

# Australasian Journal of Market & Social Research

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# AUSTRALASIAN JOURNAL OF MARKET & SOCIAL RESEARCH

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## AJMSR – Editorial

Volume 16, Number 2 of *AJMSR* contains two papers that discuss two very different approaches to gathering marketing research information. Robert Opoku provides a wide-ranging discussion of computer-aided content analysis, and concludes with some suggestions as to benefits and limitations.

In a very different vein, Susan Ellis, Brian Fine and Daisy Xu have written an overview of the market research industry in China, a snapshot of current Chinese internet usage, and a perspective on online research in China including some caveats for panel and non-panel research.

Finally, Michael Milgate has written a short review of *Super Crunchers – How anything can be predicted* by Ian Ayres, a book dedicated to using large databases to understand consumer behaviour.

Lester W Johnson,  
Editor, AMSRS Fellow

*Australasian Journal of Market & Social Research*

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# Enter the Online Dragon – With Caution

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## Abstract

With China's entry into the online market research era, it is only reasonable for marketing researchers in more developed countries to wonder about the state of the Chinese market research field in general and online research in particular. To assist researchers in making wise choices when commissioning or buying online research in China, we provide an overview of the market research industry, a snapshot of current internet usage, and a perspective on online research including some caveats for panel and non-panel research.

“China is the big, looming dragon sitting on every chief executive's desk. Whether a company is thinking of accessing China's market, or its low-cost production base, or investing in China's fast developing economy, no company can afford not to think about China.” Christopher Wright, Austrade Senior Trade Commissioner for Shanghai, as quoted on Austrade's China homepage (2008)

## Introduction

The world has witnessed China, with the largest population on this planet at over 1.3 billion residents, continue to soar along its economic path. With an 11.9% GDP growth rate in 2007, the fifth successive year of double-digit growth, the total GDP of China has reached RMB 25 trillion yuan (A\$4 trillion at the interbank rate of 5.8759 as at 1 September 2008) (National Bureau of Statistics of China 2008b). Even with the World Bank's (2008) projection of 9.8% growth for 2008 and the International Monetary Fund's forecast of 10% (Hamlin 2008), the numbers are impressive. No wonder Australian and New Zealand organisations are keen to build opportunities in *zhong guo* (the Middle Kingdom).

Total consumer goods sales reached RMB 9 trillion yuan (A\$1.5 trillion) in 2007, with a growth rate of 16.8% over the 2006 level (National Bureau of Statistics of China 2008a). The fastest growing sectors included apparel, automotive, construction and decoration materials, cosmetics, furniture, home appliances and audio-visual products, petroleum and petroleum products, sport and recreation products, and textiles, which all enjoyed a growth rate greater than 20% year on year. Wholesale/retail grew 16.7%, and hotel/catering grew 19.4% (National Bureau of Statistics of China 2008a).

The NBSC also reported that the total trade of imports and exports exceeded US\$2 trillion in 2007, with a growth rate of 23.5% over 2006 (National Bureau of Statistics of China 2008a), now sitting as the third largest international trading market in the world (Xinhua 2008b). Imports accounted for a healthy 44% of the total (National Bureau of Statistics of China 2008a).

According to the China Association of Automobile Manufacturers, in 2007 total automotive production was an impressive 8.88 million vehicles, of which 99%

were sold (Xinhua 2008c). JD Power – Automotive Resources Asia predicts that by 2010 China will be the biggest country in the Asia Pacific for automotive manufacturing (AFP 2007).

China's rapid growth represents even greater importance for Australian marketers. Over the 2006-2007 time period, total Australian exports to China reached A\$23.8 billion, with a growth rate of 16.8% over the prior year (Austrade 2007a). China is now Australia's second largest export market after Japan (Austrade 2007b). Further, having commenced negotiations on a Free Trade Agreement in 2005, the two parties are now moving closer to a successful conclusion.

With many Australian marketers having realised the opportunities in China, an understanding of this massive and complicated market becomes essential for them. Market research is often needed to inform or support marketing decisions, but how much of the Australian experience with market research will generalise to China? Specifically, what about the new wave of research: online research?

This article aims to provide insight into doing market research in China, particularly the increasingly popular method of gathering data online.

### **The Market Research Industry in China**

The seeds of the commercial market research practice in China can be traced back to the late 1980s, some 60 years after the field was founded in the United States (Chadwick 2006). The establishment on July 1<sup>st</sup> 1988 of the first independent research firm in China, Guangzhou Market Research Co. (GMR), was most likely a result of the spillover of the better established Hong Kong market research sector into neighbouring Guangdong province. Two years later a handful of key research specialists left GMR to establish two other research firms: South China Market Research (SCMR) and Far East

Market Research. Far East joined with Survey Research Group (SRG) in 1992 to form the first foreign direct investment (FDI) joint venture (JV) in China's budding market research industry, the only way SRG was legally allowed to enter the market at that time. In fact, finding a good local partner in China was and still is one of the critical business issues international entrants face, as the Chinese government continues to bar direct entry, i.e., without a partner (State Development and Reform Commission of the Ministry of Commerce of the People's Republic of China 2007).

For about the next 10 years, the market research industry in China enjoyed solid growth, with international firms starting operations in China through a variety of partnership structures:

- 1993: Gallup China was founded as a JV with Chinese investors.
- 1995: Asia Market Intelligence (AMI) began operating in China.
- 1997: Research International founded RI China by merging with SCMR.
- 1997: Market Facts established a JV and named it ACSR.
- 1997: ACNielsen acquired SRG China.
- 1997: TNS established CSM Media Research, a JV with CVSC. CVSC was the largest local research firm at the time and an associate firm of China International Television Corporation, affiliated with CCTV (China Central Television, the largest TV network in China).
- 2000: Ipsos started operating in China through the acquisition of several local firms such as FAMS (Feng Kai Xing), Sinolink (Hua Lian Xin), and GDMR (Guangdong Datong).
- 2001: Through an investment reorganisation process, TNS acquired a 46% stake in CVSC and renamed the company CTR.
- 2003: AMI was rebranded as Synovate under the Aegis Group.

It was not just foreign market research firms that influenced the development of the market research industry. Foreign

clients had a major impact as well. For example, Procter & Gamble China played an essential role by managing their well-recognised research supplier procurement system. P&G was not only one of the largest and earliest research buyers in China, but they also supported, educated and collaborated with a number of local firms to establish industry-wide protocols in data collection, thus helping to train many local research professionals. Some of these researchers later established their own privately owned research firms – mainly based on fieldwork capabilities – and became sought-after local partners for international firms who stepped into China through acquisitions and mergers.

The synergy of local fieldwork capability and an international research mindset further assisted industry growth, growth that has been particularly healthy since 1999. Industry turnover reached more than RMB 5 billion yuan (A\$900 million) in 2007 (China Market Research Association 2008), with a growth rate of 15% (compared to a 7% growth rate globally and 10% Asia-wide) (ESOMAR 2008) and a compound annual growth rate of nearly 27% over the years 1999-2007 (China Market Research Association 2008). According to Tony Cowling, President of TNS and President of Gallup International Association, “It is realistic to expect market research [in China] to show 15% to 20% real growth in the next five years, and certainly double-digit real growth for the next 10 years” (TNS 2007).

