

# Who is the Omnichannel Shopper?

A thesis submitted in partial fulfilment of the requirements for the degree  
of Master of Research

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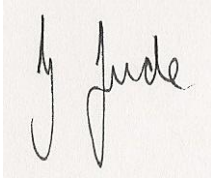
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## **Declaration of originality**

I certify that this work has not been submitted for a higher degree to any other university or institution

A handwritten signature in black ink on a light-colored background. The signature appears to be 'G. Jude' or 'Gareth Jude' written in a cursive style.

Gareth Jude

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# Who is the Omnichannel Shopper?

## Abstract

### Purpose

The omnichannel shopper is the latest evolution of the online shopper. They shop anywhere, anytime and are not restricted by physical locations or channels. They have been shown to spend more and spend more often than non-omnichannel shoppers. The purpose of this thesis is to identify the characteristics of the omnichannel shopper so that retailers can better target their investments in serving these valuable customers.

### Design/methodology/approach

We first review the multichannel and omnichannel literature to establish a hierarchy of omnichannel shopping behaviour. Second, we use secondary data derived from a quantitative telephone survey by Telstra of 800 randomly selected people of which 185 answered the questions used for analysis in this report. The data was collected between March and April 2014.

### Findings

The research finds that there are three statistically different groups of omnichannel shoppers and that these groups form a hierarchy. The Basic group operates at a level no different to the multichannel shopper of the “clicks and bricks” era. The mobile group shop in ways that were not possible before the advent of connected mobile devices. The advanced group uses their devices to shop multiple channels simultaneously. The research also finds that these basic, mobile and advanced groups of shoppers can be identified to a certain extent by their age, social media use, domicile location and income. This partially supports the Diffusion of Innovation theory of Rogers (Rogers 1983) which is based on the notion that early adopters can be identified by demographic and behavioral characteristics and was used in the studies of early adoption of internet shopping. In addition membership of the “Mobile Omnichannel” group can be predicted reliably 31% of the time by their access to social media networks from mobile devices

### Theoretical Implications

The underpinning theory used for this thesis was Innovation Diffusion Theory (IDT). IDT has been used to show that early adopters can be identified by certain demographic and behavioural characteristics. A range of these characteristics were distilled from the multichannel literature and tested in this thesis. Our results show ambivalent support for demographic factors but strong support for a behavioural factor (social contentedness) as a predictor of “Mobile Omnichannel” shopping

## **Research limitations**

This research is limited by the number of demographic and behavioural variables captured in the original research. Furthermore, the data was collected exclusively in Australia. Further research could address a wider range of consumer characteristics and consider data from international markets

## **Practical implications**

Retailers can now prioritise investments in omnichannel infrastructure based on what type of omnichannel shopper constitutes the most important part of their target market.

# Introduction

## The Changing World of Shopping

Shopping online became popular in the 1990's. A review (Chang, Cheung & Lai 2005) of the factors influencing the early adoption of online shopping found that the literature can be categorised into three broad areas each combining to influence intention to shop online. The first category was the perceived characteristics of the web as a sales channel, the second category of influences relate to the website itself and the third category of influences relate to the characteristics of the shoppers themselves. While the first two categories of influences provide useful guidance to retailers already operating an online channel it is the third category of influences that may provide contemporary retailers with clues to the identity of adopters of omnichannel shopping. Innovation Diffusion theory (IDT). Rogers (1983) proposes that early adopters can be identified by certain demographic and behavioural characteristics and this theory is tested in the multichannel literature

The smartphone has changed the world of shopping forever. The omnichannel shopper (Rigby 2011), armed with their connected device, is the first consumer that retailers have ever encountered who has the ability to shop anywhere, anytime and is not restricted by physical locations or channels. Omnichannel shoppers may browse online then transact in a store; they may browse in a store then transact online; they may transact online then arrange to pick up from a retail store; they may transact in a store then arrange to pick up goods from a locker close to their home. The good news for retailers is that the omnichannel shopper is much more valuable than the non-omnichannel shopper. A UK study (Bardwell 2012) found that omnichannel shoppers; spend 3.5 times more than single channel shoppers, purchase across more categories, shop more frequently, are more loyal and have a higher retention rate.

Transitioning to the omnichannel world requires investment by the retailer in IT and physical infrastructure, business systems, control processes and training. While retailers are reluctant to cite precise dollar amounts a number feature Omnichannel investment plans in annual reports and strategy updates (*David Jones-Future Strategic Direction 2012; Harvey Norman Annual Report 2014*). Like all businesses retailers will hope to recover their investments through a combination of increased volume of sales, savings in operational expense and by charging fees for extra services provided. Cost recovery is especially important to retailers as it is an industry with low operating margins (*Margins by Sector 2015*). Before making these investments it would assist retailers to know who the omnichannel shopper is and if they are represented in their target market. Unfortunately, while the beneficial effects of omnichannel shopping are covered in the literature there has been little investigation of who the omnichannel actually shopper is. There is also a lack of clarity as to how omnichannel shopping behaviour differs from the multichannel shopping behaviour described in the extensive multichannel literature which spans from the early part of the century (Burke 2002). This leads us to our first Research question

RQ1. To what extent is the omnichannel Shopper different to the multichannel shopper?

It is perhaps no accident that the notion of omnichannel shopping emerged at the same time as smartphones were reaching significant rates of adoption around the world. The

smartphone was the first mobile device to offer consumers the prospect of reasonable connection speeds to the Internet through the, then relatively new, 3G networks that were being developed. In 2009 Apple introduced their 3G iPhone to the market, which combined broadband Internet connectivity with a much more friendly, and intuitive user interface than those of previous market leaders Nokia and Motorola. By 2010 500 million smartphones were in use around the world (Ericsson 2013). By 2015 the worldwide smartphone population had risen to 2.9 billion (Ericsson 2015) and 75% of the mobile phones being sold were smartphones on faster 4G and LTE networks. A phone with a viable broadband Internet connection facilitates the anywhere, anytime shopping experience that is the basis of Omnichannel shopping as described by Rigby (2011).

Various studies have shown that consumer's attitudes towards using mobile devices in shopping have improved considerably as smartphones have proliferated and their power and usefulness (app and mobile enabled web site availability) have increased (Huan, Fang & Tingting 2013; Persaud & Azhar 2012; Zhang & Mao 2008). While the emergence of connected mobile devices seems an obvious cause of omnichannel shopping it would assist retailers to know what else predicts that a consumer is likely to become an omnichannel shopper?

RQ 2. What are the antecedent drivers of omnichannel shopping?

Building on previous literature this paper describes a hierarchy of omnichannel behaviour that includes multichannel elements. It also examines how each of the omnichannel groups can be distinguished by demographic and behavioural variables. Finally we attempt to predict which groups of consumers are most likely to exhibit omnichannel shopping behaviour to assist retailers in prioritising their omnichannel investments

## **Literature review and hypotheses**

### **Multichannel Shopping**

Many of the characteristics of the omnichannel shopper and the benefits to retailers of serving them had already been acknowledged in the multichannel literature. The multichannel literature emerged when retailing via the internet began to become popular at the turn of the century. In the pre smartphone era these studies concentrated on discovering the effects of combining physical and virtual channels or "bricks and clicks." The multichannel consumers were found to see incremental benefits in shopping offline and online with the same retailer (Burke 2002; Dholakia, Zhao & Dholakia 2005) implied in the later omnichannel findings of (Bell, Gallino & Moreno 2014). Furthermore the multichannel shopper was seen to not consider channels in isolation but to use them in line with their mood and lifestyle (Nicholson, Clarke & Blakemore 2002) echoing the later findings of (Blázquez 2014). The more seamless the multichannel experience was between channels the more it was found to generate loyalty (Chatterjee 2006; Dholakia, Zhao & Dholakia 2005) echoing the later Omnichannel findings of the IDC study in to UK retailer John Lewis (Bardwell 2012). Multichannel was also found to generate more traffic and sales (Kumar & Venkatesan 2005; Lu & Rucker 2006; Steinfield, Adelaar & Liu 2005) just like the omnichannel study of Bell (Bell, Gallino & Moreno 2014)

## The Omnichannel Shopper

Rigby (Rigby 2011) was the first to propose the notion of the omnichannel shopper. In “The Future of Shopping,” he imagines an omnichannel channel shopping experience five years into the future. The omnichannel shopping experience includes; online and offline channels, mobile devices, multiple channels of the same retailer as well as simultaneous use of those channels. Rigby’s omnichannel shopper is equipped to shop anywhere, anytime and does not differentiate between online and physical channels. Retailers and businesses generally have traditionally aligned channels with specific groups of customers and managed them separately. Success in the omnichannel world is measured not on the performance of individual channels but on the synergistic and cumulative product of the omnichannel. Omnichannel shoppers may browse online then transact in a store; they may browse in a store then transact online; they may transact online then arrange to pick up from a retail store; they may transact in a store then arrange to pick up goods from a locker close to their home. Rigby describes a more demanding consumer who now expects to receive services traditionally associated with online shopping (like visibility of stock levels and direct to home delivery) in physical stores while at the same time expecting services traditionally associated with “bricks and mortar” shopping (like same day delivery and personal service) online.

