



**Australian Government**

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**Department of Communications,  
Information Technology and the Arts**

**The social impact of mobile phone use in Australia:  
a review of data sources**

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## Introduction

More and more mobile phones are in use in Australia and are having a pervasive impact on Australian society. Because of this, there is a general and growing interest in industry, academia and government in the impact of mobile phone usage on the people and institutions of Australia—from public policy, economic and social impact viewpoints.

The Australian Mobile Telecommunications Association (AMTA) and the Academy of the Social Sciences in Australia (ASSA) have produced a research strategy to assess the social impact of mobile phones on Australian society and institutions.

The Department of Communications, Information Technology and the Arts considered it would be useful to complement this research, and other research under discussion in the area, by providing a preliminary scan of the available data and information on mobile phone usage in Australia and internationally.

This preliminary review has focused mainly on information on the pattern of Australian mobile phone usage obtained from major public sources. This is because an understanding of this data is a prerequisite for the other areas of research, and because a fair amount of data is available.

Another focus was on information available from a small number of major international sources and media reports.

Our intention was to produce an overall sketch of the available information, so the review does not attempt to be comprehensive.

We decided to focus on the implications of trends in the use of mobile phones for households and individuals. This partly reflects the lack of available data on the patterns of mobile phone usage by business and government (which can have significant social impacts), and partly the need to contain the scope of the scanning exercise.

We did not include references to reports on mobile phone pricing, even though pricing is a significant influence on take-up, and a focus for consumer complaints. This was because we needed to contain the scope of the exercise, and because mobile phone pricing is mainly commercial in aspect.

This preliminary scan is very much a work in progress. It is presented for discussion and improvement, and is unlikely to cover the full range of potential sources.

We invite stakeholders to advise if any significant references are missing from the scan, or to comment on anything not adequately covered. Contact:

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### **Structure of the report**

This paper reports on available information on Australian mobile phone users against four broad themes identified by AMTA and ASSA:

#### 1. The structure of social groups and the impact of mobile phones

The key research questions in this theme centre around the contribution of mobile phones to:

- users' sense of identity;
- validation of users' identity;
- social power and influence;
- social cohesiveness and social capital;
- competitive advantage in economic environments;
- how to map social groups; and
- substitution for communication media.

It appears that only limited information on research in Australia into these questions is publicly available over the Internet—see the section below on 'Academic research in Australia'. Many of these themes are, however, mentioned in media reports on international research and studies. See the section 'Themes in international media coverage' below.

#### 2. Work, home and leisure

The key research questions on this theme centre around the impact of mobile phones on:

- the organisation of paid work;
- the interface between work and home;
- isolation and the need for greater social connectedness;
- vertical and horizontal social mobility and etiquette; and
- social responsibility.

It appears that almost no information on research into these questions is publicly available over the Internet in Australia. Some of these themes are, however, mentioned in media reports on international research and studies. See the section ‘Themes in international media coverage’ below.

### 3. Social innovations in digital content

The key research questions for this theme centre on:

- key factors in promoting content innovation;
- social, technological and economic barriers to innovation;
- customising innovations for major geographical and demographic sectors; and
- how industry can address consumer requirements.

Two studies were found on the Internet on Australian consumer interest in the development of future mobile phone services. Table 1 outlines these two studies.

**Table 1**

<b>Research sources</b>	<b>Title of source</b>	<b>Country/year(s)</b>	<b>Annotation/comment</b>
Ericsson	Mobile Telephone Consumer Surveys	Australia 2002 and 2004	The two surveys set out to determine what Australian consumers want from telecommunications technologies.
Allen Consulting Group for AMTA	The Economic Significance of the Australian Mobile Telecommunications Industry (September 2004)	Australia 2004	Industry Initiatives and Future Directions chapter outlines technological innovations and industry initiatives.

#### **Ericsson survey**

In May 2002, Ericsson announced it had conducted a 70-question survey of 2000 urban-dwelling respondents which set out to determine usage and attitudes to IT and telecommunication technologies and to understand what Australian consumers were seeking from future mobile phone services.

On 4 August 2004, Ericsson provided the key findings from a survey, of nearly 2000 selected representative metropolitan respondents across all states, which had been conducted in February and March 2004.

The title of the press release was ‘Ericsson survey shows tech savvy population and strong desire for broadband’.

The section on mobile services noted that overall interest had increased since the 2002 report.

The top service remains the emergency locator. Other services of interest were alerts, positioning (mapping) services, friend locator services and video telephony.

The study reported an increase in weekly SMS usage—from 54 per cent in 2002 to 69 per cent in 2004—and a slight drop in interest in financial and transactional services.

(NB The full survey reports are the intellectual property of the Ericsson Consulting Service.)

### **Allen Consulting Group study**

*The Economic Significance of the Australian Mobile Telecommunications Industry* (September 2004), a report produced for AMTA by the Allen Consulting Group, has a chapter titled 'Industry initiatives and future directions'.

The chapter outlines technological innovations (digital convergence, MMS and 4G technologies), new and emerging technology (wireless technologies for personal and business applications) and industry initiatives.

Media reports on international research on these questions are included in the section on international research.

One report which has forecast some demand trends is the Mobinet 2004 Index, which reports on global trends in mobile phone usage and presents regional data for 'Other Asia', which includes Australia.

Data would probably be available commercially for Australia from this source. For more detail, see the section 'Themes in international media coverage' below.

#### **4. Patterns of use of mobile telecommunications**

The key research questions grouped in this theme centre on the key demographic characteristics of mobile phone users, the nature of their mobile phone usage, whether existing data can be used or new research needs to be commissioned, and what are the social and cultural considerations that shape mobile phone take-up and use.

### **Commercial surveys of Australian consumers**

The two main commercial sources of data on Australian mobile phone use and consumers, Roy Morgan and ACNielsen, provide a reasonably comprehensive picture of Australian users of mobile phones.

Understandably, the information is from a commercial perspective and is focused mainly on respondents as consumers and users of technology.

The use of respondent characteristics would allow data to be generated on use and payments by age, income, location and welfare dependence. There

is some indication of the take-up of technology by users, such as users of SMS and WAP applications.

Roy Morgan provides a general indication, through an attitudinal question, of what mobile phones are used for (social purposes, business, etc). The data from this question could be used to generate useful information on motivations for use of mobile phones by demographics. It could, by extension, give some indication of the social impact of the mobile phones on the community.

There appears to be little direct information on who contacts whom and why, or about connectedness (use in social activity, expansion of social networks, group participation/facilitation).

**Table 2**

<b>Research sources</b>	<b>Title of source</b>	<b>Country/year</b>	<b>Annotation/comment</b>
Roy Morgan	The Roy Morgan single source dataset	Australia 1999 to 2003	Provides extensive data on household usage of, and individuals' attitudes to, mobile phones which can be analysed by demographics to infer usage patterns for different categories of users. Time series means trends over time can be analysed.
Nielsen Media Research	Nielsen Media Research's Panorama Service	Australia Panorama Survey 5 2004 is the fifth annual Panorama survey	Provides useful data on household usage of mobile phones which can be cross classified with standard demographics and marketing profiles. Time series means trends over time can be analysed.
Sweeny Research and Spin Communications	The Spin Sweeny Report 2003: the Definitive Lifestyle Guide to 16- to 28-year-olds in Australia	Australia 2003	Likely to include data on Australian youths' attitudes to, and use of, mobile phones. Targeted mainly at marketers.

