consumers' ability to handle multiple technologies. Ten hours per person per day in America is spent with various media as a result of the consumer's ability to implement *media multi-tasking* (*The Economist* 2005a); to achieve this feat the consumer may, for example, be simultaneously engaging with their computer, TV, iPod and a magazine.

In part, widespread exposure to and adoption of technology is driven by firms' implementation of self-service approaches where the consumer is required to interface directly with technology (Parasuraman 2000, Page and Uncles 2004). However, empirical evidence exists to support the notion of an underlying change in the technological sophistication of consumers. It is known that consumers are able to acquire the procedural knowledge very quickly which allows them to adopt and use new technologies (Page and Uncles 2004). Research based on the Technology Acceptance Model (TAM) has found that consumers are adept problem-solvers and will readily adopt a new technology which has high perceived usefulness, even if its usefulness is at the expense of perceived user-friendliness (Davis, Bagozzi and Warshaw 1989).

Resulting from the capacity of consumers to adopt and *use* multiple technologies, they employ technology to improve the effectiveness of their consumption, for example, to source product information and make comparisons online (Urban 2004, Prahalad and Ramaswamy 2004a, Day and Montgomery 1999), to link into their social networks (Wind and Mahajan 2002, Iacobucci 1998), and to exert control over information flows (Dupuy 2004, Hagel and Rayport 1997, Lawer and Knox 2004, Mitchell 2004, Szmigin 2003, Zwick and Dholakia 2004).¹⁷

¹⁵ For example, SMS alert services that this researcher has been directly involved in providing include share alerts for traders, weather alerts for mariners, sport alerts for fans, and event alerts for nightclub goers.

¹⁶ In one year from 2003 to 2004 online shopping grew from: 32% to 58% in the US, from 23% to 43% in the UK and from 18% to 33% in Australia (DCITA 2004).

¹⁷ Consumers are seeking to control the flow of their personal information outwards towards the firm. For example, consumers use technology to implement a range of strategies in an attempt to control their online identity including: i) disclosing all their information with a high level of accuracy ("identifiability"), (ii) externalising only restricted, highly accurate info ("confidentiality"), (iii) sharing

Consumers are also said to be employing technology to control flows of information *inwards* so that they control the amount of company information and can be selective about the information to which they give their attention. *The Economist* (2005a) observes that consumers by-pass television advertising by channel flicking or by using digital video recorders to skip the ads and cite a Forrester study which found that 60% of programs watched by DVR users are recorded and 92% of ads on such programs are skipped. Forrester predicts this trend to continue to the extent that by 2008, 36 million households in the USA will be using DVRs (*The Economist* 2005a). In addition, savvy consumers prevent advertising reaching them by using pop-up blockers on the web, screening SPAM from their emails, using unlisted phone numbers and actively seeking out non-company sources of information using their extensive networks.¹⁸ These trends lead to the identification of the first theme:

Theme 1: Savvy consumers have technological sophistication and can use technology to their advantage in the marketplace.

3.3 Network competency

The second theme regarding the savvy consumer is their competence in using their networks. In referring to *network competency* the current study focuses on both the consumers' use of interpersonal connections and their use of information technology to access others via the internet. Previous researchers have tended to focus on just one or the other. For example, Savolainen's (2002) definition of network competence refers to the consumers' ability to use IT to search for information but does not consider offline network competency. East, Hammond, Lomax and Robinson's (2005) comprehensive study of recommendation effects focuses on interpersonal word-of-mouth, but does not specifically consider the impact of online connectivity. Both types of connectivity are now briefly reviewed.

little and inaccurate information ("secrecy"), or (iv) taking an approach of anonymity and "pseudonymity" (Zwick and Dholakia 2004).

¹⁸ The impact on advertising is such that some experts claim that reach-frequency as an advertising objective is now dead (Day and Montgomery 1999; *The Economist*, 2005b).

3.3.1 Interpersonal network competency

Interpersonal network competency refers to the general ability of consumers to harness a network of useful personal contacts in relation to buying products/services and engaging in markets. We know that personal information sources are valuable; for instance, recommendation can have more impact on brand choice than advertising (East, Hammond, Lomax and Robinson 2005) and such sources are often seen as more credible than non-personal sources (Feick and Price 1987). Empirical research has demonstrated that interpersonal sources have higher usage rates than retail visits, sales-people, advertising, manufacturer information or consumer reports (East, Hammond, Lomax and Robinson 2005, Price and Feick 1984). In assessing intangible services, consumers ask friends and people they see as credible sources to judge both experience and credence attributes of products (Herr, Kardes and Kim 1991), and they do the latter though it raises the problem of trusting another consumer even when that other consumer does not have the ability to make a proper assessment of credence attributes (Mittal 2004). The advantage for consumers in having a high level of offline network competency is the ability to use knowledgeable friends, relatives or acquaintances as information sources in a product purchase, thus providing consumers with an *un-biased* source of product information to compare against company-provided information

Theme 2a: Savvy consumers possess *offline* network competency and can use this skill to their advantage in the marketplace.

3.3.2 Online network competency

“Millions of *networked consumers* are now collectively *challenging* the traditions of industries as varied as entertainment, financial services and health care” (Prahalad and Ramaswamy 2004c, p.2).¹⁹

The “*groundswell*” in consumer market influence means the firm must face the prospect that their customers may “*eat up your profit margins, cut down your market share, and marginalize your sources of strength*” (Li and Bernoff, 2008, p.13).²⁰

¹⁹ Italics added.

²⁰ Italics added.

As discussed in Chapter 2, greater connectivity removes barriers and creates the potential for consumers to access and share information right across the global network and to form geographically-dispersed collectives.

Forming collectives: Technology-driven social phenomena, including blogs, wikis, social networks, file sharing and citizen journalism, are part of a trend towards people connecting and depending on each other rather than on institutions (Forrester 2006). The influence of these communities on the marketplace comes from the level of engagement they create amongst their members and their independence from the firm (Prahalad and Ramaswamy 2004b, Day and Montgomery 1999). Customer ratings harness the power of WOM through online feedback systems. These *reputation systems* enable strangers to share recommendations, ultimately resulting in a more informed consumer base (Dellarocas 2003). Examples include *Which.co.uk* and *NotGoodEnough.org*. These sites give consumers the ability to complain about poor products or inappropriate treatment from firms. Consumers that have online network competency are thus empowered through widespread access to others' opinions via their online networks (Szmigin 2003).

Access to new ideas and perspectives: Networks facilitate links between individuals that are *far away* in some sense (i.e., different in space, behaviour or beliefs) (Wilkinson 2006). While these *long-reach* links are often associated with very little engagement with the consumer (i.e. they are 'weak ties'), they can be important sources of new information and ideas, as shown by Granovetter's (1973, 1983) work on the '*strength of weak ties*'. New ideas gained from connecting with weak ties may influence and change consumers' mental state and behaviours to a far greater an extent than exposure to their *strong ties* (friends and family) (Brown and Reingen 1987, Godes and Mayzlin 2004a). Today as online connectivity increasingly makes the world a *smaller place* the consumer potentially has a much larger number of widely dispersed connections (Iacobucci 1998, Godes and Mayzlin 2004a).

Consumers that possess online network competency are able to harness technology to participate in collectives with other consumers and to access new sources of information and ideas via the internet

Theme 2b: Savvy consumers possess *online* network competency and can use this skill for their advantage in the marketplace.

3.4 Consumer literacy

The new consumer is said to be *literate* (Harker and Egan 2004), *educated* (Urban 2004, Harker and Egan 2004) and *informed* (Prahalad and Ramaswamy 2004a). From the *consumer education* literature²¹ literacy is defined as “*gaining the skills and knowledge to read and interpret the text of the world and to successfully navigate and negotiate its challenges, conflicts and crises*” (Kellner 2004, p.92). Three key types of consumer marketing literacy exist – marketing, advertising and shopping.²² Each enables consumers to be savvy in various aspects of their consumption, and is discussed in turn.

3.4.1 Marketing literacy

“People are more *educated and informed* than ever, and they have the *tools to verify* a company’s claims and seek out superior alternatives from competitors. That *power* enables customers to avoid pushy marketers and make their own purchasing decisions” (Urban 2004, p.78).²³

Today’s consumers are “*wise to the wiles of marketers*. They are conscious of the campaigners behind the campaign” (Brown 2003, p.16).²⁴

Qualitative research has found that consumers are familiar with the ideas, objectives and methods of marketing as demonstrated when they apply marketing terminology in their day-to-day lives (Harker and Egan 2004). A high level of marketing literacy amongst consumers is not inconceivable when one considers that a large number of consumers are themselves marketers or employees of marketing firms. In addition, marketing education has been prominent in the past two to three decades. Popular media are also full of shows and characters who talk *marketing-speak* (e.g. *Ugly Betty*, *Mad Men*, and *Ab Fab*’s PR Eddy Monsoon).

It has long been known that consumers are sceptical about the traditional marketing concept of *marketers serving consumers*; for example, 75% of respondents across six nations surveyed by Barksdale, Perreault, Arndt, Barnhill, French, Halliday and Zif (1982) agreed that profits are a greater motivating force than serving consumers.

²¹ Much of the consumer education literature focuses on the development of literacy in novice consumers, that is, children and adolescents. See John (1999) for a review of a quarter-century of research. The current study focuses only on the adult consumer.

²² Media literacy is sometimes also discussed but the emergence of new technologies is blurring the media-technology line so this discussion has been subsumed under the theme of technological sophistication.

²³ Italics added.

²⁴ Italics added.

Despite this scepticism, consumers are prepared to tolerate marketing, and they are confident in their ability to evaluate and form a judgement about marketing activity (Harker and Egan 2004, Gaski and Etzel 2005). Consumers have tools and abilities to conduct sophisticated analysis, dissection and critique of marketing activity (Harker and Egan 2004, Urban 2004). A recent study demonstrated that consumers will assess whether a firm exerts *sufficient effort*; a firm that is seen to exert extra effort in making or displaying their products is rewarded by consumers by increasing their willingness to pay, to select the store, and by their overall evaluations, even if the actual quality of the products is not improved (Morales 2005).

Consumers also understand the less visible forms of marketing activity: for instance, (a) they understand the purpose of market research and are aware of the objectives that motivate loyalty programs; (b) not only do they understand the workings of the *front of house* marketing activities aimed at them but they are also aware of what goes on *backstage* in the firms with which they interact; and finally (c) they are aware of the commercial and social history of firms in a market, and are particularly aware of the current position of ‘their’ firm with respect to its competitors (Harker and Egan 2004).

**Theme 3a: Savvy consumers possess marketing literacy and can use
this skill to their advantage in the marketplace.**

3.4.2 Advertising literacy

“Consumers more than ever know what is being done to them, not only are they not fooled by the targeted admail that falls on their doorsteps or comes through their computers, they *know the game* well enough to play with it and even undermine it if they so wish” (Szmigin 2003 p.4).²⁵

Consumers are said to *know the game* of advertising (Szmigin 2003, Cotte and Ritchie 2005). Advertising research practitioners claim that consumers are adept at decoding advertising (Brown 2004); indeed it is their ability to understand advertising in *semiotically-equivalent* ways that allows global advertising campaigns to work across multicultural consumer segments (Domzal and Kernan 1993). Importantly, commentators observe that “*the consumer is not passive, helpless advertising fodder*”

²⁵ Italics added.

because they can detect the hype versus the reality in advertising and extract the information of value to them (Mackay 2002, p.28).

Consumers' scepticism of advertising has long been known: Barksdale et al.'s (1982) six-country study found that, regardless of nationality, most consumers (52%–66%) simply do not believe that manufacturer's advertisements are reliable sources of information about quality or performance of products, or that advertised products are more dependable than unadvertised products. Interestingly, however, a much more recent industry qualitative study found that advertising today is benefiting from a general decline in respect for other sources of information, such as news coverage and political rhetoric. Compared to these other sources "*advertising has no secret agenda*"; it is quite open in its intent to sell something (Aitchison 2004, p.25).

When it comes to obtaining the information they require, consumers are not dependent on the firm for communication but have adapted to the new forms of advertising available to them via the internet (Prahalad and Ramaswamy 2004a). *The Economist* (2005b) reports that more than 90% of people aged 18 to 54 would turn to the internet first for product information, even though the vast majority still go to a retail store to make a purchase. Obviously, much of this internet-based information sourced by consumers is independent of the firm.

The availability of technology tools is also enabling greater control over advertising media. While consumers have traditionally been viewed as victims of the media/marketing machine, there is contrary evidence that, rather than being victims, consumers are "*positively ruthless*" (Mackay 2002, p.35) in their role as audience. As evidence for this claim, Mackay (2002) reports from proprietary research studies that consumers are channel switchers with only a third watching a whole television show (and its ads) and 51% of the total audience for any one program watching less than one-third of it.

Theme 3b: Savvy consumers possess advertising literacy and can use this skill to their advantage in the marketplace.

3.4.3 Shopping literacy

With “...access to unprecedented amounts of information, knowledgeable consumers can make informed decisions” (Prahalad and Ramaswamy 2004b).

“The (consumer) buying process is becoming *professionalised* and organised” (Mitchell 2004, p.345).²⁶

Consumers spend a lot of time shopping. Statistics from the FlyBys consumer panel (which includes one in four Australian households) found that, in a typical month, 98% of households shop at supermarkets at least three times, 87% shop at least twice for fuel, and 78% at least once at a department store (Wright, Sharp and Sharp 2002). Even assuming that these purchases are routine and habitual and therefore low involvement, the experience and familiarity that this regular shopping generates provide a good platform for developing consumer expertise and literacy. This allows consumers to become more efficient and effective shoppers. Given consumers’ vast experience with shopping and their efficiency in using simplifying decision rules, it is wrong to see them as inexperienced novices (Day and Montgomery 1999). If indeed firms have tried to in the past, it is no longer possible for them to trade on shopper’s ignorance: “*people will know – and soon tell others, even those without internet – that prices in the next town are cheaper or that certain goods are inferior*” (The Economist 2005a).

Claims of increasing consumer shopping literacy are supported by anecdotal evidence from online retailer, Dell Computers. Their ex-CMO observed that if they change the price on their website, their customers’ buying patterns “*literally change within a minute*”; he claimed that this “*tells you that people are well-researched and knowledgeable*” (Mike George, Dell CMO cited in The Economist 2005a).

Theme 3c: Savvy consumers possess shopping literacy and can use this skill to their advantage in the marketplace.

As a result of their competencies with technology and their networks, savvy consumers have ready access to information. Their consumer literacy allows them to use this information to their advantage in responding to marketing activities and

²⁶ Italics added.

advertising. As with any type of achievement, these consumer competencies help to build the consumer's self-confidence and self-belief. Whether this sense of self-belief originates from their consumer competence, or, vice versa, their consumer competence arises from their self-belief, is not of concern in the current study. The next section examines consumer self-efficacy and expectations in a context where consumers are increasingly described as *connected*, *informed* and *empowered*.

3.5 Consumer self-efficacy

"both manufacturing and retail firms – are trapped in some sci-fi movie in which the customers are beginning to mutate, a business version of *Invasion of the Body Snatchers*" (Wind and Mahajan 2002, p.72).²⁷

"Consumer inertia will increasingly be a thing of the past and, while too much choice will still produce cognitive upheaval and discomfort, many consumers will nevertheless increasingly look for and get equity and value through *tackling companies head-on*" (Szmigin 2003, p.63).²⁸

Savvy consumers are said to be more *demanding* about how firms engage with them, what firms offer them, and where and when it is delivered (Kumar and Venkatesan 2005, Urban 2004, Wind and Mahajan 2002). Additionally, savvy consumers are said to have a greater desire to be in control of their lives and can match this with more means to take control (Prahalad and Ramaswamy 2004a, Day and Montgomery 1999). In short, consumers are described as having become more *active* as opposed to their previous *passive* or *inert* role in the marketplace (Prahalad and Ramaswamy 2004a, Szmigin 2003). As the *invasion of the body snatchers* quote from Wind and Mahajan (2002, p72) at the start of this section shows, it is with some trepidation that commentators recognise the potential for consumers to control aspects of the marketplace. There are even claims of a growing force of militant consumers (Dupuy 2004, Szmigin 2003); however, these claims are tempered by findings from corporate social responsibility and cause-related marketing research which has shown that the majority of consumers are "*notoriously passive*" (Doane 2005, p.220)^{29,30}.

²⁷ Italics added.

²⁸ Italics added.

²⁹ For example, despite their concern about ethical performance of businesses only 5% of consumers act on these concerns when making a purchase decision (Doane 2005).

³⁰ It must also be borne in mind, that the dire predictions that appear in management and marketing publications regarding the potential onslaught of demanding consumers is partly due to fear resulting

The construct of empowerment, defined as the “*consumer perceived control over all domains of life*” (Corrigan, Faber, Rashid and Leary 1999, p.77) has featured in the psychological literature over the past decade³¹. Empowerment is conceptualised as comprising self-esteem, power/powerlessness, optimism, righteous anger, and community activism (Rogers, Chamberlin, Ellison and Crean 1997). Empowerment has been found to be associated with quality of life and psychological health, but not limited to the privileged, educated, majority race, or the employed. In other words it is an *equal opportunity* personal state (Rogers, Chamberlin, Ellison and Crean 1997, Corrigan et al. 1999). However, the concept of empowerment is inappropriate in understanding individual human agency, as it is often used in terms of individuals being *granted empowerment* (Bandura 1997). A more appropriate mechanism for understanding the current state of the active, demanding consumer is through the notion of *self-efficacy*. Self-efficacy equips individuals with the belief (whether or not it is accurate) that they can produce valued effects by their individual and collective actions (Bandura 1997). Self-efficacy is defined as “*an individual’s assessment of his or her ability to perform a behaviour*” (Bandura 1977). Self-efficacy is a widely researched concept especially in terms of academic achievement (Pajares 1996) and employment achievement; for example, employee self-efficacy (Hartline and Ferrell 1996), sales-staff self-efficacy (Sujan, Weitz and Kumar 1994) and technology-use self efficacy (Dabholkar and Bagozzi 2002, Compeau and Higgins 1995).

There are parallels between the human resources literature which uses self-efficacy theory to understand employees’ belief in their ability to perform job-related tasks (Hartline and Ferrell 1996) and the emerging concept of the co-creating savvy consumer, where firms are increasingly looking to their consumers to be active and engaged in co-production (Prahalad and Ramaswamy 2004a,b,c,d). This self-belief in

from uncertainty. An alternative explanation might be that, while consumers have always been active and demanding about receiving quality products and good service, firms are only now paying special attention because of the “frightening” prospect of technology-enabled consumers controlling information flow and influencing others. Therefore the real change may not be about the consumer, but about the marketer’s perceptions of the consumer. In this case marketers might need to change their view of the consumer from that of a passive, manipulated number in a database (Fournier, Dobscha and Mick 1999) to an active individual capable of influencing the marketplace. Obviously the topic of manager perceptions is beyond the scope of the current study; however, an awareness of what is driving claims of the “frightening”, demanding and assertive savvy consumer is useful. Of interest in our conceptualisation of consumer savvy is whether consumers themselves realise their potential to influence the marketplace and their potential to have an impact on the firms with which they deal.

³¹ There has been an increase in research focused on “empowerment” since psychological treatment has moved out of hospitals to a community basis and self-help approaches (Rogers, Chamberlin, Ellison and Crean 1997).

their ability to make a difference is activating more and more consumers, and thus leads to our fourth theme:

Theme 4: Savvy consumers possess self-efficacy in dealing with firms.

In addition to self-expectations, the savvy consumer is said to have certain expectations about the information flows between the firm and the consumer. The next section summarises these expectations.

3.6 Consumers’ expectations of information flows

“trends and forces are coalescing into consumers who *want greater control*, are less willing to be *passive* participants in the marketing process, and have been given more means to *take control*” (Day and Montgomery 1999, p.8).³²

Consumer expectations refer to the expectations that consumers have of information flows between the firm and the consumer. Savvy consumers are said to have enhanced expectations of the firm in that they expect on going dialogue with and support from the firm; or what Prahalad and Ramaswamy (2004a) call *deep engagement*. This includes requiring the firm to open up its operations to the scrutiny of consumers (Urban 2004). Consumers have always expected firms to be responsive to their requests although they have often resigned themselves to being disappointed (Fournier, Dobscha and Mick 1998). However, consumers now have greater ability to enforce their expectations through ready access to information (about firms, products, markets) and through the ease of forming collectives with like-minded consumers. Additionally, with regard to their own personal information, savvy consumers increasingly understand the value of this information, and are aware that there is a vast amount of their personal information stored on company databases (Mitchell 2004). As part of the free flow of information between firms and consumers, they expect firms to store and use consumer records in responsible and constructive ways (Wind and Mahajan 2002).

³² Italics added.

Theme 5a: Savvy consumers expect free information flow between the firm and the consumer.

In addition, consumers are increasingly operating multiple technologies, opening up a multitude of ways to connect with they firm. Thus consumers have morphed into “cyber-centaurs” who effortlessly shift between real world and virtual channels (Wind and Mahajan 2002) and they expect firms to respond consistently via these multiple channels:

Theme 5b: Savvy consumers expect delivery via multiple channels.

Table 3.1 Consumer savvy themes from the literature

COMPETENCIES
Theme 1: Savvy consumers have technological sophistication and can use technology to their advantage in the marketplace.
Theme 2a: Savvy consumers possess <u>offline</u> network competency and can use this skill to their advantage in the marketplace.
Theme 2b: Savvy consumers possess <u>online</u> network competency and can use this skill for their advantage in the marketplace.
Theme 3a: Savvy consumers possess <u>marketing</u> literacy and can use this skill to their advantage in the marketplace.
Theme 3b: Savvy consumers possess <u>advertising</u> literacy and can use this skill to their advantage in the marketplace.
Theme 3c: Savvy consumers possess <u>shopping</u> literacy and can use this skill to their advantage in the marketplace.
EXPECTATIONS
Theme 4: Savvy consumers possess self-efficacy in dealing with firms.
Theme 5a: Savvy consumers expect free information flow between the firm and the consumer.
Theme 5b: Savvy consumers expect delivery via multiple channels.

To summarise, nine broad themes have emerged from the literature with regard to consumer characteristics (Table 3.1), and consumers that exhibit these characteristics may be considered savvy. Chapter 5 will discuss the process of scale purification and validation that will be conducted to operationalise these themes of consumer savvy into a multi-dimensional measure.

The final section in this chapter now addresses the issue of potential covariates of consumer savvy, highlighting the need for invariance analysis of the consumer savvy scale that will be developed as part of this thesis.

3.7 Potential covariates of consumer savvy: Gender and generational age

There are a number of factors which might affect an individual's consumer savvy. These include gender, age, educational attainment, socio-economic status and intellectual ability. It is not possible to address every potential factor; however, two of these which have been demonstrated to lead to variance across a number of psychological phenomena are gender and generational age.

Firstly, I consider the effect of gender. While males and females are both important participants and contributors in the offline and online marketplace, gender differences have been previously noted across a number of constructs which have some similarity to the competency and expectations dimensions of consumer savvy. These include approach to sociality and desire for belongingness (Baumeister 2007, Baumeister and Sommer 1997), concern for privacy (Garbarino and Strahilevitz 2004), and confidence and willingness to engage with technology (Page, Robson and Uncles 2007). In addition, based on two decades of psychological research, Baumeister (2007) has observed that males often have a wider variance across a range of psychological phenomena than females; that is, there are more males at the top and at the bottom of various measures because of the male tendency to embrace risk (see Baumeister (2007) for his detailed argument and supporting empirical evidence). These findings from other measures of psychological constructs suggest that an individual's gender could have a moderating effect on the competency and expectations dimensions of consumer savvy, potentially to the extent that these measures have different meanings across the genders. In addition, Baumeister's (2007) review of twenty years of psychological research tells us that the sub-sample of males might have greater variance on consumer savvy, such that males are over-represented at the extremes of consumer savvy.

The other potential covariate of savvy is the consumer's age. A consumer's age is an important mediator of interpersonal relationships and of social cohorts over time and is thus *a particularly fruitful lens* through which to examine social processes (Cole and Durham 2007). Individuals born in the same ten- to twenty-year period experience similar social, cultural, economic, and technological environments during their formative years and this then shapes their subsequent lives. This explains why each generation develops a certain *character* and why successive generations are often dissimilar in important ways. The socio-cultural environment in which a generation of consumers is raised affects their consumer-related behaviour including their attitudes and behaviours towards marketing, advertising and shopping (Roberts and Manolis

2000, Mackay 1997). Two generations which are the subject of much media and academic attention at the current time are the *Baby Boomers* and their children, who are variously termed *the Options Generation*, *Baby Busters*, *Generation X* or *Gen X*.

The exact time period that each of these generations encompasses is interpreted in a number of ways (see Table 3.2 for a few recent definitions). However, it is generally agreed that Baby Boomers were born immediately after World War II (1945 and beyond) as a result of post-war optimism, particularly in Australia, Canada and the USA. It is also agreed that this Boomer generation currently encompass the largest single generation in most Western nations (Mackay 1997). Due to their age (currently in their 40s to early 60s) and their numbers, this generation currently dominates the senior social and economic layers of society (Sirias, Karp and Brotherton 2007). Sociologist Hugh Mackay (1997) is widely regarded as conducting the most detailed study of these generational age groups in Australia, and while acknowledging the Boomer generation as a whole, he also identifies sub-groups of Early Boomers and Late Boomers whose life-experience has differed in some key ways. This study initially follows Mackay's lead in identifying two sub-groups within the overall Boomer generation (see column 4 in Table 3.2). Table 3.2 also shows the definition of Gen X consumers in this study: these are the consumers who were born from the late-1960s to the 1970s and comprise approximately 44 million US consumers (Roberts and Manolis 2000). This generation was the first to have had consistent exposure to high levels of advertising (including an average of 20,000 TV commercials per year of their lives according to a *Newsweek* article cited by Roberts and Manolis 2000). As a consequence of this early experience, Gen X is considered to be *media savvy*, *consumer-wise* and in this sense are a *Bellwether generation* for a major underlying change in consumer attitudes (Roberts and Manolis 2000). The Gen Y generation of consumers is also included in this table; however, note that this study is only interested in the adult members (18 years plus) of this generational age group which, at the time of this study, straddles the young adult/adolescent developmental age groups.

Table 3.2 Age generation definitions

Mackay (1997) ^a	Roberts & Manolis (2000) ^b	Sirias et al (2007) ^b	Present Study: Generational Definitions	Present Study: Age Sub-Samples ^c
Not explicitly defined (1980–1989)	Not explicitly defined (1977–1989)	Not explicitly defined (1983-1989)	Generation Y (1983–1989)	18–24 (n=85)
Options generation (1969–1979)	Baby busters (1965–1976)	Baby busters (1963–1982)	Generation X (1968–1982)	25–39 (n=237)
Late BabyBoomers (1956–1968)	BabyBoomers (1946–1964)	BabyBoomers (1945–1962)	Late BabyBoomers (1958–1967)	40–49 (n=133)
Early BabyBoomers (1946–1955)			Early BabyBoomers (1948–1957)	50–59 (n=97)

a. Based on Australian population.
b. Based on United States of America population.
c. Survey was conducted in Australia in 2007.

In the following paragraphs potential sources of variance for gender and generational age are considered for each of the dimensions of consumer savvy.

Theme 1: Technological Sophistication. Research suggests that there are gender differences in use of technology which would affect consumer competency on the technological sophistication dimension (Page, Robson and Uncles 2007). For instance, early studies of internet usage showed that, compared to male users, female users make less intensive use of the internet (Bimber 2000); female users perceive the internet as less useful than male users (Gefen and Straub 1997); and they exhibit higher levels of incompetence, discomfort and anxiety with the internet (Zhang 2005). As technological sophistication is an important enabler of interaction with the online connected marketplace, it might play an important role in limiting the consumer savvy of females compared to males. A contrary argument is that, while this may have been true in the early stages of internet adoption, it is not true longer-term (that is, once all users, regardless of gender, see utility in the technology).

In their comparison of Gen X and Baby Boomers, Sirias, Karp and Brotherton (2007, p.752), note that one enviable distinction of the younger age group is “*their effortless techno-literacy*”. Some researchers observe that younger consumers who have grown up in *cyberspace* are *natives* to the mindset required by a new set of digital literacies, while older consumers are *immigrants* or *newcomers* (Lankshear and Knobel 2006) and are more prone to techno-stress (Weil and Rosen 1997). Additionally consumers aged 50–plus are frequently stereotyped as “*seekers of stability and routine*,

non-innovative, and reluctant to adopt new technologies” (Niemela-Nyrhinen 2007, p.305). However, this may be changing as Boomers catch up in adopting internet and SMS technologies and as they put in extra effort to learn appropriate new skills (Niemela-Nyrhinen 2007, Honeywell and Byth 2006, Szmigin and Carrigan 2000).

Theme 2a: Interpersonal Network Competency. With respect to interpersonal network competency, the literature on gender differences has observed that: (a) females place more emphasis on maintaining relationships, (b) females communicate with one another more often, and (c) females are more likely to describe themselves in terms of their connectedness to others while men are more likely to describe themselves in terms of their separateness from others (see Garbarino and Strahilevitz 2004 for a summary). Females are generally perceived as being more likely to work cooperatively with others, more likely to seek direction than *go it alone*, and more likely to form socio-emotion-oriented social networks (e.g. Igarashi, Takai and Yoshida 2005). With these observations in mind, it might be expected that females exhibit higher interpersonal network competency than males.

With respect to the interpersonal network competency of generational age groups, Baby Boomers are observed to be more interested in collaborative working structures than Gen X; Sirias et al. (2007) says this is evidenced by Boomers’ preference for team-based structures within firms and is a result of the focus on participative, collaborative approaches to interaction which became popular in the 1970s and early 1980s. By contrast, Gen X consumers were “*raised in the milieu of such things as computer-training, latch key social conditions, the shopping mall, MTV, video games and a myriad other factors*” which have led them to take on a more independent problem-solving approach (Sirias, Karp and Brotherton 2007, p.750). If these findings about Boomer versus Gen X employees are extrapolated to consumers, it might be hypothesised that with regard to *interpersonal* network competency a Boomer consumer would demonstrate higher competency than the younger Gen X consumer.

Theme 2b: Online Network Competency. With regard to gender differences in online network competency, it is known that women use email to sustain or invigorate their personal relationships more than men (Boneva and Kraut 2002). Females view the chance to communicate with others to be one of the greatest benefits of the internet (Brunner and Bennett 1997). As women are believed to work more inter-dependently

than men, one might hypothesise that they have stronger belonging needs than males and would thus harness the connectivity provided by the internet to a greater extent than males (Brunner and Bennett 1997, Garbarino and Strahilevitz 2004). However, Baumeister and Sommer (1997) convincingly refute the stance that there are differences in need for belongingness between the sexes. By examining evidence in relation to several psychological phenomena including aggression, helping behaviour, desire for power, interpersonal behaviour and intimacy, they argue that males and females are equally social beings, but within different spheres (Baumeister and Sommer 1997). That is, the need to connect is not just a feminine trait, but a fundamental human motivation (Baumeister and Leary 1997). While it might appear that males have a stronger desire for independence and separateness from others, they do in reality have the same desire to form connections. The key difference is that male connections are formed in a broader social sphere, so while females form connections in close dyadic relationships, male sociality is oriented towards larger groups (Baumeister and Sommer 1997). Thus, when viewing the online marketplace as an opportunity to connect to a larger number of weak ties, one might expect males to have higher online network competency than females.

With regard to age, the ubiquitous availability of connecting technologies has changed the social-connectedness of younger consumers to the extent that for Gen X *“it is virtually impossible to have extended periods of time to yourself. It becomes a matter of extreme urgency if someone cannot be tracked down, within five minutes anywhere in the world”* (Heath 2006, p.41). In addition, the availability of virtual communities provides a multiplicity of ideas upon which Gen X is said to be adept at capitalising. The advantage of accessing information from these virtual communities lies in the fact that *“you only need to give a little of yourself – whether it be time, personal information or ideas – to be a part of these communities, but you get much more back”* (Heath 2006, p.45). For those who know how to make use of them, the cost of retrieving information or solving a problem through accessing a virtual community is negligible (Heath 2005). As virtual communities are dominated by Gen X and Gen Y consumers, one would expect Gen X to have higher *online* network competency than their Boomer parents.

Themes 3a/3b/3c: Marketing Literacy. We know from feminist consumer culture theorists (Bowlby 2000, 1996, DeGrazia 1996a, 1996b, Giles 2007) that the role of exchange and consumption has long been *“obsessively gendered”* to females, as a

consequence of their role in the household division of labour (DeGrazia 1996a, p.1). From a conceptual viewpoint, this goes back as far as Veblen's (1899 in DeGrazia 1996a) "*theory of the leisure class*" where women were "*the keen-eyed neighbours and ambitious shoppers in the battle to keep up with the Joneses*" (DeGrazia 1996a, p.20). In a historical-feminist review of the consumer, Bowlby (2000, 1996) observed that there are two different constructions of the female consumer in marketing rhetoric. The first is where the consumer (particularly the female consumer) is viewed as "*someone attacked by advertising as a powerless victim, her (or his) susceptibilities exploited in such a way that she or he is left with no effective choice*" (Bowlby, 1996, p 382). The second is where the consumer is viewed, not as the advertiser's victim, but as the *advertiser's double*, consciously engaged in planning and decision making, and focusing on saving time, labour and money. Giles (2007) claims that these contradictory views of the female consumer stem from social changes in the 1940s, 50s and 60s, where working-class women, in particular, were condemned for demonstrating irrational acquisitive materialism as opposed to the middle-class housewife who was seen as rational, balanced and self-restrained. Whether either or neither of these contradictory perspectives is true, a potential gender bias in consumer marketing literacy is indicated.

In addition, women's material influence on consumption is said to be growing exponentially, such that they now control \$US7 trillion in consumer and business spending in the USA (Warner 2006). Women in the USA influence 91% of house sales, buy 60% of cars and trucks, 51% of consumer electronics, and comprise 50% of business travellers (Warner 2006). Women are not only influential in their use of household finances, but are increasingly the main income earner, out-earning their husbands in 31% of US marriages according to US Bureau of Labor Statistics cited in a *Newsweek* cover story (Tyre and McGinn 2003). This trend is set to continue as education enhances the economic power of women. In 2002, women earned the majority of bachelor's degrees (57%) and by 2012 a million more US women than men aged 18–24 will be in college (Francese 2003). Thus, it appears that women's historical position as the leaders of consumption is continuing. As the traditional dominant force in consumer purchasing, and with their increasing economic power, female consumers might be hypothesised to have greater exposure to and experience with marketing than male consumers (Warner 2006). Thus females might be expected to have higher marketing literacy than males.

With regard to generational age, Gen X is acknowledged as a bellwether for subsequent generations in terms of consumer attitudes (Freeman 1995a in Roberts and Manolis 2000). Gen X was the first generation to grow up with 24-hour television and is said to be more favourably disposed to marketing and advertising than Boomers. Members of this generation believe that marketing has an important role to play in society but are suspicious of unsubstantiated claims and hype (Roberts and Manolis 2000). These trends appear to be even more prominent in the succeeding generation; Gen Y is more “*media savvy and derisive of those marketers who insult their intelligence with gimmicks and cheap tricks*” and they are “*cynical and untrusting of advertising and marketing promises*” (Huntley 2006, p.152). Gen X and, to a greater extent, Gen Y, have grown up *in the age of the brand* and are heavy brand consumers, although they are not loyal to them (Huntley 2006). This would point to a greater degree of cynicism and marketing literacy amongst the younger generations than amongst Boomers. Interestingly, however, the American Society of Newspaper Editors (2006) found that younger generations had increasingly *greater* trust in newspaper content than Boomers, although newspapers played an increasingly *less* important part in their lives. This points to greater cynicism or realism, amongst Boomers (about newspaper media at least) than amongst younger generations. Additionally, to claim that Gen X and Gen Y are more effective at dealing with advertising and PR, and can speak it like natives, ignores the depth of experience of their Boomer parents (O’Hanlon 2006). “*Boomers were still young when passive, pre-programmed mass media began a slow transformation... through which individualised information, entertainment, transaction and communication could eventually be accessed anytime, anywhere*” (O’Hanlon 2006, p.31). To summarise, the evidence on marketing literacy across generational age groups is not clear cut because “*media are as much a ‘natural element’ for Boomers as they are for the younger generations*” (O’Hanlon 2006, p.30).

Theme 4: Consumer Self-Efficacy. Building on Bandura (1977), consumer self-efficacy refers to the consumer’s self-assessment of his/her ability to perform behaviours related to consumption. The consumer-firm dyad is by nature unevenly balanced in terms of the size, power and influence of the two parties involved.

Since self-efficacy is partly a consequence of mastery experience, females with their greater levels of participation and experience in the consumption process might be expected to have higher consumer self-efficacy than males (Bandura 1986). Recall the

statistics cited earlier – that women in the USA influence 91% of house sales, buy 60% of cars and trucks, 51% of consumer electronics, and comprise 50% of business travellers (Warner 2006): this gives them experience and, potentially, expertise. However, males are known to have greater self-confidence in general and therefore may score higher on the self-efficacy measures (Baumeister, Bushman and Campbell 2000).

With regard to generational age, one might hypothesise that the older a consumer becomes, the more mastery experiences they are likely to have had in the marketplace. This would suggest that Boomers would have higher CS than Gen X or their younger cohorts. However, much of the increasing consumer power that is being hyped up relates to technology. As observed in the previous section on technological sophistication, Gen X consumers and their younger cohorts have an almost innate self-confidence as individuals who have grown up with technology, while Boomers have had to learn and adapt to much of the current technology as adults. Consumers who have grown-up in cyberspace – Gen X – are natives to the mindset required by new technologies and this may given them a sense of innate mastery, whereas older consumers – Boomers – are immigrants who have to invest in learning new skills (Lankshear and Knobel 2006). As a result of this difference one might expect the Gen X bellwether generation to be more uniformly effective in dealing with firms via technology. By contrast, there is likely to be more variation across the Boomer population in terms of their consumer self-efficacy with a large proportion of them nervous of technology and therefore less able to benefit from the increased opportunity to engage and demand from firms. However, there exists a large and increasing number of Boomer consumers who are heading into retirement with the “*time to spend and money to burn*” that allows them to adopt and become skilled in the latest technology and applications (Newsweek 2006). Thus, with regard to interacting with firms and the marketplace via technology, the generations are likely to differ in terms of the variation in self-efficacy.

Theme 5a/5b Consumer Expectations. This refers to the expectations that consumers have of firms in their dealings with consumers. Once again, due to their increasing economic power and the amount of interaction they have with firms, it might be expected that female consumers have higher expectations of the firm than male consumers (Warner 2006). Traditionally women have had a primary role in nurturing families, including responsibility for the provision of daily necessities and consumer

goods – such that any product failure might be seen as reflecting badly on her role as proficient homemaker (Bowlby 1984). Under these circumstances female consumers may have higher expectations than males. The contrary view is that nurturing roles are being more equally shared and the character of homemaking today has changed such that it has eroded any gender-based differences in consumer expectations that may have existed at one time.

With regard to generational age, Mackay (1997) observes that both Boomers and Gen X have been shaped by periods of instability: Gen X, however, was born into it and has learnt to live with uncertainty and ambiguity. Boomers by contrast, grew up in an era of prosperity and stability and have had to deal with instability in their adult years (Mackay 1997). A consequence of this experience is that Boomers are on an ongoing quest to exert control over their world: “*Control was – and still is – a big driver for Boomers*” (O’Hanlon 2006, p.22). This would suggest that Boomers have greater need to control their dealings with firms than the younger Gen X/Gen Y generations. However, control is not the only relevant area of expectation. Along with greater technological sophistication and online network competency, Gen X is more likely to have expectations that the firm take an interactive and open approach in their dealings with the consumer. Thus, there might exist different sets of expectations for Boomers and Gen X consumers.

The potential gender- and age-related differences identified in the preceding discussion suggest that there is value in conducting invariance analysis for any new measures of consumer savvy developed in this study. Measurement invariance analysis will be conducted in Chapter 7 following the operationalisation of the new consumer savvy scale in Chapter 6.

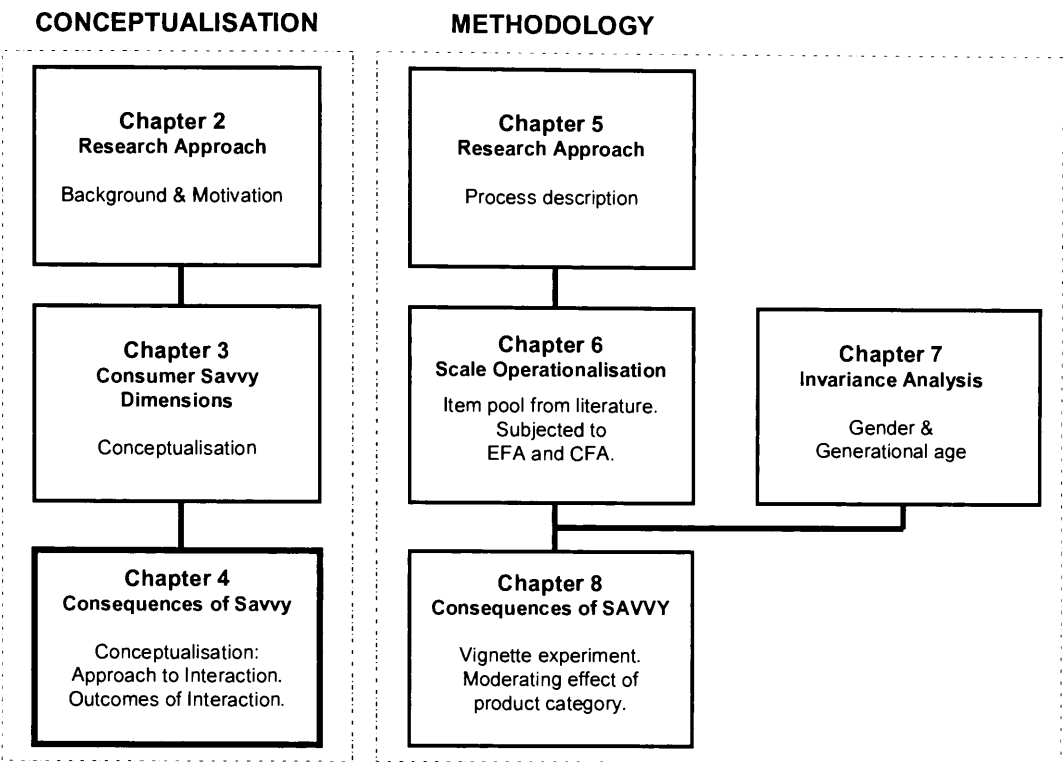
3.8 Summary

This chapter has presented, firstly, a conceptualisation of the dimensions of consumer savvy drawn from the literature, thus commencing the work of addressing RQ 1. It has then turned to an examination of how gender and generational age may be sources of measurement non-invariance for any new measure of consumer savvy that is developed in this study. This latter section commences the task of addressing RQ 2. The next chapter (Chapter 4) continues my conceptual review by considering the potential consequences of consumer savvy.