The early Omnichannel literature is conceptual and a, “call to arms,” for retailers (Aubrey & Judge 2012; Brynjolfsson, Yu Jeffrey & Rahman 2013; Rigby 2011). It focuses on the potential for traditional retailers to gain competitive advantage over pure online retailers by offering their customers a blended online and physical experience, something the pure on-liners cannot match. These papers were written roughly a decade after the “dot com” bust of the early 2000’s (Times 2000) which saw many pure play online retailers either go out of business or have their market capitalisation severely eroded. By the time these papers were written online retail was blooming again and posing a renewed threat to established retail business models. Press articles speculated on the death of physical retail in the face of the growth of online especially in categories effected by digitisation like DVD and books (Austen 2011; Ryan 2011). It was almost as if Physical and Online retail represented a binary choice for consumers. The early omnichannel literature attempts to identify a new opportunity and motivate retailers to profit from participating in the online world as well as the physical world.

Retailers are normally very motivated by changes in the competitive environment. In an Industry where many businesses sell the same products and brands retailers are always on the lookout for new ways to gain a competitive advantage over their rivals. However retailers have been generally slow to adopt Omnichannel business models. Rigby (2011) cites four reasons why traditional retailers are complacent about the threat from Online retail and reluctant to take action on Omnichannel. The first is to do with the dot com bust itself. Traditional retailers generally prospered through the dot com bust and gained renewed confidence in their physical distribution models. In Australia, three of our biggest retailers, Harvey Norman, David Jones and Myer actually closed down their online channels between 2002 and 2003 (Wells, Kruger & Greenblat 2012). Rigby’s second reason is to do with retail metrics. Traditional retail metrics focus on store ratios like same store sales and sales per square metre. These metrics are not applicable in an Omnichannel world. The third reason is to do with the way value is measured. Rigby says traditional retailers focus on profit margins (gross, operating, return on sales etc.) as a measure of value rather than on market capitalisation, which is the favoured measure of value in the online world. Even in 2011

when Rigby wrote his paper Amazon's market capitalisation was more than the sum of eight of the USA's biggest retailers (Target, Best Buy, Staples, Nordstrom, Sears, J.C. Penney, Macy's, and Kohl's) combined. Finally Rigby says there is an endemic cultural problem with retailer attitudes towards innovation. He says traditional retailers are not generally predisposed towards transformative innovation preferring incremental improvements. This attitude is embodied in the retail industry mantra "Retail is detail" (Pal & Byrom 2003).

All three conceptual omnichannel papers cited use the technique of imagining the future of retail to encourage retailers to take action. In that future a shopper emerges who has three characteristics. Firstly they are "channel agnostic" (Aubrey & Judge 2012). They shop online and offline as a matter of course and often do that with the same retailer. Each paper contains an example of a shopper beginning their shopping either online or in a store then finishing it in the opposite channel. Secondly, they shop using connected mobile devices, particularly the smartphone, as a matter of course. The smartphone facilitates a new "anywhere, anytime" shopping experience (O'Hara & Perry 2001) that has not existed before. Consumers empowered by their perpetual connection to information use their smartphones to get details on retailer locations, stock levels as well as actually placing orders. Thirdly, the omnichannel shopper shops in multiple channels simultaneously. Examples are given in all three papers of consumers using their smartphones or in-store online kiosks to supplement their physical store shopping experience. Rigby does not test his concepts with empirical research.

Omnichannel is a new field of study which means there are limited empirical studies of the phenomena available. Those that have been done echo many of the findings of the earlier multichannel literature. Balquez (2014) presents evidence that supports the characteristics of omnichannel shoppers proposed in the conceptual papers. Using Babin's, "Personal Shopping Scale" (Babin, Darden & Griffin 1994) a survey of 439 consumers, exploratory factor analysis and a one way ANOVA she finds consumers do not separate channels when they shop for fashion which is similar to earlier multichannel studies (Nicholson, Clarke & Blakemore 2002). Instead they use the channel that meets either their hedonic or utilitarian needs at the time. A departure from the multichannel studies is that mobile technology is found to be the glue that allows retailers to bind offline and online shopping experiences together and when used in-store provide consumers the ability to shop online and offline simultaneously.

The empirical omnichannel literature also proposes the types of benefits retailers can expect by joining the omnichannel world. Bell (2014) uses a number of case studies to demonstrate that sales will increase when customers are given the opportunity to shop both online and offline with a retailer. Bell (2014) cites the case of home wares retailer Crate and Barrel who introduced a classic omnichannel buy online, pick up in store service (BOPS) in the U.S.A. The BOPS service was not launched in the nearby Canadian market allowing the company to isolate the effect of BOPS on overall sales. Overall sales increased at the stores that introduced BOPS (even though online sales decreased) but specific figures are not given in the case. Bell (2014) also cites the case of online eyewear retailer Warby Parker who trialled the introduction of inventory only physical showrooms where customers could try on glasses and ask questions of staff but not buy. This allowed Warby Parker to test if offline delivery of information would increase overall sales. Using regression analysis and an econometric method called differences-in-differences it was found that overall sales in regions where

inventory only showrooms were opened increased by 9%. Evidence for increased sales when consumers engage across channels can also be found in the multichannel literature (Kumar & Venkatesan 2005; Lu & Rucker 2006; Steinfield, Bouwman & Adelaar 2002)

Evidence for the value of the omnichannel shopper can also be found in various commercial studies. An IDC study of the UK retailer John Lewis (Bardwell 2012) found that omnichannel shoppers; spend 3.5 times more than single channel shoppers, purchase across more categories, shop more frequently, are more loyal and have a higher retention rate. This study is limited by the fact that it analyses data for only one retailer and that full access is only available to researchers on submission of a fee. A publicly available study published by Oracle in the USA in 2014 (Oracle 2014) found that the omnichannel shopper was considered to be 10% to 50% more valuable by retail managers than the consumer who shopped in only one channel.

## Multichannel vs. Omnichannel shopping

It can be seen that there is overlap between the multichannel and omnichannel literature. There is speculation that the concept of omnichannel is in fact nothing more than a buzzword (Scartz 2014) and that multichannel adequately describes the shopping behaviour described in the omnichannel literature. Multichannel literature has continued to be produced in the omnichannel era (Avery et al. 2012; Schramm-Klein et al. 2011; Yang, Lu & Chau 2013; Yang et al. 2011) suggesting some researchers feel that the older word is adequate. This raises the question is omnichannel really just Multichannel with a smartphone?

Omnichannel researchers see a philosophical difference between multichannel and omnichannel. Pitorwicz (2014 p.6) says, "While the multichannel implies a division between the physical and online store, in the omnichannel customers move freely between the online (PC), mobile devices, and physical store, all within a single transaction process." Multichannel literature, including the more modern examples cited above, generally addresses the idea of channels competing for consumer choice. Implicit in the multichannel literature is the idea that there is a division between channels which can be managed and controlled by firms to create an optimum business result. Neslin et al. (Neslin et al. 2006) p. 96 formally define multi-channel customer management as "the design, deployment, coordination, and evaluation of channels to enhance customer value through effective customer acquisition, retention, and development". Implicit in the omnichannel philosophy is a view that technology has made movement between channels so fluid for consumers that they can no longer be restricted by channel boundaries. This makes management and control of consumer access to channels by retailers virtually impossible (Verhoef, Kannan & Inman 2015). Because channels are managed together consumers perceived interaction is with the brand not the channel (Piotrowicz 2014). In an omnichannel world it is the consumer that is in control of channel choice not the retailer. This means traditional channel design methodology, which matches groups of customers to appropriate channels, gives way to the provision of groups of channels matched by customers to their needs and accessed when they deem appropriate.