The Roy Morgan Single Source dataset provides data from 1999 to 2003 on usage of mobile phones:

- summary of ownership and usage;
- length of time mobile owned;
- mobile phone services used in the last four weeks;
- usage of WAP phone in last four weeks;
- types of SMS messages received in the previous four weeks;
- whether received bill or prepaid;
- total amount charged for access fee;
- total amount charged for calls;
- other services charged for;
- monthly costs of mobile phone; and
- the value of prepaid card bought.

The survey also provides information on user attitudes to mobile phones. Respondents were asked to indicate whether they agreed with 18 statements about mobile phones. The statements cover the need for a mobile phone to juggle work and personal life; for personal or family security; for business purposes; for coordinating a social life; for access to the Internet; and for time management.

The dataset does not provide information directly on the purposes that mobile phones are used for (i.e. for social networking or work purposes, who communicates with whom and how often). However, responses on people's motivations for using mobile phones could be used to categorise users by reasons for use. They could be analysed by using demographics to infer usage patterns for different categories of users.

Respondents have been characterised by age group, gender, income, region, annual income, education, work status, occupation, household characteristics and government benefits received.

The dataset is based on unit record data for 25 000 households, each year collecting information on general demographics as well as telephone usage etc. It is believed to be of sufficient depth to allow reasonable analysis to be conducted. Importantly, the dataset is a time series that would allow trends over time (1999 to 2003) to be detected.

Time series: annual reports from 1999 to 2003

Frequency: data provided annually

Availability: The database is not publicly available and must be purchased commercially

Nielsen Media Research's Panorama Service conducts surveys for 40 weeks of the year. They are based on a whole range of categories including questions on mobile phones.

Panorama is a multimedia and marketing information database of information collected from people 14 years and over nationally through a combination of face-to-face interviews and self-completion diaries. The responses from these surveys are released 10 times a year. Among the questions in this survey were:

- Do you own a mobile phone?
- Who pays your mobile phone bill?
- Which company is your service provider and brand of mobile?
- Do you have message bank/voicemail?
- How many calls were made in the past seven days?
- Is the mobile phone used for mainly business or personal calls?
- Have you ever used any of the following prepaid products?
- Which additional services do you use for your mobile?
- What is your mobile phone bill per month? and
- What types of SMS/text messages have you received in the present month?

This information can be cross-classified with standard demographics and marketing profiles such as area, age and sex, occupation, income, education, marital status, household size, nationality and languages spoken, as well as media consumption, attitudes, sports interests, and product consumption. Importantly, as there is a time series, trends over time could be determined.

Time series: Panorama Survey 5 2004 is the fifth annual Panorama survey produced. Not all surveys will necessarily include all of the questions listed above.

Frequency: Annually, six-monthly and quarterly

Availability: The database is not publicly available and must be commercially purchased.

Nielsen Media Research has also conducted a survey with seven- to 13-year-olds that included mobile phone questions.

The Spin Sweeny Report 2003: The Definitive Lifestyle Guide to 16-28 Year Olds in Australia<sup>1</sup> provides data on the attitudes, values and aspirations of Australia youth (Generation X and Y). The report found that about 88 per cent of those aged between 16 and 28 now own mobile phones.

Given the pervasive impact of mobile phones on Australian youth, their attitudes to and use of mobile phones are likely to be featured in the report. The report is targeted mainly at marketers and is described as an annual.

The report is based on qualitative research and ethnographic research with 12 focus groups, 20 in-depth interviews and 20 lifestyle profiles, quantitative research with a nationally representative survey of 1000 16- to 28-year-olds and an online survey of 100 opinion leaders.

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<sup>1</sup> A description of the report is available at <http://www.sweenyresearch.com.au> (viewed March 2005)

McNair Ingenuity Research<sup>2</sup>, in a January 2003 survey, reported on Australian usage rates for mobile phones by sex, income and age, and on SMS usage patterns. The summary findings were that:

- Mobile phones are more commonly used by men (who are 30 per cent heavier users of mobile phones than women) and, in particular, young affluent men.
- Most people aged from 18 to 29 use a mobile phone daily and 95 per cent of 18- to 29-year-olds have tried one.
- A quarter of the people living in households with income of less than \$50 000 per annum before tax have never used a mobile phone, compared to 12 per cent in households with incomes of \$80 000 or over.
- On a typical day, high income earners are more than 60 per cent more likely to use a mobile phone than lower income earners.
- Approximately a third of Australians are regular users of SMS text messaging, and one in six sends SMS messages every day.
- Text messaging is the domain of the young: on an average day in Australia, less than a quarter of Australians will send a text message, and only three per cent of people aged 60 and over will use SMS, but nearly two-thirds of people aged 18 to 29 will use SMS.

McNair Ingenuity Research surveys over 2000 adults and 1200 children every year for the Australians Today Consumer Insights research program. The results above come from the Autumn 2002 wave of the research. McNair Ingenuity Research are audited and accredited by Interviewer Quality Control Australia (IQCA), the industry watchdog for survey quality.

The 'Kids are calling' section of the McNair Ingenuity Research Australian Kids Consumer Insights (April 2003) reported on children's use of mobile phones. The summary results of the survey were that:

- One in four children aged from six to 13 now have a mobile phone.
- More than 90 per cent of children aged from six to nine have used a mobile phone, usually one belonging to their parents.
- As children get older more of their friends have mobile phones which the children sometimes use, and over a third of children aged from 10 to 13 have their own mobile phone.
- Young girls are more likely to use a mobile phone than boys of the same age, and are significantly more likely to have their own mobile phone.

This topic was included in the February 2003 wave of the ongoing Australian Kids Consumer Insights research program. The survey was conducted on 525 households by a combination of telephone interview and a self-completion survey.

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<sup>2</sup> A summary of the report can be found at [www.mcnairingenuity.com/consumer%20insights/social/Non%20SMSers%20on%20the%20outside%20January%202003.htm](http://www.mcnairingenuity.com/consumer%20insights/social/Non%20SMSers%20on%20the%20outside%20January%202003.htm) (viewed March 2005)

The results above were provided by 333 children in those households, spread across Australia. The initial interviews were conducted by trained interviewers according to standards set-out by Interviewer Quality Control Australia. A summary of this report can be accessed at Kids, Kids are Calling.<sup>3</sup>

Mobinet Index 2004 provides a report on global high-level trends in mobile phone usage. Data for Australia was collected and would probably be available commercially. See the section on media reports on international research for more on this subject.

### Australian Bureau of Statistics

Australian Bureau of Statistics (ABS) information is limited in its application and is mainly restricted to the characteristics of households with mobile phones; household use and household expenditure on mobile phones; and the number of mobile phone users in Queensland.

