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Faculty of Business and Law

SOCIAL NETWORKING THEORY AND THE RISE OF DIGITAL MARKETING IN THE LIGHT OF BIG DATA

By

Philip A Dervan

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the requirements for the degree of

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ABSTRACT

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By

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A thesis presented on the 21st April 2015

Executive Summary

The topic of this thesis is the use of 'Big Data' as a catalyst for true precision target marketing, where online advertisements across all communication channels are so timely and relevant that they are welcomed by the consumer because they improve the customer experience. In particular, the research has been directed to demonstrate the link between investment in digital branding and sales revenue at the company level. This thesis includes a review of the accumulation of 'Big Data' from a plethora of social networks, and an assessment of its current use and application by marketing and sales departments and emerging others. The hypothesis tested was that companies most advanced in processing 'Big Data' by rules-based, algorithmic, digital analysis are the companies realizing the greatest return on investment in the use of 'Big Data'. The research was conducted using a questionnaire and interviews with the top people working in large consultancy and related firms who are actively engaged in the utilization of social media and large datasets. As there is a lack of understanding within companies in terms of using social media, and many obstacles have to be overcome, the research was meant to unearth some insights into the effective use of data. The research indicated that companies that had certain organizational and operational characteristics actively use social media, although the utilization is often limited in scope. However companies that do use them effectively gain measurable ROI and tend to track users across many venues. The companies using advanced 'Big Data' analytical tools to describe and predict user characteristics, applying the intelligence to target, time, tailor and trigger the release of cogent content to the 'dynamic throng of individual audiences' are experiencing the highest return on social media investment. This thesis makes a contribution to the wider understanding of social media use by the large business entities, and to the current and future problems that this explosion of data is creating and is likely to create.

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ACADEMIC THESIS: DECLARATION OF AUTHORSHIP

I, Philip A Dervan declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Social Networking Theory and the Rise of Digital Marketing IN THE LIGHT OF BIG DATA

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signed:.....

Date:.....

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1 INTRODUCTION

This thesis is about the accelerating accumulation of 'Big Data' from social networks and how the use of this data could be the catalyst for true precision target marketing, where online advertisements are so timely and relevant that they are welcomed by the consumer. But to use 'Big Data' in close to real time, which is likely to be necessary, will require not only massive computer processors, huge quick-access data storage repositories and advanced calculation power. I posit that the real progress towards 'Big Data'-enabled precision target marketing will come from advanced algorithmic analysis by rules-based digital analysis. Further, the analytical engines will ultimately be tied to end-point execution engines at the myriad points of service (POS). A potential result of this switch from the advertisement to the analysis would be that current marketing leadership, 'idea-men', skilled at pitching products and creating compelling marketing campaigns, will be replaced by the algorithmically-savvy back-office 'nerds' at the marketing and advertising front lines.

The Literature Review comprises the following six chapters and aims to summarize and discuss existing marketing research and findings of the business and scientific communities on the development of digital technology, its ever greater usage via widespread global connectivity and the development of social media and social network sites that facilitate a number of forms of Word-of-Mouth Marketing (WOMM). One of the results of the ever-growing size and ever-increasing usage by ever-more people over an ever-lengthening period has been the accumulation of massive amounts of data, known as 'Big Data'. Ultimately this investigator will discuss the ability to apply 'Big Data' to market targeting, and why this prospect is so promising to modern marketers.

The first chapter reviews the historic, technological and social factors that have led to the current communications environment. The next chapter discusses the spread of user access and the penetration of the internet into countries across the globe. It then examines marketing theory, social marketing, the marketing management decision-making process and the possible roles social media can play in a comprehensive proactive plus responsive corporate marketing plan. The following chapter covers the rise of digital branding in the social networking environment, contrasting traditional brand-building and intervention strategies with those now available at the advent of the social media revolution. The final chapter of the literature review describes so-called 'Big Data', which is the name given to the collective information that is being or has been stored, as computers track and record business and personal internet usage, social media and networking, and every other digital interaction online.

The digital revolution of the 1980s, the development and global penetration of the public Internet since the middle 1990s and the spread of free Wi-Fi during the 2000s, created a fast-developing and potentially game-changing marketing venue in 2014 and beyond. Beginning in the late 1990s, rapid expansion of global interconnectivity via the World Wide Web (WWW) and Internet has fuelled a 'Communications Revolution' with an associated proliferation in the number and variety of local, regional and global social interactions. This recent growth was further encouraged by an exponential increase in the availability and variety of both fixed and mobile Internet-access devices worldwide (International Telecommunications Union, 2012).

Concurrently increasing mobile access and ever more attractive content has manifested many engaging forms of what is now known as 'social media', and in particular, the 'Social Network'

(International Telecommunications Union, 2012). Participation in Social Networks is itself growing exponentially in terms of the sheer number of users, their demographic and geographic spread, and in terms of the social, political, religious and economic representation among social media participants.

Considering the aforementioned conditions which currently prevail (Internet World, 2012), it can only be said that understanding and developing a profitable social media strategy has become a mandatory consideration for any forward-looking marketing manager. From one viewpoint, and led by the social media experience via 3G, 4G, Web 2.0 and increased penetration of wireless Internet access devices, what had previously been termed the 'audience of individuals' should now more accurately be called the 'dynamic throng of individual audiences'. The focus, approach and other dynamics of corporate marketing development and decision-making must adapt to the opportunity presented by social network participation, or risk the huge opportunity cost inaction could represent.

There are emerging opportunities to drive awareness and, thus, possible sales of goods and services, by leveraging social media, and social network sites (SNS) in particular, to widen the sales pipeline. If marketers develop the right approach to individual targeting for Word-of-Mouth Marketing (WOMM), project a believable sense of client intimacy and weave marketing and sales significantly, yet without annoyance into the mix, the current opportunity for shrewd and responsive marketing leaders is highly accommodating. The following chapters will examine these many factors influencing the opportunity and dynamics of the social network marketing opportunity.

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2 THE INTERNET-LED COMMUNICATIONS REVOLUTION

The Internet-led communications revolution could be said to have begun with the invention of the transistor in 1947 (Ament, 2005), leading to the integrated circuit in 1958 (Bellis, 2012), the microprocessor in 1971 (Bellis, 2012) and the personal computer in the late 1970s (Bellis, 2012). These technologies ultimately led to a 'Digital Revolution', whereby previously analogue and mechanical technologies were re-developed as digital devices, mainly through the extensive use of digital logic circuits (Bellis, 2012). In due course, digital technologies including the computer, cellular phone, and digital data storage (e.g. CDs) and transmission mechanisms (e.g. the computer network) – all crucial components of the Internet-led communications revolution – developed and matured. Since the early 1980s, all these technologies have seen widespread adoption (Internet World, 2012) and social penetration (Worldmapper, 2004).

In addition to, and as a result of the transformations of the Digital Revolution, the Internet was created in the 1960s by the United States government's Advanced Research Projects Agency (ARPA) as a means of long-distance interaction and communication between universities in the U.S. and amongst DoD (Department of Defense) facilities (Oracle, 2012). The Internet was reserved for use by universities and other U.S. government entities until 1992 when the World Wide Web (WWW) was made available to the public (ScienCentral, 1999). In part because users were able to communicate and transfer multimedia content almost instantly to any recipient connected to the 'web', individuals and businesses increasingly joined universities and government as Internet users (Oracle, 2012). At first, individuals used the technology to communicate with each other (via email), and businesses used the technology mainly as a means of simple advertising.

By the late 1990s, nearly every country on Earth was linked into the Internet, and, by current conservative estimates, the 2012 population of Internet users globally exceeded 2.25 billion (Internet World, 2012). At this time, the World Wide Web, a term originally coined by English computer scientist, Timothy Berners-Lee in 1989 (Oracle, 2012a), is a global network of interlinked documents residing on servers all around the world (Internet World, 2012), and both individual usage and population penetration is widespread globally (Wikipedia, 2012).

The interconnectivity of computers, cellular phones and other technologies facilitated by the Internet, along with explosive growth in individual and business usage have led to tremendous expansion in the access to, and types of activities people can perform online. Among the developing Internet applications has been the establishment of communities of like-minded individuals (e.g. Facebook, MySpace), and websites dedicated to users sharing a special interest such as religion, political philosophy or preferred diversions.

Online communities began as news groups or bulletin board services (BBS), emailing lists with associated user profiles, and chat rooms in the 1990s (Kaplan and Haenlein, 2010). Today, the term 'social media' is used to describe these Internet-based technologies, which are widely accessible using a variety of fixed and mobile communications technologies (e.g. PCs, cellular phones, tablets). Social media is used today for interactive communication between and within organisations, communities and individual users. Andreas Kaplan and Michael Haenlein define social media as "a group of Internet-based applications that build on the ideological and technological foundations of

Web 2.0 and that allow the creation and exchange of user-generated content" (Kietsmann et al., 2011).

Since 2012, social networking has taken place across many online venues, including online magazines, Internet forums, weblogs, social blogs, micro-blogs, wikis, podcasts, photograph/picture/video-sharing venues, shared rating and social bookmarking collectives where user-generated content (UGC) is the primary subject matter (Kaplan and Haenlein, 2010). In their 2010 Business Horizons article, Andreas Kaplan and Michael Haenlein propose classification of social media into six types: blogs and micro-blogs (e.g. FourSquare, Ning), content communities (e.g. Flickr), social networking sites (e.g. MySpace), virtual game worlds (e.g. Runescape, End of Nations), collaborative projects (e.g. SETI) and virtual social worlds (e.g. Roblox, Second Life).

It is these social networks which business leaders need to understand and master, by honing the targeting and intimacy dynamics of corporate marketing development and decision making. By so doing, companies will be able to present marketing content to targeted individuals in compelling and personal ways to drive sales and otherwise realise advantage via the fast-emerging channel known as the Social Network.

2.1 An historic review of the growth of the Internet

The Internet today is a global system of interconnected computer networks that use a standard communications protocol known as Internet protocol (IP), and often transmission control protocol (TCP) (Gilbert, 1995) to link more than 2.25 billion users (Internet World, 2012). The Internet is essentially a 'network of networks' composed of millions of public and private, academic and government networks linked by a broad array of electronic, wireless and optical networking technologies. The term 'Internet' refers also to the infrastructure to support user interaction, communication and data exchange (Cerf, 1997), and to the almost limitless range and variety of information resources and services available thereupon, such as inter-linked hypertext documents (Montecino, 2002). Beginning in the late 1990s, global interconnectivity via the World Wide Web and Internet has fuelled a 'Communications Revolution' proliferating in the volume, frequency and variety of local, regional and global social interactions.

The history of the Internet began in the 1950s with the creation and development of the first commercial mainframe computers, the UNIVAC Computer in 1951 (Greenia, 1969) and the IBM 701 EDPM Computer in 1953 (HistoryofComputers.org, 1985). These computers, simple by today's standards, functioned via point-to-point (P2P) communication between the mainframe and multiple terminals. This P2P technology was later developed into point-to-point connections between computers, the first computer networks. During the next decade, further research designed to improve the economy, efficiency and reliability of P2P technology led to the development of 'packet switching' (Joiner et al., 1978). Packet switching allowed communications networks to function at higher speeds and use existing communications technologies with greater efficiency. This improvement ultimately led to the development of ARPANET, as a means of long-distance interaction and communication between universities in the U.S. and the DOD (Department of Defense) (Oracle, 2012). More than any other early Internetwork, ARPANET led to the development of Internetworking protocols that allowed multiple separate networks to communicate seamlessly as a network of networks (Joiner et al., 1978).

Throughout the 1970s, ARPANET grew in extent, connecting more and more academic and government institutions with and to each other, but the technology remained unavailable to the general public (Kahn and Cerf, 1979). With the Internet Protocol Suite (TCP/IP) becoming standardized in 1982 (Leiner et al., 2012), the concept of a world-wide network of fully interconnected TCP/IP networks called the 'Internet' was suggested. Access to the ARPANET also grew in the early 1980s, as the National Science Foundation (NSF) developed the Computer Science Network (CSNET) which provided global research and academic organisations access to supercomputer sites in the United States. The idea of the World Wide Web (WWW) was then introduced in 1989 (Oracle, 2012) and commercial Internet service providers (ISPs) began their emergence.

In 1992 the World Wide Web was made available to the public (ScienCentral, 1999), and was fully commercialized in 1995 with the decommissioning of the National Science Foundation's NSFNET (Harris and Gerich, 1996). As of 1995, the final remaining restrictions on commercial use of the Internet were all but eliminated (Greene, Landweber and Strawn, 1993). Beginning in the late 1990s, global interconnectivity via the World Wide Web and Internet has fuelled a 'Communications Revolution' with proliferation in the number and variety of local, regional and global social interactions. Today, ever-increasing connectivity, in even very remote regions of the globe and near-space (NASA, 2008; NASA, 2010) continues to fuel a growth in Internet user population and concurrent enlargement in breadth of penetration at all levels of income and social strata.

Since the mid 1990s, the Internet has continued to grow in three ways pertinent to this topic:

1) The amount of online information and knowledge available has increased in volume, content and consumption
2) Increased and expanded use by commercial entities as the 'fifth media' to explore, even as it is developing
3) Expansion of consumer entertainment and social networking variety, availability and wide-ranging use.

Concurrently the Internet has acted as the milieu for a continuing evolution of online content and modes and ways of accessing the web. Increasing mobile access and ever more attractive content has manifested many engaging forms of what is now known as 'social media'. And in turn, social networks themselves are growing exponentially in terms of the sheer number, demographic and geographic spread and socio-economic distribution of participants.

2.2 Origins and growth of PC-based Internet access

The origin of PC-based Internet access can be traced back to the advent of the transistor in 1947 (Ament, 2005), which led to the integrated circuit in 1958 (Bellis, 2012), then the microprocessor (i.e. the 'chip') in 1971 (Bellis, 2012) and ultimately the personal computer in the late 1970s (Bellis, 2012). More so than the resulting pervasive use of digital logic circuits in all manner of appliances, tools and other devices (Rullis, 2009), the development of the personal computer and its widespread acceptance created an entire new market for digital devices (Christensen, Raynor and Anthony, 2003). The demands of this developing digital product marketplace, comprised not only of public sector organisations and businesses, but increasingly of individual consumers, prompted massive investment in digital technologies (Halverson and Smith, 2009). These investments led to

the development of ever-faster and more functional microchips, digital data storage devices (e.g. floppy disks, CDs, 'Flash' drives) and new information transmission mechanisms (e.g. 'wired' and 'wireless' computer networks, the Internet) and ultimately new Internet-enabled transmission mechanisms (e.g. email, SMS, VOIP). Thus was established the PC-based Internet communications revolution.

More specifically, the advent of commercially-available personal computers in the early 1980s, usable by non-technical individual users at price points many could afford led to a massive increase in computer usage (Reimer, 2005). During most of the 1970s, computers had been purchased primarily by business, government and universities. The first Personal Computers (PCs), the Apple I in 1976 and the Apple II in 1977, were the first PCs that met with strong interest from individual buyers, and the IBM 'PC', released in 1981, marked IBM's entry into the personal computer industry. During the 1980s and early 1990s, many knock-offs of the IBM PC emerged, including some notable clones (Computer Hope, 2012):

- The Commodore 64 in 1982
- The Compaq Portable in 1983
- The Tandy 1000 in 1984
- The Dell 'Turbo PC' in 1985
- The Atari ST in 1985
- The IBM 'PC Convertible', the first laptop computer, in 1986
- The Mac SE and IBM PS/2 in 1987

Quantitatively, the growth in PC and related computer product sales is illustrated in Figure 1 (Business Insider, 2012). As more people purchased PCs, an industry focused on developing software came to fore, led by Microsoft and Apple. Microsoft's text-based disk operating system (DOS) became the de facto operating system for IBM PCs and their numerous clones, beginning in 1984. Later that year Apple introduced the McIntosh (i.e. the 'Mac'), the operating system of which integrated graphics and text. This new user interface, a 'graphical user interface' (GUI), proved highly desirable to the non-technical buyer. IBM, not to be outdone, retorted with the introduction of the Windows 1.0 in 1985, and has competed head-to-head with Apple in the operating system space ever since (Computer History Museum, 2012).

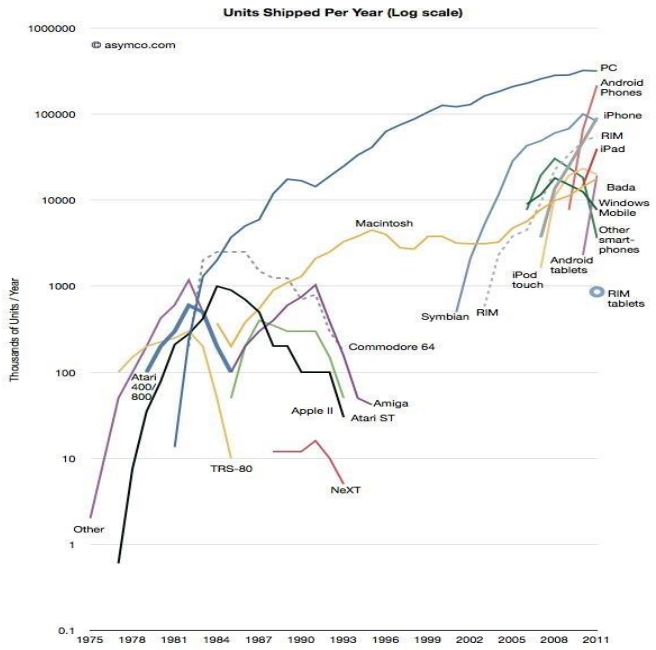

Figure 1 - Historical Sales of Computers (Source: http://articles.businessinsider.com/2012-01-18/markets/30639063_1_chart-platforms-courtesy)

As the capabilities and functionality of these and other lesser known operating systems developed during the 1980s and 1990s, computers became much more user-friendly and more prolific. People became increasingly familiar and adept at their use, bolstered by their increasing presence in schools and workplaces (Cosper, 2012). Consequently a highly competitive market, where processor speed,

the amount of live (i.e. RAM) memory and the ease and capacity of both in-device (i.e. hard drives) and transportable (e.g. floppy disks) storage became major drivers attracting buyers (Computer History Museum, 2006).

Throughout the 1990s, PCs became as common as some kitchen appliances in homes throughout the developed regions of the world (Fay-Wolfe, 2005). While in 1989 only 15% of U.S. households possessed a home computer (i.e. a PC, PC-clone or Apple computer), by the end of the 1990s, the figure had increased to more than 50% (Ward, 2009).

With the advent of the Microsoft Windows 95 operating system, the proliferation of all varieties of professional and personal software, including video games, and the emergence of a commercial World Wide Web, by the early 2000s, almost anyone could have access to powerful hardware, robust applications and global communications. By this time, compelling multimedia capabilities and Internet-access tools (Computer Hope, 2012) including the MODEM and wireless router were fast-developing to facilitate interconnectivity of personal computers and computer networks via the Internet (Computer History Museum, 2006).

In 2012 personal computers, including laptops and tablets, were ubiquitously equipped with Internet access capability, having both the hardware and software needed. The processor speeds, RAM, fixed and removable storage capacity and virtual storage options of these devices have all grown at breakneck speed. In addition, the emergence of broadband and the proliferation of 3G and 4G wireless connectivity have shortened data transfer delays to near instantaneous in many cases. According to the Internet Research Company, the number of people with online access in 2011 included 22% of the global population, with 1.1 billion people regularly accessing the Internet from non-cellular phone devices (Aun, 2007). In essence, the popularity of the PC spawned these developments, and while alternative devices (e.g. cellular phones) are increasingly used to access the Internet, the PC user experience remains a major driving force in the ongoing expansion, development and differentiation of social media and the WWW.

2.3 Origins and growth of mobile Internet access

Mobile telephone technology has been available for much longer than most people realize, but only became relevant to the growth of the WWW with the development and availability, in 1996, of the first Internet-connected mobile phone: the Nokia 9000 Communicator. Still, a short review of the development of mobile telephony will show how significant was this development and how Internet-connectivity via wireless devices, particularly the cellular phone, has improved and inflated since the middle 1990s.

Voice transmission via wireless radio signals had been in use since the 'Father of Radio Broadcasting', Reginald Fessenden, developed the 'Alternator-Transmitter' in 1906 (Brittain, 1996). This first wireless audio transmission device was able to send quality audio signals, but without any way to amplify the signals, the range was limited to only a few miles. The Alternator-Transmitter was used most notably for ship-to-shore communications from a fixed base as early as 1930 (Popular Science, 1934) and increasingly for ship-to-ship communications, at first between military vessels exclusively, during World War I (Gow and Smith, 2006). In 1919, following the close of WWI, the U.S. government released its patents for radio transmission technology, and commercial use began, with

military investments leading to developments including the first hand-held radio transceivers in the late 1930s (Harlow, 1936).

The first commercially accessible mobile telephones required the ability to connect to the public switched telephone network. This was accomplished during the 'first mobile telephone call' made from an automobile using technology developed by developed by Bell Laboratories in 1946 (Belrose, 1995). Developments taking place from this point included AT&T's establishment of the Mobile Telephone Service (MTS) in 1946, requiring a bulky, 80-pound transmission device to be installed in the user's automobile (AT&T, 2012). From the late 1940s through the mid-1960s, demand for mobile telephones increased among consumers, occasioning AT&T's Improved Mobile Telephone Service (IMTS), made available in 1965 (AT&T, 2012). The improvements associated with the IMTS included the additional of radio channels to allow more simultaneous calls, the replacement of operator-based 'call set' by customer dialling, and the introduction of less cumbersome mobile telephony equipment (AT&T, 2012).

Also in the 1960s, Radio Common Carrier (RCC) was introduced by competitors who emerged in response to AT&T's IMTS. A variety of other services were also emerging at the time in Europe, most notably in West Germany and Norway, and in the United States, though none was as significant as IMTS and RCC. Several new kinds of transceivers arose as well, including the RCA 700 series handheld two-way radio and the 'highly advanced' briefcase phone. While wireless services proliferated slowly, a need became apparent for what people today call 'roaming' capability. That is, there was an emerging desire for the ability for a mobile telephony customer to automatically make and receive voice calls when travelling outside the geographical coverage area of the home network, by means of using a visited network (Redl et al., 1998). Because the telecommunications industry lacked standards for connectivity between devices and services, roaming was mainly accomplished by manual redialling on the part of the user. To improve service, many industry associations were working on a single standard to allow roaming, though multiple decoders to enable operation with more than one of the common signalling formats (e.g. 600/1500, 2805, and Reach) were in wide use at the time (Gow and Smith, 2006).

Cellular phone ideas really began to develop in the 1970s. New ideas, including the development of hexagonal cells (Ring, 1947), receiver towers with directional antennae, frequency re-use and automated 'hand off' were all advanced during the early 1970s (Amos, 1970). In 1973, mobile telephony finally broke from the need to mount transceivers in cars and other vehicles (Cooper et al., 1973). Motorola researcher, Martin Cooper and his team developed a prototype handheld phone weighing 2 ½ pounds with dimensions 9 inches by 5 inches by 1¾ inches. The device was a commercial success and spurred Motorola to develop more small wireless telecommunications products that would eventually culminate in the first of the cellular phones consumers recognize today (Miller, 2009).

The first wide-ranging analogue cellular phone network, the Advanced Mobile Phone System (AMPS) was developed in the late 1970s in the U.S. and spread to Israel and Australia. In many ways, AMPS was the first real system to drive mass market adoption of cellular phone technology (AT&T, 2012). The system was immature by today's standards, with its lack of encryption and heavy demand for bandwidth. Still, it was the system most in use at the time and the interconnection technology for the Motorola DynaTAC Analog AMPS, one of the first incarnations of a 'modern' cellular phone. The

AMPS system remained the dominant cellular network throughout the remainder of the 1970s and the 1980s.

During the early 1990s, analogue services began being replaced by digital services, bringing to the fore the same benefits as described above in Sections 2.1 and 2.2. These '2G' mobile phone services were of two standards: the U.S. standard was known as the Code-Division Multiple Access (CDMA) system (Fendelman, 2012), while the standard for many European nations became the Global System for Mobile Communications (GSM) (PC Mag, 2009). At the same time, thanks to increased cell tower density, more advanced batteries and more efficient electronics, large, uncomely transceivers were increasingly replaced with smaller 'hand-helds' weighing less than one pound. Coincident with the diminishment of transceivers was the emergence of the pre-paid cellular phone (Gow, 2006). Later, in 1993, phones began being made with Short Message Service (SMS) (i.e. text messaging) capabilities (Hillebrand and Holley, 2010). Text messaging was originally popular with younger users, and has also grown in popularity with older users over the course of time. Before the end of the decade, phones with multimedia capabilities and access to media content housed on the WWW became prevalent. The first phone to have Internet connectivity built in was the Nokia 9000 Communicator, introduced in 1996 in Finland. This phone was quite expensive at the time, however, and limited availability of easily-accessed content for mobile phones online held back the widespread use of these phones for several years. Still, with the connection between cellular phones and the Internet initiated, businesses were soon to meet the opportunity with paid downloadable ringtones, mobile payment processes and sponsored SMS advertising all making a showing by the end of the 1990s.

More than any prior networking development, the advent of 2G standard telecommunications Internetworking systems in the early 2000s spawned massive growth in the use and sales of cellular phones. The explosion in use of cell phones to access the Internet quickly made it obvious that 2G standards would be insufficient to match forward demand, so work on third generation (3G) systems began promptly, early in the decade. 3G systems differed from 2G systems mainly in their use of packet-switching, described earlier in this text, rather than circuit-switching for data transfer (Dornan, 2000). The resulting high connection speeds associated with 3G networks led to a major transformation in the use of cellular phones. Streaming media, including radio and television to 3G handsets appeared on the scene (Gow and Smith, 2006) and companies including Disney and Real Networks began providing specialized content.

GROWTH IN CELLULAR TELEPHONE AND INTERNET USAGE 1990 THROUGH 2010				
Year	Cellular Phone Subscriptions	% of Global Population	Internet Users	% Internet users/cellular users
1990	12,400,000	0.25%	2,800,000	0.05%
2002	1,174,000,000	19%	631,000,000	11.0%
2010	4,000,000,000	67%	1,800,000,000	26.6%
2012	6,200,000,000[1]	88%	2,280,000,000	36.8%

[1] Number of subscriptions can exceed number of subscribers because many users possess multiple subscriptions

Table 1 – Growth in use of cellular phones and the Internet between 1990 and 2010 (Sources: The International Telecommunication Union 2011, The World Bank, 2012).

During the mid 2000s, regular improvements to 3G networks, like High-Speed Packet Access (HSPA), were introduced to increase download speeds and capacity. By late 2007, penetration of 3G-enabled cellular phones and 3G telecom services had become a $120 billion global industry. Today nearly 300 million subscribers, or approximately 7.5% of the more than 4 billion worldwide cellular telephone subscribers, are 3G enabled (Table 1).

According to the International Telecommunications Union (ITU), at the end of 2011, mobile telecommunications subscriptions totalled more than 6 billion, with global penetration estimated at 87% (International Telecommunications Union, 2012). Further, the ITU estimates that cellular phone penetration in the 'developed' world has reached a saturation point of approximately 79%. Thus future growth in cellular phone subscriptions are being driven by rapid adoption in the 'emerging' world, led by escalated usage in India and China, and trailed by expanded use in Africa. Regarding access technology, at the end of 2011, ITC indicates that approximately 90% of the world's population had mobile access to 2G networks, and of these, 45% of global regions boast both 2G and 3G coverage (International Telecommunications Union, 2012).

Growth in global cellular phone usage is especially relevant because of its direct bearing on growth in Internet access. In fact, beginning in the late 2000s, an increasing percentage of global Internet access was via mobile devices (i.e. cellular phones and laptop computers) as opposed to fixed devices like PCs. This phenomenon began in the Far East with Internet users in Japan, South Korea and Taiwan increasingly accessing the Internet by cellular phone rather than by fixed PC, and spread to India, The Philippines and many other Asian countries.

WORLD INTERNET USAGE AND POPULATION STATISTICS December 31, 2011						
World Regions	Population (2011 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2011	Users % of Table
Africa	1,037,524,058	4,514,400	139,875,242	13.5 %	2,988.4 %	6.2 %
Asia	3,879,740,877	114,304,000	1,016,799,076	26.2 %	789.6 %	44.8 %
Europe	816,426,346	105,096,093	500,723,686	61.3 %	376.4 %	22.1 %
Middle East	216,258,843	3,284,800	77,020,995	35.6 %	2,244.8 %	3.4 %
North America	347,394,870	108,096,800	273,067,546	78.6 %	152.6 %	12.0 %
Latin America / Carib.	597,283,165	18,068,919	235,819,740	39.5 %	1,205.1 %	10.4 %
Oceania / Australia	35,426,995	7,620,480	23,927,457	67.5 %	214.0 %	1.1 %
WORLD TOTAL	6,930,055,154	360,985,492	2,267,233,742	32.7 %	528.1 %	100.0 %

Table 2 - Worldwide Internet Usage (Sour. Copyright ©2001-2012, Miniwatts Marketing Group).

In the U.S. and Western Europe, the density of home and business PC penetration has caused the growth in mobile Internet access to appear less significant, with an estimate of 20% to 30% of all Internet usage originating from mobile sources (International Telecommunications Union, 2012), though this figure belies per capita usage.

3 GLOBAL DISTRIBUTION AND USAGE OF THE INTERNET

Internet hosting point growth, as measured by the increase in new websites, now totals approximately 1 billion, according to The ISC Domain Survey. Alternatively, the number of registered domain names, which represent physical points (i.e. IP addresses) on the Internet totals 132 million as of June 2012. This figure (i.e. top-level domain names TLDs) is up from approximately 27 million at the end of 2000, and 80 million at the end of 2006. Rapid growth continues today.

These top-level domains (TLDs) are spread throughout the world, with the vast majority (i.e. 80 million) located in the United States. Outside the U.S., Germany lays claim to 6.5 million domains, China 5.1 million, the United Kingdom 4.8 million, Canada 3.9 million and France 3.3 million (Webhosting Info 2012). During 2012 the most significant growth in registered domain names is taking place mainly in the United States, China and Australia. Notably, figures related to Internet users, population penetration, total number of hosts, websites and domain names are highly variable according to the information source accessed. The figures above were accumulated from what are believed to be highly accurate and trustworthy sources, and may differ significantly from other available information sources.

3.1 Penetration of Internet in developed and emerging regions

Notwithstanding the figures provided by the Internet world statistics in Table 2, it is possible to cross-tabulate the current penetration and usage of the Internet by region, based on country population figures from the United Nations Department of Economic and Social Affairs, and with per capita Internet user information from the World Bank, it is possible to segregate the worldwide penetration of the Internet (Table 3).

While the figures in Tables 2 and 3 do not agree precisely, due to calculation variables and mathematical differences, the cross-tabulation produced in Table 3 mainly concurs with the ranking in Table 2. That is, in the left-hand column North America and Europe lead the list in terms of the percent penetration of the Internet in the region, while Africa trails. When the per cent penetration figures are applied to total populations, however, a significant difference becomes clear. While per capita penetration in Europe and North America is highest, the total user populations in Asia, South America and even Africa rise to the fore, despite lower Internet penetration rankings, while Oceania drops to last place, despite relatively high Internet penetration into its population. With this in mind, the marketer needs to consider not only the regional population penetration of the Internet, but also the sum total of users in that region, when estimating the customer exposure which a new marketing campaign will meet.

3.2 Personal Internet usage patterns

As discussed earlier in Sections 2.1 through 2.3, the original uses of the Internet focused on the ability to rapidly communicate text messages and share scientific research and developments between military, academic and other government institutions. Since the Internet was opened to public use in the mid 1990s, the reasons people use the medium have expanded considerably. Table 4 shows the result of a 1996 field trial by Carnegie Mellon University to improve understanding of the use of the Internet by people accessing from their homes.

Internet Users per Capita Ranking

Europe	Penetration by Country		
Mean	Min	Max	
66%	40%	96%	
North America	Penetration by Country		
Mean	Min	Max	
51%	8%	85%	
Middle East	Penetration by Country		
Mean	Min	Max	
42%	3%	82%	
South America	Penetration by Country		
Mean	Min	Max	
36%	10%	81%	
Oceania	Penetration by Country		
Mean	Min	Max	
32%	1%	83%	
Asia	Penetration by Country		
Mean	Min	Max	
30%	1%	82%	
Russian Federation	Penetration by Country		
Mean	Min	Max	
28%	2%	47%	
Africa	Penetration by Country		
Mean	Min	Max	
13%	1%	49%	

Internet Users Population Ranking

Asia	Total Users
Mean	
30%	1,104,729,242
Europe	Total Users
Mean	
66%	490,730,631
North America	Total Users
Mean	
51%	269,691,560
South America	Total Users
Mean	
36%	139,861,348
Africa	Total Users
Mean	
13%	126,409,684
Middle East	Total Users
Mean	
42%	117,537,621
Russian Federation	Total Users
Mean	
28%	39,924,900
Oceania	Total Users
Mean	
32%	11,624,867

Table 3 - United Nations, Department of Economic and Social Affairs - Population Division, Population Estimates and Projections Section - World Population Prospects, the 2010 Revision.

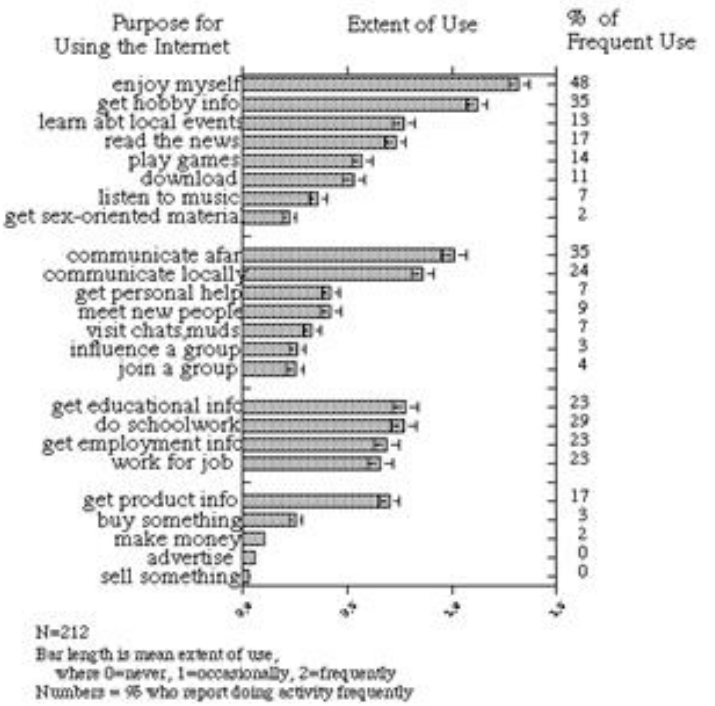

Figure 2 – Reasons for personal Internet usage from the home in 1996 (Source: Kraut et al., 1997).

The field trial was based on a study of 100 households in the Pittsburgh, PA area of the United States. Figure 2 illustrates the results as a bar chart. In the chart, the bar length corresponds to the use of the Internet for a specific purpose where "0" indicates no use and "4" indicates very frequent use. Longer bars indicate more frequent use. To help with interpretation, the results are further separated into four categories: entertainment, communication, work and electronic commerce. Kraut and his colleagues found that, to the extent the small sample could be extrapolated to the Internet population at large, the primary reasons people were using the Internet from home in 1996 were hedonic rather than instrumental. People at the time used the Internet mainly to communicate with others, near and far, and to get information related to a hobby, education or job. Very few users reported using the Internet to chat, join user groups, buy or sell, or advertise. While users may have sought information online, purchases presumably took place via more traditional channels (e.g. at brick-and-mortar locations). Notably, almost one in four users during 1996 used the Internet for work or school-related activities.

Since the Kraut field trial in the mid 1990s, the amount and variety of information and the diversity of online interaction available to users has increased and evolved. With this in mind, it is not surprising that the main reasons people use the Internet have also expanded over time, though the top activities have remained somewhat constant (i.e. communication and information-seeking). At its most fundamental level, Internet use was not so different in 2012, when considered in the broad categories of the earlier study.

Figures from the Pew Internet & American Life Project tracking surveys, updated as recently as February 2012 nearly match the results of the earlier study. In other words, people continue to use the Internet mainly to communicate with others and to get information.

The difference between the users of the mid 1990s and current users has more to do with the variety of means of communication and the expanded range and depth of information available online. While users previously communicated with others via text email alone, now they upload and share all kinds of audio-visual content, use instant messaging, access 'live' content and Tweet their ideas to the online population at large instantaneously. This is not surprising considering that, at its base, the Internet is a communications and information-sharing technology.

Of particular interest to this research is the major growth in use of business, private and government portals to complete sales and other transactions which formerly required physical proximity to complete. For example, according to the Pew Center, as of 2011, 71% of adult users in the United States go online to purchase products, whereas the Kraut study indicated only a 4% frequency of purchasing online in 1996. This major growth in users buying products and services online bodes well for businesses, which by definition sell items, and implicitly would like to sell items online. In terms of activities which were not widely available online during 1996, the Pew study indicates that, as of 2011, 61% of users do banking online, 25% make phone calls and 11% trade stocks, bonds or mutual funds online. Again, these increases suggest an increasing level of comfort with online transactions in general, especially those involving finances and financial instruments among users. The growing comfort also bodes well for businesses aiming to sell products and services in the online environment.

Similarly, in 1996 fewer than 5% of users sold or advertised products online, while in 2010, 53% used online classified advertisement websites to sell or advertise products and 26% participated in online

auctions. While the 1996 Kraut study found 14% played games online, the 2010 Pew survey found the figure to be 36%.

Especially notable in terms of this research are the Pew Center's findings concerning social networking-related activities. The survey found that 33% of respondents go online to read other people's journals or blogs, 22% participate in online discussions and 16% use online social networking sites like MySpace and Facebook.

Table 5 shows the top five online activities for adults in the United States. The activities are separated into the four categories used in the 1996 Kraut study: entertainment, communication, work and electronic commerce, and the percentage of users surveyed who participate in the activity are indicated.

Top Internet User Activities by Category *2012* *Adult Internet Users in the United States*	
Entertainment	
Surf the Web for fun	62%
Watch a video clip or listen to an audio clip	56%
Watch a video on a video-sharing site like YouTube or GoogleVideo	52%
Upload photos to a website so you can share them with others online	37%
Play online games	35%
Communication	
Send or read email	92%
Send instant messages	40%
Send or receive text messages using a cell phone	35%
Read someone else's online journal, web log, or blog	33%
Chat in a chat room or in an online discussion	22%
Work	
Research for school or training	57%
Do any type of research for your job	51%
Look online for info about a job	47%
Sell something online	15%
Send or receive an invitation to a meeting an online invitation service	12%
eCommerce	
Research a product or service before buying	81%
Buy a product	71%
Buy or make a reservation for travel	64%
Do any banking online	53%
Pay bills online	38%

Table 4 – Top online activities of U.S. Adults 2010 through 2012 (Source: Pew Internet & American Life Project tracking surveys).

3.3 Developing user demographics

Originally the domain of academics, government officials and other public servants, the emergence of a public Internet added personal and business users to the fold. But not all the new users employed the Internet equally for the same purposes. Usage demographics have been, and continue to be, different between males and females, the young and the old.

For example, Kraut's 1996 field trail study showed that females used the Internet for communications with friends and family, for personal help and for school-work more than males. Conversely, males used the Internet for less social activities, such as seeking product information, downloading software and viewing pornography.

In addition, adults tended to use the Internet more to attain employment-related information or for job-related activities, while teenagers more often sought educational information and used the Internet to support school assignments. Adults also used the Internet more for product intelligence, purchases, news and pornography. Adult males were the main group to use the Internet as a source of news. Teenagers were more likely to use the Internet for gaming, listening to music and social interaction. Finally, adult women and teenage boys were the groups most associated with using the Internet for sales, advertisement and other money-making endeavours.

Moving forward to the present day, an important difference in usage between generations has been the dominance of 'Millennials', those users aged 18 to 33 years, in many uses of the Internet. Millennials remain the highest volume users of social networking sites, instant messaging, online classifieds, listening to music, playing games, reading blogs and participating in virtual worlds (Zickuhr, 2010). Generation X users, not surprisingly, more often access government websites and seek financial information online than Millennials. Notably, the older generation's use of online communication and entertainment, in particular social network sites, has grown especially quickly with respect to the Millennials, with the fastest growth coming from the G.I. generation, aged 74 years and older.

Further, there has been a rapid acceleration of Internet users of all ages watching videos and listening to music online, presumably the result of spreading broadband penetration. While the popularity of blogging among Millennials has actually decreased in favour of social networking sites during the past five years, its appeal to older generations has increased (Zickuhr, 2010).

Arguably the most significant Internet trend, however, has been an ongoing generational levelling of participation in particular online activities. That is, the popularity of certain activities, which were formerly dominated by Millennials, or were at least not as popular with older generations, has become increasingly common to users of all generations. These include search engine use, purchasing and rating of products and services, regarding news and downloading podcasts (Zickuhr, 2010).

As of 2010, Internet user demographics have been characterized by the Pew Internet and American Life Project in terms of the frequency of particular online activities by members of different age groups (Table 6) (Zickuhr, 2010).

Generations Online 2010: Summary

The following chart shows the popularity of internet activities among internet users in each generation.

Survey dates vary—for details, see the **Methodology** section at the end of this report.