4 Consequences of savvy: Conceptualisation

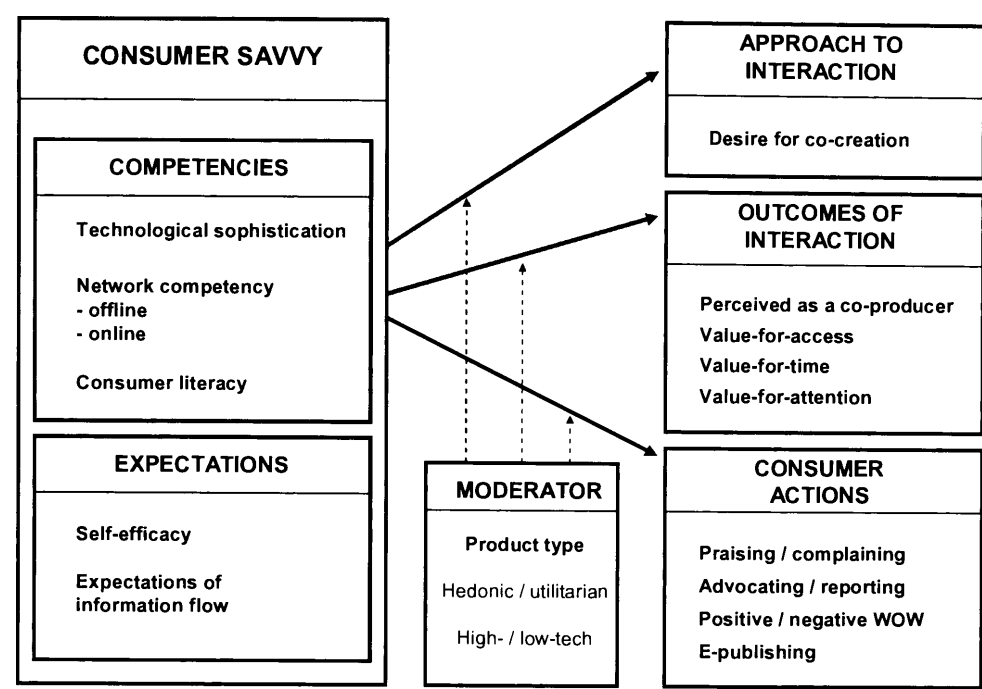
This chapter presents the second phase of conceptualisation (Figure 4.1). It shifts focus from the *dimensions* of consumer savvy, to the *consequences* of savvy in the consumer-firm interaction. In addressing this issue it examines academic and managerial literature to uncover key themes. As in Chapter 3, this literature review of the consequences of consumer savvy is conducted sceptically because much of the literature is, once again, commentary- or anecdotally-based. It is possible, however, to make linkages between the savvy consumer commentaries and existing, well-established concepts in social cognitive theory, in the word-of-mouth literature and in the customer-complaining literatures. Leading commentators on the ‘buyer-centric revolution’ claim that the consumer revolution involves more than just a change in the characteristics of consumers; it also involves substantial changes in the way consumers and firms will expect to interact (Mitchell 2004, Prahalad and Ramaswamy 2004, Vargo and Lusch 2004, 2006, Wind and Mahajan 2002). The literature describes today’s savvy consumers as more assertive than previous generations and more likely to air their opinions and assert their self-perceived rights (Prahalad and Ramaswamy 2004 b, c, Szmigin 2003). Recent empirical research suggests that the consequences of unhappy customers in an era of online forums and blogs may hit a firm “*where it hurts*”. Negative “*consumer voice*” has been mapped directly to reductions in stock returns (see empirical study of the airline industry by Luo 2007). These themes and claims are made with the intention of developing a set of testable hypotheses to address the following research questions about the consequences of consumer savvy: *RQ 3: Does savvy affect consumers’ approach to the consumer-firm interaction?: (3a) Does it relate to desire for co-creation? (3b) Does it relate to perceptions of value in interacting with the firm? And (3c) Does it increase the likelihood of consumer activism activities?* In addition it considers the potential moderating effect of product context by asking: *RQ 4a: Are the effects of consumer savvy moderated by the hedonic-utilitarian characteristics of products? RQ 4b: Are the effects of consumer savvy moderated by the technological innovativeness of products?*

Figure 4.1 Chapter outline: Conceptual and methodological sections



As illustrated in Figure 4.2 this chapter identifies three broad potential consequences of consumer savvy: (1) the consumer’s approach to the interaction, (2) the outcomes of the interaction, and (3) the likelihood of the consumer engaging in complaining behaviour and in word-of-web (WOW) activities.

Figure 4.2 Consequences of consumer savvy



4.1 Consumer approach to the interaction (RQ 3a)

4.1.1 Desire to engage in co-creation

One of the most prevalent claims about the consequences of increased consumer savvy is consumers’ growing enthusiasm for and insistence on co-production or “co-creation” (Prahalad and Ramaswamy 2004a, Lawer and Knox 2004, Mitchell 2004, Vargo and Lusch 2004, 2006, 2008, Kalaignanam and Varadarajan 2006, Oliver 2006, Lafley and Charan 2008). As previously identified in Chapter 4, the ‘marketing information revolution’ is occurring as the savvy consumer becomes more informed, networked, empowered and active. Part of this change is said to encompass the consumer willingly taking on more of the functions of the firm and participating in the creation of products and services (Blattberg and Glazer 1994, Vargo and Lusch 2004, Prahalad and Ramaswamy 2004a). There is some evidence to challenge this increasingly widespread claim; for example, Niladri, Krishnamurthy and Hess (2008) have found that consumers prefer a standard product over a customised offering if there exists a high risk of ‘miswanting’, i.e. where the customer may struggle in predicting their own future hedonic reactions.

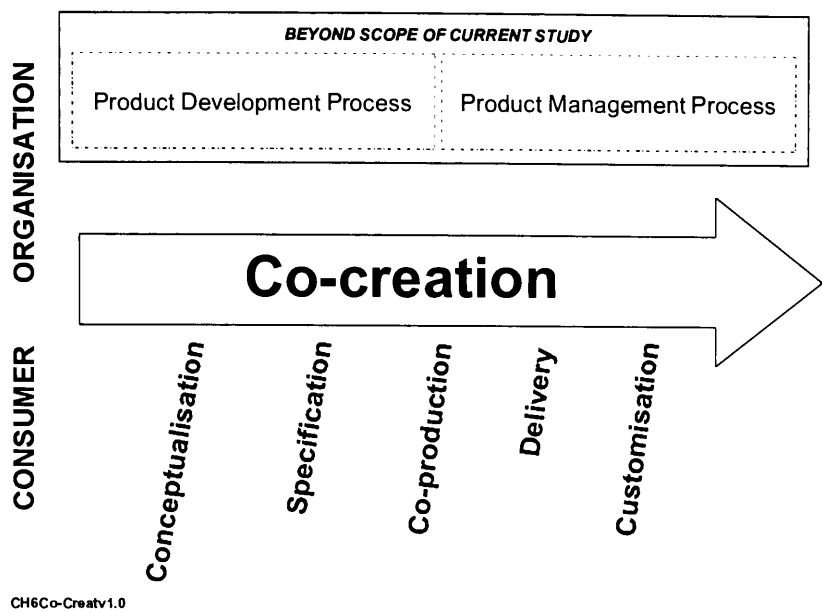
The difficulty for managers and academics alike is that not only is there a paucity of empirical evidence regarding savvy consumer characteristics and outcomes, but the concepts of ‘co-creation’, ‘co-production’, ‘customisation’, ‘specification’, and the like, are poorly defined, yet alone measured. These terms are used almost interchangeably and variously claimed as evidence of the consumer’s increasing involvement in the interaction and/or the marketplace, yet have significantly different implications for firm processes. While the firm side of the interaction is beyond the scope of this study, it is important to clarify what is understood as ‘co-creation’.

Vargo and Lusch (2008) attempt to resolve some of the most troublesome semantic problems. They explain that *co-production* (i.e. the process of making units of output) is nested within the overall process of *co-creation of value*. Value cannot be created unilaterally (by the firm) but “*always involves a unique combination of resources and idiosyncratic determination of value*” (Vargo and Lusch 2008, p.8). On the other hand, customer involvement in co-production (which is most likely to occur when there is a goods component in the value creation process) is optional.

For the purpose of this study I am informed by Vargo and Lusch’s (2008) updated definition while bearing in mind Prahalad and Ramaswamy’s (2004a) earlier conceptualisation of ‘co-creation’, and use it as an umbrella label for all aspects of product conceptualisation, feature specification, actual production, product delivery, and customisation where the consumer might be involved in the process (Figure 4.3). My interest is in the consumer aspects of co-creation, specifically the consumer’s desire to engage in aspects of co-creation. Based on the literature, my first hypothesis is as follows:

H1: Desire to engage in co-creation is greater for high CS than low CS.

Figure 4.3 Variations on a theme: ‘co-creation’



Having briefly considered the savvy consumer’s general approach to interacting with the firm, the following section discusses the consequences of consumer savvy in specific interaction conditions.

4.2 The consumer-firm interaction

Firms are increasingly warned of the need for a new range of competencies to deal with the co-creating consumer, including firm processes configured to personalisation, empowered employees, and IT systems which provide customer information to all staff (Day 2003). However, many of these changes require organisational restructuring and processes that are not apparent to the consumer. From a consumer perspective the broad changes required include: seamless access across multiple channels, open and unbiased information, continuity of connection (or ‘deep engagement’), and responsiveness. Each of these requirements is briefly examined in turn.

Seamless access across all channels. Day and Montgomery observe that “*for most consumers, time is increasingly scarce, so they are more willing to pay to save time and effort. This puts a premium on being able to deliver goods and services when and where the customer wants them*” (Day and Montgomery 1999, p.4). As the quote indicates, time-poor consumers are said to put a premium on the accessibility of goods and services. This is equally true in offline and online environments; indeed, the offline

environment now has to “*compete not only with the internet, but also to contend with the expectations of speed, immediacy, customisation and global accessibility created by the demands of the consumer*” (Dann and Dann 2001, p.65). In addition to raising their expectations, the internet has taught consumers that they have options and, as a result, consumers want the ability to “*click, call or visit*”, across multiple locations and through multiple channels “*when and where they want it*” (Wind and Mahajan 2002).³³ There is some empirical evidence that multi-channel consumers are increasing in numbers; in addition, consumers have been found to spend significantly more money with each additional channel they use to engage with the firm (Shankar and Winer 2005, Rangaswamy and Van Bruggen 2005, Kumar and Venkatesan 2005³⁴).

Anecdotally there is evidence of consumers’ use of multiple channels to gather information: over 80 per cent of Ford’s customers in America have already researched their prospective purchase on the internet before they arrive at the showroom. These consumers come into the retail dealership with a specification sheet printed from the internet showing the precise car they want from the dealer’s stock, together with the price they are prepared to pay (*The Economist* 2005b). The use of channels works the other way, too, where consumers make use of in-store channels for information gathering and then make their purchase in another cheaper channel (e.g. browsing books in a retail store then purchasing online).

Open and unbiased information. Ready access to information means that consumers are better informed through ready access to information. Consumers are aware of the ‘backstage’ workings of many firms (Harker and Egan 2004) and expect to be treated by the firm as informed and intelligent. The savvy consumer is said to respond positively to firms that: (a) open up their organisations’ operations and goals to the scrutiny of consumers (Urban 2005, 2004), and (b) assist them in dealing with vast

³³ As a result, companies need to develop new strategies to meet the expectations of consumers, including integrated channel options. For marketers this means that each of the multiple points of consumer-company interaction are crucial for creating value (Prahalad and Ramaswamy 2004a). Providing consumers with ready access is said to be a key building block for co-creating value with consumers (Prahalad and Ramaswamy 2004b). Since it is very difficult to predict the experience a consumer will have at every point in time, Prahalad and Ramaswamy (2004a, p.10) say the task of the firm is “*one of innovating a robust experience environment*”. This is said to be achieved by aligning the incentives of sales staff and channel members (Urban 2004) and through establishing information networks that cross traditional functional and firm boundaries to create a total delivery process (Webster 1998).

³⁴ In an empirical study of 3,200 customers Kumar and Venkatesan (2005) found that customers who shop in four channels spend significantly more money than customers who shop in three channels, who spend significantly more than customers who shop in two channels, who again spend significantly more than customers who shop in one channel.

amounts of information by providing tools to assist in data collection, comparison and choice (Mitchell 2004). These two sub-themes are examined below.

Firstly, firms are required to *provide open and honest information* about the firm, its products and its objectives. Even if firms want to put on a ‘show’ for consumers, this may no longer be possible because the information asymmetry which enabled it no longer exists (Mitchell 2004) and because of consumer awareness of back-stage processes (Harker and Egan 2004). Firms have previously hidden or disguised inefficiencies which will now become apparent as the ‘front’ is removed (Jones 2001). In a commentary on trust-based marketing, Urban observes that: “*To develop trust-based relationships, a company must become more transparent to customers, supplying them with open and honest information*” (Urban 2004, p.79). This includes the need to develop greater transparency in their operations, revealing plans, processes and limitations which firms may previously have kept out of the public eye (Urban 2005, 2004). Amazon’s approach of directly opening up its databases to allow consumers to self-determine their online identity is hailed as an example of the future of consumer-firm interaction (Zwick and Dholakia 2004).

The second theme is that the *firm will provide unbiased information for consumer decision making*. A negative impact of the ready availability of information in the connected world is that consumers must contend with vast amounts of information. In response to consumers’ needs to process this information, firms are expected to balance company information with unbiased information and to provide, or at least support, helpful choice tools (Urban 2005, 2004, Mitchell 2004, Wind and Mahajan 2002). An extreme example of the open and unbiased approach to marketing is what Urban (2005, 2004) refers to as the ‘customer advocacy’ marketing approach. This perspective says a firm will recommend any product in the marketplace, even if it is a competitor’s offering, provided it has best fit with the consumer’s needs (Urban 2000).

Continuity of connection. The traditional transactional view of marketing ends at the point of purchase (Coviello, Brodie, Danaher, and Johnston 2002). However, in order to achieve the value they seek, savvy consumers are said increasingly to require ongoing connection rather than one-off transactions (Szmigin 2003). Savvy consumers require ‘deep engagement’ with the firm, and desire to be engaged in other processes, including specification, production and delivery (Prahalad and Ramaswamy 2004b). The concept of co-creation is reliant on a notion of ‘dialogue’ or ‘conversation’ between

the firm and the consumer (Prahalad and Ramaswamy 2004a). In order to make this happen there needs to be '*rich dialogue*' and information infrastructure centred on the consumer.³⁵ "*Markets can be viewed as a set of conversations between the consumer and the firm. Dialog implies interactivity, deep engagement, and the ability and willingness to act on both sides*" (Prahalad and Ramaswamy 2004a, p.9).

Responsiveness. Savvy consumers are said to expect firms to be responsive to them including their spoken requests and their un-verbalised requirements. The consumer "*now expects the world to revolve around her. Large corporations are expected to know her likes and dislikes. She and her peers, and even more so her children, don't even want to have to ask for what they want*" (Wind and Mahajan 2002, p.74). This expectation is not new – consumers have always expected firms to be responsive to their requests – however, the difference is that due to the changes in consumer characteristics resulting from technological sophistication, connectivity and sense of self-confidence (addressed in Chapter 3) consumers have greater ability to enforce this expectation (Mitchell 2004, Szmigin 2003). Consumers also expect firms to be responsive to unsolicited requests and feedback (Wind and Mahajan 2002). As a result, firms should be eliciting "*timely, rich, volunteered information from customers and potential customers*" (Mitchell 2004, p.345). In addition, where the firm does encourage and respond to volunteered information, it means less concern for the consumer about privacy as their personal details are only handed out when required (Mitchell 2004).³⁶

Secondly, firms are expected to be responsive to their stored knowledge about the consumer. Not only should firms be more responsive to consumer inputs, but they should also proactively act on the knowledge they have gained about the consumer in order to satisfy consumer needs (Wind and Mahajan 2002). Literate consumers know that there is a vast amount of their personal information stored on company databases

³⁵ The firm's infrastructure needs to "encourage active participation in all aspects, including information search, configuration of products and services, fulfilment and consumption" (Prahalad and Ramaswamy 2004a, p.11).

³⁶ The advantage of information volunteered in this manner is that the information is predictive (often the consumer is communicating about what they intend to purchase in the future), and it can reduce consumers' concerns about privacy and firms' concerns about obtaining permission (Mitchell 2004). The potential implications of using volunteered and rich information are significant. It can eliminate vast amounts of waste and inefficiency existent in direct marketing, as well as enrich the content and value of exchange between buyers and sellers. Mitchell (2004) claims the advantage of information that is volunteered in this way will trigger a radical re-engineering of current marketing processes such as database building, management and analysis, segmentation and targeting, customer relationship marketing and campaign management.

(Hagel and Rayport, Fournier and Mick 1999, Wind and Mahajan 2002). The savvy consumer expects firms to use their existing knowledge of their individual needs to provide what he or she requires without even asking for it. This is where a CRM program can add true value by establishing a dialogue with the consumer (Dowling 2002) and through the process of continuous preference learning (Parsons, Zeisser and Waitman 1998).

Ideal customer-firm interaction. Based on the themes identified in the preceding paragraphs, the ideal customer interaction involves: (a) a firm which provides seamless access, service and delivery across multiple channels, (b) is open and honest about the firm and provides unbiased information for decision-making, (c) desires an on going connection with the consumer, and (d) is responsive to consumer requests, to feedback and to their stored knowledge of the consumer. For simplicity I will refer to the optimal consumer-firm interaction that demonstrates these four characteristics as a ‘*best case scenario*’. By contrast, a ‘*worst case scenario*’ might be an interaction where (a) a firm is accessible only via limited channels for product delivery and service, (b) where it does not appear to like receiving customer queries or does not respond to customer queries, (c) where it provides information only about the company products and does not respond to requests for unbiased information about competitors, and (d) gives an impression of being unresponsive and uninterested in the consumer.³⁷ Drawing on the literature regarding the savvy consumer, these two contrasting interaction scenarios are likely to lead to different consumer responses and actions. In the following sections (Sections 4.3 and 4.4) a number of hypotheses are presented based on the likely outcomes of these two types of scenario (summarised in Table 4.1).

³⁷ There are likely to be far worse scenarios where a consumer is subjected to insults, abuse, theft, fraud, and so on; however, here we are only interested in contrasting high probability types of interactions between firms and consumers.

Table 4.1 Hypothesised consequences of consumer savvy (RQ 3)

	THE CONSUMER-FIRM INTERACTION	
	'Best case' scenario	'Worst case' scenario
(RQ 3a) APPROACH TO THE INTERACTION (see Section 4.2)		
Desire for co-creation	H1: High > Low SAVVY	
(RQ 3b) OUTCOMES OF THE INTERACTION (see Section 4.3)		
Perceived as a co-partner	H2a: High > Low SAVVY	H2b: Low > High SAVVY
Perceived value-for-access	H3a: High > Low SAVVY	H3b: Low > High SAVVY
Perceived value-for-time	H4a: High > Low SAVVY	H4b: Low > High SAVVY
Perceived value-for-attention	H5a: High > Low SAVVY	H5b: Low > High SAVVY
(RQ 3c) CONSUMER ACTIONS (see Section 4.4)		
Give praise to the firm	H6a: High > Low SAVVY	
Complain to the firm		H6b: High > Low SAVVY
Praise to a third party	H7a: High > Low SAVVY	
Complain to a third party		H7b: High > Low SAVVY
Positive WOW	H8a: High > Low SAVVY	
Negative WOW		H8b: High > Low SAVVY
Positive e-publishing	H9a: High > Low SAVVY	
Negative e-publishing		H9b: High > Low SAVVY

4.3 Outcomes of the interaction (RQ 3b)

4.3.1 Co-partner

As discussed in the previous section, with regard to the consumer's approach to interacting with the firm, a savvy consumer is likely to demonstrate greater desire and confidence to be engaged in co-creation. With regard to the outcomes of a specific interaction, the savvy consumer is likely to have enhanced self-perception as a co-partner. This will particularly be the case in a 'best case' scenario, where a firm demonstrates interest and openness in its dealings with the consumer. In this circumstance, a high savvy consumer is likely to perceive their treatment from the firm as being like a 'co-partner' in the interaction.

H2a: Perceptions of being viewed by the firm as a co-partner are more positive for high CS than low CS in a best-case condition.

H2b: Perceptions of being viewed by the firm as a co-partner are more negative for high CS than low CS in a worst-case condition.

4.3.2 Value in the interaction process

Perceived value has been conceptualised as the perceived net gains associated with products or services acquired (Grewal, Iyer, Krishnan and Sharma 2003). In a review of the past literature on perceived value, four key dimensions of value were identified – acquisition value, transaction value, in-use value and redemption value – however, consumers' conceptualisation and determinants of value are changing as a result of the internet and associated technologies (Grewal, Iyer, Krishnan and Sharma 2003). The consumer's increased willingness to bypass traditional media and channels is said to be evidence of their search for new forms of value (Vargo and Lusch 2004, Day and Montgomery 1999). In addition, their greater degree of engagement in the marketplace is cited as evidence that the consumer is no longer content to play a passive role in the interaction process, but insists on being engaged and extracting "*value at the traditional point of exchange*" (Prahalad and Ramaswamy 2004a, p.6).

As a result of the rise of web-based technology and the increasing importance of information, different forms of value are being sought by consumers (Grewal, Iyer, Krishnan and Sharma 2003, Bitner, Brown and Meuter 2000, Parasuraman and Grewal 2000). Consumers are much more likely to 'scrutinise' and 'assess' the consumer-firm

interaction process (Prahalad and Ramaswamy 2004a) and specifically to evaluate it in terms of interaction-value (Lawer and Knox 2004). Interaction value is not the same as product value (such as social value, functional value, and financial value) but, instead, focuses on the consumer perception of value in the actual process of interaction. Lawer and Knox's (2004) conceptualisation provides a typology of interaction-value, and forms the basis for the following discussion.

Firstly, *value-for-access*: most consumers today are aware of and concerned about the privacy of their personal information (ADMA 2005, 2008). They are aware of the ability of firms to collect individual data almost anywhere, anytime, including increasingly their behavioural information collected via technologies such as GPS, e-tags, sensors, smart cards and biometrics (Lawer and Knox 2004). Some commentators predict a coming battle for customer information. This will be played out as customers struggle to take ownership of information about themselves and demand value in exchange for it (Hagel and Rayport 1997, Hagel and Singer 1999). This will be driven in part by their recognition that the current returns for the information they divulge are unsatisfactory and partly by their recognition that they have the power (either through technology, legislation or business practices) to do this (Hagel and Rayport 1997). Savvy consumers may attempt to gain control of their personal information in the following ways: (i) by refusing to give permission to the firm to store their information, (ii) by giving the firm permission to store their personal information but under certain conditions of security, and (iii) by restricting the firm's ability to pass on this information to third parties. Lawer and Knox (2004) use the term 'value-for-access' to refer to the consumers' drive to demand value in exchange for access to their personal information.

H3a: Perceptions of value-for-access from the interaction are higher for high CS than low CS in a best-case condition.

H3b: Perceptions of value-for-access from the interaction are lower for high CS than low CS in a worst-case condition.

Secondly, *value-for-time*: consumers are time poor and increasingly prepared to pay to save time (Lehmann 1999). Therefore, consumers put a premium on services that provide value-for-time and which are delivered when and where they are needed (Wind and Mahajan 2002, Nunes and Cespedes 2003). This includes not just time-

saving or just-in-time delivery, but also time enrichment and the provision of valuable brand experiences (Lawer and Knox 2004). Savvy consumers expect the firms they interact with to be responsive, easily accessible, provide on going connection and provide unbiased information (Section 4.2). All of these characteristics can enhance the time-value evaluation by minimising *time-spent* seeking out information/alternatives/ensuring privacy and by maximising *time-enrichment* by making the ongoing consumer-firm connection into a secure and enjoyable experience. The result is that savvy consumers are more likely to be concerned about achieving direct benefit for use of their time.

H4a: Perceptions of value-for-time from the interaction are higher for high CS than low CS in a best-case condition.

H4b: Perceptions of value-for-time from the interaction are lower for high CS than low CS in a worst-case condition.

Thirdly, *value-for-attention*: as noted in Chapter 3, savvy consumers are well informed through their own networks. Additionally, because of their technological sophistication, they have an abundance of information readily available should they require it. Their consumer literacy means that they ‘know the game’ of advertising (Szmigin 2003), thus they are aware of the differing levels of value in various communications. Their ability to control information flow, enabled by technology, allows them to filter out, delete or ignore unwanted communications (Day and Montgomery 1999)³⁸ and enhances the value of information to the consumer. Previous research has found that a consequence of consumers perceiving themselves as being in control of information flow is the enhanced *value* of the information to the consumer (Ariely 2000).³⁹ These factors, along with the savvy consumer’s sense of empowerment/self-efficacy, mean that savvy consumers are likely to exhibit selectivity about which person, product, organisation or communication gains their attention. Their selection criteria will be based on their evaluation of what source is likely to provide them with the most benefit or value for their attention.

³⁸ Arising partly from this (and partly as a result of government/industry regulation in many nations) the use of consumer permission will be a mandatory component of the future of marketing practice (Lawer and Know 2004).

³⁹ Consumer ability to control the flow of information also impacts on the consumer’s ability to integrate and remember that information (Ariely 2000).

H5a: Perceptions of value-for-attention from the interaction are higher for high CS than low CS in a best-case condition.

H5b: Perceptions of value-for-attention from the interaction are lower for high CS than low CS in a worst-case condition.

4.4 Consumer actions resulting from the interaction (RQ 3c)

Consumer savvy includes dimensions of consumer competency and expectations (of the firm) (Chapter 3). *Social cognitive theory*, which examines situations where an individual's competencies and expectations of a social system determine the outcome, has been applied in many contexts (Bandura 1977, 1997). For instance, it is known from research into working conditions that different patterns of self-efficacy and outcome expectations have different psychosocial and emotional effects in job performance (Bandura 1997). Bandura's concept can be extended to understand the impact of a marketplace which increasingly views consumers as active participants in the production of value (Vargo and Lusch 2006). The matrix presented in Figure 4.4 shows how the consumer outcomes detailed in each quadrant correspond to those proposed by Bandura (1997). For instance, in the top right quadrant Bandura states that high personal efficacy and a positive outcome environment is likely to lead to 'productive engagement' and 'personal satisfaction'. This is the quadrant where we would expect to find a savvy consumer working with a responsive firm, to 'co-create' products and services. However, we also know from Bandura's research that other quadrants result in less positive outcomes. The top left quadrant shows that personal efficacy combined with environmental unresponsiveness generates resentment, protest and collective efforts to change institutional practices. This quadrant appears to represent the 'consumer terrorist' (Szmigin 2003) where competent consumers find themselves trying to interact with a firm that is unresponsive, and look for their own ways of solving this problem.

Figure 4.4 Consumer actions in ‘best’ and ‘worst’ case conditions

EXPECTATIONS OF THE ORGANISATION			
		Expectations not met	Expectations met
CONSUMER SAVVY	High	High SAVVY, “Worst” case Protest Grievance Social activism	High SAVVY, “Best” case Productive engagement Personal satisfaction
	Low	Low SAVVY, “Worst” case Resignation Apathy	Low SAVVY, “Best” case Self-devaluation Despondency

The bottom half of the matrix shows the case of the low competency individual, or for the purposes of the current study, the ‘low savvy’ consumer. The bottom left quadrant, where the consumer has low consumer savvy competencies *and* the firm is unresponsive, is characterised by resignation and apathy. The bottom right quadrant is characterised by low personal efficacy such that an individual perceives themselves as ineffectual but sees others achieving successful outcomes. This quadrant is characterised by self-devaluation and despondency (Bandura 1997). These latter two quadrants appear to equate to the perspective of resigned and despondent consumers identified by Fournier, Dobscha and Mick (1998) in their study of failures in relationship marketing.

Thus, from social cognitive theory we know that the outcomes of interaction between a consumer and a social system depend on the characteristics of both the consumer and of the entity with which they interact. With regard to the outcomes of a specific consumer-firm interaction, high savvy consumers are more likely than low savvy consumers to take action in either best case and worst case interactions with the firm. In particular, in circumstances where the savvy consumer’s expectations are not met, then it might be predicted that a high competency individual is likely to engage in protest and social activism. In this case networked consumers feel “*emboldened*” to

speak out (Prahalad and Ramaswamy 2004b) and can “*compare notes*” and “*whip up agitation*” (Szmigin 2003). The numbers of such individuals is predicted to grow as “*the attributes that will concern consumers in their choices in the future will be more complex and sophisticated. Consumers will be less easily convinced and more critical in their choices*” Szmigin (2003, p.67).

In her extended commentary on the new consumer, Szmigin (2003) warns practitioners of the dissatisfied consumer who might well become a ‘terrorist’. The interconnectedness created by the internet allows consumers to use it “*as a tool to combat injustice, to complain and to put their own points across to millions of others*” (Szmigin 2003, p.7). Although it may seem an extreme analogy, she argues there are similarities in the way that dissatisfied consumers and real terrorists feel disillusioned with businesses and governments who do not listen to them (Szmigin 2003).⁴⁰ Should this energy become formalised it can pose a real financial threat to the firm. Anecdotal evidence comes from the Kryptonite lock company saga where the company was forced to recall \$US10 million worth of bicycle locks following a blog campaign over a 12 day period (Kirkpatrick, Roth and Ryan 2005). The initiator of the original blog posting believed that Kryptonite had not been responsive to her feedback that the bicycle lock was not working as promised.

The consumer complaining literature identifies the consumer outcome of complaining to the firm, to third parties or to other consumers as giving ‘voice’ (Singh 1988, Halstead 2002, Szymanski and Henard 2001). Social cognitive theory suggests that, as a result of the savvy consumer’s sense of empowerment, they are more likely to: praise or complain to the firm, and praise or report the firm to a third party. Thus the following hypotheses set up the likely high-savvy consumer actions in best and worst case interaction scenarios:

H6a: Likelihood of giving praise to a firm is higher for high CS than low CS in a best-case condition.

H6b: Likelihood of complaining to a firm is higher for high CS than low CS in a worst-case condition.

⁴⁰ However, having used such extreme language in identifying the threat posed by dissatisfied consumers, the examples of formalised “terrorism” identified by Szmigin appear to be fairly mild – they are “culture jamming” (changing brands and ads to create parodies) and peaceful boycotts (such as “buy nothing day”) (Szmigin 2003).

H7a: Likelihood of praising the firm to a third party is higher for high CS than low CS in a best-case condition.

H7b: Likelihood of complaining about the firm to a third party is higher for high CS than low CS in a worst-case condition.

A characteristic of savvy consumers is their network competency which enables them to use WOM communication to their advantage in the marketplace and their supposed *enthusiasm* for doing so (Prahalad and Ramaswamy 2004b). WOM is described as “*advice from other consumers*” (East, Hammond, Lomax and Robinson 2005, p.145) and is usually considered specifically at the brand or product level. WOM can be a highly valuable form of brand or firm promotion since, as a general rule, the less control a company has over communication, the greater the credibility (Godes and Mayzlin 2004b). Consumers engage in both positive and negative WOM, although a dissatisfied consumer is said to be more likely to engage in negative WOM than a satisfied customer will engage in positive WOM (Anderson 1988).

WOM’s impact is magnified by the web as consumer criticism and complaints become more public and can rapidly become widespread (Kirkpatrick, Roth and Ryan 2005). The ‘social contagion’ that occurs via WOM enables consumers to spread their complaints (or praise) about a firm, its products and its operations far beyond their traditional strong-tie network of immediate family and friends, to a whole world of ‘weak-tie’ connections via the internet (Granovetter 1973, Lehmann 1999, Godes and Mayzlin 2004a).

Two characteristics of the savvy consumer – their increased technological sophistication and greater network competency – enables them to share their thoughts and experiences with many other consumers much more readily. This includes vastly greater numbers of consumers in a way that was previously impossible (Prahalad and Ramaswamy 2004c, Mitchell 2004, Godes and Mayzlin 2004a). A savvy consumer can readily engage in WOW (word-of-web) activities via email mailings, mobile handset text messaging and via online chat-rooms and discussion forums. Through these means, an individual may quickly call up a collective of consumers to implement boycotts to directly affect profits, arrange for campaigns outside the firm, and petition other consumers.

Thus I propose the following directional hypotheses:

H8a: Likelihood of engaging in positive WOW is higher for high CS than low CS in a best-case condition.

H8b: Likelihood of engaging in negative WOW is higher for high CS than low CS in a worst-case condition.

In addition to making contributions to existing chat rooms and discussion forums, statistics suggest that the number of consumers publishing comments via their own web sites and weblogs is on the rise (Ward and Ostrom 2006). This form of online activity involves greater levels of effort from the consumer than the WOW actions discussed in the preceding section. Consumers need to set-up, maintain and promote their own website as well as present content in a ‘published’ format. However, despite the effort required, this form of activity has seen growth; for instance, *Fortune* magazine reported that 23,000 weblogs were created each day in 2005 prompting the authors to warn firms that “*there is no escaping the blog*” (Kirkpatrick, Roth and Ryan 2005).⁴¹ The potential for consumers to promote a brand they like via positive e-publishing is enormous. However, as experience from offline WOM has shown, the potential negative effects of e-publishing may be even greater. Firms are warned of the increasing threat of negative actions from dissatisfied consumers via the web (Gregoire and Fisher 2008). Retaliation is “*an aggressive behaviour done with intention of getting even, perhaps the most extreme behavioural response to consumer dissatisfaction*” (Huefner, Parry, Payne, Otto, Huff, Swenson and Hunt, 2002, p.114). Categories of retaliation can include creating cost or loss, vandalism, trashing, stealing, negative word of mouth intended to hurt the business (as opposed to WOM intended to advise other consumers), and personal attack (Huefner et al. 2002).⁴²

⁴¹ Advertisers and marketers have been quick to jump on the opportunity to use techniques that maximise WOW, and the term “viral marketing” is now used in advertising practice and research as the equivalent of WOW advertising (Phelps, Lewis, Mobilio, Perry and Raman 2004). The definition of viral marketing is “*the process of encouraging honest communication among consumer networks*” (Phelps et al 2004, p.334). Little is known at present about the role of the profile and motivations of consumers that engage in viral marketing; however, Phelps et al (2004) have identified the existence of email “viral mavens” and that they are more likely to be female. Watts and Dodd (2008) have found that, for viral marketing, it is more important to have a critical mass of receptive individuals, than to identify specific individual influencers.

⁴² An example of the latter is provided by the attack on an eBay seller who sold a faulty laptop (<http://amirtofangsazan.blogspot.com/>).

Thus I propose the following hypotheses:

H9a: Likelihood of engaging in positive e-publishing activities is higher for high CS than low CS in a best-case condition.

H9b: Likelihood of engaging in negative e-publishing activities is higher for high CS than low CS in a worst-case condition.

The consequences of consumer savvy identified in this chapter are likely to be moderated by the type of product and the environmental context. These issues are discussed in the next two sections.

4.5 Moderator – Product category type

Few of the predictions about the rise of consumer savvy and increasing requirement for consumer-centric marketing specify the product context. It is apparent that those who envisage a coming ‘revolution’ believe it will be universal (Mitchell 2004, Prahalad and Ramaswamy 2004a). Nevertheless, it is important to examine the concept of consumer savvy across a range of product contexts because it is not yet known whether consumer-centric marketing may “*become a new paradigm for marketing, or (may) be relegated to a concept that applies only to small segments of the market (e.g. college-educated people) and complex products (e.g. cars, computers)*” (Urban 2005, p.159).

Existing knowledge of consumer involvement indicates that there may be differences in behaviours across product types depending on the perceived importance of the product, the perceived risk associated with its purchase (i.e. risk of negative consequences and probability of making such a mistake), the symbolic or sign value attributed by the consumer to the product, and the hedonic value of the product (Laurent and Kapferer 1985). We know from the consumer involvement literature, that consumers who experience high product category involvement are more likely to evaluate the merits and weaknesses of a purchase and pay more attention to communication from the firm (Cacioppo and Petty 1982). They are more likely to conduct an extensive choice process and be active information seekers (Laurent and Kapferer 1985). Highly involved consumers are likely to be heavy searchers, to be high spenders and to have frequent contact with retailers (Bloch, Sherrell and Ridgway

1986). They are also likely to report significantly higher levels of word-of-mouth activity (Block, Sherrell and Ridgway 1986, Richins and Bloch 1986). These previous findings collectively indicate that product categories which lead to higher levels of consumer involvement are likely also to lead to greater levels of engagement with the firm in terms of dialogue and complaining when things go wrong.

While several product typologies exist and may be of relevance, two are examined in this study: hedonic/utilitarian and high-/low-tech. It is expected that should product type have a moderating effect on the impact of consumer savvy, then differences will occur across each of these categories as follows:

Hedonic/Utilitarian. Hedonic goods provide experiential consumption, fun, pleasure and excitement. By contrast utilitarian goods are primarily instrumental and functional (Hirschman and Holbrook 1982). The shopping experience for utilitarian goods is evaluated by consumers in terms commonly applied to work performance, such as ‘an errand’, and the outcomes in terms of being ‘happy simply to get through it’ (Babin, Darden and Griffin 1994). The experiential nature of goods high in hedonic characteristics offering the promise of ‘fun’ means that these goods are more likely than utilitarian goods to engender (a) greater consumer involvement and hence greater interest in co-creation, (b) higher perceptions of value in the interaction with the firm, and (c) higher likelihood of consumer actions following the interaction. Thus it is hypothesised that:

- H1a:** Desire to engage in co-creation is greater for high CS than low CS in hedonic rather than utilitarian product categories.
- H2c:** Perceptions of being viewed by the firm as a co-partner are more positive for high CS than low CS in hedonic rather than utilitarian product categories.
- H3c:** Perceptions of receiving value-for-access are more positive for high CS than low CS in hedonic rather than utilitarian product categories.
- H4c:** Perceptions of receiving value-for-time are more positive for high CS than low CS in hedonic rather than utilitarian product categories.
- H5c:** Perceptions of receiving value-for-attention are more positive for high CS than low CS in hedonic rather than utilitarian product categories.

- H6c:** Likelihood of giving praise or complaining to a firm is greater for high CS than low CS in hedonic rather than utilitarian product categories.
- H7c:** Likelihood of praising or complaining to a third party is higher for high CS than low CS in hedonic rather than utilitarian product categories.
- H8c:** Likelihood of engaging in positive/negative WOW is higher for high CS than low CS in hedonic rather than utilitarian product categories.
- H9c:** Likelihood of engaging in positive/negative e-publishing activities is higher for high CS than low CS in hedonic rather than utilitarian product categories.

High/Low-Tech: Consumer involvement is enhanced by the importance of a product decision and by the negative consequences of a ‘mis-purchase’ (Laurent and Kapferer 1985). In the case of consumer durables, the risk of mis-purchase is high since these goods are often expensive and a consumer may be stuck with a poor choice for several years. Thus involvement in these categories is likely to be higher in general than for non-durable goods. For a *high-tech* consumer durable, consumers may be unfamiliar with the product features and this may magnify perceptions of ‘mis-purchase’ risk. A low savvy respondent may feel intimidated, fearful and thus express avoidance when faced with a purchase decision for a high-tech durable good. By contrast, a high savvy respondent is likely to approach this purchase decision with self-efficacy, thus high savvy is likely to correlate with high involvement in the purchase decision. A high-tech category will be particularly appealing to high savvy consumers if it contains some element of uniqueness (Laurent and Kapferer 1985). Thus it is hypothesised that:

- H1b:** Desire to engage in co-creation is greater for high CS than low CS in high-tech rather than low-tech product categories.
- H2d:** Perceptions of being viewed by the firm as a co-partner are more positive for high CS than low CS in high-tech rather than low-tech product categories.
- H3d:** Perceptions of receiving value-for-access are more positive for high CS than low CS in high-tech rather than low-tech product categories.
- H4d:** Perceptions of receiving value-for-time are more positive for high CS than low CS in high-tech rather than low-tech product categories.
- H5d:** Perceptions of receiving value-for-attention are more positive for high CS than low CS in high-tech rather than low-tech product categories.
- H6d:** Likelihood of giving praise or complaining to a firm is greater for high CS than low CS in high-tech rather than low-tech product categories.
- H7d:** Likelihood of praising or complaining to a third party is higher for high CS than low CS in high-tech rather than low-tech product categories.
- H8d:** Likelihood of engaging in positive/negative WOW is higher for high CS than low CS in high-tech rather than low-tech product categories.
- H9d:** Likelihood of engaging in positive/negative e-publishing activities is higher for high CS than low CS in high-tech rather than low-tech product categories.