**Table 3**

<b>Research sources</b>	<b>Title of source</b>	<b>Country/year</b>	<b>Annotation/comment</b>
Australian Bureau of Statistics (ABS)	Household Use Of Information Technology— Cat No 8146.0.	Australia 2003	Provides data on household access to mobile phones and proportion of employees who work from home that use mobile phones.
ABS	Household Telephone Connections Queensland October 2003— Cat No 8159.3.	Australia 2003	Provides data on Queenslanders who use a mobile phone. Usefulness depends on how representative Queensland is of Australia.
ABS	Household Expenditure Survey, Australia: User Guide additional information	Australia 1998/99	Provides data on household expenditure on mobile telephones and mobile telephone accounts.

‘Household Use of Information Technology’—Cat No 8146.0 2001-02.

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<sup>3</sup> [www.mcnairingenuity.com](http://www.mcnairingenuity.com)

- Table 2.5 ‘Household Technologies 2002’ provides data on household access to mobile phones by type of household, income and broad region (state/territory and metropolitan/non-metropolitan).
  - Comparison figures for 1998 and 2000 are set out in Table 1.7 ‘Households with Mobile Phones’ in the publication for 2000.
- Tables 7.3 and 7.4 ‘Technologies Used to Work from Home 2001 and 2002’ provides the proportion of wage and salary earners with agreements with employers to work from home that use mobile phones for this purpose by age, gender, state/territory, metropolitan ex-metropolitan and educational attainment for reference years 2001 and 2002. The inclusion of mobile phones in the survey suggests it is seen as one of the main technologies involved in working from home.

‘Household Telephone Connections Queensland October 2003’—Cat No 8159.3. This publication provides data in:

- Table 10 ‘Whether persons (18 years old and above) had or did not have the use of a mobile phone by statistical regions in Queensland (11)’—this table provides numbers of mobile phone users and non-users by region; and
- Table 11 ‘Persons (18 years old and above) who have a mobile phone by age, sex and telephone connections’—this table provides numbers for mobile phone users by a few demographics.

The usefulness of this data depends on how representative Queensland is of Australia, and whether it can be used as an indicator for Australia as a whole.

‘1998/99 Household Expenditure Survey: Detailed Expenditure Items’—Cat No. 6535.0, published September 2000, provides household expenditure on goods and services by household expenditure classification (HEC) by gross income quintile and state/territory. Expenditure on mobile phones is not specifically included in the publication but is available under a more detailed classification that is outlined in ‘Household Expenditure Survey, Australia: User Guide Additional Information Appendix 3 Household Expenditure Classification’—Cat No. 6527.0. In this publication:

- ‘Tools and other household durables not elsewhere classified’ nec 07051199’ includes a separate category 0705119901 for mobile phones (purchase).
- ‘Telephone charge account 08010301’ includes a separate category 0801030102 for mobile telephone accounts.

Expenditure items can be cross-classified:

- at the household level by geography, dwelling type, household demographics, labour force, educational attendance and health/disability; and

- at the personal level by geography, demographics, labour force status, education attainment, health/disability and income of persons both for households and individuals.

## Information on Australian telephone subscribers

The Australian Competition and Consumer Commission (ACCC) in its ‘Mobile Services 2003: An ACCC Discussion Paper, April 2003’ provided information on the number of mobile telephone subscribers and growth. Data for 2003 was provided by industry.

The Australian Communications Authority (ACA) in its ‘Telecommunications Performance Report 2002/03’, released in late 2003, has a chapter on mobile telecommunications services, which reported on trends in 2002–03 including SMS, customer churn, industry performance and benefits to consumers, consumer satisfaction, supplier behaviour and industry initiatives.

The ACA also produces a regular consumer bulletin that reports on developments in the industry. Issue 25—Winter 2004, reported on a new project: ‘Vision 20/20: Future Scenarios for the Communications Industry—Implications for Regulation’ that developed 2020 scenarios that try to envisage the environment our communications industry may operate in and what challenges it may face.

The OECD Communications Outlook 2003 provided data on mobile prepaid subscribers as a percentage of all subscribers in Australia 1999–2003<sup>1</sup> and mobile penetration in selected OECD countries, including Australia, from 1996 to 2001.

The Australian Communications Authority (ACA) provides advice so consumers can determine the most suitable form of mobile phone contract with a view to reducing debt.

## Industry statistics and research

### Australian national mobile telephone carriers

Extensive data on Australian mobile phone subscribers is collected by the major service carriers. Some of this data is made publicly available in the annual reports of the major carriers (Telstra, Optus, Vodafone Hutchison and Virgin Mobile), which are available on the Internet.

The information provided allows some of the characteristics of the carrier's subscribers to be determined, such as the operating system used, the nature of contracts (prepaid versus postpaid) and average revenues per user (prepaid and postpaid).

This information can be combined to produce a general picture of Australian mobile phone subscribers which could be used as a basis for further research. In particular, it would be useful to have an idea of the rate of take-up by consumers of particular mobile phone technologies, which could be dissected by demographics.

In addition, to this publicly available data, the carriers would have further extensive unpublished information available on consumers.

'The Economic Significance of the Australian Mobile Telecommunications Industry (September 2004)' produced by the Allen Consulting Group for AMTA included section 3.2 on 'subscriber growth and characteristics'. This section covered:

- subscriber growth in Australia;
- the mobile telephone growth rate;
- numbers and proportion of prepaid subscribers and the growth of SMS; and
- trends in international mobile markets, included a comparison of Australia with the international mobile market.

A Telstra white paper 'Mobilising for a competitive advantage: How enterprises can benefit from mobility solutions' (November 2004)<sup>4</sup> is a study of Australian business that found 3G and other technologies producing cost-effective mobile access devices will provide small business with competitive advantage. The paper provides a number of case studies of organisations that are achieving benefits through enhanced productivity through the implementation of mobility solutions.

Budde.com<sup>5</sup> offers an annual report for sale entitled 'The Australia Mobile Communications and Mobile Data Market' (the latest available is for 2004–05). This report provides industry information, including that on subscribers, which would be useful as a base for research on the impact of mobile phones. The information in the report covers:

- market and industry analyses, trends and developments;
- facts, figures and statistics;
- industry and regulatory issues;
- research, marketing, benchmarking;
- major players, revenues, subscribers, prepaid;

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<sup>4</sup> [www.telstrabusiness.com/assets/downloads/TelstraMobilisingCompetitiveAdvantage.pdf](http://www.telstrabusiness.com/assets/downloads/TelstraMobilisingCompetitiveAdvantage.pdf) (viewed March 2005)

<sup>5</sup> <http://www.budde.com.au>

- spectrum auctions, developments, government policies;
- infrastructure, GSM, CDMA, 3G.
- mobile data-to-market issue, paging, dedicated services;
- SIM, SMS, MMS, GPRS, EDGE, WAP, M-Commerce;
- telemetry, location services, Bluetooth, PMR, TMR; and
- mobile satellite services.

Budde.com also offers information and commentary on global overviews, statistics trends and developments.

## Academic research in Australia

The scan through the Internet revealed some academic research on the social impact of mobile phones. There is, however, likely to be other research either happening already or upcoming.