Pew Internet
Pew Internet & American Life Project

90-100%	40-49%
80-89%	30-39%
70-79%	20-29%
60-69%	10-19%
50-59%	0-9%

Key: % of internet users in each generation who engage in this online activity

Millennials Ages 18-33	Gen X Ages 34-45	Younger Boomers Ages 46-55	Older Boomers Ages 56-64	Silent Generation Ages 65-73	G.I. Generation Age 74+
Email	Email	Email	Email	Email	Email
Search	Search	Search	Search	Search	Search
Health info	Health info	Health info	Health info	Health info	Health info
Social network sites	Get news	Get news	Get news	Get news	Buy a product
Watch video	Govt website	Govt website	Govt website	Travel reservations	Get news
Get news	Travel reservations	Travel reservations	Buy a product	Buy a product	Travel reservations
Buy a product	Watch video	Buy a product	Travel reservations	Govt website	Govt website
IM	Buy a product	Watch video	Bank online	Watch video	Bank online
Listen to music	Social network sites	Bank online	Watch video	Financial info	Financial info
Travel reservations	Bank online	Social network sites	Social network sites	Bank online	Religious info
Online classifieds	Online classifieds	Online classifieds	Online classifieds	Rate things	Watch video
Bank online	Listen to music	Listen to music	Financial info	Social network sites	Play games
Govt website	IM	Financial info	Rate things	Online classifieds	Online classifieds
Play games	Play games	IM	Listen to music	IM	Social network sites
Read blogs	Financial info	Religious info	Religious info	Religious info	Rate things
Financial info	Religious info	Rate things	IM	Play games	Read blogs
Rate things	Read blogs	Read blogs	Play games	Listen to music	Donate to charity
Religious info	Rate things	Play games	Read blogs	Read blogs	Listen to music
Online auction	Online auction	Online auction	Online auction	Donate to charity	Podcasts
Podcasts	Donate to charity	Donate to charity	Donate to charity	Online auction	Online auction
Donate to charity	Podcasts	Podcasts	Podcasts	Podcasts	Blog
Blog	Blog	Blog	Blog	Blog	IM
Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds

Source: Pew Internet surveys. *pewinternet.org*

Table 5 – Top online activities by age group of U.S. Internet users, 2010 (Source: Pew Internet surveys).

In terms of Internet use variability by gender, a study of more than 500 college students in 2012 found that males used the Internet more for entertainment and gaming, while females used the Internet for communications and social networking more than males. Another 2012 study found males were more likely than females to use Web 2.0 applications including blogs, wikis, online games and immersive virtual environments (Wen-Hao et al., 2012). The study also found that males

and females did not differ significantly on the use of social networking tools and online video sharing.

Finally, researchers with the Pew Internet and American Life Project (Fallows, 2005) found that women approach the Internet with a focus on deepening relationships, while men approach the Internet more as a recreational tool. In particular, the study found that men use the Internet more to access general information (e.g. news, weather, sports, finance, downloading and rating), while women most commonly use the Internet to get information on health, medical and religious topics. Further, females tend to use e-mail as an intimate tool to communicate with friends and family to share information and ideas across topics, while males approach email in a more utilitarian fashion. Also, while men are more likely to participate in online transactions such as bill paying and stock/bond/mutual fund trading, both genders equally use the Internet to buy products or services, and bank online.

While these demographics are by no means an exhaustive list of differences between users, based on age group and gender, they highlight significant distinctions in the use of the Internet by these users. Of particular note is increased use of the Internet overall by older generations, the ubiquitous interest in social networks and social networking tools across generations and gender, and the divergence in trust and focus of Internet use between males and females.

3.4 The advent of social networks

It would seem the most potent cross-gender and trans-generational applications that have been introduced in the evolution of the WWW have been social networking sites. These sites began as message boards and the like, then developed into blogs and online forums and in 2012, manifested as highly interactive, multifunctional, web 2.0+ enabled applications, like Facebook, MySpace, LinkedIn, Twitter, StumbleUpon and others. These applications evolved with the spread of broadband and mobile Internet access, along with developments in content-sharing technologies. Briefly, some key milestones in the advent of social networks include (Pearson Education, 2007):

- 2001 – Wikipedia, an online encyclopedia with open editing launches
- 2002 – Friendster, considered the first 'social network' is introduced
- 2003 – LinkedIn, a professional social networking site premiers
- 2004 – Facebook spreads from Harvard to other universities and reaches 1 million members
- 2005 – YouTube, a video-sharing social network, begins broadcasting
- 2006 – Twitter, a micro-blogging and social networking site goes live
- 2007 – Apple releases the first iPhone, allowing mobile access to social networking sites
- 2008 – Facebook becomes more popular than MySpace, making it the top social networking site
- 2009 – Foursquare, a social networking site based on physical location, launches
- 2010 – Twitter users send 65 million tweets daily and Facebook reaches 500 million users
- 2011 – StumbleUpon takes lead as the website delivering the most U.S. social media traffic

There are so many such social networking tools at this time that the next section of this literature review is dedicated to a comprehensive description of social networking theory, social networks and social networking sites. To wrap up this chapter on the Internet-led communications revolution, the following tables (Tables 6a to 6e) list major social networks, categorized by target audience.

Large General Audience Global Social Networking Sites					
Website	Target Audience	Launch Date	Website	Target Audience	Launch Date
Bolt.com	General Audience	1996	Orkut	General Audience	2004
Fotki	General Audience	1998	Tagged	General Audience	2004
Cyworld	General Audience	1999	Bebo	General Audience	2005
Gather.com	General Audience	1999	Ning	General Audience	2005
Kiwibox	General Audience	1999	Stickam	General Audience	2005
Makeoutclub	General Audience	1999	Badoo	General Audience	2006
MouthShut.com	General Audience	2000	Jaiku	General Audience	2006
Frühstückstreff	General Audience	2001	Faceparty	General Audience	2007
Meetup	General Audience	2001	Flixster	General Audience	2007
StumbleUpon	General Audience	2001	Listography	General Audience	2007
FilmAffinity	General Audience	2002	Quechup	General Audience	2007
Friendster	General Audience	2002	Filmow	General Audience	2009
MyLife	General Audience	2002	WeOurFamily	General Audience	2009
Plaxo	General Audience	2002	Diaspora*	General Audience	2010
delicious	General Audience	2003	Hotlist	General Audience	2010
hi5	General Audience	2003	LAGbook	General Audience	2010
MEETin	General Audience	2003	MillatFacebook	General Audience	2010
Myspace	General Audience	2003	Google+	General Audience	2011
tribe.net	General Audience	2003	Pinterest	General Audience	2011
Cloob	General Audience	2004	Wellwer	General Audience	2011
Facebook	General Audience	2004	Friendica	General Audience	2012
Flickr	General Audience	2004			

Table 6a - Major social networks for general audiences (Source: Wikipedia, 2012).

Large Special-Interest Group Social Networking Sites					
Website	Target Audience	Launch Date	Website	Target Audience	Launch Date
Gapyear.com	Travelers	1998	Wattpad	Bibliophiles	2006
Open Diary	Bloggers	1998	weRead	Bibliophiles	2006
Xanga	Bloggers	1998	italki.com	Polyglots	2006
LiveJournal	Russian-speaking Bloggers	1999	Exploroo	Travelers	2006
deviantART	Art Community	2000	GamerDNA	Gamers	2006
Partyflock	Dutch Music Afficionados	2001	Twitter	Micro-bloggers	2006
Travellerspoint	Travelers	2002	ReverbNation.com	Musicians	2006
Gaia Online	Gamers	2002	Livemocha	Polyglots	2007
Last.fm	Music Afficionados	2002	Playfire	Gamers	2007
CouchSurfing	Travelers	2003	Cellufun	Mobile Gamers	2007
Passportstamp	Travelers	2003	Fuelmyblog	Bloggers	2007
Playlist.com	Music Afficionados	2003	Virb	Artists	2007
PureVolume	Indie music Afficionados	2003	SoundCloud	Musicians	2007
WAYN	Travelers	2004	Zooppa	Independent Artists	2007
LibraryThing	Bibliophiles	2005	Busuu	Polyglots	2008
TravBuddy.com	Travelers	2005	Raptr	Gamers	2008
Blogster	Bloggers	2005	Plurk	Micro-bloggers	2008
MOG	Music Afficionados	2005	Taltopia	Artists	2008
Buzznet	Music and Pop-Culture Community	2005	GetGlue	Entertainers	2008
Indaba Music	Musicians	2005	Skoob	Brazillian Bibliophiles	2009
douban	Entertainment Review-Seekers	2005	TermWiki	Polyglots	2009
aNobii	Bibliophiles	2006	Wooxie	Bloggers	2009
Goodreads	Bibliophiles	2006	ShareTheMusic	Music and Pop-Culture Community	2009
Shelfari	Bibliophiles	2006	Audimated.com	Musicians	2010

Table 6b - Major social networks for special interest groups (Source: Wikipedia, 2012).

Large Special Audience Global Social Networking Sites					
Website	Target Audience	Launch Date	Website	Target Audience	Launch Date
Classmates.com	School, College, Work and Military Communities	1995	SocialVibe	Charitable Community	2007
AsianAvenue	Asian Americans	1997	Geni.com	Geneologists	2007
Care2	Green Living and Social Activist Communities	1998	LinkExpats	Expatriate Community	2007
BlackPlanet	Black American Community	1999	NGO Post	Indian News Seekers	2007
Vampirefreaks.com	Gothic and industrial subculture Communities	1999	Pingsta	Internetwork Experts	2007
DXY.cn	Chinese Healthcare Community	2000	Ravelry	Knitting and Crocheting Communities	2007
WriteAPrisoner.com	Inmates and family Community	2000	Disaboom	People with Disabilities	2007
CozyCot	East Asian and Southeast Asian women	2001	Fubar	Singles	2007
My Opera	Opera Afficionados	2001	eToro	Social Investors	2007
Athlinks	Runners and Swimmers	2001	WiserEarth	Social justice and environmental Communities	2007
Skyrock	Francophones	2002	Xt3	Catholics	2008
Hub Culture	Global Influencers	2002	Cross.tv	Christians	2008
Fotolog	Photography Community	2002	GovLoop	Government Workers and Contractors	2008
MyHeritage	Families	2003	Identi.ca	Hackers and Software Freedom Advocates	2008
Elftown	Fantasy and Sci-Fi Afficionados	2003	Gays.com	LGBT Community	2008
Eons.com	Baby Boomers and Users Aged 40+	2004	Itsmy	Mobile Internet Users	2008
aSmallWorld	European Social Elite	2004	Sina Weibo	Chinese Micro-bloggers	2009
43 Things	Goal Setters and Achievement Seekers	2005	DailyBooth	Photography Community	2009
OUTeverywhere	LGBT Community	2005	Blauk	Gossiping Community	2010
Lifeknot	Hobbyists	2006	LaiBhaari	Marathi Social Networkers	2010
PatientsLikeMe	Medical Patients	2006	Wepolls.com	Polltakers	2011
CafeMom	Mothers	2006			

Table 6c - Major social networks for large special interest audiences (Source: Wikipedia, 2012).

Large Business & Academic Social Networking Sites

Website	Target Audience	Launch Date	Website	Target Audience	Launch Date
HR.com	Human Resources Professionals	1999	ScienceStage	Scientists	2008
Advogato	Software Developers	1999	Qapacity	Business Community	2009
Hospitality Club	Hospitality Community	2000	Meettheboss	Business Community	2010
XING	European Businesspeople	2003	Viadeo	Students, teachers and educators	2004
LinkedIn	Business Community	2003	StudiVZ	German-speaking University Students	2005
Ryze	Business Community	2004	Nasza-Klasa.pl	Polish Students	2006
Yelp, Inc.	Local Businesspeople	2004	Tuenti	Spanish speaking Students	2006
Focus.com	Business Community	2005	TeachStreet	Academics/Researchers	2007
Elixio	Business Community	2007	FledgeWing	University Students	2008
DailyStrength	Medical Health Community	2007	Academia.edu	Academics/Researchers	2008
Epernicus	Research Scientists	2007	Mubi	Cinema Afficionados	2008
Talkbiznow	Business Community	2008	Students Circle Network	Students, Teachers and Educators	2010
Yammer	Office Colleagues	2008			

Table 6d - Major social networks for business & academic groups (Source: Wikipedia, 2012).

Large Tageted General Audience SN Sites

Website	Target Audience	Launch Date	Website	Target Audience	Launch Date
mixi	Japanese General Audience	2000	Wer-kennt-wen	German-speaking General Audience	2006
Friends Reunited	UK General Audience	2000	Odnoklassniki	Russian-speaking General Audience	2006
Trombi.com	French General Audience	2000	Vkontakte	Russian-speaking General Audience	2006
Habbo	Teenage General Audience	2000	IRC-Galleria	Finnish General Audience	2006
iWiW	Hungarian General Audience	2002	Ibibo	"Talented" General audience	2007
Netlog	European General Audience	2003	BIGADDA	Indian General Audience	2007
Nexopia	Canadian General Audience	2003	Sonico.com	Spanish speaking General Audience	2007
Taringa!	Argentinian General Audience	2004	Lafango	"Talented" General audience	2008
Hyves	Dutch General Audience	2004	Kaixin001	Mainland Chinese General Audience	2008
Zoo.gr	Greek General Audience	2004	The Sphere	Wealthy General Audience	2008
WeeWorld	Teenage General Audience	2004	Foursquare	Mobile General Audience	2009
Biip.no	Norwegian General Audience	2005	Goodwizz	French General Audience	2010
Qzone	Chinese General Audience	2005	Faces.com	Adult General Audience	2011
MocoSpace	Mobile General Audience	2005	Renren	Chinese General Audience	2011

Table 6e - Major social networks for targeted general audiences (Source: Wikipedia, 2012).

4 SOCIAL NETWORKING THEORY (SNT)

According to Stanley Wasserman, Rudy Professor of Statistics, Psychology and Sociology at Indiana University, "A social network is a social structure made up of a set of actors (such as individuals or organisations) and the dyadic ties between these actors" (Wasserman and Faust, 1994). In other words, this definition identifies a social network as the structure created when a group of individuals or organisations interact with one another in some way. According to the Oxford dictionary, "A Social Network is a network of social interactions and personal relationships, or a dedicated website or other application which enables users to communicate with each other by posting information, comments, messages, images, etc…" (Oxford Dictionary, 2012).

Social networks have traditionally been studied by placing them, as it were, into one or another theoretical framework. The most important of these frameworks are Balance Theory, Graph Theory, Social Comparison Theory and, lately, the Social Identity Approach. Also important in terms of this dissertation is Complex Network Theory.

Balance theory is used in social networking analysis to evaluate the motivational effects of interpersonal communication between, or positive feelings for another individual, towards developing or changing the first person's attitude about an object. This object can be another person, organisation, product, service or other (Heider, 1958). As an example, consider an Internet User (U_1) who likes another User (U_2) but does not like a given Product (P), and the person discovers that U_2 is an employee of the company that makes P. This example is represented symbolically as:

$$U_1 (+) \rightarrow U_2$$
$$U_1 (-) \rightarrow P$$
$$P (+) \rightarrow U_2$$

Balance theory posits that the User (U_1) will always strive for 'balance' in response to an 'unbalanced' condition. To evaluate the disposition of U_1 in this example, simply multiply the arithmetic signs and determine whether U_1 will perceive a 'balance' (a positive product) or an 'imbalance' (a negative product) and thus be compelled to change one of his or her attitudes. In this case a positive (+) multiplied by a negative (-) multiplied by a positive (+) results in a negative product, or an 'imbalance'. In order to achieve balance, then, U_1 has three attitudes he or she may change:

1. Decide that s/he doesn't actually like U_2: U_1 (-) ⟶ U_2, thus "–" x "–"x "+" = "+" (i.e. 'balance')
2. Decide s/he actually likes the product P: U_1 (+) ⟶ P, thus "+"x "+"x"+" = "+" (i.e. 'balance')
3. Decide that U_2 isn't actually involved with P: P (-) ⟶ U_2, thus "+"x "-"x"-" = "+" (i.e. 'balance')

Graph theory is used in Social Networking analysis to elicit the ways in which information spreads within the network (Newman, 2010). This theory is not related to the process of graphing relationships on a relational plane, but describes relationships between 'nodes' (e.g. Users) and their 'connections' (e.g. communication) which represent the links between nodes. Connections can be unidirectional or bidirectional, meaning in this case that a given user (U_1) may communicate with another user (U_2) who in turn may not respond (i.e. a 'unidirectional' connection) or U_2 may return the communication (i.e. a 'bidirectional' connection). The nodal relationships are represented 'graphically' by this Sociogram in Figure 3:

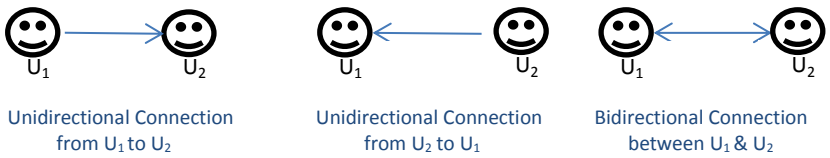

Figure 3 - Examples of two-node (dyad) Sociograms.

These simple illustrations belie the complexity to which Sociograms can develop. A slightly more developed Sociogram, which also includes signs usable for balance theory analysis is illustrated below (Figure 4) (UNISUL, 2012). Sociograms can also include representations of 'value' or specific 'activities' between nodes.

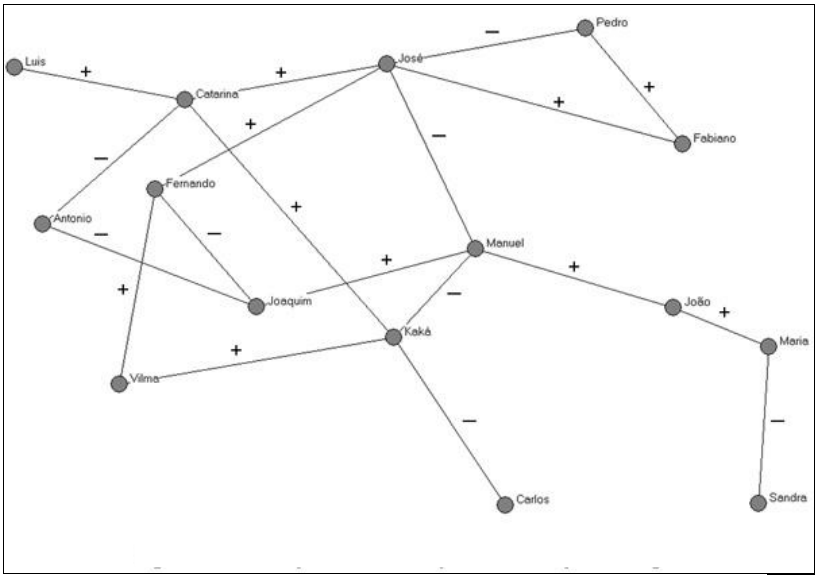

Figure 4 – Example of a social network Sociogram with value labels to facilitate analysis by Balance Theory (Source: UNISUL Social Network Analysis).

Social Comparison theory is used in social networking to analyse the types of comparisons made by individuals to evaluate the accuracy of their self-analysis in terms of opinions, abilities and other characteristics (Schachter, 1959). The theory postulates that Users appraise their 'worth' (social or personal) by comparing themselves to others and thus valuating themselves. This ranking can be in terms of such characteristics as intelligence, wealth, success, appearance and similar measures. The two variants of social comparison are 'Upward' comparison and 'Downward' comparison. In the former, the user compares him or herself to others who seem to be better, or have more of the quality in question. In the latter, it is the opposite case. In upward comparison, the user often develops a sense of inadequacy, while in downward comparison the user tends to develop a sense of personal advantage (Mislove et al., 2007). The processes of comparison can lead to self-enhancement via association with other members, or with subgroups within the social network.

Because social network sites facilitate the viewing of other users' apparent private lives, for example purported success, wealth, possessions, health, or attractiveness, the tendency for users to make social comparisons is heightened. The most noted research on this facilitated heightening of social comparison suggests most comparison is 'upward' and has led to increased depression among social media users (Kaplan and Haenlein, 2010). But the researchers also point out that the greater transparency of other people's lives often leads to social comparison bias (Kaplan and Haenlein, 2010). A negative bias can arise from the ease of misrepresentation in a virtual environment and the 'bigger than life' appearance of others' activities.

The Social Identity Approach is the application of both Social Identity theory and Self-Categorization theory to the study of social networks. The former theory is used to evaluate individual networking behaviours on the basis of perceived status as a result of membership in a social group that is considered 'relevant' (Haslam, 2001) to the individual, and the legitimacy and openness of the intergroup environment (Tajfel and Turner, 1986). The latter theory is used in social networking analysis to study how individuals 'variably and fluidly' change their characterization of themselves as a function of "categorization processes in social perception and interaction which speaks to issues of individual identity as much as group phenomenon" (Oakes, Haslam and Turner, 1994).

Further, complex network analysis is used in social networking evaluation to evaluate the manner in which content spreads between members of the network. According to the theory, information spreads in one of two ways, that is, conserved spread and non-conserved spread (Newman, Barabási and Watts, 2006). In the former, the sum total of the content being disseminated throughout the network remains constant as it is spread. In the latter, the content either grows or shrinks as it moves through the network.

Employing these four theoretical models, social networking theorists study the individual social network participants and groups in terms of the associative and comparative factors which depreciate or enhance their perceptions of themselves, other people and objects, and how these perceptions influence the actions of these individuals. Adding complex network analysis elucidates the manner in which these associative and comparative factors develop as they are disseminated throughout the network.

In order to more deeply understand the application of these theories and analytical approaches to online social networks, the following discussion focuses on the definition of 'social network sites' and why they are popular from a socio-psychological point of view. Following these descriptions, the discussion in the following chapter centres on using social networks to promote products, disseminate brand awareness campaigns and improve marketing management decision-making.

4.1 What are social networks?

Considering the emphasis of this document, a more focused characterisation attuned to the former definition can be found in a 2007 *Journal of Computer-Mediated Communication* article entitled "Social Network Sites: Definition, History, and Scholarship". In this paper, Danah M. Boyd and Nicole B. Ellison of the University of California and Michigan State University (Boyd and Ellison, 2007), respectively, define social network sites (SNS) as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd and Ellison, 2007). In addition, a significant difference between SNS resembling Facebook or LinkedIn and so-called predecessors in the vein of blogs and chat rooms is that the former are based mainly on relationships between people, while the latter are based principally on shared interests.

While the interactive environment, the mode and the gravity of communication between members of a social network vary according to the particular website, this investigator will call the aggregate of these 'social network sites' for the purpose of this dissertation. The term 'network' is favoured in this nomenclature because individual SNS users indeed form a 'network', or group of connected members, regardless of whether actual 'networking' occurs via this computer-mediated communication (CMC). The term 'networking', as used in this case, means any social activity by which groups of like-minded individuals recognize, create, or act upon personal, business or other interpersonal opportunities.

In 2012, SNS sites representing the gambit of user interests and diversions made possible the sharing of various forms of information, or 'user-generated content' (UGC). This UGC includes text, music, photos, images, hyperlinks and other personalized content (Leiner et al., 2012). Some social communities have even been developed where the level of interaction requires a user's complete

attention in near real-time, and are concurrently used by users sitting almost anywhere around the globe (e.g. online gaming networks). Furthermore, SNSs can be differentiated into three types: mobile-specific SNSs (e.g. National Weather Service Mobile), web-based, and web-based supporting limited mobile interactions (e.g. Facebook). Among these, many SNSs target people from specific demographic groups; the intention to develop a pre-chosen user base does not always agree with the demographic makeup of the *de facto* user base that develops (Kopytoff, 2004). While many SNSs are conceived to serve definite interest groups based on specific interests, ethnic groups, religious affiliation, sexual, political, or other identity-driven identifications (Boyd, 2006), in fact, it is not surprising to find users segregating themselves according to these factors, despite the demographic intentions of the SNS administrators.

Key to SNS success has been making it possible for users to develop personal profiles where individuals can "type one's self (Sic.) into being" (Sundén, 2003). In this case, users create (semi)personal and custom content for their online identity vis-à-vis detailed profile page. Over time, SNSs evolved various guidelines and/or topical questionnaires to help new users establish a somewhat standardized profile, and generally include the option to add images and prose descriptions of oneself, or make statements, or otherwise draw attention to one's individual topics of interest. Profile content can often act as a signal to other SNS members interested in being introduced to like-minded contacts, according to SNS options and personal interest. Yet it has been found that the personal drivers behind joining an SNS and subsequently initiating contact with another user based on the content of their online profile are often highly individualized (Lampe, Ellison and Steinfeld, 2007).

An additional differentiator between SNS is the specific mechanisms available for the user to make known to other users the members of his/her own network, those identified as 'connected to you' within and/or outside the SNS. Terms used to distinguish users with outside relationships include 'contact', 'fan' and 'friend' among others. These connections may require only individual validation, or may require validation by the targeted user as well before becoming active. In general, the terms 'contact' and 'fan' are applied to connections which are not validated by both users (i.e. unidirectional validation), while the latter term, 'friend' often requires mutual bidirectional validation, though these obligations continue to morph in line with available data security options (Boyd and Ellison, 2007). Further user-friendly operational control of visibility options and cross-network information exchanges are among the primary differentiators of SNS communities such as LinkedIn (Boyd and Ellison, 2007). Note that while any of these terms may be used to signify a mutual relationship in an SNS, the terms do not necessarily correspond to their meanings in the wider vernacular (Boyd, 2006).

4.2 Why people use social network sites

Part of the appeal of joining an SMS is that of identifying and acknowledging other users with whom one is associated by a personal network, or becoming 'connected' to like-minded users of the given SNS. Public display of SNS users' networks often acts as a key attractor to new users of a specific SNS, as the volume and quality of a user's network, and perhaps the content as well, can be viewed as forms of social capital (Ellison and Lampe, 2007). Importantly, while the sharing of users' social network, which visibility is often at the user's discretion, allows fellow SNS users who might never 'meet' under pre-CMC conditions to make connection, the main objective for many participants

being identified as communicating with others already in their social networks (Boyd and Ellison, 2007). For many users of SNS, staying in touch with friends and making plans with them are more common activities than making new friends.

At the surface level, the main reasons people use SNS to gain information, ideas and opinions from others, to interact with like-minded people, to develop personal celebrity, to express their imaginations and personal identity, or to simply 'escape' from the daily routine. It is true that these reasons do describe the main activities users perform on SNS, and should be noted by the marketing manager. Below the surface are deeper social and psychological motivators which drive users to SNS. These deeper forces are arguably more important for the theoretical purposes of this dissertation, and will be discussed in more detail below.

At a slightly deeper layer, SNS also serve to increase users' social capital (Ellison and Lampe, 2007), that is, "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Ellison and Lampe, 2007). These resources include the development of personal relationships, increased ability to establish groups and associations and greater access to useful information, including recommendations and reviews. Social capital is more easily created via the kind of informal networks that become established on SNS, presumably because people prefer to choose their associates rather than being told whom these will be.

As mentioned previously, many studies have shown that the principal use of SNS for both adults and teenagers is the furthering of pre-existing personal relationships, rather than the creation of new ones (Bordieu and Wacquant, 1992). This is easily understood, considering the difficulty one would face mapping out all of one's direct and indirect (i.e. through direct connections) connections, either on paper or using a non-SNS computer application like Microsoft Access. An SNS user's contacts can be divided into what are characterized as 'strong' and 'weak' ties (Zickuhr, 2010), with strong ties (e.g. close friends) requiring significant attention to maintain, and weak ties (e.g. distant colleagues) who require a minimum of regular attention. Using an SNS to keep track of direct contacts (mainly 'strong' ties), in perhaps greater detail than would otherwise be likely (Donath and Boyd, 2004) gives the user much more connectivity, information and access to his or her own extended network (including 'weak' ties) than other methods that could be employed. Increased connectivity, information and access are further facilitated by the simple, user-friendly interfaces provided by SNS. It has also been pointed out that SNS "make invisible social networks visible" (LeFever, 2010) by elucidating the user's contact's contacts, and sometimes the latter's contacts as well.

There are also many reasons social network sites appeal to Internet users from a psychological point of view. For example, it could be argued that participation in an SNS can lead to satisfaction of several of Abraham Maslow's psychological needs, including the need for 'belonging', 'esteem', 'self-actualization' and even 'safety' (Maslow, 1998). While satisfaction of the need for belonging is implicitly enhanced by joining an SNS, the ways SNS participation satisfies the other three needs warrants a brief explanation.

It has been found, for example, that developing and posting information about oneself enhances self-esteem (Gentile et al., 2012), as it is a self-focused activity, despite taking place on a 'social' network site. According to Keith Campbell, one of the study's authors, "Editing yourself and constructing yourself on these social networking sites, even for a short period of time, seems to have

an effect on how you see yourself … (people) are feeling better about themselves in both cases. But in one they are tapping into narcissism and in the other into self-esteem" (Nauert, 2012)."

The need for self-actualization can also be satisfied when SNS users develop their own 'unique' profiles, 'play' games with their contacts, experience ease and self-sufficiency engaging others via the SNS and enrich their daily experience by the 'richer' quality of interaction achieved (Maslow, 1998). Finally, satisfaction of the need for 'safety' may be illustrated by the aforementioned study that found males were more likely than females to use Web 2.0 applications including blogs, wikis, online games, and immersive virtual environments, while the genders did not differ significantly on the use of social networking tools and online video-sharing (Wen-Hao et al., 2012).

By looking beyond the specific activities (e.g. chatting with friends) and superficial reasons (e.g. uploading pictures) why people use SNS, it is possible to reveal deeper, and perhaps hidden, incentives driving users to SNS. Maslow's human 'needs' (Maslow, 1998) serve as one framework by which this investigator may speculatively propose these deeper drivers, and suggest these drivers bolster the attractiveness of SNS vis-à-vis other social venues. Considering the many ways described above how satisfaction of Maslow's human 'needs', such as safety, belonging, esteem and self-actualization, seem to be afforded to users participating in SNS, it seems likely these kinds of portals will continue to be popular and will not simply be a temporary 'fad'.

Few other venues offer the same combination of speed, functionality and instant connectivity that SNS, and, more generally, social media channels offer. Resulting from the combination of these characteristics, these online venues have an edge in terms of quick rewards, greater availability of groups in which to participate and connectivity to a much larger group of 'friends' than would otherwise be likely, or even possible. It has been argued (Gentile et al., 2012; Nauert, 2012; Wen-Hao et al., 2012) that all of these characteristics fulfil the kinds of human 'needs' outlined by Maslow (Maslow, 1998). If indeed this is the case, then SNS has great inertia to remain an important channel for marketing managers to access a large user base with high WOMM potential, even as effective marketing approaches to the SNS community are just emerging today.

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4.3 Uses of social network sites for marketing – types of campaigns

Social Media Marketing (SMM) refers to the activity of increasing 'traffic' at a company's website or otherwise gaining the attention of users of SNS. The goal of SMM is to increase consumer exposure to a company's products or services and thus to increase brand awareness, brand equity and ostensibly, sales. Social network sites are intrinsically good at supporting one-to-many marketing, the approach that has been standard for marketers using print, radio and television. But more importantly, SNS are able to support one-to-one marketing. The traditional marketing milieu of

print, radio and television are not able to support this kind of marketing, whilst SNS venues support both types of marketing side by side, as it were, in the same environment.

Theoretically, both the one-to-one and the one-to-many approaches can achieve the goals of SNS marketers, but the one-to-one approach is increasingly important to marketers wanting to develop lasting brand equity. The one-to-many approach (e.g. banner advertisements, pop-up window advertisements), though they might increase brand awareness, are unlikely to increase brand equity. It could indeed be argued that these one-to-many online advertisements actually decrease brand equity, as many users view them as either necessary evils on the one hand, or annoying obstacles to users' activities on the other.

Companies have begun to embrace the online user of SNS with a variety of marketing campaigns, some more personalized than others. Email marketing, one of the earliest forms of social media marketing, is usually an example of non-personalized messaging. This is not entirely the case, however, because the recipients of email 'SPAM' are sometimes chosen from lists indicating users with a common interest or affiliation. A more advanced approach to email marketing is the RSS feed, where users sign up to be 'alerted' to certain content (e.g. job openings, news items and organisational events) sent as email to their accounts. If interested, the user activates an embedded hyperlink, which opens a web page.

More common, and arguably more advanced types of social media campaigns in use today on SNS, such as Facebook, are 'like' campaigns where users respond to posted content (i.e. banner ads, pop-ups) by indicating they 'like' the content. These campaigns vary, mainly by what they offer the user in response to their approval of the content. Some campaigns reward fans with printable coupons. Others give fans access to special content or other valued offers. Still others allow users to join competitive online games, while yet others provide access to single-player games, often ranking user performance versus 'friends' or other players. 'Like' campaigns on Facebook are shared to a user's strong and sometimes weak ties depending on the user's broadcast settings, and often require no effort on the part of the user. Users can also respond to social media campaigns by tagging, bookmarking, inviting, linking, reviewing and rating products, services and promotions.

Other types of SNS marketing include in-text advertising, where key words become hyperlinks wherever they arise in SNS content (e.g. blog posts, articles) and redirect to company sales collateral. To avoid redirecting users to a new site, many of these hyperlinks trigger pop-up windows within the user's current window (Aaker and Smith, 2010). Some recent 'use cases', which represent the trend towards engaging the consumer and have been notably successful, are described in the following table (Table 7) (Layfield, 2010).

Examples of Highly Successful Social Media Campaign Types			
Campaign Type	Engaging 'Gimmick'	Example	Notable Characteristics
Sweepstakes Entry Exchange	Upload a photo of yourself with the product and be entered into a sweepstakes	Dunkin Donuts "Keep it Coolatta" Promotion	First example of this kind of Social Media Campaign (SMC)
Time-Series Video	A video time-series of a a positive result of using a product or service	Dove Evolution Promotion	Received 11.4 million views on YouTube, purportedly equivalent to $150 million exposure
Crowd-Sourcing Campaign	Ask users to provide suggestions for products (personal pride-only reward)	My Starbucks Idea	Starbucks gets free business development ideas while creating brand recognition/equity
"Entertaining" Video	An original idea video that promotes sharing	Evian - Roller Babies	61 million (Est.) views, 80% considered discussing, 65% considered sharing
Charitable Donation for Mention	Sponsors offer to donate money in exchange for social sharing or posting	Everywhere – #BeatCancer	Generated $70,000 in charitable donations at $0.01 per tweet, blog post, or Facebook status update
"Shock value" Video	A video of someone doing something 'unthinkable' or otherwise 'shocking'	Blendtec – Will It Blend?	Example video has generated more than 100 million hits since its release in 2009
Join the Cause Campaign	An online campaign asking users to participate in a common cause with others	Obama – Election Campaign	Example campaing generated 5 million 'friends', 13 million email subscribers and 8.5 million monthly visitors and 3 million online donors
"Play on Words" Video	A video which uses pun to promote a product or service via humor	Compare the Market – Compare the Meerkat	Highly 'viral' content and clear brand association (compare "Geiko/Gecko")

Table 7 – Examples of successful social media campaigns (Adapted from Layfield, 2010).

4.4 Engaging SNS users by understanding their self-understanding

The current period in human history has been called the “Age of Authenticity” by esteemed social philosopher Charles Taylor, Professor Emeritus of Philosophy at McGill University, in his 2007 book, A Secular Age. The mandate of authenticity is “each one of us has his/her own way of realizing our humanity, and that it is important to find and live out one’s own, as against surrendering conformity with a model imposed on us from outside” (Taylor, 2007). For generations X, Y and Millennials, Taylor suggests the “language of self-definition is defined in the spaces of mutual display, which have now gone meta-topical”.

One might identify the quintessential meta-topical mutual display space as the SNS, with its self-descriptions, individual multimedia content, ‘likes’ and user identification with interest areas and social mores. According to Taylor, “One could argue that for many young people today, certain styles, which they enjoy and display in their more immediate circle, but which are defined through the media, in relation to admired stars—or even products—occupy a bigger place in their sense of self, and that this has tended to displace in importance the sense of belonging to large scale collective agencies, like nations, not to speak of churches, political parties, agencies of advocacy, and the life” (Taylor, 2007).

Given that readers agree with Taylor’s identification of the individual modern mandate, perhaps the most important consideration for marketing managers aiming to develop successful campaigns for SNS users is to realize legitimacy and transparency are essential to engage people in these venues. In other words, to appeal to the ‘authentic’ individuals in the SNS venue, marketing managers will have to design more open campaigns, with deeper and more interactive consumer engagement, than they have previously and traditionally designed. Conceivably, to approach marketing in this way will require marketing managers to change their mindsets. Rather than the ‘one-to-many’ messaging of traditional campaigns, it is indicated that successful campaigns will require more of a ‘one-to-one’ approach to messaging.

4.5 Encouraging user response to SMM content

According to the New York Times, marketers are now developing content which is less focused on pitching their products and more towards attracting users to their SNS ‘pages’ (Newman, 2011). Banner ads are now marked with such widgets as menu tabs, hover-to-expand functionality, scrolling real-time Tweets and other content to engage users. In many cases the ads allow users to

interact without the need to redirect them to another site. This enablement is increasingly popular because users find redirects annoying, according to the article, and increases user interaction time from an average of 11 seconds to more than 30 seconds (Newman, 2011).

Targeting issues are an ongoing challenge, and may be the most daunting task for marketers aiming to attract SNS users to their content. Identifying the messaging, tone and content that will attract the most users, or at least the most target users, is key to success. In terms of real-world social media marketing campaign content, a 2012 analytical report by marketing firm Performics indicated that campaigns including images (e.g. infographics, product photos) and other visual content (e.g. videos) spur as many as 44% of users to interact with the advertisement (Middleton, 2010). According to the study, women are more likely to respond to photographs, while men are more likely to click on videos. The study also found that ads which include links to articles encourage up to 35% of users to engage.

Finally, according to a 2011 survey of more than 3,800 business marketers (Stelzner, 2012), to achieve success with SNS marketing, companies need to focus more on promoting ideas and creating platforms for interactive and transparent communications with users. Rather than speaking to 'the crowd', marketers will need to dedicate resources to convey customized responses containing specific information to inquiring consumers. To thrive in the SNS marketing arena, the survey report suggests campaigns need to be specialized for the company's industry, product or service and the geography, histology and interests of target consumers. In a sense, brand-building will rely more on individual engagement, deeper 'connection' with the consumer and 'humanity' in messaging (Stelzner, 2012).

4.6 Developing 'viral' content to drive brand awareness

One could say the 'holy grail' of SMM is so-called 'viral' content. The term 'viral' is used here to indicate online content which spreads quickly through a population because it is shared by many people with others in their networks via electronic mail or SNS postings.

According to Jordan Kasteler, author of the book A to Z: Social Media Marketing, the best way to grow brand awareness and drive users to one's website is to disseminate content that 'goes viral'(Kasteler, 2011). Of great consequence for the marketing manager is to understand that it is the viewer who determines whether content will 'go viral', and not the creator of the content who decides. Kasteler points out 21 types of social content that he claims are more likely to 'go viral' than other types (Table 8).

21 Types of Successful Viral Content		
Approach	**Description**	**Why it works**
The Manifesto	A passionate, elegant argument that resonates with a niche	Users are predisposed to share content supporting their own positions
The Controversy	A passionate rebuttal or argument against a popular opinion	Users agreeing with the popular opinion are inclined to post comments
The Promise	A timeline or promise of achievement if followed	Users respond to the challenge or seek more information on the topic
The Urgent Attention-Grabber	Imply that users will 'miss out' unless they quickly respond	Users fear the loss of, or cost of a missed opportunity
The Epic	A huge list of content relevant to a niche group	Users perceive access to the content as a time-saving or saavy investment
The Ranked List	A list ranking topics or persons relevant to a niche group	Users comment in agreement or disagreement with controversial rankings
The Man of the Year	An announcement of a 'best-in-class' item, topic or person	Users comment in agreement or disagreement with controversial choice of #1
The Directory	A large compilation of interesting content along a topic	Users save time by having the list on-hand and inclined to share in their niche
The Quiz	User-focused, knowledge-testing and just-for-fun varieties	Interactive, enjoyable content sparks comments and comparisons
The Pop-Culture Tie-In	Any item embracing the 'latest craze'	Resonates with users interested in popular culture leading to comments and sharing
The Expert	Commentary referring to a current, popular figure	Inclines users who identify in some way with the figure to comment and share
The Viral Video	An shocking, interesting or funny, well-made original video	Users who enjoy the content will share it
The Visual Aid	A visual representation of a large aggregate of data	Users will share easy-to-digest content that speaks to their interests
The Tutorial	Step-by-step or 'how to' instructions	Users hope to gain social capital by enabling others in their network
The 'Freebie'	Providing content with perceived value free of charge	Positions creator as an 'authority' and inclines users to return seeking relevant information
The Create-Your-Own Activity	An item allowing the user to create unique/personalized content	Users feel self-actualized, esteemed and gain social capital via 'belonging'
The Collaboration	Content developed along a theme by many contributors	Users are inclined to share content they have helped to develop
The Incredible Story	Content recounting amazing achievement or peak performances	Users are inclined to share content they find impressive
The Knee-jerk Reaction	Content displaying a captivating, singular event	Users are inclined to share the content because it is simple and transparent
The Ridiculous	Content that is surprising and funny	Users hope to gain esteem as the source of entertaining content
The Hybrid	Content combining aspects of several other approaches	These tend to be the most successful 'viral' contents

Table 8 – Varieties of social media content that encourage viral 'sharing' (Adapted from: Kasteler, A to Z: Social Media Marketing).

Given Kasteler's premise, the extent to which marketing managers can adapt their messaging towards content that encourages 'viral' sharing, as summarized in Table 8, will enable them to reach the most consumers. Further, if the message is well-crafted, the virtual WOMM will also build brand recognition and perhaps greater brand equity.

4.7 Using social networks to improve marketing management decision- making

Social media provides many excellent opportunities for collaboration between consumers and marketers. The most important aspect of social media for marketing management decision-making may be the access it provides to the opinions, ideas and preferences of either existing or potential consumers.

For example, marketers can create focus groups of voluntary contributors to discuss product attributes and marketing messages that resonate best with consumers. Such focus groups can also be engaged for other marketing-related tasks. In any case, these groups will provide important perspectives and information that would not only be difficult to acquire otherwise, but also is gained at little cost. It is also possible through SNS for marketers to start discussions with particularly

informed or active users to gain product intelligence, and even to recruit these users to promote the brand.