A summary of the hypotheses regarding the moderating impact of product type is provided in Table 4.2.

Table 4.2 Moderating impact of product type (RQ 4)

(RQ 4a)		(RQ 4b)	
Hedonic	Utilitarian	High-Tech	Low-Tech
CONSUMER APPROACH TO INTERACTION – MODERATING EFFECT OF PRODUCT TYPE			
Desire for co-creation	H1a: High > Low SAVVY	H1b: High > Low SAVVY	
OUTCOMES OF INTERACTION – MODERATING EFFECT OF PRODUCT TYPE			
Perceived as a co-partner	H2c: High > Low SAVVY	H2d: High > Low SAVVY	
Perceived value-for-access	H3c: High > Low SAVVY	H3d: High > Low SAVVY	
Perceived value-for-time	H4c: High > Low SAVVY	H4d: High > Low SAVVY	
Perceived value-for-attention	H5c: High > Low SAVVY	H5d: High > Low SAVVY	
CONSUMER ACTIONS – MODERATING EFFECT OF PRODUCT TYPE			
Give praise to the firm / Complain to the firm	H6c: High > Low SAVVY	H6d: High > Low SAVVY	
Praise to a third party / Complain to a third party	H7c: High > Low SAVVY	H7d: High > Low SAVVY	
Positive WOW / Negative WOW	H8c: High > Low SAVVY	H8d: High > Low SAVVY	
Positive e-publishing / Negative e-publishing	H9c: High > Low SAVVY	H9d: High > Low SAVVY	

4.6 Environmental context

As this study examines the consumer’s expectations of the marketing processes of the firm, it can benefit from research examining the market orientation (MO) of firms and their “*responsiveness to changing marketplace needs*” (Jaworski and Kohli 1993, p.53). Environmental context is believed to impact the level of market orientation – or, from a consumer perspective, the firm’s consumer-centricity – that is required of an organisation (Jaworski and Kohli 1993, Kohli and Jaworksi 1990). Borrowing from the

MO literature, two environmental factors are considered in the current study: (a) competitive intensity and (b) technological turbulence.⁴³

Firstly, the MO literature has identified that *competitive intensity* is an important contextual factor, such that, firms in highly competitive environments need to be more customer-centric (Jaworski and Kohli 1993, Dawes 2000). From a consumer perspective, competitive intensity translates as *choice intensity*, the number of competing offers available to the consumer. While there might be some exceptions, on the whole, globalisation and market fragmentation means that many of the choices a consumer must make occur in situations of high choice intensity. Thus, for the Phase 3 experimental study, the first environmental context factor to be considered is choice intensity. In a high choice intensity context *consumers will be required to make more use of their savvy consumer skills as they deal with the challenges of gathering market information and making selections from a wide selection of alternatives*. Phase 3 incorporates a high choice intensity environment into the experimental design by selecting product categories which are formed (i.e. not under development) and include several well-established competing brands (Chapter 8).

A second factor that impacts the level of market orientation required by a firm is *technological turbulence* or rate of technological change. According to the MO literature, where high technological turbulence exists customers are more likely to trade-off their expectations of a consumer-centric approach in exchange for greater technological innovation (Jaworski and Kohli 1993). However, where there is moderate to low technological turbulence, then the firm gains competitive advantage through being market-oriented and not through technological innovation. These findings from the MO literature are translated in the current study as follows: *savvy consumers will expect more of the marketing processes (as opposed to the technological innovativeness) of a firm in a situation of low/moderate technological turbulence*. Thus, for the purposes of this study, a context of moderate technological change is adopted in the experimental design by selecting product categories which are established, with a well-formed product concept (Chapter 8).

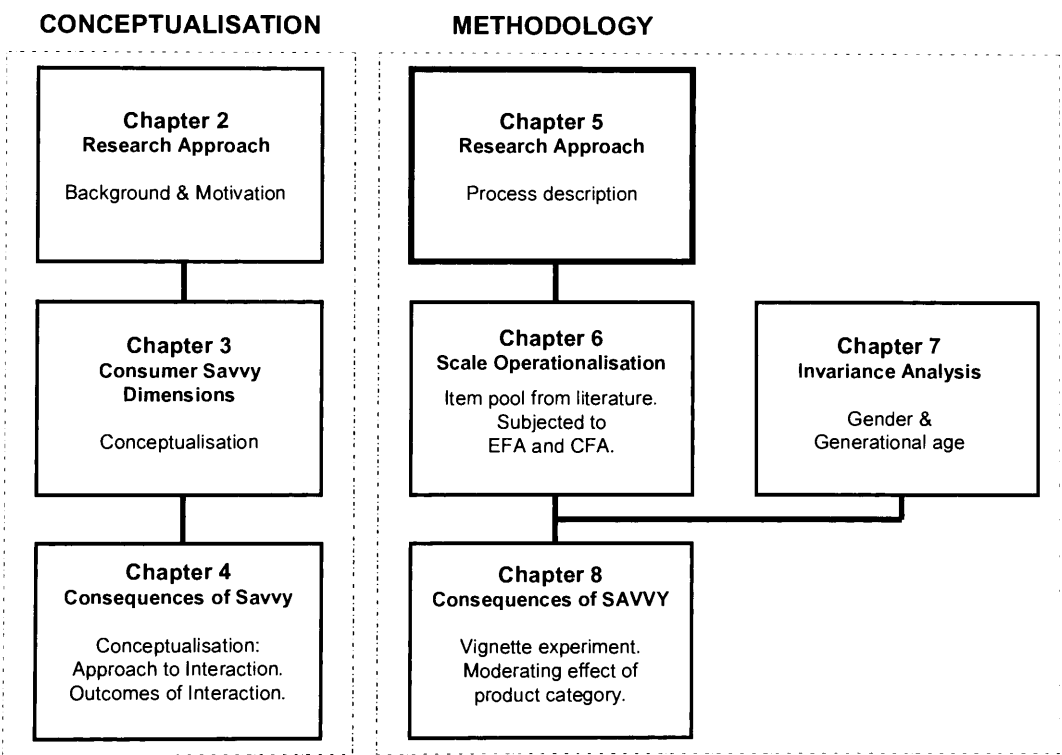
⁴³ Note, Jaworski and Kohli (1993) proposed three environmental factors that might moderate a firm's market orientation. The third one, "market intensity" relates to "the rate of change in the composition of customers and their preferences" (p.57). This is an issue which: (a) an individual consumer is not likely to be able to evaluate, and (b) has little relevance from an individual consumer perspective. A further note is that contradictory findings exist regarding the moderating impact of all three of these environmental factors (see Dawes 2000 for a review of previous MO studies).

Having identified the key consequences of consumer savvy in this chapter, the research design is described next.

5 Research Approach and Scale Development Procedure⁴⁴

The purpose of this chapter is to describe the research methods and procedures (Figure 5.1). It commences with a roadmap through the remaining empirical chapters of this thesis. A brief discussion of the overall methodological design is presented including details of research context (linking back to the discussion in Chapter 2), sampling frame, units of analyses, medium of communication, and research boundaries. The second half of this chapter details the process used in operationalising the construct of consumer savvy as a multi-item multivariate scale. The chapter goes on to explain the need for this new scale, then details the process – including scale development, refinement and purification – that has been used. Finally, it addresses how key biases and errors were checked during the scale development process.

Figure 5.1 Chapter outline: Conceptual and methodological sections

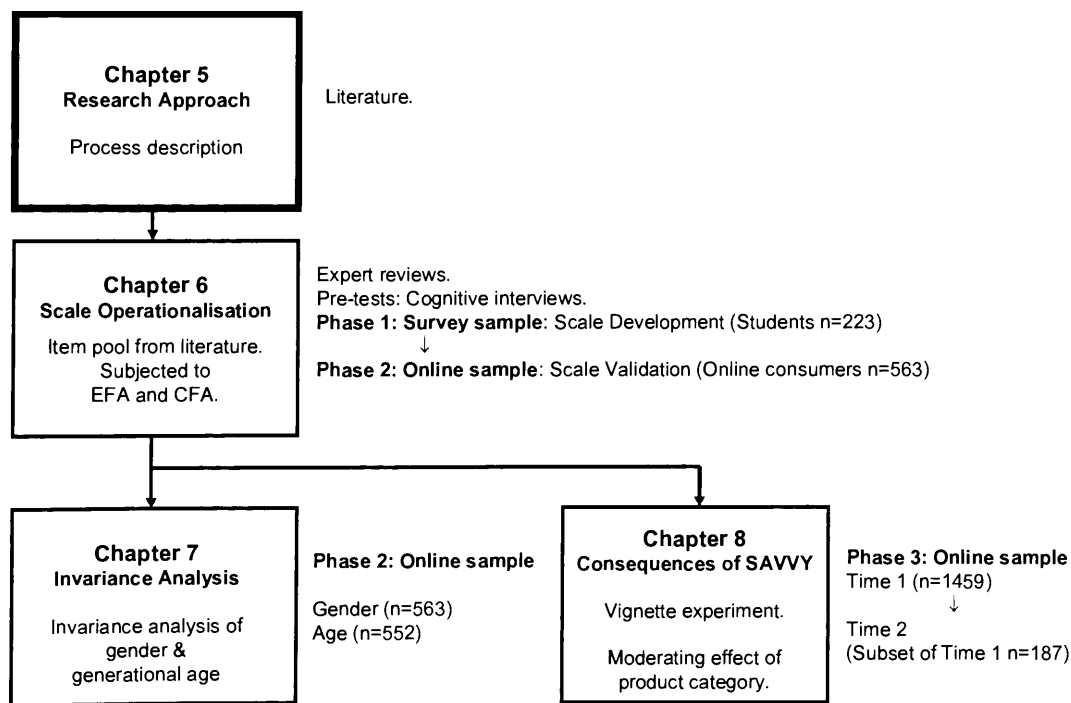


⁴⁴ Sections of the scale development process presented in this chapter were published in Macdonald and Uncles (2007), *Journal of Marketing Management* and presented in a peer-reviewed conference paper at the Academy of Marketing (UK) conference in Egham (2007).

5.1 Overview of stages in the methodology

The aim of conceptualising and developing a measurement scale of consumer savvy is achieved through several stages of methodology/analysis based on three phases of data collection, as summarised in Figure 5.2. These stages of methodology/analysis are presented roughly in the chronological order in which they were implemented. This current chapter outlines steps in the process used to operationalise the multidimensional construct of consumer savvy which was first presented in Chapter 3. In doing this, it draws heavily from the literature identified in that earlier chapter and supplements this with findings from consumer focus groups. Chapter 6 will then detail the outcomes of the scale refinement, purification and validation phases for a new scale using an augmented-Churchill (1979) scale development approach. This process entails use of a scale development sample (Phase 1 student survey) and a scale purification sample (Phase 2 online survey). Chapter 7 describes details of invariance analysis with respect to gender and generational age. Chapter 8 then presents the design, procedure and results for a vignette experiment which was implemented via an online survey (Phase 3 online sample). The vignette experiment is a first attempt to investigate the consequences of consumer savvy.

Figure 5.2 Stages of research methodology



5.2 Approach to methodology

This study is motivated by the increasing number of calls to view consumers as ‘co-creators’ of marketing outcomes and the requirement for firms to become more consumer-centric. The implications of these predicted changes in the consumer-marketer dynamic are still being realised. However, both researchers and managers recognise an urgent need for measurement to aid the generation of “*hard facts and metrics*” (Gummeson 2004, p21) in the establishment of a new paradigm. The first stage of this research study begins to address these calls by developing a mechanism that can be used to measure an individual consumer’s marketplace competency. In approaching the marketer-consumer interaction from the perspective of the consumer (as opposed to the marketing manager/brand manager), this study differs markedly from a great many other studies of the marketer-consumer interaction. After deriving a conceptualisation of the consumer savvy construct from the literature it then uses well-established psychometric measurement procedures to develop a new measure of SAVVY.⁴⁵ In developing this new measure, the study follows the well-worn path of multi-item, multi-construct scale development using an iterative process of item development, EFA and CFA.

An often over-looked phase of scale development involves invariance analysis.⁴⁶ The current study considers the potential effect of gender and generational age as sources of non-invariance for the consumer SAVVY scale. Scale invariance analysis is used to confirm whether the measurement model fits consistently across these sub-groups by following Byrne’s (2004) multigroup CFA procedure.

The final stage of the methodology makes a first use of the new SAVVY scale in a between-subjects vignette-based experimental design. The vignette experiment includes a two-stage design where consumer SAVVY is assessed (at Time 1) and then the consequences of SAVVY are assessed based on the consumers’ responses to a given vignette (at Time 2). In designing this study, consideration was given to the advantages of survey research incorporating a vignette-based experimental design (see Table 5.1).

Survey design is a commonly used approach which has the advantages of efficiently linking psychological variables with reported behaviour. In the vignette study, consumers were requested to make decisions about their likely perceptions and

⁴⁵ Note: The measurement model of SAVVY is differentiated from the broader concept of consumer savvy through use of capitalisation.

⁴⁶ Measurement invariance analysis is sometimes referred to as measurement equivalence analysis. For the remainder of this thesis we will refer to invariance analysis.

behaviours given the conditions presented. The vignette had the advantage of providing enhanced internal validity and measurement reliability (through a standardised set of stimuli) and enhanced construct validity (by focusing respondent attention on the features of interest). The vignette-design also helped to provide a realistic setting while eliminating the biases that occur from memory lapses and rationalisation tendencies which occur when the research relies on consumers’ retrospective reports. The contrastive or factorial survey method of vignettes is used in this study such that different versions of the same basic vignette are randomly allocated to different respondents. The process of vignette design employed in this study follows the Wason, Polonsky and Hyman (2002) checklist.

Table 5.1 Advantages of the methodological design

Survey research	Source
Can go beyond current and past behaviour and probe future intention as well as beliefs and preferences.	Nancarrow, Brace & Wright 2001
Can address a number of questions and link psychological variables to reported behaviour with greater efficiency.	Nancarrow, Brace & Wright 2001
Vignette design	
Useful when marketing research aims to understand which of multiple options consumers prefer, as often it is difficult for consumers to predict their own preferences and/or consumption patterns	Wason, Polonsky & Hyman 2002
Offers greater realism than direct questioning techniques by providing contexts which better approximate real life.	Wason, Polonsky & Hyman 2002
Overcomes the problems associated with survey research which seeks to examine consumer behaviours and attitudes. Often the judgements required are too abstract, resulting in the problem of “ <i>posing vague questions (such) that each respondent will answer in terms of his own mental picture of the task before him</i> ”.* A vignette supplies standardised stimuli to all respondents which in turn enhances internal validity, measurement reliability and ease of replication	Alexander & Becker 1978
It harnesses the advantages of experimentation such that the variables of interest can be manipulated, and variables not of interest can be “ <i>controlled-out</i> ”.	Wason, Polonsky & Hyman 2002
Improves construct validity by focusing respondent attention upon specific features of the research question.	Wason, Polonsky & Hyman 2002
Is unnecessary to ask respondents to recall past incidents. Hence it reduces the biases that are introduced from memory lapses, rationalisation tendencies and consistency factors which occur when research relies on consumers’ retrospective reports.	Grewal, Hardesty & Iyer 2004, Johnson & Ford 1996
Enhances respondent involvement and dramatises issues.	Wason, Polonsky & Hyman 2002
The contrastive or factorial survey method of vignettes has the advantage that each vignette serves as a control for the other versions, which allows us to assess differences in judgements caused by facts that differ across vignette versions.	Wason, Polonsky & Hyman 2002

* Alexander and Becker 1978, p.93.

A further consideration regarding the research approach is the use of self-perception measures. This is a common and necessary approach both in consumer and

business research for constructs which are difficult to measure and even more difficult to relate to performance (such as market orientation and customer satisfaction) (Ailawadi, Dant and Grewal 2004). Self-perception measures are appropriate in this case because ‘perception is a form of reality’ and this study is genuinely interested in the perceptions of consumers. This is especially the case when considering that this research is founded on the basis of societal and economic changes said to *empower* consumers and *revolutionise* their interactions with the firm.

5.3 Research context

For the bulk of this research program, the consumer-firm interaction will be examined in the context of online direct marketing (as opposed to personal selling or mass communication) because it is in this context that many of the changes resulting from the information age are being felt the most. These changes include enhanced *connectivity* for the consumer provided by internet and wireless technologies, availability of large quantities of *information* to the consumer, the ability for the consumer to *control flow* of information and to use technology to *deflect* unwanted communication.

Direct marketing refers to “*a system of marketing by which organisations communicate directly with target customers to generate a response or transaction*” (Belch and Belch 2009, p458). Within the domain of direct marketing, the previous few years have witnessed the rise of ‘permission-based’ direct marketing in the online/wireless context. This form of direct marketing, where the consumer only receives each piece of communication that they agree to receive, is particularly of interest when examining the topic of consumer empowerment.⁴⁷ Due to the enabling

⁴⁷ *PureProfile* acts as a needs articulation service (Mitchell 2004) to the extent that consumers indicate their buyer-readiness state across a range of FMCG, durable and service categories. Permission-based marketing, as exemplified by *PureProfile*, recognises the consumer’s right to decide which companies may reach them with specific campaigns, information, requests, or market research studies. And it further acknowledges the consumer’s right to protect and benefit from their personal information. *PureProfile* acts as a bureau of consumers’ personal information. It sells firms the opportunity to communicate with the *PureProfile* member base via the *PureProfile* mechanism. Members do not have to receive any campaign that does not interest them, but if they do, then they are paid at least \$1 for their time. Members’ details are protected and kept private until they decide that they want to supply them to a firm. *PureProfile*’s operating model also recognises the right of consumers to receive recompense for giving up their time and their attention to focus on the message from the seller. *PureProfile* members issue their permission in two-ways: (a) Initially by establishing a ‘profile’ which lists their interest in and buyer-readiness state in a range of product categories, then by regularly updating this profile through semi-regular ‘qualification’ questionnaires. (b) Secondly, even if the consumer has indicated an interest in a

effect of technology and interconnectedness, this form of direct marketing allows the consumer's permission to be sought not as a one-off but for *each* communication. It is in the context of permission-based direct marketing that the online components of this study are conducted.

Although the research context for the SAVVY scale development process involves an aspect of technology (internet access via computer) and is in the context of permission-based direct marketing, it is expected that respondents are representative of the average consumer. This is supported by government statistics which show that Australian consumers are heavy adopters of mobile phones, computers and the internet (as presented in Chapters 1 and 2).

With regard to the vignette-based experimental study, it was necessary to establish a context in which the vignette occurs. In devising this context, the current study draws on the market orientation literature. In the work of Jaworski and Kohli (1993), contextual issues are operationalised as choice intensity and rate of technology innovation. Thus the context for the vignette study will control for high choice intensity and moderate technological turbulence as part of the vignette study design.

5.4 Sampling frame: Online consumer panel

Respondents in the scale development stage (Phase 1 Sample) were students from the University of New South Wales (UNSW) in undergraduate and postgraduate marketing electives. They completed an anonymous online survey for credit in one of their courses.⁴⁸ These students were younger than the average consumer (98% were 24 years or younger) which meant that they are likely to be at the forefront of consumer-centricity in terms of technological enablement but not necessarily in terms of life experience. The advantage of using this sample at the development phase of the SAVVY scale was that they were a relatively uniform sample in terms of demographics, market experience and technology usage.

The sampling frame in the scale validation, measure equivalence and vignette experiment stages of this study (Phase 2 and 3 samples) were sampled from

certain category they are under no obligation to receive communications from the company, but may turn down any campaign without penalty.

⁴⁸ Appropriate measures were taken to ensure that the UNSW Human Research Ethics policy was adhered to. This included the students not being identifiable to their course coordinator or to the researcher, and the students not being forced to complete the study: the alternative option was a one-page written submission.

PureProfile.com – an online permission-based direct marketing consumer panel. It is implicit in the nature of the *PureProfile* service that members have basic computer literacy and have regular access to networked computers with internet access. Many of the predictions of enhanced consumer empowerment have as an implicit assumption universal access to technology (as detailed in Chapter 2), therefore it is likely that internet users are leading the general populace in their exposure to new consumer-centric marketing techniques and in their demonstration of savvy consumer characteristics. Members of the *PureProfile* panel are ‘ordinary’ members of the consumer population aged 18–plus years. A comparison of the *PureProfile* sample with ABS data shows that they are over-representative of Australian consumers up to the age of 39 years, and under-representative of consumers aged 60–plus years: The advantages of accessing the *PureProfile* consumer panel include: firstly, the ability to access a large sample of consumers with maximum efficiency, and secondly, it allows the researcher to select respondents based on prior responses including demographics and other individual difference measures. Furthermore, the database ensures that a reliable email address is available to enable the two phase data collection in Phase 3.

Table 5.2 Sample profiles

	PHASE 1	PHASE 2	PHASE 3	PHASE 3	PureProfile	Australian
	UNSW	PureProfile	TIME 1	TIME 2	Online	population
	university	Online	PureProfile	PureProfile	panel	Aged 15-79
	students	panel	Online	Online	member-	years ¹
	(%)	(%)	panel	panel	ship base	(%)
			(%)	(%)	(%)	
Gender						
Male	35.9	50.1	45.5	43.6	47.0	49.4
Female	64.1	48.7	53.2	54.9	53.0	50.6
Missing	--	1.2	1.3	1.5	--	--
Age						
18-19 ²	32.3	2.7	2.1	1.8		8.9
20-24	65.5	12.4	9.4	10.2	16.0	9.2
25-29	2.2	12.1	15.1	16.4	23.0	8.8
30-39	--	30.0	24.5	27.1	33.0	19.0
40-49	--	23.6	22.8	21.5	17.0	19.0
50-59	--	17.2	13.7	12.1	8.0	16.6
60-69	--	1.2	9.9	9.2		11.1
70-79	--	--	2.0	1.6	3.0	7.4
Missing	--	.8	0.5	0.1		--
Employment status						
Full-time paid	--	58.8	48.8	47.5		
Part-time paid	--	18.8	21.0	20.9		
Not paid	--	16.7	23.9	24.4		
Full-time student	96.0	5.2	4.9	6.1		
Part-time student	4.0	0.2	1.0	0.8		
Missing	--	0.3	0.4	0.3		
MMS-enabled mobile phone³						
Daily (1)	--	26.3	23.1	23.7		
Rarely / never (5/6)	--	59.7	55.6	58.3		
Bluetooth enabled device³						
Daily (1)	--	21.8	18.4	19.3		
Rarely / never (5/6)	--	57.9	61.5	58.3		
Cable internet / broadband internet³						
Daily (1)	--	82.6	82.3	81.8		
Rarely / never (5/6)	--	9.0	9.4	10.1		
Personal organiser³						
Daily (1)	--	15.5	13.3	13.5		
Rarely / never (5/6)	--	74.3	78.3	78.5		
SMS/MMS info service³						
Daily (1)	--	21.7	17.4	19.4		
Rarely / never (5/6)	--	53.8	59.5	58.6		
Online comparison sites³						
Daily (1)	--	22.9	17.6	18.6		
Rarely / never (5/6)	--	36.3	29.6	26.4		
Online instant messenger³						
Daily (1)	--	38.2	33.5	36.5		
Rarely / never (5/6)	--	36.1	39.4	36.6		
N=	223	563	1461	628		

1. ABS (2007) Australian Census data.
2. Note that Australian population statistics start from age 15 years while the sample population starts age 18 years.
3. Extreme responses shown only.

5.5 Units of analysis

There are two ‘units’ of interest in this study: the consumer, and the consumer-firm interaction.

The unit of analysis in the first phase of this study is the individual adult consumer. While much of the literature on consumer literacy focuses on novice consumers⁴⁹ the scope of this study is adult online direct-marketing consumers (that is, 18 years old or above). Consumers are asked to provide their self-perceptions of the extent that they possess savvy characteristics, their perceptions of marketing processes, and their predicted behaviours during their interactions with firms. The outcomes of savvy are examined amongst consumer-members of an online permission-based direct marketing firm. This context is likely to include consumers across the full range from low to high savvy apart from the most disadvantaged members of Australian society who do not have access to connective and interactive technologies.

The focal unit of analysis in the Stage 2 vignette study is the consumer-perceived interaction between the consumer and the firm. This is any consumer-perceived interaction between an individual consumer and the firm, including pre-, during and post-purchase. From the firm perspective, the interaction might include personalised or mass communication; however, it is up to the consumer whether they perceive either of these (or neither) as a personalised communication. In addition, the interaction may be initiated by the consumer or by the firm, but importantly again it is based on consumer perceptions of the interaction. This focus on the interaction as a unit of analysis is consistent with predictions that marketplace interaction will be increasingly treated as the focus of our research through the parsing down of the two current and distinct streams of consumer behaviour and marketer behaviour research (e.g. Wright 2002).

5.6 Medium of communication: Internet research

Most of this study was conducted using the internet as the communication medium. Internet research is increasingly being chosen over laboratory-based or paper survey research because it removes constraints of place and time and minimises some of the human-errors that have traditionally afflicted research (Birnbbaum 2001, Johnson 2001). In addition, in the current study it is a more appropriate form of research

⁴⁹ That is, children. See for example, review by John (1999).

because it matches the new kinds of consumer behaviour which information technology is producing (Johnson 2001).

Advantages of internet research include that it (Birnbaum 2001): (a) improves external validity by taking the research out of the artificial environment of the laboratory; (b) helps to reduce recruitment costs and gives greater ability to select respondents based on demographics and other individual difference measures; (c) allows for inclusion of more subjects from more locations and allows automatic coding and construction of data files; (d) provides the opportunity to obtain large and heterogeneous samples as people can be more easily selected based on their demographic and other characteristics; (e) reduces the costs of experimental assistants and field researchers and, finally, (f) it avoids issues of non-standardisation of experimenter/interviewer effects.

5.7 Analytical approach

As discussed, this research program involved several stages of research facilitated by three phases of data collection. Across the study, the analytical approach was fundamentally quantitative and included well-established procedures to achieve the various milestones involved in developing, purifying and validating a newly conceptualised measurement scale. The study commenced with development of the SAVVY construct based on a literature synthesis. An initial item pool was generated as a result of this literature review and augmented by first-hand observation research of four consumer focus groups⁵⁰. This was followed by initial data collection within a university student population in order to develop the scale dimensions. The analytical approach at this phase was EFA using SPSS 15. A second stage of data collection was then conducted within a population of online consumers. Data from this second set of respondents was used to purify the scale items using the well-established process recommended by Churchill (1979). This process includes iterations of EFA analysis using SPSS 15 followed by CFA using structural equation modelling in AMOS 7. Correlation analysis was used to validate the newly developed SAVVY scale against established scales. Scale invariance analysis was conducted using CFA multi-group

⁵⁰ The researcher was involved in the design of the research protocol and was an observer for these focus groups. However, this focus group research was intended for a different purpose and only a few questions were of relevance to the current study. Hence data from these focus groups is treated as secondary data which complements the literature review conducted in Phase 1.

analysis in AMOS 7 and followed the procedure recommended by Byrne (2004). Scale reliability analysis was conducted following the third phase of data collection. Findings from the experimental vignette were analysed using ANOVA in SPSS 15.

5.8 Research boundaries

In considering the boundaries of the phenomena under examination, the following considerations are relevant: Firstly, the nature of the consumer-firm context, and secondly the balance between achieving the desired high-level examination of the phenomena of interest and the need to place this in a specific product category context.

This study examines the consumer-firm interaction in the context of online *permission-based* direct marketing (as mentioned in Section 5.3). At the commencement of this study in 2005, permission-based marketing represented a very specific and narrow B2C context. However, it is believed that technological, business strategy and government legislation changes are in the process of making this study's findings increasingly generalisable across all forms of direct marketing. For instance, as the world moves towards greater use of technology (such as location-based marketing) we will see increasing use of business strategies which include consumer permissions. For instance, communications to personal technology devices will allow screening-out by consumers of unwanted communications. In addition, there have been moves by many national governments to legislate permission such as the USA's and Australia's 'Do Not Call' registers.

This study takes, as a precedent, the MO literature where the approach is generally broad rather than deep, as exemplified by Narver and Slater's (1990) study of market orientation effects on profitability. Thus the relevant consumer concepts are examined at a high-level and from a strategic perspective. Inevitably this means some specificity is lost in examining individual consumer concepts and, in examining the relationships between consumer concepts, it allows the exploration of the emergent concept of overall consumer savvy. The issues addressed in this study cut across many areas of inquiry in consumer and strategic research, including direct marketing, relationship marketing, segmentation, customer complaining behaviour, word-of-mouth, product management, customer service and communication. The wide-reaching implications of the savvy consumer phenomena may apply across all markets and product types. However, in order to allow the application of the vignette-based experiment in the final empirical phase, two typical product categorisations were used

to define the product context: hedonic/utilitarian products and high-/low-tech products. More details are provided in Chapter 8.

5.9 Need for a new scale

As previously intimated, a review of the literature reveals much conjecture but little actual measurement of the empowered, demanding savvy consumer. While Chapter 2 identified measures for related constructs, such as market-mavens, persuasion knowledge and consumer vulnerability, there are no existing scales of consumer savvy. It is of vital importance for marketing practitioners and academics to determine the degree to which they need to consider and be prepared for the purported emergence and growth of the ‘savvy consumer’. Without any existing measure of this phenomenon it is difficult to quantify its occurrence and consequences. In addition, as with other constructs of individual difference, it is important to understand the dimensions of and degrees of variation in the phenomena.

The development of a new SAVVY measure will allow the existence of consumer ‘savvy’ to be assessed within consumer populations and segments. It will enable profiling of various consumer populations in terms of their overall SAVVY and on the dimensions of SAVVY.

The new SAVVY scale also has the potential to aid in prediction; for instance, by enabling the measurement of the impact of consumer savvy in industry and environmental contexts. The increasing pressure on managers to adapt their business processes to be more ‘consumer-centric’ necessitates the urgent need for measurement and confirmation of the extent and the impact of consumer savvy.

5.10 Scale development approach

This paper adopts what might be referred to as an ‘augmented-Churchill’ approach to scale development. The process of scale development is grounded in the accepted paradigm for scale development provided by Churchill (1979). This is done for pragmatic reasons. However, this is preceded by appropriate processes and checks for conceptual validity, as recommended by Rossiter (2002). Other aspects of Rossiter’s (2002) C-OAR-SE procedure are not adopted; while it is valued for its focus on conceptualisation of constructs, it is criticised for strongly advocating against empirical

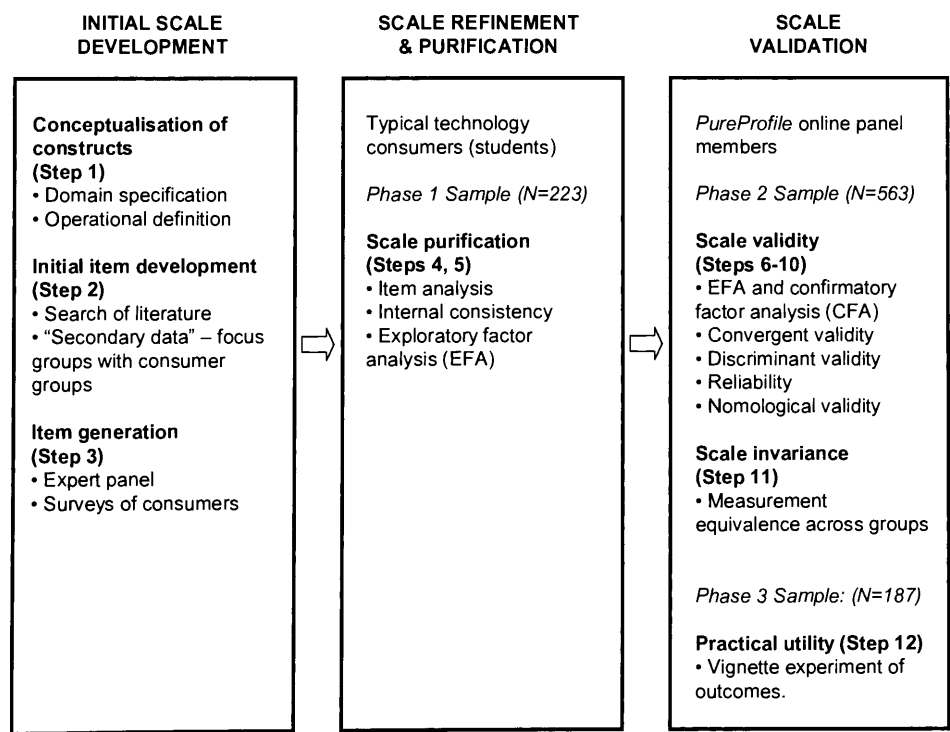
validation of constructs (Finn and Kayande 2005). There are some initial signs that there may be growing adoption of Rossiter’s (2002) recommendations into the standard scale development approach as indicated by recent research, such as by Forsythe, Liu, Shannon and Gardner (2006).

5.11 Scale development process

The process used in this study follows that recommended by Churchill (1979). The scale development process involves three key stages – the initial scale development stage, the scale refinement and purification stage, and the scale validation stage (Figure 5.2).

This section now provides an overview of the scale development process used in this study. The twelve steps of the scale development process depicted in Figure 5.2 and outlined briefly below are then detailed in Chapters 6, 7 and 8.. In particular, Steps 1-10 (scale development, refinement, purification and initial validation) are detailed in Sections 6.1 to 6.10 of the following chapter. Chapter 7 details the methodology and results for Step 11 (invariance analysis) and Chapter 8 describes the methodology and results for Step 12 (application of the newly developed scale in an experimental study).

Figure 5.3 Scale development process



Step 1: Conceptualisation of constructs

Step 1 conceptualises the construct and specifies the domain associated with consumer savvy (as per Churchill 1979). The definition of the savvy construct to be developed describes the construct in terms of the focal object (the consumer-marketer interaction), the attribute (perceived consumer savvy characteristics/expectations) and rater-entity (the consumer) (Rossiter 2002).

The savvy scale comprises latent measures. There are few existing studies to inform the research about the possible existence of “*relatively independent factors that together determine the level of the latent construct*” (Jarvis, Mackenzie and Podsakoff 2003, p.207). In the absence of empirical research regarding consumer savvy, it is difficult to tell whether indicators are dependent or independent. In addition, Jarvis, Mackenzie and Podsakoff’s (2003) ‘rule of thumb’ based on a meta-analysis of twenty-four years of marketing publications is that psychological constructs as opposed to managerial constructs are more likely to be measured by reflective indicators. The psychological nature of the consumer savvy construct means that reflective measures are appropriate (Jarvis, Mackenzie and Podsakoff 2003).

Step 2: Initial item development

Step 2 identifies the potential dimensions for a new multi-dimensional model including representative items for each of the domains of the consumer savvy construct. The process of item development is based on a comprehensive literature review to identify all potential characteristics of ‘consumer savvy’. As per DeVellis (2003), there should be a tendency to err on the side of being over-inclusive at the item generation stage as this redundancy assists in scale development.

Step 3: Item generation

Step 3 generates a comprehensive list of scale items that capture each of the potential domains specified in Steps 1 and 2. A set of items is generated which intends to tap the domains of consumer savvy as closely as possible (Churchill 1979). The initial objective is to create item pools for the dimensions of savvy from existing scales (if at all possible) and by creating additional items that seem to fit the construct definition.

5.12 Scale refinement and purification

The finalised item pool is then subjected to the widely accepted Churchill (1979) paradigm for new scale development. This includes accepted procedures recommended by Gerbing and Anderson (1988), Hair, Anderson, Tatham and Black (1998) and Netemeyer, Bearden and Sharma (2003). Scale refinement and purification includes detailed item, exploratory factor and confirmatory factor analyses to provide an initial assessment of scale reliability, unidimensionality and convergent and discriminate validity. As part of the ‘purification’ process, items are removed one-by-one, to create a robust and parsimonious measure. This is achieved through the application of two broad statistical techniques, in a series of iterations, until the scale reaches a point where it meets initial validity and reliability requirements. Exploratory factor analysis (EFA) is typically employed as a preparatory step in determining the structure of proposed constructs (Gerbing and Anderson 1988). Principle component factor analysis (PCA) is used, followed by Varimax rotation, with the scree test criterion to identify the number of dimensions of the scales. Often the results from EFA do not hold when constructs are put through the more robust Confirmatory factor analysis (CFA) test. Therefore, following the deletion of a number of items in the EFA process, the scale is subjected to CFA.

Step 4: Item refinement and content validity

In the current study, a panel of experts was asked to critically evaluate the item specificity and clarity of the constructs (as recommended by Rossiter 2002). Items that did not achieve at least moderate agreement between the experts were deleted.

Step 5: Scale refinement and initial purification

Internal consistency, item analysis, and exploratory factor analysis: Step 5 aims to purify the measure and to produce maximum internal consistency. Consistent with leading researchers (Nunnally and Bernstein 1994), multiple criteria were used to determine the number of factors to include in the model and which items to retain for each factor. More specifically, items with low factor loadings ($<.40$), high cross-loadings ($>.40$), or low communalities ($<.30$) were candidates for elimination. After qualitative inspection of item content for domain representation, items were considered for deletion. The remaining items were submitted for further EFA, applying the same

criteria in item reduction. Item-to-total correlations were examined until all items that reduce the internal reliability were deleted. The resulting scales should demonstrate good reliability, with coefficient alphas of 0.70 or greater. A factor model can then be estimated using the remaining items. The amount of total variance accounted should be calculated to ensure that total variance for the dimensions exceeds the minimum 50% suggested for social science research (Hair, Anderson, Tatham and Black 1998). Furthermore, all retained items should have a 0.60 or greater loading on the dominant factor and less than 0.40 on other factors, confirming the independence of the constructs and ensuring maximum internal consistency.

5.13 Further scale purification and scale validation

Step 6: EFA and CFA

Following initial scale purification using EFA, the scale is subjected to further validation using a second sample of online consumers. This involves further iterations of EFA (as just described) and CFA described below.

CFA is used to further purify the scale with the goal of improving the ‘congeneric measurement properties’ of the scale (Gerbing and Anderson 1988). A multi-item, multi-dimensional CFA model of SAVVY is estimated using AMOS structural-equation modelling (SEM). The chi-square statistic, goodness of fit index (GFI), comparative fit index (CFI) and root mean square residual (RMSEA) are assessed to evaluate overall fit of the measurement model. Criteria for cut-offs on fit indices are established using existing ‘rules of thumb’ (as per Forsythe et al. 2006), such that, specific cut-offs are set for CFI >.90 and RMSEA <.06. Goodness of fit indices for the multi-group model are checked to confirm that each subscale is unidimensional, such that each item reflects one, and only one, underlying construct. If any items are unrelated or have low factor loadings they are removed provided they are not conceptually important. Once the CFA analysis indicates that the scale has good model fit, then no further modifications to the scale are required.

Step 7: Convergent and discriminant validity

One of the biggest advantages of the CFA/SEM technique is its ability to assess the construct validity of a proposed measurement theory through checking the convergent and discriminant validity of the scale to be assessed (Hair, Black, Babin,

Anderson and Tatham 2006, p.776). Convergent validity is assessed by examining the confirmatory factor loadings of each item with its intended construct. Loadings are expected to exceed 0.50 (Anderson and Gerbing 1988). All corresponding t values should be statistically significant, providing support for convergent validity (Bagozzi and Yi 1988). Discriminant validity is checked by ensuring minimal factor loadings (less than 0.40) of items with unintended constructs. Additionally, correlation between these items is examined to ensure that they are not too highly correlated (Byrne 2001), or, as Kline (1998) recommends, $r < 0.85$.

Step 8: Reliability analysis

Squared multiple correlations are sometimes referred to as item reliabilities and are similar to the idea of communality in EFA (Hair et al. 2006); they should exceed a threshold of 0.40. Construct reliability is important when variables measured by summated scales are to be used as a predictor of outcomes. Since summated scales are an assembly of items designed to measure underlying constructs, it is important to know whether the same set of items would result in the same responses if they were re-administered to the same respondents. Cronbach's (1951) coefficient alpha provides a check of reliability for each subscale and should exceed a threshold of 0.70 (Nunnally and Bernstein 1994). However, composite construct reliability is often used in conjunction with SEM models as coefficient alpha can underestimate reliability (Hair et al. 2006). Both checks of reliability are used in this study.

Step 9: Model structure and fit

Following completion of EFA and CFA an assessment of the model structure and fit is conducted.

Step 10: Nomological validity

As the goal of most research is to build and test theory, assessment of construct validity is essential (Gerbing and Anderson 1988). One method commonly used to assess construct validity is to determine whether the measure reflects theoretical relationships with other constructs. The literature indicates savvy may be related to persuasion knowledge and market mavenism and should be opposed to concepts of consumer vulnerability. Therefore tests of the newly developed savvy measure are conducted against these existing measures (see Figure 5.3).

5.14 Measurement equivalence

Step 11: Measurement invariance analysis

A measure of consumer competency – such as the consumer savvy scale – is likely to be used for profiling and cross-group comparisons therefore it is necessary to establish scale equivalence across groups. This study conducts scale invariance analysis for two key demographic groupings which have a potential socialising impact on a consumer's competency: gender and generational age. Evidence from other areas of research, particularly cross-cultural psychology, indicates that it is *not* sufficient to simply demonstrate replicability of factor structures across groups, but that analysis of invariance is needed to test for equivalence of a measurement instrument across groups.

Invariance analysis is a technique used most frequently to establish measurement equivalence in cross-cultural studies (for example, Steenkamp and Baumgartner 1998, Byrne and Watkins 2003, Tucker, Ozer, Lyubomirsky and Boehm 2006) or in psychological and educational research where measures will subsequently be used to make comparisons between people (especially children) of different age groups (for example, Prince-Embury and Courville 2008).