Based on the above discussion it is hypothesised that not all omnichannel shoppers are the same. Some are likely to be more engaged across channels than others. At a basic level omnichannel shoppers exhibit the same behaviours as the multichannel shoppers of the

“clicks and bricks” literature. For example they shop online and offline, perhaps with the same retailer, based on what is most convenient to them at the time. We would expect them to browse products on websites or apps, read online reviews of products and purchase products or services online from a computer. The more “Advanced Omnichannel” shoppers leverage their connected mobile devices to shop “anywhere, anytime.” This behaviour was not possible to multichannel shoppers of the pre smartphone era. We would expect them to use their mobile phones to find out information on a retailer, make purchases on a mobile phone and make purchases on a tablet. The most “Advanced Omnichannel” shopper uses technology to shop in multiple channels simultaneously. We would expect them to compare prices online while shopping in a store and scan a barcodes using a mobile device for price information when in the premises of a physical retailer.

H1. There is a hierarchy of omnichannel shopping behaviour which blends multichannel concepts and is evolving as follows

- a. Shops online and offline (“Basic Omnichannel”)
- b. Shops online using mobile devices (“Mobile Omnichannel”)
- c. Shops online and offline simultaneously (“Advanced Omnichannel”)

## Adoption of Omnichannel shopping

Despite the philosophical difference between omnichannel and multichannel it would be useful for retailers contemplating investments in omnichannel infrastructure and services to know if anything can be learned about the profile of potential omnichannel customers from the multichannel literature. The multichannel literature certainly goes further than the omnichannel literature in identifying the shopper in ways that are useful to marketers. An early study of the characteristics of the internet shopper (Donthu & Garcia 1999) establishes that they are likely to be older, have a higher income, be more concerned with convenience, be more impulsive, less risk averse and a more responsive to various methods of advertising than the non internet shopper. There are also instances in the multichannel literature of attempts to segment the online shopping population into meaningful descriptive segments. In a large empirical study of Asian internet shopping Kau et al (2003) identify six distinct segments based on demographic, psychographic and shopping behavioural factors they call: brand comparison, online shopping, deal prone, information seeking, ad orientation and offline shopping. Rohm and Swaminathan (2004) identify four groups that they call, “convenience shoppers, variety seekers, balanced buyers, and store-oriented shoppers”.

Multichannel shopping has now been established for over a decade but omnichannel shopping using a smartphone as described by Rigby (2011) is a fairly recent phenomena. “Advanced Omnichannel” shoppers who use their mobiles to shop multiple channels simultaneously may be said to be innovators or early adopters (Rogers 1983). This makes them comparable with the multichannel shoppers of the “bricks and clicks” literature of the early part of the century. Innovators and early adopters are important in the diffusion of innovations because they are thought to have a strong influence on the majority of customers who adopt a product or service after them. In the early multichannel literature there were numerous attempts to characterise the early adopter of online shopping.

A review (Chang, Cheung & Lai 2005) of the factors influencing the early adoption of online shopping found that the literature can be categorised into three broad areas each combining to influence intention to shop online. The first category was the perceived characteristics of the web as a sales channel including perceived risk, relative advantage, online shopping experience, service quality and trust. The second category of influences relate to the website itself including the products it is selling and risk reduction measures inherent in its design. The third category of influences relate to the characteristics of the shoppers themselves including their shopping orientation, demographic variables, computer/internet usage and knowledge, customer innovativeness and psychological variables. While the first two categories of influences provide useful guidance to retailers already operating an online channel it is the third category of influences that may provide contemporary retailers with clues to the identity of early adopters of “Advanced Omnichannel” shopping.

### Demographics

There is conflicting evidence in the multichannel literature on the relative importance of demographic characteristics influencing intention to shop online. The easiest signposts to a target market are demographic ones. Most retail databases will contain information on age and gender of their customers and may also contain data on income levels and education. Demographic information is also accessible on commercially available lists. Rogers (1983) suggests that the early adoption is a function of increasing education and socioeconomic status. The early online shopping adoption literature generally supports this proposition (Bhatnagar, Misra & Rao 2000; Burroughs & Sabherwal 2002; Cao & Mokhtarian 2005; Donthu & Garcia 1999; Li, Kuo & Russell 1999; Sin & Tse 2002). There is also evidence that the early adopter of internet shopping tended to be male (Bhatnagar, Misra & Rao 2000; Li, Kuo & Russell 1999; Sin & Tse 2002). Some studies find the early adopter of online shopping more likely to be older (Donthu & Garcia 1999) while others find that they are more likely to be younger (Sin & Tse 2002). This is in contrast to numerous studies of early adoption outside online shopping which have found that early adopters are usually younger (Chan-Olmsted, Li & Jaemin 2005)

Three studies from Goldsmith (Goldsmith, R 2002; Goldsmith, RE 2001; Goldsmith, RE & Goldsmith 2002) discount the influence of demographics factors entirely. Another study (Mathwicka 2001) p.51 goes further saying “...people who shop online are beginning to mirror the US population.” It should be noted however, that the samples used in the Goldsmith and Mathwicka studies were not necessarily designed to detect demographic influences. All of the Goldsmith studies use convenience samples of University students while the Mathwicka study uses data from one specific retailer operating both a catalogue and an internet sales channel.

If demographic cues do exist to identify omnichannel shoppers it is important for retailers to be able to identify them. The smartphones that facilitate omnichannel shopping are more expensive than regular feature phones. When acquired with data plans that allow extensive access to the internet to allow, for instance browsing retailer websites, they become even more expensive. Commercially available research (Jude, G. & Macdonald 2014) also shows penetration rates of smartphone usage are higher among young people. The convenience benefits of omnichannel shopping would seem to be more relevant to time poor urban dwellers. All this would suggest that omnichannel shoppers might be likely to have higher

incomes, be younger and be urban dwellers than non-omnichannel shoppers and if so will be identifiable by their demographic characteristics.

H2. The omnichannel shopper differs from the non-omnichannel shopper in demographic profile.

If it is possible to demonstrate a hierarchy of omnichannel shopping based on shopping behaviour and to separate omnichannel shoppers from non-omnichannel shoppers on the basis of demographic profile it should also be possible to separate the hypothesised three groups of omnichannel shoppers based on demographic and behavioural indicators.

H3. The omnichannel shopper groups (a,b and c) will differ from each other in terms of demographic and behavioural indicators

### Technology

The early multichannel literature finds various behavioural traits linked to technology also influence the adoption of online shopping. A number of studies found a link between heavy computer and internet usage with intention to shop online (Burroughs & Sabherwal 2002; Goldsmith, R 2002; Goldsmith, RE 2001; Goldsmith, RE & Goldsmith 2002; Limayem, Khalifa & Frini 2000). The Goldsmith studies link computer and internet usage with Domain Specific Innovativeness (DSI) which is the tendency of individuals to be innovative within a specific area of interest. This means for example that consumers who are heavy users of the internet are therefore likely to adopt shopping online but also that customers who are heavy buyers of fashion are likely to adopt online channels to facilitate their interest in that category.

An obvious practical difference between the omnichannel shopper and the earlier multichannel shopper is their access to connected mobile devices. A connected mobile device allows consumers to shop “anywhere, anytime,” and not be restricted to a computer. Mobile devices also open up the possibility of shopping in two channels simultaneously. Thus a mobile enabled consumer can for example be shopping in a store while simultaneously checking offers from competing retailers on their smartphone. While broadband internet connection speeds have been available on mobile devices via 3G networks since the early part of the century mass adoption of smartphones did not begin until Apple introduced its 3G iPhone in 2009. By 2010 500 million smartphones were in use around the world (Ericsson 2013). By 2015 the worldwide smartphone population had risen to 2.9 billion (Ericsson 2015) and 75% of the mobile phones being sold were smartphones on faster 4G and LTE networks.

For retailers the development of online sites for mobile phones is an incremental investment. Standard websites do not perform optimally on mobile phones. Google has recently exposed the lack of investment by Australian businesses in mobile sites by deciding not to list search results for companies (Graham 2015) whose mobile sites are not optimised. 50% of businesses in Australia were affected. Tablet computers also require separately developed sites. Tablet computers have been adopted in large numbers around the world in recent years. Gartner predicts (Gartner 2014) that there will be over 320 million tablets shipped in 2015 overtaking computer shipments for the first time. In Australia tablets were predicted to be in the hands of 54% of the population by the end of 2014 (Jude, G & Singh 2013).