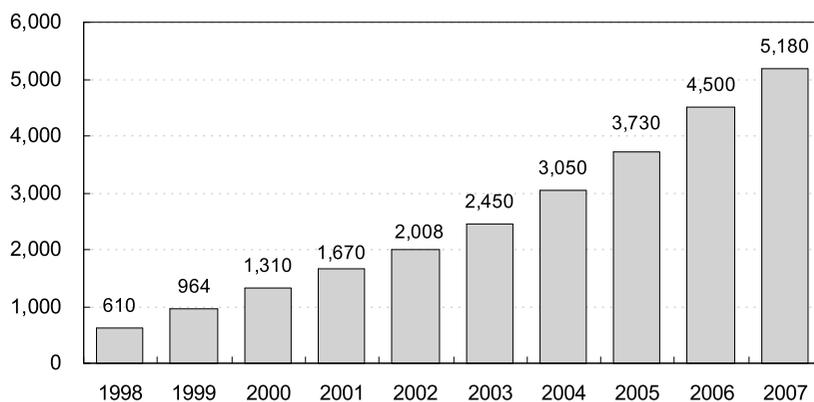
Some other well-known home-grown research firms such as Horizon (founded in 1992), SinoTrust (1992), Pamri (1993) and Sinomonitor (1998, with international investments added in 2003) also gradually developed their differentiated competencies and are now important field forces for local research buyers. Local Chinese marketers have continued to increase their investment in market research and now account for more than 80% of total research spending in China, allowing local research firms to grow at a considerably

good pace hand-in-hand (China Market Research Association 2008).

Currently there are over 1,500 independent market research firms operating in China, widely segmented by offering services in different disciplines, such as customised consumer research, syndicated consumer and media research, retail audit and business to business industry research. The major spenders in market research are marketers in the sectors of FMCG, durable goods, automotive, telecommunications, finance, pharmaceutical, IT, industrial and retailing (China Market Research Association 2008).

The average number of researchers for a medium sized research firm is about 30, according to the CMRA (China Market Research Association 2008). The de facto

China Market Research Total Turnover (million RMB)



Source: China Market Research Association 2008

China MR Turnover Growth Rate vs. Global



Source: China Market Research Association 2008

entry qualification for researchers is a bachelors degree, most commonly in the social sciences, statistics, marketing, commerce or English. Masters degree holders are also frequently found in research firms, and even some PhDs work in the industry. Post degree, staff are normally trained on the job and through internal training programs. A research manager or project director who manages a team of five or six researchers will typically have 7-8 years of experience. Despite the numbers, there is no commonly recognised accreditation system for research professionals in China, unlike Australia with its Qualified Practising Market Researcher (QPMP) scheme.

International firms have introduced their latest research techniques into this market, both for qualitative and quantitative studies. Qualitative methodologies and techniques widely applied include focus groups, depth interviews, diaries, accompanied shopping, guerilla interviewing, creative workshops, and ethnography. In quantitative studies, data are often collected by face to face interviews (via door knock or street intercept), CATI (Computer Assisted Telephone Interview), direct mail and online.

In multinational research firms, proprietary solutions are commonly branded consistent with the rest of the world, and for some such companies the solution specialisation is managed globally in an integrated fashion. This has the potential to reassure both international and local research buyers that they are receiving services of the same standard as in other more research-sophisticated markets.

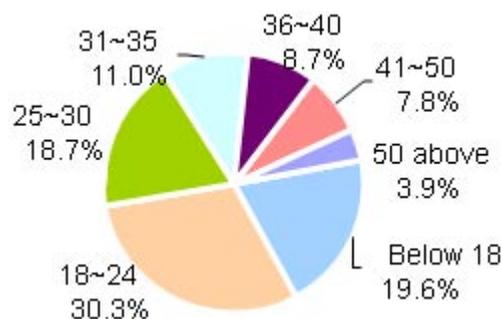
In summary, the current state of the research market in China is probably best described as relatively young but rapidly emerging – parallel to China’s economic development in general. Further maturing will be dependent on both client needs (e.g., knowledge of and willingness to pay for more accurate and/or sophisticated solutions) and available expertise.

## Internet Usage in China

Internet activity in China is hot, hot, hot, and there are now more internet users in China than anywhere else in the world. By the end of 2007 there were already 210 million (China Internet Network Information Center 2008a), with 160 million online video users (China Internet Network Information Center 2008c). As at 30 June there were 253 million Chinese online, surpassing even the US. The number of what the Chinese government calls “netizens” in China is already more than 10 times the *total* population of Australia and more than 50 times that of New Zealand.

Nearly 7 in 10 (69%) are 30 years old or younger, with one-third of those being current students (China Internet Network Information Center 2008d). The web in China is a tremendously youth centred environment in a country where the under-30s make up less than 40% of the general population (National Bureau of Statistics of China 2007) under the central government’s one-child policy.

### Internet User Profile - by age



Source: China Internet Network Information Center 2008d

The most recent CNNIC reports show a more varied distribution of netizens than before, with an increasing proportion of females (now 46% of the total) (China Internet Network Information Center 2008d), a greater over-30 representation than previously, and more rural residents. However, penetration is still only

7% in rural areas (China Internet Network Information Center 2008b). This is fundamentally an infrastructure issue, with PC ownership only 1/20<sup>th</sup> that of urban areas (China Internet Network Information Center 2008c). The growth of so-called Net Bars (internet cafés) has increased access, but the cost of utilising a PC at a Net Bar means that rural residents tend to be more selective in their web usage and stay online for a shorter period of time (China Internet Network Information Center 2008c). No wonder regular online usage in China is still low. The prediction is that it will take until 2011 before China overtakes the US in the number of regular online users (JupiterResearch 2008).

Between the youth profile and the strong urban skew, the difference between online and offline populations remains mammoth. This has implications for online market research, as we will discuss later.

How exactly are the Chinese using the net? By far the greatest use, at least in terms of time spent online, is for gaming. Online gaming annual revenue stands at A\$1.5 billion, with an average spend of about \$10 per session for many of the paid games (Cavalli 2008). One out of every five internet users is a gamer (Xinhua 2008a), and most of the games are developed locally (In-Stat 2008). China is expected to become the largest online gaming market in 2009 (In-Stat 2008) and is likely to continue holding that rank as long as government acceptance of such activity remains.

Chinese gamers play games online an average of 7 hours per week, with 21% playing more than 10 hours per week (China Internet Network Information Center 2008c). With the typical netizen online 19 hours per week in total (China Internet Network Information Center 2008d), that's 37% of gamers' time taken up with gaming on average. The Chinese government recognises the dangers of addiction to online gaming – with one official referring to it as “a sort

of spiritual opium” (Linde 2008) – and has taken a number of steps to try to limit its impact. However, the top six internet portals in China continue to show a dramatic increase in revenue from gaming, which currently accounts for 58% of their combined revenue (TrendsSpotting 2008).

One would think that Chinese netizens had good purchasing power given the money they spend to pursue such activities. That is true but is not totally the case. While they spend an average of RMB 212 yuan (A\$36) per month on internet services, their monthly income – in large part because of their youth – is RMB 2,048 yuan (Data Center of China Internet 2008) or A\$349 – just above the average monthly income of the typical Beijinger. While over time their income would be expected to grow, in the near term this group as a total entity is not necessarily the most desirable market for advertisers. That said, 7% of internet users earn more than RMB 5,000 yuan per month (China Internet Network Information Center 2008d), a segment that – though currently small relative to the total web-using population – still consists more than 17 million people with significant disposable income.