**Table 4**

<b>Research sources</b>	<b>Title of source</b>	<b>Country/year</b>	<b>Annotation/comment</b>
Australian Journal of Emerging Technologies and Society (AJETS)	AJETS Journal	Australia Three volumes per year.	AJETS aims to promote discussion of the role of technology in society from a social, behavioural sciences and humanities perspective.
Christine Satchell and Supriya Singh of RMIT University and Smart Internet Technology CRC	User Problems— Design Solutions Swarms for Mobiles	Australia 2004	The report is a qualitative study into the impact of mobile phones on youth culture which reported six major emerging themes.
Trans/Forming Cultures, a Key University Research Centre in Communication and Culture, UTS	Proposed research into the use of mobile telecommunications by young people in New South Wales.	Australia Proposed to occur in 2004 and 2005	The research is planned to develop an understanding of the different ways young people in NSW regions use mobile communications.

<b>Research sources</b>	<b>Title of source</b>	<b>Country/year</b>	<b>Annotation/comment</b>
Mary and Des Power of Bond and Griffith Universities	Everyone Here Speaks TXT: Deaf People Using SMS in Australia and the Rest of the World	Australia March 2004	The research highlights the adoption of text messaging by the Deaf/deaf community and the advantages of modern mobile phone technology for them.
Louise Horstmanshof Griffith Institute for Higher Education at Griffith University	Using SMS as a way of providing connection and community for first year students	Australia June 2004	This is a study of SMS text and its affect on university students forming social groups.
L Horstmanshof and M. Power: Bond University	Keeping and Supporting Relationships through SMS text messaging	Australia June 2004	This is a study of SMS text and its affect on forming social groups: the Deaf/deaf community
C. Satchell, S Singh, and J Zic of Smart Internet Technologies CRC	3G Multimedia content production as social communication	Australia 20 August 2004	Study of the impact of 3G services on social communication
Associate Professor Simon Chapman and WN Schofield of the Department of Public Health and Community Medicine, (UNSW)	Lifesavers and cellular samaritans: emergency use of cellular (mobile) phones in Australia	Australia 1998	Report presents the results of a national survey of Australian mobile phone users that found there were benefits from the use of mobile phones in rapidly reporting emergencies.
Pam Coutts of the Centre for Internet Research at the University of Adelaide	Banking on the Move— Characterising User Bottlenecks for M-Commerce Uptake	Australia January 2002	The report is an initial market profile survey on the potential for m-commerce take up.
Pam Coutts, Kate Alport, Reg Coutts and David Morrell of the Centre for Internet Research at the University of Adelaide	Beyond the Wireless Internet Hype—Reengaging the User	Australia 2003	The report examines the reluctance of consumers to adopt the new generation of Internet enabled mobile phones despite their widespread use for voice and messaging.

Research sources	Title of source	Country/year	Annotation/comment
S Tjong, I Weber and J Sternberg	Mobile Youth Culture, Shaping Telephone Use in Australia and Singapore	Australia July 2003	A cross-cultural study comparing the key cultural and economic factors shaping the adoption of mobile phone technology.
Australian Psychological Society	Psychosocial aspects of mobile phone use among adolescents	Australia November 2004	Report covered safety issues, family relationships, peer relationships and financial issues.
Dr J Phillips and Ms A Bianchi, School of Psychology, Psychiatry and Psychological Medicine, Monash University	Psychological Practices of Problem Mobile Phone Use	Australia March 2005	The study is an assessment of why some people are more likely to use mobile phones inappropriately.

The Australian Journal of Emerging Technologies and Society (AJETS) is a multi-disciplinary, peer reviewed journal, focusing on the complex relationship between science and technology and their wider socio-cultural contexts. AJETS is designed as a forum for informed discussion and debate about the role of technology in society, drawing on a variety of viewpoints from all branches of the social and behavioural sciences and humanities.

The second journal contained an article, 'Preference for SMS versus telephone calls in initiating romantic relationships'<sup>6</sup> by Ruth Byrne and Bruce Findlay. This study examined sex differences in the likelihood of initiating first moves (toward relationship establishment) or first dates via short message service (SMS) text messaging and telephone calls. The sample was 159 females and 107 males, with a mean age of 28 years. They completed an on-line self-report questionnaire that assessed relationship initiating behaviours.

Christine Satchell and Supriya Singh of RMIT University and Smart Internet Technology CRC have produced a report 'User Problems—Design Solutions Swarms for Mobiles'<sup>7</sup> which draws on findings from a qualitative study into the impact of mobile phones on youth culture. The Young People study was a qualitative analysis of study of 29 young people in Melbourne aged 18 to 27. The paper reported six major emerging themes:

- the user archetype: the nomad;

<sup>6</sup> [http://www.swin.edu.au/sbs/ajets/journal/issue2/abstract\\_sms.htm](http://www.swin.edu.au/sbs/ajets/journal/issue2/abstract_sms.htm) (viewed March 2005)

<sup>7</sup> [www.mobilecommunitydesign.com/archives/000091.php](http://www.mobilecommunitydesign.com/archives/000091.php)

- twin desires of fluidity and control;
- users wanting to communicate a specific message to callers without speaking to them;
- mobile phones are central to identity;
- producing and sharing content is an important part of how young people share experiences; and
- privacy is a concern in relation to protecting content on mobile phones.

The paper then discussed translating user studies to design in general terms.

Young people's use of new technologies has resulted in the development of new virtual communities, according to preliminary findings of research conducted by RMIT University researcher Christine Satchell. Seven out of 10 young people are reported to visit online communities at least once each month, which allows them to form associations with others who share similar interests, unconstrained by the limits of time or geography. Young people are also using new technologies to become active content producers, rather than passive consumers, with the classic example of this being the mobile phone.

Ms Satchell has been studying the ways young people use technology in order to generate data for the development of future technologies. Her PhD is titled 'A young nomad's guide to new digital terrains'. The research is intended to aid the development of new digital technologies by providing computer scientists with scenarios and personas of actual young users.

Trans/Forming Cultures (TfC) is a key university research centre in communication and culture at the University of Technology Sydney. TfC is proposing a major piece of research into the use of mobile telecommunications by young people in New South Wales. The focus of the proposed work is to develop an understanding of the different ways young people use mobile communications in their social, cultural and economic lives, and in developing conversations among related communities of interest.

The research is aimed at addressing significant perceived gaps in public policy and industry and community discussion:

- a lack of authoritative data about who, how and why young people communicate;
- a lack of information about how mobile telecommunications use varies in a range of New South Wales communities (rural and remote, new arrivals, and so on); and
- a lack of a cross-community interdisciplinary commitment to addressing the social, cultural and economic implications of mobile multi-media telecommunications.

Mary and Des Power of Bond and Griffith Universities, Queensland, in 'Everyone Here Speaks TXT: Deaf People Using SMS in Australia and the Rest of the World' reported that the Deaf/deaf community has keenly adopted mobile text messaging technology to communicate with others and benefited greatly from the flexibility and interconnectivity of mobile phones. An extract of 'Everyone Here Speaks TXT' can be found at the Journal of Deaf Studies and Deaf Education.<sup>8</sup>

Louise Horstmanshof of the Griffith Institute for Higher Education at Griffith University, in 'Using SMS as a way of providing connection and community for first year students'<sup>9</sup>, showed that mobile phones offer one means of meeting the challenge of providing for frequent and meaningful interaction amongst students and staff in an environment where students and casual academic staff are spending less time on campus as a result of busy and complex lives.