Various studies have shown that consumer's attitudes towards using mobile devices in shopping have improved considerably as smartphones have proliferated and their power and usefulness (app and mobile enabled web site availability) have increased. An early quantitative study of Taiwanese commuters (Tsang, Shu-Chun & Ting-Peng 2004) discovered very negative attitudes toward 'sms' marketing to mobile phones. In a study of Scottish teenagers (Grant & O'Donohoe 2007) it was found that while mobile phones were a constant companion and essential facilitator of a social life they were also considered important tools in screening commercial intrusion. The study reported very negative feelings toward commercial sms messages directed to the mobile even if the user had opted into receiving those messages. Zhang and Mao's quantitative study into acceptance of 'sms' marketing in China (Zhang & Mao 2008) reported that consumers will accept 'sms' marketing if it demonstrates value but that building trust is a key issue. This implies the same distrust of commercial sms reported in the earlier Scottish qualitative study

By 2012 a Canadian study (Persaud & Azhar 2012) found consumers will accept advertising to their mobile phone if it is from brands they like, suits their shopping style (they have given permission) and demonstrates value. The study also cites a 2011 (ComScore 2011) report that discovered growing acceptance of mobile advertising across all age groups. In 2013 a phenomenological study of consumer attitudes towards mobile in China (Huan, Fang & Tingting 2013) found while attitudes towards commercial sms messages were still negative attitudes towards newer forms of marketing like advergames and apps was positive. The participants felt most positive when mobile marketing emulated online marketing they were used to seeing on their computer. By 2015 comScore (2015) reported the effectiveness of mobile advertising had overtaken the effectiveness of desktop advertising in the USA.

### **Social Connectedness**

Word-of-mouth has long been considered the best form of advertising by marketers. Rogers (1983) also found word-of-mouth to be an important factor in adoption of innovations. In his study he argued that interpersonal channels of communication were important to every category of adoption (early adopters, early majority and laggard) except innovators. In a contemporary study of adoption of personal computers Dickerson and Gentry (Dickerson & Gentry 1983) p233 found that innovators themselves were "logical introverts" not interested in belonging to social groups. Sultan et al (Sultan, Farley & Lehmann 1990) analysed the results of 213 Bass models from 15 published papers on adoption of innovation up to 1980. They found that the average values for the coefficient of innovation and coefficient of imitation were 0.03 and 0.38, respectively. Their findings indicate that word-of-mouth is the main driver of the diffusion of new products rather than the innate innovativeness of consumers. A more recent study (Naseri & Elliott 2009) found similar results in a Bass model study that investigated the adoption of online shopping in Australia. They found that the coefficient of innovation and coefficient of imitation were 0.033 and 0.384, respectively indicating, like the Sultan et al study, that adoption of online shopping is fundamentally driven by word-of-mouth.

For the modern consumer social media is the new word-of-mouth. Sensis report (2015) that 49% of Australians access social media networks at least once a day. The average social network user has 297 friends and followers but has only seen 39% of them face to face in the last 12 months. Smartphones are by far the most popular access device with 70% of users accessing their social media networks in this way. Shopping is also somewhat

important with 19% of users reporting that they have used social media to research products or services. Despite the rather low use of social media to research retail purchases the conversion rate is very high with 49% reporting research on social media led to a retail purchase. A recent empirical study across three countries (Hudson et al. 2015) found that consumers engaging with their favourite brands using social media have stronger relationships with those brands than consumers who do not interact with their favourite brands using social media.

We therefore hypothesise that just as social connectedness has been seen as a reliable predictor of many innovations including online shopping the use of social media on mobile devices will be seen as a reliable predictor of “Advanced Omnichannel” shopping.

H4. Use of social media on mobile devices is a reliable predictor of “Advanced Omnichannel” shopping behaviour

## Method

We first review the Multichannel and Omnichannel literature to establish a hypothetical hierarchy of Omnichannel shopping behaviour. Second, we use secondary data derived from a quantitative telephone survey by Telstra of 800 randomly selected people of which 180 answered the questions used for analysis in this report. The data was collected between March and April 2014.

## Relationship between Research Questions and Hypotheses

Research Question	Hypothesis
R1. To what extent is the Omnichannel Shopper different to the Multichannel shopper?	H1. There is a hierarchy of Omnichannel shopping behaviour which blends Multichannel concepts and is evolving as follows <ul style="list-style-type: none"> <li>a. Shops online and offline</li> <li>b. Shops online using mobile devices</li> <li>c. Shops online and offline simultaneously</li> </ul>
	H2 The Omnichannel shopper differs from the non-Omnichannel shopper in demographic profile
	H3. The Omnichannel shopper groups (a,b and c) will differ from each other in terms of demographic and behavioural indicators

R2. What are the antecedent drivers of Omnichannel shopping?

H4 Use of social media on mobile devices is a reliable predictor of Advanced Omnichannel shopping behaviour

## Data Sources

Telstra is an Australian based telecommunications and information services company with operations in twenty countries including China. It has a market capitalisation of approximately \$A66billion (Yahoo). Telstra has published three reports describing the development of mobile device enabled shopping in Australia (Jude, G. & Macdonald 2014; Jude, G & Singh 2013; Jude, G , Singh & Wilson 2012). The consumer data used in these reports provides a valuable descriptive view of the development of Omnichannel shopping behaviour in Australia. The data used in this thesis is from the most recent report (2014). It was reanalysed to answer the research questions and to test the hypotheses. The data collection from the original telephone survey was conducted in March and April 2014. Of particular benefit to this project is that each response can be linked back to the demographic and behavioural data contained in Table 2.

## Sample

The Telstra report is based on the results of a telephone survey of randomly selected respondents across Australia conducted by Sweeny research. Quotas were applied to provide a nationally representative sample for each age group and both genders. Quotas were also applied on location to ensure coverage across metropolitan and regional areas in each State and Territory. A total of 800 respondents participated in the original survey but they did not necessarily answer all questions. The data used to test the hypotheses in this report is taken from 185 respondents who answered two specific questions in the survey. The first question asked respondents about their online shopping behaviour while the second question asked them about which devices they use to access social media. The number of respondents to each question can be seen in Table 2. In the original report a weighting algorithm was used to simulate a representative sample for each question. This was not used in our analysis.

Table 1 Profile of respondents

Question		Online Shopping Activities	% sample	Devices Used to access social media	% Sample
Respondents		186	100.0%	533	100.0%
Gender	Male	96	51.6%	231	43.3%

	Female	90	48.4%	302	56.7%
Age	14-19	9	4.8%	65	12.2%
	20-39	60	32.3%	203	38.1%
	40-64	117	62.9%	265	49.7%
Location	Metro	132	71.0%	382	71.7%
	Rural	54	29.0%	151	28.3%
Social Media Use	More Than 5 times per day	48	25.8%	140	26.3%
	Every day or more than once a day	51	27.4%	218	40.9%
	Once a week or more than once a week	34	18.3%	142	26.6%
	Occasionally	9	4.8%	33	6.2%
	Never	44	23.7%	-	N/A
Income	up to \$65,000pa	61	32.8%	173	32.5%
	Above \$65,000pa	102	54.8%	236	44.3%
	Non respondents	23	12.4%	124	23.3%

Source: Telstra survey 2014

## Questions used

### Online shopping activities

These questions are designed to reveal which types of shopping activities are being conducted online by the respondents. They include browsing and transacting questions as well as questions that isolate which devices are being used and when simultaneous online and offline shopping tasks are being performed. The questions were selected on the basis of testing certain types of behaviour. The first group of questions test behaviours that were all possible before the introduction of smartphone technology and therefore test “Basic Omnichannel” behaviour (which is in fact identical to early Multichannel behaviour). The second group of questions test the more advanced “Mobile Omnichannel” behaviour i.e. shopping with the aid of connected mobile devices. The third group of questions measure “Advanced Omnichannel” behaviour where the consumer is shopping multiple channels simultaneously i.e. checking prices or scanning codes online via smartphone while in a physical retail store. Each question begins with a lead-in as follows.

“Now thinking about shopping and purchasing generally. Which of these activities have you done in the past twelve months?”

1. Browsed products on websites or apps
2. Read online reviews of products
3. Purchased products or services online from a computer
4. Used a mobile phone to find out information on a retailer
5. Made a purchase on a mobile phone
6. Made a purchase on a tablet
7. Compared prices online while shopping in a store
8. Scanned a barcode using a mobile device for price information

### Devices used to access social media

These questions are designed to reveal which mobile devices respondents are using to access social media. Each question is preceded by a lead in as follows.

“What devices do you use to access social media network sites?”