Marketers can use social media sites for direct interaction with potential consumers via social and mobile media, as in the 'engaging' social media campaigns and 'viral' social media content described above. Marketing manager, Stephanie Gehman summarizes several avenues the marketing manager can take to gain intelligence from social media sites in a recent article in Social Media Examiner (Gehman, 2011). She points out that particular sites have advantages over others depending upon the marketing decision to be made.

Facebook applications are one way to interact with prospects. Using these apps can foster co-creation of new products in a more advanced iteration of the Starbuck's example mentioned above. Building Pages on Facebook, inviting users to suggest improvements to products and services is another possible approach.

For example, to gain intelligence online by hosting a series of new product demonstration videos on YouTube and asking for feedback can inform marketing managers of the most potent messaging and key questions consumers want answered, even as information about the product potentially disseminates widely in the process.

To gain a rapid response to a question, the marketing manager could also use Twitter. In one example, Zappos held a contest, asking users to help them rewrite their order confirmation email, apparently garnering significant response. Twitter can be a powerful tool to get rapid response to key questions about desired product attributes or specific offerings.

In addition to the direct approach, Gehman also points out that marketers can gain product and R&D insight by monitoring open conversations, reviewing user comments concerning products or services and noting the popularity (e.g. the number of 'likes' on Facebook) of company or product social web pages (Gehman, 2011).

5 THE RISE OF DIGITAL BRANDING IN THE SOCIAL NETWORKING ENVIRONMENT

The growth and expansion of social network sites, social networking and other forms of digital communication have led to the opening of an entirely new media for marketing professionals to utilize. Increasingly called the 'fifth' media, after the traditional four marketing media: newspapers, magazines, television and radio, the Internet is becoming an ever more important medium for marketers to use. Further, with the growing importance of digital marketing and branding and the manner in which social network users interact, the traditional four 'P's of the marketing mix (i.e. price, product, promotion and placement) are increasingly complemented with the so-called fifth 'P', people.

This fifth 'P' is necessarily added to the marketing mix when that mix includes the use of the fifth media. This is because, as discussed in the prior chapter, people seek satisfaction of their Maslovian 'needs'. In addition, considering Taylor's current 'age of authenticity', users will find marketing only resonates with them when it is more personalized, trustworthy, transparent and open. At its base, the requirement for marketers is to alter their mindsets from 'one-to-many' messaging of traditional campaigns to a 'one-to-one' approach to marketing.

This chapter reviews the traditional marketing techniques and 'new' marketing techniques, some of which are simply adaptations of extant techniques, arising from the digitization of branding and the expansion and diversification of the social network environment.

5.1 Traditional marketing techniques

Traditionally, marketing has been mainly 'mass' marketing where the message emanates from the company to the masses, that is, 'one-to-many' marketing. The traditional marketing channels employed have included mass media, i.e. newspapers, magazines, television commercials, radio advertisements, and outdoor advertising or direct mail. All these venues demand that marketers craft messages that speak to the largest segment of the potential audience in an attempt to attract as many consumers to their products and services as possible (Clow and Baack, 2007). As such, these messages are not highly personalized, often relying on repeated presentation of product image (video media) or product name (audio media) aimed at linking in the minds of prospects the product's qualities with the satisfaction of perceived needs and with the company's brand.

Traditional print marketing techniques outside other media include wall paintings, fixed, human and mobile billboards, print flyers, posted bills and banners attached to just about any fixture one can imagine (e.g. bumper stickers). Within various printed media common marketing collateral includes classified text advertisements, page or text-embedded photo or image-enhanced advertisements, pull-out advertisements, advertising 'sections' in newspapers and advertising 'flyers' distributed with the print media.

Traditional audio-visual media marketing includes radio or television 'sponsorship' advertising, commercial short format advertising (i.e. 30-second 'spots') during regular programming, and infomercials (i.e. long format advertisements). In the new millennium, entire channels devoted to selling have been established (e.g. Home Shopping Network). More recently, products or product symbols embedded within entertainment, a kind of covert marketing, have grown in popularity (e.g.

James Bond clearly wearing an Omega watch, using a Nokia phone, driving a late-model BMW and being complemented frequently about the fit of his Armani suit).

While many of these same techniques are transferable to the digital environment in forms like banner advertisements, in-text advertisements, pop-ups, online classifieds and email attachments, it is well-known that many of these traditional marketing ploys go ignored or unnoticed by users. The remainder of this chapter focuses on social networking techniques, where the one-to-one and one-to-few marketing approaches stand to gain the greatest traction, as discussed in the prior chapter.

5.2 Social networking techniques – opportunities and obstacles

The following marketing techniques are not unique to online social networking platforms, but they are facilitated by the platforms. The rise in popularity and diversity of social network sites has made the marketing function both easier and harder.

Social Networking Techniques		
Marketing Technique	**Short Description**	**Reference**
Buzz	The practice of gathering volunteers to try products, then sending them out into the world to talk up their experiences with the people they meet in their daily lives.	Khan, 2005
Viral	The process by which user-generated content is rapidly spread through social networks by processes like WOMM.	Kasteler, 2011
Community	A technique to engage existing customers with each other or with the company which products or services the firm provides.	Bryan, 2004
Grassroots	A technique to engage existing customers with each other or with the company which products or services the firm community discussion groups and events.	Homburg, Kuester and Krohmer, 2009
Evangelism	A form of word-of-mouth-marketing (WOMM) whereby companies can identify and groom voluntary advocates to actively spread positive information about the firm's products and services.	Huba and McConnell, 2002
Product Seeding	The practice of making product or services available at no cost to individuals they consider 'opinion leaders' who, being held in high regard, have a strong influence on others.	Krumholz, Egilman and Ross, 2011
Influencer	Identifying particular individuals or 'types' of individuals who are influential in the purchasing decisions of prospective buyers to whom are targeted marketing messages.	Brown and Hayes, 2008
Cause	The promotion of a common message, endorsements of a company's product by the 'cause', local and national partnerships of various types and 'cause'-related employee service program development.	Faville, 2006
Conversation Creation	The process of developing compelling digital content, including entertaining media or otherwise promotional materials including advertisements, intended to prompt word-of-mouth marketing activity	Mihir and Halvadar, 2009
Brand Blogging	Marketing participation in the 'blogosphere', the aggregate of all online blogs, to communicate information on topics of interest to other users about the company, its products and services.	Sernovitz, 2006
Referral	A method by which formatted, automated and regular messages are sent via social networks to encourage both existing customers and prospects to discuss and share product promotional information.	Schmitt, Bernd and Van den Bulte, 2010

Table 9 – Summary of Most Common Social Media Marketing Techniques.

The task of targeting the best prospects and promoting products and services to them is expedited by identifying user communities most likely to have interest in them. The manner of engaging the customer has become somewhat harder, however, as modern social network users demand more intimacy, authenticity and transparency in marketing communications. Further, with increased scepticism about the veracity of formal marketing messages originating directly from companies for the mass market, techniques involving word-of-mouth-marketing (WOMM) by unremunerated individuals and groups have gained credibility. At the same time, the shift in 'trusted' sources can be easily undermined by excessive use and questionable 'reward' schemes used to encourage these 'trusted' sources. The following are several of the more commonly employed social network marketing techniques enlisted by companies in 2012. Many are similar to each other in that they involve WOMM in one or another manner. But each has distinctions enabling the separation and categorization developed in the following sections.

5.3 Buzz Marketing

The term 'Buzz Marketing' refers to the "practice of gathering volunteers to try products, then sending them out into the world to talk up their experiences with the people they meet in their daily lives" (Kahn, 2005). The purported 'edge' of buzz marketing (BM) is very much in line with other word-of-mouth-marketing (WOMM) techniques, in that the people who share the product knowledge are known and trusted members of a social network. The kind of knowledge exchange indicated by 'Buzz' has been taking place for centuries as people have sought information from their trusted acquaintances. But having companies actively develop techniques and strategies to promote the 'Buzz', understand the means by which the information spreads and measure the sales results following the promotion is a somewhat recent development.

BM often works by the activities of Marketing Mavens, who are generally consumers who have up-to-date information about products, places to shop and different markets. These individuals are consumers with a great deal of knowledge and connections, who thereby have a trusted opinion on products or services, based mainly on having historically provided helpful and cogent advice and speculation to other users. Users look to marketing mavens for opinions and product and service recommendations to follow. For BM to work through marketing mavens, the audience must have the perception that these consumers are discriminating in their choices and particularly knowledgeable about the topic. In practice, companies may choose 'early adopters' or members of online special interest groups as volunteers.

This aspect of BM is well-facilitated online, using social networks as source groups. Proctor & Gamble famously used BM to promote their toothpaste lines by recruiting hundreds of thousands of teenagers to talk about these products (Kahn, 2005). Other companies prefer to use 'connectors', that is, people who have a large number of contacts across many social strata, as their WOMMs. In many cases these connectors are celebrities. In a sense, using connectors is very similar to choosing a famous person to 'evangelize' a product, which is a more traditional marketing technique. With respect to social networking, it could be said that the power of the 'maven' is significantly increased as the buzz can be disseminated more quickly to many recipients, as was once possible only in the case of a 'connector'.

Further, according to Barbara Kahn of Knowledge at Wharton, for BM to be effective the product has to be one which connotes 'being in the know' (Kahn, 2005), such as fashion and cultural items (e.g. books, movies, gadgets) where value accrues through social interaction. And according to Wharton School Marketing Professor, Peter Fader, marketers need to understand BM is a tactic rather than a strategy and will grow old quickly if over-used (Fader, Hosanagar and Abhishek). That is, if everyone is constantly sharing product opinions with a person, that person will become oversaturated with such commentary and come to ignore it. In addition, Wharton's Jeonghye Choi points out in his dissertation that WOMM has a 'shelf life' in that people value 'buzz' when choosing products or services initially, but will thereafter keep their own council on what to buy or with what they align themselves (Choi, 2010).

Another point of view on Buzz marketing is that it is inherently unethical, because in many cases it is really a kind of 'stealth' marketing, where the 'mavens' are unannounced marketing agents who often receive free products in exchange for social network endorsement of a company's product.

According to Wharton Marketing Professor, Lisa Bolton (Kahn, 2005), sometimes companies hire actors to act as 'average Joes' and even when true 'mavens' are involved, many will not identify themselves as buzz marketers. Bolton contends, "Whenever the buzz agent doesn't identify himself upfront as a marketer, the customer interaction is deceptive and, therefore, unethical. Research in psychology suggests that consumers are more readily persuaded when they do not know that the other person is trying to persuade them".

5.4 Word of Mouth Marketing

The 'Word of Mouth Marketing' [WOMM] communication in marketing is relevant today, as consumer behaviour becomes more immune to traditional means of marketing communications such as advertising. Word of mouth marketing is the intentional influencing of consumer-to-consumer communications, and is an increasingly important technique. Also called 'viral', 'buzz' and 'guerilla' marketing, a plethora of popular books on word of mouth marketing are being released (e.g. Jaffe 2007; Kelly, 2007; Rosen, 2009; Sernovitz, 2006), and industry associations like WOMMA, the Word of Mouth Marketing Association, have grown rapidly and advocated for the burgeoning new industry.

Marketers and sociologists have recognized the importance of word of mouth as a naturally occurring phenomenon for more than half a century, suggesting, for example, that word of mouth affects the majority of all purchase decisions (Kozinets, 2010). However, these theories and observations about informal, unsolicited word of mouth phenomena were constructed in a marketing world untouched by the Internet. The Internet's accessibility, reach and transparency has enabled marketers to influence and monitor word of mouth as never before. Kozinets (2010) lists the ways marketers can achieve their goals online: 'listening in' to online conversations, moderating word of mouth, engaging in dialogue on social media forums and giving products to people of influence. Notably, such tactics change word of mouth from a natural, spontaneous phenomenon, whose power rests primarily in the fact that participants are not commercially motivated, to a more artificial, calculated and commercialized force in which bloggers are co-opted by marketers to become product advocates. In order to adopt the proper strategy, marketers should first understand why WOMM plays such an important role when consumers make a purchase decision and, at the same time, understand which elements make WOMM an effective form of communication. Understanding WOMM communication is essential in marketing communication, because of the shift that took place in consumer's behaviour, that is, building a shield against traditional methods of marketing communications.

Over the past decade, WOMM has become a topic to be studied in the field of marketing. Researchers have associated this concept with personal recommendations, interpersonal relationships, interpersonal communication, informal communication, personal and interpersonal influence and even with an informal form of advertising.

Dye (2000), investigating the marketing practices at more than 50 companies found that buzz (self-generating demand) impacts about two-thirds of the U.S. economy, including a number of sectors not dissimilar to higher and further education: hotels, investment products, publishing and healthcare. Marsden (2005) says that research shows that WOMM is at least twice as powerful as traditional marketing communications in influencing sales, and given the rise of electronic word of

mouth (mobile and internet), it is now some 50% more influential than it was 30 years ago. Furthermore, the third most trusted form of advertising (after advertising in newspapers, at 63%) was consumer opinions posted online, which was trusted by 61%. Customers are seeking out opinions because they do not trust marketing as much, and independent influencers have become more influential than before. However, WOMM is not just about referrals; it also adds credibility to a message. A friend or family member talking about a brand or product, or an independent commentator writing about it, tend to be believed more readily than commercial advertisers talking up their own brands. One of the leading writers in this field, Silverman (2000), places great emphasis on the credibility and independence of the source of the WOMM message. A 'credible' and 'independent' source will provide prospects with an indirect experience.

Online WOMM is called 'viral marketing', and was noted in 1996 by Rayport at Harvard. Viral marketing describes any strategy that encourages individuals to pass on a marketing message to others, creating the potential for exponential growth in the message's exposure and influence. It is also defined as "an alternative marketing strategy supported by research and technology that encourages consumers to dialogue about products and services". The standard viral-marketing model is based on an analogy using the spread of infectious disease. It assumes that one starts with a seed of individuals who spread a message by infecting their friends, where the expected number of new infectious people generated by each existing one is called the 'reproduction rate', or R. When R is greater than 1, each person who gets the message will, on average, spread it to more than one additional person, who then does the same thing, and so on, leading to exponential growth in the number of people who receive it: an epidemic. The first viral marketing campaign was the Hotmail launch in 1996 and it grew faster than any other company in history. Within 18 months it had over 12 million subscribers.

As more and more people use the Internet, a growing number of them are utilizing it as a highly sophisticated communications device that enables and empowers the formation of communities. Kozinets (2010) also describes what exactly online cultures and communities are, and why they are important topics for social scientists. From the beginning, the online social environment was viewed with suspicion and cynicism, as a context that created task-oriented, 'impersonal', 'inflammatory', 'cold' and 'unsociable interactions'. Over time, research has cast doubt on these suppositions.

5.5 Viral Marketing

As discussed previously in Section 4.6, Jordan Kasteler, author of the book, A to Z: Social Media Marketing, contends that the best way to grow brand awareness and drive users to one's website is to disseminate content that 'goes viral'. Viral marketing is the process by which user-generated content is rapidly spread through social networks by processes like WOMM. The process is clearly illustrated by Dr. Ralph F. Wilson in a recent Web Marketing Today article (Figure 5) (Wilson, 2012):

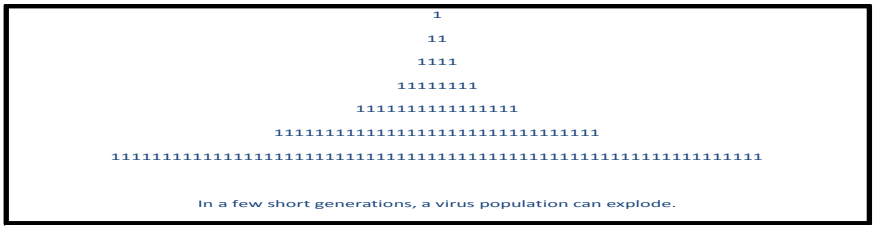

Figure 5 – Visual representation of the binary (point-to-point) spread of a virus (Source: http://webmarketingtoday.com/articles/viral-principles/).

According to Wilson, viral marketing strategies are those encouraging individuals to share a marketing message with others, which creates the potential for exponential dissemination of the message. Wilson explains that successful viral marketing campaigns include as many as possible of these six essential characteristics (Wilson, 2012):

1. Gives away products or services;
2. Provides for effortless transfer to others;
3. Scales easily from small to very large;
4. Exploits common motivations and behaviours;
5. Utilizes existing communication networks;
6. Takes advantage of others' resources.

Essentially, the idea is attract attention by freely providing a prospect with something of perceived value. To encourage transfer, the marketing message should be easy to share with other users (e.g. graphic, download, URL) online, via email or another common communications medium. Assuming the message 'goes viral', the agency must be able to accommodate the response (i.e. scale), or the so-called virus will stop reproducing. In addition, a successful viral message will appeal to common user motivators such as the desire to be 'cool' or loved, needed, or understood (e.g. Maslow's Hierarchy of Needs). Further, a message that is inserted into already ongoing communications (e.g. a 'tag' on every email sent by a user) will be more likely to proliferate virally. And finally, a message that leverages many websites or many providers as sources will be exposed to more potentially interested parties, and hence sharing, presumably initiated from more users (Wilson, 2012).

5.6 Community Marketing

Community marketing is a technique to engage existing customers with each other or with the company whose products or services the firm provides. For the purposes of this dissertation, this investigator will focus on the development of online community marketing. The development of collaborative platforms can be either 'organic' or 'sponsored' (Bryan, 2004), depending upon the origination of the resource. Community marketing is termed 'organic' when the collaborative platform has been established by the user community itself, whereas 'sponsored' community marketing is that which has been developed by the company whose users are encouraged to participate.

One of the main goals of both organic and sponsored community marketing is to connect existing customers with each other. Often platforms include blogs and message boards where users can post questions to the network. An oft-stated advantage of this function of community marketing platforms is that users may receive presumably correct responses to technical questions much faster by posing the query to the community than they would by contacting the company's customer support department. Further, users can view purportedly unbiased reviews of company products and services before speaking to a company's agents. Increasingly, user communities are wary of company communications and advertising, because they are do not trust these sources to be unbiased or even, in some cases, true and correct (Morgan and Hunt, 1994). This same wariness creates a tendency for users to 'trust' organic communities more than sponsored communities.

Sponsored communities, in addition to connecting existing customers with each other, generally aim to connect existing and prospective customers to prospects and to the company itself. The goal of the latter aims is to foster loyalty to the company's products or services and to mine the community for product ideas. Both organic and sponsored communities are would-be sources of ideas to improve products and services, though in the former communities the ideas may be less 'prompted' than in the latter communities. In both kinds of communities, marketers have the enhanced opportunity to interact with customers in a bi-directional fashion under conditions of reduced barriers to communication. The interaction thus facilitated can aid marketers with finding volunteers to be buzz marketers, product advocates and evangelists.

Some of the key functionality that users of community marketing platforms have available includes:

- Online social networking tools (e.g. blogs, forums, message boards, wikis)
- User business collaboration tools
- Community governance opportunities
- Community exclusive content (e.g. webinars, podcasts, webcasts)

Two companies in the technology industry that have highly-populated organic community marketing platforms are Microsoft and SAP. However, the two companies use these organic communities very differently.

The International Association of Microsoft Channel Partners (IAMCP) is an organic association of more than 3,000 Microsoft sales partners (i.e. companies) whose stated goal is to assist members with business development. Members join to "collaborate with likeminded partners, to work together on customer projects, to have a voice into Microsoft programs, to have a united voice to the trade press and the IT community at large, and to be part of a global/local vehicle that facilitates mutual growth and business development among partners" (IAMCP, 2012). Microsoft does not control this community, but provides some funding to keep it running. Microsoft uses the IAMCP to promote its products, providing free seminars and workshops for members, making product and service experts available for information exchange and bolstering the company's own partner-to-partner (P2P) initiatives. It also uses the community to seek many varieties of active feedback from channel partners (Graham and Bibby, 2007).

The International Association for SAP Partners (IA4SP) is SAP partners' version of the IAMCP. It is also an organic community that was formed in 2007 and counts only a few hundred SAP partners as members. While the platform offers many of the same amenities as the IAMCP, SAP's involvement with the community is minimal. Unlike Microsoft, SAP is not highly participatory in the community, preferring to focus on its own sponsored communities. While the relative benefits of the IAMCP are measurable and documented in terms of partner revenue growth and satisfaction, SAP appears to derive little direct benefit from the IA4SP. In addition, because SAP focuses attention on its sponsored communities, of which there are several, the company could be facing opportunity costs arising from wariness among users, whereby they 'trust' organic communities more than the kinds of sponsored communities central to SAP's marketing efforts (Fauscette et al., 2010).

5.7 Grassroots Marketing

Grassroots marketing refers to the practice of marketing based on personal recommendations rather than mass media forums. This kind of marketing is another kind of word-of-mouth-marketing (WOMM) technique whereby companies are promoted by their supporting communities. Again, grassroots marketing levers the perceived advantage held by potential customers that the WOMM will be unbiased and is not directed advertising, which they consider suspect. The same ethical considerations mentioned by Wharton Marketing Professor, Lisa Bolton (Kahn, 2005) in the prior section on buzz marketing apply to grassroots marketing. That is, when the grassroots advocate promotes a company's product or service without revealing the 'kickback' received from the company, the implied deception of the audience could be considered unethical.

In practice, companies pursue grassroots marketing campaigns by becoming active and developing relationships with users within targeted communities. The companies provide perceived value for the users or the community by participating in community discussion groups and events. Companies encourage users to perform activities that promote the company or its products and services. In return for participation and advocacy, users are provided with some kind of benefit that is perceived valuable. The idea is that prospective customers who visit the targeted communities and receive positive intelligence on the company, products and services presumably have a higher likelihood of becoming actual customers (Homburg, Kuester and Krohmer, 2009).

5.8 Evangelism Marketing

Evangelism marketing is another form of word-of-mouth-marketing (WOMM), whereby companies can identify and groom voluntary advocates to actively spread positive information about the firm's products and services (Huba and McConnell, 2002). Alternatively, some evangelists are 'home-grown' in that their appreciation of a product or service manifests in the form of frequent recommendations and encouragement to prospective consumers.

Evangelism marketing is similar to both buzz marketing and grassroots marketing in that it is WOMM, but differs by the intensity of the advocate. In the buzz marketing technique, WOMM arises by frequent sharing of compelling content, and in grassroots marketing, WOMM develops by prospective customers being influenced by the company-enhanced enthusiasm of a community of users.

Evangelism marketing is more an individual customer who believes so strongly in the product or service that they enthusiastically and voluntarily encourage others to purchase it (Parker, 2010). In this context, evangelism marketers are not associated with the company or remunerated in any way for their enthusiastic endorsement, so their advocacy is more credible to others.

5.9 Product Seeding

Marketing by product seeding, also known as 'Seed Trial' marketing, refers to the distribution of product samples to a targeted community prior to official product release. In the technology industry, product seeding is often referred to as Beta testing, while in the pharmaceutical industry, clinical trials aimed at introducing medical personnel to new techniques or products represent a kind of product seeding (Krumholz, Egilman and Ross, 2011).

In product seeding, companies make products or services available at no cost to individuals they consider 'opinion leaders'. Opinion leaders are identified by personal involvement with the product or service (i.e. a doctor uses a stethoscope), familiarity with the product or service and public individuation. Many are risk-tolerant, open-minded and exposed to mass media (Chan and Misra, 1990). The opinion leaders receive free products in exchange for their testing and feedback. Companies aim to impress the opinion leaders with the products or services themselves and by involving them in the context of external researchers. As their opinions may be held in high regard, the opinion leaders tend to have a strong influence on others as they promote the product or service by WOMM.

5.10 Influencer Marketing

Influencer marketing, also called 'Influence' marketing, involves identifying and targeting particular individuals or 'types' of individuals (e.g. 'opinion leaders') who, in theory, are influential in the purchasing decisions of prospective buyers. In addition to steering messaging to individuals, influencer marketing can be aimed at third parties such as media figures, collaborating professionals (e.g. accountants, lawyers), or other parties in a target buyer's value chain (Brown and Hayes, 2008). In essence, influencers are any parties that significantly shape a buyer's purchasing decision. Marketers seek out these influencers and focus marketing activities on them (Cialdini, 2001).

Marketers pursuing this variety of social marketing, which again relies at least partially on word-of-mouth marketing (WOMM), consider a number of criteria when identifying important influencers in a given business or personal community. These include the probable influencer's persuasiveness, vested interest alignment with marketing objectives, expertise in the product or service area, number of direct connections and number and frequency of interactions with targeted prospects (Keller and Berry, 2003). Many companies exist to provide marketers with off-the-shelf influencers for their plies and often use proprietary criteria to identify key persons, groups or types. In essence, however, the criteria tend to converge on the influencers' perceived expertise, market reach, social or business 'individuation', independence and charismatic or other ability to sway prospects' opinions (Brown and Hayes, 2008).

Similar to the so-called 'mavens' of buzz marketing, mentioned in Section 5.3.1, influencers, like buzz marketers often tend to be active in their expansive communities of contacts, are considered knowledgeable and trustworthy, and may be characterized as 'early-adopters', 'trendsetters' or even 'activists'(Keller and Berry, 2003). Bloggers and other social media creators are also potential 'influencers' (Gillin, 2007).

The development and expansion of social network sites arguably increases marketers' chances of correctly identifying and grooming influencers. For example, marketers can review social network sites to identify individuals who meet their criteria, contact the prospective influencers, prime them by offering product 'seeds' and ask them to take on buzz marketing, grassroots marketing or other 'non-affiliated' informal marketing roles on behalf of the firm. Indeed, many companies exist whose sole purpose is to measure online influence, using Balance Theory, Graph Theory, Social Comparison Theory or the Social Identity Approach, all discussed in the previous chapter (Sheldrake, 2009).

5.11 Cause Marketing

Cause marketing can involve a cooperative marketing effort between a business and a not-for-profit organisation or, alternatively, a marketing approach that aligns itself with a charitable or social cause. Unlike corporate philanthropy, which generally involves tax-deductible contributions from the business to the 'cause', cause marketing refers to a marketing relationship, which may not involve direct financial exchanges.

Benefits of cause marketing to businesses and to their 'causes' can be substantial. As such, the technique is growing increasingly common. Some common techniques of 'cause' marketing include promotion of a common message, endorsements of a company's product by the 'cause', local and national partnerships of various types and 'cause'-related employee service programme development. While cause marketing has been a popular marketing technique since before the Internet became publicly accessible, online cause marketing at social network sites is increasingly common. Online auctions, in which a percentage of the final price is donated to the given cause, are also increasing.

A recent IED report entitled Forecast: Recession Slams Brakes On Sponsorship Spending (IEG, 2008) points out that while the recent recession cut into cause marketing spending growth, $1.4 billion was spent on corporate sponsorships in 2007, and $1.5 billion was spent in 2008. The report also indicates North American companies pursue 'cause' marketing more than European companies, which in turn pursue 'cause' marketing more than companies in Asia Pacific and South America. Millennials and those involved in volunteer work are particularly supportive of cause marketing, with nearly 90% of Millennials indicating they would change their purchasing behaviour in favour of complementary products and companies associated with 'a good cause' (Faville, 2006). The same study found that nearly 80% would pay more attention to messaging from companies perceived as deeply committed to a cause, and an even greater percentage feel increased loyalty to companies associated with causes like social and environmental responsibility.

From the point of view of the 'cause' being supported by corporate sponsorship, the benefits are also great, creating the clichéd condition of win-win, where both sponsors and those sponsored reap symbiotic advantage. Non-profit organisations gain access to more potential supporters via the sponsor's customer base, gain additional public exposure through the marketing effort and reap financial and other rewards by accessing the often-larger financial resources of the sponsor.

5.12 Conversation Creation Marketing

Conversation creation marketing involves marketers developing compelling digital content, including entertaining media or other promotional materials, including advertisements, with the goal being to prompt word-of-mouth (WOMM) marketing activity (Mihir and Halvadar, 2009). As detailed in Section 4.6 by Jordan Kasteler, there are at least 21 types of social content that he claims are more likely to 'go viral' than other types (see Table 9). In conversation creation marketing, it follows that the kinds of content indicated in Table 9 are those which marketers should seek to develop into conversation creation campaigns.

Conversation creation necessarily involves monitoring the ongoing conversations about the company's products or services, but also involves participation in said conversations. Conversation

monitoring of representative social network sites, blogs and search engines can be performed by marketers; or marketers can employ any of many companies focused solely on providing other companies with notifications when anything is written online about the company, its products or services (Sernovitz, 2006).

While conversation monitoring provides a company with intelligence on who is talking about what (i.e. hot-button issues), and how any company response is affecting the conversation, perhaps the main benefit is identifying conversations in which the company can and should participate. Ideally, ongoing conversations will be assessed in terms of directionality, multiplier, action level and tone (Pruden and Vavra, 2004). The directionality refers to whether the topic is the company or a specific product or service. Multiplier is another word for the total distribution of the conversation among users. Action level discriminates between conversations forwarded intentionally or not, and with or without attached significance. Tonality denotes the type of information being spread and whether it can be described as positive, negative or neutral.

Once the monitored conversation is assessed, the marketer can participate by inviting the initiators to speak with them directly. The next step in conversation creation is to review the content that is shared. The third step is to respond directly (participate) in the conversation, taking care to demonstrate authentic gratitude for the communication, striving to purvey clarity and transparency in the response and somehow indicating that, in the case of a problem, the company is fixing it, or at least trying to do so (Pruden and Vavra, 2004). Again, the most important considerations in any communication are to respond in ways that satisfy the listeners' perceived needs (see Section 4.2), and, in light of Charles Taylor's discussion in A Secular Age (see Section 4.4), to portray a demeanour of 'authenticity'. According to Andy Sernovich in his book, Word of Mouth Marketing, simply acknowledging the communicant, giving that person attention and demonstrating the company's interest in the conversation is sufficient and superior to simply responding with a standard sales pitch (Sernovitz, 2006).

5.13 Brand Blogging

Brand blogging is a term that refers to a company's participation in the so-called 'blogosphere', the aggregate of all online blogs, to communicate information on topics of interest to other users about the company, its products and services (Sernovitz, 2006). The information is purportedly or, better still, actually provided by the company in a spirit of openness and transparency. Brand blogging is essentially the same as the aforementioned conversation creation in the case where it takes place on blog platforms.

5.14 Referral Marketing

Referral marketing is an expression describing the marketing of products and services to prospects by spontaneous or encouraged referrals. The referrals often take place by face-to-face, word-of-mouth-marketing (WOMM), but in many cases are afforded greater distribution via the Internet, through social media and using social network sites.

The distinction of referral marketing from other WOMM techniques is that it aims to maximize distribution potential via a structured and systematic approach to the process (Schmitt, Skiera and Van den Bulte, 2010). In referral marketing, companies create formatted, automated and regular

messages to encourage both existing customers and prospects to discuss and share promotional information focused on the value products or services provided to users. The automation process, especially in cases where multiple, audience-targeted messages are regularly guided to appropriate social groups online, purports to maximize the number and frequency of positive messages distributed among potential buyers. Further, while referral marketing takes place offline, when these campaigns are digitized and focus on Internet users, the ability to track the distribution of the messages provides important information to marketers for follow-up conversations.

A recent quantitative study (Schmitt, Skiera and Van den Bulte, 2010) completed jointly by academics of the University of Pennsylvania and Goethe University in Frankfort, Germany, indicated that prospects who became customers of a bank as a result of referral marketing efforts were more likely to be retained and more profitable to the institution, ceteris paribus. In addition, the researchers found that the increased revenue generated for the bank by referred customers on a per capita basis exceeded the per capita expense of the referral programme itself. These findings suggest referral programmes are a cost-effective and profitable means to gain new customers, and presumably more so when leveraging social networks and media.

All of these subjects, along with a review of current trends in social media marketing, will reveal that there is a large gap between what is knowable and usable by social media marketers today and what needs to be known, to be most usable in the future. The resolution of this gap is likely to come from analysis and application of so-called ‘Big Data’.

6 THE ADVENT OF 'BIG DATA', ANALYTICAL CHALLENGES AND MARKETING PROMISES

In the context of the existing information provided in this and the five preceding chapters of this review, the final chapter of this literature review describes 'Big Data': what it is, where it is, how it could be used by marketing managers and what tools will be required to make this feasible.

This research will attempt to highlight the key social media content that is so compelling to marketing managers seeking the Holy Grail of advertising – placing the right content, in the right format, in the right place, at the right time to ensure the online user engages with it.

Marketers realize that it is becoming crucial not only to collect and monitor particular types of data on online users of various 'types' and influencers, but to be able to convert that data into intelligence to guide the content, placement and timing of their social media marketing activities. The key is in gaining a clear understanding of the modern consumer and how, when and why he/she could be compelled to acknowledge and engage the business online. The premise is that by leveraging this intelligence, the marketer will know just the right campaigns to develop and where to display advertisements which will generate measurable and adequate returns on marketing investment (i.e. ROI).

6.1 'Big Data': definition, volume, formats and sources

The digital domain has long been utilized for its pervasive monitoring, tracking and user information storage capacity. Online retailers have used this information from the very beginning to gain competitive advantage over brick-and-mortar competitors (McAfee and Brynjolfsson, 2012). Consider that brick-and-mortar businesses can track what has been sold, perhaps to whom, and maybe even what else they have purchased. With the development of digital data gathering online, businesses could track all of the above, plus what else the buyer viewed, how the buyer navigated the website, how much the buyer was influenced by reviews, promotions and other users' posts, the effects of page layouts on purchasing and navigation behaviour, similarities between users and groups of users, and much more. With this information, a learning predictive algorithm could conceivably be used to send the user much more directly to items of interest, whether to purchase or to otherwise interact (McAfee and Brynjolfsson, 2012). This continuous monitoring, tracking, data storage and reporting, which has been taking place at an ever-accelerating rate since the late 1990s (CRISIL, 2013), has grown increasingly sophisticated, and by the end of 2012 had become a huge repository of data stored globally. This data, which volume is currently measured in Zettabytes (10^{21} bytes), and growing at a rate of 2.5 Exabytes (2.5×10^{18} bytes) every day (McAfee and Brynjolfsson, 2012), has become known by the moniker 'Big Data'.

One way to conceptualize 'Big Data' is as high-volume, high-velocity, and/or high-variety information assets that require new forms of processing to enable enhanced decision-making, insight discovery and process optimization (Beyer and Laney, 2012). Similarly, 'Big Data' may be defined in terms of three Vs: Volume, Variety and Velocity (CRISIL, 2013). That is, 'Big Data' refers to a *Volume* of data beyond the ability of conventional databases to manage and manipulate. In addition, 'Big Data' comes from a *Variety* of sources and structures, including social networking feeds, video files, audio files, email, sensor data and the like. These data types may be 'structured' or 'unstructured', and are

created continuously by users within the enterprise, in the general user audience, in public forums and in private networks. The *Velocity* at which more and newer data is added to the 'Big Data' repository is rapid and continuous. In fact, it is estimated that there were approximately 2.0 Zettabytes (2.0×10^{21} bytes) of data stored globally as of 2012. Further estimates suggest that since 2009, and forecasted through 2020, the compound annual growth rate (CAGR) in global data is an astounding 41.0%. Given this CAGR, IDC estimates there will be 35 Zettabytes of 'Big Data' globally by 2020 (Vesset et al., 2012).

'Big Data' also comes in a large variety of formats. 'Structured' data is data that is grouped in the form of rows or columns, for example in databases, enterprise ERP and CRM applications, and is estimated to account for about 10% of all 'Big Data' (CRISIL, 2013). 'Semi-structured' data is structured, but not in a manner conforming to the formal structures of data models. This data is also estimated to comprise about 10% of all 'Big Data', while the vast majority of 'Big Data' (est. 80%) is unstructured, meaning it cannot be stored in a row & column format (CRISIL, 2013). Examples of unstructured data types include, but are not limited to the following:

- Blogs
- Emails
- Videos
- Geospatial Data
- Text Messages
- Social Media
- Audio files
- Weather Data
- Location coordinates
- Web logs
- Clickstreams
- Sensor Data

Further, the sources of 'Big Data' are growing and the volume per unit time is accelerating (Vesset et al., 2012) along with the number of websites and means of access (e.g. cellular phones, tablets, dedicated access devices, laptops and desktops). Table 10 illustrates the extreme rate of growth of 'Big Data' from Social Networking and Communications platforms and online consumer sites:

Source of Data	Data 'Velocity' per minute
Facebook	700,000+ updates on Facebook
Flickr	7000+ photos added on flicker
BLOG	1,500 new blog posts composed
YouTube	600+ new videos uploaded
Email Programmes	200 million+ emails sent
Google	2 million+ Google search queries
Skype	400,000+ minutes of Skype calling
Online Brokerages	3500+ ticks per minute in securities trading
Twitter	400,000 tweets per minute
Online Shopping	USD $300,000+ spent shopping online

Table 10 – Some consumer sources and volumes of 'Big Data' at the end of 2012 (Source: Industry Reporting, CRISIL GR&A analysis, 2012).

Given the huge volume, variety and velocity of 'Big Data', along with projected growth, enterprises hoping to utilize this data to drive marketing analytics and automation are going to need certain capabilities and devices, some of which are not yet available. The companies will need to manage a broad range of data types and process analytical queries across these many types of data. Further, large storage capacity and quick data retrieval with advanced data manipulation capabilities will be required if enterprises seek to leverage the very large data sets involved in 'Big Data' (Manyika et al., 2011).

6.2 Where is the 'Big Data' today and what opportunity does it present?

'Big Data' reposes throughout the world on servers, in data centres, in hard copy and other formats. The amount of 'Big Data' that was stored at the end of 2010 in North America and Europe is estimated to be >3,500 Petabytes (1 Petabyte = 10^{15} bytes), and >2,000 PB respectively. Japan is estimated to possess >400 PB of 'Big Data', while China, the Middle East, India and South America are estimated to be storing >250 PB, >200 PB, >50 PB and >40 PB, respectively (Manyika et al., 2011).

Notably, the major industries responsible for the accumulation of 'Big Data' differ per region. In North America, the key verticals are Healthcare, Manufacturing, Retail and Digital Marketing. In Europe, these are Technology, Financial Services, Oil & Gas, Utilities and Manufacturing (Manyika et al., 2011). In Japan, the Manufacturing, Telecom, Health and Life Sciences verticals are the greatest 'Big Data' sources. Finally, in China, the key verticals are Telecom, Bioinformatics and Retail, while in India, they are Telecom, Retail and Banking (Manyika et al., 2011). It is also important to mention that each region is at its own state of maturity with respect to 'Big Data' analytics, with North America in a high-demand stage, Europe in the early adoption stage, and the remainder of the world still in nascence or the embryonic stage (CRISIL, 2013).

From a generic business opportunity point of view, 'Big Data' holds great promise for both large and small information technology (IT) and IT-enabled services (ITES) businesses (CRISIL, 2013). The promise arises for three major reasons, that is, the data must be managed and stored, analysed, and applied to business cases (CRISIL, 2013). Considering the volume, variety and velocity of 'Big Data', new data storage infrastructure and technologies will be needed to allow it to be managed and stored. Large hardware and software companies will benefit from the development of the needed data architectures, technology frameworks, data integration products and data warehouses (Vesset et al., 2012). Once the data is stored and manageable, it must be analysed to extract key information, trends and customer data that could be useful to generate insight. Technologies and tools capable of 'Big Data' analysis on acceptable timescales are, for the most part, nascent and will represent a huge opportunity for developers and developer environments to create these analytical products (Vesset et al., 2012). Finally, the analysed data must be used by analysts to generate insights that are cogent and actionable to marketing programme designers. To facilitate developing insights, end-user tools and interfaces will be needed, from applications capable of massive parallel processing (MPP) (Wikipedia, 2013) to relational database management tools, and innovative business intelligence and visualization techniques such as:

• A/B testing	• Association rule learning	• Classification	• Cluster analysis
• Crowdsourcing	• Data fusion and integration	• Ensemble learning	• Genetic algorithms
• Machine learning	• Natural language processing	• Neural networks	• Pattern recognition
• Anomaly detection	• Predictive modelling	• Regression	• Sentiment analysis
• Signal processing	• Supervised and unsupervised learning	• Simulation	• Time series analysis and visualization

Table 11 – Automated Tools and Techniques used in analysing 'Big Data' (Source: McKinsey Global Institute, 2011).

From a financial viewpoint, the annual product and service provision opportunity for IT and ITES companies around 'Big Data' was estimated at $8.5 billion for 2012, with a CAGR of 46% that brings the total to as much as $26.0 billion by the end of 2015 (CRISIL, 2013). The product portion, that is, software and hardware needed to store and manage 'Big Data' represents approximately 50% of the market opportunity (i.e. $6.0B – $6.5B hardware; $7.0B - $7.5B software 2015est) (CRISIL, 2013). The remaining half of the market opportunity resides in the analytics itself, and associated support of users and systems via system integration, consulting, project management and customization (CRISIL, 2013). Much of the demand for 'Big Data' products and services will be driven by private sector marketing, sales, demand forecasting, research and development, and process optimization organisations (Vesset et al., 2012). The main industries expected to drive demand in the short run are: Financial Services, Retail, Telecom, Healthcare and Manufacturing (McCorvey, 2012).

6.3 'Big Data' analytics – what needs to be done to maximize its utility?

This investigator has already discussed the current storage, retrieval, processing and advanced data manipulation capabilities that must be further developed before companies will truly be able to drive marketing analytics and automation in real time (Manyika et al., 2011). Perhaps even more important is the need for better and more sophisticated algorithmic models to operate on these advanced platforms. To the extent companies even recognize the value of social media, much less 'Big Data', current analysis is often limited by the questionable assumptions that all online activity is intentional, and that it is influenced by something else online.