#### Internet User Profile - by income



Source: China Internet Network Information Center 2008d

The Chinese certainly use the web for more than gaming, with the most popular activities across all age groups being

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listening to or downloading music (84% of all netizens) or videos (71%), checking the news (82%), instant messaging (77%), using search engines (69%) and emailing (63%) (China Internet Network Information Center 2008d). The popularity of instant messaging (IM) is probably the biggest surprise but reflects Chinese netizens' desire to be quickly and easily linked with others, suggesting that the social networking of Web 2.0 will have equally strong take-up. Young people in China find IM so ubiquitous that many now consider email to be old fashioned, and enterprise level IM is likely to be the next step on PCs to match SMS (text messaging) already available on mobile phones.

Where is e-tailing? As one user called Norman comments in Riley (2008), "Internet in China is completely different from here at the United States. In the US, internet becomes the backbone of business. It is essential tool for shopping, traveling, marketing and entertainment in addition to news and media. But in China, the internet is pretty much used for games, news and entertainments, video and music. Although the number of users is huge, most of users are playing internet games online. Yes, there are a lot of users who spend a lot of time on line. But the business value of the internet is low."

It's low but growing. The main obstacle has not been customer uncertainty as is found in more developed internet economies (Pavlou, Liang and Xue 2007) but what was until recently the low availability of credit cards. Only 25% of Chinese shopping online prefer to pay with a credit card – compared with 52% of Australians (MasterCard Worldwide 2008) – and ATM debit cards and a cash-on-delivery procedure have been common. With the recent and rapidly growing uptake in Visa and MasterCard, China is now poised to overtake Japan and become the largest online e-tailing market in the Asia Pacific by 2010 with

480 million online Chinese shoppers (MasterCard Worldwide 2008). Already 45% of Shanghai and 39% of Beijing netizens are shopping online (China Internet Network Information Center 2008d).

As in most countries, residents of the larger cities in China tend to access the internet from their office or residence. This contrasts with smaller cities, where Net Bars are more the norm, particularly for gaming. A substantial but to this point unmeasured proportion of employers restrict the use of the web by their staff, either not allowing them to access the internet at all during work hours or not permitting them to use it for anything other than clearly work related activities. A number even ban personal emails. This PC-is-only-for-work attitude appears to have softened during the Olympics, when one out of every two employees reported watching the Olympics online (Hornby 2008), though equally it could be said that bosses were simply turning a blind eye and riding the wave of nationalism. Should it turn out to have been an anomalous event, this ban will continue to have an impact on online research.

Five out of every six (85%) netizens already have access to broadband (China Internet Network Information Center 2008d). It is anticipated that a substantial jump in internet usage will come as 3G hits China and the third of the "three screens" (TV, PC and mobile phone) becomes a viable option even for rural web surfers. Already there are 601 million mobile phone users (Xinhua 2008d), or 46% penetration of the total population, adding new users at a rate of about 7 million per month – mostly from regional and rural China (CCID Consulting 2008). A number of these individuals may thus leapfrog computer technology altogether and access the web strictly from devices such as mobiles, giving them the potential to be more sophisticated in web access. As we will see later, this could have a substantial impact on appropriate market research methodologies.

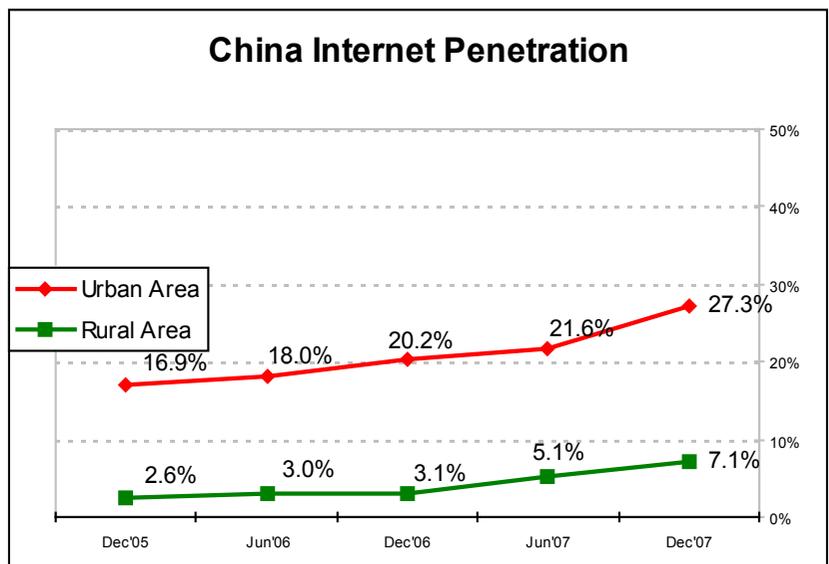
## Online Market Research in China

Though face-to-face is still the most often utilised data collection technique in quantitative studies in China, a variety of factors – the vast geographical coverage of China especially when lower tiers (less developed districts) are included, declining response rate and tendency to reach less affluent households/respondents – have triggered a switch to other alternatives such as telephone (CATI) and online. CATI is still preferred due to its typically more representative sample – which we will discuss shortly – and cheap labour force, though online is rapidly increasing in popularity. The growth of online is consistent with the global trend. Worldwide the number of online research studies increased 80% in 2005 (ESOMAR 2006) and by an additional 14% in 2006 (ESOMAR 2007). Online now accounts for 20% of total data collection expenditure globally, and in Australia it is now the dominant methodology at 32% of all research expenditure (ESOMAR 2008). Should online research growth in China continue as it has in more developed countries, clearly there will be a need to train and grow expertise.

In China, with its dramatic economic growth, the need for market research is increasing. Declining response rates from more established methodologies and the need for vast geographical coverage are underpinning the take-up of online research. A number of research firms in China have trialled online research, and even as early as 2006 more than 60% had utilised online research as one of their data collection tools, via managed consumer panels, public online portals, or internal employee/customer direct email or software platforms (China Market Research Association 2008).

The use of online research has been encouraged by the dramatic growth in the number of Chinese netizens, with an internet penetration rate of nearly 50% in Beijing and Shanghai (China Internet Network Information Center 2008a) and

19% nationally (China Internet Network Information Center 2008d). At these levels, online is still not automatically representative of the general Chinese population.



Data Source: China Internet Network Information Center 2008b

Online research in China has fed both qualitative and quantitative studies. The Chinese market research community utilises a number of ways to conduct qualitative research online, such as presenting questions via bulletin boards, conducting chat groups and keeping live diaries. For quantitative studies when a larger sample is needed or a longer interview length required, approaches such as online panels, pop-up banners, bulk email, and software platforms are taken.

Potential benefits of online research have been recognised in China with its quick turnaround time, flexibility (less venue/timing constraints in interviewing), possible cost effectiveness, easy adoption of multimedia presentation, and access to respondents without extensive screening.

In the early stages of internet development in Australia, online was primarily used for advertising and concept testing and new product development research. This

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pattern appears to be being replicated in China. For example, in 2006, AIP China, in cooperation with another international research firm, ran a pilot online study in China in parallel with a traditional offline approach and compared the results. They interviewed 450 respondents both online and offline in Shanghai for a concept test commissioned by a well known brand of cosmetics. Here is what they found (AIP China, 2006):

- Similarities
  - Top of mind brand awareness was basically the same.
  - Brand usage experiences were very similar.
- Differences
  - The online approach obtained higher unaided total brand awareness.
  - A greater number of small or lesser known brands were mentioned in the online results, possibly because respondents online had more time to think and respond (Bronner and Kuijlen 2007; Sparrow 2007).
  - Online respondents gave richer answers to brand attribute associations.
  - The respondents online were relatively better off than offline respondents in terms of educational background, income and occupation.