The paper relates the experiences of one lecturer/tutor using text messaging to stay in contact with her students and how this contact has supported and encouraged students to persist with their studies. It also discusses some of the implications of using mobile telephony to provide connection and community for first year students in higher education.

M R Power and L Horstmanshof presented a paper entitled 'YYSSW (Yeah, Yeah, Sure, Sure, Whatever): Keeping and supporting relationships through SMS' to the Human Communication and Technology Communication, National Communication Association Annual Convention at Chicago, Illinois on 11–14 November 2004.

M R Power and D J Power (2004) presented a paper entitled 'Everyone here speaks Txt: Deaf people in Australia Using SMS' to the Disability Issues Caucus, National Communication Association Annual Convention at Chicago, Illinois, 11–14 November 2004.

C. Satchell, S Singh and J Zic, in '3G multimedia content production as social communication', OZCHI 2004, November 22–24 2004<sup>10</sup> (available to Smart Internet Technologies CRC members), reported that young people are taking advantage of the increasing accessibility and technical capabilities of 3G phones and the Internet to represent their experiences through multimedia content. However, this practice is inhibited by design shortcomings which don't adequately protect the privacy of content, which produce problems for content management and which limit distribution.

The paper explores how possible design solutions were envisioned through the use of a scenario called the Trophy Room.

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<sup>8</sup> <http://deafed.oupjournals.org/cgi/content/abstract/9/3/333>(viewed March 2005)

<sup>9</sup> <http://www.ascilite.org.au/conferences/perth04/procs/horstmanshof.html>(viewed March 2005)

<sup>10</sup> <http://www.ucd.smartinternet.com.au/papers.html>(viewed March 2005)

In 'Lifesavers and cellular samaritans: emergency use of cellular (mobile) phones in Australia'<sup>11</sup> Associate Professor Simon Chapman and W N Schofield published the results of a national random telephone survey of Australian mobile phone users. The survey found that there were benefits from the use of mobile phones in rapidly reporting emergencies.

Pam Coutts of the Centre for Internet Research at the University of Adelaide, in 'Banking on the move—characterising user bottlenecks for m-commerce uptake'<sup>12</sup>, reports on the results of a multi-stage focus group and the insights gained into potential 'enablers' and 'barriers' to the use of a mobile platform for e-transactions.

Pam Coutts, Kate Alport, Reg Coutts and David Morrell of the Centre for Internet Research of the University of Adelaide in 'Beyond the Wireless Internet Hype—Re-engaging the User'<sup>13</sup> examined the key consumer issue related to convergence: the reluctance of consumers to adopt the new generation of Internet-enabled mobile phones despite their widespread use for voice and messaging. It is postulated that the key enabler to the adoption of Internet-enabled mobile services is users' relationship with their mobile phones and its connectedness to their work, relationships and lifestyle.

S Tjong, I Weber and J Sternberg in 'Mobile youth culture, shaping telephone use in Australia and Singapore', a paper delivered at the ANZCA03 conference in July 2003, presented a cross-cultural study comparing the key cultural and economic factors shaping the adoption of mobile phone technology by Singaporean and Australian youth. The research revealed the social gratification of mobility, access and convenience contributed to similar 'mobile phone cultures' in the two countries, although there were also significant differences.

In November 2004 the Australian Psychological Society released a report related to the social impact of mobile phones. A media release dated 7 November 2004 and titled 'APS study finds parents are relying on mobile phones to keep kids safe'<sup>14</sup> said:

... the APS warned parents that while mobile phones can be a convenient tool for communication between parents and teenagers, they shouldn't be relied on as a security device.

The report 'Psychosocial aspects of mobile phone use among adolescents'<sup>15</sup> reported on safety issues, family relationships, peer relationships and financial issues, and provided tips for responsible adolescent mobile phone use. The report found that reports on usage by adolescents in the study do

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<sup>11</sup> [www.amta.org.au/files/issues/pdfs/emergency.pdf](http://www.amta.org.au/files/issues/pdfs/emergency.pdf) (viewed March 2005)

<sup>12</sup> [www.smartinternet.com.au](http://www.smartinternet.com.au) (viewed March 2005)

<sup>13</sup> available at [www.smartinternet.com.au](http://www.smartinternet.com.au) (viewed March 2005)

<sup>14</sup> [http://www.psychology.org.au/news/media\\_releases/10.1\\_40.asp](http://www.psychology.org.au/news/media_releases/10.1_40.asp) (viewed March 2005)

<sup>15</sup> [http://www.psychology.org.au/news/psychology\\_week/10.10\\_2.asp](http://www.psychology.org.au/news/psychology_week/10.10_2.asp) (viewed March 2005)

not suggest excessive use; that most families are not in conflict over mobile phone use or expenditure; that mobile phones are an important tool for friendships and peer group inclusion for a small number of adolescents; and that there are negative outcomes for a smaller number of adolescents and their families.

Dr Jim Phillips and Ms Adriana Bianchi, of the School of Psychology, Psychiatry and Psychological Medicine at Monash University, assessed why some people were more likely to use mobile phones despite signs banning use on planes, in hospitals and while driving.

‘Psychological Practices of Problem Mobile Phone Use’<sup>16</sup> reported that, based on a survey of almost 200 people aged from 18 to 85, young extroverts with low self-esteem are most likely to ignore mobile phone laws and use their phones inappropriately. The release of the report was announced on the Monash University website under the title ‘Young extroverts most likely to ignore mobile phone rules’.

Two honours theses relating to the social impact of mobile phones in Australia were found:

- ‘The becoming of the body mobile: new socialites of the mobile phone’ by Renee Bilston, University of NSW (November 2003); and
- ‘Ring, ring, why did I make that call?’ by Shari Walsh, QUT October 2004, that investigates mobile phone users identity influences from planned behaviour theory perspective.

Should any readers know of other research in train or in prospect, please let us know and we will update this paper. Contact:

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## Youth, mobile phone use and debt

Another focus of existing information is the way Australian young people are integrating mobile phones into their lifestyle; complexity of contracts; and problems with debt. This information seems to be principally based a small number of surveys of mobile phone users and ex-users that are mainly focused on contracts and debt.

### Table 5

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<sup>16</sup> [www.monash.edu.au/news/newslines/story.php?story\\_id=321](http://www.monash.edu.au/news/newslines/story.php?story_id=321) (viewed March 2005)

Research sources	Title of source	Country/year	Annotation/comment
Communications Law Centre and Victoria University	Mobile Matters: Young People and Mobile Phones	Australia 1999	Report indicates the integration of mobile phones into the lifestyle of young people in Australia and difficulties for some with resulting debt.
Youth Action and Policy Association (YAPA)	Newspaper report Title of report unspecified	Australia 2003	Report indicates some young people in Australia are experiencing difficulties repaying debt resulting from use of mobile phones.
Colmar Brunton Social Research commissioned by the Commonwealth Consumer Affairs Advisory Council.	Consumer Issues and Youth: A Research Report into Best Practice in Consumer Education Targeting Young Australians	Australia October 2004	The report confirmed the importance of mobile phones as a consumer issue for youth ( 'must haves ' ) and problems with debt.