Statistical analysis of website data in the context of these assumptions can lead to misinterpretations of user influence and intent. For example, the manner in which users navigate a website is in some ways controlled by the options and possible pathways available therein, that is, the website structure. So the website structure may force users to click out of necessity rather than intention (Angel, 2013). Further, when websites provide no direct path from page A to page B, correlative statistical analysis of a user's chosen pathway is not realistic. Basic statistical analysis methods are not designed to separate the 'topological' impact of website structure, as pages in websites that are closer from a navigational point of view will almost always appear highly correlated, even if this is only the result of website topology, rather than influential causality (Angel, 2013). One solution to this challenge is to use a site map and count distances between nodes throughout, called a 'topographical design' in Gary Angel's analysis. He points out that even better is to create a 'behavioural topology' model that shows how users actually navigate the site. With the behavioural topology model's results used to frame the results of classical statistical analysis, the true relationships between content and outcome are measurable (Angel, 2013).

Analytical techniques themselves will need to evolve from descriptive analytics to predictive analytics to make the most of 'Big Data's' potential to drive precisely targeted marketing actions. Descriptive analytics include stand reports and alerts; predictive analytics include statistical analysis and forecasting; and prescriptive analytics are predictive models, optimization models and stochastic optimization models (CRISIL, 2013). The advanced techniques of predictive analysis, and the complete techniques of prescriptive analysis have become known as 'Big Data Analytics'. The techniques currently identified as 'Big Data Analytics', and presumably staging to become increasingly advanced, are listed in Table 12.

Analytical Tools and Techniques used to investigate 'Big Data'		
Online Analytical Processing	Multivariate Statistical Analysis	Natural Language Processing
Time series analysis	Semantic analytics	Social network analytics
Visualization	Extreme SQL	Constraint-based BI
Complex event processing	Analytic database functions	Behavioural analysis

Table 12 – Analytical Tools and Techniques used to investigate 'Big Data' (Source: Industry Reporting, CRISIL GR&A analysis, 2012).

Once the analytics themselves have been optimized and uncluttered, a high level of integration of multiple inputs, fast and accurate processing and interconnectivity to marketing execution technologies will be required to maximize the value of the analytics (Egol, Vollmer and Hoebling, 2012). However, pure analytics will mainly distil data into 'intelligence' that will then require analysts to ask the right questions and interpret the intelligence so as to guide decision-making. These questions must include not only 'what' is going on but 'why' is it happening and 'what next'? (Meer, 2012) Then the intelligence needs to be framed in theory and to seek a holistic view of the customer and markets. This, argues Meer, is best accomplished using a 'learning by doing' approach.

The intelligence derived from a strong analytical programme will produce the most insight if it is viewed in the context of the scientific method. That is, to test a theory of how a user forms a preference then acts on it, it is essential to start with a hypothesis about what your customers need and how you can create value for them (Meer, 2012). Meer suggests that the insights derived from data analysis in the context of a hypothesis will lead marketers to specific ideas to develop and present value-adding content in a better-targeted manner (Meer, 2012). The insights will also be more useful if they are considered holistically, that is, as one interaction among the hundreds a single user has with other retailers. This holistic view can further guide high quality content.

6.4 The focus of this thesis

The main contention of this thesis is that a new generation of algorithmic, rules-driven, integrated social media monitoring analysis, and campaign developing applications will be required to maximize the promise of social media marketing. Further, with such software tools still in their nascence, much more research needs to be completed to ideally design these tools. The discussion provides a detailed view of the research undertaken, and how this research begins to fill the gap between what 'Big Data'-driven social marketing is today, and what it has the potential to be tomorrow. A roadmap indicates the most pressing research gaps and shows how marketers can progress even faster to the 'Big Data'-driven ideal: social media-based WOMM, and precisely attuned, poignantly cogent and ideally placed market messaging that will compel user engagement, advocacy and purchasing.

7 RESEARCH METHODOLOGY

The purpose of this research is to demonstrate the link between significant investment in social media branding and sales revenue at the company level. This chapter contains a detailed review of the methodology and materials used to validate the hypothesis that a new generation of algorithmic, rules-driven, integrated social media monitoring analysis, and campaign developing applications is required to maximize the promise of social media marketing. Section 8.2 discusses the theoretical justifications of the approaches chosen to gather and analyse the data. Section 8.3 outlines the research design and objectives. Section 8.4 reviews the research execution strategy, while Sections 8.5 and 8.6 detail the questionnaire and longitudinal interview approaches employed. The questionnaire and a glossary of terms used therein can be found in Appendix A and Appendix B respectively. Section 8.7 describes the manner of data analysis used to elucidate intelligence from the data, and Section 8.8 follows as a brief summary of the chapter.

7.1 Theoretical basis of the research

A methodological approach was required to enable the researcher to develop subsequent, well-structured groupings of data from which insights could be progressively induced. The research methodology needs to:

• Deliver a structured corpus of data - from this data the researcher identifies what social networking activities and behaviours may persist within the individual and group responses, and enables the researcher to prepare for the respondent interviews;

• Through respondent interviews, help categorize social community factors and how they may be potentially impacting the respondents' survey answers;

• Enable the synthesizing of the positivistic and the interview data to deduce possible links between survey responses and underpinning social factors.

It is proposed that gathering input on how people view information usage, and developing cognitive maps by gathering the perceptions of a representative population will provide visibility to the level of social networking orientation at the overall organisational and group levels. This insight can provide the following valuable insights:

- First, it will provide information regarding the relative ranking of information concepts managers consider important to social networking;
- Second, it will offer insights into the cause-and-effect relationships of information concepts;
- Lastly, it will provide a pattern of current understanding of key information concepts.

The researcher has over 20 years of general management experience, and has worked for SAP Labs LLC for the last 15 years in Product Marketing, Product Management, Strategy and Business Development functions on an international level, having worked extensively in Europe and in the United States. He finds himself within the target research group. Jordan (1996) recognized that the fieldworker is his own research instrument, and that workplace experiences and knowledge can enhance research validation. Intrinsically the researcher's experience in managing marketing programmes and knowledge of technology will contribute to the validation of this study by:

• Identifying the appropriate target focus groups for inclusion in the stratified sample;

- Leveraging his knowledge to adapt the research activity and methods to suit the organisation;
- Knowing where to locate relevant supporting content.

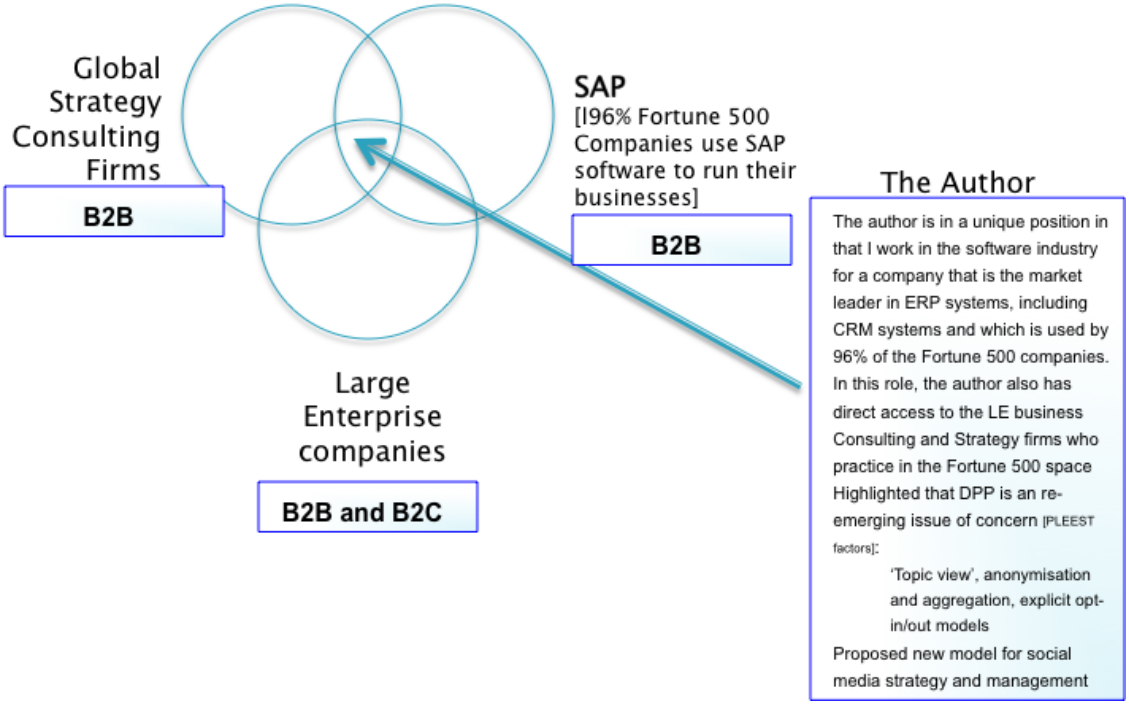

Figure 6 – Visualisation of the researcher's experience

According to Easterby-Smith and Thorpe (2001), structured interviews are useful in situations where the respondent's range of replies may be estimated, and there is a need to clarify details, opinions or ideas. They explain that structured interviews work well when the assessment goals are clear. In this context, a follow-on interview and responses will be used to build cognitive maps.

At PhD level, primary research will be a Grounded theory approach. Grounded theory refers to substantive theory that is developed inductively from a corpus of data, and subsequently leveraged to inform more formal theories.

Grounded theory is a qualitative methodology focused on better understanding phenomenon, and an inductive approach that uses a systematic set of procedures to arrive at a theory pertaining to basic social processes. The aim of the grounded theory approach is to discover underlying social forces that shape human behaviour. This is accomplished using methods such as interviews and surveys, and through skilled observation. In this approach, researchers are responsible for developing or enhancing theories that emerge from observing a group. The theories are grounded in the group's observable experiences, but researchers add their own insights into why those experiences exist (Hussey and Hussey, 1997, p. 70). In essence, grounded theory attempts to reach a theory or conceptual understanding of a theory through stepwise, inductive process.

In this context, a grounded theory seemed to offer a suitable methodological approach for this study, in that the aim is to study the responses of a group, and, by adding contextual data, induce meaning from the responses by looking for evidence of cultural aspects impacting the secured

responses. Contextual data are derived mainly from the researcher's own situational experience, observations and interviews, combined with his understanding of the research situation.

Among the contextual data relevant to this study are both financial and non-financial measures of the return being generated by SMM activities. As different firms prioritize different measures of performance, it would be ideal for survey respondents to list the measures they consider most relevant. Given the time constraints facing the target audience, the questionnaire includes a wide range of measures which respondents could identify simply by marking a check-box.

According to Yin (2003a, p.2) "the distinctive need for case studies arises out of the desire to understand complex social phenomena" because "the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events," such as organizational and managerial processes, for example. In fact, case studies seem to be the preferred strategy when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Yin, 1981, p.59; Yin 2003a, pp.2, 5-10).

In such a setting, a case study would be an *explanatory* one (ibid.). Depending on the type of research question posed, the extent of control an investigator has over actual behavioural events, and the degree of focus on contemporary as opposed to historical events, there are also *exploratory* and *descriptive* case studies (Yin, 2003a, pp.1, 3-10).

In contrast to this, STAKE (2000) identifies three types of case studies: *intrinsic*, *instrumental*, and *collective*, with the distinction between intrinsic and instrumental (a collective case study is an instrumental study extended to several cases) addressing the degree to which the focus is on the unique or the generalizable features of the case research (pp.437-438, cf. also Hartley, 2004, p.326). As a matter of interest, a common concern about case studies put forward by their critic is that they provide little basis for scientific generalization (Yin, 2003a, p.10). Yin's (2003a) answer to this:

"case studies […] are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study […] does not represent a 'sample', and in doing a case study, your goal will be to generalize theories (analytical generalization) and not to enumerate frequencies (statistical generalization)" (pp. 10 & 14)

"By combining multiple observers, theories, methods and empirical materials, researchers can hope to overcome the weakness or intrinsic biases and the problems that come from single-method, single-observer, single-theory studies. Often the purpose of triangulation in specific contexts is to obtain confirmation of findings through convergence of different perspectives. The point at which the perspectives converge is seen to represent reality" (Jakob, 2001).

Triangulation is a process of verification that increases validity by incorporating several viewpoints and methods. In the social sciences, it refers to the combination of two or more theories, data sources, methods or investigators in one study of a single phenomenon to converge on a single construct, and can be employed in both quantitative (validation) and qualitative (inquiry) studies. The author carried out a survey via a questionnaire, and then carried out interviews with 11 of the respondents. The results of both sources were incorporated into the results and discussion section of the thesis. The author ratified the interviews with the participants, as can be seen in Appendix C.

7.2 Research design and objectives

Given the target respondents, employing a detailed questionnaire and a series of interviews was arguably the best approach available to this researcher. The questions are intended to elicit the current level of social media 'Big Data' marketing taking place at major corporations, the future social media marketing initiatives these firms are planning, and the current and expected results of all the initiatives. Collecting data via survey and follow-up interview was chosen, despite certain pitfalls, because this researcher's extensive product marketing and business development experience in Europe and the United States makes it clear that the time available to Chief Marketing Officers (CMOs) is very limited and in strict supply. Any project is inherently constrained by the least available resource. In this case, the least available resource is also the most important. This is because CMOs are the target respondents, and concurrently their time is available only at a premium. In consideration of the limited time available to the target respondents, this researcher chose the information gathering technique demanding the least time, in order to take advantage of a brief window of opportunity to attract CMO attention.

This is not to say that periodic surveys do not possess certain pitfalls in comparison to continuous monitoring approaches such as regular blog or journal-type surveys. For example, given the length of many periodic surveys, it is inevitable that they contain questions which are irrelevant to the respondent or about which they have little direct experience. Question fatigue can result and lead to guessed responses, which are of questionable reliability. Further, though of limited consequence in the context of this investigation, periodic surveys limit the opportunity for fact-based process improvement, given the possibility that information, the availability of which is further delayed by the time required for analysis and presentation, can become outdated and thus of limited utility.

Considering these limitations, the target group has been revised. The researcher has very good access to many of the global consulting firms, such as Accenture, Deloitte, IBM, Capgemini, PwC, Booz, Tata Consulting Services, Wipro, Ecenta, Ernst & Young, et al. These firms offer advisory, strategy and project management services to large enterprises globally, and especially to CMO's who are the target 'users' of 'Big Data' in the social media context. Therefore, these global consulting firms have a unique and macro-level perspective of the topic, what companies are doing today, and what companies are planning to implement in the future. These firms are both an agency and a consultancy, which combines digital and creative services with deep industry knowledge.

The objective of the current investigation is to take a snapshot, as it were, of the present level of social media 'Big Data' marketing and current initiatives, rather than to respond quickly to some acute condition. All things considered, the aforementioned constraints associated with periodic surveys are of diminished relevance for this study. A survey, followed up by a 60 minute interview approach to data acquisition seemed appropriate for the purposes of this research.

Each of the hypotheses associated with the research objectives will be tested by means of the aforementioned questionnaire, found in Appendix A. Following the analysis of the questionnaire answers, this investigator will perform follow-up interviews with respondents to gain more detailed insights and enable respondents to enhance their answers with additional in depth responses.

7.3 Hypotheses and test questions

Below are details regarding the hypotheses this investigator proposed to test by way of the questionnaire and follow-up interviews:

H_1: Only companies with specific organisational and operational characteristics are actively utilising social media 'Big Data' tools.

Hypothesis 1 investigates the relationship between the various characteristics of a company and the likelihood it is making use of social media 'Big Data' tools. It is proposed that companies with the following characteristics are more likely to invest in social media marketing:

- Companies with more focused business operations
- Companies with a hierarchical organisational structure
- Companies whose primary customers are consumers
- Companies in consumer-focused industries
- Companies with high annual revenue
- Companies with extensive third-party relationships
- Companies with flexible working arrangements
- Companies driven to increase market share
- Companies with significant in-house technology

The independent variables to be tested against this hypothesis include the firm's portfolio of products and services, customers, industry of operation, organisational structure, annual revenue, strategic drivers, partner relationships, working arrangements and ownership of technology and business processes. The questions ascertaining these characteristics are found in Section 1 of the survey: General details of the company.

The dependent variables, (i.e. the extent of social media 'Big Data' investment) that will be used to validate or refute this hypothesis include the number of people involved in social media, the amount of technological and analytical investment and the extent of social media training offered to employees. The questions determining these qualities are found in Section 4 of the survey: Social media investment questions.

H_2: Of companies using social media tools, the use is mainly investigative and limited in scope and application.

Hypothesis 2 investigates the current and anticipated extent to which social media tools are used by companies. This investigator proposed that even the minority of companies using social media tools to any extent are only making limited use of the large variety of tools and techniques at their disposal.

Questions used to test this hypothesis are located in several sections of the questionnaire. Section 6 questions inquire about the overall use of social media tools and the specific items tracked. Section 7 questions include the extent to which business units are using social media to connect with customers, and what social media methods the company employs in support of each business unit involved. Section 8 questions asks technical questions as to what exactly the company is tracking,

where it tracks information online, which measures are used to evaluate social and analytical value-added, and which descriptive or predictive analytical techniques the company employs.

H_3: The companies that have overcome obstacles to using social media 'Big Data' tools, that have recognised value from social media efforts, have implemented a social media strategy, and are actually gaining measurable return on the investment.

Hypothesis 3 investigates the return on investment that progressive companies are realising from social media 'Big Data' investments. This researcher posits that companies that have taken the 'giant leap' from dabbling with social media 'Big Data' tools, to implementing a social media strategy, and backing it with resources, are realizing measurable ROI from the effort.

The independent variables to be tested against this hypothesis are found in Sections 2, 3, 4 and 5 of the questionnaire. The relevant questions in Section 2 have to do with 'ownership' of social media within the organisation, the influence of various parties in the adoption of social media, and the functional leadership of the operations. Those in Section 3 focus on the venues where social media 'Big Data' initiatives are aimed, the technologies being employed, the user content examined, the technologies employed and the types of strategic analysis being applied. The questions from Section 4 include the number of people involved in social media activities, social media training, technological investment and analytics in use. The two questions in Section 5 are used to identify the companies that have overcome obstacles to the implementation of a social media strategy.

The dependent variables, (i.e. performance against key measures) used to validate or refute this hypothesis are found in the last two sections of the questionnaire. These questions ask respondents to indicate current and future value of social media 'Big Data' activities in terms of resulting measurable, as well as perceived benefits. Questions include identifications of the business units and strategic functions that have currently benefited from social media 'Big Data' initiatives, the degree to which social media 'Big Data' technologies are providing competitive advantage, and the positive changes to the business that have resulted from the implementation of social media strategy.

H_4: The companies that invest resources in a social media 'Big Data' strategy and track users across many venues and analyse the findings using descriptive tools are gaining more significant return on their social media investments than others.

Hypothesis 4 investigates the return on investment companies extensively involved in tracking, analysing and describing user social media activities across a wide range of media. This investigator proposes that these companies are realizing even more ROI than those with more limited strategies.

The independent variables to be tested against Hypothesis 4 are found in Sections 2, 3, 4 and 8 of the questionnaire. Again, the pertinent questions in Section 2 include details on the 'ownership' of social media within the organisation, the adoptive influence of various, and the functional leadership structure of the social media initiative. Those in Section 3 are most germane to the proof of Hypothesis 3, as they focus on the extent to which companies make the most of the many social media venues available, the user content being examined and the tracking and descriptive technologies in place. The questions from Section 4 provide a snapshot of the resource investment and social media 'Big Data' initiatives in place at a company. The questions in Section 8 that are applicable to the proof of this hypothesis are those focused on the descriptive analytical techniques

the company employs to characterize the wide variety of social media data acquired.

The dependent variables, (i.e. performance against key measures) which will be used to validate or refute this hypothesis are once again found in the last two sections of the questionnaire. As described in the detail for Hypothesis 3 above, these questions ask respondents to estimate the value of social media activities across key business units and strategic functions. The questions also ask respondents which social media technologies are providing competitive advantage and which positive changes to the business have resulted.

H_5: The companies using advanced 'Big Data' analytical tools to describe and predict user characteristics, applying the intelligence to target, time, tailor and trigger the release of cogent content to the 'dynamic throng of individual audiences', are experiencing the highest return on social media investment.

Hypothesis 5 investigates the return on investment companies are experiencing when they use the 'full suite' of 'Big Data' tracking, analysis, description and prediction across a wide range of media. This investigator theorizes that the companies that have a resource-backed social media strategy with significant investment in descriptive and predictive user characteristics are realizing the greatest ROI of all companies surveyed. Further, those companies which use this data to optimize the '4 Ts', that is, targeting and timing a tailored message delivered automatically 'on trigger' will be experiencing the greatest ROI by a wide margin. This is the key hypothesis being tested via this research.

The independent variables to be tested against Hypothesis 5 are, as in the test for Hypothesis 4, found in Sections 2, 3, 4 and 8 of the questionnaire. The relevant questions in the first three sections are indicated in the detail above for Hypothesis 4. All of the questions in Section 8 are applicable to the proof of this hypothesis. Section 8 contains technical questions inquiring about specific user content the company is tracking, within which venues it tracks this information, which techniques and methods are used to analyse the information, and which descriptive or predictive analytical techniques the company employs. While intelligence on the application of technology to achieve the 4 T's can be implied from the answers to Section 8 questions, the actual application of technology towards this end is expected to be most forthcoming in the follow-up interviews.

The dependent variables are, once again, company performance against key measures. Those questions used to validate or refute this hypothesis are found in the last two sections of the questionnaire. Details of the general lines of inquiry of these questions are found above.

7.4 Research execution

During the fourth quarter of 2014, work was undertaken with the target group to gather quantitative data via structured surveys, along with qualitative data from professional bodies, and communications used to compare information perceptions with associated real-world events.

The analysis of the data collected was anticipated to be challenging, due to the volume and richness of content. Computer models were used to help with data capture, synthesis and analysis.

A self-guiding Likert scale based questionnaire (survey Monkey) was emailed to the participants to complete online, prior to engaging in an interview with the researcher. The questionnaire was

designed to take approximately 40 minutes to complete. As the researcher has direct contacts within the target group, most of the respondents were known acquaintances or through referral. Therefore, the content was likely to be rich in knowledge and experience.

7.5 The Questionnaire

The research questionnaire was composed of seven short sections, each containing appropriate questions. These sections were:

1. Company data
2. Investments in SMS
3. Obstacles to 'Big Data' investment questions
4. Social media application questions
5. Social media tracking, measurement and analysis questions
6. 'Big Data' results questions
7. Anticipated value of 'Big Data' questions

7.6 Format of questions

The first question was a multiple choice question, mainly used to qualify structural and positioning characteristics, the ownership of social media, and the amount of investment made by the company for which the respondent was speaking. In some cases, the respondent chose all responses that applied, while in other cases where prioritisation was intended, the respondent chose the top four.

All the other questions used the Likert-type scales. This low-to-high range of Likert responses was maintained throughout the questionnaire, regardless of the actual wording of the possible responses.

7.7 Layout of the questionnaire

The research questionnaire encompassed a total of 40 questions. The entire questionnaire is provided in Appendix A, and an appropriate Glossary of Terms in Appendix B. A glossary accompanied the questionnaire to aid each respondent, mainly with descriptions of mathematical testing terms queried in the final section. However, given the expertise of the target, this was not expected to be used.

The first section contains seven questions asking for basic details of the respondent's company. The second section, containing eight questions, asks the respondent about the ownership and control of Social Media 'Big Data' activities at the firms that they serve, and is followed by Section 3, comprised of two questions asking the respondent to identify any challenges or obstacles to implementing social strategy into the overall business strategy. Section 4 asks eight questions to describe the maturity of the company's social media strategy and to indicate how, and within what departments 'Big Data' strategy was being implemented. The fifth section asks five questions about the level of investment the firm had made to back social strategy, to what extent the social media effort employed new technology, what specifically was tracked and whether advanced algorithmic and other 'hard' analytical techniques of analysis were used. Section 6 asks six questions to identify the main drivers behind the firm's social media 'Big Data' investments and how business processes had been affected by social media. Finally, Section 7 asks six questions asking the respondent to describe current and anticipated value deriving from social media 'Big Data' initiatives.

7.8 Detail of questions in the survey

The specific sections and the intelligence benefit of the questions therein are detailed in the following sub-sections of this chapter.

7.8.1 General details of the company

This section of the survey was designed to identify the respondent's firm according to standard qualifiers. The aim of this section was to learn about the firm's portfolio of products and services, customers, industry of operation, organisational structure, annual revenue, strategic drivers, partner relationships, working arrangements, and ownership of technology and business processes. This investigator believed these factors would be extensive and appropriate enough, in connection with additional responses, to develop statistically significant categories of the businesses involved with respect to their social media initiatives.

7.8.2 Section 1: Social media investment questions

The questions in Section 1 are important to evaluate results versus efforts and return on investment. The queries ask how many people were currently, or planning to be involved in social media interaction, whether the company offered any social media training to employees, how much technological investment the company had made and what kind of analytics had been brought on board. Like the contribution from the previous section, correlation with performance criteria would provide insights into the most important investments behind social media programme development.

7.8.3 Section 2: Social media ownership and control questions

Section 2 of the survey seeks an understanding of the initiatives that companies have taken to explore or exploit social media as a 'Big Data' gathering or marketing and branding tool. The questions focus on 'ownership' of social media within the organisations, the influence of various parties in the adoption of social media, and the functional leadership. The answers to these questions would be correlated with performance criteria answers to elicit best practices in social media team placement and senior level involvement.

7.8.4 Section 3: Obstacles to social media investment questions

The two questions in this section gain information on challenges and bottlenecks in the social media 'Big Data' investment process. The information would be used qualitatively in the discussion section of the thesis to characterize the performance of firms, based upon the main obstacles to adoption.

7.8.5 Section 4: Social media applications questions

In Section 4, the respondents qualified their perceptions of the relative maturity of the firms' social media 'Big Data' usage compared to competitors. The questions ask which business units were using social media to connect with customers, and what social media methods the company employed in support of each business unit involved. When compared with business unit performance value answers in Section 7, these questions could be used to rank the value of individual techniques as realized in return by each department, further identifying the best initiatives in terms of ROI.

7.8.6 Section 5: Social media tracking, measurement and technology questions

Section 5 of the questionnaire asks technical questions as to what exactly companies were tracking, where they track information online, which measures were used to evaluate social and analytical value-added, and which descriptive or predictive analytical techniques the company employed. These details would be used in conjunction with the findings from the rest of the survey comparisons to establish the value of heavy 'Big Data' analysis in real company experience, and were expected to correlate well with other best practices determined on an ROI basis from comparisons of actions versus returns based on answers in the remainder of the survey.

7.8.7 Section 6: 'Big Data' results questions

This section is replete with questions about the business units and strategic functions that had been enabled or furthered by social media initiatives, and which were expected to be enabled over the next three years. The degree to which social media technologies would provide competitive advantage was qualified, and changes to the firms' employee activities, customers, stakeholders, organisational structure, business processes and approach to technology were investigated. The answers to these questions would be used in the discussion section to elaborate upon the effects of social media adoption at the company level, beyond measurable returns and other advantages.

7.8.8 Section 7: Current and anticipated value of social media questions

Section 7 is the major performance analysis section. In this section, respondents were asked to indicate the technologies that were currently providing competitive advantage, and those that would provide competitive advantage in three years' time. Respondents indicated measurable returns from social media investments, what had been gained and what was expected to be gained in terms of the identified performance measures. The answers in this section would be compared statistically with answers in all the other sections to gain significant insight into the measurable value attained by a company according to its particular efforts, and amount and type of investments.

7.9 Data Analysis

The researcher is aware that, during the course of this PhD study, social media will evolve. Therefore there is a need for flexibility within the research, whilst at the same time meeting the aims and objective of the study.

7.10 Ethics and Research Governance

ERGO (**E**thics and **R**esearch **G**overnance **O**nline) is a web-based programme that manages research submissions and applications. It is flexible enough to cater for both staff and student submissions and has options for submitting applications for the following:

- Students submitting to supervisors for approval
- Staff / postgraduates submitting to the ethics committee for approval
- Any researcher submitting to the RGO / insurance office for review and approval

Every stage of the submission process is logged for audit purposes, and emails are sent to relevant individuals at key stages, e.g. submission approval / rejection / requiring user review. The author adhered to the process and submitted the questionnaire for review.

Other key features include the following:

- Department specific check-lists for submitting research applications
- Department specific template documents
- Options for peer review prior to submitting
- Joint submissions/ coordinators with anyone registered at the University
- Options for allowing the Ethics Chair to override any previous decisions
- Submission Pathway options for each department, e.g. students MUST submit to a supervisor, students can choose, students only submit to ethics committee.

The questionnaire was subsequently approved for release, which enabled it to be sent out to the intended target audience.

The link to the University site, is as follows: https://www.ergo.soton.ac.uk/

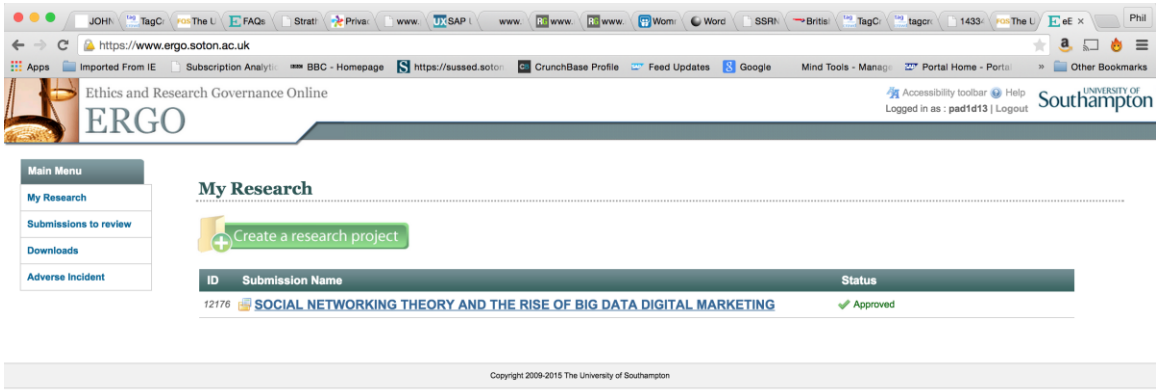

Figure 7 – Confirmation of ERGO approval

7.11 Summary

The proposed study is offered as PhD award level study, as the research expands on established doctoral level research. As positioned earlier, the proposed research will add to knowledge and to professional practice by better understanding the impact of specific information usage to the success of new marketing practitioners.

The proposed study will uncover new facts or principles, potentially suggest relationships that were previously unrecognized, potentially challenge existing truths or assumptions, afford new insights into the little-understood phenomena of Social Networking, and potentially suggest new interpretations of known facts that can alter man's perception of the world around him.

A discipline advances because readers will have a better idea than the existing body of knowledge. The process of generating knowledge can be seen as asking the question, ‘why’, and then doing

something to answer it. Adding the information gained in this study to the understanding of social networking is both exciting and gratifying.

Results of the questionnaire survey and results of follow-up interviews are presented in Chapter 8, in the context of the hypotheses in Chapter 7 where appropriate. Chapter 10 indicates which of the hypotheses have been validated by the research and which have not, defending this researcher's conclusions based on the hard data acquired. The chapter also identifies gaps remaining, despite the present investigation, and proposes ideas for future research.

8 RESULTS AND DISCUSSION

This chapter focuses on the detailed findings and statistical results of the online survey as well as semi-structured interviews. The purpose of the qualitative and quantitative research is to contribute to the wider body of literature that exists on 'Big Data' and social networks and their usage in engagement marketing techniques.

8.1 Target pool survey respondents and interviews

This thesis focuses on how social 'Big Data' plays out at large enterprise and mid-market companies, those having more than $1 billion in revenues. To further develop the broad-based online survey results completed by experts at the major global strategic consulting firms, supplemental personal interviews were also conducted with this target group. The target group consisted of senior Strategy consultants, Data Scientist consultants, Business Intelligence consultants, Marketing consultants, Chief Marketing Officers, and business unit Partners at top-tier global strategic advisory firms. The firms participating included Accenture, Ernst & Young, Capgemini, PwC, Booz & Co., Peppers & Rogers, IBM, Deloitte Digital, and WIPRO. Further, alumni from McKinsey and Boston Consulting Group contributed additional content. In total, 211 email requests were sent out, of which 51 were completed by target respondents. Amongst the 51 respondents, eleven partook in one hour interviews with this investigator.

8.2 Respondent geographic, industry and revenue demographics

Geographically, the target group members responded from several nations including the United States, Canada, the United Kingdom, Germany, India and Australia. As displayed in Figure 8, the majority (65%) of respondents hailed from the USA, 22% from Germany, 6% from the UK, 4% from India, and 2% each from Australia and Canada. This result is not surprising, considering this investigator carried out most work in the USA. The survey asked the respondents' views on many topics related to social media and social 'Big Data' usage within companies to which they offered strategic advisory consulting. Some respondents called it 'digital maturity' and 'digital transformation' in the interviews that were conducted. In addition, other terms used were: 'Digirati', 'Fashionistas', 'Conservatives', and 'Beginners'. An explanation was given for these terms by one of the executives interviewed, as follows:

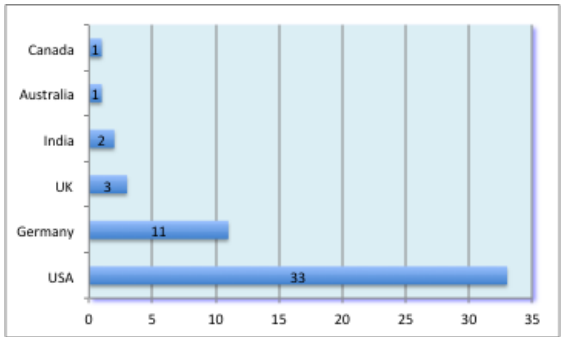

Figure 8 – Number of survey respondents by country of origin.

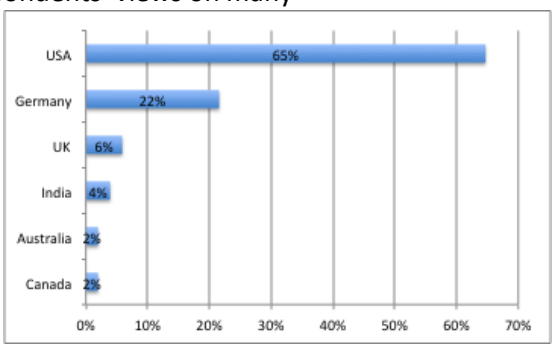

Figure 9 – Percent of responses by country of origin

- ***Digirati*** – mature at advanced technology adoption, data science skills, and management.

- ***Fashionistas*** – early adopters of advanced technologies, but without effective data science of overall management skills.
- ***Conservatives*** – slow to adopt technologies or data science, but effective at managing them.
- ***Beginners*** – possessing neither advanced technologies and data science nor the ability to manage it.

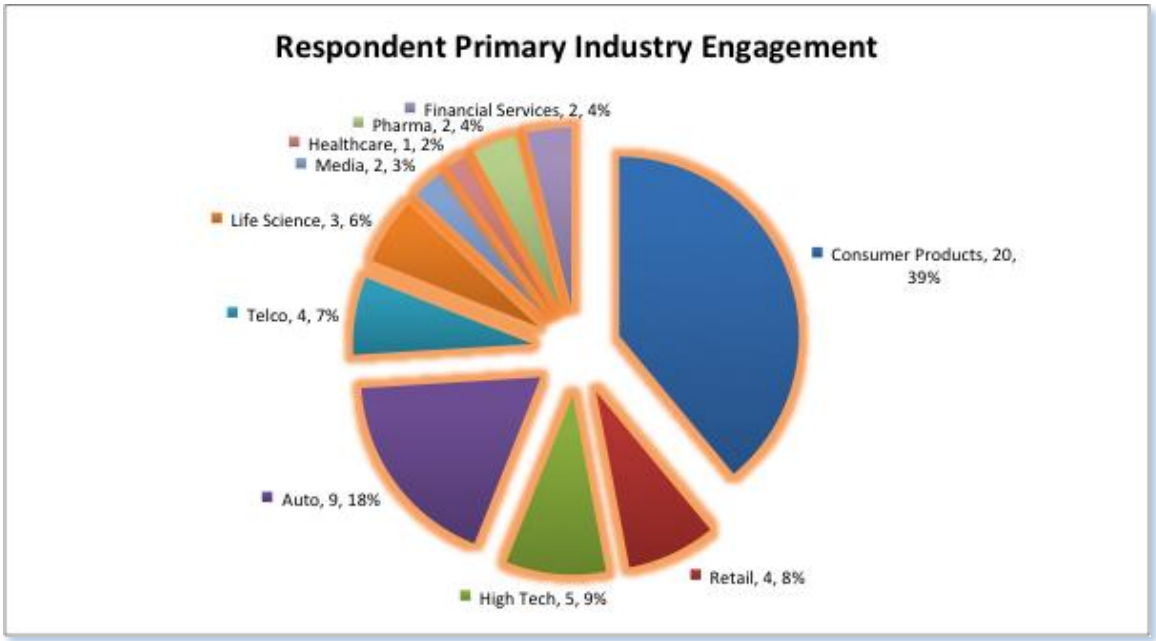

Figure 10 – Principal industries engaged by survey respondents.

Figure 10 shows the majority of respondents consult for the consumer products and automotive industries, although the high technology, retail and telecommunications verticals are also well-represented. Notably, the retail, consumer packaged goods and automotive industrial groups

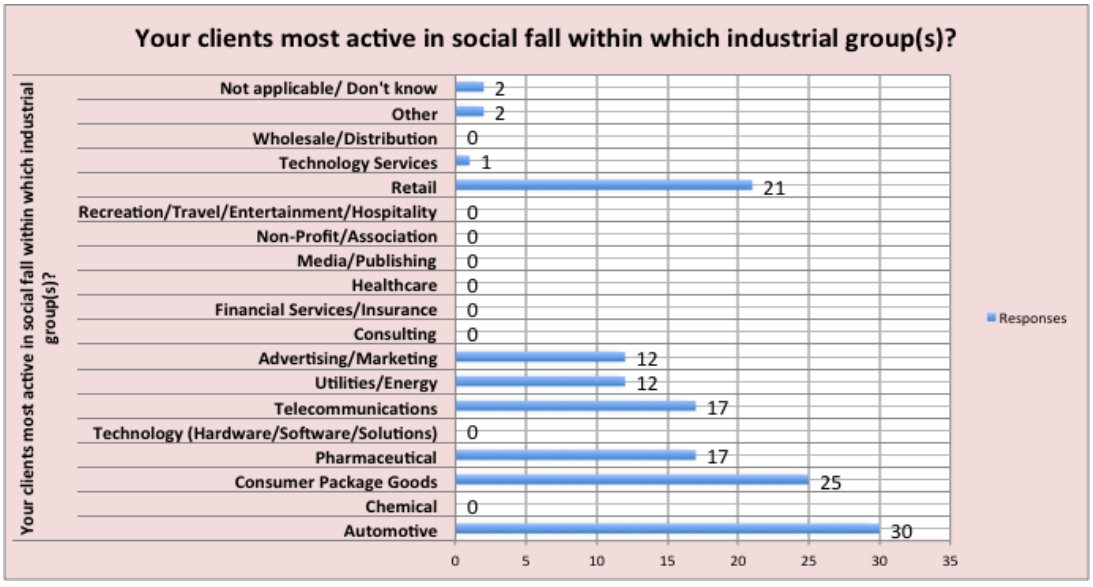

Figure 11 – Key industry groups engaging in social media activities.

are shown to be the three segments most active in the social media field by the survey data illustrated in Figure 11. The telecom, pharmaceutical, advertising and utilities segments are also identified as highly active in Social Media. In a potentially misleading paradox, the results show the

technology services and high-technology industry segments, whose capabilities comprise the essence of 'Big Data' capture, analysis and parsing, scarcely register as at all active in their own sphere.

The discontinuity is said here to mislead, because many of these technology firms sell mainly Business-to-Business (B2B), while the industrial groups shown to be most active in SMM sell principally Business-to-Consumer (B2C). While the B2B versus B2C disparity suggested by this information is not explicit in Hypothesis 1 (i.e. only companies with specific organisational and operational characteristics are actively utilising social media 'Big Data' tools), these results suggest one of the key 'operational characteristics' is B2B versus B2C sales focus. This finding may be an artefact of the relative SMM nascence of most industrial segments, as elucidated in the following results, although at this time appears significant.

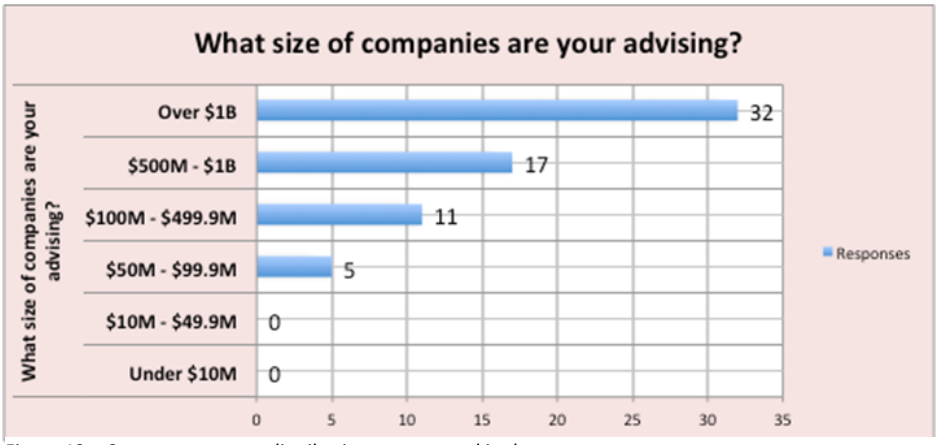

Figure 12 – Company revenue distribution represented in the current survey.

As indicated in Figure 12 ,many of companies represented in the survey sample fall into the high end of the SME segment, although the most of the respondents speak of social media activity in the large or very large business segments.