A measurement model articulates the relation between observed measurements and the latent constructs they purport to measure, so it is important to establish that the model parameters function without bias across groups or occasions (Bontempo and Mackinnon 2006). Meredith (1993, paraphrased in Bontempo and Mackinnon 2006) defined *measurement invariance* as the condition where individuals with equivalent *true scores* would have the same probability of a particular *observed score* on an associated test. This is important because for different groups measures may have different meanings at the item, construct and construct relations level (Steenkamp and Baumgartner 1998, Byrne and Campbell 1999, Byrne and Watkins 2003). If measurement invariance analysis identifies poor fit in a subgroup it may suggest that an instrument does not measure the phenomena adequately within that sub-group and a new instrument may need to be developed for that particular subgroup (Doll, Deng, Raghunathan, Torkzadeh and Xia 2004).

It should be noted, that it is not possible to unambiguously establish measurement equivalence in a factor analytic framework; however, factorial invariance analysis – when all measurement parameters function equivalently in each group of a multigroup CFA – does go some way to achieving this aim (Bontempo and Mackinnon

2006). For these various reasons, this study employs the multigroup CFA analysis method recommended by Byrne (2004) in order to test for multigroup measurement invariance of the newly developed scale. This analysis is presented in Chapter 7.

5.15 Application of the SAVVY scale

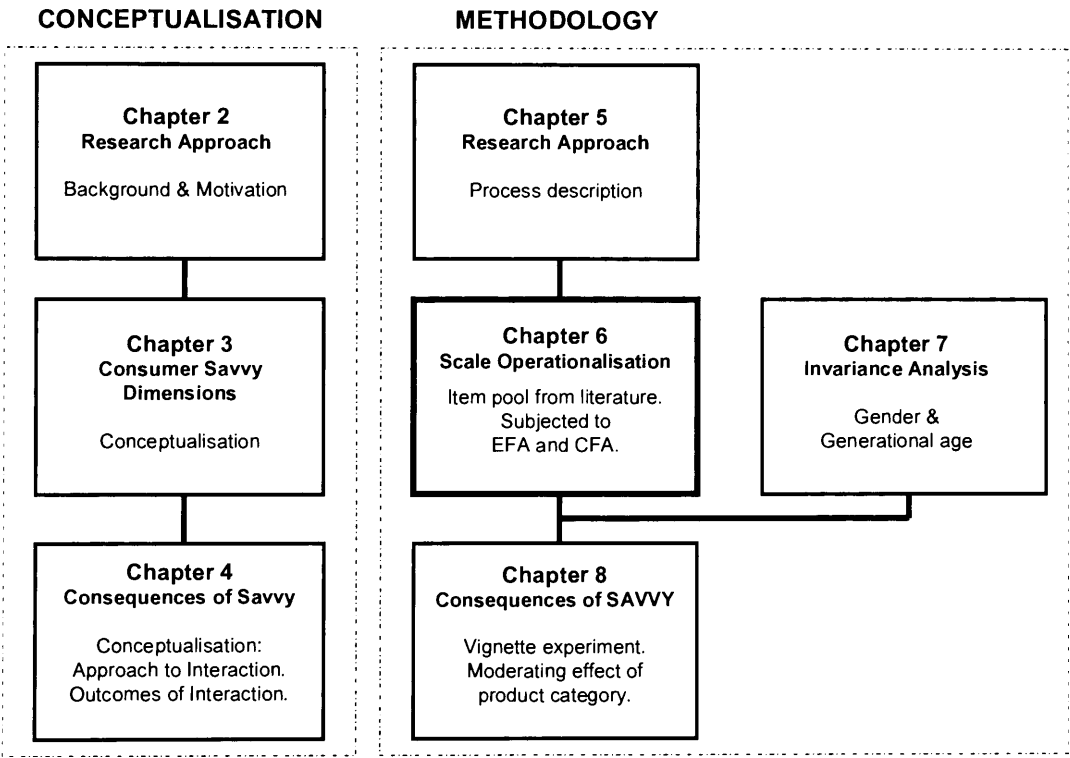
Step 12: Practical utility

Chapter 8 presents the first application of the newly developed SAVVY scale in an experimental setting. It uses a between-subjects factorial design to present high and low SAVVY respondents with optimal and sub-optimal consumer-firm interaction contexts. The intention is to measure the effects of savvy on outcomes of the interaction, including the consumers' approach to the interaction, response to the interaction and likelihood of consumer actions.

6 SAVVY Scale Operationalisation⁵¹

The literature review in Chapters 2 and 3 revealed a considerable amount of conjecture but little formal measurement of the notion of consumer savvy. Even some of the most thoughtful and heavily cited papers in this area are purely conceptual and have not explained how to identify savvy consumers nor how to measure the characteristics of these consumers (this is true, for instance, of Prahalad and Ramaswamy 2004, Urban 2004, and Vargo and Lusch 2004). In line with *RQ 1: What are the dimensions of consumer savvy?*, the purpose of this chapter is to present the detailed steps of data collection and analysis which were undertaken with the objective of operationalising a new measure of consumer SAVVY (Figure 6.1).

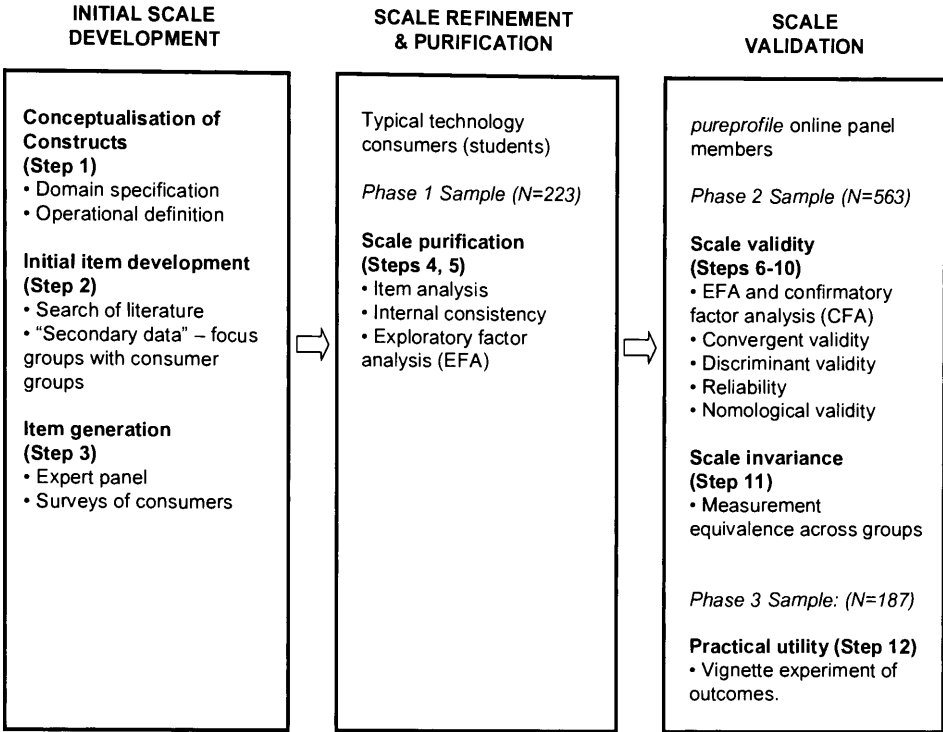
Figure 6.1 Chapter outline: Conceptual and methodological sections



The steps involved in the scale development process are summarised in Figure 6.2. This chapter presents Steps 1 to 10.

⁵¹ Sections of this chapter have appeared in the following publications: The consumer savvy conceptualisation and scale development was published in a *Journal of Marketing Management* paper (Macdonald and Uncles 2007) and in conference proceedings of the *Academy of Marketing 2007 Conference, U.K.*

Figure 6.2 Scale development process



6.1 Step 1: Conceptualisation of the SAVVY construct

As previously discussed in Chapter 3, consumer savvy is conceptualised as a form of pragmatic marketplace intelligence which enables consumers to achieve beneficial outcomes from their engagement with firms. In this chapter consumer savvy is operationalised as *a multi-dimensional, self-perception measure of an individual’s consumer competency and expectations within the consumer-firm interaction*. This operational definition describes the savvy construct in terms of the focal object (the consumer-marketer interaction), the attribute (consumer competency and expectations) and rater-entity (the consumer) (Rossiter 2002).

6.2 Step 2: Conceptualising dimensions of SAVVY

Step 2 involved a review of the literature to identify the dimensions of consumer competency. Based on this review, nine potential dimensions of consumer savvy were identified (presented in Chapter 3): Technological Sophistication, Marketing Literacy, Advertising Literacy, Shopping Literacy, Network Competency - Offline, Network Competency - Online, Consumer Expectations of Interaction from the Firm, Consumer

Expectations of Delivery, and Consumer Self-Efficacy. Most of the relevant literature was found to be written for the benefit of managers rather than consumers, even when it referred to the interaction from the consumer perspective. As a result, some re-interpretation was necessary in order to translate these to the consumer perspective, i.e. items developed needed to capture the consumer viewpoint. The literature survey, in combination with findings from my previous research with the Australian Direct Marketing Association (ADMA 2005)⁵² enabled an initial pool of 95 candidate items across the nine SAVVY dimensions detailed in Chapter 3 (Table 3.1). In line with standard practice, there was a tendency to err on the side of being over-inclusive with this initial item set (DeVellis 2003).

6.3 Step 3: Item generation and content validity

In generating the initial item set, consideration was given to adapting existing scales of related constructs such as consumer expertise, technology readiness and persuasion knowledge. However, while the technology readiness scale matches the technological sophistication dimension of consumer savvy, none of these existing scales were an exact match for the construct under examination (as discussed in Chapter 2). As a result, aside from the Technological Sophistication items – which draw (with permission) from Parasuraman’s (2000) Technology Readiness scale – most of the items generated were new. The pool of items was screened by the research team (self and PhD supervisor) in order to identify duplication of items and potential sources of ambiguity, after which several items were modified. The content validity of this initial item pool was then pre-tested with a panel of six subject experts (marketing academics) who were also provided with the overall savvy construct definition. Items which did not obtain agreement from four out of the six experts were deleted and additional items were added. Five cognitive depth interviews with adult consumers were also conducted to pre-test the survey. Items were checked for clarity and appreciation amongst this test

⁵² The process of savvy conceptualization was aided by the researcher’s previous involvement in a study with the Australian Direct Marketing Association (ADMA). This study is not reported here as it is treated as secondary data, although the researcher was actively involved in study design and data analysis. It was a two-stage ‘qual-quant’ study commencing with four consumer focus groups. Respondents represented a diversity of consumers (i.e. across a range of age; gender; consumer activism; and innovativeness groups) to obtain a wide cross-section of opinions. The researcher assisted in the design of the qualitative discussion guide and the survey. She viewed all focus groups live and analysed transcripts. The questionnaire was administered to over 1,000 consumers. Learnings from this first-hand involvement in the ADMA study have thus informed the savvy conceptualisation presented here.

sample that included some respondents for whom English is not a first language. As a result of these checks, some items were modified and the pool was reduced to 75 items.

The resulting item pool was then submitted to multi-sample scale purification and validation as described in Steps 4 and 5 below.

6.4 Step 4: Item refinement

A sample of $n=248$ undergraduate and Masters-level students was recruited to participate in the first stage of scale refinement in exchange for course credit. The goal here was to have variance with respect to consumer savvy, but for subjects to be broadly similar in other respects. The latter objective was met as the majority of respondents (98%) were aged up to 24 years (See Phase 1 sample in Table 5.2). The elimination of 25 responses following visual checks for incompleteness or patterns in their responses left a final data set of $n = 223$ respondents. After carefully checking responses for completeness, the remaining survey responses were retained for the quantitative assessment of the scale.

To minimise question order bias, two identical surveys with the questions presented in a different order were used in the following proportions: $n=106$ responses for Survey A and $n=117$ for Survey B. A comparison of these two sub-samples was conducted using Independent Samples T-Tests across all the savvy items. Significant differences were found on three items only (Network Competency N05, Empowerment P05R, Expectation E14) out of a possible 75 items. Question order bias did not account for differences in these three questions which appeared in the same position in both questionnaire versions.

The pool of 75 items was administered via an online questionnaire with each item assessed using 5-point agree/disagree response format. The online survey also included technology usage and demographic questions. Checks of normality using the Kolmogorov-Smirnov test, Z-skew and Z-kurt tests indicated that all of the savvy items were non-normal. This meant that subsequent analysis would need to take account of this non-normality. As all the items were measured using 5-point scales, there were no large extremes in data distribution. Therefore, provided some evidence of a distribution was identified (i.e. at least 10% of respondents said either 'Strongly Agree/Agree' or 'Strongly Disagree/Disagree'), then the item was retained. Three items which did not meet this minimum distribution criterion were eliminated.

6.5 Step 5: Scale refinement and initial purification

Step 5 commenced the process of scale refinement and purification through examination of items and dimensions. EFA using SPSS 15 was employed. The large number of items precluded running a full multi-dimensional EFA, so each of the nine savvy dimensions was separately analysed using Principle Components factor analysis (Varimax rotation). (PCA using Oblique rotation was also applied as a check for consistency of the results but, as identical factor results were obtained, the subsequent phases of analysis used only Varimax rotation). As the analysis progressed, items were tested and eliminated one-by-one with the aim being to obtain dimensions with high internal consistency. As items were eliminated, at times it was also necessary to make a decision about the dimensions, such that they might be merged or one might be eliminated.

EFA was conducted in several iterations. Following each round of iteration, item analysis was performed and items deleted for one of several reasons: failing to load on any factor, failing to load on expected factor, or a poor match conceptually. If an item failed the first two tests but was considered important conceptually, consideration was given to modifying or supplementing this item in later phases, following the precedent set by Parasuraman (2000). Several factor solutions were considered for each dimension, and they were evaluated in terms of their statistical significance, their explanation of variance (above 60% was considered a minimum requirement) and their reliability (assessed by coefficient alpha).

Following this analysis the item pool was reduced from 75 to 42 items across eight savvy dimensions (marketing and advertising literacy were merged into a single dimension). At this stage, the aim was to retain as many items as possible since this test sample was not meant to be fully representative of the total population of adult consumers. The outcomes of this phase of scale purification were as follows: Technological Sophistication (6 items; variance explained = 64.0%; coefficient alpha = .75), Network Competency (Offline and Online) (7 items; variance explained = 63.9%; coefficient alpha = .75), Marketing Literacy (5 items; variance explained = 66.9%, coefficient alpha = .61), Shopping Literacy (5 items; variance explained = 67.9%; coefficient alpha = .69), Self-Efficacy (7 items; variance explained = 61.6%; coefficient alpha = .78) and two dimensions of Consumer Expectations. Many of the consumer expectations items showed variance that was below the threshold of 10% at one end of the scale; however, all were retained because sample selection may have biased the

results on these items. (Marketing students are likely to have highlighted awareness of ideal marketing practices. Additionally, since all of these respondents had very similar life stage and consumer experience, this may have resulted in the lack of difference in their responses). Due to uncertainty about the composition of these dimensions, the variance explained and coefficient alpha were not reported at this stage.

For the purposes of the next round of scale purification and validation, these items were supplemented with an additional three items (one consumer self-efficacy item and two marketing literacy items) in order to make up for deficiencies identified during the process of statistical and conceptual scale evaluation conducted in Steps 4 and 5. This resulted in an item pool of 45 items across eight dimensions (see item list in Table 6.1).

Table 6.1 Item pool included in the Savvy Consumer survey[#]
(including items discarded during purification process)

TS Technological Sophistication – Innovative Expertise	
T1	Other people come to me for advice on new technologies. *
T2	In general, I am first among my circle of friends to acquire new technology when it appears. *
T3	I can usually figure out new high-tech products and services without help from others. *
	<ul style="list-style-type: none"> • It seems my friends are learning more about the newest technologies than I am. (R)* • I like engaging with firms via the internet because you are not limited to regular business hours.* • I often use technology (such as email screening, popup blockers) to control what information I get from companies.
NW Network Competency – Interpersonal	
NW1	I always know someone to call if I want to find out about the best product or service.
NW2	I have a useful network of contacts who can give me up-to-date product information on the latest innovations.
	<ul style="list-style-type: none"> • I am better than most people at finding someone to recommend the best products. • When I want to know more about a seller I will seek advice from an independent source.
NO Network Competency – Online	
N1	I often check-out chatrooms and bulletin boards to find out about the latest products that are coming.
N2	I'll often see if there is an online community that can help me when I'm looking for a product recommendation.
N3	I'll often seek the opinions of other customers by posting a query about a product on an online bulletin board or chat room.
N4	I enjoy sharing points of view with online acquaintances via bulletin boards and chatrooms.
N5	My best contacts for new product information often include people online that I've never met face-to-face.
ML Marketing Literacy	
L1	When viewing advertising, I can identify the techniques being used to persuade me to buy.
L2	I am familiar with marketing jargon.
L3	I'm really good at cutting through to the truth behind the over-claiming in advertisements.
	<ul style="list-style-type: none"> • I use advertising to find out about the newest products and technologies. • I make use of advertising to keep informed of the best deals around.
	Shopping literacy (<i>This construct was discarded in the final model</i>)
	<ul style="list-style-type: none"> • When I am shopping, I can spot a good deal or a bargain. • I'm good at finding the best price around. • For non-grocery products, I know when all the sales are on and do most of my shopping then. • When firms offer a 'gift with purchase' deal I usually find a way to get more than the allocated number of freebies. • I often try to engage the store keeper in discussion to reduce the price or get something else thrown in.
CF Complaining and specifying self-efficacy	
C1	I am confident at complaining to a firm when they don't give me what I expect.
C2	I am confident at telling organisations what I expect from them.
C3	I am confident at working with large companies to get exactly what I want from them.
	<ul style="list-style-type: none"> • As a customer, I am generally confident at letting an organisation know when they have displeased me. • I am not confident making a complaint to a company even when a product is faulty. (R) • I am confident at deciding which organisations can be trusted with my personal information. • I am confident in my ability to get exactly what I want from the organisations I deal with. • I am confident at controlling what information I receive from organisations.
EX Expectations	
X1	I expect companies to make use of my personal information to give me better service.
X2	I like a firm I have bought something from to keep me informed of further offers.
X3	For the products and services that interest me I like to be kept informed anywhere, anytime, including by SMS and email.
	<ul style="list-style-type: none"> • I expect on-going dialogue with a firm I'm dealing with. • I expect the organisations that I buy from to let me know about their plans and processes. • I expect firms to be honest if a competitor has an offering that better satisfies my needs. • It is not realistic to expect companies to inform customers about their product weaknesses. (R) • I cannot expect a company to provide all of the product information that I need. (R) • You should be able to get the same product/service offer no matter whether you buy online, by phone or in person. • I expect companies that I've dealt with a few times to know what I want without me having to ask. • I cannot expect a large organisation to care about my specific requests. (R) • It is not realistic to expect a firm to stay interested in me after I've bought something from them. (R)

[#] Notes: Item labels are shown only for items retained in the final SAVVY scale. Bulleted items were included in the pre-test but eliminated during the scale-refinement process. Items marked * are adapted from Parasuraman's (2000) technology readiness index, with permission. The technology readiness index is copyrighted by A. Parasuraman and Rockbridge Associates Inc, 1999, and the scale may be duplicated only with written permission from the authors.

6.6 Step 6: Further scale purification and scale validation

The finalised item pool was then administered to members of an online panel operated by *PureProfile*. The sampling frame was the 140,000+ members of the *PureProfile* panel. For the purpose of this research, members were defined as ‘current’ if they had been active at least twice (that is, had responded to a communication or survey from the panel owner) in the past 6 months. Panellists of *PureProfile* are profiled when they first join and then encouraged to voluntarily update their information as often as they like and through responding to intermittent surveys. The owners claim therefore that the *PureProfile* panel data is kept more up-to-date than Census data and most other consumer panels. Respondents were recruited to be broadly representative of the adult Australian population in terms of age and gender. However, this had to be achieved within the constraints of the *PureProfile* panel membership which according to their media profile is over-representative in the younger age categories (19 or younger, 20-24 years, 25-29 year and 30-39 years) and under-representative of older age categories (50-59 years, 60-69 years, 70-plus) (see Table 5.2).. Respondents received a small cash credit (equivalent to \$A10 or less) via the standard mechanism of the online panel operator. The survey was completed online and subjects answered each savvy item on a 5-point scale (anchored by ‘strongly disagree’ to ‘strongly agree’). A total of n=636 commenced the survey; of these, 73 did not complete the survey or were eliminated because of dubious response patterns, leaving a total sample of n=563 and resulting in a completion rate of 89%. The final sample profile (Phase 2 in Table 5.2) was approximately representative in terms of gender (50% male, 49% female and 1% undeclared) but varied across the age groups⁵³. The Phase 2 sample was *over*-representative of 20-29 year olds (25% versus ABS: 18%), 30-39 year olds (30% vs. ABS: 19%) and 40-49 years olds (24% vs. ABS: 19%). It was approximately representative of 50-59 year olds (17% vs. ABS: 17%) but was strongly *under*-representative of respondents aged 60-plus (1% vs. ABS: 18%).

As per Churchill’s (1979) paradigm for new scale development, the new measure was first subjected to EFA and then put through the more robust test of CFA. As in the Steps 4 and 5, the ‘purification’ process involved items being removed one-by-one, to create a robust and parsimonious measure. Once again, Exploratory Factor Analysis (EFA) was conducted as a preparatory step in determining the structure of

⁵³ A comparison with the ABS population statistics is not possible for the youngest age group (18-19 years) as the Census data reports on a different age range (15-19 years).

proposed constructs (Gerbing and Anderson 1988). Following the deletion of a number of items in the EFA process, the scale was subjected to CFA.

Prior to commencement of EFA, items were again checked for variance. As a result of this step ten items were eliminated because they did not generate sufficient (more than 10%) distribution at either end of the 5-point agree-disagree scale. Most of these eliminated items related to consumer expectations of the firm, which was not surprising considering the findings from the earlier sample.

EFA was once again conducted on each of the dimensions of the savvy measure. Seven negative valence items from across a variety of constructs did not load as expected, but instead loaded onto a single factor. Consideration was given to these forming a sub-construct of vulnerability; however, subsequent iterations of EFA where items were deleted one-by-one found that these items moved between factors a great deal and were quickly eliminated. Methodological research (Herche and Engelland 1996) confirms that reverse-polarity items often have a problematic impact on scale unidimensionality, so these findings are not unusual.

This left 28 items across eight dimensions (Technological Sophistication, Marketing Literacy, Shopping Literacy, Network Competency - Offline, Network Competency - Online, Consumer Expectations of Interaction from the Firm, Consumer Expectations of Delivery, and Consumer Self-Efficacy). Multi-dimensional EFA was now conducted until all items that loaded below 0.4, or that cross-loaded, were removed. During this process, one item (*“For the products and services that interest me, I like to be kept informed anywhere, anytime, including by SMS and email”*) was re-assigned as it consistently loaded on a different construct from the one originally assigned. The item was intended to form part of the ‘Technological Sophistication – Harnessing Technology’ sub-dimension, which did not survive the EFA. The item loaded onto the Consumer Expectations construct. As the item refers to preferences of consumers in relation to their interaction with the firm it was considered to pass the face validity test and was allowed to remain as part of the Consumer Expectation construct. Two items were eliminated. The EFA resulted in a model with 8 factors and 26 items.

CFA was then conducted using AMOS 7.0 to verify the hypothesised dimensionality of the 8-factor, 26-item scale. Consistent with the current practice in marketing, the CFA model was estimated using maximum likelihood estimation. The CFA model was evaluated using four criteria specified by Netemeyer, Bearden and Sharma (2003): (1) model convergence and range of parameter estimates, (2) fit

indices, (3) significance of parameter estimates, and (4) standardised residuals and modification indices. Model convergence is determined simply if the CFA model reaches a solution – which it did. Fit indices were evaluated using established thresholds (Hair, Black, Babin, Anderson and Tatham 2006). The fit indices for the initial model (Table 6.2) were below acceptable thresholds for a sample size greater than $n=250$, but they were in range. The significance of parameter estimates was initially checked as a guide to item retention; however, all items were significant. The magnitude of item loadings on their respective factors should range from 0.6 to 0.9 (Bagozzi and Yi 1988). Four items in the initial model loaded at 0.5 or below and squared-multiple correlations (SMCs) were far below 0.4 (indicating poor reliability) for these four items. Thus the model was not deemed to have a good enough fit.

Model fit: Further purification of the scale was conducted with items deleted one by one in an iterative process of EFA and CFA. After seven iterations (where seven items were dropped), EFA identified a model with 6 factors and 19 items (Figure 6.3). As seen in Figure 6.3, two dimensions were eliminated during this process; these were Shopping Literacy and one of the Expectations dimensions. Online and Offline (Interpersonal) Network Competency were now clearly distinct dimensions. CFA identified that this model has good fit (Table 6.2): the CFI measure of incremental fit was above the threshold of 0.92, and the standardised root-mean residual (SRMR) badness-of-fit measure was below the cut-off of 0.08 (Hair, Black, Babin, Anderson and Tatham 2006).

Figure 6.3 CFA of six-factor measurement model

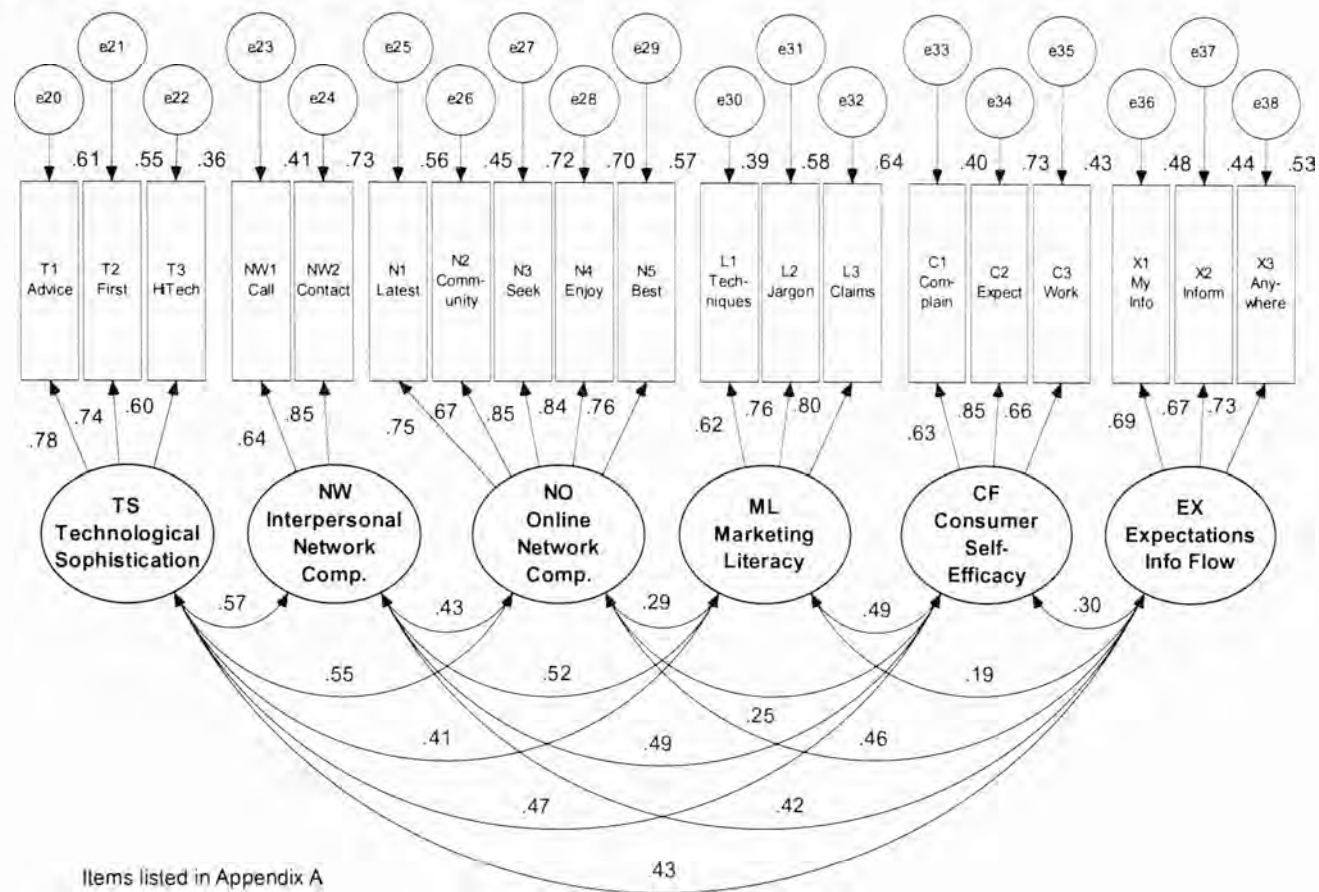


Table 6.2 CFA analysis

	χ^2	d.f.	p	$\chi^2/d.f.$	GFI	SRMR	RMSEA (Upper, Lower)	CFI
Initial model: (8 Factors, 27 Items)	739.40	271	.000 ^a	2.70	.905	.054	.055 (.051, .060)	.906
Final model: (6 Factors, 19 Items)	393.33	137	.000 ^a	2.85	.928	.051	.057 (.051, .064)	.933

a. Significant p-values are to be expected in a model which has a sample size $n > 250$ and a large number of indicators (Hair, Black, Babin, Anderson and Tatham 2006).

6.7 Step 7: Convergent and discriminant validity

Convergent validity was assessed by examining the confirmatory factor loadings of each item with its intended construct. Loadings are expected to exceed 0.50 (Anderson and Gerbing 1988). All standardised regression weights were 0.6 or above, and all were significant ($p<.05$) providing support for convergent validity (Bagozzi and Yi 1988).

Average variance extracted (AVE) is a summary indicator of convergence and is the average squared factor loading for each construct. Scores for AVE were 0.5 or above for all except Consumer Expectations which was just below this threshold (0.49) (Table 6.3). Values of 0.5 or above suggest that the variance due to measurement error is smaller than the variance captured by the construct (Hair, Black, Babin, Anderson and Tatham 2006).

Table 6.3 Composite reliability and average variance extracted for measurement model variables

	Number of Items	Composite Construct Reliability	Average Variance Extracted
TS	3	.77	.50
NW	2	.75	.57
NO	5	.85	.60
ML	3	.83	.53
CF	3	.81	.52
EX	3	.72	.49

Discriminant validity was evaluated from the factor patterns and structure coefficients presented in Table 6.4. Pattern coefficients are the standardised factor loadings, and structure coefficients show the influence of each factor on items not hypothesised to comprise that factor. The two highest non-hypothesised structure coefficient values were for NO (Online Network Competency) items loading onto TS at 0.4 and 0.38. While it is not surprising that there would be a correlation between online network competency and technological sophistication, these values are below a threshold of 0.5, and therefore do not invalidate the discriminant validity of the two constructs.

Table 6.4 Discriminant validity - Factor pattern and structure coefficients

TS			NW		NO		ML		CF		EX	
Item	Pattern	Structure	Pattern	Structure	Pattern	Structure	Pattern	Structure	Pattern	Structure	Patt- ern	Struc- ture
T1	0.78	0.78	0*	0.35	0*	0.33	0*	0.25	0*	0.29	0*	0.26
T2	0.74	0.74	0*	0.32	0*	0.30	0*	0.22	0*	0.26	0*	0.24
T3	0.60	0.60	0*	0.20	0*	0.20	0*	0.15	0*	0.17	0*	0.16
NW1	0*	0.31	0.64	0.85	0*	0.24	0*	0.29	0*	0.27	0*	0.23
NW2	0*	0.32	0.85	0.64	0*	0.23	0*	0.28	0*	0.26	0*	0.23
N1	0*	0.31	0*	0.24	0.75	0.75	0*	0.17	0*	0.14	0*	0.26
N2	0*	0.25	0*	0.20	0.67	0.67	0*	0.13	0*	0.11	0*	0.21
N3	0*	0.40	0*	0.31	0.85	0.85	0*	0.21	0*	0.18	0*	0.33
N4	0*	0.38	0*	0.30	0.84	0.84	0*	0.21	0*	0.18	0*	0.32
N5	0*	0.32	0*	0.24	0.76	0.76	0*	0.17	0*	0.14	0*	0.26
L1	0*	0.16	0*	0.21	0*	0.11	0.62	0.62	0*	0.19	0*	0.07
L2	0*	0.24	0*	0.30	0*	0.17	0.76	0.76	0*	0.29	0*	0.11
L3	0*	0.26	0*	0.34	0*	0.19	0.80	0.80	0*	0.32	0*	0.13
C1	0*	0.19	0*	0.19	0*	0.10	0*	0.19	0.63	0.63	0*	0.12
C2	0*	0.34	0*	0.35	0*	0.18	0*	0.36	0.85	0.85	0*	0.21
C3	0*	0.20	0*	0.21	0*	0.11	0*	0.21	0.66	0.66	0*	0.13
X1	0*	0.21	0*	0.20	0*	0.22	0*	0.09	0*	0.15	0.69	0.69
X2	0*	0.19	0*	0.19	0*	0.20	0*	0.09	0*	0.13	0.67	0.67
X3	0*	0.23	0*	0.23	0*	0.24	0*	0.10	0*	0.16	0.73	0.73

Note: Tabled values are standardised parameter estimates. Asterisked values are parameters fixed at reported levels to identify the model.

6.8 Step 8: Reliability analysis

Reliability was considered next. Squared multiple correlations (SMCs) are sometimes referred to as ‘item reliabilities’ and are similar to the idea of communality in EFA (Hair, Black, Babin, Anderson and Tatham 2006). All squared multiple correlations were above 0.4 except for two (Table 6.5). Given the outcomes of previous stages of this research (including both qualitative and quantitative phases), these SMCs were considered acceptable.

Table 6.5 Construct correlation matrix and item reliabilities

	Correlations						Squared Multiple Correlations
	TS	NW	NO	ML	CF	EX	
TS	1.00						
NW	0.58	1.00					
NO	0.55	0.43	1.00				
ML	0.41	0.52	0.29	1.00			
CF	0.47	0.49	0.25	0.49	1.00		
EX	0.43	0.42	0.46	0.19	0.30	1.00	
T1	0.78	0.45	0.43	0.32	0.37	0.34	0.61
T2	0.74	0.43	0.41	0.30	0.35	0.32	0.55
T3	0.60	0.34	0.33	0.25	0.28	0.26	0.36
NW1	0.49	0.85	0.37	0.45	0.42	0.36	0.41
NW2	0.37	0.64	0.27	0.33	0.31	0.27	0.73
N1	0.41	0.32	0.75	0.22	0.19	0.34	0.57
N2	0.37	0.29	0.67	0.20	0.17	0.31	0.45
N3	0.47	0.37	0.85	0.25	0.21	0.39	0.41
N4	0.46	0.36	0.84	0.25	0.21	0.38	0.70
N5	0.42	0.32	0.76	0.22	0.19	0.35	0.57
L1	0.25	0.33	0.18	0.62	0.31	0.12	0.39
L2	0.31	0.40	0.22	0.76	0.38	0.15	0.58
L3	0.33	0.42	0.24	0.80	0.40	0.16	0.64
C1	0.30	0.31	0.16	0.31	0.63	0.19	0.40
C2	0.40	0.41	0.21	0.42	0.85	0.25	0.73
C3	0.31	0.32	0.16	0.32	0.66	0.20	0.43
X1	0.30	0.29	0.32	0.13	0.21	0.69	0.48
X2	0.29	0.28	0.30	0.13	0.20	0.67	0.45
X3	0.32	0.31	0.33	0.14	0.22	0.73	0.53

Cronbach alpha reliabilities for five of the constructs – TS, NO, ML, CF and EX – were 0.75, 0.88, 0.77, 0.74 and 0.74, respectively. A cut-off threshold of 0.7 is generally considered acceptable (Hair, Black, Babin, Anderson and Tatham 2006). As only two items were included in the final NW construct, correlation (not Cronbach alpha) is the appropriate measure; this was acceptable at 0.55. The overall Cronbach alpha for the SAVVY scale is 0.87, demonstrating excellent internal consistency for the items in the scale. Comparison of the items with the construct definitions showed that the items retained face validity while appearing to sample different aspects of the construct meaning.

Composite construct reliability is often used in conjunction with SEM models as Cronbach alpha can underestimate reliability (Hair et al. 2006). All composite reliability scores exceeded the threshold of 0.7 (Table 6.3).

6.9 Step 9: Model structure

The final 19-item SAVVY scale, with six latent constructs, is depicted in Figure 6.3 (Items are detailed in Table 6.1, model fit in Table 6.2, and item statistics in Table

6.4). The following observations can be made about the individual latent constructs in the model:

TS relates to comfort and leadership in adopting new technologies, and comprises three items which were adopted from the innovativeness component of Parasuraman's (2000) Technology Readiness scale. Specifically, the three items are: *"first among my friends to acquire new technology"*, *"source of advice for new technology"* and *"can figure out high-tech products without help from others"*.

NW relates to interpersonal connectedness and includes two items: *"always know someone to call for product information"* and *"have a useful network of contacts for information on latest innovations"*.

NO relates to consumer competency in: interacting with others online to search for product information; calling for assistance in making product choices; and the hedonic value of sharing product opinions with other consumers online. The five items refer to *"checking online consumer forums for latest product information"*, *"posting online queries to seek opinions of others about products"*, *"seeking out online communities for help"*, *"enjoyment of sharing opinions with others in an online forum"* and *"having best contacts who I've never met face-to-face"*.

ML relates to the ability to decipher the techniques of advertising and to interpret the underlying messages of advertising, without being "taken in" by exaggerated claims. The three items capture *"identifying the persuasive techniques used in advertising"*, *"cutting through to the truth behind over-claiming in advertising"* and perceived *"familiarity with marketing jargon"*.

CF relates to consumers' self-efficacy in providing feedback to the firm, including asserting themselves to complain. It includes confidence in *"complaining about failure to meet expectations"*, *"telling organisations my expectations"* and *"working with organisations to get what I want"*. These are all important components in building a deeper relationship with the organisation, and mandatory for any process of co-creation to occur.

EX relates to consumers’ expectation of how the firm should interact with them. It includes the following expectations: *“making use of my personal information to give me better service”*, *“keeping me informed of further offers”* and *“keeping me informed anywhere and anytime”*.

An examination of the summary statistics for the newly developed SAVVY scale (Table 6.6), indicates that it has some skew towards high SAVVY (mean = 3.4, skewness = 0.13) and a more-peaked-than-normal distribution (kurtosis = 0.5), however, this non-normality is not significant (Kolmogorov-Smirnov statistic = .03, p =0.16).

Table 6.6 Summary statistics for SAVVY scale

	TS	NW	NO	ML	CF	EX	TOTAL SAVVY
Mean	3.32	3.33	2.87	3.71	3.72	3.30	3.38
Std. Deviation	0.79	0.81	0.93	0.69	0.67	0.84	0.53
Skewness	-0.11	-0.17	0.04	-0.31	-0.47	-0.25	0.13
Kurtosis	-0.11	-0.48	-0.55	0.27	0.40	-0.26	0.51
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.44
Maximum	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Sample n=563

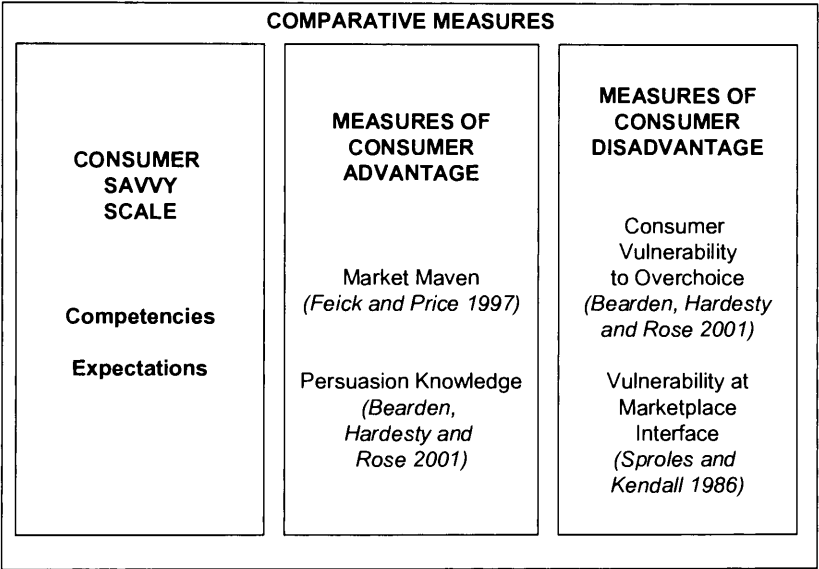
6.10 Step 10: Nomological validity

Having established convergent and discriminant validity, and described the model structure, attention turns to demonstrating the nomological validity of the SAVVY scale. This can be confirmed by demonstrating relationships with external constructs that support the theoretical framework (Hair, Black, Babin, Anderson and Tatham 2006). To this end the newly developed SAVVY scale was compared with established measures of consumer competency (with which it was predicted to positively correlate) and of consumer disadvantage (with which it was predicated to negatively correlate) (as discussed in Chapter 2).

Previous research has indicated that Persuasion Knowledge (PK) is a measure of consumer advantage, such that consumers who have high PK are less easily manipulated by marketing messages (Bearden, Hardesty and Rose 2001). The Market Maven (MM) concept is also a measure of consumer competency, such that consumers who are mavens are generally active and well-informed as indicated by their role as a

source of product and market information for other consumers (Feick and Price 1987). A visual comparison of the items in the SAVVY scale (Table 6.1) and the Persuasion Knowledge and Market Maven scales (Table 6.7) indicates little overlap between these measures. These alternative consumer competency measures were applied to a subset of sample. It was hypothesised that there would be some correlation between SAVVY and these measures of consumer advantage because they are measures of consumer competency. This is borne out by correlation analysis (see Table 6.8); both PK and MM constructs are highly significantly correlated with the overall SAVVY measure and in the expected direction.