Smart Phone (e.g. I Phone, Android, Blackberry)  
IPad or other tablet

### Questions and Hypotheses

H1. To test this hypothesis it was necessary to select questions that covered both researching and transacting as the term “shops” implies both activities. It was also necessary to select questions that measure the hierarchy of Omnichannel shopping as proposed in the hypothesis

Table 2 Relevance of online shopping activities questions to the analysis

“Now thinking about shopping and purchasing generally. Which of these activities have you done in the past twelve months?”		
1. Browsed products on websites or apps	2. Read online reviews of products	3. Purchased products or services online from a computer
These questions identify the omnichannel shopper operating at a multichannel level. These behaviours are possible without a mobile device		
4. Used a mobile phone to find out information on a retailer	5. Made a purchase on a mobile phone	6. Made a purchase on a tablet
These questions identify the omnichannel shopper that uses a mobile device		
7. Compared prices online while shopping in a store	8. Scanned a barcode using a mobile device for price information	
These questions identify the “Advanced Omnichannel” shopper who uses a mobile device and shops multiple channels simultaneously		

For the hypothesis to be supported we will need to show that each group (a, b and c) is homogenous but that each group is also different to the other groups

H2. For the hypothesis to be proven we will need to show that respondents who answer “Yes” to the online shopping activities questions differ in profile from the respondents that answer “No”. We would expect more difference between the responses in the Advanced group than the Basic group because “Basic Omnichannel” shopping is the same as early multichannel shopping and as such a well established mode of consumer behaviour.

H3. For the hypothesis to be supported we will need to show that the groups proposed in H1 are different in terms of demographics and behavioural indicators from each other. The responses from the online shopping activities questions will therefore be used again for analysis

H4. For the hypothesis to be supported we will need to show that accessing social media on mobile devices predicts “Advanced Omnichannel” shopping. Responses from the, “devices used to access social media networks” question (Table 3) will be used for the analysis.

Table 3 Relevance of devices used to access social media to the analysis

What devices do you use to access social media network sites?	
1. Smart Phone (e.g. I Phone, Android, Blackberry) 2. IPad or other tablet	These questions identify respondents who access social media via connected mobile devices

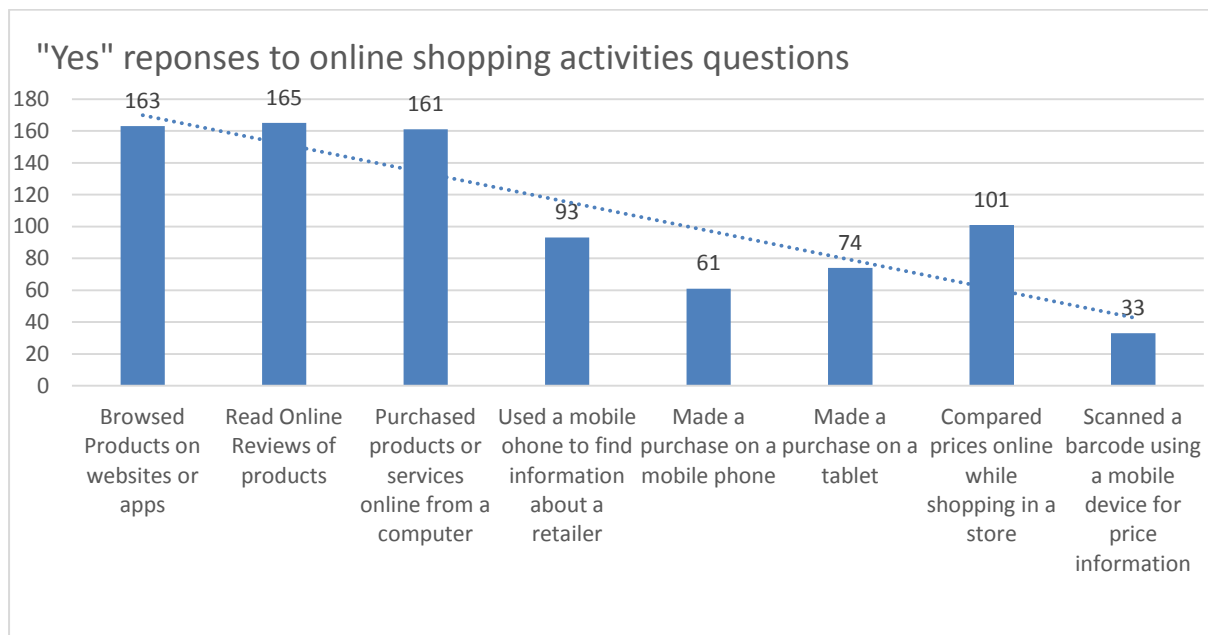
## Analysis and results

### Establishing the Omnichannel Hierarchy (H1)

The first stage of the analysis was to test if the selected questions form statistically significant groups. Using Spearman’s correlation coefficient positive and significant correlation was found between the three groups of questions. For the first or “Basic Omnichannel” group correlation between the questions ranged between .427 and .640 with a significance value above 99%. For the second or “Mobile Omnichannel” group (correlation between the questions ranged between .345 and .439 with a significance value above 99%. For the third or “Advanced Omnichannel” group correlation between the questions was .200 with a significance value above 99%. (Appendix 1)

The next stage of the analysis was to see if the three groups formed a hierarchy of Omnichannel shopping. To do this Omnichannel shoppers were separated from non Omnichannel shoppers by isolating the, “Yes” responses to each of the questions. As can be seen from the graph ( Graph 1) three hierarchical groups appear to form as hypothesised (“Basic Omnichannel”, “Mobile Omnichannel” and “Advanced Omnichannel”). On average 88% of the sample responded “Yes” to the “Basic Omnichannel” questions, 41% responded “Yes” to the “Mobile Omnichannel” questions and 36% responded “Yes” to the “Advanced Omnichannel” questions.

Graph 1



Source: Telstra survey 2014

To test the statistical significance of the descriptive analysis a paired samples t-test was used. To prepare for the t-test the responses to the three groups of questions were combined to create a mean score by group. This created a continuous variable for each group rather than the categorical variable (yes/no) per question in the original data set. This was done because categorical variables are not normally considered suitable for use in t tests. The results of the paired samples t-test showed strong and significant differences between the “Basic Omnichannel” and “Mobile Omnichannel” groups ( $t=16.917$ ) as well as the Basic and “Advanced Omnichannel” groups ( $t= 20.057$ ) at the 99% confidence level. The difference between “Mobile Omnichannel” and “Advanced Omnichannel”( $t=1.679$ ) was weaker but still significant at the 90% confidence level. (Table 4 ).

Table 4 Are the Omnichannel groups statistically different?

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Basic_Omnichannel - Mobile_Omnichannel	.46774	.37709	.02765	.41319	.52229	16.917	185	.000
Pair 2	Basic_Omnichannel - Advanced_Omnichannel	.51613	.35094	.02573	.46536	.56690	20.057	185	.000
Pair 3	Mobile_Omnichannel - Advanced_Omnichannel	.04839	.39294	.02881	-.00845	.10523	1.679	185	.095

Source: Telstra survey 2014

This analysis shows that “Basic Omnichannel” shopping is more mainstream than “Mobile Omnichannel” shopping and “Mobile Omnichannel” shopping is more mainstream than “Advanced Omnichannel” shopping. It is important to note that this is a progressive rather than a discrete hierarchy i.e. shoppers in the “Advanced Omnichannel” group also shop in Mobile and Basic ways while shoppers in the Mobile group also shop in Basic ways. The separation between “Basic Omnichannel” and the other two groups is much bigger than the separation between the Mobile and Advanced groups. The narrowness of the gap between Mobile and “Advanced Omnichannel” is due to the large “Yes” response (54%) to one question of the set (compared prices online while shopping in a store).

## Do omnichannel shoppers have different demographic characteristics than non omnichannel shoppers (H2)?

A scan of the “Yes” and “No” responses to the online shopping activities question shows some differences between in the omnichannel shopping groups in social media use, location, age and income. (Appendix 2). For each group the “Yes” responses outweigh the “No” responses in the heavier social media use categories, the metropolitan domiciled category, the younger age categories and the higher income category. These differences get bigger as we move from the “Basic Omnichannel” to the “Advanced Omnichannel” group. There is little visible difference in the gender of omnichannel and non omnichannel shoppers. This suggests that the omnichannel shopper is more likely to be younger, metropolitan domiciled, have a higher income and be a heavier user of social media than the non omnichannel shopper.

To determine the statistical significance of the descriptive data, cross tabulations were run for each shopping activity and each demographic and behavioural characteristic to see if links existed at the individual question level.