8.3 Responses to survey questions

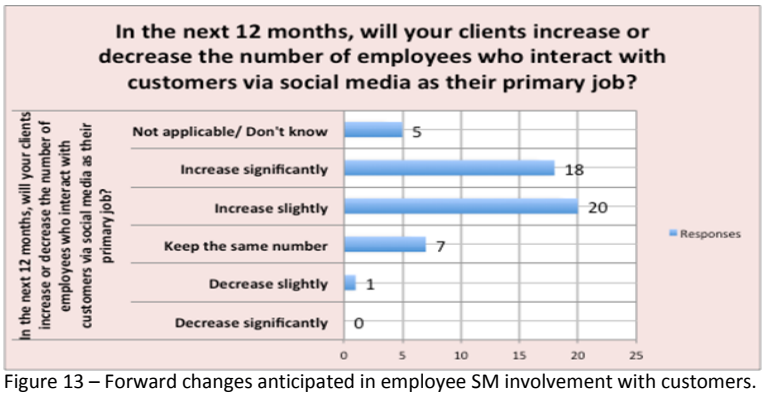

Figure 13 – Forward changes anticipated in employee SM involvement with customers.

The following sections include graphical representations of the key results gained from respondents to the survey instrument, with comments on the findings. The results are organized by the section of the survey where they were posed and provide a review of its major findings. The subsequent sections consist of the findings from eleven hour-long interviews held with senior executives consulting to the range of companies described in the demographics section above.

8.3.1 Current investments in SMS

Figure 13 indicates that most companies intend to increase the number of employees interacting with customers via social media in the coming 12 months, while almost no companies plan to decrease employee engagement. While the number of employees already involved in SMS customer interaction is not indicated, the responses suggest that many companies with active SMS initiatives are realising sufficient benefit from the SMS effort to add resources. Other companies with active SMS programmes would seem to be gaining at least enough to maintain the status quo.

Figure 14 – Main parties responsible for setting and executing SMS.

Figure 14 reveals that companies overwhelmingly appoint functional business leaders to set and execute SMS strategies. A lesser number of firms have taken the initiative to establish a separate social media leader to head the SMS effort. This finding strongly suggests that social media strategy is identified within companies as a line of business function, and perhaps not as a cross-team operation. This finding is important in the context of comments from one executive interviewed who points out "...Digital media is often bolted onto traditional media in a disjointed way. There's not enough integrated planning where the big marketing idea comes first. Instead, a traditional media campaign is frequently shoehorned into digital media." Another executive commented "...the risk of a fragmented customer experience is greater than ever. Therefore businesses and organisations should not be limited to one silo only, and nor should Social CRM."

Figure 15 – Main parties providing support and intelligence to SMS leadership.

A further question to ask here would have been to determine how many of these functional leaders were based in the Marketing Department.

The researcher's own experience is that marketing is the main 'owner' of social media, largely because it deals with customers. Figure 15 above also shows that firms are using outside marketing agencies to assist them with their social strategy and execution. In fact, managing the process in-house was the least common response to the

question. One executive interviewed pointed out, “Clients are still learning. They don’t have all the knowledge and capabilities to achieve certain strategies”. This statement appears to be borne out in the results shown in Figure 15.

The indication that in-house management of social media mechanics and cogent policy is rare may also be implied from the revelation in Figure 16 that nearly twice as many companies provide no social media training to employees, as companies training only social media team-members. Further still, fewer than 10% of respondents indicated companies are providing cross-functional social media training to employees. This result implies the existence of a vast untapped social media resource available to most companies in their existing employees, and underlines a potential source of risk towards a fragmented customer experience.

Figure 16 – Prevalence of social media training for company employees.

Regarding the existence of social media guidelines, the data shown in Figure 17 reveal that the majority of companies represented in the survey provide guidelines primarily to employees assigned to social media teams. On the other hand, the number of companies having no such guidelines or having guidelines for all employees is about equal. This result again suggests a want of understanding of the need to control potential fragmented messaging on the company’s brand image. In addition, it is this researcher’s experience that much of the content of corporate social media guidelines is more punitive in nature than anything else. That is, the guidelines often focus on penalizing perceived misuse of online resources – even to the extent that the ‘guidelines’ are principally focused on limiting personal use of the internet during work hours. If these kinds of ‘guidelines’ are in fact a large component of a company’s repertoire, they do not speak to the potential for productively utilising the employee resource base to promote marketing agenda.

Figure 17 – Prevalence of various social media guidelines for company employees.

In essence, the data presented in this section suggest that most companies active in social media and represented in the survey, that is, large or very large companies in B2C industry segments with consumer-driven revenue, have recognised the SMM potential, yet remain in the early adoption stage. As a result, most firms appear to rely mainly on outside advisors to guide tactics, and do not appear on the whole to possess sufficient realisation of the possible negative effects of fragmented customer experience on brand awareness and brand value.

8.3.2 Obstacles to 'Big Data' investment

Figure 18 would seem to get to the root of the challenge facing companies considering potential social media strategies. The main obstacle indicated by respondents was concern about data security. This concern could arguably be deemed unfounded if referring to sudden breach of private corporate databases, because 'cloud' security can arguably be shown to exceed the security offered by most in-house databases.

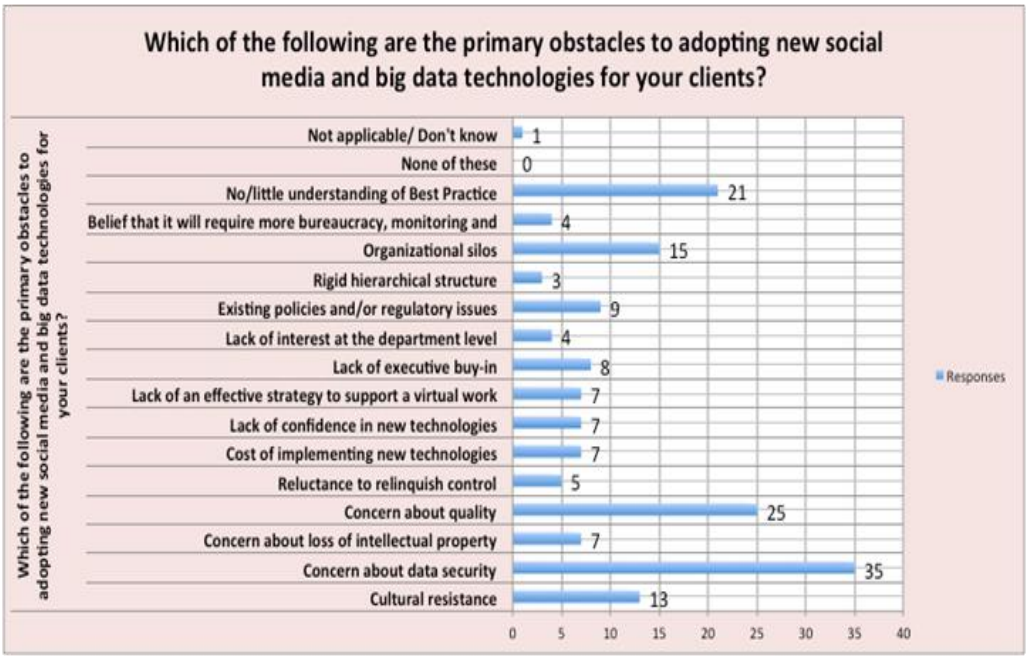

Figure 18 – Primary obstacles limiting company social media and 'Big Data' investment.

This second most prevalent response is concern about quality, and is closely followed by the third main reason: no/little understanding of best practices. In view of these three major objections, the data appear to support the contention that most businesses remain in the early adoption stage of SMM. At the same time the results suggest another significant cause for hesitance is both lack of trust that employees will 'say the right things' in social media channels, and fear that employees will divulge company secrets in social media posts. As noted in the previous section of this dissertation, the adoption of social media guidelines and social media training for all employees on ways that they can use social media to overall corporate advantage will cause many of these concerns to abate going forward. Further, promoting cross-silo SM engagement would theoretically decrease the potential for fragmentation of customer experience.

Overall the responses to this question point once again to prevalent limited understanding of how to access the value of social media channels, and to insufficient level of best practices to derive strategic advantage.

8.3.3 Application of social media intelligence

The responses to questions in this section of the survey further support the ideas mentioned in the prior two sections, especially regarding the newness of SMM efforts. For example, in Figure 19 respondents indicate most companies are just beginning to incorporate social media beyond sales, marketing and customer service. The larger group of firms approaches social channels using a 'reactive' model that deals mainly with responses to urgent issues voiced by customers. At the least, responding to the customer represents a bidirectional dyad in Social Network Theory, and hence more engagement. The next largest group of companies focuses on monitoring the comments of customers in the social media sphere. Monitoring conversations represents a unidirectional dyad, less engaging than the response-oriented approach. Fewer than 10% of respondents indicate their corporate clients have extended social strategy well beyond these limited forays, the same percentage reporting their clients have no social media strategy whatever. These responses suggest proactive use of social media to grow sales, drive brand value, improve products or enhance the customer experience is not a mainstay of today's company social media efforts. This deficiency would seem again to be the result of limited knowledge of best practices, as reported in Figure 18 above.

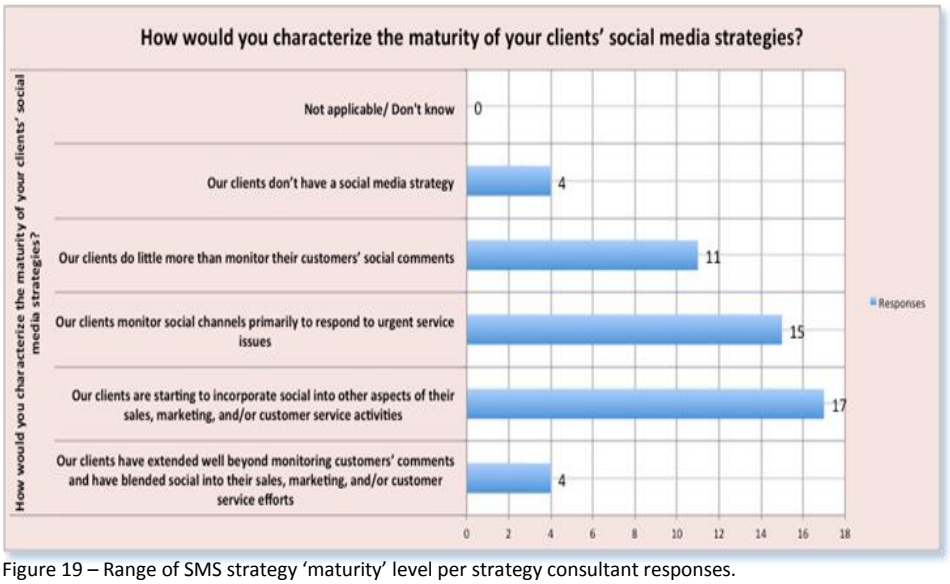

Figure 19 – Range of SMS strategy 'maturity' level per strategy consultant responses.

The relative nascence of even the most forward-thinking companies' social media efforts could also explain these results. That the relative newness of the social media market opportunity is a significant reason for the social strategy limits revealed in Figure 19 is further supported by the results shown in Figure 20. This figure points to marketing, customer service and sales as the main corporate functions using social channels to connect with customers. Notably R&D

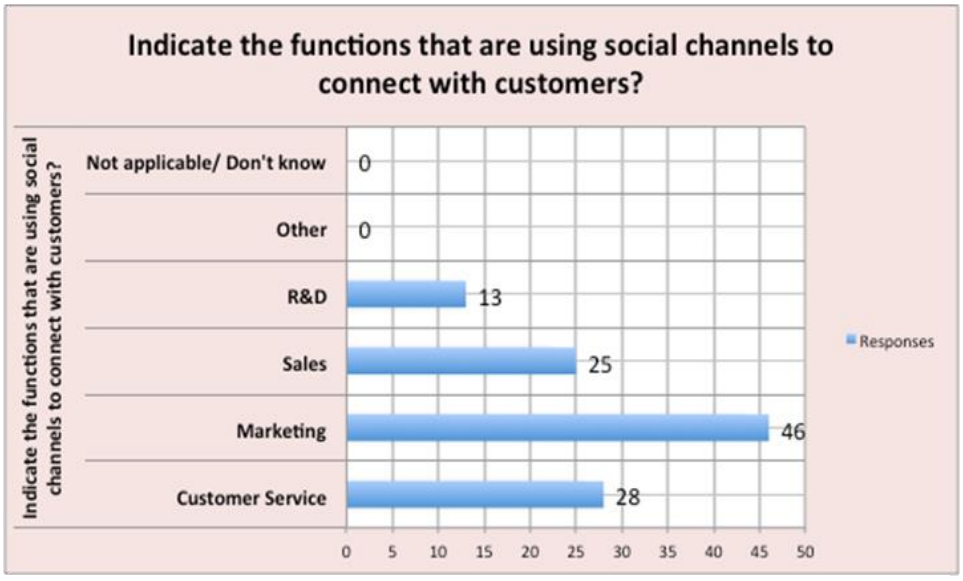

Figure 20 – Corporate functions most often using social channels to connect with customers.

shows up as a fast follower to these functions, suggesting this function may be less siloed than others. While the particular uses of social media by these departments are not explicit in the data, the results previously discussed suggest a mix of unidirectional and bidirectional dyad relationships driven by the customer vice and sales organizations. The marketing function has a wide selection of possible approaches to social media channels, from simple one-to-many advertising, to much more intimate engagement with users. This researcher suggests the actual uses fall along a bell curve highly skewed towards one-to-many and less intimate approaches. This suggestion is based on the idea that the data security and quality obstacles previously identified, along with admitted lack of understanding of best practices, are likely to make more intimate engagement with customers undesirable to many corporate executives.

Interestingly, the functions reported to be most affected by social media technologies comprise both core and non-core functions nearly equally, as illustrated in Figure 21. Although it is not entirely clear in the context of prior responses, it is likely to be the majority of non-core engagement, including such activities as sending automated email alerts when bills come due. The general trend of responses to the survey questions posed up to this juncture suggest even this kind of unrefined use of social media has been considered, rightly if not advanced, to be a legitimate benefit to non-core business functions.

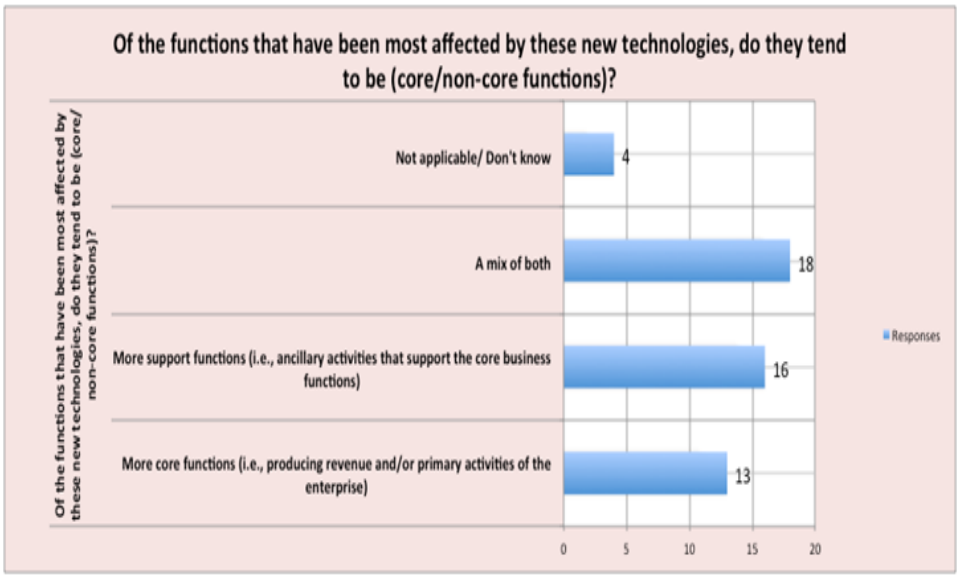

Figure 21 – Centrality of functions most affected by SMS/Big Data technologies

The results shown in Figure 22, the major focal sites for corporate social strategy activities, do reveal another source of benefit to non-core business function – human resources – in the use of such social media sites as LinkedIn to support the hiring, and potentially the employee retention processes. That said, the majority of survey respondents and executives interviewed report that Facebook, Twitter and

Figure 22 – Major focal sites for SMS strategy.

blogging sites are the most important social channels considered in current approaches to social media. This finding makes sense, considering the majority of companies focus principally on monitoring social media commentary and reacting to urgent issues. The focus on urgent issues is also consistent with the relatively large focus on company-hosted customer communities indicated in the responses. While these data are not surprising per se, they suggest at minimum that companies recognize the importance of social media channels having very high user traffic and could glean by observation ideas leading to more proactive and user-resonant approaches to social media strategy.

In Figure 23 the reader can see that the greater part of SM sales activity involves posting links and widgets pointing towards company or partner websites, or for direct purchases by users of social media sites. Intriguingly, considering the obviousness and simplicity of employing this medium for sales, many respondents report their clients do not use social networks for sales. One executive pointed out in an interview that "...(companies) try to find the right message for the right platform" and may not have identified that message as yet. Further, another alluded to the importance of "...brand executives plac(ing) emphasis on trust between their fans or friends on MySpace and Facebook" to communicate information that could boost sales. Another executive warned against too much 'sales' pitch being given "...the success of these platforms is because people want to engage with it, and if things become too corporate and too bogged down, and their interactions are obstructed in any way then people will not want to engage with them." Yet another executive interviewed put it this way: "Fortunately for those brands who have fans or friends on MySpace and Facebook, they

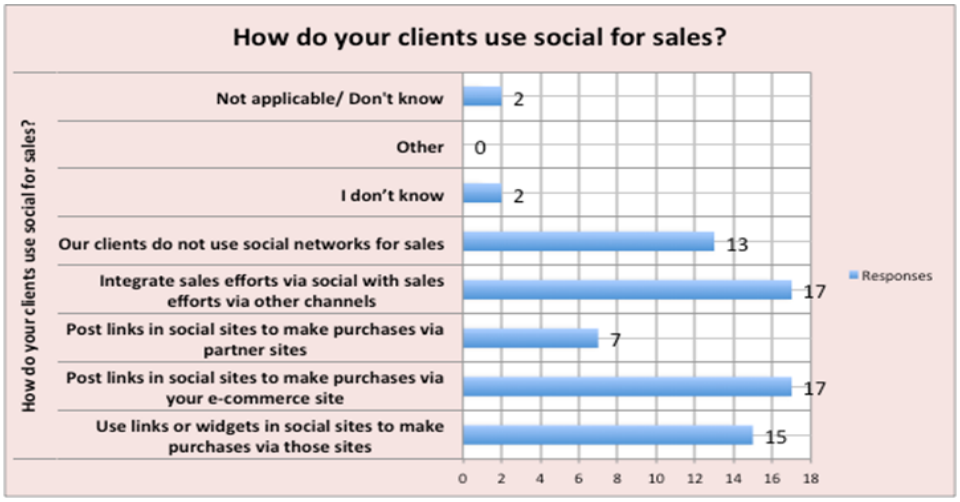

Figure 23 – Strategic sales application of social media intelligence.

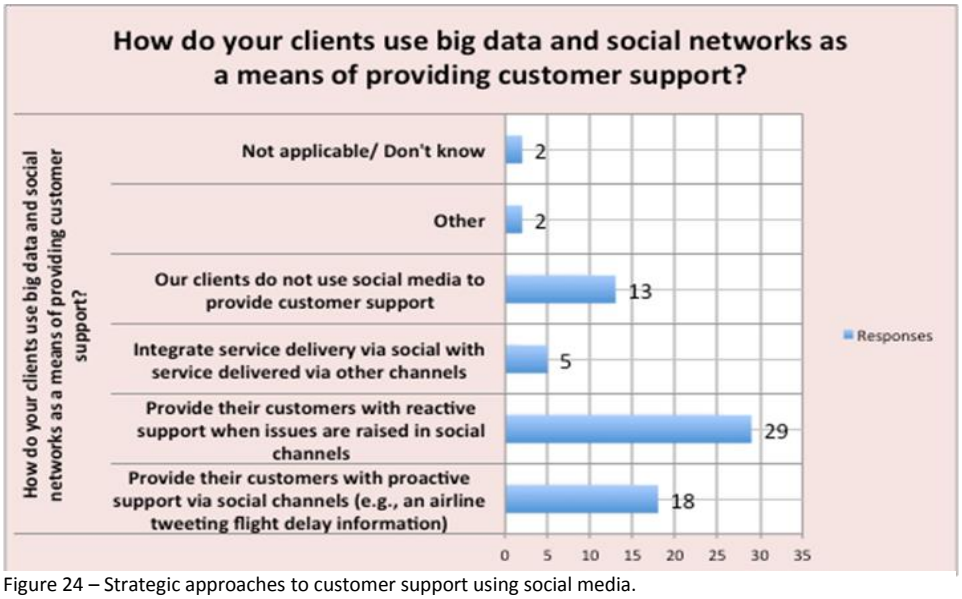

Figure 24 – Strategic approaches to customer support using social media.

have the support of these brand loyalists who can rally together to defend a brand against negative word-of-mouth."

The responses to this question further underline the embryonic nature of most companies' social media strategies. While the use of social sites advertisements to drive users to other, company-sponsored websites is 'one step ahead' of bill-board advertisement, it is only one step ahead. Figure 24 illustrates the current uses of social networking to provide customer support. Concurring with implications discussed previously, the majority of respondents point out that most companies chiefly react to issues raised by customers through social channels. This kind of reaction indicates a bidirectional dyad, while the second most common response indicates more engaging SM customer service engagement, although the intimacy of the communication is shown once again to be minimal. This proactive engagement could be said to be further ahead of any of the aforementioned sales engagements and is also likely to be hobbled by data security, communications quality and best practice uncertainty issues.

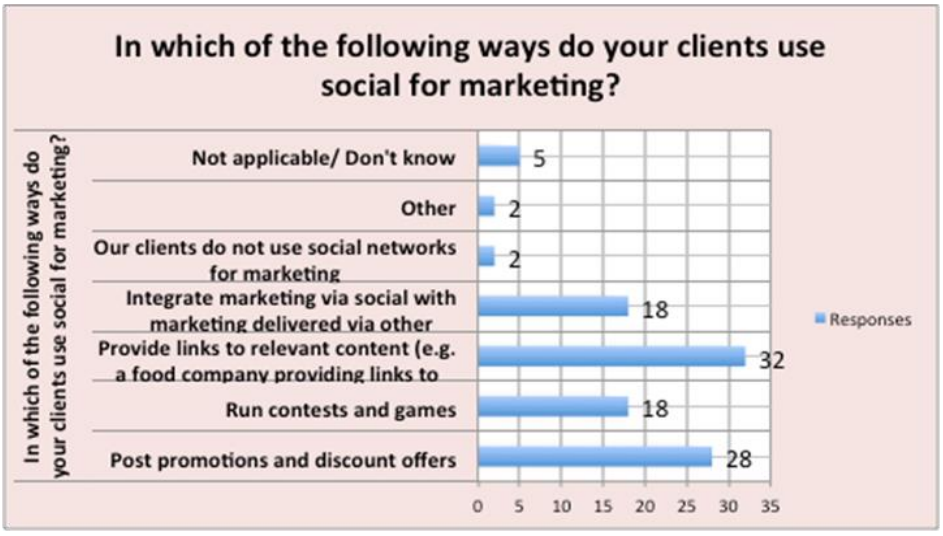

Figure 25 – Strategic application of social media intelligence to marketing.

The responses show a fair number of companies are making some use of SM channels for customer support. More than 25% of respondents indicated their clients do not use social media for any kind of customer support whatever.

Not surprisingly, in light of the company silo effect and the concerns over data security, Figure 26 shows that most companies continue to limit the use of social media as a source for customer feedback to improve R&D efforts. About one

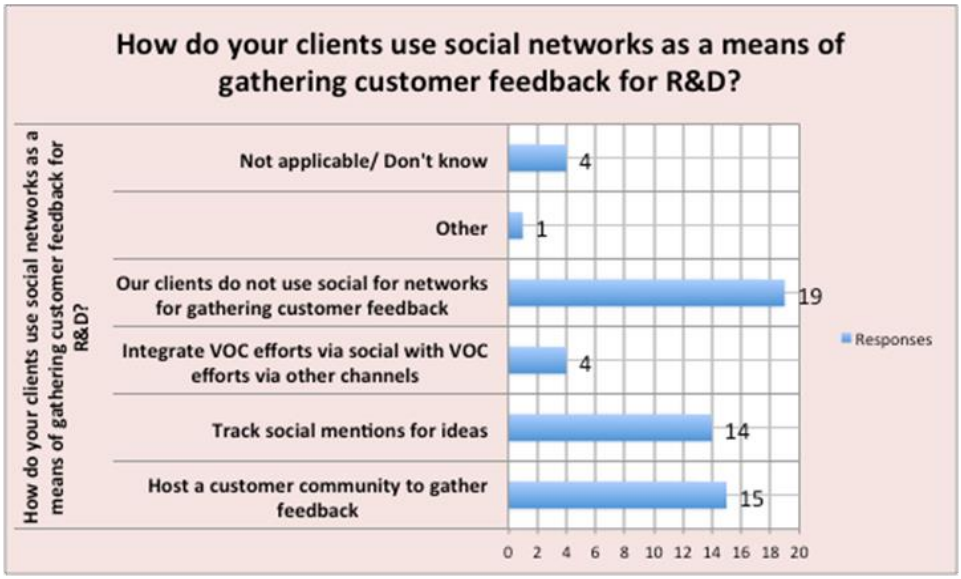

Figure 26 – Strategic R&D application of social media intelligence.

third of companies represented track social media mentions for product development ideas. Companies that are early-adopters may even be, as discussed in the literature review, promoting platforms for bidirectional sharing of ideas and seeking feedback by forming focus groups or by starting discussions in SM settings. And in deference to executive concerns over data security, another third of respondents indicate that companies host customer communities where feedback may be used for R&D purposes – including perhaps platform discussions and focus groups. Notably hosted communities also allow sharper oversight to ensure more 'control' of communications content and quality (despite potential user concern about communication transparency and veracity). Furthermore, hosted communities offer companies a more sheltered environment to test potential 'best practices', thereby addressing another major obstacle to social media involvement. At the same time, the use of any social media enterprise to receive ideas does not necessarily indicate company responses, in which case communications content and quality are non-issues.

The results illustrated in this section of the survey also support the assertion in Hypothesis 2 that even the companies with the most active social media initiatives are using SM in a mainly investigative manner, with limited scope and application. The SM sales efforts appear to be mainly rudimentary, customer service initiatives slightly more advanced and R&D activities currently quite limited within this group of companies. The reasons behind these results are surely more numerous than can be discussed within the scope of this survey's responses. Yet these same responses reiterate the great number of obstacles (Figure 18) facing social media advocates, the need to overcome silos to limit fragmented customer experience , and the need to grow in-house knowledge of best practices to follow.

8.3.4 Social media tracking, measurement and analysis

This section of the survey asks questions aimed to elicit specific types of data tracked and the types of analyses performed on this data. In the first graphic, Figure 27, it is clear that three out of four of the companies represented in the survey track the simplest metrics: number of fans/followers and 'likes'. The responses also indicate more than three quarters of companies track customer sentiment on social media sites. While tracking basic numbers of fans, followers and 'likes' is to the credit of those firms making the effort and may suggest relative brand position when compared to similar figures for industry competitors, these structured metrics in and of themselves provide limited insight. To gain significant value in this realm of tracking requires deeper insight into the demographics and other characteristics of these fans. Figure 27 also shows that almost one third of companies track the

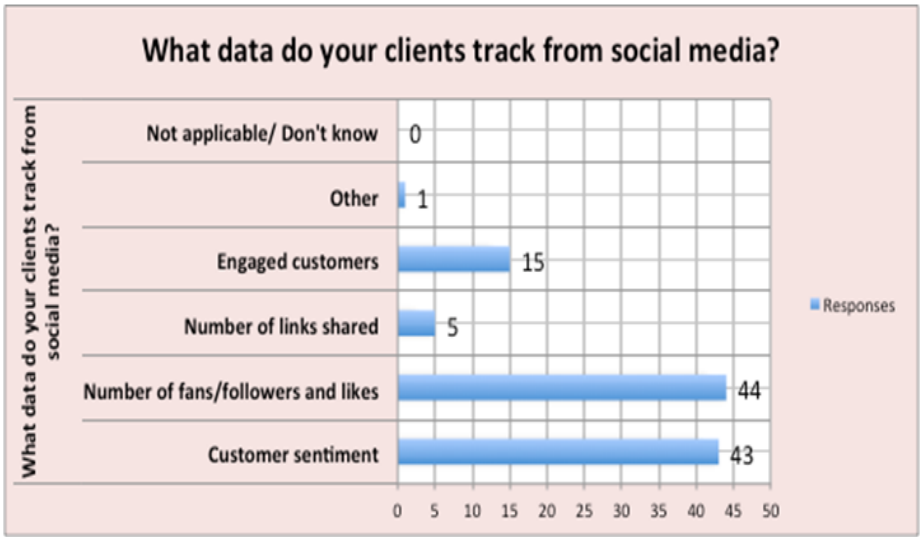

Figure 27 – SM Data currently tracked by survey respondents' clientele.

number of customers 'engaged', and approximately 10% track the number of links shared. In light of prior responses showing the majority of respondents report that Facebook, Twitter and blogging sites are the most monitored social channels, it is reasonable to presume the customer sentiment being tracked consists principally of user comments on these social media sites. Given the unstructured nature of customer sentiment comments and the potential wealth of information these would yield to apt descriptive analyses, this researcher considers the results illustrated in Figure 27 indicate steps towards a more advanced approach to SM. As one executive interviewed noted "Twitter and Facebook are regarded by those interviewed as 'very important' as they assist companies to build loyalty and engage with users, whom they would otherwise not be able to serve via their corporate website or micro-site." That companies are tracking 'sentiment' via sites like Facebook and Twitter signifies, at a minimum, that some important kinds of social media 'Big Data' are being reviewed and perhaps stored for future reference, even if the data has yet to be subject to stringent algorithmic analysis.

More important still is the data illustrated in Figure 28, the 'Big Data''on customers that is currently analysed by companies. One executive interviewed indicated "'Big Data' and the social web are used for both analysis and in driving campaigns" by his clients, and another pointed out that "Through integration with core back-end applications, 'Big Data' from the social web lets firms bring in more data sets and add-it to existing system of record files to develop more actionable intelligence in order to derive insight."

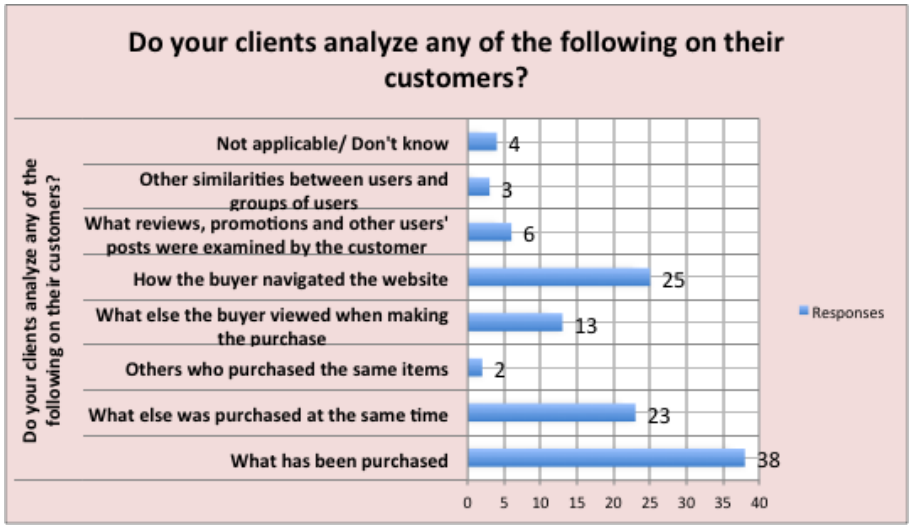

Figure 28 – ''Big Data'' on customers currently analysed by companies.

The responses show the top data being captured includes what company product was purchased by the user, what else was purchased concurrently, the formal and informal reviews examined, promotions and other content viewed, and the manner in which the user navigated the website during the purchasing visit. Among many other uses, these data have the potential to provide significant insight into comparative product value, the relative importance of different evaluative sources, including other users' posts, the varied effectiveness of different promotions and the customer utility of related site content.

Intelligence gained by hard analysis of these data companies can deduce key product attributes, identify outside and ancillary promoters deserving further engagement, improve user 'capture' by on-site promotions and develop site content to enhance the user experience. All these efforts conceivably support sales growth and customer loyalty – key strategic objectives for advanced social media campaigns.

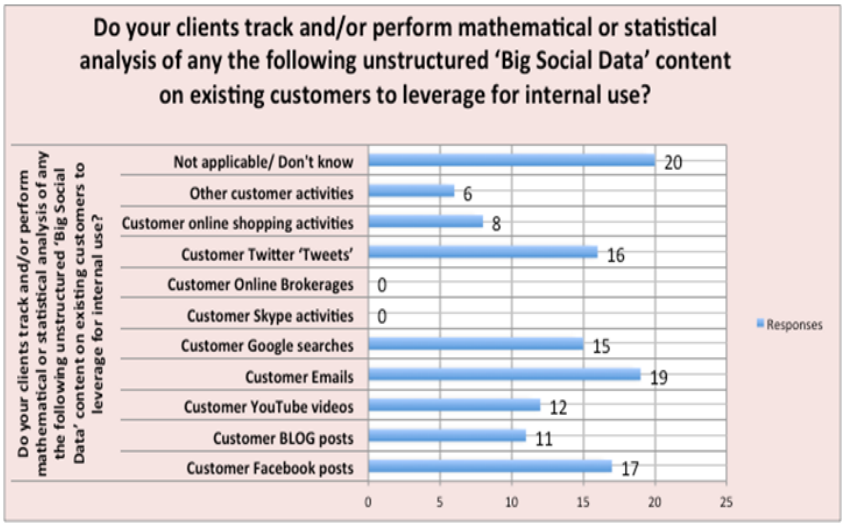

Figure 29 – Unstructured 'Big Social Data' on existing customers currently analysed mathematically and statistically by companies.

Figure 29 presents responses indicating more 'Big Social Data' content companies track. In addition to the content already mentioned, about one third of companies track and/or store information about customer YouTube videos, Google searches, emails, and online shopping activities. If this data is not only tracked and stored, but also subject to mathematical analysis, the additional insights into wider customer interests can, amongst other uses, lead to more personalised thus compelling messages and promotions aimed at these customers. Remarking during an interview elaborated below, one respondent noted: "In terms of planning social network campaigns, best practices are now being established and the data, analytics, and the execution capability, are key to that. We see a lot of opportunity to bring in the data from the social web with internal data and then doing something about the insight that this provides. You can only do that if integrated to a marketing automation solution." Being unstructured data, the analysis will be most productive if subjected to the kinds of algorithmic analysis described in the literature review, though even cursory review has the potential to provide some usable, albeit general, insight.

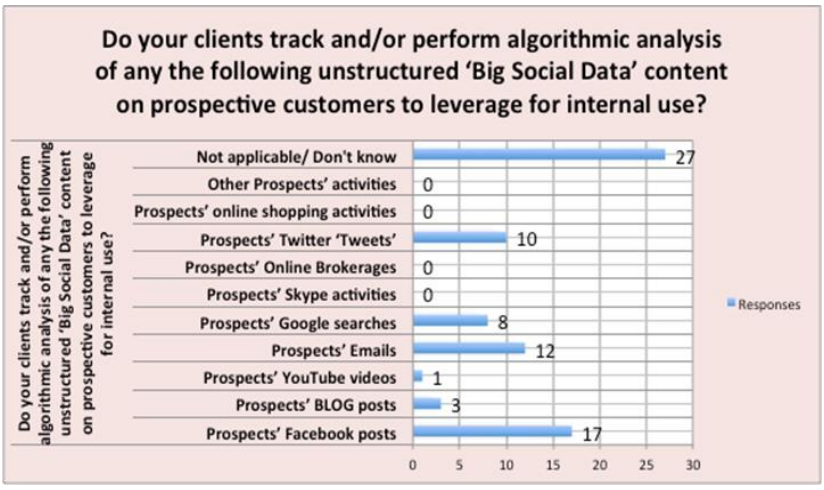

Figure 30 – Unstructured 'Big Social Data' on prospects currently tracked or analysed by companies.

These same points apply to the data presented in Figure 30 concerning prospective customers rather than existing customers. Notably, the results suggest that less attention is paid to the social media activities of prospects compared to those of customers. While in some cases the discrepancy is understandable, given the marginal return on effort (e.g. 'other prospect activities'), across-the-board decreased attention to prospects, pre-qualified or not, suggests to this researcher that most companies either possess weak predictive analytic capabilities, or limit their application to

existing customers. Remarking on another aspect of predictive analytics, one consultant interviewed pointed out "...the predictive business isn't just about advanced analytics. It's not just about 'Big Data'. That's certainly a part of it, but just knowing something is going to happen, just knowing about a market opportunity or a pending risk just isn't enough."

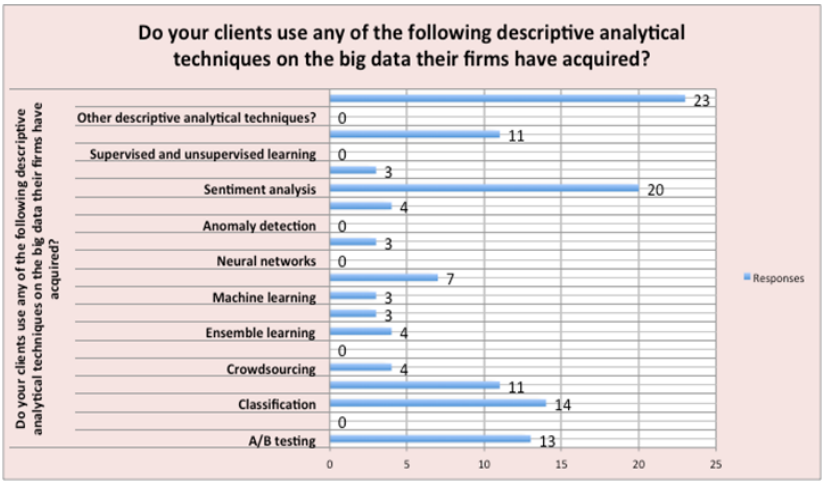

Figure 31 – Descriptive analytical techniques applied to ''Big Data'' acquired by companies.

With many companies clearly lacking advanced analytics, improved capability is prerequisite. As noted by one executive, "You have to have that capacity and insight to assess a myriad of scenarios to detect the right course of action, and then have the agility in your business processes, your organisational structures, and your systems to be able to adapt to capitalize on these changes." The need for more processing power such as mentioned in the literature review, including massive parallel processing, or additional storage capacity/hardware, appears in many cases to be indicated. If the capability and capacity to perform algorithmic analysis on prospect 'Big Social Data' exists, then this kind of analysis neither subjects data to breach, nor preordains communication, and the initiative may face fewer obstacles to incorporation into social media strategies.

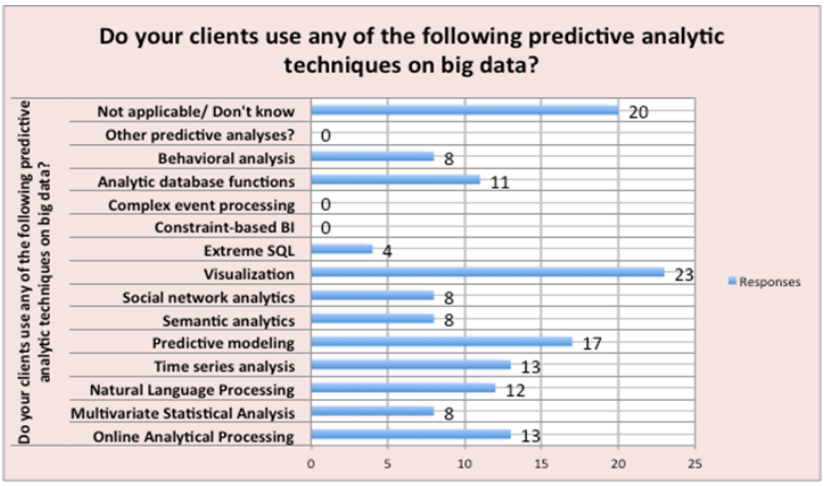

Figure 32 – Predictive analytical techniques applied to ''Big Data'' acquired by companies.

Figure 32 illustrates reported predictive analytical techniques employed by companies on 'Big Data', as described by respondents. Almost half of companies use visualization, nearly one third use some form of predictive modelling and about one quarter use analytical database functions on the data. Unspecified online analytical processing, time series analysis and natural language processing are also preferably indicated, while many other techniques are applied by some companies. While visualization and analytical database functions are straightforward and simple, this researcher is encouraged to see the burgeoning of several advanced techniques, mainly applicable to unstructured data. These include natural language processing, semantic analytics and social network analytics. As noted by one consultant interviewed "An in-memory database can respond instantly to queries from a human user, meaning that all the relevant data is stored in a system's local memory, rather than relying on the relatively slow process of storing and retrieving data from a hard drive", which leads to a higher level of engagement with the customer.

The extent to which these techniques are employed within the subset of companies using them is not explicit in the data. Nevertheless this researcher believes that the clear value elicited from unstructured data by a skilled analyst is likely to make itself sufficiently obvious as to drive wider use. By leveraging the consequent intelligence to gain competitive advantage, companies employing these techniques stand to make measurable return on social media strategy investment, fuelling subsequent investment, and thus further gains. By this mechanism, it can be argued that the early adopters of these advanced unstructured analytical techniques have early potential to pull ahead of industry competitors, not only in terms of measurable return but also in terms of social media strategy. This series of responses supports Hypothesis 4, that companies which invest resources in a social media 'Big Data' strategy and track users across many venues and analyse the findings using descriptive tools, stand to gain more significant return on their social media investments than others.