Figure 6.4 Tests of nomological validity



It was also important to distinguish the SAVVY construct from measures of consumer vulnerability, so once again two existing scales – Consumer Vulnerability to Over-Choice (VO) (Sproles and Kendall 1986) and Vulnerability to Marketplace Interfaces (VI) (Bearden, Hardesty and Rose 2001) – were applied. As before, the items from the SAVVY scale and the VO/VI scales were compared (Table 6.1 versus Table 6.7) and little overlap identified. It was hypothesised that there would be a negative correlation between SAVVY and each of the vulnerability constructs. Correlation analysis (see Table 6.7) found that both constructs were negatively correlated with SAVVY (which is consistent with expectations). However, only Vulnerable to Over-Choice was significantly (and negatively) correlated with SAVVY (Figure 6.4).

Vulnerable to Marketplace Interfaces was not significantly correlated with SAVVY, implying that invulnerability in a shopping situation is not related to my concept of the savvy, empowered, active consumer.

Table 6.7 Comparative measures

Item	Reliability
Persuasion Knowledge (Bearden, Hardesty and Rose 2001)	
PK1 I know when an offer is "too good to be true". (.72)	.85
PK2 I can tell when an offer has strings attached. (.82)	
PK3 I have no trouble understanding the bargaining tactics used by salespersons . (.63)	
PK4 I know when a marketer is pressuring me to buy . (.74)	
PK5 I can see through sales gimmicks used to get consumers to buy . (.85)	
PK6 I can separate fact from fantasy in advertising . (.78)	
Market Maven Scale (Feick and Price 1987)	
M01 I like introducing new brands and products to my friends. (.84)	.89
M02 I like helping people by providing them with information about many kinds of products. (.86)	
M03 People ask me for information about products, places to shop, or sales. (.89)	
M04 If someone asked where to get the best buy on several types of products, I could tell him or her where to shop. (.75)	
M05 My friends think of me as a good source of information when it comes to new products or sales. (.77)	
M06 Think about a person who has information about a variety of products and likes to share this information with others. This person knows about new products, sales, stores and so one, but does not necessarily feel he or she is an expert on one particular product. How strongly do you agree or disagree that this description fits you? (.46)	
Vulnerability at Marketplace Interfaces (Bearden, Hardesty and Rose 2001)	
IN1 I am afraid to "ask to speak to the manager" (.89)	.91
IN2 I don't like to tell a salesperson something is wrong in the store (.82)	
IN3 I have a hard time saying no to a salesperson (.82)	
IN4 I am too timid when problems arise while shopping (.87)	
IN5 I am hesitant to complain when shopping (.78)	
Confused from Over-Choice (Sproles and Kendall 1986)	
U01 All the information I get on different products confuses me. (.75)	.73
U02 Sometimes it is hard to choose which stores to shop at. (.68)	
U03 The more I learn about products, the harder it seems to choose the best. (.73)	
U04 There are so many brands to choose from that I often feel confused. (.81)	

Table 6.8 Comparisons of SAVVY with other consumer measures

Construct	Corr. with SAVVY	Comparison of Low versus High SAVVY respondents						
		Low n=	High n=	t	d.f.	P ^d	Mean diff.	Implication
Consumer Competency Measures								
Persuasion Knowledge	.48 ^a	131	142	-7.77	271	.000	-.46	High > Low
Market Maven	.72 ^a	37	44	-7.11	79	.000	-.88	High > Low
Consumer Vulnerability Measures								
Vulnerability at Marketplace interfaces	-.09 ^c	131	142	2.12	271	.035	.23	Low > High
Vulnerable to confusion from over-choice	-.24 ^b	44	37	2.02	79	.048	.32	Low > High

a. Correlation significant at the 99% confidence interval.

b. Correlation significant at the 95% confidence interval.

c. Correlation not-significant.

d. t-test significant at the 95% confidence level.

To further validate the scale a total SAVVY score was calculated for each respondent. Using these scores, respondents were grouped into high and low categories with respect to consumer savvy. The total SAVVY score was based on the sum of means for the six sub-constructs, with the result expressed out of a maximum of 30 (mean = 15.75, standard deviation = 3.17). Respondents scoring more than +/-0.25 of a standard deviation from the mean were deemed to be high or low, respectively, in terms of savviness (39% were high savvy consumers, 41% low savvy consumers, and 20% neither high nor low). This classification was compared across the scales of consumer advantage and disadvantage just discussed. Firstly, I undertook a comparison with the existing consumer advantage scales of PK and MM. Based on t-tests, significant differences were obtained between high and low savvy respondents on both these measures and in the expected direction (Table 6.7). Secondly, I compared high-low savvy respondents and measures of consumer vulnerability, specifically VI and VO. Once again significant differences were found and in the expected direction (Table 6.7).

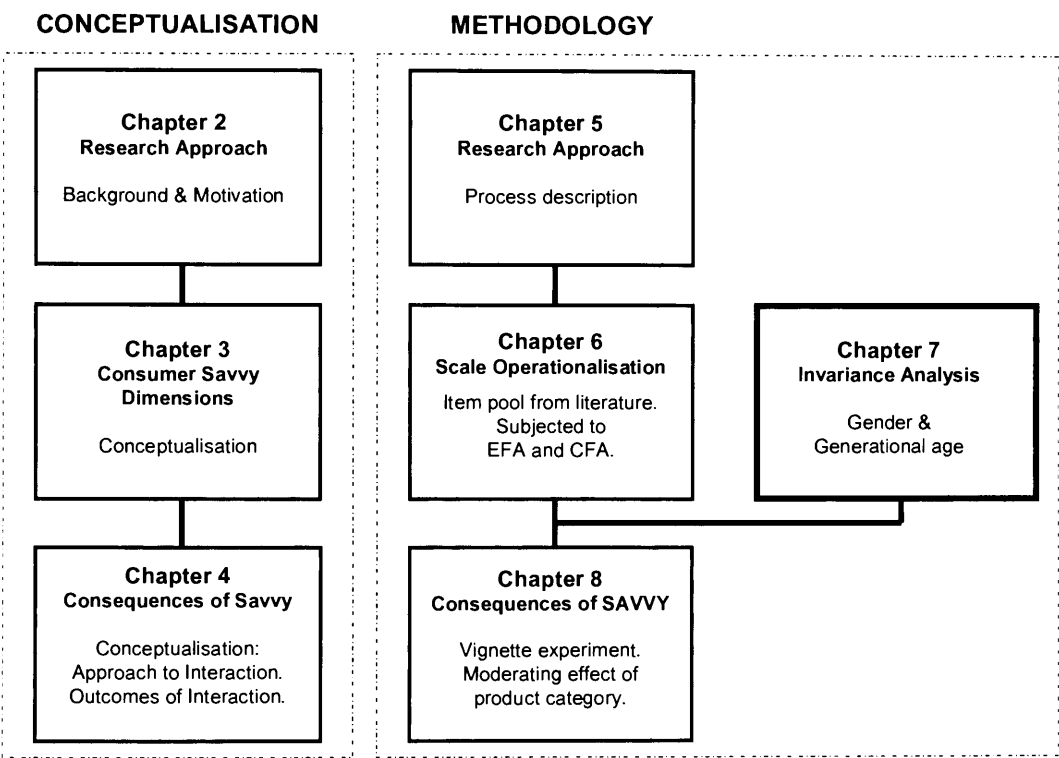
These comparisons with existing, established measures of consumer advantage and vulnerability lend weight to the assertion that consumers high in overall SAVVY are advantaged in the marketplace and that those who are low in overall SAVVY are more vulnerable. These two sets of analyses provide additional confirmation of the construct validity of the newly developed 19-item SAVVY scale.

Steps 11 (scale invariance analysis) and 12 (scale application) will be conducted in the following chapters. Chapter 7 will detail SAVVY scale invariance analysis with respect to gender and generational age. Chapter 8 presents results from a between-groups factorial experimental design which examines the outcomes of SAVVY in optimal and suboptimal interaction scenarios.

7 Gender and Age Invariance Analysis of the SAVVY Scale⁵⁴

This chapter addresses *RQ 2: Is savvy invariant across genders and age groups?*, in investigating scale invariance in relation to the demographic characteristics of gender and generational age (Figure 7.1). The potential significance of these two characteristics was explained in Chapter 3 and a brief justification for conducting measurement invariance analysis was given in Chapter 5.

Figure 7.1 Chapter outline: Conceptual and methodological sections



As previously discussed in Chapter 6, the SAVVY scale was administered to $n=563$ members of an online panel. Respondents were recruited to be approximately representative (within the constraints of the panel membership, as detailed in Section 6.6) across the Australian adult population of consumers in terms of gender (male: 50%, female: 49%, undeclared: 1%) and generational age (Gen Y, aged 18–24 years, Gen X, aged 25–39 years, Late Boomers, aged 40–49 years, and Early Boomers, aged 50–59 years).

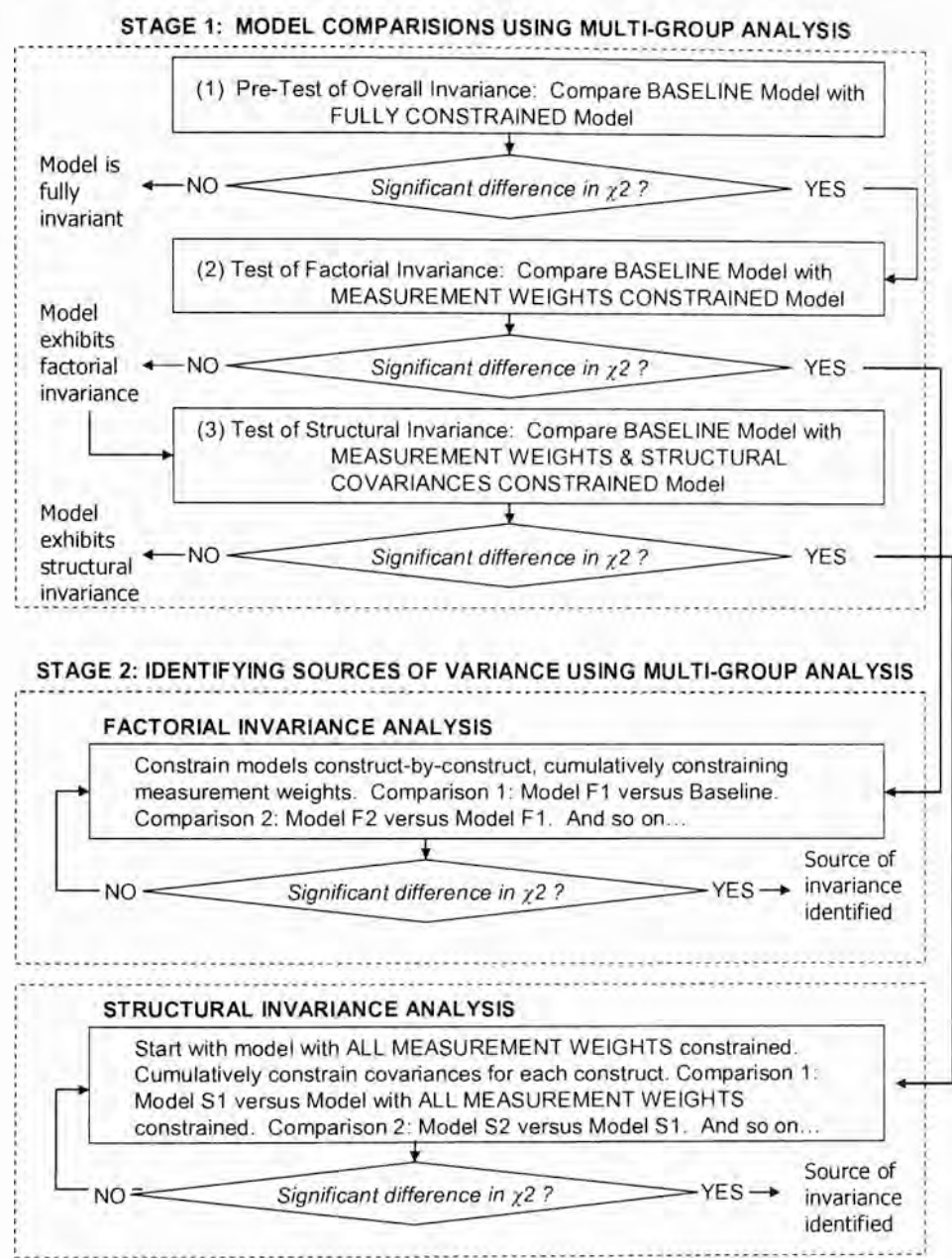
⁵⁴ Sections of this chapter have appeared in the following refereed conference proceedings: Gender invariance was published in proceedings of the *ANZMAC 2007 Conference, N.Z.* Age invariance was published in proceedings of the *Academy of Marketing 2008 Conference, U.K.*

7.1 Step 11: Invariance of the SAVVY scale – Approach to assessment

In following the sequence of steps for scale development outlined in the methodological overview (Figure 5.2), this chapter presents Step 11. The technique of scale invariance analysis adopted in this study uses multi-group CFA in AMOS structural equation modelling to test whether relations between latent variables with their indicators are identical for different groups or whether there are differences in the cross-group comparisons on the constructs represented (Byrne 2004, Byrne, Shavelson and Muthen 1989, Vandenberg and Lance 2000). It follows the staged process demonstrated by Byrne (2004) which, firstly, tests for the equivalence of items designed to measure the construct underlying each subscale, and secondly, tests the relations among these underlying constructs (Figure 7.2). In practice this means that measurement invariance tests using multigroup CFA are usually conducted in a series of steps, by progressively testing increasingly constrained models that are nested in previously estimated less constrained models (Byrne 2004, Vandenberg and Lance 2000). As the models are nested within one another, the difference in chi-square between the nested models is also distributed in a chi-square distribution with degrees of freedom equal to the difference in the degrees of freedom of the compared models (Byrne 2004, Cunningham 2007). If the chi-square comparison between the constrained model and the less constrained model yields a statistically significant different chi-square value then we know that some equality constraints do not hold across the population groups.

The process of multigroup measurement invariance analysis using CFA involves simultaneously estimating model fit for the sub-samples. It comprises two broad stages as shown in Figure 7.2. In Stage 1, model fit is calculated for a *baseline* model where none of the measurement parameters are constrained to be equal across the groups. As a pre-test for variance, this baseline model is then compared with a *fully constrained model* where *all* of the parameters (i.e. measurement weights, structural covariances and construct variances) are constrained to equal across the sub-samples. If the comparison of the baseline model with the fully constrained model results in a non-significant chi-square difference then we can conclude that the measurement model is invariant across the sub-samples and no further checks for invariance are required. However, if the fully constrained model is non-invariant then a further series of checks ensue in order to identify the source/s of variance.

Figure 7.2 The process of measurement model invariance testing*



* Process as prescribed by Byrne (2004).
"Multi-group analysis" involves *simultaneous* estimation of sub-samples.

Firstly, comparisons are conducted between the Baseline model and a model which has all Measurement Weights Constrained equal. If there is a significant chi-square difference between these two models, then we conclude that the model is non-invariant in terms of measurement weights. This leads to the implementation of *Factorial Invariance* analysis in Stage 2 in order to pinpoint these differences.

If there is a non-significant difference between the Baseline model and the model with Measurement Weights Constrained equal, then we can conclude that the

measurement model has factorial invariance across the sub-samples, so there is no need for any further Factorial Invariance analysis.

Continuing the process of analysis and elimination, the Baseline model is next compared against a model where the Measurement Weights and Structural Covariances are constrained equal. If this comparison is non-significant then we can conclude that the measurement model has structural invariance across the sub-samples so there is no need for any further *Structural* Invariance analysis. If a significant difference does occur as a result of this comparison then we conclude that measurement non-invariance is due to structural differences in the measurement model. In this case, structural invariance analysis is conducted in Stage 2.

While it would be statistically possible to follow the same process of increasingly constraining the models to test for invariance of the error variances (which are, after all, also part of the measurement model), this is considered by key proponents of the invariance method approach to be “*excessively stringent and of little practical value*” (Byrne and Watkins 2003, p.174).

In general, researchers agree on the two-stage process of model invariance analysis depicted in Figure 7.2. However, they diverge when it comes to the specifics of the process at Stage 2 where model comparison is used for pinpointing the source of model non-invariance. Some researchers interpret the invariance method by comparing the fully constrained model to models where each set of parameters (i.e. all measurement weights and all structural covariances) is individually unconstrained (e.g. Rosa, Garbarino and Malter 2006). However, Byrne (2004) strongly advocates a process where model constructs are constrained sequentially and then *cumulatively kept constrained* once the invariance of each construct is established. This means that the model under examination becomes gradually more constrained as invariance is established at each step. If the model is found to be non-invariant at any point, then the analysis stops and further investigation occurs at that point. Byrne’s (2004) recommendations are followed here, but, for the sake of comparison, factorial invariance using the technique demonstrated by Rosa, Garbarino and Malter (2006) is also undertaken.

7.2 SAVVY scale measurement invariance analysis for gender

The next section summarises the process of model equivalence testing for gender following the process presented in Figure 7.2. However, prior to conducting multigroup analysis, confirmatory factor analysis using AMOS 7.0 was conducted separately for both the male and female sub-samples. The measurement model fit statistics for both models (Table 7.1) were in the acceptable range, including: relative chi-square below the threshold of 3; CFI measure of incremental fit at or above the threshold of 0.92; and the standardised root mean residual (SRMR) badness-of-fit measure below the cut-off of 0.08 (Hair, Black, Babin, Anderson and Tatham 2006). These model fit statistics indicate that both males and females can be described by the 19-item, 6-construct SAVVY scale developed in Chapter 6.

Table 7.1 Measurement model fit – Gender sub-samples

	n	χ^2	d.f.	p ^a	χ^2 /d.f.	GFI	TLI	CFI	RMSEA (upper,lower)	SRMR
Total sample	563 ^b	393	137	0.000	2.87	0.93	0.92	0.94	.06 (.05, .06)	0.05
Males	282	284	137	0.000	2.07	0.91	0.90	0.92	.06 (.05, .07)	0.07
Females	274	257	137	0.000	1.88	0.91	0.93	0.95	.06 (.05, .07)	0.05

a. Significant p-values are to be expected in a model which has a large number of indicators and especially where there is a sample size n>250 (Hair et al 2006).

b. Seven respondents did not disclose their gender.

In order to more rigorously test the effect of gender on the 19-item SAVVY measurement model, multigroup invariance analysis for gender was conducted following the process described in Figure 7.2. There are two ways that the SAVVY measurement model might vary between males and females; the genders may differ in their measure compositions (identified by measurement weights) and they might differ in the relationship between their latent variables (identified by construct correlations).

Table 7.2, Stage 1, shows the results of the SAVVY measurement model invariance testing. Firstly the pre-test between the unconstrained model (Baseline) and the fully constrained model shows that the model is not completely equivalent for males and females. Hence, the next stage of model comparison was conducted in order to identify the source of non invariance. The chi-square difference test between the unconstrained model (Baseline) and the constrained model with fixed measurement weights (Model 1) showed no significant differences due to gender and it is concluded that males and females have equivalent measure compositions (that is, the items that comprise the SAVVY scale are invariant for both males and females).

So I continue to the next step of Stage 1 of analysis, where I compare the baseline with a model which has both constrained measurement weights and constrained construct correlations (Model 2). In this case, the chi-square difference test indicates a significant difference for Model 2 from the Baseline model. This finding implies that whereas no significant differences exist between males and females on the measurement indicators, there are significant gender differences in the structure of the measurement model. That is, the SAVVY model demonstrates factorial invariance but not structural invariance for gender.

Table 7.2 Gender multi-group analysis: Model fit comparisons and tests for structural invariance

Model Name		χ^2	d.f.	$\chi^2/d.f.$	GFI	TLI	CFI	RMSEA	SRMR	Test of χ^2 Difference			
										Comparative Model	χ^2	$\Delta d.f.$	p
STAGE 1 - MODELS COMPARED													
Baseline	Unconstrained (baseline) model	540.8	274	1.97	0.91	0.92	0.94	.04 (.04, .05)	0.06				
Pre-test for variance	Constrained measurement weights, construct correlations and variances	591.2	308	1.92	0.90	0.92	0.93	.04 (.04, .05)	0.07	Baseline	50.4	34	0.035 *
Model 1	Constrained measurement weights	559.1	287	1.95	0.91	0.92	0.93	.04 (.04,.05)	0.06	Baseline	18.3	13	0.146 NS
Model 2	Constrained measurement weights and construct correlations	583.7	302	1.93	0.90	0.92	0.93	.04 (.04,.05)	0.07	Baseline	42.9	28	0.036 *
STAGE 2 - IDENTIFY SOURCES OF GROUP VARIANCE - STRUCTURAL INVARIANCE ANALYSIS													
Model 3	Model 1 with construct correlations constrained TS and NW	561.8	288	1.95	0.91	0.92	0.93	.04 (.04,.05)	0.06	Model 1	2.7	1	0.100 NS
Model 4	Model 3 with construct correlations constrained TS, NW, NO	561.9	290	1.94	0.91	0.92	0.93	.04 (.04,.05)	0.06	Model 3	0.1	2	0.951 NS
Model 5	Model 4 with construct correlations constrained TS, NW, NO, ML	565.4	293	1.93	0.90	0.92	0.93	.04 (.04,.05)	0.06	Model 4	3.5	3	0.321 NS
Model 6	Model 5 with construct correlations constrained TS, NW, NO, ML, CF	572.6	297	1.93	0.90	0.92	0.93	.04 (.04,.05)	0.06	Model 5	7.2	4	0.126 NS
Model 7 (identical to Model 2)	Model 6 with construct correlations constrained TS, NW, NO, ML, CF, EX	583.7	302	1.93	0.90	0.92	0.93	.04 (.04,.05)	0.07	Model 6	11.1	5	0.049 *

* Significant p< .05

Given the significant difference in the Stage 1 analysis, Stage 2 analysis was consequently performed for each set of construct correlations (Table 7.2, Stage 2). The objective of Stage 2 is to pinpoint the construct correlations responsible for the group variances detected in Stage 1. This analysis involved comparing Model 1 from Stage 1 against models where the construct correlations were cumulatively constrained (i.e. first the correlation between TS and NW was constrained, then TS, NW and NO, and so on). The chi-square difference test found no significant differences until the final construct, EX, was constrained in the model. When the correlations between EX and the other constructs were constrained to equal, then the chi-square difference was significant. This implies that the correlations between the expectations sub-construct and the other sub-constructs in the SAVVY scale are not consistent across the gender sub-samples.

A z-test comparison between latent variable correlations of the male and female samples confirmed this finding (Table 7.3). Four out of the five correlations between the EX construct and the other constructs showed a significant gender-related difference. In all these cases the correlations between EX and the other constructs are higher for females than males. Thus, it appears that, for female consumers, their expectations of the firm are correlated with their Technological Sophistication (.61), Online Network Competency (.61) and, to a lesser extent, their Interpersonal Network Competency (0.53). For male consumers there is almost no correlation between their Expectations and their general consumer competencies (correlations range between 0.11 and 0.29).

Table 7.3 Gender construct correlation matrices and statistical comparison⁵⁵

	Overall						Males						Females						Gender Comparison (p-values) ^a					
	TS	NW	NO	ML	CF	EX	TS	NW	NO	ML	CF	EX	TS	NW	NO	ML	CF	EX	TS	NW	NO	ML	CF	EX
TS	1.00						1.00						1.00						--					
NW	0.58	1.00					0.50	1.00					0.63	1.00					0.02*	--				
NO	0.55	0.43	1.00				0.54	0.39	1.00				0.57	0.47	1.00				0.61	0.24	--			
ML	0.41	0.52	0.29	1.00			0.44	0.49	0.21	1.00			0.39	0.55	0.36	1.00			0.48	0.33	0.06	--		
CF	0.47	0.49	0.25	0.49	1.00		0.35	0.46	0.15	0.44	1.00		0.55	0.48	0.33	0.53	1.00		0.00*	0.76	0.03*	0.17	--	
EX	0.43	0.42	0.46	0.19	0.30	1.00	0.26	0.29	0.28	0.11	0.17	1.00	0.61	0.53	0.61	0.27	0.42	1.00	0.00*	0.00*	0.00*	0.05	0.00*	--

a. z-test of correlation coefficients in the male and female samples
 * Significant p<.05

To conclude, the SAVVY model fits both genders such that no significant differences exist between males and females in terms of the measurement items and constructs in the scale. That is, the findings of this analysis indicate that gender factorial invariance exists for the SAVVY scale. However, it appears that the measure structure is moderated by gender, specifically males and female, differ in the relationship between their expectations and their savvy consumer competencies. A final observation was made, based on model fit: it appears that the SAVVY measure structure describes the female sample better than it does the male sample.

7.3 SAVVY scale measurement invariance analysis for generational age

The next section summarises an empirical analysis of model equivalence testing for generational age groups (defined in Table 7.4). As discussed in Chapter 5, the

⁵⁵ Calculating statistical difference of two correlation coefficients, http://www.fon.hum.uva.nl/Service/Statistics/Two_Correlations.html, accessed Aug 2007. Institute of Phonetic Sciences, Faculty of Humanities, University of Amsterdam.

models for each age group are first assessed separately. Then model invariance testing is conducted sequentially using nested models.

Table 7.4 Age generation definitions

Mackay (1997)^a	Roberts & Manolis (2000)^b	Sirias et al (2007)^b	Present Study: Generational Definitions	Present Study: Age Sub-Samples^c
<i>Not explicitly defined</i> (1980–1989)	<i>Not explicitly defined</i> (1977–1989)	<i>Not explicitly defined</i> (1983–1989)	Generation Y (1983–1989)	18–24 (<i>n</i> =85)
Options generation (1969–1979)	Baby Busters (1965–1976)	Baby Busters (1963–1982)	Generation X (1968–1982)	25–39 (<i>n</i> =237)
Late Baby Boomers (1956–1968)	Baby Boomers (1946–1964)	Baby Boomers (1945–1962)	Late Baby Boomers (1958–1967)	40–49 (<i>n</i> =133)
Early Baby Boomers (1946–1955)			Early Baby Boomers (1948–1957)	50–59 (<i>n</i> =97)

a. Based on Australian population.
b. Based on United States of America population.
c. Survey was conducted in Australia in 2007.

CFA using AMOS 7.0 was conducted separately for each of the four age-group sub-samples. The measurement model fit statistics (Table 7.5) for all groups approached the acceptable range especially for the middle two age groups, the Gen X and Late Boomer sub-samples. Across the four age groups the relative chi-square is below the cut-off of 3. The GFI measure of absolute fit is above or approaching the threshold of .90 for the older three age groups. For the younger three age groups, the RMSEA is below the upper limit of 0.08 recommended by Hu and Bentler (1999); while the RMSEA is above this cut-off for Early Boomers, it is acceptably below the upper limit of 0.10 recommended by Vandenberg and Lance (2000) and Hair, Black, Babin, Anderson and Tatham (2006). The CFI measure of incremental fit is approaching the threshold of 0.95 (Hu and Bentler 1999) for all except the Early Boomers, and the standardised root mean residual (SRMR) badness-of-fit measure is below the cut-off of 0.08 (Hair et al. 2006), except again for the Early Boomers.

As previously noted, poor fit in a sub-group may suggest that an instrument does not measure the phenomena adequately within the sub-group and a new instrument may need to be developed for that particular subgroup. In the current study, while the findings of the CFA when each sub-group is separately analysed indicates some lower than preferable fit statistics, especially for Early Boomers, all four models approach

acceptable fit. Thus, the invariance analysis process is continued for all four age groups.

In order to more rigorously test the moderating effect of age-group on the 19-item SAVVY measurement model, tests for invariance were conducted simultaneously across these four age-groups (Table 7.6, top section). Significant differences across the four age groups in this combined model were observed for both the measurement weights and construct correlations, indicating the need for multigroup invariance analysis to pinpoint the source of difference.

Table 7.5 Measurement model fit – Age group sub-samples

		n	χ^2	d.f.	p ^a	χ^2 /d.f.	GFI	TLI	CFI	RMSEA (upper,lower)	SRMR
Total sample		563 ^b	393.3	137	0.000	2.87	0.93	0.92	0.94	.06 (.05, .06)	0.05
Age: 18-24	Gen Y	85	191.3	137	0.002	1.40	0.83	0.88	0.90	.07 (.04, .09)	0.08
Age: 25-39	Gen X	237	263.5	137	0.000	1.92	0.90	0.91	0.93	.06 (.05, .07)	0.06
Age: 40-49	Late Boomers	133	195.1	137	0.001	1.42	0.88	0.93	0.94	.06 (.04, .07)	0.06
Age: 50-59	Early Boomers	97	245.3	137	0.000	1.79	0.91	0.83	0.87	.09 (.07, .11)	0.08

a. Significant p-values are to be expected in a model which has a large number of indicators (Hair et al 2006).

b. Eleven respondents were aged 60-79 years.

7.4 Pre-tests of measurement invariance

As recommended by Byrne (2004), a pre-test of the 19-item SAVVY measurement model was conducted where a fully unconstrained model was compared with a fully constrained model across the four sub-samples simultaneously. This found significant chi-square difference in model fit across the sub-samples ($\Delta\chi^2=132.5$, Δ d.f=102, $p=0.02$), indicating that some degree of non-invariance does exist across the sub-samples. Further model comparisons were conducted to establish any sub-sample invariance (Table 7.6) in order to reduce the number of sub-samples in subsequent analysis and enhance the interpretability of the results (Byrne 2004). This sub-group analysis identified no significant chi-square difference between the older two age groups (Late Boomers and Early Boomers, ($\Delta\chi^2=24.0$, Δ d.f=28, $p=0.68$)), thus allowing these to be collapsed into a single sub-sample for invariance analysis. It also found no significant chi-square difference between the younger two age groups (Gen Y and Gen X, ($\Delta\chi^2=39.0$, Δ d.f=28, $p=0.08$)); however, we know from the literature that there are substantial differences in these age groups, thus, for the subsequent analysis, just the Gen X group was included. In the end, therefore, the invariance analysis was conducted on two contiguous generational age-groups (25–39 years and 40–59 years).

Table 7.6 Generational age sub-group invariance analysis

	χ^2	d.f.	$\chi^2/\text{d.f.}$	GFI	TLI	CFI	RMSEA	SRMR	Test of χ^2 Difference ^a		
									χ^2_2	$\Delta\text{d.f.}$	p
4 Age Groups (18-24, 25-39, 40-49, 50-59)											
Unconstrained model	896.1	548	1.64	0.86	0.90	0.92	0.03	0.08			
Constrained measurement weights	961.4	587	1.64	0.85	0.90	0.91	0.03	0.09	65.3	39	0.005 *
Constrained measurement weights and construct correlations	1011.3	632	1.60	0.85	0.90	0.91	0.03	0.10	115.2	84	0.014 *
Constrained measurement weights, construct correlations and variances	1028.6	650	1.58	0.84	0.91	0.91	0.03	0.11	132.5	102	0.023 *
3 Younger Age Groups (18-24, 25-39, 40-49)											
Unconstrained model	650.5	411	1.58	0.88	0.91	0.93	0.04	0.08			
Constrained measurement weights	698.1	437	1.60	0.87	0.91	0.92	0.04	0.09	47.6	26	0.006 *
Constrained measurement weights and construct correlations	729.6	467	1.56	0.86	0.91	0.92	0.04	0.10	79.1	56	0.023 *
2 Younger Age Groups (18-24, 25-39)											
Unconstrained model	455.4	274	1.66	0.88	0.90	0.92	0.05	0.08			
Constrained measurement weights	476.0	287	1.66	0.87	0.90	0.91	0.05	0.09	20.6	13	0.081 NS
Constrained measurement weights and construct correlations	494.4	302	1.64	0.87	0.91	0.92	0.05	0.10	39.0	28	0.081 NS
3 Older Age Groups (25-39, 40-49, 50-59)											
Unconstrained model	704.5	411	1.71	0.87	0.90	0.92	0.04	0.06			
Constrained measurement weights	749.6	437	1.72	0.86	0.90	0.91	0.04	0.06	45.1	26	0.011 *
Constrained measurement weights and construct correlations	781.2	467	1.67	0.86	0.91	0.91	0.04	0.07	76.7	56	0.035 *
2 Older Age Groups (40-49, 50+)											
Unconstrained model	440.6	274	1.61	0.85	0.89	0.91	0.05	0.06			
Constrained measurement weights	458.4	287	1.60	0.84	0.89	0.91	0.05	0.07	17.8	13	0.165 NS
Constrained measurement weights and construct correlations	464.6	302	1.54	0.84	0.90	0.91	0.05	0.07	24.0	28	0.682 NS

Age groups: 18-24 (n=85), 25-39 (n=237), 40-49 (n=133), 50-59 (n=97).

* Significant $p<0.05$

7.5 Boomers versus Gen X

Table 7.7 shows the two stages of invariance analysis for the age groups investigated. Stage 1 presents the overall model comparisons while Stage 2 presents the analysis to pinpoint sources of non-invariance in the measurement model. Stage 1 commenced with the two generational age groups being run simultaneously using an unconstrained model (the Baseline model). Next, multi-group analysis was conducted using Model 1 which constrained all measurement weights to be equal across the two sub-samples. The significant chi-square difference resulting from the comparison between Model 1 and The Baseline ($\Delta\chi^2=30.0$, $\Delta d.f. =13$, $p=0.005$) indicates that there are generational differences on measurement structure, and, unlike the gender invariance analysis, factorial invariance was not established across the age groups. As a result we move to Stage 2 to pinpoint the source of difference. Two approaches to within-factor invariance testing were applied: Stage 2A presents the cumulative approach advocated by Byrne (2004) while Stage 2B presents the approach demonstrated by Rosa, Garbarino and Malter (2006). With Byrne’s (2004) approach a sequence of models is tested, with each *cumulatively* constraining the indicators of a

particular construct. A source of non-invariance is identified when a model comparison test using chi-square difference is significant. Using Byrne’s approach it is concluded that neither CF nor TS is invariant across the two age groups and this is pinpointed to items CF1, CF3 and TS3. The alternative approach of Rosa, Garbarino and Malter (2006) (Stage 2B in Table 7.1) confirms the significant differences arose only when the CF and TS constructs were involved.

Table 7.7 Generational age group multi-group analysis: Model fit comparisons and tests for multi-group invariance

Model 1	Constrained measurement weights	563.7	287	1.96	0.90	0.91	0.92	.05 (.04, .05)	0.06	Baseline	30.0	13	0.0047	*
STAGE 2A- IDENTIFY SOURCES OF GROUP VARIANCE - FACTORIAL INVARIANCE - Cumulatively constrained models ^b														
Model 2	Baseline Model with meas. weights on NW constrained equal	533.8	275	1.94	0.90	0.91	0.93	.05 (.04, .05)	0.06	Baseline	0.1	1	0.752	NS
Model 3	Model 2 with meas. weights on NO constrained equal	536.1	279	1.92	0.90	0.91	0.93	.05 (.04, .05)	0.06	Model 2	2.3	4	0.681	NS
Model 4	Model 3 with meas. weights on ML constrained equal	537.1	281	1.91	0.90	0.91	0.93	.04 (.04, .05)	0.06	Model 3	1.0	2.0	0.607	NS
Model 5	Model 4 with meas. weights on EX constrained equal	538.6	283	1.90	0.90	0.91	0.93	.04 (.04, .05)	0.06	Model 4	1.5	2	0.472	NS
Model 6	Model 5 with meas. weights on CF constrained equal	548.3	285	1.92	0.89	0.91	0.93	.05 (.04, .05)	0.06	Model 5	9.7	2	0.008	*
Model 6a	Model 5 with meas. weight on item CF1 constrained equal	543.6	284	1.91	0.89	0.91	0.93	.05 (.04, .05)	0.06	Model 5	5.0	1	0.025	*
Model 6b	Model 5 with meas. weight on item CF3 constrained equal	546.2	284	1.92	0.89	0.91	0.93	.05 (.04, .05)	0.06	Model 5	7.6	1	0.006	*
Model 7	Model 5 with meas. weights on TS constrained equal	554.3	285	1.94	0.89	0.91	0.93	.05 (.04, .05)	0.07	Model 5	15.7	2	0.000	*
Model 7a	Model 5 with meas. weight on item TS2 constrained equal	539.0	284	1.90	0.90	0.91	0.93	.04 (.04, .05)	0.06	Model 5	0.4	1	0.527	NS
STAGE 2B- IDENTIFY SOURCES OF GROUP VARIANCE - FACTORIAL INVARIANCE- Construct by construct ^c														
Model A	Model 1 with unconstrained meas. weights NW	563.6	286	1.97	0.89	0.91	0.92	.05 (.04, .05)	0.06	Model 1	0.1	1	0.752	NS
Model B	Model 1 with unconstrained meas. weights NO	561.5	283	1.98	0.89	0.91	0.92	.05 (.04, .05)	0.06	Model 1	2.2	4	0.699	NS
Model C	Model 1 with unconstrained meas. weights ML	562.6	285	1.97	0.89	0.91	0.92	.05 (.04, .05)	0.06	Model 1	1.1	2	0.577	NS
Model D	Model 1 with unconstrained meas. weights EX	562.1	285	1.97	0.89	0.91	0.92	.05 (.04, .05)	0.06	Model 1	1.6	2	0.449	NS
Model E	Model 1 with unconstrained meas. weights CF	554.3	285	1.94	0.89	0.91	0.93	.05 (.04, .05)	0.07	Model 1	9.4	2	0.009	*
Model F	Model 1 with unconstrained meas. weights TS	548.3	285	1.92	0.89	0.91	0.93	.05 (.04, .05)	0.06	Model 1	15.4	2	0.000	*

a. Baby-Boomers defined as respondents aged 40-59 (n=230). Gen-X defined as respondents aged 25-39 years (n=237).
b. Invariance analysis approach advocated by Byrne (2004), which involves comparing cumulatively constrained models against the previously less constrained model
c. Invariance analysis approach adopted by Rosa, Garbarino and Malter (2006), which involves comparing the fully constrained model against each model where the construct of interest is unconstrained.
* Significant p<.05

The two-stage invariance analysis presented in Table 7.7 and the comparison of factor loadings presented in Table 7.8 shows that the importance of the constructs and their indicators differ between the two generational age groups. In particular, the measures in the TS and CF constructs differ. For Boomers, TS3 *"figure out new technology without help from others"* is important while not at all so for Gen X (regression weights for Boomers = 0.72 cf. Gen X = 0.48). Gen X has grown up with technology and rapid technological change, so for them figuring out new technology without assistance is second nature. Whereas for Boomers who didn’t grow up with the

technology, but have had to deal with it as they neared middle-age, figuring out technology is a challenge and a point of pride for those who can manage it self-sufficiently. For consumer self-efficacy there are significant differences between Boomers and Gen X on two of the measures. CF3, the measure of confidence in “*working with large companies to get what I want*”, is more important for Boomers than for Gen X (Boomers = 0.73 cf. Gen-X = 0.59) as is CF1 confidence in “*complaining to a firm*” when my expectations are not met (Boomers = 0.66 cf. Gen X = 0.58).

Table 7.8 Generational age groups - Comparison of measurement weights

Name	Regression Weights ^a		SAVVY scale items ^b
	BOOMER (n=230)	GEN-X (n=237)	
TS1	0.72	0.80	Other people come to me for advice on new technologies.
TS2	0.73	0.76	In general, I am first among my circle of friends to acquire new technology when it appears.
TS3	0.72	0.48	I can usually figure out new high-tech products and services without help from others.
NW1	0.59	0.64	I always know someone to call if I want to find out about the best product or service.
NW2	0.82	0.86	I have a useful network of contacts who can give me up-to-date product information on the latest innovations.
NO1	0.74	0.73	I often check-out chatrooms and bulletin boards to find out about the latest products that are coming.
NO2	0.68	0.64	I'll often see if there is an online community that can help me when I'm looking for a product recommendation.
NO3	0.86	0.88	I'll often seek the opinions of other customers by posting a query about a product on an online bulletin board or chat room.
NO4	0.85	0.85	I enjoy sharing points of view with online acquaintances via bulletin boards and chatrooms.
NO5	0.73	0.80	My best contacts for new product information often include people online that I've never met face-to-face.
ML1	0.67	0.60	When viewing advertising, I can identify the techniques being used to persuade me to buy.
ML2	0.75	0.77	I am familiar with marketing jargon.
ML3	0.87	0.77	I'm really good at cutting through to the truth behind the over-claiming in advertisements.
CF1	0.66	0.58	I am confident at complaining to a firm when they don't give me what I expect.
CF2	0.84	0.87	I am confident at telling organisations what I expect from them.
CF3	0.73	0.59	I am confident at working with large companies to get exactly what I want from them.
EX1	0.73	0.76	I expect companies to make use of my personal information to give me better service.
EX2	0.63	0.73	I like a firm I have bought something from to keep me informed of further offers.
EX3	0.74	0.68	For the products and services that interest me I like to be kept informed anywhere, anytime, including by SMS and email.

a. Standardised regression weights, unconstrained model
b. Macdonald and Uncles (2007)

7.6 Summary

The results of invariance analysis show a significant moderating effect of gender on the *structure* of the SAVVY measurement model and a significant moderating effect of generational age on the *measurement dimensions* of the SAVVY measurement model. These findings may provide justification for treating these two demographics as covariates in certain applications of the SAVVY scale: (i) biological gender as a covariate in an analysis of relationships *between* SAVVY dimensions, and (ii) generational age as a covariate for dimensions of the SAVVY measurement model.

For gender, my initial analysis identified factorial invariance, however, it failed to find structural invariance. Further multi-group invariance analysis pinpointed this structural difference as due to the correlations of the expectations (EX) construct with other constructs in the scale. The implication of this is that there are no significant differences in the SAVVY measure composition for male and female sub-samples.

However, significant gender differences emerge when invariance analysis is used to compare the relations among the constructs in the scale. The findings imply that gender has no significant difference on the SAVVY construct measures. However, if a researcher is interested in the correlations between constructs then they will need to consider gender as an important moderator of the SAVVY scale.