Table 5 Cross tabulations of online shopping activity questions (1-8) with Demographic characteristics

	Question	“Basic Omnichannel”			“Mobile Omnichannel”			“Advanced Omnichannel”	
		1	2	3	4	5	6	7	8
Gender	Chi Square.	0.253	0.151	0.223	0	0.023	0.058	0.66	0.571
	sig.	0.615	0.697	0.637	1.000	0.880	0.809	0.798	0.450
Location	Chi Square.	0.421	0.944	1.686	3.758	3.86	1.322	1.161	1.191
	sig.	0.516	0.331	0.194	0.053*	0.049**	0.250	0.281	0.275
Age	Chi Square.	6.688	7.8	2.322	16.831	21.607	0.093	5.276	7.624
	sig.	0.035**	0.020**	0.313	0.000***	0.000***	0.954	0.071*	0.022**
Income	Chi Square.	0.201	0.114	4.962	2.429	2.461	1.022	0.069	2.659
	sig.	0.654	0.735	0.026**	0.119	0.117	0.312	0.793	0.103

Source: Telstra survey 2014

\*\*\* Significant at 99% confidence

\*\* Significant at 95% confidence

\* Significant at 90% confidence

The output (Table 5) shows that the most statistically significant links exist between age and omnichannel shopping. Six of the eight questions returned chi square results that are statistically significant in the 90% to 99% confidence level. The strongest results were in the “Mobile Omnichannel” category where question 4 (i.e. used a mobile phone to find out information on a retailer) returned a chi square of 16.831 and a significance score of .000 and question 5 (made a purchase on a mobile phone) returned a chi square of 21.607 and a significance score of .000.

The links to other demographic variables are not as strong. The “Mobile Omnichannel” group is linked to location. Question 4 (i.e. used a mobile phone to find out information on a retailer) returning a chi square of 3.758 and a significance score of .053 and question 5 (i.e. made a purchase on a mobile phone) returned a chi square of 3.86 and a significance score of .049. A further link was noted between one of the “Basic Omnichannel” group questions (3) and Income. No significant links were found between any of the questions and gender. The ambivalent links between demographics and omnichannel adoption echo the findings of the early studies in to the adoption of multichannel shopping.

### Can the omnichannel groups be distinguished from each other by demographic and behavioural characteristics? (H3)

The next stage of the analysis was to move from the individual question level to the group level. To do this a series of ANOVA tests were run using the group mean scores from the paired t-tests and the demographic and behavioural variable of social media use.

Table 6. ANOVA tests between Omnichannel groups and Demographic and Social Media use characteristics

		“Basic Omnichannel”	“Mobile Omnichannel”	“Advanced Omnichannel”
Gender	F	0.063	0.002	0.366
	Sig	0.802	0.967	0.546
Social Media	F	1.155	6.631	2.235
	Sig	0.332	0.000***	0.067*
Location	F	1.419	4.687	1.933
	Sig	0.235	0.032**	0.166
Age	F	3.347	7.608	4.935
	Sig	0.037**	0.001***	0.008***
Income	F	1.575	3.181	1.171
	Sig	0.211	0.076*	0.281

Source: Telstra survey 2014

\*\*\* Significant at 99% confidence

\*\* Significant at 95% confidence

\* Significant at 90% confidence

The results show (Table 6) that age is the most important characteristic separating the groups. Age is significant across all groups but strongest in the Mobile group ( $f=7.608$ ,  $p .001$ ) and Advanced group ( $f= 4.935$ ,  $p .008$ ). Social media use is also an important differentiator at the 99% confidence level for the Mobile group ( $f=6.631$ ,  $p .000$ ) and at the 90% confidence level for the Advanced group ( $f=2.235$ ,  $p .067$ ). The Mobile group also demonstrates statistically significant differentiation on the location ( $f=4.687$ , sig .032) and income ( $f=3.181$ , sig .076) variables.

### Can “Advanced Omnichannel” behaviour be predicted by social media use on mobile devices (H4)?

To determine if “Advanced Omnichannel” behaviour can be predicted by high social media use on mobile devices a multiple linear regression analysis was performed. The dependent

variable was the “Advanced Omnichannel” group and independent variables were the responses to the question on “devices used to access social media networks”. The results of the regression are shown in Table 7.

Table 7. Access to social media via mobile device as a predictor of Omnichannel behaviour

	What devices do you use to access social media?	Unstandardized coefficients	Beta	t value and significance	r squared
“Basic Omnichannel”	Tablet	0.16	0.28	3.42*	0.08
“Mobile Omnichannel”	a. Tablet	0.33	0.42	5.40*	0.17
	b. Tablet and Smartphone				
	Tablet	0.31	0.39	5.50*	0.31
	Smartphone	0.30	0.37	5.31*	
“Advanced Omnichannel”	Smartphone	0.21	0.29	3.59*	0.08
* significant at above 99% confidence level					

Source Telstra survey 2014

The use of mobile devices to access social media networks is a reliable but weak predictor of “Advanced Omnichannel” behaviour. It predicts “Advanced Omnichannel” behaviour less than 10% of the time. ( $r^2=.08$ ,  $p=.000$ ). The “Basic Omnichannel” group produced similar results to the “Advanced Omnichannel” group ( $r^2=.08$ ,  $p=.001$ ). The results for the Mobile group showed that access to social media networks via mobile devices predicts “Mobile Omnichannel” shopping behaviour more than 31% of the time. Using a stepwise procedure it was found that connection to social media via tablet alone predicts “Mobile Omnichannel” shopping 17% of the time. ( $r^2=.173$ ,  $p=.000$ ). When smartphone is added the predictive power rises to 31% ( $r^2=.312$ ,  $p=.000$ ).

## Discussion

### Implications for theory

The underpinning theory used for this thesis was Innovation Diffusion Theory (IDT) (Rogers 1983). IDT has been used to show that early adopters can be identified by certain demographic and behavioural characteristics. A range of these characteristics were distilled from the multichannel literature and tested in this thesis. Our results show ambivalent support for demographic factors but strong support for a behavioural factor (social contentedness) as a predictor of “Mobile Omnichannel” shopping

This study contributes to theory firstly by identifying three statistically distinct groups of omnichannel shoppers. Prior to this study the omnichannel literature implied a world of shoppers all operating at the “Advanced Omnichannel” level. This finding allows future researchers and practitioners to segment groups of shoppers in to omnichannel types for the

development of theory and strategy. Only the entry level, or “Basic Omnichannel” shopper, behaves like the multichannel shopper of the, “clicks and bricks” literature. The other two groups of omnichannel shoppers identified in the research behave in ways that were not possible in the multichannel era. The “Mobile Omnichannel” group use connected mobile devices to facilitate and enhance their shopping experience embodying the “anywhere, anytime” approach to shopping envisaged by Rigby (2011). The “Advanced Omnichannel” group use connected mobile devices to facilitate the simultaneous shopping of channels. This behavior was also envisaged in the early omnichannel literature (Aubrey & Judge 2012; Brynjolfsson, Yu Jeffrey & Rahman 2013; Rigby 2011).

The three groups of omnichannel shoppers can be identified and separated from non omnichannel shoppers to a certain degree by their demographic and behavioral profiles. Age is an important differentiator of all three groups while social media use is important in differentiating both the “Mobile Omnichannel” and “Advanced Omnichannel” groups. In addition domicile location has a role in differentiating the “Mobile Omnichannel” group and income has a role in differentiating the “Basic Omnichannel” group. The partial support for the hypotheses (H2, H3) contributes to the literature by echoing the studies of early online shopping. These studies collectively were able to link demographic and behavioural characteristics like age, gender, income, computer use and internet use with propensity to shop online but individually only found one, two or three factors significant.

The second contribution to theory is the finding that membership of the “Mobile Omnichannel” group can be predicted reliably 31% of the time by the use of social media on connected mobile devices. This finding is well within the range of predictive models analysed by Ventakesh et al (2003) who compared eight adoption models and found their predictive power ranged from 17% to 53%. Furthermore this finding adds to the literature that identifies social connectedness as a major driver of adoption for all groups apart from innovators.