Turnaround time for the online research was much faster than offline, and it was cheaper as well. Not surprisingly, the client was very happy with the online results. Note however that although the main research conclusions obtained from the two approaches were basically consistent, there were striking differences on some issues. Also note that it will take more than this single study to be able to generalise the similarities of and differences between online and offline research findings in China.

On 5 February 2008, the day before the Chinese New Year holiday and a time notoriously difficult for doing research (think: 31 December on the Western

calendar), Synovate China released survey findings from a study conducted online. Total turnaround time of the study was only 1.5 days.

At the time of interviewing, China had been experiencing a major cold front for two weeks. People working in big cities like Guangzhou and Beijing were trying to return to their home towns for the holiday period but were stuck in traffic or stopped by flight and train cancellation. Determining that people's safety was more important than the traditional family reunion, the central government issued a strong recommendation that people stay where they worked and spend the holiday there, not travel all the way back to their home towns. The research question was, how did the travel obstacles impact people's travel plans?

The study was conducted online 2-3 February among more than 500 urban Chinese from Shanghai, Beijing, Guangzhou and Wuhan and surrounding cities. Data showed that, despite the big chill, 39% of urban Chinese still intended to travel outside their city of employment during this Lunar New Year (Synovate 2008). Of those would-be travelers, 53% had had to change their plans (such as the precise date of travel) due to the cold weather but were nonetheless embarking on journeys (Synovate 2008). This provided further evidence of the importance of family in the Chinese culture and also the resilience of China's people. It was also a demonstration of the efficiency of online research in China.

### **Online Panels in China**

As is found in Australia and as is becoming the standard worldwide, well constructed online panels – groups of potential respondents who are pre-qualified for research and have agreed to participate for a period of time (Nancarrow and Cartwright 2007) – are generally perceived in the Chinese research community as a better way to obtain a filtered, clean sample pool than random acquisition via public online portals.

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However, the source of the panel is one of the critical issues that need to be considered. In China, global panel management companies such as GMI, Greenfield and SSI recruit their panelists online and manage them, and then research firms normally rent panelists by paying fees to the panel management agencies. Some of the large full service research firms such as Synovate and AIP Online Surveys have also established their own panel recruitment platform.

**Panel quality in China.** China utilises panel recruitment from a variety of sources to maximise the likelihood of representative samples. As is true elsewhere in the world, well constructed and well managed online panels, with pre-qualified opted-in respondents, are perceived by the Chinese research community as a good method of data collection. We would add the proviso that it is a good method provided it is performed appropriately. In China, none of the accepted systems of quality management appear to be in place yet as regards online panels. Given that China is still early in the lifecycle of this methodology, we would expect to see a transition to global quality standards such as the ISO 26362, the new ACE guidelines being developed in the US, the ESOMAR 26 which is current wisdom in Europe and QSOAP (Quality Standards for Online Access Panels) which is now being used and audited in Australia.

Quality is an end-to-end process and covers recruiting, survey design, panel management and analysis and weighting. Critical issues that need to be considered for Chinese online panels include the source of the panel and the resulting representativeness, survey design, management of the panel, and weighting and analysis of the resulting data.

**Recruiting.** The recruitment strategy should ensure there are effective controls including recruiting:

- to match CNNIC geo-demographic profiles;

- from a wide range of websites – high cash incentives are generally not recommended as they tend to create professional respondents or, worse, outright cheating;
- with offline recruitment, or inviting respondents from offline studies, as a supplement – which makes samples more representative and allows identification to be confirmed;
- to supplement special interest groups (such as regional/rural population via Net Bars);
- to fill gaps such as young, transient people with mobile telephone access;
- with double opt-in; and
- with profiling to include address, telephone/mobile and demographics.

**Survey design.** The design should include researcher involvement, which relates to:

- the need for and nature of stratification;
- quotas on the source of recruitment of those invited to complete the survey;
- questionnaire design;
- limits on questionnaire length;
- limits on frequency of previous participation; and
- the need for a parallel sample, and the appropriateness of the method selected.

**Panel management.** Here there is a need to consider state-of-the-art panel management software and how to control the use of the panelists:

- how frequently they are used;
- the individual profiting of these panelists;
- management of their activity, and the need to replenish and recruit for under-represented groups;
- the selection and management of incentives;
- control and documentation of panelists' involvement in multiple panels;
- isolation of fraudulent respondents;
- updating and removing totally inactive panelists.

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**Analysis and weighting.** Finally, there is a need to consider whether any weighting will be geo-demographic, propensity (including attitudes and behaviour) or some other method such as non-parametric modelling. For example, in China, most panels draw from Tier 1 (e.g., Beijing and Shanghai) and Tier 2 (cities one size down from Beijing and Shanghai) cities but have little or no access to residents of Tier 3 (regional) and Tier 4 (rural). This remains a major challenge to building an online panel that represents the general population of China.

### **Issues in Online Research in China**

**Representation.** Though online research has enjoyed rapid growth in China in recent years and has demonstrated specific benefits, there is no such thing as an ideal approach. In particular, Chinese research professionals are challenged by the question of representation in online. Using quota sampling to obtain a representative national sample is both expensive and time consuming, and when the target population includes smaller cities and rural areas it is extremely difficult to accomplish. Realistically this means that online is much less commonly – probably rarely – used for such studies.

Representation is less an issue in developed markets where online penetration is high – such as Australia (Nielsen Online 2008) and New Zealand (International Telecommunication Union 2007), both at 80% – and in countries where demographic variation is less influenced by geography and therefore more easily accessed online, such as Japan. In developing countries, internet usage tends to be skewed toward the younger, better educated, more affluent and more technologically savvy. As we have seen, China is much more heavily skewed than most.

To counter this, research firms in China often try to draw a stratified sample

that corresponds to basic demographic characteristics such as age, gender and income of the general population. Yet the opinions of such an online sample can still differ markedly from the views held in the general population as a function of the coverage bias on other characteristics for which researchers are unable to control. Careful composition of the online sample or online panel is thus the major issue facing market researchers in China as they attempt to balance cost efficiencies expected from this data channel with the expense of shaping and supplementing the existing panelists to obtain a sample that can provide meaningful results.

**Customer competency.** Increasing internet access and usage in China suggests that the country is well on the pathway to developing savvy customers but may not be there yet. The ability to use new technologies – in this case, digital literacy – is one element in creating customer savvy, but a number of other factors are also involved, including marketing literacy (Macdonald and Uncles 2007).

At the same time, there is a suggestion that an increase in digital literacy is at least correlated with an increase in knowledge on specific topics (e.g., Duffy, Smith, Terhanian and Bremer's (2005) study that found that online respondents were better informed than their face-to-face counterparts on certain health issues). It is possible that online respondents in general could also be more marketing knowledgeable. However, given the young age of so many Chinese netizens it is unlikely they have yet developed true marketing savvy. For example, Chan, Cheung and Tse (2007) report that there is an overemphasis on foreign fashion brands among younger urban buyers due to a belief that because the brands are foreign they are automatically higher in quality.

It would thus be premature to assume that an online panelist in China has the same degree of customer savvy as an online panelist in Australia. This will need

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to be taken into account when constructing an appropriate online questionnaire.