Gender invariance was followed by generational age group invariance analysis. As there were four age groups to start with, I conducted sub-sample analysis and identified that the four groups could be collapsed into two groups along generational lines. Subsequent multi-group invariance analysis was conducted on Boomer and Gen X respondents. This analysis identified factorial non-invariance which means that the SAVVY measure operates differently for the Boomer and Gen X sub-samples. These differences related to the technological sophistication and consumer self-efficacy dimensions of the SAVVY scale. For Gen X respondents, items in the constructs of TS and CF have less importance than for Boomers. Thus, generational age may be an important covariate of consumer savvy. This is something to be borne in mind by both practitioners and researchers intending to apply the measure in their research.

7.7 Discussion

Gender and age are known to have significant effects on consumer-related behaviours. This section followed the examination of the literature presented in Chapter 3 which identified how gender and generational age differences might be manifest across consumer competencies and expectations. It then presented an empirical analysis of members of an online consumer panel.

While gender differences are well known to exist in many types of consumer characteristics and competencies, this analysis found that there were no significant gender differences in the measurement constructs of the consumer SAVVY scale. This analysis did, however, identify that gender may have a moderating effect on the relationships between different types of consumer capabilities.

For generational age, it is known that individuals born in the same ten- to twenty-year period experience similar social, cultural, economic, and technological environments during their development. This explains why each generation develops a certain 'character' and why successive generations are often dissimilar in important ways. This analysis identified significant differences between the successive generations

of Gen X and Boomer consumers on the dimensions of the consumer SAVVY scale. In particular, these differences occurred on the TS and CF constructs.

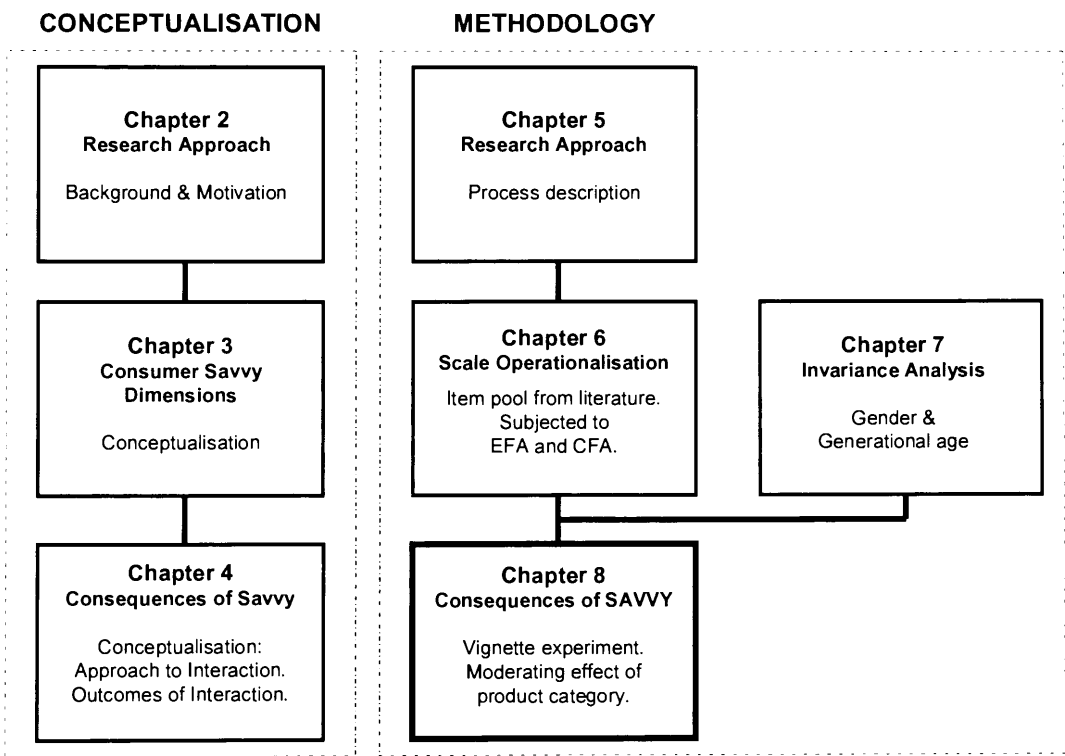
While a finding of factorial and structural invariance for both of the covariates examined in this chapter would have made for a cleaner solution, the reality is that any number of existing and widely used measures of consumer characteristics might suffer from similar limitations. However, most have not been subjected to tests of the same level of rigour as those used in this study. The finding that SAVVY does not demonstrate full measurement equivalence across the genders or across the GenX/Boomer generational divide does not preclude its use – as will be shown in the next chapter – nevertheless, it suggests caution should be exercised when using this scale.

8 Consequences of savvy: Methodology and results

In this chapter the newly developed SAVVY scale is applied in an experimental study to examine the consequences of consumer study (Figure 8.1). The intention is to address the remaining research questions. Firstly, *RQ 3: Does savvy affect consumers' approach to the consumer-firm interaction? RQ 3a: Does it relate to desire for co-creation? RQ 3b: Does it relate to perceptions of value in interacting with the firm? RQ 3c: Does it increase the likelihood of consumer activism activities?*

This chapter also addresses the potential moderating effect of product category by asking: *RQ 4: Are these effects of savvy moderated by: RQ 4a: the hedonic-utilitarian characteristics of products? Or RQ 4b: the technological innovativeness of products?*

Figure 8.1 Chapter outline: Conceptual and methodological sections

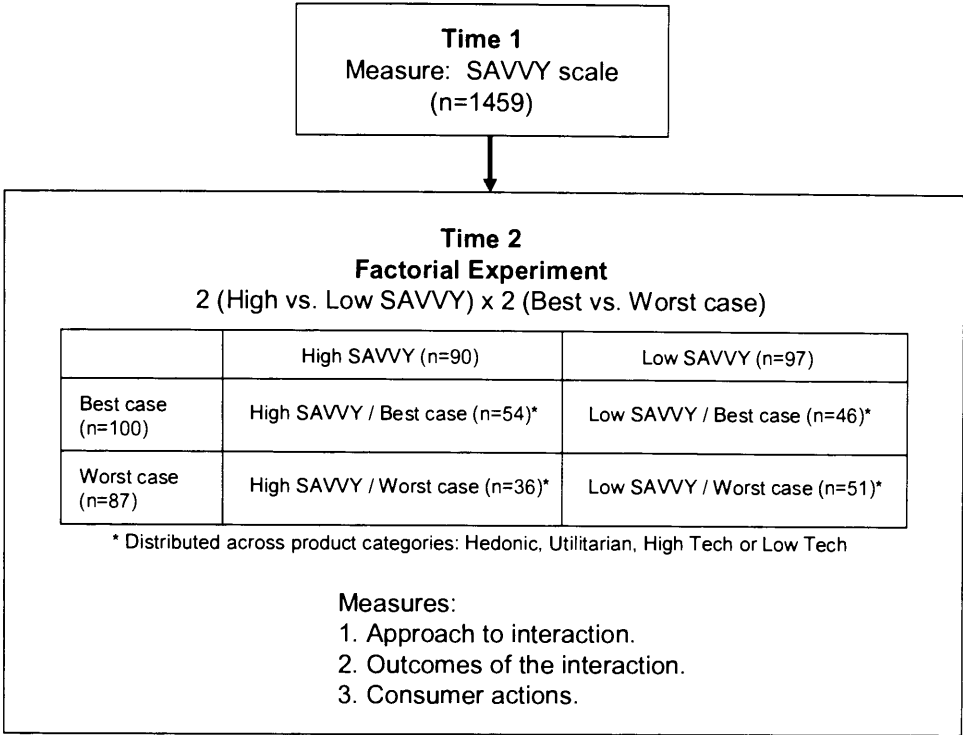


An initial examination of the effect of high/low savvy on the consumer-firm interaction is conducted; methods, procedures and results are described, then findings presented.

8.1 Step 12: Application of the SAVVY scale

In following the sequence of steps for scale development outlined in the methodological overview (Figure 5.2), this chapter presents Step 12, an application of the SAVVY scale. Respondents in this phase of the research participated in an experiment which was conducted over two time periods (Figure 8.2). At Time 1, newly-recruited consumers participated in an online survey which comprised the 19-item SAVVY scale (as developed in Chapter 6). Then, some three to four months later, a sub-sample of these consumers participated in a quasi-experimental vignette-based online survey. The vignette-based factorial design was used to: (a) provide a realistic, but controllable, context of consumer-firm interaction whilst (b) enabling the comparison of interaction contexts across respondents. The Time 2 online survey comprised a brief first-person vignette of an interaction with a hypothetical unbranded firm, followed by measures of: (a) consumers' approach to interaction (expressed in terms of their desire for co-creation), (b) the outcomes of their interaction with the company in the scenario (in terms of perception of being treated as a co-partner and perceived value in the interaction), and (c) their likelihood to engage in consumer activities such as customer complaining/praising to the firm or a third party, word-of-web, or e-publishing. Respondents' composite SAVVY score allowed them to be classified as either 'high savvy' or 'low savvy'. The vignettes presented either a 'best case' or a 'worst case' scenario. The resulting study was a 2 (high/low SAVVY) by 2 (best/worst condition) design. The 2x2 design was repeated across product categories representing hi-tech/low-tech and hedonic/utilitarian product types. Each respondent at Time 2 participated in only one out of eight vignettes (2 interaction types x 4 product types) as part of a between-subjects design.

Figure 8.2 Study design



8.2 The sample frame

The population of relevance is all adult Australian consumers of goods for end-use - some 15 million individuals according to the 2006 Australian Census (ABS 2007). As with Phase 2, the sampling frame was the 140,000+ members of the *PureProfile* online consumer panel. This database aims to be representative of the Australian population, however as noted previously it tends to over representative of the population aged under 40 years and under-representative of the population aged 60-plus) and therefore, it is possible that this panel, like others, is "*biased toward progressive technology innovators*" (Sudman and Wansink 2002, p.57). As my objective was to test a new type of consumer competency that was possibly still making its way through the general population (in the same way as a virus may spread through a population), it was considered an advantage to be testing the scale amongst this potentially biased population.

8.3 Unit of analysis

The focal unit of analysis in this Phase 3 vignette study is the consumer-perceived interaction between the consumer and the firm. The focus is on the

consumer's approach to, their reaction to, and actions resulting from a specific, hypothetical consumer-firm **interaction** as depicted in a first-person vignette.

8.4 Online data collection procedure

Data were collected via online surveys. Existing *PureProfile* members were invited to participate via the usual mechanisms of the panel: i.e. either when they enter the Australian *pureprofile.com* website or by a specially targeted email invitation. At Time 1, *PureProfile* respondents were randomly selected within gender and age categories with the aim of being approximately representative of the Australian population (Table 8.1). The Phase 3 sample was slightly under-representative of males (46% versus ABS: 49%) and over-representative of females (53% versus ABS: 51%). The Phase 3 sample was approximately representative for 20-24 year olds (9% vs. ABS 9%) but like Phase 2 (reported in Chapter 6) the sample was *over-representative* of 25-29 year olds (15% versus ABS: 9%), 30-39 year olds (25% vs. ABS: 19%) and 40-49 years olds (23% vs. ABS: 19%). It was somewhat under-representative of 50-59 year olds (14% vs. ABS: 17%) and 60-69 year olds (10% versus ABS: 11%). It was under-representative of respondents aged 70-plus (2% vs. ABS: 7%).⁵⁶

Time 2 respondents were a sub-set of the Time 1 respondents. Their responses were matched across the two time periods by a unique respondent identification code.

A total of 1559 completed the Time 1 survey online in April-May 2007. Of these, 100 (6.4%) responses were disqualified due to an incomplete or inappropriately completed survey, leaving an effective sample of n=1459 responses. For each respondent a SAVVY score was calculated as a mean of means for the six SAVVY dimensions, thus giving respondents a score which ranged from a minimum of 1 up to a maximum of 5 (Table 8.2). For the composite SAVVY score, skewness approaches zero, indicating a near normal distribution, while kurtosis implies a more-peaked-than-normal distribution, although it is within the range of -2/+2. The composite SAVVY score has an acceptable level of normality, as confirmed by the Kolmogorov-Smirnov test (Table 8.2).

At Time 2 (three to four months later in August 2007) a follow-up survey was administered to respondents from Time 1. All respondents from Time 1 were invited to participate in Time 2, **aside** from those whose aggregate SAVVY score was within 0.25

⁵⁶ A comparison with the ABS population statistics is not possible for the youngest age group (18-19 years) as the Census data reports on a different age range (15-19 years).

of a standard deviation (S.D.) in either direction from the mean SAVVY score. The exclusion of the middle of the distribution (n=182) was an attempt to increase the variance within the sample. This left a potential respondent pool at Time 2 of 1277 respondents (n=608 at the higher SAVVY end of the distribution and n=669 at the lower SAVVY end). Respondents were invited via the panel web-page or via an email invitation to participate in the follow-up study. Follow up emails were sent until the minimum number of respondents had completed each experimental condition. A total of 679 respondents completed the Time 2 study, giving a return response rate of 53%. This is a reasonable return rate given the lag of 3–4 months between the two time periods. Following data cleaning, the total sample completing the Time 2 survey was n=628.

These 628 respondents were divided as follows: (a) Those that obtained a composite SAVVY score that was within one S.D. of the mean (n=441) were screened out from further analysis. Their data was used to develop the new multi-item Co-Creation scale (presented in Section 8.9.3). (b) Those that were at the extremes were retained for the vignette study, i.e. respondents whose total SAVVY score was more than one S.D. greater than the mean (High SAVVY, n=90) or those whose total SAVVY score was more than one S.D. *less* than the mean (Low SAVVY, n=97).

Table 8.1 Sample profiles for Phase 3

	Australian population Aged 15–79 years ¹ (%)	Time 1 (%)	Time 2 (%)	Time 2 High SAVVY (%)	Time 2 Low SAVVY (%)
Gender					
Male	49.4	45.5	43.6	55.7	28.9
Female	50.6	53.2	54.9	44.3	71.1
Missing	--	1.3	1.5	--	--
Age					
19 or younger ²	8.9	2.1	1.8	1.1	1.0
20-24	9.2	9.4	10.2	11.1	5.2
25-29	8.8	15.1	16.4	26.7	9.3
30-39	19.0	24.5	27.1	30.0	19.6
40-49	19.0	22.8	21.5	20.0	24.7
50-59	16.6	13.7	12.1	8.9	19.6
60-69	11.1	9.9	9.2	2.2	20.3
70-79	7.4	2.0	1.6	--	--
Missing	--	0.5	0.1	--	--
n=		1459	628	90	97

Usage of Technologies (5 Use daily, 1 = Use rarely)

	(Mean)	(Mean)
Home cable / broadband internet. ³	4.8	4.3
Use an MMS-enabled (multimedia messaging) mobile phone. ³	3.1	1.1
Use a Bluetooth enabled device. ³	3.3	0.7
Use an electronic personal organiser, such as PalmPilot. ³	2.4	0.4
Use SMS / MMS information service to your mobile phone. ³	3.1	1.1
Access online comparison sites. ³	4.0	1.4
Use online instant messenger. ³	3.8	2.0
n=	90	97

1. ABS (2007) Australian census.

2. This age range is 18–19 years only in the Phase 3 samples due to *PureProfile* 's membership restriction of 18-plus.

3. Significant, $p < 0.01$.

Table 8.2 Summary statistics for SAVVY scale (Phase 3)

	Total SAVVY score ¹	'High SAVVY' Total SAVVY score	'Low SAVVY' Total SAVVY score
Mean	3.47	4.37	2.62
Std. Deviation	0.54	0.24	0.26
Skewness	-0.07	N.A.	N.A.
Kurtosis	0.33	N.A.	N.A.
Minimum	1.37	4.07	1.78
Maximum	5.00	5.00	2.92
n=	1459	90	97

1. Kolmogorov-Smirnov test indicates a normal distribution (w = 0.02, p = 0.09)

The vignette experimental design was intended to obtain roughly equal cell sizes across a 2 x 2 x 4 (High/Low SAVVY by Best/Worst Vignette by Product Category) design, however the eventual distribution was somewhat uneven. Responses were distributed across the best-case/worst-case vignette condition as n=100 and n=87, respectively, and across the product categories as follows: Hedonic n=54, Utilitarian n=53, High Tech n=43, Low Tech n=37. Observation of sub-cells (in Table 8.3) shows that many of these contained less than the minimum thirty respondents. This has implications for analysis using ANOVA. Thus, in subsequent analyses, two separate ANOVA were run: firstly 2 (SAVVY) by 2 (best/worst condition), and secondly, 2 (SAVVY) by 4 (product category).

Table 8.3 Experimental conditions – Sub-sample sizes

	High SAVVY (n=)	Low SAVVY (n=)	Total (n=)
Condition			
Best case	54	46	100
Worst case	36	51	87
Product type			
Hedonic	28	26	54
Utilitarian	23	30	53
High Tech	22	21	43
Low Tech	17	20	37
Condition by Product Type			
Best case / Hedonic	18	11	29
Worst case / Hedonic	10	15	25
Best case / Utilitarian	8	15	23
Worst case / Utilitarian	15	15	30
Best case / High tech	15	11	26
Worst case / High tech	7	10	17
Best case / Low tech	13	9	22
Worst case / Low tech	4	11	15
Total n =	90	97	187

8.5 Sample characteristics

The Time 1 sample has demographic characteristics that are reflective of the overall Australian population in terms of gender and age (Table 8.1). The sample is slightly over-representative of females (Time 1 = 53% versus ABS Stats = 51%) and slightly under-representative of males (46% versus 49%). The Time 1 sample differs from the Australian population by being slightly under-representative of those aged up to 19 and of those aged 50–plus. The age group 20–24 years has very similar representation to the overall population (Time 1 = 9.4% versus ABS Stats = 9.2%). The online panel has an over-representation of those in the working-age categories between 25 to 49 years.

The sample at Time 2 was a subset of the Time 1 sample and is not distinctly different, aside from having slightly fewer males and slightly more 30–39 year olds. Following the vignette experiment, there were two sub-samples of the Time 2 sample: High SAVVY (n=90) and Low SAVVY (n=97). A review of these samples indicates differences in the representation of generational age groups. The younger age groups

(20–24, 25–29 and 30–39 years) are under-represented in the Low SAVVY group while the 25–29 year olds, in particular, are over-represented in the High SAVVY group. There is a strong indication here that Low SAVVY is skewed towards older consumers (particularly those aged 50–plus), while High SAVVY has a skew towards those aged up to 39 years. The 40–49 year old group, which correlates with the Late Boomers age group, is something of a marker generation. This finding gains more significance when compared with the sub-sample invariance analysis conducted in the previous chapter (Table 7.6). This analysis showed that while the SAVVY measure has an equivalent meaning and structure for the two Boomer sub-groups (i.e. 40–49 years and 50–plus), and an equivalent meaning and structure for the two younger Gen Y and Gen X generations (i.e. 18–24 years and 25–39 years, respectively), it does not have an equivalent meaning and structure for the contiguous age groups of Gen X and Late Boomer age groups (i.e. 25–39 years and 40–49 years). That is, there appears to be a generational split which currently occurs between the Gen X age-band and the Late Boomers. Due to the cross-sectional nature of this study, it is impossible to tell here whether this split will remain permanently at this particular point between the generational age groups, or whether the social trend of increasing consumer savvy is simply moving back through the older generational age groups, as technology becomes more ubiquitous, user-friendly and easy to adopt.

Sample analysis also indicated significant differences in gender distributions between the Time 2 High SAVVY and Low SAVVY groups (Table 8.1): Males are over-represented in the High SAVVY group and females are substantially over-represented in the Low SAVVY group, indicating that more females perceive themselves as low SAVVY compared with males. Possibly these gender differences arise because generally males are believed to have higher levels of self-confidence, and these differences in self-confidence apply across many facets of life - but particularly with regards to technology (TS) and online competency (NO). This would be consistent with the gender differences identified in the construct correlations during the invariance analysis in Chapter 7. Significant differences in usage of various technologies between High SAVVY and Low SAVVY respondents provides further validation of the SAVVY scale as a measure of competency (Table 8.1).

8.6 Non-response bias

Time 1. The panel operator had previously warned us that self-selection bias might exist among younger (18–24 year) and older (aged 60–plus) consumers; both of these groups are under-represented in the consumer panel and are known for being unresponsive to surveys. Two additional attempts via email invitations were made to recruit respondents in these under-represented age groups.

Time 2. While the response rate at Time 2 was 53% of those who completed the study at Time 1, an examination of the sample profiles does not indicate the existence of any demographically-based response bias (see Table 8.1). I did, however, notice that it took longer to achieve completion of one of the four product categories (the low-tech refrigerator) and surmised that many respondents balked from participating because they considered the product category ‘boring’.

8.7 Measurement instruments

Time 1. In Time 1, use was made of the 19-item SAVVY scale developed in Chapter 6. Respondents completed the SAVVY scale on 5-point disagree-agree scales. The survey also included a few check items on technology usage, and basic demographics.

Time 2. The design at Time 2 comprised a vignette, a newly developed scale of desire for co-creation, a single-item measure of being perceived as a co-partner, single-item measures of perceived value, and single-item measures of consumer actions. The vignettes and measurement instruments are now described.

8.7.1 Vignettes

Vignette-based stimuli were used rather than relying on respondent recall of a specific previous interaction. Vignettes allow the examination of complex situations while controlling for moderating variables (Wason, Polonsky and Hyman 2002), thus enabling “*the study of human choices when the alternatives are complex bundles that vary in many ways*” (Rossi and Nock 1982, p.9). Careful consideration was given to ensuring that no key variable, or combination of variables, was ignored as part of the vignette design (Wason, Polonsky and Hyman 2002).

Context. In designing the vignette, consideration was given to two contextual measures which originate in the MO literature: competitive intensity and technological turbulence (discussed previously in Chapter 4, section 4.6). Firstly, to create an impression of moderate-high competitive intensity, the introduction to the vignette stated that “*there are several providers of the <product category> in the market*” (Figure 8.3). Product categories (to be discussed shortly) which included several competing brands were selected. Secondly, the contextual issue of technological turbulence was implicit in the product categories selected (detailed shortly). Each of the product categories selected involves an element of technology. Each category is subject to moderate technological turbulence, in that technological developments are continuing to occur, but the product categories have formed and stabilised into a concept that consumers can grasp.

Nature of interaction and vignette development. The consumer expectations of interaction discussed in Chapter 4 (section 4.2) were contrasted to develop a ‘best’ or ‘worst’ interaction vignette according to the consumer-centric marketing literature (Figure 8.3). Thus, in the best case interaction vignette a firm was described as being accessible via multiple channels; providing open and unbiased communication; being responsive to consumer comments; and interested in continuity of connection (‘deep engagement’). In a worst case interaction vignette, the vignette descriptions implied that the firm was poor on each of these elements.

The relevance of these two generic vignette instruments was pre-tested amongst consumers, aged 20–50 years, who were representative of the final sample. Some of the pre-test respondents had English as a second language, which helped to ensure that the language used was clear to all respondents. Pre-test respondents were presented with one ‘best’ case vignette and one ‘worst’ case vignette for different product categories and asked to comment on the following: the realism of the scenario, the typicality of the scenario, aspects of the firm’s behaviour which they notice, ways in which the firm might meet their own expectations, the likely affective and behavioural reactions to a scenario like this, and then any general comments. As a result of this feedback, some small modifications were made to the description of the unbranded firm and to the interaction in order to enhance its realism. The scenarios were also checked with members of the same expert panel which checked the development of the SAVVY scale in Phase 1. These checks of the different vignette versions ensured their internal consistency and plausibility (Wason, Polonsky and Hyman 2000, Fredrickson 1986,

Levy and Dubinsky 1983). Every attempt was made to ensure the variations in the vignette were sufficiently detailed to control respondents' idiosyncratic projections but not so detailed as to overburden respondents (Hox, Kreft and Hermkems 1991). The vignettes did not use company or product brand names.

8.7.2 Vignette design: Product categories

Each vignette presented an interaction in a specific product category. In order to obtain variety in product types, two product type categorisations were used: hedonic versus utilitarian and high- versus low-tech. This meant it was necessary to settle on one product for each of the following categories: hedonic, utilitarian, high-tech, and low tech. Several product categories were pre-tested using a sample of Master of Commerce students (n=22) ranging in age from 18 to 54 years. With their intended categorisation shown in parentheses, these categories were: a titanium-finish fridge freezer with a built-in MP3 player (high-tech), a 400 litre frost-free fridge (low-tech), a mobile phone handset that includes Bluetooth (high-tech), a standard mobile phone handset (low-tech), a portable music player that allows download of MP3 tracks (high-tech), and a portable CD player (low-tech), an electronic games console (hedonic), a digital photo frame (hedonic), a broadband modem (utilitarian), and an external hard drive (utilitarian).

Pre-test respondents were asked to indicate whether any of a list of characteristics applied to that product category. Respondents could select any or all of these characteristics that they believed related to that product category.

A brief description of the purpose of each product was included in the pre-test and in the vignette because some consumers may vary in their familiarity with them. Pre-test respondents were also asked: "*Are these descriptions understandable?*" and were invited to provide any further open feedback. Details of pre-test respondent age range and whether they spoke English as a first or second language were recorded. Again, approximately two-thirds of the pre-test sample had a non-English-speaking background, which was useful for pre-testing the language and clarity of the product descriptions.

The high-tech and low-tech criteria were evaluated as follows:

Low-tech categories

- Simple
- Standard knowledge
- Easy to use
- Basic
- Low-tech

High-tech categories.

- Complicated
- Hard to understand
- Difficult to use
- Sophisticated
- High-tech

A typology of hedonic-utilitarian characteristics was adapted from Batra and Ahtola (1990) and Dhar and Wertenbroch (2000). Respondents could select any or all of the characteristics that they believed related to that product category as follows:

Hedonic categories

- Fun
- Pleasurable
- Exciting
- Agreeable
- Foolish

Utilitarian categories.

- Useful
- Beneficial
- Important
- Valuable
- Wise

The pre-test found that the portable CD player was characterised as low-tech while the MP3 player was viewed as a combination of low- and high-tech. The basic mobile phone handset was viewed as low-tech, while the Bluetooth-enabled handset was viewed more often as a combination of low- and high-tech. The only category where a clear difference existed was for the fridge category where the internet-enabled fridge was characterised as high-tech in almost all instances and the 400 litre fridge was viewed as low-tech in all but one case. Hence the two fridge examples were used to represent high- and low-tech product categories (Figure 8.4). The electronic games console scored highest on hedonism and the external hard drive was more frequently rated on utilitarian dimensions, so these two categories were also selected (Figure 8.5).

Figure 8.3 Generic vignette design

Section	Purpose	'Best' case vignette (generic)		'Worst' case vignette (generic)	
Introduction		"Imagine you are looking to buy a....."			
Category description	Name of category and brief description of product category features.	Vignette 1: "fridge-freezer with built in MP3 player and full internet access" (Hi Tech) Vignette 3: "400 litre frost free fridge" (Low Tech) Vignette 5: "electronic games console" (Hedonic). Vignette 7: "external hard drive" (Utilitarian)	Vignette 2: "fridge-freezer with built in MP3 player and full internet access" (Hi Tech) Vignette 4: "400 litre frost free fridge" (Low Tech) Vignette 6: "electronic games console" (Hedonic). Vignette 8: "external hard drive" (Utilitarian)		
Context	The same context description is used in each vignette and is intended to convey a contextual environment of high choice-intensity.	"There are many providers of such <CATEGORY NAME> available in the market. You are currently speaking with one company. The following describes how the company deals with you."			
Interaction	The vignette depicts a consumer-firm interaction with the following characteristics: Best case vignette: 1. seamless access via multiple channels, 2. open, honest, unbiased, 3. desire on-going connection with consumer, and 4. responsive to the consumer's requests. Worst-case vignette:: 1. accessible via limited channels, 2. does not like receiving or responding to consumer queries, 3. provides information selectively, and 4. gives an impression of being unresponsive and uninterested in the consumer.	"The company you are considering buying from makes their products available across all channels (in store, online, by phone or by mail). The company also provides customer service across all channels. The company appears to be happy to answer any of your queries at any time including via any of the channels. Staff tell you about the advantages and disadvantages of their brand including any limitations it might have versus its nearest rival. The overall impression you get is that the company wants to have an on-going conversation with you, the consumer, even after you have actually purchased the product."	"The company you are considering buying from makes their products available only in limited channels (i.e. only online or only in-store). The company provides very limited customer service. The company does not appear to like receiving your questions and it does not necessarily respond to your queries. Staff tell you only about the advantages of the product; they don't answer your queries about its nearest rival. The overall impression you get is that the company is not interested in an on-going conversation with you, the consumer."		

Figure 8.4 Vignette design for high tech and low tech categories

	<i>Vignette 1</i>	<i>Vignette 2</i>
Category	'Best' case vignette High Tech	'Worst' case vignette High Tech
Category description	Imagine you are looking to buy a titanium finish fridge freezer with a built in MP3 player and full internet access . It diagnoses minor faults on-screen and has a contents page for entering and monitoring food content and expiry dates. This product is generally considered to be a high-tech model.	
Context	There are many providers of such fridges available in the market. You are currently speaking with one company. The following describes how the company deals with you.	
Interaction	The company you are considering buying from makes their products available across all channels (in store, online, by phone or by mail). The company also provides customer service across all channels. The company appears to be happy to answer any of your queries at any time including via any of the channels. Staff tell you about the advantages and disadvantages of their brand including any limitations it might have versus its nearest rival. The overall impression you get is that the company wants to have an on-going conversation with you, the consumer, even after you have actually purchased the product.	The company you are considering buying from makes their products available only in limited channels (i.e. only online or only in-store). The company provides very limited customer service. The company does not appear to like receiving your questions and it does not necessarily respond to your queries. Staff tell you only about the advantages of the product; they don't answer your queries about its nearest rival. The overall impression you get is that the company is not interested in an on-going conversation with you, the consumer.

	<i>Vignette 3</i>	<i>Vignette 4</i>
Category	'Best' case vignette Low Tech	'Worst' case vignette Low Tech
Category description	Imagine you are looking to a buy 400 litre frost free fridge which has a freezer compartment on top and a fridge compartment below. This product is generally considered to be a low-tech model.	
Context	There are many providers of such fridges available in the market. You are currently speaking with one company. The following describes how the company deals with you.	
Interaction	The company you are considering buying from makes their products available across all channels (in store, online, by phone or by mail). The company also provides customer service across all channels. The company appears to be happy to answer any of your queries at any time including via any of the channels. Staff tell you about the advantages and disadvantages of their brand including any limitations it might have versus its nearest rival. The overall impression you get is that the company wants to have an on-going conversation with you, the consumer, even after you have actually purchased the product.	The company you are considering buying from makes their products available only in limited channels (i.e. only online or only in-store). The company provides very limited customer service. The company does not appear to like receiving your questions and it does not necessarily respond to your queries. Staff tell you only about the advantages of the product; they don't answer your queries about its nearest rival. The overall impression you get is that the company is not interested in an on-going conversation with you, the consumer.

Figure 8.5 Vignette design for hedonic and utilitarian categories

	Vignette 5	Vignette 6
Category	'Best' case vignette Hedonic	'Worst' case vignette Hedonic
Category description	Imagine you are looking to buy an electronic games console which acts as a virtual reality simulator. You can use the console to play numerous games, for example, a game of virtual boxing or tennis. You don't need to use any buttons to manipulate what you see on screen. All you have to do is swing your console to indicate the move you want your player to make and there, you've got it on the screen.	
Context	There are many providers of such electronic games consoles available in the market. You are currently speaking with one company. The following describes how the company deals with you.	
Interaction	The company you are considering buying from makes their products available across all channels (in store, online, by phone or by mail). The company also provides customer service across all channels. The company appears to be happy to answer any of your queries at any time including via any of the channels. Staff tell you about the advantages and disadvantages of their brand including any limitations it might have versus its nearest rival. The overall impression you get is that the company wants to have an on-going conversation with you, the consumer, even after you have actually purchased the product.	The company you are considering buying from makes their products available only in limited channels (i.e. only online or only in-store). The company provides very limited customer service. The company does not appear to like receiving your questions and it does not necessarily respond to your queries. Staff tell you only about the advantages of the product; they don't answer your queries about its nearest rival. The overall impression you get is that the company is not interested in an on-going conversation with you, the consumer.

	Vignette 7	Vignette 8
Category	'Best' case vignette Utilitarian	'Worst' case vignette Utilitarian
Category description	Imagine you are looking to buy an external hard drive. Every computer has at least one internal hard drive to store its operating system, programs and information. An external hard drive allows a user to store information on a hard drive that is not inside the computer. The external hard drive is connected to the computer via a high-speed interface cable which allows data to be passed back and forth.	
Context	There are many providers of such external hard drives available in the market. You are currently speaking with one company. The following describes how the company deals with you.	
Interaction	The company you are considering buying from makes their products available across all channels (in store, online, by phone or by mail). The company also provides customer service across all channels. The company appears to be happy to answer any of your queries at any time including via any of the channels. Staff tell you about the advantages and disadvantages of their brand including any limitations it might have versus its nearest rival. The overall impression you get is that the company wants to have an on-going conversation with you, the consumer, even after you have actually purchased the product.	The company you are considering buying from makes their products available only in limited channels (i.e. only online or only in-store). The company provides very limited customer service. The company does not appear to like receiving your questions and it does not necessarily respond to your queries. Staff tell you only about the advantages of the product; they don't answer your queries about its nearest rival. The overall impression you get is that the company is not interested in an on-going conversation with you, the consumer.

8.7.3 Dependent measures

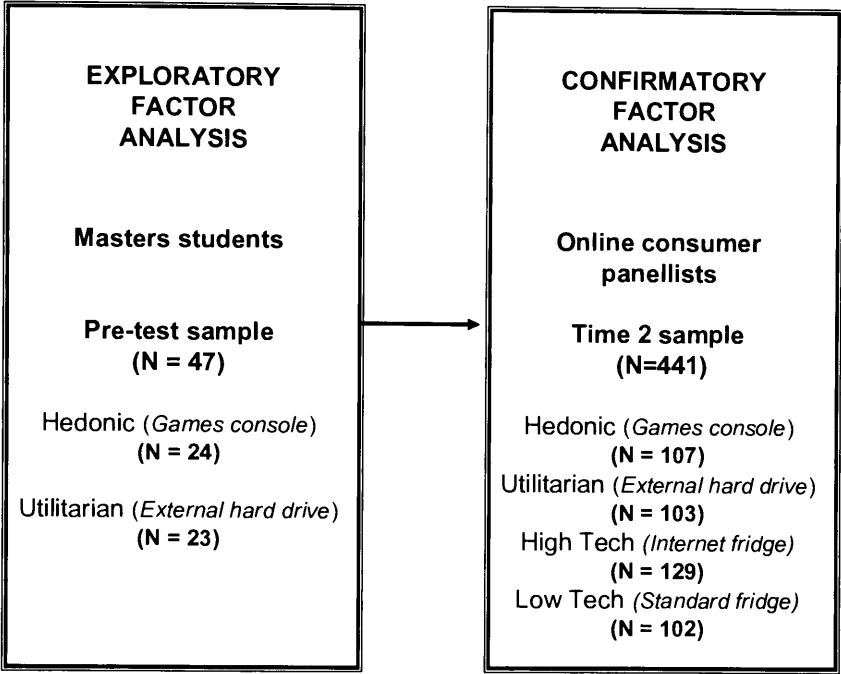
Following the vignette, the survey consisted of a number of outcome measures. These were intended to measure three potential consequences of consumer savvy: the impact on the approach to interaction, the outcomes of the specific interaction and the likelihood of consumer word-of-mouth/activism behaviours (drawing on literature presented in Chapters 2–4). These outcome measures were assessed on the basis of a 5-point Likert scale anchored as follows: 1 - Strongly Disagree, 2 – Disagree, 3 – Neither, 4 – Agree, 5 – Strongly Agree.

a. Approach to the interaction

Desire for co-creation. No existing measures of desire for co-creation were identified during a review of the literature so a new scale was developed. The context of co-creation was technology-based consumer goods (e.g. electronic games console, external hard drive). The items for the proposed Desire for Co-Creation scale were developed from the literature review presented in Chapter 4. As discussed in that previous section, the existing literature identified several aspects of co-creation including conceptualisation, specification, co-production, co-delivery and customisation. Based on this literature review, an initial item pool was generated comprising 16 items. This included 3 items to measure Desire to Co-Conceive, 5 items to measure Desire to Co-Produce, 5 items to measure desire to Co-Develop/Assemble/Distribute and 3 items to measure Desire for Customisation. These 16 items were implemented using 5-point scales anchored from 1 – Strongly Disagree to 5 - Strongly Agree via a paper-based survey to a pre-test sample of N=47 Master of Commerce students. The survey was based on one of the product categories used in the final study: either a Hedonic product category (electronic games console, N=24) or a Utilitarian product category (external hard drive, N=23) (Figure 8.6). Respondents were asked to make any comments about the design of the questions. Following several iterations of EFA, two Co-Creation factors were identified: Desire to Co-Produce (4 items) and Desire to Co-Conceive (3 items); however, discriminant validity was low for these two factors. All other constructs and items developed in the initial item pool were eliminated one-by-one due to low- or cross-loading or because they loaded as a single factor. While co-production is not necessary for co-creation to occur (Vargo and Lusch

2008), it is not surprising for it to be one of the two dimensions of my co-creation measure since the categories examined in this study contain a goods element.

Figure 8.6 Phases of co-creation scale development



A further phase of scale development was conducted with N=441 online consumer panellists. These were the respondents who obtained ‘moderate’ consumer SAVVY composite scores at Time 1 (i.e. they obtained a combined SAVVY score that was within one S.D. of the mean).⁵⁷ These respondents completed the co-creation scale at Time 2 in response to a specific product category (in either a Hedonic, Utilitarian, High Tech or Low Tech product condition). The savvy scale items were assessed on the basis of 5-point Likert scales with the range as follows: 1-Strongly Disagree, 2 – Disagree, 3 – Neither, 4 – Agree, 5 – Strongly Agree.

CFA Measurement model fit analysis of the remaining 7 Co-Creation items was conducted on this sample. AMOS revealed that the items had better fit as a unidimensional scale than as a two-dimensional scale comprising Desire to Co-Produce and Desire to Co-Conceive. Further iterations of CFA were conducted until the final unidimensional Co-Creation scale comprised just 5 items (CMIN=34.43, d.f.=5, p=0.000, CMIN/DF=6.89, GFI=0.97, SRMR=0.02, RMSEA = 0.12 (0.08, 0.15), CFI =

⁵⁷ These respondents were not required for the subsequent ANOVA analysis so their responses were able to be used for initial scale development.

0.98) (See Table 8.4). The squared multiple correlations for these five items were all above the threshold of 0.4. The AVE of the Co-Creation scale of 0.66 was above the threshold of 0.5. Both measures of reliability exceeded the threshold of 0.7: Composite construct reliability score for this scale was 0.91; Cronbach alpha for the five-item scale was 0.86.

Table 8.4 Desire for co-creation scale

		Factor Loading	Squared Multiple Correlation
COPROD2	The company should treat me as an important partner in design and specification of the product.	0.73	0.54
COPROD3	I have a strong desire to work with the company in creating this type of product.	0.83	0.69
COPROD4	I can directly influence the company at all stages of making this product.	0.83	0.69
COCONC1	I would like to help the company come up with ideas for this product category.	0.82	0.68
COCONC2	The company should encourage me to be involved at the early design stage for this product.	0.85	0.72
AVE			0.66
Composite construct reliability			0.91
Cronbach alpha			0.86

b. Outcomes of the interaction

Perceived as a co-partner. This was measured using a single item measure of consumer perception of the firm’s view of their role as a co-partner in the interaction: *“The company views me as an individual co-partner in the development of customised, products and services”*.

Perceived value in the interaction. New items to measure perceived value in the interaction were developed based on the conceptualisation provided by Lawer and Knox (2004). Items were developed for the constructs of value-for-access (*“This company delivers the value that I expect in exchange for access to my personal information.”*), value-for-time (*“The time I spend with this company pays off in terms of the value I get”*) and value-for-attention (*“Focusing my attention on my interaction with this company is worthwhile”*).

c. Consumer actions

A series of single-item behavioural measures were developed specific to the best and worst case vignettes. Following the best case vignette a series of eight praising and positive WOW items were measured. Following the worst case vignette a series of eight complaining and negative WOW items were measured. This design ensured that the behaviours tested were consistent with the treatment received from the hypothetical firm depicted in the vignette. As the behaviours were matched across the best and worst vignettes, this allowed the directional behavioural measures to be collapsed into non-directional generic measures of an action type.

Praising/complaining behaviours: These single item measures of predicted behaviour were intended to measure consumer ‘voice’ and were developed based on the customer complaining literature (Halsted 2002, Szymanski and Henard 2001). Each behaviour was presented as either a positive (praising) behaviour or a negative (complaining) behaviour.

Praising behaviours
(Following the best-case vignette)

- “Compliment the Sales/Customer Service representative”*
- “Pass a compliment to the Manager, or to regional or national headquarters”*
- “Praise the company to a consumer advocacy agency.”*
- “Write a letter of praise about the company to a local newspaper.”*

Complaining behaviours
(Following the worst-case vignette)

- “Complain to the Sales/Customer Service representative.”*
- “Complain to the Manager, or to regional or national headquarters.”*
- “Complain about the company to a consumer advocacy agency.”*
- “Write a letter of complaint about the company to a local newspaper.”*

Online behaviours. These single item measures of online behaviours were intended to measure WOW and e-publishing. They included two single-item measures of WOW via an existing online vehicle (a consumer website or forum).