There is some evidence in the findings that innovation diffusion theory (IDT) partially explains the adoption of omnichannel shopping. While computer and internet use and social connectedness were successfully used to predict early adoption of online shopping similar measures (use of social media on mobile devices) predicted reliably but weakly membership of the most “Advanced Omnichannel” group. In addition while three statistically different groups of Omnichannel shoppers were found to exist there was less difference between the Mobile and Advanced pair than for the other two pairs due to the popularity of comparing prices online while shopping in a store (54% of respondents). This is the most complex of the Omnichannel behaviours (simultaneous shopping of channels) but it is already more popular than the less complex “Mobile Omnichannel” shopping. The technology acceptance model (TAM) (Davis, Bagozzi & Warshaw 1989) with its suggestion that behavioural intention (BI) to use a technology depends on its perceived usefulness (U) plus attitude (A) towards use (a sum of perceived usefulness, perceived ease of use and external variables) may provide an additional framework to explain omnichannel adoption .

## **Practical Implications**

For retailers this research offers a way to better understand what kinds of omnichannel shoppers they have in their customer base and what facilities to provide to serve them best. “Advanced Omnichannel” shopping, i.e. the shopping of multiple channels simultaneously is

already a mainstream activity for many consumers. A majority of the sample (54%) reported having checked a price online while shopping in a retail store. For retailers with a significant proportion of these customers in their target market omnichannel investments should focus on delivering online content with the physical shopping experience via smartphone. Depending on the retail format this could mean cat walk shows, “how to” videos or price/feature comparisons. If this content is delivered using a browser based app that only activates when a customer enters a wi-fi zone or connects to a beacon this may give a reason for customers not only to come to the store but stay with the retailer physically and virtually for the duration of their visit. This group may also appreciate extra ways to use their mobile while in store like making payments, redeeming vouchers or finding out about inventory levels or where stock is physically located in the store. Social media is important to “Advanced Omnichannel” shoppers so retailers also may consider facilitating ways for customers to share their in store shopping experience via video with their social network while in the store.

“Mobile Omnichannel” shopping, i.e. the use of a mobile device to search, compare and transact, is an even more mainstream activity of consumers. In addition, the “Mobile Omnichannel” group is the easiest to identify via their age, social media use and domicile location and the only group we can predict through their social media use on mobile devices. For retailers with a significant proportion of these customers in their target market omnichannel investments should focus on delivering online content that allows the customer to interact as much as possible with the brand through their mobile device. For example it would make sense to invest as a minimum in mobile apps and the mobile enablement of existing web assets which are now given priority in Google searches from mobile (Rossi 2015). Social media is also important to this group and they access it on mobile devices. Building a strong, mobile enabled social media presence across platforms should also be a priority.

“Basic Omnichannel” shopping, i.e. shopping online and offline using a computer, is the most mainstream omnichannel activity of consumers. Our research shows that almost 90% of all consumers now shop this way. This means almost all retailers need to provide their customers the ability to shop online and offline. That may mean developing a trading web site if one does not already exist, making the experience online and offline as seamless as possible and creating social media sites so consumers can connect with the brand. For pure play online retailers it may mean creating a physical presence via pop-up or permanent retail store presences.

## Research Limitations

As with all secondary research this research has its limitations in that it was conducted by re-analysing existing data. This meant no original questions pertaining to the research objectives were asked. In addition, the profiling of the shoppers by demographic and behavioural characteristics available from the data was limited. Only five profiling characteristics were used and no psychographic elements were considered. A more extensive profiling of the respondents would have been useful. Furthermore only two questions and ten responses from the research addressed the range of Omnichannel behaviours being examined. A wider range of questions may have given better definition to

the results. More profiling and a wider range of questions would also have allowed a more extensive analysis of the data.

The research is further limited by the fact that the data used was originally collected for commercial not academic purposes. In the original report a weighting algorithm was used to normalise the responses to each question. The raw data often has a large number of nil responses not normally acceptable in academic analysis. In addition it means that the sample is a convenience sample not representative of the Australian population. The fact that this is a purely Australian study is a further limitation.

### **The Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM) (Davis 1989) evolved from the Theory of Reasoned Action (TRA) (Fishbein 1975). Whereas the TRA with its emphasis on beliefs and subjective norms driving behavioural intention is intended to explain a wide variety of behaviours the TAM was developed specifically to address the adoption of technology. The TAM suggests that behavioural intention (BI) to use a technology depends on its perceived usefulness (U) plus attitude (A) towards use (a sum of perceived usefulness, perceived ease of use and external variables). The original applications of TAM were in corporate environments particularly those facing the challenge of driving productivity through adoption of technological change. TAM was also used in the “bricks and clicks” literature to explain the consumer adoption of online shopping. The justification for using this theory to explain a consumer rather than business behaviour is that in the case of online shopping consumers must adopt technology before they can shop.

Chen et al (2002) use TAM in combination with Innovation Diffusion Theory (IDT) (Rogers 1983) to explain adoption of online shopping. They extend the TAM by adding the variable of compatibility from IDT. Their findings show that the most important factor in having consumers use an online store is their attitude toward using online stores and that attitude can be influenced by the compatibility of the store with the consumer. Pavlou (2003) also used TAM to predict adoption of online shopping but this time with addition of trust and perceived risk which were proposed as crucial factors in adopting a new way of virtual shopping. Using a partial least squares test (PLS) all the elements of the proposed model were shown to demonstrate significant influence on intention to shop online.

The TAM has also been used in the mobile phone literature to explain adoption of new networks (Teng, Lu & Yu 2009), new network features (Hung, Ku & Chang 2003), new types of devices (Bruner li & Kumar 2005; Tseng & Lo 2011) and acceptance of new forms of marketing to phones (Zhang & Mao 2008). As mobile phones have become more useful in the path to purchase (bigger screens, faster processing speeds), and attitudes have changed towards their use (a proliferation of useful apps, more intuitive user interfaces and provision of free wi fi by more retailers) the TAM may predict that it is mobile phone technology itself that is the antecedent driver of Omnichannel shopping. Unfortunately there is not enough data available in the Telstra reports to test this influence but it could be a fruitful area for further research if the right data sets were found to be available.

## Recommendations for further research

Future researchers may consider building on this research by extending its reach to other geographies. There is also the opportunity to build an original piece of research more focussed on defining the various behaviours of omnichannel shoppers. This research would have a wider of range questions designed to more clearly identify omnichannel behaviours and link those with respondents profiled on more characteristics.

This study establishes a link between social media use, especially on mobile devices, and omnichannel behaviour. Further research could expand on this and look at issues such as which social media platforms are most closely associated with omnichannel shopping, which groups of people are most likely to use social media to research purchases and the influence of retailer sponsored social media activity. It would also be valuable to know to what extent social media is a driver of omnichannel shopping activity versus omnichannel shopping being a driver of social media activity.

This study is based on quantitative data. Further exploratory qualitative research may shed light on how consumers relate to their mobile device as an omnichannel shopping companion. The issue of trust is an important one in marketing and has long been known to be an important influence in retail (Berry 1996; Guenzi, Johnson & Castaldo 2009; Sirdeshmukh, Singh & Sabol 2002). Trust has also been studied extensively in the multichannel literature (Forsythe & Shi 2003; Jarvenpaa, Tractinsky & Vitale 2000; Kim & Benbasat 2006; Lee & Tan 2003; Miyazaki & Fernandez 2000). The mobility literature referenced earlier shows gradually increasing levels of trust in mobile devices for retail transactions. To my knowledge there has been no empirical study into the influence of trust in the mobile device on omnichannel shopping. Has the mobile device become a more trusted advisor than friends, retail store team members or retailer marketing on the path to purchase? If so how can retailers increase their ability to join the circle of trust that binds consumers and their devices?

While this study identifies groups of omnichannel shoppers and provides some insight in to the antecedent drivers of omnichannel shopping behaviour it does not uncover the motivations for consumers to engage in omnichannel shopping. Further research may examine the relationship between shopping orientations (convenience, price, recreational, time conscious, brand conscious etc.) and omnichannel shopping. Shopping orientations have already been studied in relation to multichannel shopping (Donthu & Garcia 1999; Li, Kuo & Rusell 1999; Sin & Tse 2002; Swaminathan, Lepkowska-White & Rao 1999) but there are no empirical studies in the omnichannel literature that I am aware of. Research into shopping orientations may be complimented by observation of consumers in shopping malls and retail stores. Observational research has been common in the retail literature since Paco Underhill's classic "Why we Buy, The Science of Shopping" (Underhill 1999). Observation may uncover the cues that prompt consumers to engage with their mobile devices while shopping.