**Appropriate methodology.** While online research in general is viewed as a very reasonable replacement methodology (under the right circumstances) to CATI or face-to-face by Chinese market researchers, online panels require more careful consideration. As we have seen, unusually heavy utilisation of the PC for online gaming, the dramatic take-up of instant messaging for short bursts on the web, challenges with workplace access to the internet for non-work purposes and the very youthful profile of PC web surfers all require an examination of the question “When are online panels appropriate in China?”. The answer: under those situations where a panel can reasonably represent the target consumers, and when the panel is professionally managed, it can certainly be used. To reach key target groups that are underrepresented in a panel, a hybrid or mixed methodology will be more appropriate.

The use of the real-time “river” method, where banner ads or pop-up surveys are placed to collect responses from people visiting particular websites, is one possible means of supplementing special interest groups. However, like other methods it is only as good as the source. Sampling the river of a *single* website is common in China and can be helpful or dangerous depending on whether that one website adequately reflects the variety of individuals interested in the overall topic. There is a further danger in that these respondents have not previously been profiled or opted-in, and are in many ways unknown.

Even more unfortunately, river samples in China are sometimes drawn from marketing panel sites, whose primary purpose is to advertise and sell products. Marketing panels are less concerned about where the respondents come from, and as a result the panels are simpler and cheaper to maintain – particularly as basic quality checks such as the time it takes for

respondents to complete questionnaires are usually not conducted. These panels are further skewed by the fact that their panelists are already predisposed to an array of advertising and sales activities and so are not necessarily representative of typical online users. The fact that marketing panels tend to pay high incentives means an additional bias toward panelists who are in it to make quick money: younger, time richer, cash poorer.

In any event, the speed with which the Chinese market is likely to replace the PC with the third screen suggests that online questionnaires will need to be short and sharp for this market and easy to read and respond to using a mobile. Mobile phones will increasingly be used to access younger respondents, those who are transient and those without fixed lines or internet access. In this, China may lead more developed countries. What better place to experiment with length and format than among a people so energetic, so curious and so future oriented?

### **Some Key “Do”s for Online Research in China**

**For online research in general.** Here are what we believe to be the major “Do”s of online research in China.

1. Be clear as to the extent that true representativeness matters in your sample. If your research issue can be addressed by surveying young gamers in Net Bars, online can be a wonderfully viable method in China – provided of course you can gain and maintain the gamers’ attention. More upmarket residents of major cities such as Beijing and Shanghai can also be reached online. If you need to study workers in Tier 2 cities, it is definitely possible to use online methods. At this point in time, don’t even think about it for cities smaller than Tier 2 unless your market research firm has the ability to work effectively through local Net Bars.
2. Be aware that cost and time issues may become much greater considerations if you move beyond the more

affluent Tier 1 cities, particularly if you need to stratify on more than the basic characteristics. Don't expect online to automatically be cheaper. Even in Tier 1 cities, the non-youth online audience can be more costly to recruit depending on the particular target population, as many are better off financially than the general population.

3. Be sure your survey is hosted on a Chinese server. With centralised control of the national firewall, there is no way to guarantee unbroken access to material on a foreign server.

**For online panels.** In China as in the rest of the world, there is an obvious need to respond to key client needs. In order for Chinese online research to meet those needs, Chinese panels will have to fulfill the same requirements as elsewhere:

- Representative (represent the population you say you are representing)
- Replicate (provide consistent results from one survey to the next)
- Valid (checked against independent measures to show that the results are accurate)
- Capable of calibration from other methodologies such as telephone or face-to-face
- Increasingly more sophisticated analysis as required by clients, which means there is a need for advanced IP for techniques such as choice models, conjoint analysis, "driver" analysis, advertising effectiveness measurement and brand equity research – all of which require good software but, if the panel is good, provide added value as part of the online methodology
- Innovative, with user friendly questionnaire tools such as flash, visuals and time bars

Key "Do"s for online panels in China are these:

1. Recognise that quality is an end-to-end process, from design to panel management to analysis and weighting. Weakness anywhere in the chain may result in invalid data.

2. Ensure that you know how representative the panel is: the source and type of recruitment and profile of panelists both on the panel in general and in your sample.
3. Check the bona fides of the company creating and maintaining the online panel, should you choose to use one. For accurate and generalisable research results, adherence to QSOAP (Quality Standards for Online Access Panels) international standards is just as important in China as in Australia. There is no need to relax your quality requirements simply because you are conducting research in this rapidly developing nation. Request a response on ESOMAR or QSOAP guidelines.

Importantly, Chinese market researchers will have to come to learn that in designing online questionnaires, the internet is a different medium, and one cannot just transfer paper questionnaires online.

## In Conclusion

Commercially, online research will inevitably grow in China as a result of the benefits it provides to the ultimate clients of research. These benefits include speed, flexibility, cost effectiveness, access to pre-screened target respondents and the ability to expose visuals such as advertising and choice models.

There will be temptations, particularly driven by lower pricing, to convert tracking studies in China to online. This will be feasible (depending of course on the degree to which the targeted population can be reached online) but will require some parallel tracking to assess the need to calibrate to online from CATI or face-to-face responses. There will be different calibration weights required for different categories and types of questions and scales and often for different brands. Much more testing is necessary to identify those types of studies and the categories and types of questions where one can automatically substitute online for traditional methodologies. Further, if the

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use of online in China is extended not only to tracking studies but also to usage and attitude surveys, segmentation research and brand equity studies, it will need to be treated particularly cautiously and use the highest standards of survey design, panel management and analysis.

As with early stages of internet penetration elsewhere, it is more likely that online-only surveys will be most successful when conducted for special interest target groups. Mixed, hybrid methodology will be more appropriate to represent broader population groups where some of the sample is interviewed by CATI, face-to-face, or mail surveys to supplement the online respondents.

The moral of the story is this: with

careful management, stratification and proper weighting, online research in China – whether on its own or as part of a mixed, hybrid solution – has the capability to provide valid data for a population of interest. But here it is a clear case of *caveat emptor*. Remember that China has low internet penetration and skewed internet demographics and that Chinese online research is in the early days. If you do not explicitly control for representativeness, panel management and other quality issues, and if you do not calibrate results as you move from offline to online, you may get a less expensive piece of research in China – but it may not even be worth what you pay for it.

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# Computer-Aided Content Analysis: An Important Weapon in a Marketing Communication Researcher's Arsenal

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## **Abstract**

We trace the history of content analysis and further analyse some contemporary definitions of this subject matter. We also argue that computers can clearly support, be it qualitative or quantitative content analysis, by serving as a repository for coding data and providing power tools for analysing and reporting research. Whilst discussing some key methodological decisions, and software selection considerations, we also re-echo the strength, benefits and limitations of computer-aided content analysis to marketing communication researchers.

## **Introduction**

In many respects, content analysis has served as an important and powerful tool in analysing words, sentences and semantic structures. According to Newbold et al., (2002, p.79), content analysis was introduced as a systematic method to study mass media, especially propaganda, by Harold Lasswell in 1927. However, it proliferated as a research methodology in mass communication studies and social sciences. As a primary message-centred methodology (Neuendorf, 2002), content analysis has been used to study a broad range of texts, from transcripts of interviews to editorial and advertising content of newspapers and magazines. A plethora of research on content analysis in the marketing field has focused on searching for meaning in magazines (see Tse et al., 1989; Gross and Sheth, 1989; Kolbe and Burnett, 1991; Kolbe and Albanese, 1996); best-selling books (Harvey, 1953; Mullins and Kopelman, 1984); television advertisement (Resnik and Stern, 1977; Dowling, 1980), print advertisement (Graham et al., 1993), and travel related websites (Choi et al., 2007; Pitt et al, 2007).