The results illustrated in this section of the survey show signs that basic data social media data are being surveyed commonly and in any case rudimentary analytical techniques are being applied. While the data continues to support the assertion that social media strategy at most companies remains foundational, the data indicate that seeds are being sown for ultimate realisation of value proposed by 'Big Social Data' at the level of advanced corporate strategy.

8.3.5 Results and anticipated value of 'Big Data'

The questions posed in this last section of the survey focus upon the measures of value companies use to establish the utility of social media strategy. The questions pertain to the value currently perceived and to the value anticipated going forward. The most common response shown in Figure 33 indicates what one might consider a limited perspective, that 'success' in social media means more fans and 'likes' on social media websites. The second most common response is stronger, in that it suggests at least a large number of firms link social media success with sales. Time on site, while possibly further suggesting the recognition between social media and sales value may also mislead, in the sense described in the literature review. That is, if the site is poorly designed or contains lacklustre content, users will need to spend more time on site simply to acquire the information sought. Time spent on site for this reason can thus reflect a negative customer experience. On the contrary, the fact that nearly one third of companies link social media success to revenue garnered directly from social media activity reveals a significant number of companies in the survey have their 'eyes on the prize', as it were. Less directly, the number of forwarded links may be considered a fair measure of interest level in the content of online company marketing collateral, but does not necessarily indicate product approval. The number of comments alone, another commonly purported gauge of success, seems too far removed from social media 'success' to represent a reasonable measure, especially because the nature of the comments is unspecified.

Figure 33 – Common company measurements of SMS success.

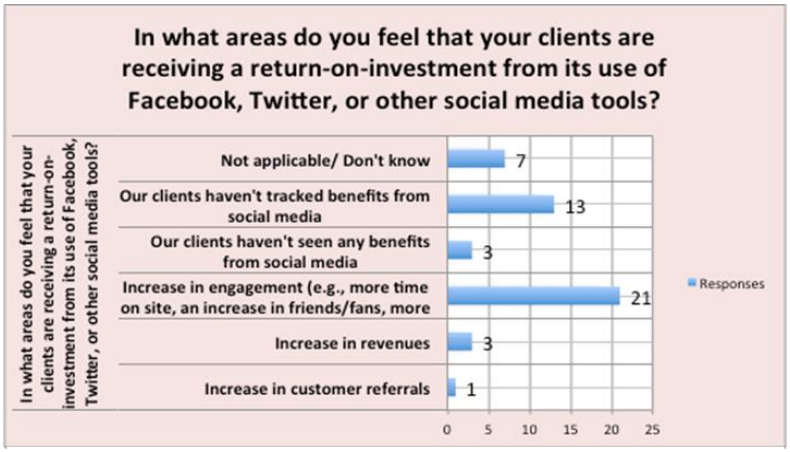

Figure 34 – Sources of ROI from uses of SM tools.

In many cases, negative regard for a product will encourage more posting than positive regard. Not surprisingly, given the focus on what may be thought of as 'secondary' or 'indirect' benefits of social media activity (i.e. benefits not contributing 'hard' ROI), most respondents indicated, as shown in Figure 34, that client companies are seeing increases in user engagement, while few are seeing increase in revenue or customer referral. The results presented in the figure may be misleading given the inherent difficulty linking a particular sale directly to a social media initiative. As mentioned during one executive interview, "We as a consulting firm, are doing a lot of research on how to measure social media on behalf of our clients. It has proven to be difficult because ROI doesn't really play a part, or is difficult to accurately measure. Nevertheless, our clients still want to do it and fear becoming less relevant to their customers otherwise".

More measurable results of social media and 'Big Data' initiatives are listed in Figure 35. While the most common response, 'increasing effectiveness' is somewhat vague in this sense, greater market expansion, faster time to market, and higher productivity/ efficiency are relatively easy to measure. Further, these measures lend themselves to frequent review and causal analysis. Considering these factors, the responses illustrated in this figure are among the more 'defensible' amongst all the survey responses. Essentially, respondents report many companies are currently realising significant marketing and sales benefits along with product improvement, innovation and related efficiencies as a result of social media strategies. This finding supports Hypothesis 3, that companies that have overcome obstacles to using social media 'Big Data' tools, that have recognised value from social media efforts and that have implemented a social media strategy, are actually gaining measurable return on the investment.

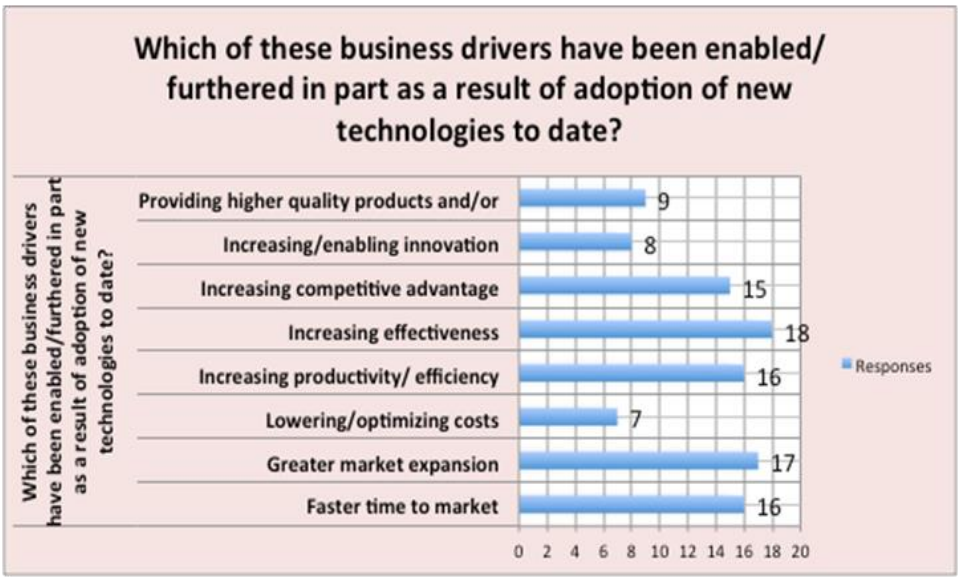

Figure 35 – Current business drivers enabled by SMS technologies.

Figure 36 shows companies expect greater return in all areas as a result of adoption of SMS technologies in the coming years. These responses could be taken to reflect not only delayed benefit from social media initiatives undertaken at this time, but equally the very nascence of the efforts themselves. Conspicuously, forward projection suggests marketing will continue reaping the most benefit while the effusive 'increasing effectiveness' retreats in importance. Also notable is the expectation of greater cost optimization. On the other hand, the provision of higher quality products as a result of social media technologies is no longer amongst the main drivers anticipated to be furthered in three years' time. More insight into these last differences is provided via the comments from interviews posted in the following section.

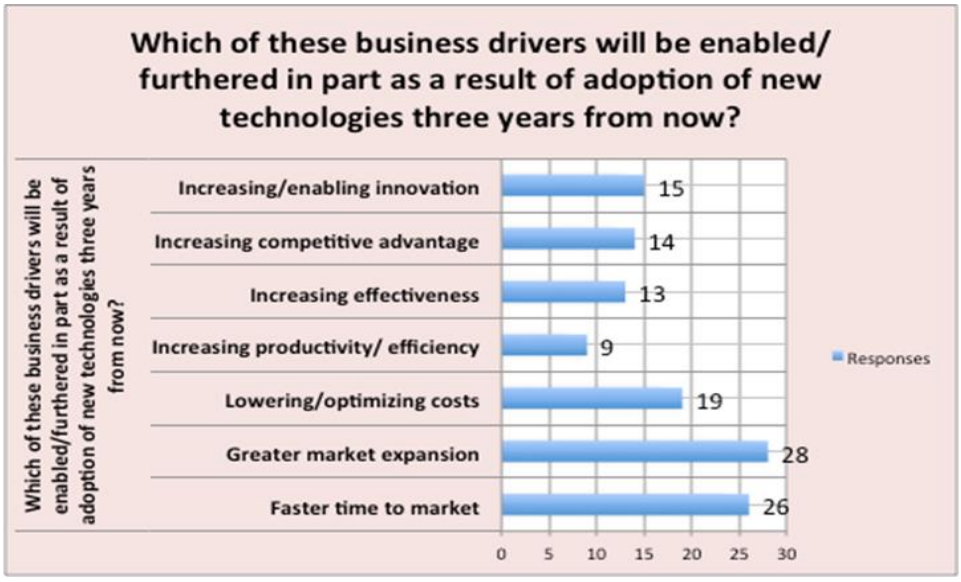

Figure 36 – Anticipated forward business driver enablement by SMS technologies.

The final two graphics, Figures 37 and 38, respectively, reveal the value companies currently perceive and anticipate receiving in three years' time as a result of adopting 'Big Data' tools. The responses point not only to greater certainty over the value of SMS efforts in the future, presumably as results arise and reliably measures develop, but also to upward momentum in the amount of positive value to be realised. While some 'Big Data' efforts are currently identified as generating negative value, none constitute pure losses in three years' time. Furthermore, even the most bearish advisors appear to relent somewhat in three years' time, with fewer indicating client companies will realise 'almost no positive value' henceforth.

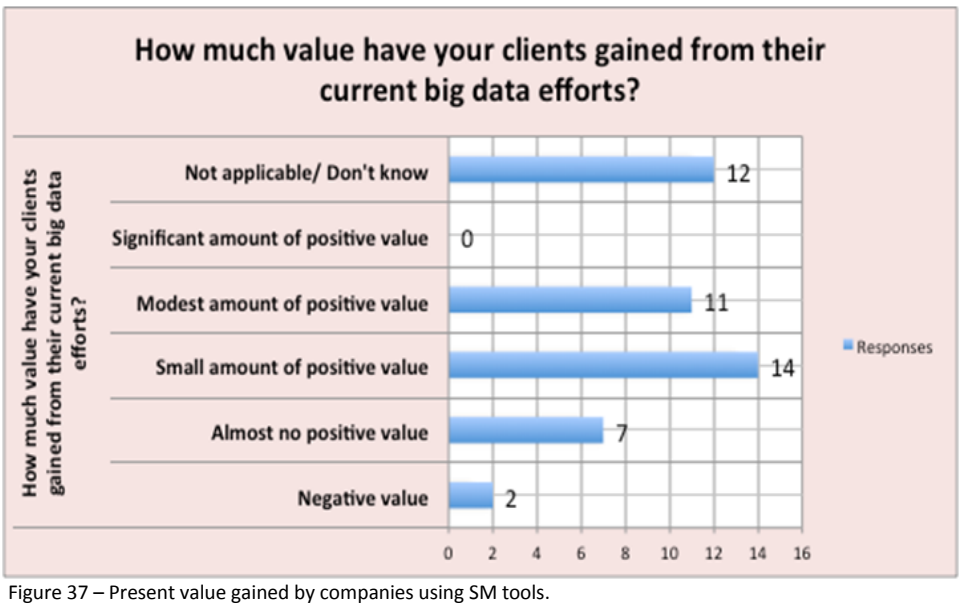

Figure 37 – Present value gained by companies using SM tools.

Perhaps the most notable data revealed by comparing these two figures is that no companies are reported to be currently gaining a 'significant amount of positive value', whereas in three years' time the most common response is that companies will experience a significant amount of positive value from current initiatives. Once again, the reasoning behind the conclusions reflected in these latter two graphics becomes clearer in the following section covering topical discussions from interviews held by this researcher with survey respondents and other experts in the field. And the expectations suggested by these two figures, (i.e. that 'Big Data' tools will grow in descriptive and predictive application and be linked to high-velocity, real-time, iterative analytics via integration with core back-end applications) possibly supports a future where the most important hypothesis presented in the Methods section of this dissertation will be validated: that companies using advanced 'Big Data' analytical tools to describe and predict user characteristics, applying the intelligence to target, time, tailor and trigger the release of cogent content to the 'dynamic throng of individual audiences' are experiencing the highest return on social media investment.

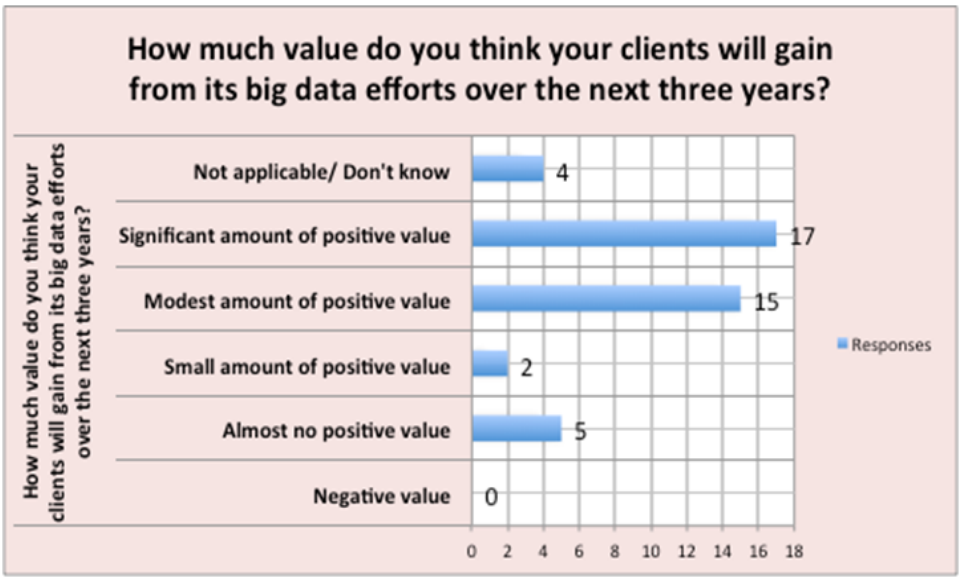

Figure 38 – Forward value anticipated for companies using SM tools.

8.4 Topical discussions from expert interviews

Eleven hour-long discussions were held with expert industry consultants to supplement the data from the research survey. Below is the substantive content from these discussions, segmented by topic, with each section containing comments from several of those interviewed.

8.4.1 Qualitative data analysis

Digital media has introduced new challenges and new opportunities in the realm of marketing.

The following details from semi-structured interviews with senior executives at international strategic consulting firms provided a wealth of data that can be categorised into three core themes: Social Network 'Big Data' Strategy, Social Network Adoption and Usage, and Social Network 'Big Data' Campaign management.

In this context, Social Network 'Big Data' Campaigns refer to the integration of social 'Big Data' into marketing automation platforms. Social Media 'Big Data' Strategy includes opinions on best practice engagement marketing techniques and on the level of adoption and usage by firms on these social

network platforms. Campaign Management refers to the ways firms manage the interaction between users and the brand profile.

The executives who participated in the semi-structured interviews help strategic clients in large enterprises in three core ways: 1. Systems of Record; 2. Systems of Engagement; 3. Integration to the external worldwide social web. They assist large enterprises with strategic consulting services, also known as professional services, covering situational analysis, design and development. Theymanage 'Big Data' strategy as it relates to the external social web of 'Big Data' and integration with systems of record within the companies' own firewall, and how these can relate to a system of engagement with existing customers, and net new customers for their clients.

8.4.2 Social network 'Big Data'

Both Twitter and Facebook are considered important tools to global strategic consulting firm executives as part of their clients' online marketing and customer engagement mix. Those interviewed commented that the two platforms offer an opportunity for their large enterprise clients to engage with online users and with communities they wanted to target. The executives agreed that it is important for brands to be involved on the platforms and to deliver content that is relevant to the audiences on those spaces.

What the brand or product is greatly influences which platform the executives will use for a campaign. Facebook was noted as the most useful platform for creating engaging and 'creative' content such as brand pages. Facebook and Twitter were seen as the preferred platforms for increasing the viral effect of campaign.

"'Big Data' and social networks are a vital component of most marketing activities these days. The simple reason is that this is where people spend time – therefore if you're able to engage them where they are already spending time, then you have a better chance of success" (Executive, 'Big 5' consulting firm).

"I don't see firms placing a priority on Twitter or Facebook as one space. Rather, they try to find the right message for the right platform... each platform plays an important role and no one dominates for a certain brand" (Executive, 'Big 5' consulting firm).

"Marketing attribution is something that is important to Chief Marketing Officers. These days, every touch point along a consumer's path is measurable, allowing firms to identify the tactics that drive results, allocate budgets more effectively, and scale their best performing campaigns. 'Big Data' and the social web are used for both analysis and in driving campaigns" (Executive, 'Big 5' consulting firm).

"It's really important that our clients are on Facebook and also monitor Twitter feeds. Most of the clients that I engage with are at the early stages, so it's all about testing and gaining early insights rather than waiting for it to become a scientific ROI, and then jumping in and not knowing what to do with it" (Executive,'Big 5' consulting firm).

8.4.3 'Big Data' and integration to systems of record

Some executives interviewed stated that their clients use Facebook and Twitter as part of an integrated campaign to target a specific audience. The 'Big Data' from the social web was queried, analysed and then augmented with internal systems of record information that firms held on customers. Systems of record include information such as customer details, transaction details, financial details, etc.

"Vertical data integration is fundamental for 'Big Data', high-velocity, real-time, iterative analytics for Marketing. Through integration with core back-end Applications, 'Big Data' from the social web lets firms bring in more data sets and add-it to existing systems of record files to develop more actionable intelligence in order to derive insight. This insight will allow our firms to execute more business transactions at the end points and literally tie and measure the business outcome to a real-time execution" (Executive, 'Big 5' consulting firm).

Other executives interviewed said that their clients have only dipped their toes in the water with regards to 'Big Data' and social networks, and have executed on a trial and error basis to help develop best practices for their users to engage with their brands.

"Clients are still learning. They don't have all the knowledge and capabilities to achieve certain strategies. That is why people are there to assist them with that, both from a strategy side and a technology landscape side in order to execute" (Executive, strategy consulting firm).

"In terms of planning social network campaigns, best practices are now being established and the data, analytics, and the execution capability are key to that. We see a lot of opportunity to bring in the data from the social web with internal data and then doing something about the insight that this provides. You can only do that if integrated to a marketing automation solution" (Strategy consultant, 'Big 5' consulting firm).

"There is a need for a system of engagement, in contrast with a system of record. These systems are readily distinguishable. For example, DataSift, etc. are at the heart of the digital consumer experience, and SAP is at the heart of ERP. Having these types of 3rd party applications connecting to SAP core systems allows data/analytics/transactions to traverse back and forth as needed to enable an integrated, end-to-end capability that respects the privacy of both domains but enables appropriate exchanges between them" (SAP, Vice President, products and innovation).

8.4.4 'Big Data' and system of engagement

Social CRM strategies cover all parts of the organisation and reflect all facets of CRM, including the usual sales, marketing, service and support to advanced areas, such as innovation, collaboration and customer experience. Customers continue to adopt social technologies at a fast pace and organisations have to keep up and be relevant to these customers. Social technologies also continue to proliferate. Because the conversations about organisations increasingly occurs outside of the organisation's control, in the social media channels.

"Organisations need to discover where the conversations are happening in this new social world. They also need to identify who is influential, whether they are a customer, to assess their willingness to engage with the firm, and determine an engagement approach or re-engagement actions."

This is the basis for the fast growth in Social CRM driven by 'Big Data', analytics and systems of engagement in order to execute. As was mentioned earlier, social CRM does not replace existing CRM efforts, but instead brings more potential value to existing efforts and should complement the overall CRM strategy.

"We as a consulting firm are doing a lot of research on how to measure social media on behalf of our clients. It has proven to be difficult because ROI doesn't really play a part, or is difficult to accurately measure. Nevertheless, our clients still want to do it and fear becoming less relevant to their customers otherwise".

8.4.5 Use of mathematical model in marketing

Social 'Big Data' reflects the new world of disruptive technologies and the related business models, processes and organisational requirements companies live in today. Consumers have embraced social and digital technologies to varying degrees, and it has become more important to consumers across the board. Some consumers have completely 'gone digital', in that they prefer to interact with their providers via online channels at every opportunity and are loathe to be forced into conversations with humans. At the opposite end of the spectrum are consumers who still lean heavily on traditional channels, but even they are likely to use available digital channels at different times for certain activities. Most companies' customer engagement strategies are fuelled by analytics to derive more insight and clues on what to do next. Many companies automate responses with the use of predictive analytics either for mining existing customer and social web data for patterns, or to estimate ' next best' offer or reply. Specially written algorithms drive predictive analytics, as well as descriptive and prescriptive analytics. Descriptive analytics looks at what happened and why, and prescriptive analytics is concerned with making something happen that the firm wants to make happen. Well written SQL based algorithms on large amounts of data work extremely well on certain database technologies, especially SAP's High Performance Analytical Appliance, or HANA. SAP HANA is an in-memory database that is able to calculate massive amounts of data in a matter of seconds. These sorts of technologies, coupled with well written algorithms, are enabling marketers to conduct business in real-time, at the point of customer engagement. The rise of digital technology has given consumers many more options for interacting with companies they patronise. It is also true that companies can use technologies and mathematics to better predict and serve consumers.

"Success is determined by who finds out about it early enough and then acts quickly enough to engage. We are seeing much greater use of algorithms these days, as companies analyse and automate. We advise firms on how to carry out hypothesis free research, where they scan the social web for any patterns or correlations. This is really 'Big Data', but you can do it today. There are over 500 million Tweets per day, and you can scan all of these in seconds. The question is then, what do you do with it?" (Senior Consultant, global strategic consulting firm)

The need for real-time analytics driven by well-written algorithms can be further understood by this statement from a senior consultant at one of the largest strategy consulting firms in the world:

"A customer's path to purchase used to be generally predictable, flowing through stages of awareness, consideration, evaluation, purchase, and use. However, our experience shows that this traditional sales and marketing funnel has been supplanted by a new model that's driven by digital

technologies. Today's customer journey is dynamic, accessible and continuous because the digital touch points consumers are exposed to are always on, and customers can constantly re-evaluate their purchase options. Every customer is now a digital customer, from the traditional customer to the digital-savvy one" (Senior Consultant, global consulting firm).

"Our media habits have changed irrevocably. But much of today's marketing is still biased toward how people consumed media in the past. Digital media is often bolted onto traditional media in a disjointed way. There's not enough integrated planning where the big marketing idea comes first. Instead, a traditional media campaign is frequently shoehorned into digital media. Sometimes new media channels are picked, not because there's a consumer insight, but because they're the trendy flavour of the week" (Practice Lead, strategic consulting firm).

Executives also indicated that today's consumers find it easier to compare a company's promise with its delivery and how the overall customer experience meets their own expectations and can make changes if they find their provider is not as digital as they want. Social Media captures both the official and the unofficial customer conversations, including emotional state, sentiment, humour and anger. It is the use of technologies with well written algorithms that can trawl the 'Big Data' in seconds and make a determination. Other tools, such as Natural Language Processing helps to understand context.

"Social [media] is driven by insight, and insight is more than just preferences or interests. It also offers opinions. Some clients want to engage with their customers more closely, and see social CRM and digital marketing as a way to do that" (Executive, large strategic consulting firm).

"We advise our clients to first listen to what their customers are saying. These are really 'Big Data' sets, but the technologies are there to do it," (Executive, large strategic consulting firm).

Those interviewed mentioned that social media and digital marketing is driven from, and builds off the analysis of what customers are saying. Marketers need to identify top influencers, most important conversations and gauge the tone and discussion of topics.

"One of our clients kicked off a social listening initiative and realised that a large part of their marketing efforts did not reach its most influential social channels" (Executive, large strategic consulting firm).

"Today there is the opportunity to analyse and bring together analytical and transactional data in a way that was previously not possible. We advise clients on the best use of the performance capabilities of real-time in-memory analytics to basically tell them something that they do not know. It is must have intelligence for users." (Executive, large strategic consulting firm).

"Data and its analysis are becoming increasingly valuable to large enterprises, helping to optimise internal operations and create new sales opportunities so the software and platforms that simplify and speed data throughput are therefore becoming more attractive" (Executive, large strategic consulting firm).

"An in-memory database can respond instantly to queries from a human user, meaning that all the relevant data is stored in a system's local memory, rather than relying on the relatively slow process of storing and retrieving data from a hard drive. This allows the software that acts on that data to

move much faster. This, in turn, makes it easier to keep applications up to date with live information about a company's operations. Typically, data available in business software is days or weeks old, which throws planning and forecasting off. Working with live information allows a company to make quick changes in response to sudden shifts in business conditions: Prices can be changed, products can be redirected, and extra supplies can be ordered. Important business decisions can be made on the spot" (Executive, large software company).

"It's about managing a business in detail rather than in the aggregate… And by networking through the algorithmic and automatic processing of data into new comprehensive contexts (sic) " (Executive, large consulting company).

"Given the way in which we slid into the current information society, all the steps were recognisable to the point that people thought: Oh, it's not going to be that bad, because the technology is not far enough along. In terms of camera surveillance of public space, there was the consolation that it was just a person sitting there and looking at the monitors in real time. But soon cameras became digital, and it was possible to send the video material to processing centres. The next step was the increased capacity of hard drives and the simultaneous decrease in price for data storage. And then came data networking. Now we are experiencing such an increase in computer capacity, that it is possible to cheaply and easily analyse data automatically" (Partner, global strategic consulting firm).

"Working with live information allows a company to make quick changes in response to sudden shifts in business conditions: customer voice…..Prices can be changed, products can be redirected, extra supplies can be ordered. Important business decisions can be made on the spot. And you do that with the help of third party data" (Executive, large consulting company).

"I want to be clear here that the predictive business isn't just about advanced analytics. It's not just about 'Big Data'. That's certainly a part of it, but just knowing something is going to happen, just knowing about a market opportunity or a pending risk just isn't enough…. You have to have that capacity and insight to assess a myriad of scenarios to detect the right course of action, and then have the agility in your business processes, your organisational structures, and your systems to be able to adapt to capitalize on these changes" (Senior Consultant, global advisory consulting firm).

"Today's buyer is more empowered with Information, leveraging the Internet and social media, and peer recommendations to make more informed purchase decisions. They have more ways to buy, and products can be customised for the individual.

Social media has become a critical component of the marketer's media mix. The particular pull of social media is that unlike many channels that offer either reach or depth, social media offers both. It is consumer engagement at scale. Social media is becoming more effective every month as more consumers become social media users" (Marketing Strategist, global strategic consulting firm).

"As automation and algorithmic targeting improves our clients are beginning to establish a proper performance measure that will allow them to audit the activity/value of their marketing activities across for all networks" (Senior Consultant, global strategy consulting firm).

8.4.6 Importance of Twitter and Facebook to large enterprises

Twitter and Facebook are regarded by those interviewed as 'very important', as they assist companies to build loyalty and engage with users, whom they would otherwise not be able to serve via their corporate website or micro-site. The general point of view is that they are an essential part of increasing a company's reach. Some of the executives cited that some clients have used the platforms to access and engage with users to test future product ideas and obtain feedback.

"From my point of view, yes we are encouraging companies to invest in Twitter and Facebook in order to listen and engage if they have something interesting to say. We see it as another marketing channel and not as something totally separate" (Senior Partner, 'Big 5' strategy consulting firm).

However, all respondents cited that there is growing sensitivity around data privacy and protection issues. This was especially true in Europe. The consulting firms advise clients on the strategy, implementation and adoption of social, 'Big Data' and digital marketing, but they have all seen that large enterprises now want to know whether the end user has consented to be contacted - the so called 'opt-in', as they called it. Nearly all said that they expect the development of laws and the need be compliant.

"Some of our clients use social advertising for brand awareness, while others view it as a more direct response-type "action medium. This is where data privacy and protection issues can arise. We are seeing greater scrutiny at the political, social ethics and legal camps" (Senior Partner, global strategic consulting firm).

Companies using social media advertising find that different platforms serve different needs. Facebook has become a broad-based media channel, while Twitter skews younger generations with more usage on mobile devices. Smaller networks such as Pinterest, Instagram, LinkedIn and Snapchat have more specific audiences.

8.4.7 Building brand loyalty and relationships

Engaging with social network users via one-to-one communications was considered important by the executives interviewed. The executives felt that communicating with users involves a large investment of their time in order to experience good results, such as word-of-mouth and user participation. Because the users invest a lot of their own time interacting with their friends on Facebook and Twitter, it makes sense that the companies interact and engage with them at the same time, or real-time. This ensures that the brand is 'socialising' alongside users in their own environment.

"We advise companies to get involved with Facebook and Twitter in order to get consumers to talk about those brands. It's all about building the perception of the brand in those spaces and letting your consumers build that perception as well as talk about the brand as well" (Marketing Director, large enterprise company).

"One of our clients, who didn't do much digitally, was sceptical about advertising on Facebook. We ran ads for them in the right-hand rail, in the news feed and in page posts. These were simple ads, to the point. My client was impressed with the ability to reach an elusive target, in this case, male 18-

22 years old. Social media can reach who you need to reach at a scale that is so vast you can't ignore it" (Senior Consultant, large consulting firm).

"Brands need to be open and genuine. They need engaging content, and they need to be honest" (Senior Consultant, large consulting firm).

Figure 39 – Word Cloud formed from 1:1 interviews with global strategic consulting firm

8.4.8 Shift in power

All executives interviewed had experienced a shift in power in terms of users controlling the conversations within social media channels. Executives talked about how important it was to listen to customer voice and concerns on these networks, and how incredibly valuable it was for companies who adopted it. Also, by accepting criticism and giving users honest information, the brands have been able to form deeper relationships with users and increasing brand loyalty.

"It is all about the audience. Companies can rarely control the conversation on social media. They need not worry if somebody has said something negative, they just need to find out why they have said it rather than ignore them so that they can be reassured and once they are reassured, they will pass this onto their friends" (Strategy Consultant, 'Big 5' global consulting firm).

8.4.9 Building relationships

The executives interviewed all commented that consumers continue to adopt social technologies at a very fast pace, and that many organisations are struggling to keep up. The rapid adoption of social networking enables users to connect with individuals, and communities who share mutual interests are increasingly leaving organisations out of the conversation. Simply hiring more people to keep up with social marketing, sales, and support will not be sufficient, as consumers and their new channels will always outnumber employees. As a result, companies need an organised approach, using

enterprise software that connects business units to the social web – giving them the opportunity to respond in near real-time, and in a coordinated fashion. The relationship between organisations and customers has traditionally been optimised around the organisation, not the customer. However, the rapid adoption of social networks has shifted the balance of power to the customer. Companies and organisations have fallen behind in connecting with customers, and realise that they must find a way to at least participate in the conversation.

Consumers connect with each other and happily leave organisations behind. Consumer behaviour has changed and businesses and organisations can no longer control the conversations with their customers. In fact, consumers and prospects have chosen to engage with organisations on their own terms.

“Every audience has distinct pain points and desires that drive them to particular products or services. A one-size-fits-all approach risks losing the audience right when they come to your site. Marketers find the pain points of their customers, and then create content to meet those needs" (Senior Consultant, global strategy consulting firm).

Those interviewed also commented that, as many companies are now empowered to have discussions with customers, the risk of a fragmented customer experience is greater than ever. Therefore businesses and organisations should not be limited to one silo only, and nor should Social CRM. In order for companies to respond to customers in a holistic fashion, their internal tools must aggregate internal discussions, customer records and workflows in a coordinated workflow.

"We are starting to see Marketers increasing their focus on the main social sites of Facebook, Instagram, Twitter and YouTube, while others are beginning to shift their efforts to more niche sites such as Reddit and specialist forums. The direction companies go will depend upon their sophistication as it regards to the space, as well as their social media budgets. It also depends upon how they use the medium, whether it's for broadcasting purposes or engagement and community building” (Senior Consultant, global strategy consulting firm).

As Nicholas Negroponte put it, “Computing is not about computers anymore. It is about living.”

Without a doubt, technology will play an ever-increasing role in people’s lives. The growing Internet of Things will be ubiquitous, tying people’s lives closer to technology. It will no longer be an option to be digitally clueless; businesses that lose customers because of poor communication will not survive. People, and therefore customers, are changing; businesses need to change with them.

8.5 Findings in terms of hypotheses

It is possible to make a primary evaluation of the integrity of the hypotheses this thesis attempts to prove, given the results presented by both the survey responses and the interview discussions.

8.5.1 Only companies with specific organisational and operational characteristics are actively utilising social media ‘Big Data’ tools

The results defend the principal presented by the first hypothesis, though not in all its specifics. The data show that companies whose primary customers are consumers (i.e. those with a ‘B2C’ sales model) and those in consumer-focused industries are indeed more likely to be actively utilizing social

media 'Big Data' tools. In particular, the commercial segments identified by survey results to be most involved in SMM, were the consumer products, automotive, high technology, retail and telecommunications verticals. It is also arguable that these B2C companies, in contrast to B2B conglomerates, possess 'more focused business operations' via acute focus on consumer segments and by tighter product groupings – two other characteristics herein posited. Further, while the most commonly reported definition of 'success' in social media means more fans and 'likes' on social media websites, the second most common response that a large number of firms link social media success with sales supports the proposal that companies driven to increase market share are key users of social media.

Regarding the proposition in Hypothesis 1 that companies with a hierarchical organisational structure have a greater tendency to use SMM tools, the data may be considered indirectly supportive. That is, data showing companies overwhelmingly appoint functional business leaders to set and execute SMS strategies, few companies train cross-functional employees in social media, and most companies offer employees outside social media teams any guidelines, suggest formality and rigidity, if not necessarily hierarchy.

Also, the proposal that companies with extensive third-party relationships are more active in SM than others appears supported by the common use of outside marketing and advertising agencies by firms to assist them with social strategy and execution. In addition, that significant SM sales activity involves posting links and widgets pointing towards partner websites suggests third-party relationships are substantial among those companies using social media tools.

Less clear from the data is the effect of revenue on the likelihood a company is using social media tools. The large majority of companies represented in the survey fall within the high end of the SME segment or the large/very large revenue brackets. Because smaller companies were under-represented in this survey, the data does not clearly indicate that only companies with high annual revenue are most actively using social media 'Big Data' tools. Furthermore, the data does not speak to the prevalence of flexible working arrangements among companies active in SM. Regarding the significance of in-house technology, the evidence is also inconclusive. One possible reason this point is not necessarily supported by the data is because many outside firms have arisen, offering the necessary technology on-demand, and with many software firms ending support for older systems, these 'cloud' companies stand to grow in number and use.

Overall, this investigator believes the data supports Hypothesis 1, that is, companies whose primary customers are consumers, have more focused operations, are driven to increase market share, possess hierarchical business structures and have many third-party relationships are more likely to be actively utilising social media 'Big Data' tools.

8.5.2 Of companies using social media tools, the use is mainly investigative and limited in scope and application

This investigator proposes that even the minority of companies using social media tools to any extent, are only making limited use of the large variety of tools and techniques at their disposal. The data clearly support this hypothesis. While nearly 75% of respondents report companies track social media sites, the survey indicates that fewer than 10% of companies have extended social strategy beyond the limited forays of monitoring social media commentary and reacting to urgent issues,

counting 'likes' and enumerating their fans/followers. Fewer than 30% track the number of customers 'engaged' and the number of links shared, while another 30% report no social media strategy whatever. Top 'hard' data being captured by even the most active companies is generally limited to identifying the product purchased by the user, what else was purchased concurrently, the formal and informal reviews examined, promotions and other content viewed, and the manner in which the user navigated the website during the purchasing visit. About one third of companies track customer YouTube videos, Google searches, emails, and online shopping activities.

As regards particular activity, customer service and sales are the main corporate functions using social channels to connect with customers, although in a minimum number of cases, R&D is beginning to grow SM access. While the relatively large focus of most firms is on company-hosted customer communities, the greater part of SM sales activity on social media sites involves posting links and widgets pointing towards company or partner websites. Most companies chiefly react to issues raised by customers through social channels, though almost all continue to limit the use of social media as a source for customer feedback to improve R&D efforts. About one third of companies represented track social media mentions for product development ideas. Finally, the results indicate less attention is paid to the social media activities of prospects compared to those of existing customers.

Considering these findings, this investigator believes the data strongly supports Hypothesis 2, that is, even the minority of companies using social media tools to any extent are making minimum use of the large variety of sites, tools and techniques at their disposal.

8.5.3 The companies that have overcome obstacles to using social media 'Big Data' tools, that have recognised value from social media efforts, that have implemented a social media strategy, are actually gaining measurable return on the investment

Hypothesis 3 investigates the return on investment progressive companies are realising from social media 'Big Data' investments. This researcher posits companies that have taken the 'giant leap' from dabbling with social media 'Big Data' tools to implementing a social media strategy, and backing it with resources, are realising measurable ROI from the effort.

By a wide margin, most companies track and store only basic social media data, apply to it rudimentary analytical techniques, and lack the advanced hardware and software to realise the highest possible value from the 'Big Data'. Most companies are capturing straightforward structured data such as number of likes/followers, purchases made, coincident purchases, reviews and promotions and other content viewed, and website navigation pathways. About one third of companies track and/or store unstructured customer YouTube videos, Google searches, emails, and online shopping activities.

While nearly 50% of companies analyse data using visualization, only one third use any form of predictive modelling, and about one quarter use analytical database functions on the data. A much smaller number of firms apply some kind of online analytical processing, time series analysis and natural language processing to the 'Big Data'.

The data also indicates the level of corporate strategy at most companies remains foundational, with most firms providing little guidance, and no training provided for employees outside SM teams. Besides marketing, customer service and sales of most corporate departments are uninvolved in 'Big Data' application. The majority approach to the data follows a unidirectional dyad, where monitoring of customer commentary and basic opinion (e.g. likes/dislikes) prevails.

Not surprisingly in light of these results, the data showing few firms are seeing measurable increases in revenue, market expansion, faster time to market, higher productivity/efficiency or customer referrals. The results specify some companies' 'Big Data' efforts are currently generating negative value, and no companies are reported as gaining a 'significant amount of positive value' at this time. While the data does not link ROI directly to specific resource investment and use of tools, survey results indicate most firms represented have yet to make a 'giant leap' from dabbling with social media tools. For these reasons Hypothesis 3 remains neither proven nor unproven by the data.

8.5.4 The companies that invest resources in a social media 'Big Data' strategy and track users across many venues and analyse the findings using descriptive tools are gaining more significant return on their social media investments than others

Hypothesis 4 investigates the return on investment realised by companies extensively involved in tracking, analysing and describing user social media activities across a wide range of media. This investigator proposes such companies are realising even more ROI than those with more limited strategies.

As described in the defence of Hypothesis 2, the data shows that most companies using social media tools are attending only a small subset of social media sites, tools and techniques available. Further, as elaborated above, most companies track fundamental, structured social media data, but lack advanced technology and employ only basic analytical techniques to elicit intelligence.

While at least some companies are reviewing and storing important kinds of social media 'Big Data' for future reference, the survey results show most data has not been stringently analysed algorithmically. The survey results indicate only 30% of companies apply any form of predictive modelling, and fewer than 25% use analytical database functions on the data. Only a small fraction of firms employ online analytical processing, time series analysis, or natural language processing techniques.

Qualitative feedback from the interviews also backs the survey data presented above. Respondents indicate that most of their clients are in the early stages of social media strategy and lack the knowledge, best practices and capability to establish social media 'Big Data' strategies, much less invest. Several respondents also point to disorganized SM integration, lack of marketing automation solutions and difficulty accurately measuring ROI, as hindering strategy investment.

The data indicate few of the companies represented track users across a large number of venues, and very few employ descriptive analytical techniques. In addition, no companies in this survey are reported as gaining a 'significant amount of positive value' at this time. Given these quantitative and

qualitative data, this researcher considers the available information insufficient to determine the validity of Hypothesis 4.

8.5.5 The companies using advanced 'Big Data' analytical tools to describe and predict user characteristics, applying the intelligence to target, time, tailor and trigger the release of cogent content to the 'dynamic throng of individual audiences' are experiencing the highest return on social media investment

Hypothesis 5 investigates the return on investment companies achieve when they use the 'full suite' of 'Big Data' tracking, analysis, description and prediction across a wide range of media. This investigator theorizes that the companies that have a resource-backed social media strategy with significant investment in descriptive and predictive technology are realising the greatest ROI of all companies surveyed.

In light of the findings explained in defence of the prior hypotheses, this researcher concludes the data is insufficient to evaluate Hypothesis 5. Notwithstanding, no companies in this survey reportedly gaining a 'significant amount of positive value' at this time, few or no companies represented in the survey or discussed during interviews appear to be advanced enough in social media 'Big Data' acquisition, analysis, application and user engagement to prove or disprove this hypothesis.

8.6 Extended discussion of results

This research seeks to explore how effective social network platforms are for engagement marketing campaigns with the objective of building brand loyalty. At the same time, the research also takes into account the opinions of those brands who have executed campaigns on both platforms, and the opinions of users who come into direct contact with brands. Overall this chapter discusses the opinions and findings of the brands and users identified by the quantitative and qualitative research data.

The digital memory grows, and the public at large have settled into the role of the data provider. If the service is free, you are not the customer, you are the product.

People have casually crossed the threshold of computerised society. People's lives are stored in bits and bytes, whether people like it or not. People make phone calls, read and write digitally, their music and photos stored in the Cloud, most people's news comes from online sources. People's mobile phones can tell you your precise location and one's 'friends' on Facebook know everything about people's daily lives. All of this has value to businesses looking for audiences to pitch their various wares.

No matter what and where people work, there is virtually no activity that leaves no trace data. The digital society affects almost every area of life, and it generates huge amounts of 'Big Data' that can be evaluated, analysed, filtered and processed. The amount of digitally stored expressions of life continues to grow exponentially; there is no end in sight.

Everyone has something to hide. How far can go custom search engines go, or specialist algorithms be created to do hypotheses-free research of data? Businesses are listening for signals and

monitoring social media channels. Through specialist 'Big Data' tools, they are looking for patterns, correlations and key words that can provide insight to the business about the social media 'User'.