This thesis did not determine if the omnichannel shopper is simply a multichannel shopper who has adopted mobile. Further research is required to validate the philosophical view that omnichannel is inherently different to multichannel (Piotrowicz 2014; Verhoef, Kannan & Inman 2015). Choice modeling that examines the interplay between channels during the

same transaction is required to test the degree to which channel choice has been subsumed in to brand choice by consumers

A further area of study may be to examine the potential of omnichannel shoppers to move beyond researching and transacting with retailers to become collaborators in the creation of value with the retail supply chain. Collaboration between retailers and their supply chain partners has long been seen as a significant driver of value (Barratt 2004; Duffy 2004; Lehoux). Prahalad (2004) introduced the concept of co-creation of value to the supply chain literature. Underlying the concepts of collaboration and co-creation is the notion of connectedness. Now that consumers have powerful smartphones in their pockets they also have the tools to be collaborators and co-creators of value in the supply chain. An exploratory study is required to determine which areas of collaboration and co-creation would seem most valuable to consumers and the retail supply chain.

## Conclusion

The world of shopping is changing perhaps more than at any other time in its history. The omnichannel shopper represents both a great opportunity and a great challenge for retailers. We embarked on a study to define the omnichannel shopper and provide some insight in to the antecedent drivers of Omnichannel shopping behaviour. The results should prove valuable to future researchers in distinguishing different types of omnichannel behaviour and as time goes on re-examining the factors that are most likely to predict omnichannel shopping behaviour. They also will help retailers prioritise their investments in omnichannel infrastructure, systems and training

The research finds that there are three statistically different groups of omnichannel shoppers and that these groups form a hierarchy. The “Basic Omnichannel” group operates at a level no different to the multichannel shopper of the “clicks and bricks” era. The “Mobile Omnichannel” group shop in ways that were not possible before the advent of connected mobile devices. The “Advanced Omnichannel” group uses their devices to shop multiple channels simultaneously. The research also finds that these Basic, Mobile and Advanced groups of omnichannel shoppers can be identified to a certain extent by their age, social media use, domicile location and income.

The research also attempted to identify the antecedent drivers of omnichannel shopping using Innovation Diffusion Theory (Rogers 1983). Use of social media on mobile devices was found to reliably predict membership of the “Mobile Omnichannel” group 31% of the time. Further research may determine if the Technology Adoption Model (Davis 1989) may be a useful framework for further explaining the adoption of omnichannel shopping.

## Appendix

### Appendix 1

Correlation of the tested questions

“Basic Omnichannel”

		Q1. Browsed products on websites or apps	Q2. Read online reviews of products	Q3. Purchased products or services online from a computer
Q1. Browsed products on websites or apps	Correlation Coefficient	1.000	.640**	.427**
	Sig. (2-tailed)	.	.000	.000
Q2. Read online reviews of products	Correlation Coefficient	.640**	1.000	.457**
	Sig. (2-tailed)	.000	.	.000
Q3. Purchased products or services online from a computer	Correlation Coefficient	.427**	.457**	1.000
	Sig. (2-tailed)	.000	.000	.

\*\* . Correlation is significant at the 0.01 level (2-tailed).

“Mobile Omnichannel” shopper

		Q3. last 12mths- Used a mobile phone to find out information on a retailer	Q4. last 12mths- Made a purchase on a mobile phone	Q5. last 12mths- Made a purchase on a tablet
Q3. last 12mths- Used a mobile phone to find out information on a retailer	Correlation Coefficient	1.000	.470**	.439**
	Sig. (2-tailed)	.	.000	.000
Q4.. last 12mths- Made a purchase on a mobile phone	Correlation Coefficient	.470**	1.000	.345**
	Sig. (2-tailed)	.000	.	.000

Q5. last 12mths- Made a purchase on a tablet	Correlation Coefficient	.439**	.345**	1.000
	Sig. (2-tailed)	.000	.000	.

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## “Advanced Omnichannel” Shopper

		Q7.last 12mths- Compared prices online while shopping in a store	Q8. last 12mths- Scanned a barcode using a mobile device for price information
Q7.last 12mths- Compared prices online while shopping in a store	Correlation Coefficient  Sig. (2-tailed)	1.000  .	.200**  .006
Q8. last 12mths- Scanned a barcode using a mobile device for price information	Correlation Coefficient  Sig. (2-tailed)	.200**  .006	1.000  .

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Appendix 2

Isolating the “Yes” Responses from the “No” responses to the Online shopping behaviours questions to see if three Omnichannel groups can be observed

Group	Question	Yes	%	No	%	Total	Av by group	%
A	Browsed Products on websites or apps	163	88%	23	12%	186		
A	Read Online Reviews of products	165	89%	21	11%	186		
A	Purchased products or services online from a computer	161	87%	25	13%	186	163	88%
B	Used a mobile phone to find information about a retailer	93	50%	93	50%	186		
B	Made a purchase on a mobile phone	61	33%	125	67%	186		
B	Made a purchase on a tablet	74	40%	112	60%	186	76	41%
C	Compared prices online while shopping in a store	101	54%	85	46%	186		

C	Scanned a barcode using a mobile device for price information	33	18%	153	82%	186	67	36%
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Source: Telstra survey 2014

### Appendix 3

“Yes” and “No” responses to the Online shopping behaviours questions by group as a percentage of total responses in the group.

		“Basic Omnichannel”		“Mobile Omnichannel”		“Advanced Omnichannel”	
		Yes	No	Yes	No	Yes	No
Gender	Male	51%	53%	52%	51%	53%	51%
	Female	49%	46%	48%	49%	46%	49%
Social Media Use	5 times per day	27%	20%	39%	19%	46%	19%
	Everyday	27%	26%	27%	29%	34%	29%
	Every week	18%	22%	16%	18%	23%	18%
	Sometimes	4%	12%	2%	6%	4%	6%
	Never	24%	20%	16%	27%	27%	27%
Location	Metro	72%	62%	78%	67%	75%	66%
	Regional	28%	38%	22%	33%	25%	34%
Age	14-19	5%	3%	7%	4%	8%	2%
	20-39	35%	15%	43%	29%	31%	24%
	40-64	60%	83%	50%	67%	53%	74%
Income	Below \$65000	31%	39%	29%	35%	33%	40%
	Above \$65000	57%	42%	62%	50%	67%	60%
	Non Responses						

## Appendix 4

Results of the regression analysis using the groups of omnichannel shoppers as the dependent value and mobile devices used to access social media as independent variables

"Basic Omnichannel"

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.278 <sup>a</sup>	.077	.071	.26748709	2.189

a. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)

b. Dependent Variable: Basic\_Omnichannel

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.838	1	.838	11.717	.001 <sup>b</sup>
	Residual	10.017	140	.072		
	Total	10.855	141			

a. Dependent Variable: Basic\_Omnichannel

b. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.767	.038		20.267	.000

Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)	.161	.047	.278	3.423	.001
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a. Dependent Variable: Basic\_Omnichannel

#### "Mobile Omnichannel"

##### Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.415 <sup>a</sup>	.173	.167	.35359117	
2	.558 <sup>b</sup>	.312	.302	.32361145	1.959

a. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - iPad or other tablet

b. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - iPad or other tablet, Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)

c. Dependent Variable: Mobile\_Omnichannel

##### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.651	1	3.651	29.203	.000 <sup>b</sup>
	Residual	17.504	140	.125		
	Total	21.155	141			
2	Regression	6.598	2	3.299	31.503	.000 <sup>c</sup>
	Residual	14.557	139	.105		
	Total	21.155	141			

a. Dependent Variable: Mobile\_Omnichannel

b. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - iPad or other tablet

c. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - iPad or other tablet, Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.317	.039		8.229	.000
	Q7A. What devices do you use to access social network sites? - iPad or other tablet	.326	.060	.415	5.404	.000
2	(Constant)	.130	.050		2.609	.010
	Q7A. What devices do you use to access social network sites? - iPad or other tablet	.305	.055	.388	5.504	.000
	Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)	.302	.057	.374	5.305	.000

a. Dependent Variable: Mobile\_Omnichannel

“Advanced Omnichannel”

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.291 <sup>a</sup>	.084	.078	.33434255	1.988

a. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)

b. Dependent Variable: Advanced\_Omnichannel

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.443	1	1.443	12.912	.000 <sup>b</sup>
	Residual	15.650	140	.112		
	Total	17.093	141			

a. Dependent Variable: Advanced\_Omnichannel

b. Predictors: (Constant), Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.240	.047		5.076	.000
	Q7A. What devices do you use to access social network sites? - Smart Phone (eg. iPhone, Android or Blackberry)	.211	.059	.291	3.593	.000

a. Dependent Variable: Advanced\_Omnichannel

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