The rise of the World Wide Web, and computer and information technologies in general present content analysts with significant opportunities. Faster computers and more sophisticated software are creating powerful new tools for the analysis of communication messages. At the same time, researchers are gaining access to previously inaccessible or prohibitively expensive data through search engines and electronic databases. Fielden (2002) hinted that analysis of textual data, via a process called text analysis, promises to be important and perhaps commercially more important, than mining of structured, often numeric, data. To date, the use of text mining technologies is on the increase because content strategy has focus on information quality. Against this backdrop, the purpose of this study is three fold. We attempt to coin a more functional definition, provide some key methodological decisions and considerations in content analysis and to re-echo the importance of computer-aided content analysis to researchers.

This paper has some significant contributions to share with content analysts,

researchers, managers and communications experts. Many and varied potential benefits of using content analysis have been registered by both academics and practitioners but the manual application of this research technique has traditionally made its use potentially unreliable and tedious. To content analysts, this paper is reassuring them that computer-aided analysis can minimize both problems. We re-echo that removing the human element in coding maximizes reliability, while the ability to input text into a computer and have it analyzed in a matter of minutes with software removes much of the time and tedium of content analysis. Therefore, content analysts, scholars and marketing communication experts should be able to analyze online marketing communications tools (such as websites, blogs, wikis, podcasting and widgets) and texts (such as advertisement, corporate annual reports, focus group transcripts, newspapers and magazine publicity) and so on with less difficulty.

To achieve our stated purposes, the remainder of this paper is organized as follows. First, some previous definitions of content analysis are provided and analysed. Thereafter, some key methodological decisions and considerations in content analysis are further explained. The paper ends with some discussions of computer-aided content analysis, implications for market researchers as well as its limitations.

### DEFINITIONS OF CONTENT ANALYSIS

Many definitions have also surfaced as there are many researchers interested in content analysis. Some of the definitions include but are not limited to the ones in Table 1.

A widely used definition of content analysis which illustrates the early focus on quantitative analysis was provided by Bernard Berelson. Although this definition is often quoted, it has been found wanting in many respects. First, the word 'objective' is dis-

**Table 1: Various definitions of content analysis**

Author	Definition
Berelson (1952, p.18); Newbold et al., 2002, p.79	Content analysis is described as a "research technique for objective, systematic and quantitative description of manifest content of communication."
Stone et al., (1966, p.5)	"It is any research technique for making inferences by systematically and objectively identifying specified characteristics within text."
Holsti (1969, p.14)	"It is any technique for making inferences by objectively and systematically identifying specified characteristics of messages."
Weber (1990, p.9)	"Content analysis is a research method that uses a set of procedures to make valid inferences from the text."
Berger (1991, p. 25)	"It is a research technique that is based on measuring the amount of something (violence, negative portrayals of women or whatever) in a representative sampling of some mass-mediated popular form of art."
Kolbe and Burnett (1991)	Define content analysis to include the objective, systematic and quantitative description of the manifest content of a communication.
Neuman (2003, p.310)	"A technique for gathering and analysing the content of text."
Neuendorf, 2002, p.9)	"Content analysis is summarizing quantitative analysis of messages that relies on the scientific method... and is not limited as to the types of variables that may be measured of the context in which the messages are created or presented."
Wilson (2006, p.98)	"It involves the analysis of the content of any form of communication whether it is advertisement, newspaper articles, television programmes or taped conversation."

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puted by researchers including Berger and Luckman (1996). Obviously they pointed out that even the most scientific methods of social research cannot produce totally objective results. Second, this definition can also be criticised on the grounds that latent as well as manifest content can be analysed.

Holsti (1969) offers a broad definition of content analysis. Under this definition, the technique of content analysis is not restricted to the domain of textual analysis, but may be applied to other areas. The problem with such a definition is that it opens the floodgates because, in order to allow for replication, a content analysis technique can only be applied to data that are durable in nature. The problem with Berger's definition is that it is too narrow and only focuses on a few things that can be content analysed. In close consonance to Berelson's definition, Kolbe and Burnett's one has been supported by Malhotra and Birks (2006). Neuman (2003) also lists content analysis as a key non-reactive research methodology (i.e., non-intrusive). In his definition, the 'content' refers to words, meanings, pictures, symbols, ideas, themes, or any message that can be communicated. The 'text' also refers to anything written, visual, or spoken that serves as a medium for communication. The problem with the Neuman (2003) and Wilson (2006) definitions is that they are somewhat focused on what can be content analysed. One of the most prominent contemporary researchers using and writing about content analysis is Kimberley Neuendorf. On the other hand, Neuendorf's definition seems to be focused too much on what researchers do in content analysis (methodology) other than what can be done with it.

It can be concluded that the early content analysts tried to define content analysis to meet the standards of the scientific method. They argued for the scientific nature of this analysis by agreeing on some distinguishing characteristics of content analysis such as objective, systematic and

quantitative. For full appreciation of these early definitions see Kassirjian (1971). This seems natural in the sense that much of the scholarship in this area were still embryonic, hence could not justify this research tool as scientific. Therefore, the early scholars in this area tried to look for support to justify the scientific nature of their tool. This, they did by relying on definitions. Consequently, and being mindful of their positions as content analysts, they seem to have chosen words that will help them to meet this objective. On the other hand, the more recent ones have been focusing on the context in which content analysis can be applied. This could in a way indicate that the battle over the scientific nature of content analysis as a methodology has somehow been won. In other words, the discourse as to whether a content analysis is scientific or not has been established. Hence, the challenge for modern content analysts has been "what to" or "what" can be content analysed.

Following the discussions, it is clear that all the definitions considered above have their own weaknesses. However, it is pertinent to note that there are common themes that run through all of them. Some of them have been identified in Table 2. (below)

Taking clues from the above themes and for the purpose of this paper, content analysis can be defined as "a method of gathering and analyzing a text or content of a piece of writing into various groups or categories depending on selected criteria and by systematically identifying specified characteristics or patterns within the text or content in order to predict and make valid inferences from the data." Our motivation for settling on this working definition is that it has some advantages over the previous one in the following ways. It is all round, broader in scope, methodologically-focused, and outcome/result-oriented.

**Table 2: Common themes that run through the definitions**

Subject	Theme
Content analysis is a/it is:	a) "method of identifying text" (Stone et al., 1966)
	b) "research technique for objective, systematic and quantitative description of manifest content" (Berelson, 1952; Holsti, 1969)
	c) "research method of codifying text" (Weber, 1990)
	d) "a research technique" (Berger, 1991)
	e) "consists of gathering and analysing the content of text" (Neuman, 2003)
	f) "is summarising...and may be measured..." (Neuendorf, 2002)

**PURPOSES OF CONTENT ANALYSIS**

Research into the literature reveals the following as purposes of content analysis. According to Neuendorf (2002, p. 52), Berelson (1952) suggested five main purposes of content analysis as follows: to describe substance characteristics of message content: to describe form characteristics of message content: to make inferences to producers of content: to make inferences to audiences of content: and to predict the effects of content on audiences. Carney (1972) broadly agreed with this view. However, he summarises the three main uses of content analysis as descriptive, hypothesis testing, and facilitating inference.

Neuendorf supports Carney's view of media content analysis as useful for facilitating inference even though one cannot directly prove it. Neuendorf further adds that content analysis has some predictive capabilities as well as other specialist uses. Neuendorf (2002, p. 53) concludes that there are four main approaches to and roles of content analysis: descriptive, inferential, psychometric, and predictive.