'Mobile Matters: Young People and Mobile Phones'<sup>17</sup> was produced by the Communications Law Centre and Victoria University. The research provided a picture of young people's experience with mobile phones and described a culture where mobile phones are firmly established within the social life of users (a mobile culture) and represent an ongoing financial commitment. The report provides data on the specific uses and motivations for acquiring a mobile phone for the sample of young people used for the report.

The study reported 18 per cent of questionnaire respondents having difficulties paying their normal bills and seven per cent struggling to pay their bills. The study reported many young people (18 per cent) did not understand the mobile phone contracts. The report recommended enhanced disclosure, readily comprehensible contract documents and greater contract flexibility.

The study was based on a survey of 750 young mobile phone users or ex-users, focus groups and secondary data analysis of industry data and public

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<sup>17</sup> A summary of this report, 'Ring me—mobile phones and young people' is included in the papers for the 1999 Communications Research Forum and is available at [www.rcf.dcita.gov.au](http://www.rcf.dcita.gov.au).

documents and reports by the Telecommunications Industry Ombudsman's office.

Peak lobby group Youth Action and Policy Association (YAPA) polled 550 young people in NSW about their mobile-phone use; most were under 18 and were interviewed in Sydney. Twenty per cent of young phone owners admitted phone debt had caused them major problems, and fewer than 10 per cent knew where to go for help with debt. The survey found that 40 per cent of young people had received monthly bills for more than \$200 and four per cent had received bills for more than \$1500. More than one in 10 of those polled said they spent more than 50 per cent of their income on phone bills.

ABC Radio National program *The World Today* on 28 January 2004 reported that La Trobe University law students produced a study that revealed teen phone debt and confirmed that the 'use now, pay later' system could saddle teenagers with debts by drawing them into debt traps. The report, dated January 2004, is titled 'He that goes a borrowing goes sorrowing—a report into youth debt'. Ms Liz Curran, lecturer in law at La Trobe University, was reported as saying that there is a need to educate young people, for much more explicit terms and conditions in mobile phone contracts, and also for more thought by mobile phone companies and other credit facilities about what they are doing and the consequences.

There is much interest in youth debt and mobile phone debt is a significant component of that debt. An example is a *Sydney Morning Herald* article of 8 September 2004, headlined 'Children of misfortune: With credit cards and big mobile bills, today's young adults are racking up debt faster and deeper than previous generations'. It reported that apart from consumer debt the most frequently reported debts are for telephones and rent.

The article referred to a study 'Misfortune or mismanagement: a study of consumer debt issues'<sup>18</sup> by Margaret Griffiths and Bill Renwick of the University of Newcastle. This study found that mobile phone debt was highest for the 18- to 24-year-old age group, with a third of those who sought help with debt saying it was their primary source of debt and a further 20 per cent describing it as secondary.

The importance of the mobile phones as a consumer issue for youth is further confirmed by a report, commissioned by the Commonwealth Consumer Affairs Advisory Council and released by the Parliamentary Secretary to the federal Treasurer, Senator Ian Campbell in 2002. The media release title was 'Mobile phones top young people's consumer issues: national report'. The report found that:

- mobile phones rank as probably the most important product for young people;

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<sup>18</sup> [www.newcastle.edu.au/school/cc-ebus-mgt/media\\_release/exec\\_summary.pdf](http://www.newcastle.edu.au/school/cc-ebus-mgt/media_release/exec_summary.pdf) (viewed March 2005)

- mobile phones symbolised freedom, growing up, excitement and having fun and were ‘must haves’ for teenagers wanting to keep up and achieve social acceptance;
- there is a lack of understanding about phone plans and call costs and consumer rights generally; and
- the aspirational and emotional nature of mobile phones for youth made it difficult to persuade young people to approach purchase and usage responsibly.

The research was conducted by Colmar Brunton Social Research and involved expert consultations, focus groups and desk research. The report is titled ‘Consumer Issues and Youth: A Research Report into Best Practice in Consumer Education Targeting Young Australians’<sup>19</sup>

### **International research and comment**

There has been wide-ranging research internationally on the use of mobile phones, reported in the media and through the Internet.

One source of particular interest is the New Media and Communications Technology group<sup>20</sup> in the School of Human Sciences of the University of Surrey, which specialises in the social impact of information and communication technologies, including that of the mobile phone. The group annually holds the Wireless World Conference which features subjects that parallel those identified as being of interest to the AMTA and ASSA.

The University of Surrey has funded a major new research initiative, the Digital World Research Centre,<sup>21</sup> to be a centre of excellence and pursue multidisciplinary research on the influence of information and communications technology on society, government, politics and the economy.

Dr Nicola Green, Lecturer at the Department of Sociology at the University of Surrey, provided comments about research on the social impact of mobile phones:

- Many of the most important and interesting studies are not necessarily only statistical or survey in orientation, but also qualitative in-depth empirical work that complements statistically-oriented understandings.<sup>22</sup>
- Collections of international studies are available, though not necessarily offering explicit comparative pieces:

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<sup>19</sup> [http://www.consumersonline.gov.au/content/publications/consumer/consumer\\_issues.asp](http://www.consumersonline.gov.au/content/publications/consumer/consumer_issues.asp)

An abridged print copy of the report is also available. (viewed March 2005)

<sup>20</sup> <http://www.soc.surrey.ac.uk/technology.htm> (viewed March 2005)

<sup>21</sup> <http://www.surrey.ac.uk/dwrc/Index.htm> (viewed March 2005)

<sup>22</sup> For example, a fairly comprehensive bibliography of current work provided by Les Haddon is at <http://members.aol.com/leshaddon/MobileRefs.html>

- ‘Perpetual Contact’ ed. J Katz;
- ‘Machines That Become Us’ ed. J Katz; and
- ‘Wireless World: Social and Interactional Aspects of the Mobile Age’ 2002, ed. Barry Brown, Nicola Green and Richard Harper.
- Rich Ling at Norway's Telenor and J Katz of Rutgers are running a ‘Sociomobile’ webpage (<http://www.sociomobile.org/>) that contains a listing of resources As above, could this be included as a footnote reference?.
- ‘Regulatory, information and the self: ownership and mobile environments’ [As above re footnote reference] (<http://risome.soc.surrey.ac.uk>) has some links to other mobile resources, although they are mainly oriented towards trust and privacy issues.
  - RIS:OME seeks to understand the relationship between the generation, ownership and control of mobile, location-based and personal information about individuals and understandings about privacy.
- Another source is the three-year ‘Socio-technical shaping of mobile multi-media personal communications’ project (STEMPEC)<sup>23</sup>, with the Digital World Research Centre at the University of Surrey, on which Dr Green was postdoctoral researcher. This project had collaborative funding from the (at the time) four UK mobile operators, under the Department of Trade and Industry's Foresight Link Scheme. The project is aiming to connect academia and industry, in much the same way as the AMTA/ASSA project is intending to. A co-authored book is forthcoming from this research.