Easy to use 'user interfaces' on devices allow everyone to have access to a networked world with a mouse click, or a touch with a finger. People have settled themselves into the role of a permanent data encoder, consciously or unconsciously allowing a deep insight into the way people communicate their wishes and social environment. Billions of snippets of information are generated every minute in social networks and Internet services worldwide. To collect them and to use them to generate profiles by age, sex, place of residence, employer or nationality, has become a lucrative business. The almost magical relationship that people have developed with computers and mobile phones casually filled the pockets of the social networks, which became the beneficiaries of this digital gold mine.

Of the eleven personal interviews carried out by this investigator, seven people specifically called out data privacy and protection as key issues facing marketers today, and how to legally and ethically tap into big social data. The view was that large scale collection of personal metadata could be used intensively by organisations. Social metadata has, however, yet to realise its full potential, because of data privacy and protection (DPP) concerns, and these vary in coverage by continent, and indeed also by country laws. The concerns expressed centred around 'permission' by the 'user'. Other than 'opt-in' by the user, there are a lack of technical solutions for personal metadata management by individual users which, in turn, therefore prevents metadata from being shared and reconciled under the control of the particular individual user. Therefore, large swathes of rich 'Big Data' are 'out of reach' of the marketer.

Companies want to legally and ethically have access to this metadata in order to allow Analytical and CRM Applications to provide smart services and personalized experiences, and they do this through the use of commercial algorithms to help users feel more connected, productive, and entertained. Combining analytics and audience data helps to increase relevancy to the targeted audience. Messaging with high relevancy is vital to driving customer satisfaction and lifetime value to the firm.

This is one of the promises of 'Big Data'. It is about maximizing computation power and algorithmic accuracy, to gather, analyse, link and compare large data sets, and the social web data set can only be described as 'BIG'. It is also about drawing on large data sets to identify patterns in order to make economic business decisions.

Metadata has, however, yet to realise its full potential. This data is currently collected and stored by hundreds of different social media services and companies. Such fragmentation makes the metadata inaccessible to innovative commercial business services, like what SAP provides through their customer engagement software, using high speed analytical appliances and complex algorithmic toolsets, or even the individuals themselves. On the one hand, the lack of access and control of individuals over their own metadata is fuelling growing concerns. This makes it very hard, if not impossible, for an individual to understand and manage the associated risks. On the other hand, DPP and legal concerns are preventing metadata from being reconciled and made broadly accessible, mainly because of concerns over the risk of re-identification or corrupt misuse.

Five respondents cited that they are seeing demand from companies that are looking to secure a privacy-first social data analysis process that anonymises the social data. The outcomes would be

audience-level analysis in aggregate, and be fully anonymised. For businesses, this would help them integrate multiple data sources to build a single view of each customer segment, identify and target high value audiences, and increase performance, grow segments, and deliver high relevancy to market faster than before.

There is increasing political awareness on DPP, and addressing users' legitimate privacy concerns will soon be a prerequisite to any metadata usage (i.e. Acxiom, a long established 'data provider' is under some scrutiny at the moment on how it actually obtains and maintains the data it gathers and sells).

It is important to understand the digital world, to see through the financial mechanisms and recognise the resulting motivations of the people and institutions. Who benefits when moving social norms towards less, and privacy policy towards more 'digital commons' was a point raised.

The loudest lobbying is being done by the biggest beneficiaries of this development, which is the 'end of privacy'. The market valuation mechanisms for Internet companies reward innovation, particularly in a field where they elicit users to provide more information in order to keep and retain them on their platforms and invite all their friends.

The large scale collection of personal metadata could be used intensively by organisations. Social metadata has however yet to realise its full potential because of data privacy and protection (DPP) concerns, and these vary in coverage by region. For SAP, DPP is governed out of Germany, and therefore governed under German Law, which is strict in these matters. Other than 'opt-in' by the user, there is a lack of technical solutions for personal metadata management by individuals which, in turn, therefore prevents metadata from being shared and reconciled under the control of the particular individual. Large swathes of rich 'Big Data' are therefore 'out of reach' of the Marketer.

What DataSift have done is to create a secure privacy-first social data analysis process that anonymises the social data. For SAP customers using CEI on HANA, this would help them integrate multiple data sources to build a single view of each customer segment, identify and target high value audiences, and increase performance, grow segments, and deliver high relevancy to market faster than before.

And what is the drive behind the large storage of data? - The full coverage that what is communicated is to be saved on the vague grounds that one could possibly need the data later? The new techniques come creeping into people's lives, as companies are tempted by the promise of increasing efficiency, without asking if it is possible to get an adequate value for the data with which all users collectively pay for the promises. People transfer information about themselves, the price, voluntary and involuntary of which one cannot even imagine how the information can be used in the future. The digital memory grows and grows, and the end is not provided.

The digital future is created by the sum of many small actions people all do every day. The discussion in recent years about state and private data hoarding, scandals and abuse show a growing sensitivity to issues of digital privacy.

The importance of privacy is to be aware of where the boundaries are, and what one really wants to keep to oneself is the first step to digital maturity. Each of us has something to hide. The question is, from whom? People can, as individuals and as a community, not simply drift uncontrolled in the wild

stream of bits and bytes. People should aware and well informed to influence what is happening, because new social norms and rules are necessary. Finding the balance between the private interests of the individual and the possibilities of a fully connected world is the goal.

9 CONCLUSIONS AND RECOMMENDATIONS

The research indicates that companies need to stop admiring the opportunity, or doing (the wrong) things better, and use the source of their challenges: digital social media, as an enabler and catalyst to help them begin doing things differently and tap into new revenue growth potential. In other words, they need to adopt new customer-centric practices that can help them become multispeed customer organisations, ones that act at the same pace as consumers now act.

Companies need to strive for targeted digital experiences, not simply scale and work to improve how they interact with customers. The key to targeting is to understand the right marketing mix of channels, both digital and analogue, for each customer profile, and then develop new front-office CRM operating models based on customers' new needs and preferences.

Across the 'Social Web' (Figure 40), the internet has put global scale communications tools in the hands of individuals. Services such as Twitter, YouTube, Facebook, Tumblr, Instagram, WhatsApp and SnapChat, generate new media on par with the telephone or television, and do so with such a speed that it is highly disruptive. It took decades to develop and deploy these original networks, and firms had plenty of time to adapt to the changes they brought along.

Figure 40 - The Social Web

Today, a social media service offering can be developed in weeks and go viral in months to hundreds of millions of users across the world. There are no barriers to entry. This intense pace of innovation and deployment gives organisations no time to adapt before another potential disruptor emerges. Social media could be called the democratisation of the tools of self- expression by consumers everywhere. A global transparency where we can now see further, faster and do it at low cost or inconvenience demands a proactive approach to social media by firms, as they can no longer rely on old methods. They must respond to the new transparency or risk irrelevance. Firms need an effective protective interface between their internal affairs and the public world at large, as the old interfaces are losing their effectiveness.

Through social networks, rumours and opinions now propagate across the globe in a matter of days, if not hours. Firms' PR and Marketing Departments face new demands to join the conversations and respond to individuals on the channel they prefer, and in an intelligible, honest and conversational way. Firms that need months to develop communications strategies will find themselves quickly behind. There is easy access to the myriad of social data, like Twitter, Facebook, Tumblr, Instagram, etc., so firms can hear what is going on at a conversational level and overall topic level. Companies should focus on the ecosystem versus the enterprise. Rather than continuing to emphasise the traditional engagement model, providers need to use digital capabilities to create a seamless, omni-channel, and end-to-end customer experience across today's new relationship model. This experience must comprise a broader ecosystem of stakeholders including dealers, brokers, distributors, co-consumers, co-producers, influencers and institutions.

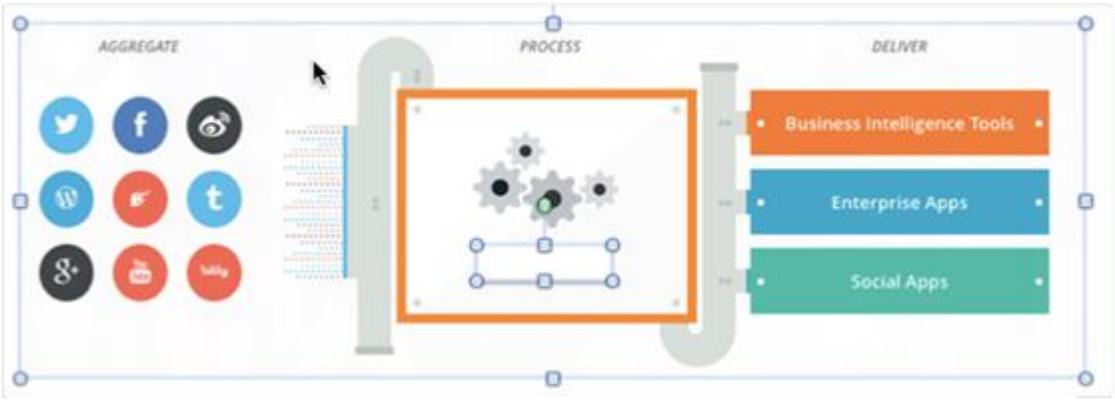

Figure 41 - Broad Access to Social Channels.

Companies must access broad social channels and address customers' needs, and not the organisation's problems or limitations. Instead of pursuing programmes geared toward improving internal metrics, companies must strive to increase the value generated by the customer experience. This involves more sharply focusing investments and metrics on only those initiatives that are truly relevant to, and desired by, customers, as indicated by harvesting and analysing 'Big Social Data' analytics (i.e. predictive, descriptive and prescriptive algorithms).

People will see a big increase in mobile social marketing with mobile advertising, applications and crowd-sourced, mobile-driven content. Firms and users will leverage the power of these two key obsessive technologies of 'Social' and 'Mobile' to new heights.

The whole future of social media intelligence turns on being able to make sense of unstructured 'Big Data': the real-time stream of posts, comments, tweets and pictures. This is important because valuable insights are locked within text, whether that is a positive post towards a newly launched product, or an intent-to-churn signal for a mobile operator. Human data analytics enables organisations to parse the vast amount of unstructured social

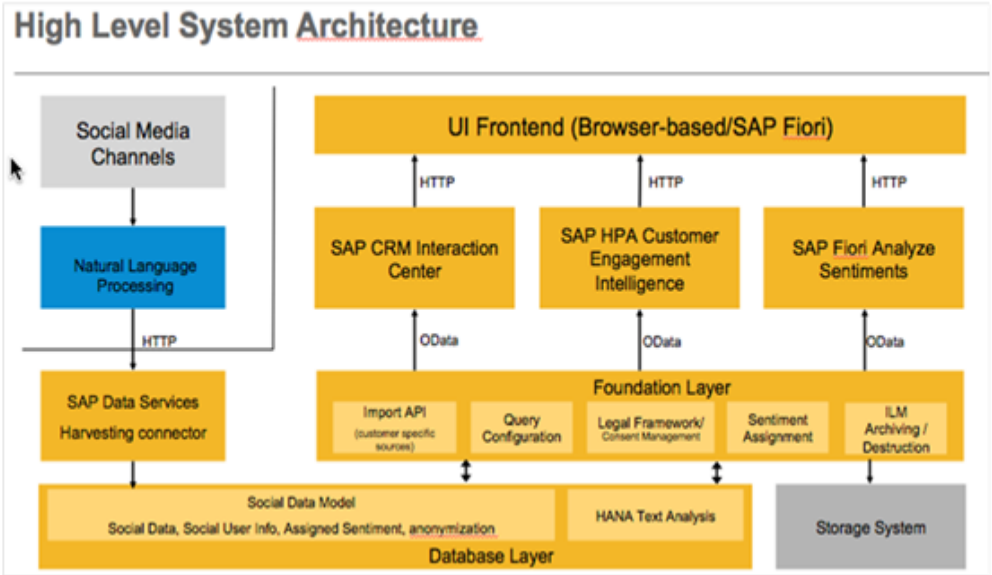

Figure 42 – One Possible System Architecture for Social Media Management.

data activity and turn it into actionable intelligence. To acquire this intelligence in a structured manner requires a system architecture such as shown in Figure 42.

Organisations without 'Big Data' projects risk being left behind in this analytics race. Firms completing 'Big Data' projects see business outcomes for a wide spectrum of strategic corporate goals, from new revenue generation and new market development, to enhancing the customer

experience and improving enterprise-wide performance. Organisations are increasingly regarding 'Big Data' as extremely important and central to their digital strategy.

With a more robust mix of digital and analogue capabilities, driven by a deep understanding of what today's non-stop customers truly want and which customer experience initiatives really create value, providers will be much better positioned to keep more of their own customers, while competing more effectively for those who are looking for a better choice.

Consumer sensitivity and concerns about data privacy are on the rise. Privacy needs to be embedded into the design of 'Big Data' analytics platforms and business practices. A survey conducted by the Pew Research Centre found that 80% of adults who use social networking sites are concerned about third parties like advertisers or businesses accessing the data they share on these sites (compared to only 70% who were worried about the way government agencies use their data). The challenge is not with social networks themselves, but with businesses that harvest and process data from these networks.

9.1 Proposed social media model

The following table presents the elements of a model this researcher proposes for a unified platform for engaging audiences, activating customers, and driving business results across all social channels. The model covers signals intelligence monitoring, enables planning, engaging, content discovery, coordinating, measuring, archiving, security and integrating with other business applications.

The industries spending a great deal on media, in particular, face a closely related challenge. User reviews of products and services are changing the balance of power between customers and companies. A brand's marketing efforts lose influence as the opinions of other consumers become more powerful. Responsive companies are learning to quickly and publicly respond to complaints or negative reviews, and to act on negative sentiment as they listen to the murmur of the masses. In some cases, if the reviews are very negative, the firms may have to modify and even withdraw the product in question. Pouring marketing investment into mediocre products or services no longer works. Small groups of people with shared values, beliefs and goals, who can coordinate quickly, will be the best at the fast, open responsive communication the new transparency demands.

The model that this researcher proposes (below) includes both evasive measure and countermeasures in its arsenal.

Plan:	
• Schedule and create posts to be published across numerous accounts, channels, and voices, months in advance • Assign content creation to individuals, groups, or departments • Remind users of their content responsibilities via email	• Consolidate activity into a unified calendar view for tracking and management • Access shared library to store and organize approved digital assets • Utilize spell check within all content creation screens
Engage:	
• Create and utilize a single publishing voice for consistency across large organizations • Publish content on multiple social networks using multiple accounts at one time • Target specific and customized audiences on Facebook, LinkedIn, and Google+ by selecting attributes like gender, education, age, location, job function, and seniority • Leverage various types of content including microblogs, blogs, photos, videos, documents, events, group comments, ratings, and reviews • Import all social networks posts automatically to ensure a complete and measurable aggregation of social activity • Respond to inquiries across social networks using publishing workflows • Implement custom Facebook Applications for specialized engagement featuring text, video, quizzes, and store locators	• LISTEN • Organize activity and search streams into custom groupings for easy monitoring • Rely on threaded views for full context around interactions • Translate 80+ languages in-stream including double-byte languages • Identify influencers • Access full conversation histories and internal notes across all teams • Hide or delete posts from social networks, identify spam • Triage inbound items for automatic response, automated workflow, or for action from other teams
Coordinate:	
• Group social media accounts that represent a brand, voice, or persona • Assign tasks to individuals, groups, or departments • Notify users of assigned or incomplete tasks and maintain personalized To-Do lists • Ensure that only approved content is published using automatic, multi-tiered content approval paths	• Create customized, flexible workflows and automate frequently repeated actions • Utilize customer care specific workflows that track ticket resolution times • Boost productivity by surfacing conversations relevant to their roles
Measure:	
• Aggregate and measure engagement across all platforms and all social accounts • Report at the departmental, regional, or brand level and filter in real time customize reporting periods • Customize reporting periods • Export all social measurement data to .xls and .csv formats, generate charts and customized .pdf reports	• Utilize Bit.ly integration or custom shortener to measure post engagement • Set and measure progress towards web analytics goals to understand campaign and message effectiveness • Attribute dollar amounts to types of engagement to understand value of social media management
Content:	
• Collaborate with team members during creation process • Use customizable content library to distribute content and approved assets to teams • Provide easy access to standardized responses for common issues and questions	• Help distributed teams stay on brand • Import large volumes of planned content using .csv uploads • Amplify earned content such as Bazaarvoice reviews
Archive:	
• Retain independent access to social activity without relying on social networks • Capture all inbound and outbound activity in a single system • Record engagement audit trails across team members and social channels	• Store approval audit trails • Integrate data API with social archive information to data warehouses • Automate daily exports via SFTP
Organise:	
• Create a social organization that matches your actual organization; create brands, geographies, departments, teams, and/or social use cases • Provide granular access controls within platform and across social properties • Grant modularized platform access according to social roles and responsibilities	• Customize roles and responsibilities outside of prepackaged options • Restrict users to engage with specific geographies or audience segments
Secure:	
• Separate Social Marketing Software user accounts from social network accounts • Manage passwords including expiration dates and CAPTCHA • Deploy within Amazon's Virtual Private Cloud for layered security • Encrypt data in transit and at rest	• Restrict application access using whitelisted IP addresses and ranges • Support backup encryption using SSL and GnuPG • Enable Single Sign-On using Security Assertion Markup Language (SAML) 2.0
Analyse:	
• Identify top content, contributors, engagement, activity, and time of day • Measure and track conversions using Google Analytics or Omniture link tagging and goals • Compare message and campaign performance across all or select social channels	• Conduct content and topical analysis • Monitor various customer care analytics including, time to close and time in stage
Social Network Support:	
• Belong to the following partnership programmes: Facebook's Preferred Market Developer Programme, Twitter's Certified Products • Programme, and LinkedIn's Social Media Manager Programme • Access SMMS using mobile application • Offer extended team training, enablement, and best practice services and community management	• 24/7 technical support • Maintain robust knowledge base with videos, articles, and access to ongoing education webinars • Notify customer base of platform changes using in-product and/or email

Table 13 – Components of Proposed Social Media Management Plan.

These capabilities, both evasive and direct, are essential to managing an effective enterprise-level social media presence. The model covers the following key elements: Plan, Engage, Coordinate, Measure, Content, Archive, Organise, Secure, Analyse, and the Social Network Channels that underlie this all. The model is also applicable to all the following social networks and content:

- Facebook: Monitor Brand Pages, Groups, Newsfeeds, Filtered Newsfeeds and Individual Timelines. Engage using Posts, Targeted Posts, Replies, Private Messages, Comments, Series, Events, Likes, Hides and Deletes.
- Twitter: Monitor All Friends, all Mentions, Lists, Direct Messages, @user streams, search streams and all Retweets. Engage using Tweets, Retweets, Favorites, Series, Direct Messages and Deletes.
- LinkedIn: Monitor Company Pages, Updates, Discussions, Comments, Series and Individual Accounts. Engage using Posts, Targeted Posts, Comments, Likes, Group Discussions (including Stars) and Deletes.
- Google+: Monitor Page Activity and Comments. Engage by Sharing Posts, Targeting Circles and creating Comments.
- YouTube: Monitor Channels, Views and Comments. Engage by posting videos and Comments.
- Bazaarvoice: Monitor Reviews including author name, text, star rating, review feedback, date, time and location. Amplify reviews by posting on Facebook, LinkedIn, Twitter and Google+.
- Pinterest: Monitor boards and images using keyword search.
- Flickr: Monitor photos listed in a Flickr account's list of contacts and items matching keyword search. Engage by posting photos.
- All XML-RPC blogs: Monitor comments made on blog activity. Engage by posting and tagging blogs.
- Search-Based Streams: Monitor social media channels based on simple or complex terms and phrases. Search can include multiple channels, hash tags, or locations.

Given the results obtained from the research, this researcher found it necessary to revisit some of the theories discussed in the earlier part of the thesis. The Sociogram approach (see Figure 44), for instance, discusses upward and downward movement in terms of social interaction. However, the research clearly indicates the intervening variables and the role of the mediators who, by and large, manage and control the data.

Figure 43 – Social Media future in the light of Big Data.

This means that the power resides mainly with the providers of the platforms and not, to as great an extent, with the consumer. Yet even the provider is prone to attack, making security a critical issue as shown in Figure 43 and Table 13. Each of the dyad relationships in Figure 44 become *de facto* triads via intervening variables provided by the network providers, by systems, by archival material, by hackers and possibly by inadvertent or advertent interventions by friends or foes.

Evidently social media platforms, rather than being finished products, are dynamic objects that are tweaked in response to their users' needs and the larger technological and economic infrastructure through which they develop (Feenberg, 2009). The sample that was researched in this thesis is essentially composed of large players, who are more interested in building brands and loyal customers than trying to understand any creativity or improbable networks and connections that take place. When the issues of security and data espionage are considered, the whole process becomes messy and difficult to manage and understand. The results clearly demonstrate the quandary in which many managers find themselves. This quandary is the reason this researcher is proposing the model illustrated in Figure 43 and Table 13: issues of security and content as well as analysis and planning are of considerable importance. But the companies are involved in Social Media to make money and not necessarily to offer succour and sustenance to the people engaging in social media interactions. As this thesis undertakes a business-led approach, this focus is to be expected. However a crucial question could arise as to whether businesses would be better off engaging properly with the customer in a meaningful manner and providing security, which nation states provide, rather than just gathering data for business purposes?

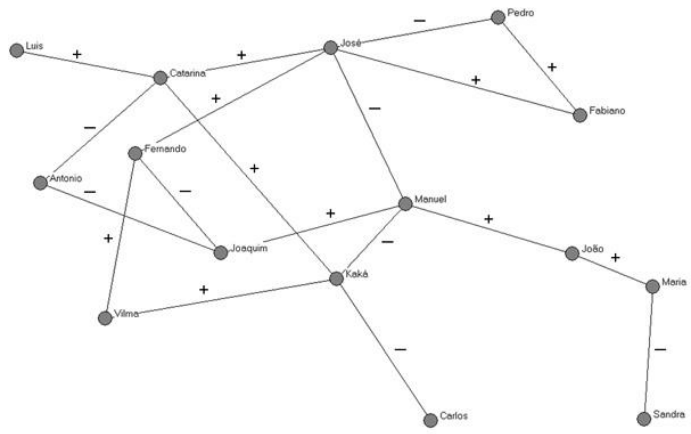

Figure 44 – Sociogram with value tags.

In many ways, Google is a social platform, although it also engages individuals every day through its historical take, its design and the information on the search engine. However, at the same time, it is gathering a massive amount of information, the legitimacy of which is now being challenged by the EU with regards to anti-trust laws. All the social media platforms are attempting to do this to a greater or lesser degree. The growth of such behemoths is unprecedented in history. These huge entities are stateless global organisations that are difficult to challenge. The goal of the EU challenge is to stop Google from gathering all the information on every individual, thus eliminating competitors.

Another interesting view of this growth of social media interactivity is the evolutionary view taken by Dennett and Roy (2015). Their thesis centres essentially around the naturalistic thesis that, after the Cambrian period, the environment provided more light, causing the creatures of the seas and land to develop new capabilities explosively due to *transparency.* Accordingly "The sudden transparency of the seas led to the emergence of camera style retinas, which drove the rapid adaptation of claws, jaws, shells and defensive body parts. Nervous systems evolved too, as animals developed new predatory behaviours and in response, methods of camouflage and evasion" (Parker, 2003).

Dennet and Roy's argument is that, given the way in which rapid communication takes place through social media, marketing, public relations, legal and other departmental activities at companies are now exposed to the masses within seconds and minutes. Transparency thus permeates. Firms

therefore need to engage with the consumers in a meaningful and intelligent manner or quickly suffer sales consequences.

This is now an 'arms race', where organisations will have to flex and weave data with speed and transparency in engaging with the customer, going back to the earlier argument of the case for businesses to be more than just brand builders and data miners. Of course this transparency is a mixed blessing and consumers also need protection in terms of security measures, even if they only provide momentary relief as the arms race continues. With advances in large scale pattern analysis, data visualisation, data grounding, professional service and journalism, the human population is creating powerful feedback loops that must only accelerate the growing transparency of organisations.

So, given the results from this study, it is important to not only create a model for interaction; it is equally important to create a model where ways of engaging are put under a microscope in order to deal with an increasingly savvy consumer network. The limitation of this exercise is the focus on business, which focus was made clear at the outset. However the dialogue with the consumer needs now to take place at a higher level, with organisations using their vast data stores and networks for lasting effectiveness in a planned manner of engagement that provides both security and good content.

The main contribution of the thesis is that it provides a lens to study the way in which large businesses engage with the customer, often not very effectively. It also provides a sensible framework with which to move SM strategy forward, and questions some of the general assumptions held by businesses. This type of analysis could not easily be undertaken without a high level network, which fortunately this author could call upon. The whole field of social media marketing is fast-moving and one can only provide a current 'snapshot' of the key issues involved. Data supply will only grow. The ways in which we use it and interact with it will be the future.

Hypotheses		Questionnaire headings	Questions related to Hypotheses	Outcomes and results	Feeds into the new model	What contribution
1	The extent to which companies are actively pursuing social media marketing is unclear	H1. Social Media Strategy question	1, 2, 3, 4, 5, 6, 7, 12, 21	1. Digirati – mature at advanced technology adoption, data science skills, and management. 2. Fashionistas – early adopters of advanced technologies, but without effective data science of overall management skills. 3. Conservatives – slow to adopt technologies or data science, but effective at managing them. 4. Beginners – possessing neither advanced technologies and data science nor the ability to manage it.	Plan Engage Coordinate Measure	An assessment of current use and application by Marketing departments. Harvesting [listening] and sentiment? Target lists, marketing automation?

Hypotheses		Questionnaire headings	Questions related to Hypotheses	Outcomes and results	Feeds into the new model	What contribution
2	There is uncertainty concerning the subset of social media content that offers value	H3. Social Media Investment and Obstacles questions. 5. Anticipated value of Social Media questions.	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	1. Reactive support predominates 2. Provide links to relevant content 3. Post promotions & discount offers 4. Run contests and games 5. Chief Marketing Officer 6. Social Media Agencies 7. Marketing Services Agency 8. Lack of guidelines 9. No training 10. Quality 11. Organisational silos 12. Data security 13. No best practice	Plan Engage Coordinate Content Organise	As there is a lack of understanding within companies in terms of using social media and many obstacles have to be overcome, the research unearthed some insights into the effective use of SM data. What LE firms doing, what use cases they are running, and is it integrated into MarComm DPP is a key issue today. The research indicated that companies that had certain organisational and operational characteristics actively use social media but often the utilization was limited in scope. Use Cases are rudimentary. The industries that are at the forefront.
3	The most significant obstacles to implementing social media strategy are not known	2. Social Media Ownership and control questions. 3. Social Media investment questions.	8, 9, 10, 11, 12, 13, 14, 15, 16, 17	1. No best practices/strategy 2. Data security and privacy concerns 3. Don't' know 4. Small value now 5. Future value is high 6. Lack of guidelines 7. Need guidance 8. Shifting budget from SEO 9. Attribution/measurement	Plan Engage Coordinate Content Organise Secure	Research identified that the obstacles to better adoption included lack of capability in-house, and was often outsourced to Marketing Services Agencies.
4	The use of 'Big Data'' analytical tools among large companies has yet to be established	4. Social Media usage, tracking, measurement and analysis	13, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 34	1. Limited analytical use 2. Lack of data science capability 3. Lack of attribution measurement 4. Need guidance on best practices 5. Shifting budgets from SEO to SM 6. Sentiment analysis is the most prevalent. 7. Lack of maturity	Plan Engage Coordinate Organise Measure Analyse	The companies that invest resources in a social media 'Big Data' strategy and track users across many venues and analyse the findings using analytical tools are gaining more significant return on their social media investments than others.

Hypotheses		Questionnaire headings	Questions related to Hypotheses	Outcomes and results	Feeds into the new model	What contribution
5	The measures used to determine 'successful' use of 'Big Data' beyond ROI are not standardised	Social Media Investment questions. Social Media Usage questions. Anticipated Value of Social Media questions.	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 13, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	Tweets SEO Emails Blogs Facebook posts, comments, likes Friends Referrals Engaged customers Links shared Review, promotions Purchased	Measure Analyse Support	Contribution to knowledge through the wider understanding of social media use by the LE business entities and to the current and future problems that this explosion of data is creating and is likely to create: The author is in a unique position in that I work in the software industry for a company that is the market leader in ERP systems, including CRM systems and which is used by 96% of the Fortune 500 companies. In this role, the author also has direct access to the LE business Consulting and Strategy firms who practice in the Fortune 500 space Highlighted that DPP is an re-emerging issue of concern [PLEEST factors]: 'Topic view', anonymisation and aggregation, explicit opt-in/out models Proposed new model for social media strategy and management

Table 14 – Summary of Thesis Hypotheses, Outcomes/Results and Contributions.

9.2 Limitations

This research and its associated findings are primarily limited to the consulting population. The research determined that respondents to the online survey had an active involvement with customer relationship management, strategy, social media and IT technology.

The use of Likert scales may also constrain data reliability because different people can imagine different contexts when responding to a given statement. In addition, the data captured online and then transferred to SAP Lumina by the researcher to produce the descriptive statistics may include errors caused by the transfer.

Both the quantitative and qualitative research data was collected during a six-week period in January and February, 2015. As a result, the data and results can only be considered as reflecting the views and opinions of the consulting firm executives during the first quarter of 2015.

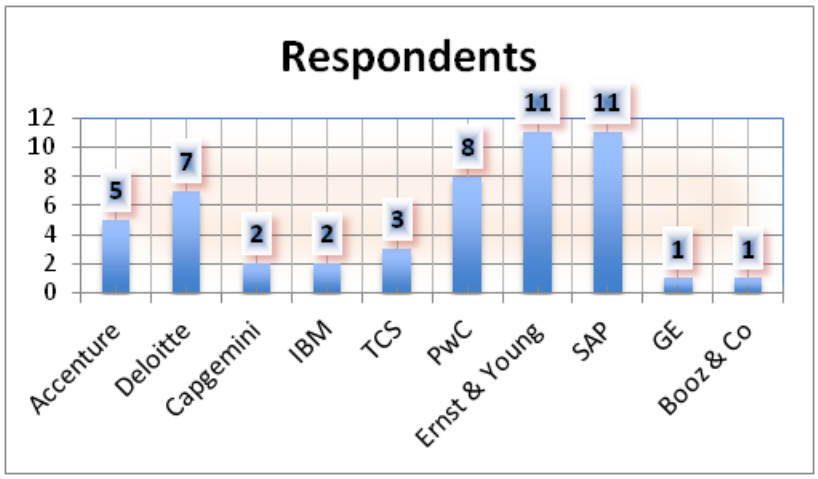

Figure 45 – Survey respondents by corporate association.

These research findings do not illustrate changes of behaviour or opinions over time. Also, the choice of particular consulting executives interviewed may result in research bias, given that the number of consultants interviewed was unavoidably limited. Further, the questions asked of the consulting executives led them to comment upon particular aspects of their client engagements that they may not otherwise have considered noteworthy, had the specific questions not been posed. A different perspective would likely be gained by surveying the opinions of those consultants who do not engage in social media consulting.

People are living in the most revolutionary era in human communication since the invention of the printing press. For the past few years, marketers have 'woken up' to the fact of consumers having the power to express their views anytime and anywhere. 'Social' is hot, and if representing nothing else, is a response to this awakening. Now, the lines between paid, owned and earned media have been blurred, if not erased. Social media crosses the barrier between the three. It is also both fast-paced and chaotic.

There is also a blurring between media and brands. Brands are becoming publishers and content marketers. So for brands as well as media, the goal is to engage an 'audience' or group of customers. Now is the time for media and brands to meet the audience with social relevance – where they are. The audience is in many places, so engaging them should not just be in social media, but by integrating social content into any digital experience.

9.3 Further research

This research could be expanded to further benefit consultants, marketers and brand executives. While increasingly significant, the research clearly indicates that social networks are effective platforms for engaging with users.

As a result there is an opportunity to explore the usage of data by social networks in light of the growing awareness and sensitivity around Data Privacy and Protection.

This research would then support the hypotheses put forth in this thesis, and the views of consulting firm executives, that more analytical data science is required for business to capitalize on 'Big Data' from social media networks.

9.4 Conclusion

In conclusion, this research has shown that companies should consider a presence on social networks to access potential audiences. Social networks add up to a very large audience with which companies may engage.

Similarly marketers and brand executives should plan communication strategies and objectives for continuing engagement, which they can measure independently using the growing array of analytical tools available today to monitor, analyse and recommend next best actions. It is important for marketers to note that when executing a social network marketing campaign, they should keep users within the platforms rather than taking them outside of the social network environment.

From a cost-benefit perspective, Facebook and Twitter platforms provide large, ready-made audiences of users for brands, thus making the task of engaging with these audiences easier. These platforms are 'neutral territory', as opposed to bespoken branded communities, which milieu is further supported by the findings within this research that users want to control the conversation with brands on their own terms. Users do not feel threatened by brands on these platforms; instead both brands and users are equal. Thus, if brands treat users as friends rather than as customers, trust will be reinforced.

Interestingly this research illustrates that any brand can achieve success on Facebook and Twitter, as previously successful brands have not always been iconic. As long as the brand emotionally engages with users via great content, it will create a desire for users to participate, thus building trust and ultimately loyalty around itself.

APPENDIX A – RESEARCH QUESTIONNAIRE

Prepared by: Philip A Dervan

In support of:

Date:

Note: This survey is strictly confidential. Results will be totally anonymised. It is understood that your responses are your personal opinions and not that of your firm. Your name will not be used without your express authorization to do so in writing.

Your Name:

Company:

Role and responsibility:

For each item identified below, please check mark
to the left that best fits your assessment of your company.
All responses will be treated in confidence.

CLIENT/COMPANY DATA QUESTIONS

1. Who are the primary customers of your client's business?
    a. Consumers [B2C]
    b. Businesses [B2B]
    c. Consumers and businesses
    d. Other, please specify

2. Which Industries are the most active in social media?
    a. Automotive
    b. Chemical
    c. Consumer Package Goods
    d. Pharmaceutical
    e. Technology (Hardware/Software/Solutions)
    f. Telecommunications
    g. Utilities/Energy
    h. Advertising/Marketing
    i. Consulting
    j. Financial Services/Insurance
    k. Healthcare
    l. Media/Publishing
    m. Non-Profit/Association
    n. Recreation/Travel/Entertainment/Hospitality
    o. Retail
    p. Technology Services
    q. Wholesale/Distribution
    r. Other, please specify

3. What size of companies do you advise?
    a. Under $10M
    b. $10M - $49.9M
    c. $50M - $99.9M
    d. $100M - $499.9M
    e. $500M - $1B
    f. Over $1B

4. Have your clients made any of the following moves to manage the broad range and volume of 'Big Social Data' types?
    a. Upgraded data retrieval capacity
    b. Upgraded data manipulation capacity
    c. Increased in-house storage capacity
    d. Outsourced storage capacity to a vendor
    e. Purchased or developed software to improve capacity to leverage large data sets
    f. Made other improvements to leverage very large data sets (please specify)

5. Please indicate which of the following parties influenced the adoption of these new technologies:
    a. CEO
    b. CFO
    c. CMO
    d. Sales
    e. Other

6. Have your clients made any of the following efforts to apply 'Big Social Data' intelligence to business activities?
    a. Developed analytical queries that operate across structured data
    b. Developed analytical queries that operate across unstructured/other data
    c. Developed tools capable of Massive Parallel Processing (MPP)
    d. Identified and developed techniques to use key information, trends or customer data that could be useful to generate business insights?
    e. Established a program to apply analytical results directly to business cases?
    f. Not applicable/ Don't know

7. Overall, to what degree would you say your clients are using a new generation of technology tools (e.g. social networking, 'Big Data', cloud, mobile devices and applications, virtual meeting tools, etc.) for business operations? *Please select the statement below that comes closest to describing what you see with your client's use of new technology*.
    a. None: Don't officially use any of these new technologies at this time, although some employees may be using them on their own
    b. Limited: e.g. they are experimenting with some of these tools, primarily on a departmental basis
    c. Moderate: e.g. they have companywide use of some of these new technologies … or they have some departments or business units that are making use of most of these new tools
    d. Extensive: Your clients believe strongly in the benefits of these new technologies and are deploying them aggressively wherever it makes sense
    e. Don't know

SOCIAL MEDIA INVESTMENT QUESTIONS

8. How many employees interact with customers via social media as their primary job?
    a. None
    b. 1 to 4
    c. 5 to 10
    d. 11 to 19
    e. 20 to 49
    f. 50 or more
    g. Not applicable/ Don't know

9. In the next 12 months, will your clients increase or decrease the number of employees who interact with customers via social media as their primary job?
    a. Decrease significantly
    b. Decrease slightly
    c. Keep the same number
    d. Increase slightly
    e. Increase significantly
    f. Not applicable/ Don't know

10. Which department "owns" social Media?
    a. There is a dedicated social media organisation
    b. It sits within marketing
    c. It sits within customer service
    d. No department is currently leading this effort
    e. Marketing Services Agency
    f. Other, please specify

11. Who is responsible for setting and executing your client's social media strategy? (*Select all that apply*).
    a. C-level executive
    b. Functional business leader (e.g., marketing VP, customer service director)
    c. Social media leader (e.g., director of social strategy)
    d. A cross-functional team of executives
    e. No one is currently leading this effort
    f. Other, please specify.