Positive WOW behaviours
(Following the best-case vignette)

- Praise the company in an online forum.*
- Tell others about the company via a consumer site, such as notgoodenough.org*

Negative WOW behaviours
(Following the worst-case vignette)

- Criticise the company in an online forum.*
- Warn others about the company via a customer grudge website, such as notgoodenough.org.*

They also included two single-item measures of e-publishing. These represent more extreme online behaviours where the consumer is responsible not just for the content but for initiating the vehicle of online communication, i.e. via their own blog or via a fan web site or hate web site that they set-up.

Positive e-publishing behaviours
(Following the best-case vignette)

- Praise the company on your own personal website.*
- Set up a 'fan site' about the company.*

Negative e-publishing behaviours
(Following the worst-case vignette)

- Criticise the company on your own personal website/weblog.*
- Set up a 'hate site' about the company.*

8.8 Experimental procedure

Respondents completed online surveys in their own time. Some three to four months separate the data collection between Time 1 and Time 2.

Time 1. The 19-item SAVVY scale was subjected to reliability analysis for the N=1459 respondents sampled at Time 1. It achieved overall acceptable reliability with Cronbach alpha = 0.89. Composite construct reliability for all constructs was above the threshold of 0.7, except for the Expectation construct which had low reliability (Cronbach alpha = 0.60) and low AVE (0.3) (Table 8.5). This was due to one item EX1 (“I expect companies to make use of my personal information to give me better service”) which had a low factor loading (0.38). It was concluded that the low loading on this particular item was due to recent activities that had been conducted with the online consumer panel by the panel owner, to increase consumer awareness of services available to them via permission-based marketing. As the majority of consumers outside of the panel would not have experienced these activities it would be incorrect to modify the SAVVY scale (which had been previously developed and modified based on

multiple stages of sampling), nevertheless should further sampling confirm the poor fit of the Expectation construct then modifications must be considered.

Link between Time 1 and Time 2 surveys. Following the Time 1 survey, respondents were categorised on the basis of their composite consumer SAVVY score (as described in Section 8.4). Then, within each of the high or low SAVVY groups, they were randomly allocated to one of eight experimental conditions for the Time 2 study.

Table 8.5 Composite reliability and average variance extracted for SAVVY scale

SAVVY Construct	Number of Items	Composite Construct Reliability	Average Variance Extracted
TS	3	0.78	0.55
NW	2	0.87	0.72
NO	5	0.86	0.61
ML	3	0.80	0.45
CF	3	0.82	0.54
EX	3	0.60	0.30

Time 2. In the Time 2 Survey, a contrastive vignette factorial survey design was used where each respondent receives a randomly allocated version of the basic vignette design. Each respondent completed only one vignette. Thus the 2 (High or Low Consumer SAVVY) by 2 (Best or Worst case interaction) factorial-design experiment was a between-subjects design. Although a between-subjects design requires more subjects and has increased variability due to individual differences in subjects, it also has a number of advantages: as each respondent completes only a single vignette it removes the bias that can arise from presentation of two or more scenarios of similar descriptions to the same individual (Alexander and Becker 1978); it avoids the problem of learning effects (Martin 1985); it allows for shorter experimental sessions and makes counter-balancing unnecessary (Martin 1985); and it minimises information overload and fatigue of the respondent (Wason, Polonsky and Hyman 2002).

Respondents were presented with the product category and the scenario and then asked a number of questions about their attitudes towards the interaction and their likely behaviours.

8.9 Results

The n=187 responses from the online vignette experiment were subjected to two sets of between subjects analysis of variance (ANOVA). Firstly, 2x2 ANOVA

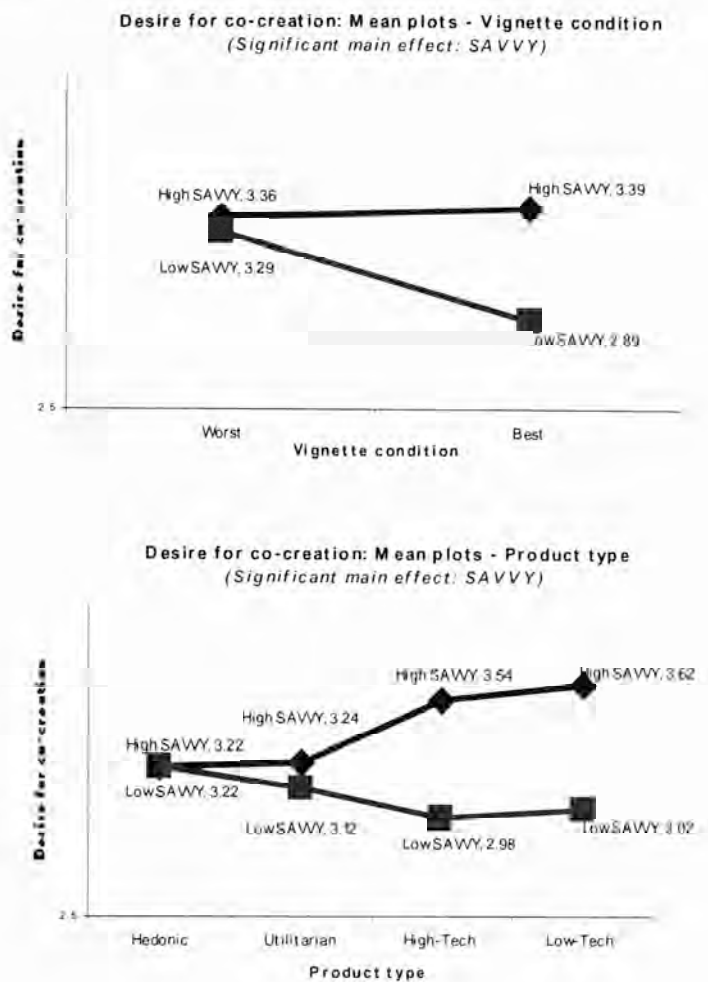
(High/Low SAVVY by Best/Worst Condition) and, secondly, 2x4 ANOVA (High/Low SAVVY by Product Type).

a. Approach to the interaction

Desire for Co-Creation. The 2 (High/Low SAVVY) by 2 (Best/Worst Condition) ANOVA for the 5-item ‘Desire for Co-Creation’ scale found a significant main effect for High/Low SAVVY (M ’s = 3.4 vs. 3.1, $F(1, 186) = 5.7, p < 0.05$). No significant main effect was found for the Best/Worst vignette condition nor was there an interaction effect for SAVVY and Best/Worst vignette condition (Table 8.6). Mean plots for High and Low SAVVY respondents in each condition indicated that High SAVVY respondents had greater desire for co-creation across both Best and Worst vignette conditions (Figure 8.7). High SAVVY respondents’ desire for co-creation was regardless of the treatment received from the specific firm. By contrast, low SAVVY respondents appeared to show more discretion in their desire for co-creation, expressing greater desire for co-creation in the worst case scenario than in the best case scenario (Figure 8.8).

Analysis of the potential moderating effect of product category in the 2 (SAVVY) by 4 (Product Type) ANOVA of the Co-Creation measure found a significant SAVVY main effect (M ’s = 3.4 vs. 3.1, $F(1, 186) = 6.8, p < 0.05$) but no significant main effect or interaction effect for product category (Table 8.7). Thus, it appears that within the context of the technology products included in this study at least, product type does not have a moderating effect on consumer desire for co-creation. These findings appear to indicate that high SAVVY respondents are generally interested in Co-Creation, regardless of treatment received from the firm and regardless of the product context, whereas low SAVVY respondents only become interested in Co-Creation if they are treated to a poor interaction by the firm.

Figure 8.7 Desire for co-creation – Mean plots



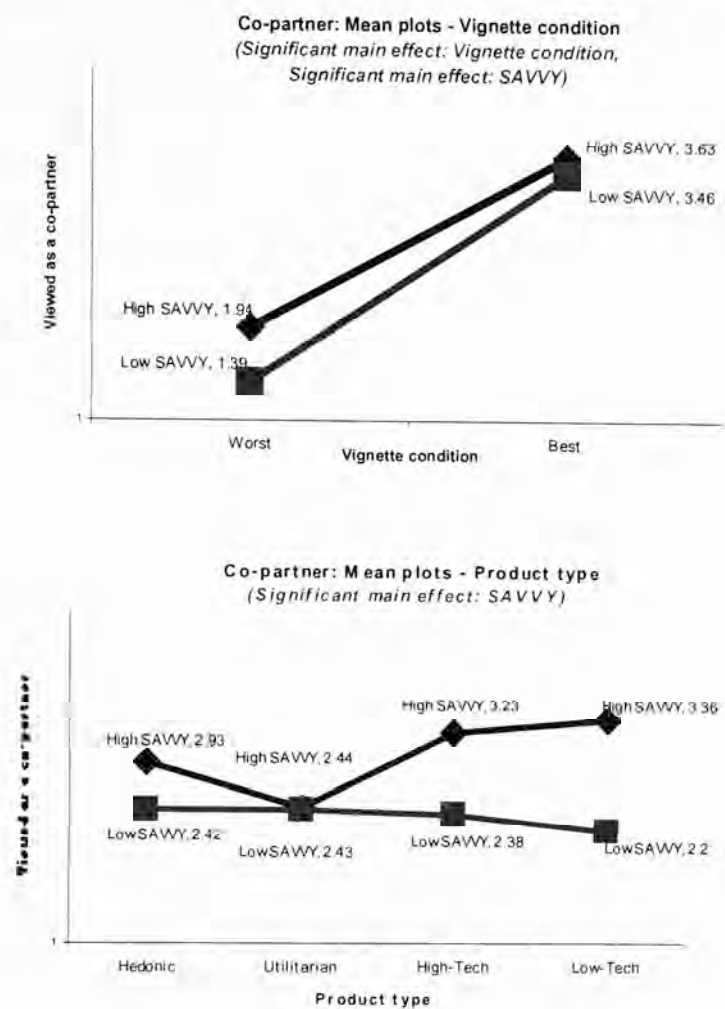
b. Outcomes of the interaction

Viewed as a co-partner. For the 2 (SAVVY) by 2 (Best/Worst Condition) ANOVA for the single-item Co-Partner measure, a significant main effect was found for the Best/Worst vignette condition (M 's = 3.0 vs. 2.4, $F(1, 186) = 193.06, p<0.05$) and a significant main effect was found for the SAVVY measure (M 's = 3.0 vs. 2.4, $F(1, 186) = 7.2, p<0.05$). However, no significant interaction effect (SAVVY by Best/Worst) was found (Table 8.6). Mean plots for High and Low SAVVY respondents indicate common agreement of being “viewed as a co-partner” in the best case vignette but not in the worst case vignette. The results of the ANOVA and the mean plots (in Figure 8.9) indicate that High SAVVY respondents have consistently higher perception than Low SAVVY consumers of themselves being viewed as a co-partner by the firm. This finding appears to be consistent with social cognitive theory (previously discussed

in Chapter 4, see Figure 4.2) which suggests that high self efficacy is associated with productive engagement, while low self-efficacy is more likely to be associated with powerlessness and apathy.

For the 2 (SAVVY) by 4 (Product Type) ANOVA of the single Co-Partner item, a significant main effect was again found for consumer SAVVY (M 's = 3.0 vs. 2.4, $F(1, 186) = 10.44$, $p < 0.001$) such that High SAVVY respondents are more likely to feel perceived as a co-partner than low SAVVY respondents. No significant moderating effect for Product Category was found (Table 8.7). An examination of the mean plots for the Co-Partner item (Figure 8.9) show that the High SAVVY respondents agree that the company views them as a co-partner in the hedonic, high-tech and low-tech product categories, but not in the utilitarian category. By contrast, Low SAVVY respondents do not agree with this statement in any of these four categories (their mean responses cluster around the Disagree end of the 5-point Likert scale). The one product category where High and Low SAVVY respondents share the same response is the utilitarian product (external hard drive) with a mean of 2.4 placing their responses at the Disagree end of the 5-point Likert scale. Two possible explanations arise for this exception: the external hard drive may be perceived as a commodity product with few product attributes that could be designed or modified by the consumer or, alternatively, the external hard drive may be perceived as being too complicated for consumers to understand and therefore to contribute to its design and customisation. Overall, the results from the ANOVA indicate that within the context of the technology products included in this study at least, product type does not have a significant moderating effect on consumer perceptions of being viewed as a co-partner by the firm.

Figure 8.8 Viewed as a co-partner – Mean plots



Perceived value-for-access. Table 8.6 shows the results of the 2 (SAVVY) by 2 (Best/Worst Condition) ANOVA for the measure of value-for-access. The main effect of Best/Worst Condition is significant, and not surprisingly the value derived in the best case scenario is rated significantly higher than in the worst case scenario. The main effect of High/Low Consumer SAVVY is also significant; this is explained by a mean score which is around 0.3 points higher for the High SAVVY respondents, regardless of the best/worst condition. No significant effect for the product moderator is found for value-for-access (Table 8.7).

Perceived value-for-time. A similar finding was obtained for perceived value-for-time. The main effect of Best/Worst Condition is significant and the perceived value derived in the best case scenario is rated significantly higher than in the worst case scenario (Table 8.6). This is explained by a mean score which is on average 0.3 points higher for the High SAVVY respondents in the worst case condition and 0.2

points higher in the best case condition. Once again, no significant moderating effect for product category was found (Table 8.7).

Perceived value-for-attention. The main effect of Best/Worst Condition is significant for the value-for-attention item (Table 8.6). The main effect of High/Low Consumer SAVVY is also significant. No significant moderating effect for product category was found on any of the three items (Table 8.7).

Summary of perceived value measures. Overall, these findings lend support to the hypothesis that High SAVVY consumers are more comfortable in sharing their personal information and are more likely to believe that firms will make effective use of this personal information to assist them. They also believe in focusing their attention on the interaction with the firm and that interacting with the company is a good use of their time. Collectively, these findings can be interpreted as saying that High SAVVY consumers are more interested in investing in the interaction (relationship) with the firm in the scenario than Low SAVVY consumers.

It was hypothesised that a significant interaction effect would exist, such that High SAVVY consumers would be more extreme in their ratings of value (i.e. they would rate value higher in the Best case scenario and lower in the Worst case scenario). However, no significant interaction effect was obtained across any of the three items. Instead, High SAVVY consumers rated the value in the interaction higher regardless of the type of interaction they experienced. This lends support to the conclusion that SAVVY respondents may be more positive (optimistic).

c. Consumer actions

As discussed in Chapter 4, a number of consumer responses are hypothesised to occur as a result of the interaction of a High SAVVY consumer with a firm in the best or worst condition. However, no significant SAVVY effect was identified for the first two categories of praising/complaining to the firm (sales rep or head-quarters), or praising/complaining to a third party firm (consumer advocate or newspaper) (Table 8.6). In addition, no product moderator effect was identified for any of these customer praising or complaining actions (Table 8.7). Thus, high SAVVY consumers are no more likely to praise or complain to the firm or a third party than a low SAVVY consumer, regardless of the interaction context or the product category.

For the category of WOW activities that involve commenting via an online mechanism, no significant SAVVY effect was found for posting comments on a

consumer website (Table 8.6). However, a significant SAVVY effect was found for commenting via on online forum (M 's = 3.4 vs. 2.9, $F(1, 186) = 5.26, p < 0.05$) (Table 8.6). As hypothesised, High SAVVY respondents were more likely to engage in this activity. It was hypothesised that High SAVVY respondents would be particularly active in the Worst case condition, where feelings of being wrongly treated would result in them 'telling the world about it'. However, mean plots (Figure 8.10) show that this is not the case. In fact High SAVVY respondents were more likely to comment via an online forum in the best case interaction. This could be seen as good news for managers. The 2 (SAVVY) x 4 (Product type) ANOVA found no significant main effect for product category although a significant SAVVY main effect was found (M 's = 3.4 vs. 2.9, $F(1, 186) = 7.34, p < 0.05$) (Table 8.7). This is explained by High SAVVY respondents being *least* likely to comment on an online forum for the utilitarian product category of fridges (Figure 8.10). Presumably they were unexcited by this 'boring' category which was the least technologically innovative of the four categories tested.

The other category of e-publishing captures online activities which require much more effort from the consumer; it includes two items: writing their own blog or setting up a fan/hate website. It was not expected that a high proportion of respondents would engage in either of these activities as they represent a high level of online engagement and technological knowledge. Indeed sample profiling of use of technology and applications (Table 8.1) found that both high- and low-SAVVY respondents were likely to use broadband (means were 4.8 'strongly agree' and 4.3 'agree', respectively). However low SAVVY respondents were unlikely to use online instant messenger (mean=2.0 'disagree'), access online comparison sites (mean=1.4 'strongly disagree'), own an MMS-enabled phone (mean=1.1 'strongly disagree') or a Bluetooth device (mean=0.7 'strongly disagree'). High SAVVY respondents were more likely to engage in online instant messenger (mean=3.8 'agree') and accessing online comparison sites (mean=4.0 'agree'), but only moderately likely to own an MMS-enabled phone (mean=3.1 'neither agree or disagree') or a Bluetooth device (mean=3.3 'neither agree or disagree'). Thus it was not expected that large proportions of either of these groups would engage in e-publishing via a blog or via website they create, although clearly high SAVVY respondents had a greater likelihood of doing so.

The 2 (SAVVY) by 2 (Best/Worst Condition) ANOVA found a significant SAVVY main effect for engaging in e-publishing about the company via their own blog (M 's = 3.0 vs. 2.5, $F(1, 186) = 4.98, p < 0.05$) (Table 8.6). Mean plots show that High

SAVVY respondents are more likely to engage in this activity following the best case interaction. Again, this is good news for managers concerned about the risk of consumer terrorism. The 2 (SAVVY) by 4 (Product type) ANOVA found a significant SAVVY main effect (M 's = 3.0 vs. 2.5, $F(1, 186) = 8.09, p < 0.01$) moderated by an interaction between SAVVY and Product (M 's = 3.0 vs. 2.5, $F(1, 186) = 3.53, p < 0.05$) (Table 8.7). The mean plots in Figure 8.10 show that High SAVVY respondents were much more likely to engage in this activity in the High Tech (internet-enabled fridge), Low Tech (standard fridge-freezer), and Hedonic (electronic games console) categories, than in the Utilitarian (external hard drive) category. A surprising result was the number of Low SAVVY respondents who said they would engage in this activity, particularly for the hedonic and utilitarian categories as opposed to the high-tech/low-tech categories. Given their low usage of online instant messenger (62% of Low SAVVY cf. 22% of High SAVVY respondents use it less than once a week), online comparison sites (83% Low SAVVY c.f. 13% High SAVVY use less than once a week) and electronic personal organisers (94% Low SAVVY c.f. 52% High SAVVY use less than once a week) this finding is most likely a result of: (a) lack of respondent understanding of the concept of blogging and therefore confusion and potential compliance error in answering, or (b) sampling error in the hedonic/utilitarian product category.

The final measure of consumer action is the most extreme response to the consumer-firm vignette and involves e-publishing by setting up a fan- or hate-site. The 2 (SAVVY) by 2 (Condition) ANOVA identified no significant results (Table 8.6). The 2 (SAVVY) by 4 (Product type) ANOVA identified no significant SAVVY or Product results, however, it did identify a significant interaction effect (M 's = 1.8 vs. 1.8, $F(1, 186) = 4.24, p < 0.01$) (Table 8.7). The mean plots shows this interaction effect following a similar pattern as seen in the e-publishing via own blog action just described. Once again, Low SAVVY respondents in the hedonic/utilitarian categories said they would be more likely to engage in this activity than High SAVVY respondents. As before, the best explanation would appear to be respondent confusion or sampling error in the Low SAVVY, hedonic/utilitarian product categories.

Table 8.6 Results of 2 (High-Low SAVVY) by 2 (Best/Worst-case) ANOVA

ITEMS**		MEAN				A N O V A Significance Tests (n=187)*		
		Low SAVVY		High SAVVY		Best-Worst Case Vignette Condition	High – Low SAVVY	INTERACTION Best-Worst Case with High- Low SAVVY
		Worst Case (n=51)	Best Case (n=46)	Worst Case (n=36)	Best Case (n=54)			
APPROACH TO THE INTERACTION								
H1:	CO-CREATION: Desire for Co-Creation scale (5-item measure)	3.29	2.89	3.36	3.39	0.13	0.02	0.07
OUTCOMES OF THE INTERACTION								
H2a/b:	CO-PARTNER: The company views me as an individual co-partner in the development of customised, products and services.	1.39	3.46	1.94	3.63	0.00	0.01	0.16
H3a/b:	VALUE-FOR-ACCESS: This company delivers the value that I expect in exchange for access to my personal information.	1.63	3.80	1.89	4.09	0.00	0.05	0.92
H4a/b:	VALUE-FOR-TIME: The time I spend with this company pays off in terms of the value I get.	1.53	3.63	1.86	3.87	0.00	0.03	0.72
H5a/b:	VALUE-FOR-ATTENTION: Focusing my attention on my interaction with this company is worthwhile.	1.65	3.78	1.97	4.04	0.00	0.03	0.79
CONSUMER ACTIONS								
H6a/b:	Praise / complain to the organisation's sales representative.	3.47	4.07	3.17	4.22	0.00	0.66	0.17
	Praise / complain to organisation's headquarters.	3.51	3.35	3.28	3.56	0.75	0.95	0.23
H7a/b:	Praise / complain to a consumer advocacy agency.	2.88	3.04	3.00	2.81	0.95	0.77	0.36
	Praise / complain to a newspaper.	2.76	2.54	2.75	2.65	0.36	0.80	0.74
H8a/b:	WOW via a consumer website	3.53	2.78	3.58	3.22	0.01	0.20	0.32
	WOW via an online forum.	3.00	2.83	3.17	3.56	0.58	0.02	0.15
H9a/b:	E-publishing via own blog.	2.49	2.50	2.72	3.13	0.28	0.03	0.31
	E-publishing by setting up a fan site/hate site.	1.71	1.85	1.69	1.93	0.23	0.83	0.77

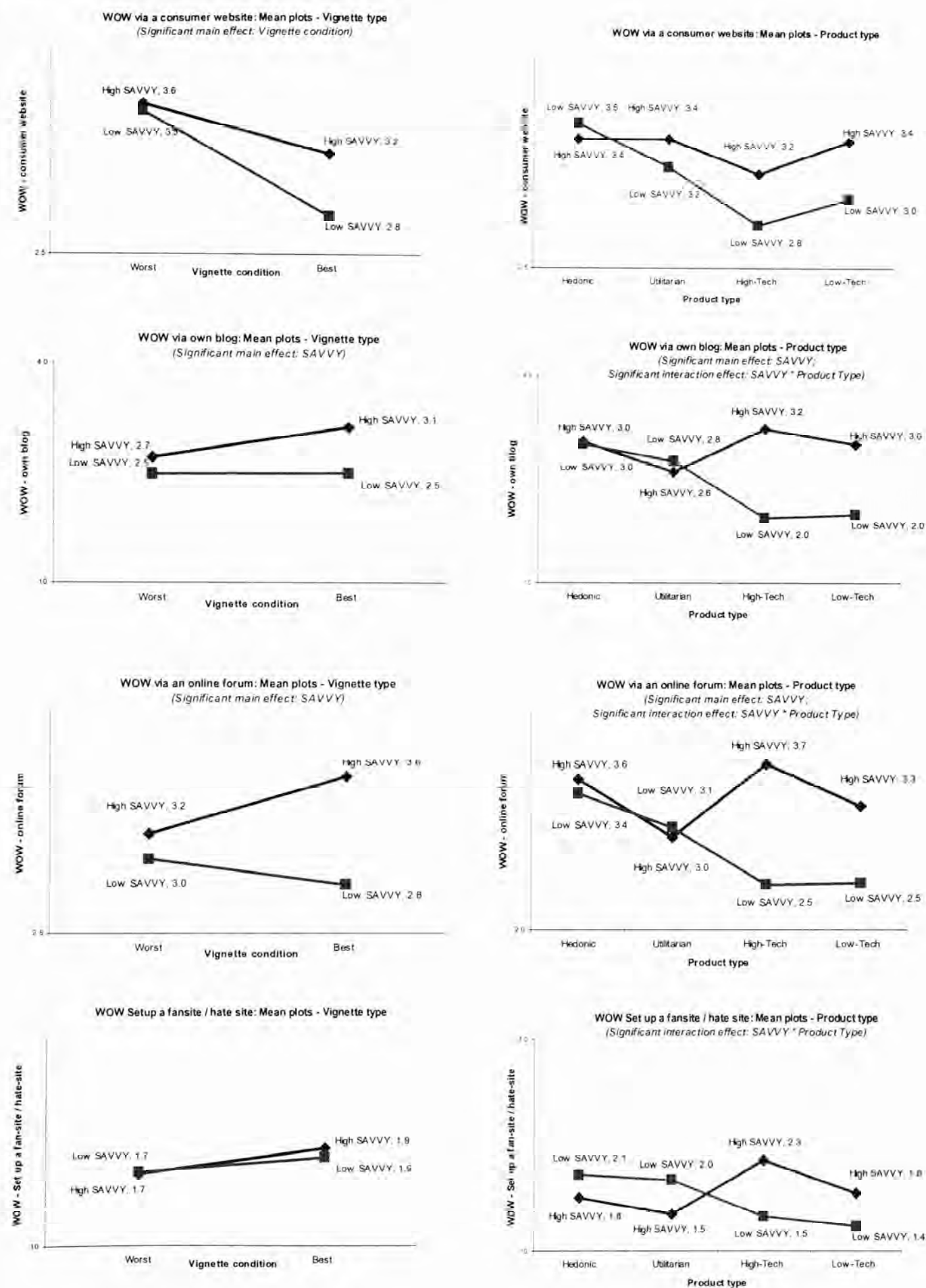
* Sample n=187 (Best case n=100, Worst case n=87, High SAVVY n=90, Low SAVVY n=97). ** Measures range from 1 = Strongly Disagree to 5 = Strongly Agree. Co-creation multi-item measure has been re-calculated to the same scale (originally from 5 = Strongly disagree to 25 = Strongly agree).

Table 8.7 Results of 2 (High-Low SAVVY) by 4 (product type) ANOVA

ITEMS**	MEAN								A N O V A Significance Tests (n=187)*		
	Low Savvy				High Savvy				Product Type	High-Low SAVVY	INTERACTION Product Type with High-Low SAVVY
	Hedonic (n=26)	Utilitarian (n=30)	High-Tech (n=21)	Low-Tech (n=20)	Hedonic (n=28)	Utilitarian (n=23)	High-Tech (n=22)	Low-Tech (n=17)			
APPROACH TO THE INTERACTION											
H1a/b: CO-CREATION: Desire for Co-Creation scale (5-item measure)	3.22	3.12	2.98	3.02	3.22	3.24	3.54	3.62	0.90	0.01	0.19
OUTCOMES OF THE INTERACTION											
H2c/d: CO-PARTNER: The company views me as an individual co-partner in the development of customised, products and services.	2.42	2.43	2.38	2.20	2.93	2.44	3.23	3.36	0.50	0.00	0.19
H3c/d: VALUE-FOR-ACCESS: This company delivers the value that I expect in exchange for access to my personal information.	2.81	2.67	2.71	2.40	3.00	2.83	3.59	3.59	0.58	0.01	0.25
H4c/d: VALUE-FOR-TIME The time I spend with this company pays off in terms of the value I get.	2.54	2.50	2.67	2.40	3.00	2.61	3.36	3.41	0.38	0.00	0.45
H5c/d: VALUE-FOR-ATTENTION: Focusing my attention on my interaction with this company is worthwhile.	2.85	2.67	2.62	2.45	3.21	2.74	3.36	3.65	0.56	0.00	0.25
CONSUMER ACTIONS											
H6c/d: Praise / complain to sales representative.	3.96	3.67	3.33	4.05	3.64	3.61	4.05	4.00	0.46	0.69	0.19
Praise / complain to organisation's headquarters.	3.69	3.37	2.90	3.75	3.43	3.26	3.41	3.76	0.12	0.84	0.47
H7c/d: Praise / complain to a consumer advocacy agency.	3.31	2.87	2.52	3.10	2.96	2.78	3.05	2.71	0.51	0.69	0.32
Praise / complain to a newspaper.	2.92	2.60	2.38	2.70	2.68	2.39	2.95	2.76	0.60	0.80	0.33
H8c/d: WOW via a consumer website	3.54	3.23	2.81	3.00	3.43	3.43	3.18	3.41	0.34	0.27	0.77
WOW via an online forum.	3.42	3.07	2.48	2.50	3.57	2.96	3.73	3.29	0.12	0.01	0.05
H9c/d: E-publishing via own blog.	3.00	2.77	1.95	2.00	3.04	2.61	3.23	3.00	0.21	0.01	0.02
E-publishing by setting up a fan site/hate site.	2.08	2.00	1.48	1.35	1.75	1.52	2.27	1.82	0.46	0.44	0.00

* Sample n=187 (High SAVVY n=90, Low SAVVY n=97). ** Measures range from 1 = Strongly Disagree to 5 = Strongly Agree. Co-creation multi-item measure has been re-calculated to the same scale (originally from 5 = Strongly disagree to 25 = Strongly agree).

Figure 8.9 Consumer actions – Mean plots



8.10 Discussion

The findings are summarised in Table 8.8 (consequences of SAVVY) and Table 8.9 (moderating effect of product). They provide confirmation for *RQ 3a: That consumer SAVVY does relate to desire for co-creation*. For High SAVVY respondents, this effect occurs regardless of whether it is a Best or a Worst case scenario, and regardless of the product category. Low SAVVY respondents are more likely to consider engaging in Co-Creation in the Worst case scenario (possibly in order to fix up the problems associated with that scenario).

The findings also provide partial confirmation of *RQ 3b: that SAVVY relates to consumer perceptions of value when interacting with the firm*. When it comes to a specific interaction, consumer SAVVY has a significant effect on perceptions of being treated like a co-partner and on perceptions of receiving value-for-access, -time and -attention. It was hypothesised that High SAVVY respondents would show greater discretion in their assessment of value in the interaction; that they would award higher levels of value in the interaction to the Best case vignette and lower levels of value in the Worst case vignette. However, this was not the case; instead, High SAVVY respondents regarded the vignette as having higher value in the interaction regardless of whether it was a Best case or a Worst case scenario. This in some ways may appear naive (especially in a scenario where a firm is not treating the consumer very well) or could be due to a general level of confidence and optimism.

This study also tested, *RQ 3c: Does savvy increase likelihood of consumer activism activities?* With regard to specific consumer actions resulting from the vignette, SAVVY was found to have *no* significant effect on praising/complaining to the firm, nor did it have a significant effect on praising/complaining to a third party. However, it did have a significant effect on positive WOW via a consumer forum and e-publishing via the consumer's blog. It was hypothesised that greater levels of consumer activism would be identified in the Worst case condition; however, the opposite effect was identified. High SAVVY consumers were more likely to engage in WOW activities following the Best case vignette than the Worst case vignette. The findings thus give little support to predictions from Szmigin (2003) and others of an increase in consumer terrorism as consumers become increasingly savvy.

Table 8.8 Results of hypotheses testing (RQ 3) - Consequences of SAVVY

		NATURE OF THE SPECIFIC CONSUMER-FIRM INTERACTION	
		'Best' case vignette	'Worst' case vignette
(RQ 3a) APPROACH TO THE INTERACTION			
Desire for co-creation	H1 Significant main effect for SAVVY ¹		
(RQ 3b) OUTCOMES OF INTERACTION			
Perceived as a co-partner		Significant main effect for SAVVY ² H2a – confirmed H2b – not confirmed	
Interaction perceived as providing value-for-access		Significant main effect for SAVVY ² H3a – confirmed H3b – not confirmed	
Interaction perceived as providing value-for-time		Significant main effect for SAVVY ² H4a – confirmed H4b – not confirmed	
Interaction perceived as providing value-for-attention		Significant main effect for SAVVY ² H5a – confirmed H5b – not confirmed	
(RQ 3c) CONSUMER ACTIONS ³			
Give praise / complain to the firm To organisation's sales representative To the organisation's head quarters		H6a/b Not significant.	
Praise / complain to a third party To a consumer advocacy agency. To a newspaper		H7a/b Not significant.	
Positive / Negative WOW WOW via a consumer website. WOW via an online forum		H8a/b Consumer website – Best/Worst main effect ⁴ Online forum – SAVVY main effect ⁵	
Positive / Negative e-publishing e-publishing via own blog e-publishing by setting up a fan/hate site		H9a/b Own blog – SAVVY main effect ⁵ Fan/hate site – Not significant.	

1. Directional hypothesis confirmed: High SAVVY > Low SAVVY.
2. Directional hypothesis only partially confirmed: High SAVVY > Low SAVVY in Best case, but Low SAVVY not > High SAVVY in Worst case vignette.
3. Note that cell sizes below n=30 precluded running ANOVA separately in the Best case and Worst case interaction contexts.
4. Significant main effect for Best-Worst case condition. No main effect for SAVVY. No interaction effect.
5. No main effect for the Best-Worst case vignette was found. Significant main effect for SAVVY (High SAVVY > Low SAVVY). No interaction effect was found.

This study also considered the potential moderating effect of product by asking: *RQ4: Are these effects of savvy moderated by: (4a) the hedonic-utilitarian characteristics of products? (4b) Or the technological innovativeness of products?* (Table 8.8). For the four product category examples tested in this study, no significant product moderator effect was identified. This finding provides some initial evidence that the consumer SAVVY effect may be universal, and not necessarily bounded by specific product contexts.

Table 8.9 Results of hypotheses testing (RQ 4) – Product moderator ¹

	(RQ 4a)	(RQ 4b)	
	Hedonic	Utilitarian High-Tech	Low-Tech
CONSUMER APPROACH TO INTERACTION – MODERATING EFFECT OF PRODUCT TYPE			
Desire for co-creation	H1a/b Not significant ²		
OUTCOMES OF INTERACTION – MODERATING EFFECT OF PRODUCT TYPE			
Perceived as a co-partner	H2c/d Not significant ²		
Perceived value-for-access	H3c/d Not significant ²		
Perceived value-for-time	H4c/d Not significant ²		
Perceived value-for-attention	H5c/d Not significant ²		
CONSUMER ACTIONS – MODERATING EFFECT OF PRODUCT TYPE			
Give praise / complain to the firm			
To organisation's sales representative	H6c/d Not significant ³		
To the organisation's headquarters			
Praise / complain to a third party			
To a consumer advocacy agency.	H7c/d Not significant ³		
To a newspaper			
Positive / Negative WOW	H8c/d		
WOW via a consumer website.	Consumer website – Not significant. ³		
WOW via an online forum	Online forum – Not significant ²		
Positive / negative e-publishing	H9c/d:		
e-publishing via own blog	Own blog – Significant interaction effect ⁴		
e-publishing by setting up a fan/hate site	Fan/hate site – Significant interaction effect ⁵		

1. Note that cell sizes below n=30 precluded running ANOVA separately in the product contexts

2. A significant main effect for SAVVY was found (High > Low SAVVY). No significant main or interaction effect for product category was found.

3. No significant main effects were found. No significant interaction effect.

4. A significant main effect for SAVVY was found (High > Low SAVVY). No significant main for product category was found. However, a significant interaction effect was found.

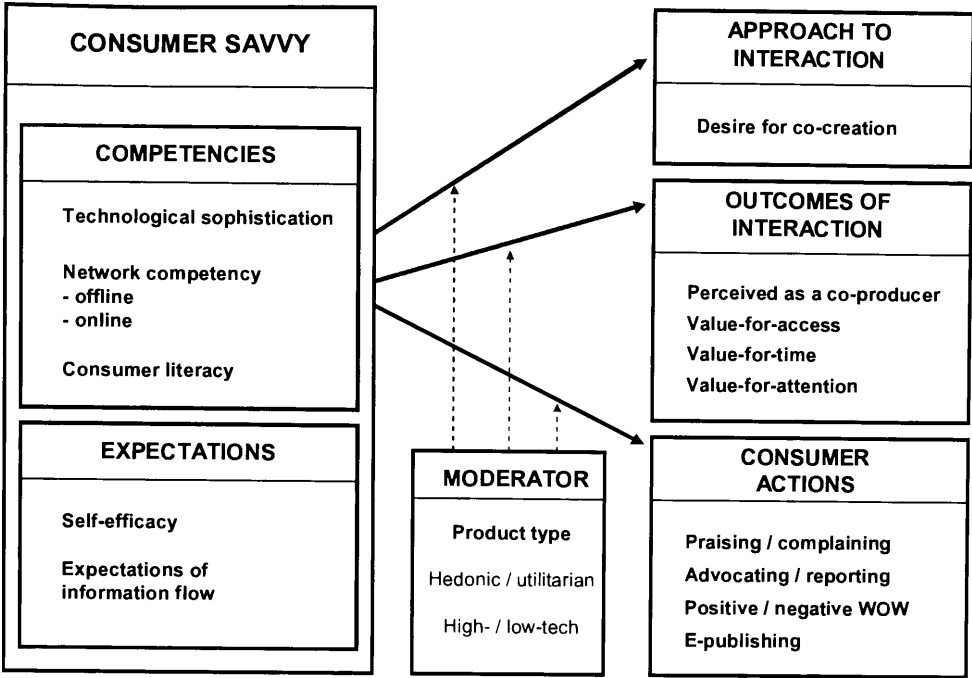
5. No significant main effects were found. However, a significant interaction effect was found.

9 Conclusions

This final chapter summarises key findings and conclusions. It commences by addressing each research question in turn then draws some overall conclusions. It considers conceptual, empirical and measurement contributions of this study. It also discusses the significance of the study from academic, managerial and consumer perspectives. Finally it addresses limitations in the study design and implementation, and identifies areas for extension.

The study was motivated by the desire to establish the truth status of the concept of the *savvy consumer*, a supposedly new force in the technologically connected marketplace; a consumer who is connected, informed and empowered (Chapter 2). The study commenced with a two-stage conceptual literature review to determine, firstly, the claimed dimensions of consumer savvy (Chapter 3), and then developed hypothesised outcomes of interactions between the savvy consumer and firms in different interaction contexts (Chapter 4). The conceptualisation of consumer savvy and hypothesised consequences was followed by several stages of methodology (described in Chapter 5). The dimensions of consumer savvy identified in Chapter 3 were operationalised into a new multi-dimensional measurement SAVVY scale (Chapter 6) using widely accepted psychometric scale development practices. The newly developed SAVVY scale was then subjected to measurement invariance analysis for two potential sources of non-invariance - gender and generational age (Chapter 7). Having spent some time determining the validity, reliability and some limitations of the newly developed measurement tool, the SAVVY scale was applied in an experimental context (Chapter 8). The aim of the experimental vignette was to model potentially optimal and sub-optimal interaction contexts to assess the consequences of consumer SAVVY on the consumer's approach to the interaction and on the outcomes of the interaction (Figure 9.1).

Figure 9.1 Consumer savvy characteristics and consequences



9.1 What are the dimensions of consumer savvy? (RQ 1)

Consumer savvy was defined as *a form of pragmatic marketplace intelligence which enables the consumer to achieve beneficial outcomes from their engagement with the firm* (Chapter 3). It was operationalised as a multi-dimensional, self-perception measure of *an individual’s consumer competency and expectations within the consumer-firm interaction* (Chapter 6).

From the literature, a series of nine themes emerged about the characteristics of consumer savvy (Table 9.1). The first six themes indicated that savvy consumers possess a number of competencies. They are technologically sophisticated, have offline and online network competency, and possess marketing, advertising, and shopping literacy. In addition, three *expectations* themes were identified: consumers have high levels of consumer self-efficacy which gives them confidence in interacting with firms, they expect free information flow between themselves and the firm, and they expect the firm to be accessible via multiple channels.

Following the conceptualisation of consumer savvy, a process of scale development was conducted commencing with these nine propositions (Chapter 6). Starting with an initial pool of 95 items across nine dimensions, an early stage of scale refinement with a sample of n=223 undergraduate and Masters-level students reduced

the item pool to 45 items across seven dimensions. This item pool was then applied to a sample of $n=563$ online consumers.

From the starting point of nine themes the following modifications occurred during the process of scale development/purification: (a) the marketing and advertising literacy dimensions converged into a single dimension; (b) the shopping literacy dimension was eradicated during scale purification; (c) offline and online network competency were clearly two separate dimensions; (d) technological sophistication was a dimension by itself; (e) consumer self-efficacy was a single dimension; and (f) the two consumer expectations dimensions merged into a single measure of consumer expectations of information flow. The resultant measurement model, called the SAVVY scale, comprised the following six dimensions: (1) technological sophistication, (2) online network competency, (3) offline network competency, (4) marketing literacy, (5) consumer self-efficacy, and (6) expectations of information flow. Thus, following assessment across multiple samples and an iterative process of EFA and CFA, the final measurement model with six dimensions and 19 items was identified ($\chi^2 = 393.33$, d.f. = 137; $\chi^2/\text{d.f.} = 2.85$, GFI = 0.93, CFI = 0.93).

Table 9.1 Consumer savvy dimensions – Conceptualisation and operationalisation (RQ 1)

Conceptualisation of consumer savvy dimensions (CH3)	Operationalisation of SAVVY dimensions (CH6)
COMPETENCIES	
Theme 1: Savvy consumers have technological sophistication and can use technology to their advantage in the marketplace.	1. Technological sophistication (3 items)
Theme 2a: Savvy consumers possess <u>offline</u> network competency and can use this skill to their advantage in the marketplace.	2. Network competency (offline) (2 items)
Theme 2b: Savvy consumers possess <u>online</u> network competency and can use this skill for their advantage in the marketplace.	3. Network competency (online) (5 items)
Theme 3a: Savvy consumers possess <u>marketing</u> literacy and can use this skill to their advantage in the marketplace.	4. Marketing literacy^a (3 items)
Theme 3b: Savvy consumers possess <u>advertising</u> literacy and can use this skill to their advantage in the marketplace.	
Theme 3c: Savvy consumers possess <u>shopping</u> literacy and can use this skill to their advantage in the marketplace.	(Shopping literacy dimension was discarded during scale purification)
EXPECTATIONS	
Theme 4: Savvy consumers possess self-efficacy in dealing with organisations.	5. Consumer self-efficacy (3 items)
Theme 5a: Savvy consumers expect free information flow between the organisation and the consumer.	6. Consumer expectations of information flow^a (3 items)
Theme 5b: Savvy consumers expect delivery via multiple channels.	

a. These items converged onto a single dimension during the process of scale purification.