To Neuendorf (2002), while psychometric refers to specialised medical and psychoanalytical uses of content analysis for interpreting the text of a patient interviews or statements, the three other approaches are highly relevant to social sciences and cultural studies. The first and most basic

role-descriptive, provides an insight into the specific messages and images in discourse and popular culture represented in mass media. The inferential and predictive roles of content analysis—even though they are 'facilitating' rather than conclusive, allow exploration of likely effects of mass media representations on audiences and on societies.

However, the reliability of content analysis for describing mediated discourses, and particularly for drawing inferences or making predictions concerning likely effects of these mediated discourses, depends on the methodology employed. Therefore, some key methodological decisions and considerations in content analysis are discussed under the next sub-headings.

**THE QUANTITATIVE VERSUS QUALITATIVE CONTENT ANALYSIS DEBATE**

Researchers have approach content analysis in different ways, using "different conceptual and methodological tools" (Shoemaker and Reese, 1996, pp. 31). Cooper and Schindler (2003) noted that the breadth of content analysis makes it flexible and wide-ranging tool that may be used as a general methodology or as a problem-specific technique. However, many authors have been silent on whether content analysis as a research strategy belongs to the qualitative or quantitative approach (see Neuman, 2003). Some authors recognise it as quantitative (see

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Bryman and Bell, 2003, p.194; Berelson, 1952); others (see Miles and Huberman, 1994; Boyle, 1994; Tesch, 1990) have positioned it squarely inside the qualitative domain. Shoemaker and Reese added that social scientists taking a behaviourist approach rely mostly on quantitative content analysis, while humanist approaches to media content tend towards qualitative analysis. To them, a social scientist may use both types of research. While Neuendorf strongly advocates that content analysis is purely quantitative, Shoemaker and Reese's categorisation of content analysis into humanist and behaviourist traditions indicate that content analysis can be undertaken using both approaches. The latter hinted that behavioural content analysis is not always or necessarily conducted using quantitative or numerical techniques, but the two tend to go together. Similarly, humanistic content study naturally gravitates towards qualitative analysis. Shoemaker and Reese (1996) further note: "educing large amounts of text to quantitative data... does not provide a complete picture of meaning and contextual codes, since texts may contain many other forms of emphasis besides sheer repetition" (p.32). Commenting on the quantitative-qualitative dichotomy in content analysis, Neuman (2003) hints that qualitative content analysis is not highly respected by most positivist researchers. Nonetheless, feminist researchers and others adopting more critical and interpretative approaches favour it. In a form of a critique, Newbold et al. (2002, p.84) hold the view that quantitative content analysis "has not been able to capture the context within which a media text becomes meaningful." They added that qualitative content analysis examines the relationship between the text and its likely audience-derived meaning, recognising that media texts are polysemic (i.e., open to multiple different meaning to different readers) and tries to determine the likely meaning of texts to audiences. It pays attention to audience, media and contextual factors, not simply the text.

In conclusion, it could be deduced that qualitative content analysis relies heavily on researcher readings and interpretation of text. Its intensive and time-consuming nature is one of the reasons why qualitative content analysis has involved small samples of content. This has been criticised by some researchers as unscientific. In other words, qualitative content analysis is difficult and may be impossible to do with scientific reliability. Quantitative content analysis can conform to the scientific method and produce reliable findings. On the other hand, qualitative analysis of texts is necessary to help understand their deeper meanings and likely interpretations by audiences. It is to this effect that others have argued for its dynamic nature by indicating that it used to be quantitative but in modern times it is gaining currency as a qualitative approach (see Marshall and Rossman, 1999; Cooper and Schindler, 2003; Krippendorf, 2004).

However, in questioning the validity and usefulness of the distinction between quantitative and qualitative content analysis, Krippendorf (2004, p.19) argues that "all reading of texts is qualitative, even when certain characteristics of a text are later converted into numbers." In a less dichotomist view, it can also be concluded from Hansen et al. (1998) and Shoemaker and Reese (1996) that a combination of quantitative and qualitative content analysis offers 'the best of both worlds' and further, that a combination of quantitative and qualitative content analysis methodologies is necessary to fully understand the meanings and possible impacts of texts. In fact, we have taken the same position as Hansen et al and Shoemaker and Reese in this paper.

### **COMPUTER AIDED CONTENT ANALYSIS (CACA)**

Upon the popularization of the General Inquirer content analysis programme by Stone et al. (1966), computer-aided content analysis of texts has gained wider usage. Various computer-aided text analyses has been performed and described

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in different studies. For some examples of its varied applications, see these studies (Weber, 1990; Erdener and Dun, 1990; Wolfe, 1991; Kabanoff, 1996; Pitt et al., 2007, Opoku et al., 2007).

Computer software programmes that are designed to facilitate content analysis have proliferated over the past few years. This has brought in its wake various discussions on this subject matter (see special issue of *Qualitative Sociology*, Vol. 7 (1-2), 1984). Using computers to facilitate qualitative data analysis has been given various names such as computer-facilitated data analysis (see Wolfe et al., 1993), computer-assisted data analysis (see Maclaran and Catterall, 2002), and computer-supported data analysis (see Romano et al., 2003). We choose not to engage ourselves in this 'war of words' but to stick to computer-aided content analysis (CACA) in this paper. We also add that computers can clearly support, be it qualitative or quantitative content analysis, by serving as a repository for coding data and providing power tools for analysing and reporting research. This remains the position of this paper.

### **STRENGTHS OF CACA**

A way to understand the contribution of computers to content analysis is to contrast computer-aided and manual approaches (Kelle, 1995). The contribution of computers to data analysis has been recognised in the following ways.

First, computerization allows the manipulation of large data sets that otherwise would have been difficult doing manually. The complexity and potential interrelationships of concepts increase exponentially with the quantity of data. Software programmes offer features for organizing, searching, retrieving and linking data that renders the process of handling a large project much more manageable. For instance, Lissack (1998) described how parsing software can be used to sample concepts from a large corpus. This sampling approach allows the researcher to

content analyze a reasonable amount of data representative of the initial corpus.

Second, computers can help reduce the time and cost of undertaking content analytic projects. Time savings stem from the minimization of the coding task, the reduction in coder training, the elimination of inter-rater checks, and the ease of running multiple analyses (Carley, 1997).

Third, the use of computers addresses several of the reliability concerns associated with manual coding. Coding rules are made explicit which ensures reliability and comparability of results across texts (see Morris, 1994).

Finally, one of the most exciting developments of the past few years in CACA research is the use of network concepts. New linkage features in computer aided content analysis exists between text memos, and codes such as hyperlinks and graphical tools. This has been applied in the areas of theory building and hypothesis testing. By integrating qualitative and quantitative analysis in CACA, information can be retrieved in meaningful ways that allows for the mergence of grounded hypotheses (Gephardt, 1993; Wolfe et al., 1993). These developments by CACA seem particularly useful because it has helped to diffuse concerns about the decontextualization of results that is inherent to a methodology based on coding and retrieval (Dey, 1995; Prein and Kelle, 1995).

### **CHOOSING A CACA SOFTWARE**

An array of programmes abounds with breathtaking pace of future introductions to aid CACA. However, several interesting and important types of CACA software have been proposed. Tesch (1990; 1991) brought up a typology based on the two dimensions of methodology and technology that has been adapted by several authors (see for e.g. Wolfe et al., 1993; Roberts, 1997) by making a blurring distinction between commercial and academic software. Weitzman and

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Miles (1995) established a practical list of types of CACA packages, ranging from simple to more complex programmes. Catterall and Maclaran (1998) also came out with seven categories (text retrievers, textbase managers, code and retrieve programmes, code-based theory builders, conceptual network builders, content analysis programmes and artificial neural network programmes). Recently, it appears many programmes share common features thus narrowing the distinction to three general programme types. These are: text retrieval, text analysis, and database manager programmes.