In ‘Text appeal: the psychology of SMS texting and its implications for the design of mobile phone interfaces’, Fraser J.M. Reid and Donna J Reid argue that understanding the psychological drivers behind SMS uptake among key user groups could open the door to a range of user-centred applications which could transform handset usability—and hence operator revenues – for this inexpensive form of text messaging.

The report combines the findings of their web-based survey of SMS users with psychological evidence and research on related text-based conversational systems. It draws out lessons for a user-based approach to the design of mobile phone handset displays that capitalise on the social affordances of SMS texting. The paper is included in selected papers from the Fourth International Network Conference 2004, Plymouth, UK.

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<sup>23</sup> <http://www.surrey.ac.uk/dwrc/Research/STEMPEC.htm> (viewed March 2005)

The UK Office of Communications (Ofcom) regularly produces reports entitled 'Consumers use of mobile telephony'.<sup>24</sup> The latest of these surveys was released in October 2003. This report provides the key findings on consumer behaviour in the UK mobile market, taken from the 14th wave of Ofcom's quarterly residential survey, undertaken in August 2003. The survey was conducted for Ofcom by MORI with 2099 adults, 73 per cent of whom claimed to have a mobile phone. Subjects covered in the report included market penetration, use of advanced services, and caller line identification. Time series data is available from comparisons with the previous survey results.

Ofcom has also produced reports on competition in the mobile market, an international benchmarking study of mobile services, market information updates, a report on wholesale voice mail termination and a study on trends in mobile phone usage and its impact on the industry.

Ofcom produced 'The Communications Market 2004', which has a section on Telecommunications that has reports on the UK population's use of mobile phones, with comparisons to major EU countries, the USA and Japan. The titles of the areas covered include:

- growth in mobile phone subscribers;
- mobile calls, messages and revenue (calls and data) on the rise;
- mobile prices remain relatively stable;
- fixed to mobile substitution by consumers continues (a comparison of mobile penetration in Western Europe, main method of making and receiving calls, and average use for mobile customers);
- the rise and rise of SMS (mobile data services growth);
- 3G still some way from a mass market; and
- average household and business spend on telecommunications, by type including mobiles.

Textually.org, all about texting, SMS and MSS'<sup>25</sup> is a very useful source on media reports about the social impact of mobile phones. While its main focus is on text messaging, textually.org provides an excellent summary of media reports on the social and economic impact of mobile phones. The media reports are archived by date and subject matter and are readily accessible.

Commercial research has been conducted on British youth's use and attitudes to mobile phones. One major UK study is 'Me, my mobile and I', the latest report conducted by the Teleconomy Group. Teleconomy has

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<sup>24</sup> These reports are available at <http://www.ofcom.org.uk>. Some reports are under Oftel research at this link—Oftel is a previous incarnation on Ofcom.

<sup>25</sup> [www.textually.org.au](http://www.textually.org.au)

produced these reports each year for the past four years. The latest study reported that 10- to 14-year-olds—dubbed M-agers—are rapidly becoming the most sophisticated users of mobile phones and are aware of downloading possibilities. Twenty-six per cent of respondents stated they could not live without their mobile phone. The report is available from Teleconomy on a commercial basis.

The OECD Communications Outlook 2003 has provided data on mobile phone penetration in selected OECD countries, including Australia, from 1996 to 2001.

A discussion paper prepared by the International Telecommunications Union MIC Workshop on shaping the future of the mobile information society, titled 'Social and human considerations for a more mobile world' (Document SMI04 26 February 2004) explored the societal and human implications of the advances in mobile phone technology and the pervasiveness of the technology. The discussion is divided into four key areas influenced by the use of mobile phones:

- identity, including mobile gender and youth, belonging and the self, the fashionable mobile and identity management for a mobile world;
- social interaction, including the interaction between the public and private spheres of life, love and dating and mobile entertaining;
- the workplace, including living to work, working on the move, mobile opportunity and tracking the mobile; and
- wellness and safety, including mobile health applications and concerns, the environment and the mobile, mobility and emergency services and protecting mobile minors.

These key areas have much in common with the key questions posed by AMTA/ASSA.<sup>26</sup> A survey extract of Mobinet Index 2004<sup>27</sup> (released in July 2004) reports on global and regional trends in mobile phone usage and contains some forecasts of future trends. This report was produced by AT Kearney and the Judge Institute of Management at the University of Cambridge. Mobinet 2004 is the seventh survey. The first was released in June 2000 and the sixth in April 2003.

The survey tracks five major components: connection (penetration); non-voice communication; entertainment; information services; and transactions.

Data on Australia is included in 'Other Asia', which for 2004 includes China and South Korea. The Mobinet 2004 survey interviewed 4500 users in Asia, Europe and the Americas about their mobile phone and data

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<sup>26</sup> The report can be obtained from [www.itu.int/home](http://www.itu.int/home)

<sup>27</sup> The survey extract is available at [http://www.atkearney.com/shared\\_res/pdf/Mobinet\\_Extracts\\_2004\\_S.pdf](http://www.atkearney.com/shared_res/pdf/Mobinet_Extracts_2004_S.pdf). (viewed March 2005)

transactions. There were 387 respondents in Australia. Separate data for Australia is likely to be available commercially.

According to an Industry Search article,<sup>28</sup> the Mobinet 2004 survey reported that Australia's usage of Internet enabled and camera mobile phones is well behind global rates but local demand for text and picture services shows promise.

Recent trends in the US mobile phone market were reported in a press release with the heading 'Enpocket's Mobile Media Monitor Finds Mobile Ownership & Sophistication Growing Fast in US'.<sup>29</sup> The press release provided a summary reported on penetration rates by sex, age ranges and income and commented on an increased level of sophistication of usage in the US market, with increases in downloading of media and games, and the significant increase in the use of text to interact with media. Phase II of the survey was based on 1,000 telephone interviews undertaken by NOP World for Enpocket Insight in late July 2004, and relates to the period May 2004 to July 2004.

A Japanese mobile network operator, NTT DoCoMo, has established an institute for studying the social impact of mobile phones. Specific themes of research are to include:

- impact on society and culture, with recent emerging issues to be studied including mobile phone usage etiquette, and the increasing popularity of a culture that features the wide usage of emoticons;
- the impact on legal systems of increasing digital crime (spam mail and 'digital shoplifting' – stealing published information by using a phone's camera) and countermeasures to address mobile phone oriented crimes;
- industry impact from the dissemination of mobile phones on a variety of sectors; and
- mobile phones as a form of social infrastructure, including their role as indispensable tools for information distribution during times of natural disasters/wars, etc, and support and facilitation of social capital formation.<sup>30</sup>

Netsize, a global leader for mobile business and entertainment solutions, launched its 2004 guide: 'Developing the Multimedia Mobile Market' on

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<sup>28</sup> The article is available from a search on mobile phones at <http://www.industrysearch.com.au/>

<sup>29</sup> The press report can be accessed at <http://www.enpocket.com/wrapper/page.php?content=news/2004/aug23.html> (viewed March 2005)

<sup>30</sup> An article on this subject can be found at <http://www.infosyncworld.com/news/n/4833.html> (viewed March 2005)

18th March 2004 in London.<sup>31</sup> The guide covers the development of the mobile data market in 21 countries supported by detailed statistics and analysis including mobile penetration, average revenues per users, fixed line vs. mobile growth, SMS volumes, operator market shares, market pricing, new industry regulations and the development of the multimedia market.