Having established convergent and discriminant validity of the new six-dimensional 19-item SAVVY scale and described its measurement model structure (see Chapter 6), a test of nomological validity was conducted where the SAVVY scale was compared with existing measures of consumer advantage and consumer disadvantage. The SAVVY scale was found to be significantly and positively correlated with existing consumer competency measures (Persuasion Knowledge and Market Mavenism) and significantly and negatively correlated with a measure of consumer vulnerability (Vulnerable to Over-Choice). These findings support the contention that consumer savvy is indeed a measure of consumer advantage within the sample of online consumers studied.

9.2 Is savvy invariant across gender and age groups? (RQ 2)

Before the newly developed savvy scale can be employed as a tool for profiling, it is important to establish whether it is invariant across key demographics. This is particularly the case because consumer savvy is a phenomenon which results from social and technological changes. Two key demographics – gender and generational age – might have an effect on how individuals respond to measurement items, measurement compositions and the relations amongst measurement constructs. Each of these demographics has been found to have some effect on related constructs. For instance (as discussed in Chapters 3 and 7), gender has been shown to have an effect on consumers' approach to sociality and desire for belongingness, and confidence and willingness to engage with technology. A consumer's age is an important mediator of interpersonal relationships and of social cohorts over time and "*a particularly fruitful lens*" through which to examine social processes (Cole and Durham 2007). The socio-cultural environment in which a generation of consumers is raised affects their consumer-related behaviour including their attitudes and behaviours towards marketing, advertising and shopping. Thus, findings from other measures of psychological constructs suggest that an individual's gender and generational age could have a moderating effect on some of the competency and expectations dimensions of consumer savvy, to the extent that these measures have different meanings across the genders or age cohorts.

Thus measurement invariance analysis of the SAVVY scale was conducted for these demographics following the two-stage process shown in Figure 7.2 (as prescribed by Byrne 2004). The first key finding is that the SAVVY scale demonstrates item-level gender invariance – which means the 19 scale items have measurement equivalence for males and for females (Table 9.2). However, a further stage of invariance analysis identified a degree of structural non-invariance for gender. This means that the relationships between the scale dimensions vary a little between the genders. In particular the differences relate to the Expectations dimension and its relationship with the other dimensions in the scale (Table 9.2). Unfortunately one of the limitations of measurement invariance analysis is that there are no guidelines for establishing '*how much non-invariance is too much?*' However, I would argue that this finding is not sufficient to prevent use of the SAVVY scale when profiling gender groups across consumer populations. The implication for researchers is that care must be taken when trying to understand the relationships between savvy dimensions across the genders.

Table 9.2 Findings of SAVVY scale invariance analysis (RQ 2)

	Gender (CH7)	Generational Age (CH7)
STAGE 1: Factorial invariance analysis	Factorial invariance for gender Measurement items are invariant (i.e. equivalent) across the genders.	Factorial non-invariance for generational age Measurement items are invariant across the generational groups <i>except</i> for TS (technological sophistication) and CF (consumer self-efficacy) dimensions
STAGE 2: Structural invariance analysis	Structural non-invariance for gender Structural relationships between scale dimensions are invariant <i>except</i> for the EX (expectations) dimension.	----- Not tested because factorial non-invariance was identified.*

* As per method recommended by Byrne (2004).

The second key finding is that while the SAVVY scale is factorially *invariant* between Late Boomer and Early Boomer cohorts (i.e. those aged 40–49 years and those aged 50–59 years, respectively)⁵⁸ and is factorially *invariant* between concurrent generations of Gen Y and Gen X consumers (i.e. those aged 18–24 years and 25–39 years, respectively)⁵⁹, it is factorially *non-invariant* between Gen X (25–39 years) and Boomers (40–59 years). This means that some of the item measures have different meanings for Boomers and Gen X. This has more serious implications for use of the consumer SAVVY scale. These differences in meaning occur particularly in the constructs of TS (Technological Sophistication) and CF (Consumer Self-Efficacy). An examination of the factor weights indicates that these items have less importance for Gen X respondents than for Boomers. This is most likely because Gen X have grown up with technologies such as TV, computers, mobile devices, etc. as part of their native environment while Boomers have had to adapt to many of these technologies as adults. Not all Boomers would have been able to adapt as easily, thus potentially leading to greater variability on these measures than for younger generations. Thus, the sense of being able to adapt to new technologies may be more of a differentiator for Boomers, explaining the importance placed on these items as measures of consumer competency by Boomer respondents. It means that extra care must be taken in using the scale as a profiling tool across a wide range of age groups.

A broader implication from these findings of non-invariance of the SAVVY measurement model is that it raises questions about other established scale measures which might potentially have a social element. While measurement invariance

⁵⁸ Age as measured in the year 2007.

⁵⁹ Age as measured in the year 2007.

techniques are used in cross-cultural research, the use of measure invariance analysis within a culture is less common, in fact it is “*a road less travelled*” according to one of its proponents Barbara Byrne (2004, p273). Yet, if it was used more frequently, perhaps other similar non-invariant effects might be identified and this would alert scale users of their limitations when interpreting results.

**9.3 Does savvy affect consumers’ approach to the consumer-firm interaction?:
(RQ 3)**

The findings of the experimental study presented in Chapter 8 which tested the hypotheses developed in Chapter 4 are summarised in Table 9.3. They provide confirmation for *RQ 3a: That consumer SAVVY does relate to desire for co-creation*. High SAVVY respondents express significantly greater desire to engage in co-creation and this effect occurs regardless of whether the interaction is optimal or sub-optimal, and regardless of the product category. Low SAVVY respondents are more likely to consider engaging in Co-Creation in a sub-optimal interaction scenario (perhaps in order to fix the problems that they encounter in the scenario). The findings also provide partial confirmation of *RQ 3b: That SAVVY relates to consumer perceptions of value when interacting with the firm*. When it comes to a specific interaction, consumer SAVVY has a significant effect on perceptions of being treated like a co-partner and on perceptions of receiving value-for-access, value-for-time and value-for-attention.

It was hypothesised that High SAVVY respondents would show greater discretion in their assessment of value in the interaction; that they would award higher levels of value in the interaction to the optimal interaction scenario and lower levels of value in the sub-optimal scenario. However, this was not the case. Instead, High SAVVY consumers awarded higher value to the interaction than Low SAVVY consumers, regardless of the nature of the interaction. This in some ways may appear naive in a scenario where a firm is not treating the consumer optimally. However, it may also be an indicator that consumer SAVVY is associated with optimism and a positive approach to interacting with the firm, such that savvy consumers are keen to co-create value, are happy to share access to their information, and give their time and attention to interacting with the firm. This is good news for the firm.

Table 9.3 Consumer savvy consequences – Hypotheses and results (RQ 3)

Hypotheses: Consumer savvy consequences (CH4)	Results: Vignette-based experiment(CH8)
(RQ 3a) APPROACH TO THE INTERACTION	
H1: Desire to engage in co-creation is greater for high CS than low CS.	H1 (Desire to co-create): Significant: High CS > low CS
(RQ 3b) OUTCOMES OF INTERACTION – Best Case	
H2a: Perceptions of being viewed by the firm as a co-partner are more positive for high CS than low CS in a best-case condition.	H2a (Co-partner): Significant
H3a: Perceptions of value-for-access from the interaction are higher for high CS than low CS in a best-case condition.	H3a (Value-for-Access): Significant
H4a: Perceptions of value-for-time from the interaction are higher for high CS than low CS in a best-case condition.	H4a (Value-for-Time): Significant
H5a: Perceptions of value-for-attention from the interaction are higher for high CS than low CS in a best-case condition.	H5a (Value-for-Attention): Significant
(RQ 3b) OUTCOMES OF INTERACTION – Worst Case	
H2b: Perceptions of being viewed by the firm as a co-partner are more negative for high CS than low CS in a worst-case condition.	H2b (Co-partner): <i>Not significant</i>
H3b: Perceptions of value-for-access from the interaction are lower for high CS than low CS in a worst-case condition.	H3b (Value-for-Access): <i>Not significant</i>
H4b: Perceptions of value-for-time from the interaction are lower for high CS than low CS in a worst-case condition.	H4b (Value-for-Time): <i>Not significant</i>
H5b: Perceptions of value-for-attention from the interaction are lower for high CS than low CS in a worst-case condition.	H5b (Value-for-Attention): <i>Not significant</i>
(RQ 3c) CONSUMER ACTIONS	
H6a: Likelihood of giving praise to a firm is higher for high CS than low CS in a best-case condition.	H6a / 6b (Praise / complain): <i>Not significant</i>
H6b: Likelihood of complaining to a firm is higher for high CS than low CS in a worst-case condition.	
H7a: Likelihood of praising the firm to a third party is higher for high CS than low CS in a best-case condition.	H7a / H7b (Third party): <i>Not significant</i>
H7b: Likelihood of complaining about the firm to a third party is higher for high CS than low CS in a worst-case condition.	
H8a: Likelihood of engaging in positive WOW is higher for high CS than low CS in a best-case condition.	H8a / H8b (Positive / negative WOW) Consumer website – <i>Not significant</i> . ¹ Online forum – Significant. ²
H8b: Likelihood of engaging in negative WOW is higher for high CS than low CS in a worst-case condition.	
H9a: Likelihood of engaging in positive e-publishing activities is higher for high CS than low CS in a best-case condition.	H9a / H9b (Positive / negative e-publishing): Own blog – Significant. ² Setting up a fan / hate site – <i>Not significant</i> .
H9b: Likelihood of engaging in negative e-publishing activities is higher for high CS than low CS in a worst-case condition.	

1. No significant SAVVY main effect; however, there was a significant main effect for BEST-WORST condition. Both High and Low SAVVY respondents more likely to use WOW via a consumer website in the WORST condition than in the BEST.

2. Significant main effect for SAVVY (High SAVVY > Low SAVVY).

This study also tested *RQ 3c: Does savvy increase the likelihood of consumer activism activities?* Four types of consumer actions were investigated –

praising/complaining to the firm, praising/complaining to a third party, positive/negative WOW, and positive/negative e-publishing: With regard to the first two categories of activity, consumer savvy was found to have *no* significant effect on praising/complaining to the firm, nor did it have a significant effect on praising/complaining to a third party. Thus high savvy consumers are no more likely to engage in these kinds of activities than low savvy consumers.

Inconsistent results were found for the four online consumer activities. *WOW via posting a comment on a consumer website* was significantly more likely to occur in the worst case interaction than in the best case (so consumers are more likely to engage in negative WOW than positive WOW). However, a significant savvy main effect was found for *WOW via an online consumer forum*; high savvy consumers were more likely to engage in this activity.

No significant effects were found for *e-publishing a fan/hate web site*, but a significant SAVVY effect was found for *e-publishing via my own blog*. The most interesting finding from this section of the study is that while it was hypothesised that greater levels of consumer activism would be identified for high savvy consumers following a suboptimal (worst case) interaction, the opposite effect was identified. High savvy consumers were *more* likely to engage in WOW/e-publishing activities following the *Best* case vignette than the *Worst* case vignette. The findings thus give little support to predictions from Szmigin (2003) and others of an increase in consumer terrorism as savvy consumers come up against firms that do not take a consumer-centric approach. Again, this finding might be regarded as good news for firms.

9.4 Are the effects of consumer savvy moderated by product? (RQ 4)

The findings of product moderator analysis conducted in Chapter 8 based on hypotheses presented in Chapter 4 are summarised in Table 9.4. This analysis considered the potential moderating effect of product by asking: *RQ4: Are these effects of savvy moderated by: (4a) the hedonic-utilitarian characteristics of products? (4b) or the technological innovativeness of products?* (Table 8.8). Four product category examples were tested in this study – hedonic (electronic games console), utilitarian (external hard drive), high tech (internet-enabled fridge freezer) and low tech (frost free fridge freezer). No significant product moderator effect was identified for the consumer approach to the interaction (H1), for the outcomes of the interaction (H2–H5), for

consumer praising/complaining activities (H6 and H7) or for consumer WOW activities (H8). In fact the only significant effect of product was found for the two e-publishing activities (H9) and this was not evidenced by a main effect for Product Type, but by an interaction effect between product and SAVVY.

This finding that product category does not moderate the effect of consumer savvy on the consumer-firm interaction provides some initial evidence that the consumer savvy effect may be generalisable across product categories, at least within the boundaries of consumer technological product categories (as tested in this study).

Table 9.4 Product moderator – Hypotheses and results (RQ 4)

		(RQ 4a)		(RQ 4b)	
		Hedonic	Utilitarian	High-Tech	Low-Tech
Hypotheses:		Results:			
Consumer savvy consequences (CH4)		Vignette-based experiment (CH8)			
CONSUMER APPROACH TO INTERACTION – MODERATING EFFECT OF PRODUCT TYPE					
H1a / H1b: Desire to engage in co-creation is greater for high CS than low CS			H1a / H1b ¹ <i>Not significant</i>		
OUTCOMES OF INTERACTION – MODERATING EFFECT OF PRODUCT TYPE					
H2c / H2d: Perceptions of being viewed by the firm as a co-partner are more positive for high CS than low CS.			H2c / H2d ¹ <i>Not significant</i>		
H3c / H3d: Perceptions of receiving value-for-access are more positive for high CS than low CS.			H3c / H3d ¹ <i>Not significant</i>		
H4c / H4d: Perceptions of receiving value-for-time are more positive for high CS than low CS.			H4c / H4d ¹ <i>Not significant</i>		
H5c / H5d: Perceptions of receiving value-for-attention are more positive for high CS than low CS.			H5c / H5d ¹ <i>Not significant</i>		
CONSUMER ACTIONS – MODERATING EFFECT OF PRODUCT TYPE					
H6c / H6d: Likelihood of giving praise or complaining to a firm is greater for high CS than low CS.			H6c / H6d ² <i>Not significant</i>		
H7c / H7d: Likelihood of praising or complaining to a third party is higher for high CS than low CS.			H7c / H7d ² <i>Not significant</i>		
H8c / H8d: Likelihood of engaging in positive/negative WOW is higher for high CS than low CS..			H8c / H8d ³ <i>Not significant</i>		
H9c / H9d: Likelihood of engaging in positive/negative e-publishing activities is higher for high CS than low CS..			H9c / H9d ⁴ <i>Some interaction effect – but small sample</i>		

- 1. No significant main or interaction effect for product category, although a significant main effect for SAVVY was found.
- 2. No significant main or interaction effects.
- 3. *Consumer websites:* No significant main or interaction effects for WOW via consumer websites.
Online forums: A significant SAVVY main effect for WOW via an online forum, however, no main effect for product category and no interaction effect.
- 4. *e-publishing via own blog:* A significant main effect for SAVVY and a significant interaction effect.
e-publishing via fan web site or hate web site: A significant interaction effect.

9.5 Contributions

The major contributions of this study are a conceptual and an operational definition of consumer savvy, followed by an empirical test of the outcomes of consumer savvy. This study conceptualises the dimensions of consumer savvy, develops an operational and validated measurement scale for this construct, determines the extent of consumer savvy amongst an online panel of permission-based direct

marketing consumers, and provides an initial examination of the outcomes of consumer savvy.

The findings will benefit researchers by making some first steps towards building a formal theory of consumer savvy. The outcomes may go some way to assisting marketing practitioners in separating the hype from the reality in understanding the consumer-marketer interaction when consumers are competent and, empowered and demanding. The conceptual, empirical and measurement contributions are examined briefly in turn.

9.5.1 Conceptual contribution

This study provides a conceptualisation of the savvy consumer concept based on an extensive literature review. The result of this review is a synthesis and unifying framework which identifies and describes dimensions of consumer savvy, including competencies and expectations. Despite the modifications made during the scale development/purification stages of scale development the operationalised SAVVY scale was found to be reasonably consistent with the conceptualisation of consumer savvy originally presented in Chapter 3 (Figure 3.2). In this conceptualisation, the dimensions of consumer savvy were transposed against the background of the communications layers that exist in the technologically-connected marketplace. Thus, *technological sophistication* is a necessity for the savvy consumer in order that they might use and benefit from the ubiquitous technology (*layer 1*) and continuous technological advances in the marketplace. In addition, this level of competency is necessary in order to have *online network competency* to take advantage of the connectivity (*layer 2*) that exists in the technologically-connected marketplace. Online network competency provides consumers with borderless access to new nodes of information and aids horizontal peer-to-peer (customer-to-customer) communication. Old-fashioned offline connections are not forgotten in the conceptualisation, which includes a measure of *offline network competency*. Online/offline network competency provides the consumer with the means to access information (*layer 3*). The information layer potentially provides the consumer with direct access to the firm and its internal workings, as well as the broader marketplace. The uneven supply of information however, leads to the rise of infomediaries to assist consumers in information gathering and evaluation. The

marketing literacy of consumers means that they are able to assess the quality of information sources and use this knowledge to their advantage.

In addition they are able to take advantage of the various new applications (*layer 4*) in the marketplace including one-to-one marketing (where the consumer receives a fully tailored marketing mix), permission-based advertising (which gives the consumer control over the firm's information and allows them to specify relevance of communications), peer-to-peer communication/social marketing (which allows the consumer to collaborate with other consumers and to potentially form powerful collectives) and price negotiation with the firm (by being better informed or through applications such as reverse auctions). In addition *consumer self-efficacy* ensures that consumers have the belief that they can produce valued effects using all of these competencies at all of the layers. The savvy consumer's minimum *expectation* of the firm is that it will provide ready and open information flow between the firm and themselves.

Thus, the findings assist marketing researchers by subjecting the numerous loosely made claims about the characteristics of, and consequences of, savvy (identified in Chapters 3 and 4, respectively), so that researchers have a better understanding of the nature of the 'new' consumer and their adaptation to the information-rich marketplace.

Note that this study makes no attempt to conceptualise the interactions between the outcome constructs presented in Chapter 4. As stated at the commencement of Chapter 1, this study is intended as a first step in conceptualising and establishing the truth status of the consumer savvy concept. Thus it reviews the entire topic from a strategic high-level perspective.

9.5.2 Empirical contribution

This study provides an empirical contribution by measuring variations in consumer savvy within a sample of online permission-based marketing panel consumers. As the savvy consumer concept itself has suffered from lack of precise definition, it is not surprising that it has also lacked empirical evidence. The outcomes from the study will go a long way towards filling this gap. For instance, by (a) developing a way to measure the occurrence of consumer savvy, (b) determining the effects of gender and age on measure invariance, and (c) establishing some boundaries regarding the moderating impact of product type. In so doing it provides managers and

researchers with empirical confirmation of the overall occurrence of the consumer savvy concept and thus helps to determine whether consumer-centricity is a valid new paradigm for marketing or if it should be relegated to a concept for small segments or specific product types only (as per Urban 2005).

9.5.3 Measurement contribution

The study provides a measurement contribution by developing and validating a scale of consumer savvy. This new SAVVY scale can be used by researchers and managers investigating the consumer-firm interaction in any context where they wish to understand the impact and potential of consumer-centric marketing approaches. It will further allow the phenomenon of rising consumer savvy - poetically described as “*the invasion of the body snatchers*” by Wind and Mahajan (2002, p72) - to be tracked over time. Considering the disruptive and costly impacts of operational changes required to make existing businesses more consumer-centric, this new measure has tremendous potential benefit for managers. It would allow businesses to track the rising savvy levels of their customer segments in order to better pick the timing for re-aligning their business to the ‘new’ consumer – who may in fact be some time away before arriving in any great force of numbers.

9.6 Significance

This study of the savvy consumer has significance to researchers, practitioners and consumers themselves.

9.6.1 Academic significance

The contribution of this study is the conceptualisation and operationalisation of consumer savvy, via a new SAVVY measurement scale. The validated scale is useful for any researcher examining aspects of consumer-centricity or wishing to track the evolution of consumer savvy across populations. The selected approach of measure-development and quantification goes a long way towards answering the aforementioned calls for “*hard facts and metrics*” (Gummesson 2004, p21)

The identification of dimensions of consumer savvy assists in understanding the overall construct, while the development of a scale to test consumer savvy is of value to researchers wanting to measure the occurrence and impact of consumer savvy on marketing processes and outcomes. This study assists researchers in understanding consumers' self-perceived competence and how this affects their perceptions of marketing processes and their perceptions of valued outcomes.

9.6.2 Managerial significance

The findings have benefit for practitioners who are under substantial pressure to create more 'consumer-centric' firms to suit the supposedly more savvy consumer. History shows that managers are often pressured to implement new strategies without fully understanding their implications or limitations, such as CRM strategy (discussed in Chapter 1) or as evidenced by the dot.com boom and bust. This study provides valuable empirical evidence to allow managers to commence their assessment of the extent to which they should engage in "*the co-creation of value through personalized interactions that are meaningful and sensitive to the specific consumer*" (Prahalad and Ramaswamy 2004b, p.6).

From a *marketing perspective*, the focus on defining consumer competencies and empowerment provides a degree of formality in discussions of savvy consumers which, hitherto, has been lacking. The six consumer characteristics presented here offer a distinct and comprehensive definition in terms of the consumer's know-how, cunning and ability to achieve the best outcome from interaction with firms and the marketplace in the context of a dynamic technologically-connected environment.

Various practical management uses can be envisaged. The SAVVY scale developed in this study could be used to distinguish consumers with different patterns of scores on the six characteristics – in a similar manner to the shopper typologies provided by Ganesh, Reynolds and Lockett (2007) and Brengman, Geuens, Weijters, Smith and Swinyard (2005) - to see whether they are differentially sensitive to certain marketing tactics and strategies. A company could use the scale to measure and monitor the 'savvy' of their customer base over time to see how they are developing. Or the scale could be used with other measures or to identify distinct segments of consumers, including identifying the relative sizes of segments and what differentiates them in terms of lifestyle, demographics and purchasing characteristics. The use of the

SAVVY scale in consumer profiling might assist management decision-making about customer-centric marketing strategies, such as permission-based marketing, multi-channel strategy, consumer-led brand communities, and open innovation. Such findings might have implications for the firm's operations including both its internal processes and customer-facing procedures.

9.6.3 Consumer significance

It is more typical of strategic marketing research to ask managers their opinions rather than consumers. However, the concept of consumer-centric marketing is based on a number of assumptions of how consumers perceive and act in response to the world around them. Thus, it is logical that consumers should be the focus of investigation. By turning the spotlight on consumers, the findings of this study will not only benefit managers by providing them with greater insight, but will also benefit consumers by, firstly, giving voice to their self-perceptions of their rising consumer savvy, and secondly, by capturing their expectations of 'consumer-centric' marketing processes.

From a *consumer perspective*, the benefits of embodying some or all of the six savvy consumer characteristics include: having a better understanding of product markets, being able to extract value from interactions with firms, and having greater input into marketing processes such as production, distribution, communication and delivery (points noted, if not demonstrated, by other commentators). Importantly, however, consumers will vary in their receptiveness and adaptiveness to the information age. Even those consumers who are savvy will not be equally demanding, active and empowered – something that is only too apparent when the scale is used to distinguish low and high scoring respondents.

Finally, from a *public-policy viewpoint*, it would be of value to track savvy in contexts traditionally associated with consumer disadvantage, such as amongst consumers with low income and low educational attainment, in order to better understand its impact across the entire consumer population, now and progressively into the future. This might be a valuable extension of the scale in a study where economic factors are also examined (as discussed in Section 1.2.3).

9.7 Study limitations

9.7.1 Research approach

The validated scale is useful for any researcher/practitioner examining aspects of consumer-centricity or wishing to track the evolution of consumer savvy across populations. This is demonstrated by the use of the SAVVY scale by the Australian Direct Marketing Association who have used the scale in their recent 'Consumer Insights 2008' study. Consumer Insights (ADMA 2008) is a biannual study used to inform member companies and key stakeholders, including legislative bodies, of consumer attitudes to direct marketing.

With regards to the research approach adopted in this thesis, it is needless to say that there are always alternative approaches that might have been used. In investigating the effect of consumer savvy in the consumer-marketer interaction, there are several alternative approaches which may be appropriate.

(a) *A process-driven qualitative approach:* One alternative might have involved a process-driven qualitative approach to investigate the consumer-firm interaction process in a specific case. This would allow the researcher to drill down into the actual workings of the interaction process between the firm and the consumer. This approach would add value by allowing researchers to track the steps in the interaction process and measure specific components of the interaction. However, while this approach would yield valuable results, it would not solve the issue of lack of quantification of the dimensions of consumer savvy or measurement of its widespread impacts.

(b) *An historical-analytical approach:* Another approach would be an historical or longitudinally-based study to allow comparison of today's consumers with those in previous epochs. As discussed in Chapters 1 and 2, there is an assumption of increasing consumer empowerment and the resultant necessity for consumer-centric marketing approaches. If consumers are indeed becoming more 'savvy', then this is a change occurring now and continuing. An historical study could help to refute or support the increasingly widespread claims of a 'revolution' in consumer power; such an objective is beyond the scope of the current study, although repeated use of the scale over time periods would help to build an historical record.

(c) *Manager perceptions*: Another alternative would involve collecting data based on manager perceptions rather than, or in addition to, those of consumers. This would be a valid approach because the question posed is of strategic importance to firms. Managers would have a valid perspective on the consumer-firm interaction. In addition it is the most commonly used approach for strategic business research. However, the reason that the current study specifically focuses on the consumer perspective is because this is frequently under-researched in developing marketing theory (Bazerman 2001). It is also appropriate that, in considering a concept (the changing nature of the consumer) which is supposed to be driving the requirement for a new approach to business (consumer-centricity), the entity of interest (the consumer) should be the focus of data collection.

9.7.2 Conceptual limitations

In some ways this research project mirrors the approach taken in the MO literature. Like that stream of research, this study takes a strategic viewpoint of the interaction between firms and customers. Like studies in the MO field, the current study examines processes and a generic outcome using cross-sectional analysis (Uncles 2002). The generic outcome in the MO literature is for the benefit of the firm and its 'performance'. From the literature, consumer savvy is generally presumed to be advantageous for the consumer and a precursor to greater success for the consumer. Thus, the performance outcome of the MO literature is roughly equivalent to the 'success' outcome resulting from increased consumer savvy. This study does not take the step from measuring 'savviness' to measuring 'success' of the consumer (indeed it is not clear whether any such measure equivalent to financial performance of the firm exists). Therefore, this study may be subject to some of the same conceptual criticisms directed at MO research. For example, in the MO literature, it is questionable whether the firm's pursuit of MO gives sustainable competitive advantage or is simply a necessity for survival. Similarly, in the current study, it might be asked: 'Is consumer savvy an advantage for a consumer in the consumer-firm interaction, or simply a mandatory competence for survival?' For instance, if all consumers are expected to become involved 'co-creators' then is being a savvy consumer a necessary precursor for all consumers in dealing with consumer-centric firms?

Secondly, in the MO literature it is unresolved whether market-driven firms develop skills and capabilities that are rare, heterogeneous and difficult to imitate or whether in fact they simply have “*the ability ... to learn from the past and visit possible futures*” (Uncles 2000, p iv). Thus, the same might be asked of the set of dimensions of consumer savvy identified in this study: ‘Does consumer savvy involve the development of specific skills and behaviours by the consumer? Or might the consumer’s success simply depend on his/her general ability to learn from history and adapt to the future?’

Neither of these conceptual issues is addressed in this study. However, the development of a conceptualisation and measure of consumer savvy is the first step in allowing further examination of the concept and its consequences, and its implications for consumers and firms.

With regard to the outcomes of consumer savvy, the following conceptual limitations may also occur. The literature on the ‘new consumer’ appears to assert that savvier consumers are more confident, have higher satisfaction, have greater sense of value-achievement and well-being, and that the firms who match their expectations gain greater trust/commitment. Indeed, this is what is expected to be found. However, it is possible that the non-savvy consumer - who is *not* media literate, technologically sophisticated or well connected, for instance - might be ‘blissfully ignorant’ of the potential threats and opportunities posed in the networked world. As a result the low-savvy consumer might have lower expectations of the marketing processes of the firm. This could mean that the outcomes of consumer satisfaction and sense of well-being might potentially be as high – perhaps even higher – than for a more informed, possibly more cynical and anxious, high-savvy consumer. In addition, the lack of access to information alternatives might see the low-savvy consumer rely more heavily on *trust* in and *commitment* to the firm, than the fully informed high-savvy consumer, thus once again their scores might be higher on these dimensions. Therefore, one of the challenges for this study is to understand the different underlying reasons that might generate the same levels of outcome overall for low- and high-savvy consumers.

9.7.3 Scale development limitations

The approach to scale development in marketing research is at a cross-roads, with much on going discussion about the most appropriate paths (see Figure 9.2). As a

researcher using a scale at this point in time, it is somewhat unclear which approach is most appropriate.

Figure 9.2 Approaches to scale development in marketing

	Chzurchill (1979) Scale Purification Procedure	Rossiter (2002) C-OAR-SE Procedure	Finn & Kayande (2005) Multi-variate Generalisability Theory
CONCEPTUAL DEVELOPMENT	Multiple objects of measurement not explicitly considered ¹ . This approach has resulted in the "alpha-oriented" approach.	Object-Attribute-Rater (OAR) stages provide explicit consideration of multiple objects.	Other multiple facets aside from those identified from OAR can contribute variance.
EMPIRICAL VALIDATION	Extensive. Uses correlations from respondent samples to provide numbers as evidence of reliability and construct validity ¹ .	Relies on expert judgement, not empirical evidence.	Empirically tests OAR constructs which they claim is not possible using Churchill (1979) and lacking from Rossiter (2002).
IMPLICATIONS	Overemphasises validation numbers at expense of conceptual rigour. Numbers often misleading.	Increased focus on conceptualisation. BUT too context-dependent. Reduced scope for generalisation because no allowance for empirical generalisation ¹ .	Contributes to Rossiter (2002) approach by adding an empirical generalisation phase which they say allows the validity of constructs to be checked.

¹. Finn & Kayande 2005

The classic Churchill (1979) method of scale development has dominated marketing theory and practice until the new millennium, but more recently there have been increasing calls for less emphasis on numerical validation and greater focus on conceptual development (Rossiter 2002, Finn and Kayande 2005). The Churchill (1979) step-by-step approach is credited with the widespread adoption of an alpha-oriented approach. However, it is also criticised for resulting in misleading findings (Finn and Kayande 2005).

A controversial recent response to this issue has come in the form of the C-OAR-SE procedure (Rossiter 2002). Rossiter’s aim was to completely overhaul marketing’s scale development approach away from Churchill (1979) by providing researchers with an alternative step-by-step procedure. This was to be achieved by re-focusing marketing researchers on the conceptual development stages and de-emphasising the pursuit of unidimensionality through factor analysis and the hunt for, and reliance on, high alphas (Rossiter 2002). The response from marketing academe to-date appears to indicate that C-OAR-SE is valued for its input into the conceptual development stages of scale creation (Diamantopoulos 2005, Finn and Kayande 2005, Forsythe, Liu, Shannon and Gardner 2006). However, it appears that while reminding

researchers of the importance of rigorous conceptual development, C-OAR-SE does not completely address the needs of this study (Finn and Kayande 2005).

Neither does C-OAR-SE fully replace the Churchill (1979) approach to empirical validation (Diamantopoulos 2005, Finn and Kayande 2005). Finn and Kayande (2005) recommend a different approach to testing empirical generalisation, which they refer to as MGT (multivariate generalisability theory). They say this approach has advantages over the traditional Churchill (1979) approach because it is not constrained by the following three limitations: that there is only one object of measurement (respondents), that only items are a facet of generalisation, and that only reflective items should be included (Finn and Kayande 2005).

An indication of the marketing discipline's response to C-OAR-SE would come from finding it implemented in newly published or presented scales research. A fairly extensive review of the published literature has found little evidence of the C-OAR-SE procedure being implemented to date – notable exceptions being Forsythe, Liu, Shannon and Gardner (2006) and Bergkvist and Rossiter (2007). Similarly, due to the recency of this debate there are few examples of the Finn and Kayande technique in the literature. As presented in Chapters 5 and 6, the approach chosen in the current study is an 'augmented-Churchill' approach, which follows the accepted path of scale development while allowing for the integration of some recent ideas from Rossiter (2002), particularly in relation to the conceptualisation stages of scale development.

Reflective indicators rather than formative indicators. Marketing studies have been criticised for relying almost exclusively on classical test theory and its process of scale development, whereby items (i.e. observed variables) composing a scale are perceived as reflective (effect) indicators of an underlying construct (i.e. latent variable) (Jarvis, Mackenzie and Podsakoff 2003, Diamantopoulos and Winklhofer 2001). The alternative measurement perspective is based on formative (causal) indicators and involves the creation of an *index* rather than a scale (Diamantopoulos and Winklhofer 2001). Jarvis, Mackenzie and Podsakoff (2003) provide a set of conceptual criteria for deciding whether a construct should be modelled as having formative or reflective indicators. For each of the constructs in this study, it was determined that the items did not pass one key test of formative measures – that it should be possible to view “*the indicators .. as defining characteristics of the construct*” (Jarvis, Mackenzie and Podsakoff 2003, p.203). Thus, the use of a reflective scale was deemed appropriate for

this study of consumer savvy and the Churchill (1979) process of scale development was adopted.

9.7.4 Measurement limitations

As with most research, there are several measurement limitations in this study including the use of cross-sectional data and self-perception measures. There are risks arising from using the same method to capture inputs and outputs, from using an online survey, and from paying respondents a small reward to participate. There are also risks from social desirability responding. Each of these limitations is now addressed briefly.

1. *Cross-sectional.* This is a cross-sectional study which means that it embodies the implicit assumption that model parameters are stable for some period of time. This assumption enables progress to be made in defining and measuring the concept of consumer savvy. However, it is recognised that, longer-term, the concept is most likely evolving and developing. One way to address this in future research would be to combine the savvy metrics developed here with a process approach, such as a case study method.

2. *Self-perception.* The measures used in this study are based on consumers' self-perceptions. While this is the typical form of data collection in many strategic management studies, there are well-documented limitations of using self-perception and self-report measures. For instance, when measuring an outcome which the respondent has not given much thought to beforehand, such as satisfaction or purchase intention, consumers may be more prone to the 'mere measurement effect'. This occurs where respondents are induced to form judgements that they would otherwise not form, which in turn influences subsequent responses and behaviours to make them more consistent with their expressed judgements (Dholakia and Morwitz 2002). In addition, consumers' perception of several constructs may be influenced by psychological processes such as positive illusions, cognitive consistency and self-serving attribution bias, whose impact depends on the research context and the other variables that are being measured along with a judgment of self-performance (Ailawadi, Dant and Grewal 2004, p. 3–4). Ailawadi et al. claim that individuals may consistently over- or under-estimate their performance. Similarly, when reconstructing the past, consumers may try to make it "*consistent with subjective performance results, conventional story lines, and current beliefs*" (March and Sutton 1997, p.699). The use of a vignette methodology helps to

minimise some of these limitations; for example, it minimises the need for retrospective recall by informants.

3. *Common-method variance.* Another potential limitation in Phase 3 of the study design involves obtaining inputs and outputs from the same respondent. This may lead to common-method variance that occurs when perceptions of performance and other variables of interest are obtained from the same respondents using the same measurement method (Ailawadi, Dant and Grewal 2004). In such cases, the respondents' psychological need for consistency, ego-enhancement or ego-protection is likely to be aroused. Even if the ego is not involved it is possible that the need for consistency means that the reported levels on certain measures are influenced by the respondent's knowledge of the outcomes, for example in MO research, "*there are good reasons to believe that a manager's perceptions of, reporting of and memory of their firm's MO is strongly influenced by the known performance of the firm*" (Wilkinson 2005, p.4). This limitation is minimised in the current study by collecting input (consumer savvy) and output data (desire for co-creation, perceived value, consumer actions) at widely-spaced time periods (with 3–4 months between). This should have facilitated forgetting and helped ensure that a respondent's participation at the earlier stage did not have an impact on their later responses.

4. *Online survey method.* Survey research in general may have a number of disadvantages including lack of control by the researcher, lack of interaction, non-response bias, self-reporting bias and socially desirable responding. Similarly, with online surveys, the researcher cannot control in what setting the consumer participates in the survey. However, this problem exists with any survey where its administration is not under the researcher's direct supervision (Birnbbaum 2001, 2000). Previous studies have found a reasonably high level of convergence between lab and web methods; for example, consistent results for surveys, scales, and experimental variables measured via the web and in a lab setting have been found (Krantz and Dalal 2000). Furthermore, survey research is one of the most commonly used methods of gathering data in strategic marketing research.

5. *Response bias resulting from financial reward.* There is a risk with consumer panels which involve a reward scheme that responses are biased to those consumers who are motivated by the financial reward. However, generally these rewards are very small and not enough to make participation highly profitable for consumers. In the case of *PureProfile* respondents, the financial reward is, firstly, small (between \$1–\$5) and,

importantly, would be viewed by the respondent as a standard non-negotiable component of dealing with any *PureProfile*-related communication. Rather than being viewed as a problem, these incentives should be seen as appropriate recognition of the consumer's time and effort, especially in the case when the intention is to go back to respondents on more than one occasion (Sudman and Wansink 2002).

6. *Social desirability check.* This study did not incorporate a social desirability check when measuring consumer preferences for the consumer-firm interaction. Perhaps this would have explained the consistently positive results for High SAVVY respondents resulting from the Phase 3 experimental interaction vignette. A check of this type is recommended for any future study.

9.7.5 Sampling limitations

The consumer panel was managed by a third party supplier with a well-maintained database. The supplier has many major government and corporate clients who require that it regularly conducts checks of its panel. Panel members who misrepresent their demographic profiles receive a reprimand or are removed. However, there was no opportunity for the researchers involved to conduct qualitative research directly with panellists. Furthermore, the text-based online survey meant that the study was reliant on respondent comprehension of text, yet a number of questions were asking about their procedural knowledge.

Finally, as discussed in Chapter 6, items with a less than 8% distribution which also had poor kurtosis were dropped. But perhaps this finding of low variability was a sampling effect and due to lack of variability within the samples. For instance, the Phase 1 study was initially applied to marketing students and the Phase 2 and 3 studies to online, permission-based marketing consumers. Both of these samples are likely to include respondents who have somewhat higher than average technological competence and who are aware of the power of the internet to find information sources, and have potentially learnt about the internet's ability to 'turn the tables' on firms. Therefore, this study was conducted with the suspicion that these two sets of respondents might be a little ahead of 'ordinary' consumers, but perhaps not by too great a margin (recall from Chapter 1 that household internet penetration is estimated to be about 60% in Australia).

9.8 Extensions

9.8.1 Other covariates

We examined the SAVVY scale for measurement invariance across gender and generational age. However, there may be other highly relevant sources of measure non-invariance. This may include, for example, IQ/ability (Turkheimer 1991), educational attainment (Yoo 2002), professional needs (e.g. an individual's job may require them to be technologically sophisticated, regardless of age, gender, and even regardless of any particular aptitude) (Yang 2005), and culture (Steenkamp and Baumgartner 1998, Viswanathan and Childers 2000).

9.8.2 Other contexts

Further extensions of this research would be to consider other contexts, including alternative interaction contexts, product contexts and geographic contexts. Replicating the study in alternative contexts would help to establish the generalisability of the findings. Alternative and relevant contexts of interaction might include a personal selling situation or a mail direct-marketing communication. A comparison might be made between an infomediary context and a final-firm context. A further extension would involve examining the impact of consumer savvy across other product-type continuums, such as those which involve public versus private consumption, low price versus high price, first purchase versus repeat purchase, and so on.

9.8.3 Temporal analysis

In many ways the claims of 'rising consumer power' appear to echo those made during the consumer movement of the 1960s which had substantial impact on the business and legal landscape, and resulted in legislative changes and the explicit statement of consumer rights in many Western nations. For example, the savvy consumer is described as demanding, active and empowered. An interesting question, which is not addressed in this thesis, is 'to what extent does consumer savvy differ from the consumer activism of the past?' The conceptualisation of consumer savvy in this document includes aspects which are specific to the consumer in the information age, such as technological sophistication. However, the question of how different the savvy

consumer of the new millennium is from the activist consumer of the 1960s remains an interesting one for future research.

Additionally, although the literature which informs this study conveys a sense of high-paced and pervasive change in the consumer, it is not the intention to confirm the actual rate of change using the method in the current study. However, the validated scale of consumer savvy does at least enable the phenomenon of consumer savvy to be tracked over time from this point on.

9.8.4 Other consequences of consumer savvy overall and sub-dimensions

Only a limited number of potential consequences of consumer SAVVY were examined in this study. However, other outcome measures that would have relevance include measures of the quality of the relationship. These might include relationship satisfaction, as well as trust and commitment (Morgan and Hunt 1994, Sharma and Patterson 1999, Garbarino and Johnson 1999, Grewal, Hardesty and Iyer 2004). As indicated by results of the 2x2 ANOVA of desire for co-creation, it is possible that the savvy measure is correlated with measures of optimism and happiness. These constructs could be measured as potential covariates or outcomes of consumer savvy. In addition it would be valuable to further examine consumer actions resulting from the interaction. These include purchase likelihood, exit likelihood, and other kinds of consumer activism.

9.9 A final word

Overall, there is considerable scope for extending our understanding of consumer savvy. Given the backdrop of the interconnected global marketplace and the resulting decrease in consumer-firm information asymmetry, a focus on ‘empowered’ and ‘savvy’ consumers is likely to be seen as of increasing importance. As the work in this thesis demonstrates, in order to make progress careful conceptualisation and measurement is required.

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FIN 4B