In selecting software for content analysis, White et al., (2001) have also offered the following guidelines:

- The software must be able to automatically identify words in a text and produce a frequency list of terms, counting at least occurrence and frequency within each text.
- The software must be able to identify frequently occurring words in the texts and be able to identify synonyms of the related words.
- The software must have its own dictionary which can further enrich the dictionary build-up.
- The software must be able to compare the batches of texts to identify differences and similarities within the text documents.
- Stop words and other items must be able to be excluded at the user's discretion.
- The software must be able to establish relationships among words or categories as well as identify similarities using hierarchical clustering and multidimensional scaling analysis.

In sum, there are many products on the market which are designed to make content analysing easier. Each product has its own capabilities and level of performance. It is therefore up to an effective researcher not only to choose the best out of the pile of content analysis software on the market, but to master its application in order

to achieve better results. For appreciation of commonalities, differences and limitations of some earlier text analysis software see Alexa and Zuell (2000).

### **LESSONS TO BE DRAWN FROM THIS PAPER BY PRACTISING MARKETING COMMUNICATION RESEARCHERS**

The trend in content analysis is toward increasingly employing computerised management of text. This evolution has been welcomed as an important development with the potential to improve the rigour of analysis in this information age. However, the drift of computer supported-content analysis has been on the word as unit of analysis (Stone, 1997; Péladeau, 2003) rather than on sentences (Gottshalk, 1997) or semantic structures (Roberts, 1997) because word frequency analysis of text can add new insights into marketing communications. Two major assumptions underlie the validity of counting word frequencies in marketing communications. Firstly, it assumes that the language people use reflects what they are, intending to do, concerned with or focusing on. This presupposes that the words contained in communication tools or texts reflect what organisations or designers think as well as what the important attributes or characteristics of themselves are. The second assumption is that the relative frequency with which particular words are used on a medium is an indication of how the message sender is focusing on those words to develop a particular brand personality. Taking into consideration the importance of brand personality positioning in today's fiercely competitive business environment, CACA affords marketing communication researchers the ability to assess the words used in positioning a brand, and how they are mirroring themselves in the minds of stakeholders with ease. Content analysis of textual information on the web, for instance, could also be compared with other communication media such as publisher's blurbs, reviews, commentaries, press reports and releases, and broadcast and print advertising in

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order to determine the extent to which an organisation communicates consistent brand personality messages across all media. In addition, this tool can empower marketing communication researchers to analyse intended brand personality of organizations relative to their competitors, as well as relative to benchmarks at a very low cost. It is our firm belief that CACA is a means to an optimal approach to conducting sophisticated content analysis which will benefit organisations in terms of cost, flexibility, and reliability and at the same time maintain satisfactory levels of validity.

#### **LIMITATIONS OF CACA**

Despite the above advantages, users of CACA software are still confronted with some challenges. The debate regarding manifest versus latent content cannot be left out (Woodrum, 1984). Although CACA software is increasing in sophistication, Morris (1994) revealed that measuring content with computers will miss some latent aspects within texts such as tone or irony of expression. Unfortunately, human coders still also exhibit low reliability for

latent content. Further, it could be argued that the significance of these problems may be over-estimated for business texts appearing in corporate documents such as annual reports and websites. These documents are usually written for clarity because they are read by people from around the world. Still, validity may be particularly critical issue when dealing with metaphors, homonyms, colloquialism (Carley, 1997), and other aspects of natural language (Morris, 1994).

In terms of implementing CACA, three issues should be borne in mind. Obviously and in general terms, researchers should avoid the over reliance on a computer and the justification fallacy of using a computer programme (Tallerico, 1991) because computerization may never replace human judgement in all cases. Second, retrieval capabilities may be insufficient and limited in certain software categories (Gephardt and Wolfe, 1989). Finally, the fragmentation of the field of CACA software and its proliferation on the market make the choice of the appropriate package difficult.

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# Super crunchers – how anything can be predicted

Ian Ayres (2007) New York: Bantam Books / London: John Murray Publishers

## Reviewed by Michael Milgate

This exposition of how businesses are able to use the large databases available to them to both predict and understand consumer behaviour. Ian Ayres argues that the revolution in data storage has made large database interrogation possible for all manners of businesses. His central premise is that statistical analysis in field after field is uncovering hidden relationships among widely disparate kinds of information that traditional experts in a single field would never consider.

The database decision-making tools he utilises will be familiar to many researchers, namely randomised testing and regression, but researchers will be surprised and entertained by his case histories, which cover fields as diverse as politics, education and medicine.

Ian Ayres is both a professor of law and management at Yale University. He has produced a book that makes the world of data mining easily accessible to the non-specialist. Using a wonderful range of interesting examples he shows, for example, that it is possible to predict whether or not a wine vintage will be good or bad, not by asking a wine expert, but by plugging the weather statistics into a very simple regression equation. This book is for those of you who, like me, are fascinated to learn that for every centimetre of winter rain the expected price of wine increases by U\$0.00117.

Researchers will enjoy and learn from this book, as Ayres shows how a new breed of number crunchers, who he calls “super crunchers,” have emerged in many fields, including marketing services, and seek to discover empirical correlations between seemingly unrelated things. He suggests that this type of analysis is much better at predicting the market potential of untried and immature products than are so-called experts. He makes a strong and welcome case for the central role of empirical data in decision-making. He suggests that we are in a historic moment where intuitive and experiential expertise is losing out to number crunching as businesses increasingly rely on large databases that can be speedily interrogated.

He makes interesting connections to some of the most influential marketing books of the last few years. He shows, for example, how the use of this type of analysis lets sellers access the ‘long tail’ identified by Chris Anderson, through the use of ‘collaborative filters’ such as those that make recommendations when you buy a book from Amazon.com or identify music you like to hear on Pandora.com. Interestingly, he sees these collaborative filters as examples of James Surowiecki’s “Wisdom of Crowds” in which the data collected from people like you can make accurate predictions of what you might like to buy. This is the wisdom of crowds that goes beyond the conscious of individual members to see what works at the unconscious level. In his world of super crunching, organisations that use this approach may be able to make more accurate predictions of how individual will actually behave. This goes to the heart of some of the key issues that Wendy Gordon, among others, has identified as facing our profession.

His final position is that the rise of super crunching does not mean the end of intuition or expertise, but rather that decision makers in the future will increasingly need to toggle between their intuitions and data-based decision making. Their intuitions will guide them to ask new questions of the data, while super crunching will facilitate hypothesis testing. He envisages a Bayesian future in which we toggle back and forth between intuition and statistical predications, updating predictions over time because of the new information from the wealth of available databases and the ease with which we can conduct online randomised tests. The future, he suggests, belongs to those who can inhabit both the world of intuition and the world of data. That sounds like a rosy future for market research to me.

I recommend this book to all who wish to see how the world is becoming a rich data mine and who want to start liberating the value that is hidden in that mine. In short, this book is for those who enjoyed *Freakonomics*. It will similarly entertain and educate. You will be fascinated by questions such as “Why pilots readily adopted flight support software but medical practitioners have been slow to utilise evidence based medicine? The answer: ‘Pilots go down with their planes.’

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