This is the third edition of the Netsize Guide which is reported to be the leading industry reference document for information relating to key country influencers and nuances for messaging and infotainment services across Europe, China and the US.

Netsize has launched the *Netsize Guide 2005*, which provides detailed market reports covering 29 countries and 103 mobile operators with the latest mobile penetration rates, operator ARPU comparisons, messaging statistics, consumer content purchase trends, handset market reviews, average pricing trends and much more.<sup>32</sup>

## Themes in international media coverage

Media reports of research on mobile phones cover a wide range of subjects, reflecting the pervasive impact of mobile phones and should perhaps be captured in a dedicated literature review and scoping exercise. The major themes encountered in a trawl through the Internet were:

- mobile phones as the platform of a new culture:
  - instant communications and gratification influencing the development of society; and
  - emerging as mankind's primary communications interface and lifestyle tool.

### Youth

- integration into lifestyle, dependence (social exclusion/inclusion) and identity (the dominant technology with which youth define themselves), financial/legal inexperience and debt;
- risk of youth access to inappropriate and undesirable content, including pornography, and inappropriate wider social contacts through mobile phones;
- mobile phones as security devices for families and youth; and
- emergence of a segment of youth who rely on mobile phones and consequently do not use conventional media sources so they cannot be reached by advertisers.

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<sup>31</sup> A summary report on the 2004 Guide is in the SMS and MMS News Archive at [www.smstoday.co.uk/news/](http://www.smstoday.co.uk/news/) (viewed March 2005)

<sup>32</sup> The 2005 guide is available to key mobile industry professionals for free from the Netsize website: [www.netsize.com](http://www.netsize.com).

### Children

- increased development of mobile phone products for children and targeting of mobile phones promotion to children (e.g. Barbie dolls with mobile phones);
- ethical concerns with the above developments; and
- health concerns with use of mobile phones by young children.

### SMS and the English language

- concerns about the impact of SMS on students' use of English—UK, Norway and Singapore—use of SMS contractions and a perceived reduction in the quality of written responses by students.

### Entertainment and popular culture

- use of mobile phones for entertainment including games, SMS books, soap operas, information and data - contribution to popular culture; and
- proposed use of mobile phones for TV viewing and viewing film clips/movies.

### 3G and the future development of the mobile phone

- the future of the mobile phone, including the implications of the development and take up of new technology (2.5G and 3G, WAP, organisers, etc), and what new technologies people might want on their mobile phones; and
- the potential impact of viruses given use of mobile phones for PC-type functions.

### Impact on work and work/life balance

- the effect on work and work life balance (mobile workers and tradesmen, increased stress, increased availability and blurring of work/family time); and
- time savings/efficiencies/improvements to people's lives.

### Restrictions on use

- increasing restrictions on the use of mobile phones:
  - proposals to prevent use at public performances at theatres and concerts and in prisons, schools, examinations, places of worship and courts of law:
    - examination cheating in South Korea, India and Thailand; and

- inappropriate use in schools in the US;
- increased restrictions on the use of camera phones because of security concerns in the workplace with IP theft (protection of copyright and commercial in confidence information) and digital shoplifting (stealing published information);
- increased restriction on the use of camera phones for privacy reasons, mainly protection of individuals from being photographed in inappropriate contexts;
- privacy concerns from potential accumulation and use of data on mobile phone users;
- development of etiquette for use of mobile phone in public places; and
- increased regulation of prepaid phone cards because of concerns they may provide anonymity for users which may be exploited for illegal purposes and/or terrorism.

#### Health

- health and the mobile phone (electromagnetic radiation and health);
- use by health care providers; and
- use in health and medical emergencies.

#### Use of SMS by the Deaf/deaf community

- the adoption of text messaging by the Deaf/deaf community and the advantages for them of modern mobile phone technology.

#### e-commerce/marketing

- increasing use of mobile phones (and SMS) for e-commerce and financial purposes, including e-payments, and the corresponding need for increased security safeguards;
- concerns by marketers and advertisers about a cohort of youth that rely on their mobile phones, tend not to use traditional media and cannot be reached by usual advertising methods; and
- proposed use of soap operas, and other forms of mobile phone entertainment, to target the youth market.

#### Mobile phones in developing countries

- mobile phones as a liberating and enabling force in developing countries that have poor fixed line infrastructure; and
- political implications of increased ownership of mobile phones—people power and the reduced ability of governments to restrict information flows—North Korea and China.

## Summary conclusions

The review shows that, while there is a plethora of ad hoc data sources and research, most interest has centred on patterns of use and social innovations. The paper highlights a number of key gaps in research:

- the contribution of mobile phones to a sense of identity, social power and influence (mainly for young Australians) and the extent of substitution for communication media;
- the impact of mobile phones on the organisation of paid work and the interface between work and home;
- key factors in promoting content innovation and customising innovations for major geographical and demographic sectors;
- the likely impact of the proliferation of content; and
- the current and future impact of mobile phones on Australia's young people, including integration into their lifestyle and management of debt.

A number of emerging research themes are highlighted, although research in these areas is currently hampered by a lack of good quality data. These emerging areas of interest are:

- a trend to increasing restrictions on the use of mobile phones in some circumstances, such as for public performances and in places of worship, prisons, schools and examinations;
- restrictions on mobile camera phones for reasons of security in the workplace and for the privacy for individuals;
- privacy issues with the use of information on mobile phone use; and
- youth and mobile phones: integration into lifestyle (including having to earn to pay the mobile phone bill), financial/legal inexperience and debt.

## List of acronyms

3G – Third generation mobile telecommunications technology  
ABS – Australian Bureau of Statistics  
ACA – Australian Communications Authority  
ACCC – Australian Competition and Consumer Commission  
AJETS – Australian Journal of Emerging Technologies and Society  
AMTA – Australian Mobile Telecommunications Association  
ANZCA – Australian and New Zealand Communication Association  
Incorporated  
ARPU – Average revenue per user  
ASSA – Academy of the Social Sciences in Australia  
CDMA – Code division multiple access  
CRC – Cooperative research centre  
EDGE – Enhanced data GSM environment  
GPRS – General packet radio service  
GSM – Global system for mobile communication  
HEC – Household expenditure classification  
IQCA – Interviewer Quality Control Australia  
MIC – South Korean Ministry of Information and Communication  
MMS – Multimedia messaging service  
OECD – Organisation for Economic Co-operation and Development  
Ofcom – UK Office of Communications  
OZCHI – the annual conference of CHISIG, the Computer-Human  
Interaction Special Interest Group of the Human Factors and Ergonomics  
Society of Australia  
PMR – Private mobile radio  
RISOME – a research project at the University of Surrey (Regulation,  
information and the self: ownerships and mobile environments)  
SIM – Subscriber identity module  
SMS – Short messaging service  
STEMPEC – Socio-technical shaping of mobile multimedia personal  
communications project  
TfC – Trans/Forming Cultures  
TMR – Trunked mobile radio  
WAP – Wireless application protocol  
YAPA – Youth Action and Policy Association