12. Who assists with your client's social strategy? (*Select all that apply)*.
    a. There is a dedicated social media organisation
    b. Industry analysts
    c. Marketing Services Agency
    d. General Marketing team
    e. Social media agency
    f. Advisory Consultants
    g. I don't know

13. Do your clients encourage social media use among employees who are NOT specifically part of the firm's social team?
    a. They encourage select customer-facing employees to use social channels to interact with customers
    b. They encourage all of their customer-facing employees to use social channels
    c. They encourage all of the company's employees to use social channels
    d. Employees are not permitted to use social channels at work
    e. I don't know

14. Do your clients provide social media training to employees?
    a. Yes, but only to the employees assigned to the social media team
    b. Yes, to all employees
    c. No
    d. They are currently developing curriculum
    e. Not applicable/ Don't know

15. Do your clients have social media guidelines?
    a. Yes
    b. No
    c. Both yes and no
    d. They are currently developing social media guidelines
    e. I don't know

OBSTACLES TO 'BIG DATA' INVESTMENT QUESTIONS

16. Which of the following are the primary obstacles to adopting these new technologies for your clients? *(Select up to 4).*
    a. Getting buy-in from senior leadership
    b. Getting buy-in from staff
    c. Getting the necessary budget/funding to support the social media goals
    d. Selecting the right metrics to show success
    e. Connecting social media activities to hard-dollar returns
    f. Not applicable/Don't know

17. Which of the following are the primary obstacles to adopting these new technologies for your clients? *(Select up to 4).*
    a. Cultural resistance
    b. Concern about data security
    c. Concern about loss of intellectual property
    d. Concern about quality
    e. Reluctance to relinquish control
    f. Cost of implementing new technologies
    g. Lack of confidence in new technologies
    h. Lack of an effective strategy to support
    i. Lack of executive buy-in
    j. Lack of interest at the department level
    k. Existing policies and/or regulatory issues
    l. Rigid hierarchical structure
    m. Organisational silos
    n. Belief that it will require more bureaucracy, monitoring and policing
    o. No/little understanding of Best Practice
    p. None of these

SOCIAL MEDIA 'BIG DATA' APPLICATION QUESTIONS

18. How would you characterize the maturity of your client's social media strategy?
    a. They have extended well beyond monitoring customers' comments and have blended social media strategy into our sales, marketing, and/or customer service efforts
    b. They are starting to incorporate social media strategy into other aspects of our sales, marketing, and/or customer service activities
    c. They monitor social channels primarily to respond to urgent service issues
    d. They do little more than monitor our customers' social comments
    e. They don't have a social media strategy
    f. Not applicable/ Don't know

19. Indicate the functions that are using social channels to connect with customers (*Select all that apply*).
    a. Customer Service
    b. Marketing
    c. Sales
    d. R&D
    e. Other, please specify

20. In which of the following ways do your clients use social media for marketing? (*Select all that apply)*.
    a. Post promotions and discount offers
    b. Run contests and games
    c. Provide links to relevant content (e.g. a food company providing links to recipes)
    d. Integrate marketing via social with marketing delivered via other channels
    e. Clients do not use social networks for marketing
    f. Other, please specify

21. Where do your clients focus social strategy? (*Select all that apply*).
    a. Facebook
    b. Twitter
    c. LinkedIn
    d. Foursquare
    e. Blogs
    f. Company-hosted customer community
    g. Industry-focused forums or communities (e.g., Trip Advisor)
    h. Our company does not have a social strategy
    i. Not applicable/ Don't know

22. How do your clients use social media for sales? (*Select all that apply*).
    a. Use links or widgets in social sites to make purchases via those sites
    b. Post links in social sites to make purchases via your e-commerce site
    c. Post links in social sites to make purchases via partner sites
    d. Integrate sales efforts via social with sales efforts via other channels
    e. Clients do not use social networks for sales
    f. I don't know
    g. Other, please specify

23. How do your clients use 'Big Data' and social networks as a means of providing customer support? (*Select all that apply*).
    a. Provide our customers with proactive support via social channels (e.g. an airline tweeting flight delay information)
    b. Provide our customers with reactive support when issues are raised in social channels
    c. Integrate service delivery via social networks with service delivered via other channels
    d. We do not use social media to provide customer support
    e. Other
    f. Not applicable/ Don't know

24. In which of the following ways do your clients use social 'Big Data' for marketing? (*Select all that apply*).
    a. Post promotions and discount offers
    b. Run contests and games
    c. Provide links to relevant content (e.g. a food company providing links to recipes)
    d. Integrate marketing via social with marketing delivered via other channels
    e. Other
    f. Not applicable/ Don't know

25. Do your clients use social networks as a means of gathering customer feedback for R&D? (*Select all that apply*).
    a. Host a customer community to gather feedback
    b. Track social mentions for ideas
    c. Integrate VOC efforts via social with VOC efforts via other channels
    d. Our company does not use social networks for gathering customer feedback
    e. Other
    f. Not applicable/ Don't know

SOCIAL MEDIA TRACKING, MEASUREMENT AND ANALYSIS QUESTIONS

26. Do your clients track and/or perform mathematical or statistical analysis of any the following unstructured 'Big Social Data' content on existing customers to leverage for internal use?
    a. Customer Facebook posts
    b. Customer BLOG posts
    c. Customer YouTube videos
    d. Customer Emails
    e. Customer Google searches
    f. Customer Skype activities
    g. Customer Online Brokerages
    h. Customer Twitter 'Tweets'
    i. Customer online shopping activities
    j. Other customer activities
    k. Not applicable/ Don't know

27. Do your clients track and/or perform algorithmic analysis of any the following unstructured 'Big Social Data' content on <u>prospective customers</u> to leverage for internal use?
    a. Prospective Customer Facebook posts
    b. Prospective Customer BLOG posts
    c. Prospective Customer YouTube videos
    d. Prospective Customer Emails
    e. Prospective Customer Google searches
    f. Prospective Customer Skype activities
    g. Prospective Customer Online Brokerages
    h. Prospective Customer Twitter 'Tweets'
    i. Prospective Customer online shopping activities
    j. Other prospective customer activities
    k. Not applicable/ Don't know

28. Do your clients use any of the following descriptive analytical techniques on the 'Big Data' your firm has acquired? (*Select all that apply*).
    a. A/B testing
    b. Classification
    c. Cluster analysis
    d. Crowdsourcing
    e. Machine learning
    f. Natural language processing
    g. Neural networks
    h. Pattern recognition
    i. Anomaly detection
    j. Regression analysis
    k. Sentiment analysis
    l. Signal processing
    m. Simulation modeling
    n. Other descriptive analytical techniques?
    o. Not applicable/ Don't know

29. Do your clients use any of the following predictive analytic techniques on 'Big Data'? *Select all that apply*.
    a. Online Analytical Processing
    b. Multivariate Statistical Analysis
    c. Natural Language Processing
    d. Time series analysis
    e. Predictive modeling
    f. Semantic analytics
    g. Social network analytics
    h. Visualization
    i. Extreme SQL
    j. Constraint-based BI
    k. Complex event processing
    l. Analytic database functions
    m. Behavioural analysis
    n. Other predictive analyses?
    o. Not applicable/ Don't know

30. Do your clients track any of the following on customers?
    a. What has been purchased
    b. What else was purchased at the same time
    c. Others who purchased the same items
    d. What else the buyer viewed when making the purchase
    e. How the buyer navigated the website
    f. What reviews, promotions and other users' posts were examined by the customer
    g. Other similarities between users and groups of users
    h. Not applicable/ Don't know

'BIG DATA' RESULTS QUESTIONS

31. Which of these business drivers have been enabled or furthered in part as a result of adoption of new technologies? *(Choose up to 4)*.
    a. Faster time to market
    b. Market expansion
    c. Lowered/optimized costs
    d. Increased productivity/ efficiency
    e. Increased effectiveness
    f. Increased competitive advantage
    g. Increased/enabled innovation
    h. Provided higher quality products and/or services
    i. Improved customer service
    j. Increased profitability
    k. Not applicable/ Don't know

32. Which functions will be most affected by these new technologies three years from now? (*Select all that apply*).
    a. Product development (Research and Development)
    b. Production (Plant production or front/middle/back office)
    c. Distribution
    d. Marketing
    e. Sales
    f. Customer Service
    g. Human Resources
    h. IT
    i. Risk Management
    j. Audit and Compliance
    k. Finance and Accounting
    l. Supply Chain
    m. Not applicable/ Don't know

33. Of the functions that have been most affected by these new technologies, do they tend to be:
    a. More core functions (i.e. producing revenue and/or primary activities of the enterprise)
    b. More support functions (i.e., ancillary activities that support the core business functions)
    c. A mix of both
    d. Not applicable/ Don't know

34. Has 'Big Data' led to changes in your client's business processes?
    a. They have created new sets of processes and/or made substantial changes to existing ones
    b. They are integrating previously discrete processes
    c. Our business processes are more flexible and adaptable to different business needs or changing conditions
    d. They have more process standardization
    e. They have less process standardization
    f. They are doing more business process outsourcing
    g. They more easily connect our business processes with those of our trading partners and suppliers
    h. They make more spontaneous connections with customers
    i. Not applicable/ Don't know

ANTICIPATED VALUE OF 'BIG DATA' QUESTIONS

35. How do your clients measure success in social technology? (*Select all that apply*).
    a. Customer referrals
    b. Revenue via social technology
    c. Time on site
    d. Friends/fans, likes
    e. Forwarded links
    f. Number/frequency of comments
    g. We don't track social metrics
    h. Not applicable/ Don't know

36. To what degree do you believe these new technologies can provide your clients with competitive advantage today?
    a. Will not provide advantage
    b. Will provide minimal advantage
    c. Will provide uncertain advantage
    d. Will provide some advantage
    e. Will provide a great deal of advantage

37. To what degree do you believe these new technologies can provide clients with competitive advantage three years from now?
    a. Will not provide advantage
    b. Will provide minimal advantage
    c. Will provide uncertain advantage
    d. Will provide some advantage
    e. Will provide a great deal of advantage

38. In what areas do you see clients are receiving a return-on-investment from its use of Facebook, Twitter, or other social media tools? (*Select all that apply*).
    a. Increase in customer referrals
    b. Increase in revenues
    c. Increase in engagement (e.g. more time on site, an increase in friends/fans, more clicks to the corporate website)
    d. We haven't seen any benefits from social media
    e. We haven't tracked benefits from social media
    f. Not applicable/ Don't know

39. How much value have your clients gained from their current 'Big Data' efforts?
    a. Negative value
    b. Almost no positive value
    c. Small amount of positive value
    d. Modest amount of positive value
    e. Significant amount of positive value
    f. Not applicable/ Don't know

40. How much value do you think your clients will gain from its 'Big Data' efforts over the next three years?
    a. Negative value
    b. Almost no positive value
    c. Small amount of positive value
    d. Modest amount of positive value
    e. Significant amount of positive value
    f. Not applicable/ Don't know

This is the end of the questionnaire.
Thank you for taking the time to respond to this survey.

APPENDIX B – GLOSSARY OF TERMS

A/B testing: A/B testing is a methodology of using randomized experiments with two variants, A and B, which are the control and treatment in the controlled experiment.

Analytic database functions: Analytical database functions are used to answer multi-dimensional analytical (MDA) queries swiftly.

Anomaly detection: Anomaly detection is the search for items or events which do not conform to an expected pattern, called anomalies, which are then transformed into critical and actionable information.

Behavioural analysis: The structured observation of the behaviour of people rather than unobservable events attributed to them.

Classification: Classification is the problem of identifying to which of a set of categories (sub-populations) a new observation belongs, on the basis of a training set of data containing observations (or instances) whose category membership is known.

Cloud Computing: Convenient, on-demand access through the Internet to a shared pool of computing resources that can be easily configured and scaled up or down as needed.

Cluster analysis: Cluster analysis or clustering is the task of grouping a set of objects in such a way that objects in the same group (called cluster) are more similar (in some sense or another) to each other than to those in other groups (clusters).

Complex event processing: Complex event processing, or CEP, is event processing that combines data from multiple sources to infer events or patterns that suggest more complicated circumstances. The goal of complex event processing is to identify meaningful events and respond to them as quickly as possible.

Constraint-based BI: The transformation of raw data into meaningful and useful information for business purposes based on user-generated parameters known as constraints.

Crowdsourcing: Crowdsourcing is the practice of obtaining ideas or content by soliciting contributions from a large group of people, and especially from an online community.

Data fusion and integration: Data fusion is the process of integrating multiple data and knowledge sets representing the same real-world object into a consistent, accurate and useful representation.

Ensemble learning: In statistics and machine learning, ensemble methods use multiple models to obtain better predictive performance than could be obtained from any of the constituent models.

Extreme SQL: Extreme SQL is the use of advanced queries in Structured Query Language, a special-purpose programming language designed for managing data held in a relational database management system.

Genetic algorithms: In the computer science field of artificial intelligence, a genetic algorithm (GA) is a search heuristic that mimics the process of natural selection.

Globalization: The ability for companies to access expertise, capabilities, customers and resources anywhere they wish.

Machine learning: Machine learning, a branch of artificial intelligence, concerns the construction and study of systems that can learn from data.

Multivariate Statistical Analysis: Multivariate statistics involves the simultaneous observation and analysis of more than one outcome variable.

Natural language processing: Natural language processing (NLP) is a field of computer science that applies computers to derive meaning from human or natural language input.

Neural networks: Neural networks are models inspired by animal central nervous systems (in particular the brain) that are capable of machine learning and pattern recognition.

Online Analytical Processing: In computing, online analytical processing, or OLAP, is an approach to answering multi-dimensional analytical (MDA) queries swiftly.

Operating Model: An organisation's ongoing recurring (cyclic) activities involved in the running of a business for the purpose of producing value. This is distinguished from the organisation's business model, which defines what the company does to make money.

Pattern recognition: Pattern recognition is the attempt to assign a label to each input value in a given set of classes.

Predictive modelling: Predictive modelling is the process by which a model is created or chosen to try to best predict the probability of an outcome.

Regression analysis: Regression analysis is a statistical process for mathematically estimating the relationships among variables.

Semantic analytics: Semantic analytics is the use of groupings of observations to analyse content in web resources. This field of research combines text analytics and Semantic Web technologies like RDF.

Sentiment analysis: Sentiment analysis or opinion mining refers to the application of natural language processing, computational linguistics and text analytics to identify and extract information from source materials.

Signal processing: Signal processing deals with mathematical analysis of signals, or measurements of time-varying or spatially varying physical quantities

Simulation modelling: Simulation modelling is the process of creating and analysing a digital prototype of a physical model to predict its performance in the real world.

Social network analytics: Social network analysis (SNA) is the methodical analysis of social networks.

Social networking: The use of internal or external (e.g. Facebook, Twitter, YouTube) social computing platforms to create awareness, gain market intelligence, engage with customers and other stakeholders, or collaborate and share knowledge among employees and/or partners.

Supervised and unsupervised learning: Supervised learning is the machine learning task of inferring a function from labelled training data. Unsupervised learning refers to the problem of trying to find hidden structure in unlabelled data.

Time series analysis: Time series analysis comprises methods for analysing time series data in order to extract meaningful statistics and other characteristics of the data.

Virtual Business: Collaboration or transaction among team members or with customers, trading partners, suppliers or other stakeholders regardless of time or place.

Visualization: Visualization is the graphic representation of information, data or knowledge intended to present complex information quickly and clearly in the form of infographics.

APPENDIX C – EMAIL RATIFICATION CORRESPONDENCE

From: Doug Hurley <doug.hurley@ey.com>
Date: Monday, March 23, 2015 at 7:55 PM
To: SAP SAP <phil.dervan@sap.com>
Subject: FW: Confirmation of our discussions regarding the Social Media questionnaire follow up

Phil,
No problem It was back in January, but I can see that you have represented my thoughts in the right way. It was good to talk to you about such a topical subject in our consulting world.

Regards,
Doug

Doug Hurley | Principal | Advisory Services

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From: <Dervan>, SAP SAP <phil.dervan@sap.com>
Date: Friday, March 20, 2015 at 10:29 AM
To: SAP SAP <phil.dervan@sap.com>
Subject: Confirmation of our discussions regarding the Social Media questionnaire follow up

Hello Doug,
I wanted to again thank you for taking the time to complete the questionnaire and then go over it with me on the phone. As part of the research protocol, I wanted to check with you that you are happy that I captured your comments accurately in the final document, which I enclose for your reference.

Thanks & regards,
Phil

From: "<Van Eeden>", Jaco Van Eeden <jvaneeden@deloitte.com>
Date: Friday, March 27, 2015 at 11:08 AM
To: SAP SAP <phil.dervan@sap.com
Subject: RE: Confirmation of our discussions regarding the Social Media questionnaire follow up

Dear Phil,
Yes, this looks fine. Great topic and I like the end result.

Kind Regards,

Jaco Van Eeden
Principal Deloitte Digital/Innovation
Deloitte Consulting
Cell: 908-391-5308
Email: jvaneeden@deloitte.com
Linked profile: www.linkedin.com/in/jacovaneeden

From: <Dervan>, SAP SAP <phil.dervan@sap.com>
Date: Friday, March 20, 2015 at 10:42 AM
To: SAP SAP <phil.dervan@sap.com>
Subject: Confirmation of our discussions regarding the Social Media questionnaire follow up

Hello Jaco,
I wanted to again thank you for taking the time to complete the questionnaire and then go over it with me on the phone. As part of the research protocol, I wanted to check with you that you are happy that I captured your comments accurately in the final document, which I enclose for your reference.

Thanks & regards,
Phil

REFERENCES

Aaker, J. and Smith, A., 2010. *The Dragonfly Effect: Quick, Effective, and Powerful Ways to Use Social Media to Drive Social Change*. San Francisco, CA: Jossey-Bass (Wiley). ISBN 978-0470614150.

Amos, J., Bell Telephone Laboratories Incorporated., 1970. *Mobile Communication System*. U.S. Pat. 3,663,762.

Andreas, M., and Haenlein, M., 2010. Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons,* 53 (1), pp.59–68.

Angel, G., 2013. Digital Analytics: Time for a new method? *Customer Intelligence*, [online] Available at:< http://www.mycustomer.com/topic/customer-intelligence/digital-analytics-time-new-method/160650> [Accessed 6 February 2013].

AT&T., 2012. 1946. *First Mobile Telephone Call.* [online] Available at: <http://www.corp.att.com/attlabs/reputation/timeline/46mobile.html> [Accessed 12 August 2012].

Aun, F., 2007. *Brazil, Russia, India and China to Lead Internet Growth Through 2011*. [online] Available at: <http://www.clickz.com/clickz/news/1709565/brazil-russia-india-china-lead-internet-growth-through-2011> [Accessed 20 July 2012].

Bellis, M., 2012. *The History of Computers.* [online] Available at: <http://inventors.about.com/library/blcoindex.htm> [Accessed 8 July 2012].

Belrose, J. S., 1995. Fessenden and Marconi: Their Differing Technologies and Transatlantic Experiments During the First Decade of this Century. In: *IEEE International Conference on 100 Years of Radio. 5-7 September 1995*. London, U.K.

Beyer, M. and Laney, D., 2012. *The Importance of ''Big Data'': A Definition*. [online] Gartner Inc. (Published 2012) Available at: <http://www.gartner.com/DisplayDocument?ref=clientFriendlyUrl&id=2057415> [Accessed 5 February 2013].

Bickart, B. and Schindler, R., 2001. Internet Forums as Influential Sources of Consumer Information. *Journal of Interactive Marketing*.

Bourdieu, P. and Wacquant, L., 1992. *An Invitation to Reflexive Sociology*. Chicago: University of Chicago Press.

Boyd, D., 2006. Friends, Friendsters, and MySpace Top 8: Writing community into being on social network sites. *First Monday*, 11 (12).

Boyd, D., M. and Ellison, N. B., 2007. Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication,* 13 (1), Article 11.

Brattain, W. and Shockley, W., 2005. *Troy MI: The Great Idea Finder*, (2005). [online] Available at: <http://www.ideafinder.com/history/inventions/transistor.htm> [Accessed: 12 July 2012].

Brittain, W., 1996. Scanning the Past: Fessenden, Reginald A., and the Origins of Radio. *Proceedings of the IEEE*, December, 84 (12), pp. 1852-3.

Brown, D. and Hayes, N., 2008. *Influencer Marketing: Who really influences your customers?* Oxford UK: Butterworth-Heinemann.

Bryan, I., 2004. *Community Oriented Marketing: The Definitive Guide to Enlightened Business Development*. Lincoln, NE: iUniverse Inc. ISBN 0-595-30881-3.

Business Insider, 2012. *The Complete History Of Computer And Gadget Sales In One Elegant Chart*. [online] Available at: <http://articles.businessinsider.com/2012-01-18/markets/30639063_1_chart-platforms-courtesy> [Accessed 12 July 2012].

Cerf, V. G., 1997. *Technical Aspects of the Internet Infrastructure: description. Computer Networking: Global Infrastructure for the 21st Century (1997).* Available at: <http://www.internetsociety.org/internet/how-it-works/technical-aspects> [Accessed 11 July 2012].

Chan, K. K. and Shekhar, M., 1990. Characteristics of the Opinion Leader: A New Dimension. *Journal of Advertising*, 19 (3).

Choi, J., 2010. *Online Retailing in Spatially Dispersed Offline Markets*. Publicly accessible, Penn Dissertations. Paper 178. Available at: <http://repository.upenn.edu/edissertations/178> [Accessed 22 July 2012].

Christensen, C. M., Raynor, M. E. and Anthony, S. D., 2003. Six Keys to Creating New Growth Businesses. *Harvard Management Update*. 1 January 2003. Prod. #: U0301A-PDF-.

Cialdini, R., 2001. *Influence: Science and Practice*. Boston, MA: Allyn and Bacon.

Clow, K. E. and Baack, D., 2007. *Integrated Advertising, Promotion, and Marketing Communications*. 3rd ed. Upper Saddle River NJ: Pearson Education. ISBN 0-13-186622-2.

Computer History Museum , 2006. *Timeline of Computer History*. [online] Available at: <http://www.computerhistory.org/timeline/?category=cmptr> [Accessed 20 July 2012].

Computer History Museum, 2012. *Selling the Computer Revolution*. [online] Available at: <http://www.computerhistory.org/brochures/decades.php?decade=thm#> [Accessed 12 July 2012].

Computer Hope, 2012. *Computer History (1990)*. [online] Available at: <http://www.computerhope.com/history/1990.htm> [Accessed 11 July 2012].

Cooper, M. et al., Motorola Inc., 1973. *Radio Telephone System".* U.S. Pat. 3,906,166.

Cosper, A., 2012. *History and Evolution of Computers*. [online] Available at: <http://www.ehow.com/facts_5339228_history-evolution-eHow.com> [Accessed 20 July 2012].

Dash, M. and Krishna, K. H., 2009. Exploring Word-of-Mouth Communication in Business-to-Business Marketing. [online] Available from: http://dx.doi.org/10.2139/ssrn.1934172 . [Accessed 12 August 2012].

Day, G. S., 1994. The Capabilities of Market-Driven Organisations. *Journal of Marketing*, 58.

Dennet, D.C. and Roy, D., 2015. Our Transparent Future. *Scientific American,* 312 (3), pp. 58-63.

Donath, J. and Boyd, D., 2004. Public displays of connection. *BT Technology Journal* , 22 (4).

Dornan, A., 2000. *The Essential Guide to Wireless Communications Applications*. Upper Saddle River NJ: Prentice Hall PTR.

Dye, R. 2000. The buzz of buzz. *Harvard Business Review.*

Easterby-Smith, M. and Thorpe, R., 2001. *Management Research: An Introduction*. London: Sage Publications Limited.

Egol, M., Vollmer, C. and Hoebling, K., 2012. The Four Types of Digital Marketer. *Booz & Company's Strategy and Business magazine*, 10 December.

Ellison, N., Steinfield, C. and Lampe, C., 2007. The benefits of Facebook "friends": Exploring the relationship between college students' use of online social networks and social capital. *Journal of Computer-Mediated Communication*, 12 (3), Article 1.

Fallows, D., 2005. *How Women and Men Use the Internet*. [online] Pew Internet & American Life Project. Available at: <http://www.pewinternet.org/.> [Accessed 1 August 2012].

Fauscette, M. et al., 2010. *IDC Competitive Market Insight: SAP*. [Report]. Boston MA: International Data Corporation.

Faville, K., 2006. Civic-Minded Millennials Prepared to Reward or Punish Companies Based on Commitment to Social Causes. In: *The 2006 Cone Millennial Cause Study, Cone Inc.* [online] Available at: < http://www.csrwire.com/press_releases/19346-Civic-Minded-Millennials-Prepared-to-Reward-or-Punish-Companies-Based-on-Commitment-to-Social-Causes> [Accessed 20 August 2012].

Fay-Wolfe, V., 2005. *History of Computers*. [online] Available at: <http://www.homepage.cs.uri.edu/faculty/wolfe/book/Readings/Reading03.htm>. [Accessed: 20 July 2012].

Feenberg, A., 2009. Critical Theory of Communication Technology: Introduction to Special Section. *Information Society Journal*, March-April, 25 (2), pp. 77-83.

Fendelman, A., 2012. *What is CDMA? Definition of CDMA: Cell Phone Glossary*. [online] Available at: <http://www.cellphones.about.com/od/phoneglossary/g/cdma.htm> [Accessed 15 August 2012].

Gault, F. and Peterson, G., 2003. Measuring the diffusion of information and communication technology in society and its effects: Canadian experience. *International Statistical Review*.

Gehman, S., 2011. *3 Ways to Use Social Media for Product Research and Development*. [online] Available at: <http://www.socialmediaexaminer.com/3-ways-to-use-social-media-for-product-research-and-development/> [Accessed 12 August 2012].

Gentile, B., Twenge, J. M., Freeman, E. C. and Campbell, W. K., 2012. The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behaviour,* September, 28 (5), pp. 1929–1933.

Gilbert, H., 1995. Introduction to TCP/IP. *PC Lube and Tune,* [online] Available at: <http://www.yale.edu/pclt/COMM/TCPIP.HTM> [Accessed 10 July 2012].

Gillin, P., 2007. *The New Influencers*. Fresno CA: Quill Driver.

Godin, S., 1999. *Permission Marketing: Turning strangers into friends, and friends into customers.* New York: Simon and Schuster.

Gow, G. A., 2006. *Privacy Rights and Prepaid Communication Services - A survey of prepaid mobile phone regulation and registration policies among OECD member states*. [Research Report] Centre for policy research on science and technology. Vancouver, BC: Simon Fraser University Press.

Gow, G. A. and Smith, R. K., 2006. *Mobile and wireless communications: an introduction*. New York: McGraw-Hill International. ISBN 0-335-21761-3.

Graham, S. and Bibby, D., 2007. *The Impact of P2P: Measuring the Value of Partner-to-Partner Business Activity in the IAMCP Network*. [Report]. Boston MA: International Data Corporation.

Greene, T., Landweber, L. and Strawn, G., 1993. *Fact Sheet: A Brief History of NSF and the Internet*. [online] Available at: <http://www.nsf.gov/news/news_summ.jsp?cntn_id=103050> [Accessed 12 July 2012].

Greenia, M. W., 1969. *History of Computing: An Encyclopaedia of the People and Machines That Made Computer History.* Sacramento CA: Lexicon.

Hafstad, A., 1997. Activating interpersonal influence through provocative appeals: Evaluation of a mass media-based antismoking campaign targeting adolescents. *Health Communication*.

Halverson, R. and Smith, A., 2009. How New Technologies Have (and Have Not) Changed Teaching and Learning in Schools. *Journal of Computing in Teacher Education,* 26 (2), Winter 2009–10, *International Society for Technology in Education*.

Harlow, A. F., 1936. *Old Waves and New Wires: The History of the Telegraph, Telephone, and Wireless*. New York: Appleton-Century.

Harris, R. and Gerich, G., 1996. Retiring the NSFNET Backbone Service: Chronicling the End of an Era. *Connexions*, 10 (4).

Hartley, J., 2004. Case Study Research. In: C. Cassell and G. Symon, eds. *Essential guide to qualitative methods in organizational research*. London: Sage, pp.323-333.

Haslam, A. S., 2001. *Psychology in Organisations*. London UK: SAGE Publications.

Heider, F., 1958. *The Psychology of Interpersonal Relations.* Hoboken NJ: John Wiley & Sons.

Hillebrand, Trosby, Holley and Harris, 2010. *SMS: the creation of Personal Global Text Messaging.* Hoboken NJ: John Wiley & Sons, Inc.

History of Computers.org, 2012. *History of Computers.* [online] Available at: <http://www.historyofcomputers.org/> [Accessed 11 July 2012].

Hjorth, L. and Yuji, M., (in press). Logging on locality: A cross-cultural case study of virtual communities Mixi (Japan) and Mini-hompy (Korea). In: B. Smaill, ed. *Youth and Media in the Asia Pacific.* Cambridge, UK: Cambridge University Press.

Hoey, C., 1998. Maximising the effectiveness of Web-based marketing communications. *Marketing Intelligence & Planning*.

Homburg, C., Kuester, S. and Krohmer, H., 2009. *Marketing Management - A Contemporary Perspective*. 1st ed. London UK: McGraw-Hill Higher Education. <http://articles.businessinsider.com/2012-01-18/markets/30639063_1_chart-platforms-courtesy> [Accessed 12 July 2012].

Huba, J. and McConnell, B., 2002. *Creating Customer Evangelists: How Loyal Customers Become a Volunteer Sales Force*. Burlington VT: Lewis Lane Press. ISBN 0-7931-5561-4.

Hussey, J. and Hussey R., 1997. *Business Research: A practical guide for undergraduate and postgraduate students*. Chippenham, Wiltshire: Anthony Rowe Ltd.

IEG LLC Sponsorship Report, 2008. *Forecast: Recession Slams Brakes On Sponsorship Spending.* [online] Available at: <http://www.sponsorship.com/iegsr/2008/12/22/Forecast--Recession-Slams-Brakes-On-Sponsorship-Sp.aspx> [Accessed 18 August 2012].

International Association of Microsoft Channel Partners (IAMCP), 2012. [online] Available at: <http://www.iamcp.org/?page=FAQ> [Accessed 20 August 2012].

International Telecommunications Union, 2012. *Percentage of Individuals using the Internet 2000-2010*. Available at: <http://www.itu.int/net/itu_search/index.aspx?cx=001276825495132238663%3Anqzm45z846q&cof=FORID%3A9&ie=UTF-8&q=%22Percentage+of+Individuals+using+the+Internet+2000-2010%22>. [Accessed 7 July 2012].

Internet World, 2012. *Internet World Statistics: Internet Usage Statistics, The Internet Big Picture, World Internet Users and Population,* 2012. Available at: <http://www.internetworldstats.com/stats.htm>. [Accessed 9 July 2012].

Jakob, A., 2001. On the Triangulation of Quantitative and Qualitative Data in Typological Social Research: Reflections on a Typology of Conceptualizing 'Uncertainty' in the Context of Employment Biographies, Forum. *Qualitative Social Research*, 2 (1).

Jaffe, J., 2007. *Join the Conversation: How to Engage Marketing-Weary Consumers with the Power of Community, Dialogue and Partnership*. New York: John Wiley & Sons.

Joiner, R. et al., 1978. *The Evolution of Packet Switching.* [online] Available at: <http://www.fsktm.upm.edu.my/~mothman/sak5306/MyNote/Evolution-packet-switching.pdf> [Accessed 11 July 2012].

Kahn, B., 2005. What's the Buzz about Buzz Marketing? *Knowledge@Wharton*, 12 January 2005.

Kahn, R. E. and Cerf, V. G., 1979. *What Is The Internet (And What Makes It Work)*. [online] Available at: <http://www.cnri.reston.va.us/what_is_internet.html> [Accessed 11 July 2012].

Kaplan, A. M. and Haenlein, M., 2010. Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons,* 53 (1), pp.59–68.

Kasteler, J., 2011. *A to Z: Social Media Marketing*. Raleigh, N.C.: Lulu Press.

Keller, E. and Berry, J., 2003. *The Influentials.* New York: Free Press.

Kelly, L., 2007. *Beyond Buzz: The Next Generation of Word-of-Mouth Marketing*. New York: John Wiley & Sons.

Khermouch, G. and Green, J., 2001. Buzz Marketing: Suddenly This Stealth Strategy Is Hot--but It's Still Fraught with Risk. *Business Week*, 30 July.

Kietzmann, J. H., Hermkens, K., McCarthy, J. P. and Silvestre, B.S., 2011. Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54, pp.241–251.

Kohlbacher, F., 2006. FQS. *Art*, 21 January, 7 (1).

Kohli, A. K. and Jaworski, B. J., 1990. Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing*, 54.

Kopytoff, V., 2004. Google's Orkut puzzles experts / Internet watchers ponder reason for social network site. *The San Francisco Chronicle.* [online] 29 November 2004. Available at: <http://www.sfgate.com/business/article/Google-s-Orkut-puzzles-experts-Internet-2633049.php#ixzz2HEQsQaDa> [Accessed 15 July 2012].

Kozinets, R. V., 2002. The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research*.

Kozinets, R. et al., 2010. Networked Narratives: Understanding Word-of-Mouth Marketing in Online Communities. *Journal of Marketing*, March 2010, 74 (2), pp.71-89.

Lampe, C., Ellison N. and Steinfeld, C., 2007. A Familiar Face(book): Profile Elements as Signals in an Online Social Network. In: *Proceedings of Conference on Human Factors in Computing Systems (CHI 2007)*. San Jose, CA: ACM Press, pp.435-444.

Laney, D., 2012. *3D Data Management: Controlling Data Volume, Velocity and Variety*. Available at: <http://blogs.gartner.com/doug-laney/files/2012/01/ad949-3D-Data-Management-Controlling-Data-Volume-Velocity-and-Variety.pdf> [Accessed 6 February 2013].

Layfield, T., 2010. The Top 10 Best Social Media Marketing Campaigns Of All Time. *The Content Marketing Blog,* [blog]. Available at: <http://www.acquisitionengine.com/top-10-best-social-media-marketing-campaigns-all-time/> [Accessed 7 August 2012].

LeFever, L., 2010. *Social Networking in Plain English.* [video online] Available at: <http://www.commoncraft.com/video/social-networking> [Accessed 12 August 2012].

Leiner, B. M. et al., 2012. *Brief History of the Internet (2012).* Available at: <http://www.internetsociety.org/internet/internet-51/.../brief-history-internet/> [Accessed 11 July 2012].

Levine, R., Locke, C., Searls, D. and Weinberger, D., 2000. *The Cluetrain Manifesto*. Cambridge, MA: Perseus.

MacNealy, M. S., 1999. *Strategies for Empirical Research in Writing*. Boston: Allyn.

Manyika, J., et al., May 2011. *'Big Data': The next frontier for innovation, competition, and productivity.* [online] McKinsey Global Institute. Available at: <http://www.mckinsey.com/Insights/MGI/Research/Technology_and_Innovation/Big_data_The_next_frontier_for_innovation> [Accessed 4 February 2013].

Marsden, P., 2005. Narayandas D Building Loyalty in Business Markets. *Harvard Business Review*, 83 (9), Available at: https://hbr.org/2005/09/building-loyalty-in-business-markets.

Maslow, A., 1998. *Towards a Psychology of Being*. 3rd ed. Hoboken NJ: John Wiley & Sons, Inc.

McAfee, A. and Brynjolfsson, E., 2012. 'Big Data': The Management Revolution. *Harvard Business Review*, October, 90 (10), pp.59-68.

McCorvey, J. J., 2012. Best Industries 2012: 'Big Data' 5 Markets Making Waves, *Inc. Magazine* [online] Available at: <http://www.inc.com/ss/best-industries-2012/jj-mccorvey/big-data-5-companies-capitalizing-on-this-business-opportunity?nav=next#0> [Accessed 2 February 2013].

Meer, D., 2012. The ABC's of Analytics. *Booz & Company's Strategy and Business magazine*, 3 December 2012.

Middleton, D., 2010. Performance marketing in a search-centric world. [online] Available at: <http://performics.com/think-tank/Performance-Marketing-Search-Centric-World/492> [Accessed 12 August 2012].

Miller, S., 2009. Motorola Executive Helped spur Cell Phone Revolution, Oversaw Ill-fated Iridium Project. *The Wall Street Journal*, 20–21 June, p. A10.

Mislove, A. et al., 2007. Measurement and analysis of online social networks. In: IMC '07, *Proceedings of the 7th ACM SIGCOMM conference on Internet measurement*. San Diego, CA, 24-26 October 2007, pp. 29-42.

Montecino, V., 2002. *What Is Hypertext?* Available at: <http://www.mason.gmu.edu/~montecin/hypertext.htm> [Accessed 11 July 2012].

Moon, A., 2012. Gender, Internet experience, Internet identification and Internet anxiety: a ten-year follow-up. *Cyberpsychology, Behaviour, and Social Networking,* 15 (7), pp. 370-372.

Morgan, R. and Hunt, S. D., 1994. The Commitment-Trust Theory of Relationship Marketing. *The Journal of Marketing,* July, 58 (3).

Narver, J. C. and Slater, S. F., 1990. The effect of a market orientation on business profitability. *Journal of Marketing*, 54.

NASA, 2008. NASA Successfully Tests First Deep Space Internet. NASA media release 08-298, 18 November 2008.

NASA, 2010. *NASA Extends the World Wide Web Out Into Space.* NASA media advisory M10-012, 22 January 2010.

Nauert R., 2012. Facebook, Social Networks Tie Into Self-Esteem, Narcissism, *Psych Central,* [online] Available at: <http://psychcentral.com/news/2012/06/27/facebook-social-networks-tie-into-self-esteem-narcissism/40728.html> [Accessed 6 August 2012].

Newman, A. A., 2011. Brands Now Direct Their Followers to Social Media. *The New York Times Business Day,* 3 August, p. B3.

Newman, M., Barabási, A. L. and Watts, D. J. eds., 2006. *The Structure and Dynamics of Networks*. Princeton, NJ: Princeton University Press.

Newman, M. E. J., 2010. *Networks: An Introduction.* Oxford UK: Oxford University Press.

Oakes, P., Haslam, A. and Turner, J., 1994. *Stereotyping and social reality*. Oxford: Blackwell.

Oracle ThinkQuest , 2012. Innovations on the Internet. Available from: <http://library.thinkquest.org/25744/>. [Accessed: 9 July 2012].

Oxford Dictionary, 2012. *Definition of social network*. Oxford UK: The Oxford University Press. [online] Available at: <http://oxforddictionaries.com/definition/english/social%2Bnetwork> [Accessed 12 August 2012].

Parker, L., 2010. The ABC's of Social Branding, [online] *WomenEntrepreneur.com,* 14 September, 2010.

Parker-Brown, J. and Gaca, M., 1999. Global concerns have become local, local concerns are now global: Learning and research in cyberspace. Paper presented at *29th Annual Conference of Australian Association for Research in Education*, 26 – 30 November: Hobart, Australia.

Parket, A., 2003. *In The Blink Of An Eye: How Vision Sparked The Big Bang Of Evolution*. 1st ed. Cambridge Massachusetts: Perseus Publishing.

PC Magazine, 2009. *Encyclopedia of Computer Terminology*. [online] Available at: <www.pcmag.com›Solutions›Encyclopedia> [Accessed 12 August 2012].

Pearson Education: Info please database, 2007. *Timeline: Social Media -Key dates in the evolution of social media*. [online] Available at: <http://www.infoplease.com/science/computers/social-media-timeline.html#ixzz226l6G2HV> [Accessed 12 August 2012].

Popular Science, 1934. Ship to Shore Telephone Service Opened. *Popular Science,* March 1930, 116 (3), p.34.

Price, L., Feick, L. F. and Guskey, A., 1995 . Everyday market helping behaviour. *Journal of Public Policy and Marketing*, 14 (2), pp. 255-266.

Pruden, D. R. and Vavra, T. G., 2004. Controlling the Grapevine. *Marketing Management*, 13 (4), pp. 24-30.

Rayport, Prof. J., 1996. *The Virus of Marketing*. Havard Business School.

Redl, S. M., Weber, M. K. and Oliphant, M. W., 1998. *GSM and Personal Communications Handbook.* Norwood MA: Artech House Mobile Communications Library. ISBN 978-0-89006-957-8.

Reimer, J., 2005. Personal Computer Market Share: 1975-2004. *Ars Technica*, [online] Available at: <http://arstechnica.com/business/2012/08/from-altair-to-ipad-35-years-of-personal-computer-market-share> [Accessed 20 July 2012].

Ring, D. H., 1947. *Hexagonal cells for mobile phones in vehicles*. [Memo] July 1947. Bell Laboratories.

Rosen, E., 2000. *The anatomy of buzz: how to create word-of-mouth marketing*. 1st ed. New York: Doubleday/Currency.

Rosen, E., 2009. *The Anatomy of Buzz Revisited*. New York: Doubleday Business.

Rullis, R., 2009. *The History of Digital Recording.* [online] Available at: <http://history.sandiego.edu/gen/recording/digital.html> [Accessed 12 July 2012].

Sand, M., 2003. Integrating the web and e-mail into a push-pull strategy. *Qualitative Market Research: An International Journal,* 6 (1) , pp. 27-37.

Schachter, S., 1959. *The Psychology of Affiliation*. Stanford, CA: Stanford University Press.

Schmitt, P., Skiera, B. and Van den Bulte, C., 2010. Referral Programs and Customer Value. *Journal of Marketing*, 75 (1), pp. 46 – 59.

ScienCentral, Inc. and The American Institute of Physics, 1999. *The World Wide Web, 1990-Present*. Available at: < http://www.pbs.org/transistor/background1/events/www.html > [Accessed: 10 July 2012].

Sernovitz, A., 2006. *Word of Mouth Marketing*. New York: Kaplan Publishing.

Sernovitz, A., 2006. Word of Mouth Marketing: How Smart Companies Get People Talking. Chicago: Kaplan Business Publishing.

Sheldrake, P., 2009. *The increasingly crowded market of Social Web Analytics, Social Networks, Consumer & FMCG, Digital Media Relations*, [blog]. Available at: <http://www.philipsheldrake.com/2009/06/the-increasingly-crowded-market-of-social-web-analytics/> [Accessed 18 August 2012].

Silverman, G., 2001. *The secrets of word-of-mouth marketing: how to trigger exponential sales through runaway word of mouth*. New York: AMACOM.

Stake, R.E., 2000. Case Studies. In: N.K. Denzin and Y.S. Lincoln, eds. *Handbook of qualitative research*. Thousand Oaks: Sage, pp. 435-453.

Stelzner, M., 2012. *Social Media Marketing Industry Report. How Marketers Are Using Social Media to Grow Their Businesses.* [Online] Available at: <http://www.socialmediaexaminer.com/SocialMediaMarketingIndustryReport2012.pdf> [Accessed 1 August 2012].

Sundén, J., 2003. *Material virtualities: approaching online textual embodiment - Volume 13 of Digital formations.* New York: Peter Lang. ISBN: 0820462047, 9780820462042.

Tajfel, H. and Turner, J. C., 1986. The social identity theory of intergroup behaviour. In: S. Worchel and W. G. Austin, eds. *Psychology of intergroup relations*. Chicago, IL: Nelson-Hall, pp. 7-24.

Taylor, C., 2007. *A Secular Age*. Cambridge, Mass: Belknap Press of Harvard University. ISBN 9780674026766.

The Centre for Computing History, 2001. [online] Available at: <http://www.computinghistory.org.uk/det/5779/Nokia-9000-Communicator/> [Accessed 22 July 2012].

Timeline of Computer History. [online] Available at: <http://www.computerhistory.org/timeline/?category=cmptr> [Accessed 20 July 2012].

Townsend, A. M., 2001. Network cities and the global structure of the Internet. *American Behavioral Scientist*, June, 44 (10), pp. 1697-1716.

Tse, A. C., 1995. Comparing two methods of sending out questionnaires: E-mail versus mail. *Journal of the Market Research Society*, 37 (2), pp. 441–446.

Tyler, B. B. and Gnyawali, D. R., 2002. Mapping managers' market orientation regarding new product success. *Journal of Product Innovation Management*, 19 (4).
UNISUL Social Network Analysis, 2012. *Graph theory applied to social networks analysis*. [online] Available at: <http://labspace.open.ac.uk/mod/resource/view.php?id=378588> [Accessed 12 August 2012].

Vesset, D, A. et al., 2012. *Worldwide 'Big Data' Technology and Services 2012–2016 Forecast*. Framingham, Massachusetts: International Data Corporation (IDC). Doc # 238746.

Walsh, G. and Mitchell, V.W., 2001. German market mavens' decision-making styles. *Journal of euromarketing,* 10 (4), pp. 83–108.

Ward, M., 2009. *Celebrating 40 years of the net*. BBC News, 29 October 2009.

Wasserman, S. and Faust, K., 1994. *Social Network Analysis: Methods and Applications*. New York and Cambridge England: Cambridge University Press.

Watters, A., 2010. *The Age of Exabytes: Tools and Approaches for Managing 'Big Data'* (Presentation for Hewlett-Packard Development Company). Available at: <http://readwrite.com/2012/03/05/big-data> [Accessed 24 January 2013].

Wen-Hao D., Huanga, D., Ward, H. and Yooc, S. L., 2012. Gender divide and acceptance of collaborative Web 2.0 applications for learning in higher education. *The Internet and Higher Education,* January 2013, 16, pp. 57-65.

Wilson, R. F., 2012. The Six Simple Principles of Viral Marketing. *Web Marketing Today,* May 2012.

Worldmapper, 2004. *Cellular Subscribers 1990*. Available at: <http://www.worldmapper.org/display.php?selected=333> [Accessed 9 July 2012].

Yin, R.K., 1981. The case study crisis: Some answers. *Administrative Science Quarterly*, 26 (1), pp. 58-65.

Yin, R.K., 2003a. *Case study research, design and methods*. 3rd ed., vol. 5. Thousand Oaks: Sage.

Yin, R.K., 2003b. *Applications of case study research*. 2nd ed., vol. 34. Thousand Oaks: Sage.

Zickuhr, K., 2010. *Generations 2010*, [pdf]. Washington DC: The Pew Research Center's Internet & American Life Project. Available at: <http://pewinternet.org/Reports/2010/Generations-2010.aspx.> [Accessed 20 August 2012].