



New(s) functions for the mobile: a cross-cultural study

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Abstract

In recent years the mobile phone has evolved from essentially an interpersonal communication device to a multimedia machine providing always-on internet connection. However, actual use of mobile internet, including functions such as news services, has been slow in most countries. This article focuses on questions related to usability and cost for using the mobile as a news medium, drawing upon cross-cultural data gathered in Sweden and Japan during fall 2007. Although Japan and Sweden have superficially equivalent news media systems, the Japanese more favourably perceive the usefulness of accessing news on the mobile than do Swedes. However, the Japanese judge mobile news as more expensive and are less willing to pay for it. In reporting on this research, the article illustrates some of the methodological challenges in doing cross-cultural comparisons.

Key words

convergence, cross-cultural, Japan, media, mobile, multimedia, news usage, Sweden

The interaction between technology and culture affects the adoption and use of information and communication technologies (ICTs). There are traditionally different views on the relative importance of these forces, from technological determinism to social constructivism. Katz and Aakhus (2002) argue that technology serves as a constraint upon possibilities, while it does not determine what people actually will use technology for. Schroeder (2007) considers how the diffusion of cars, telephones and television has changed the lifestyles and cultures of people across the world. Although it is beyond the scope of this article to evaluate which forces play the most important role here, it is important to stress that technology and culture are co-present in technological development. Many ICTs have had a profound impact on cultures and lifestyles in the past. What are commonly referred to as mobile phones clearly represent such an ICT.

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The convergence of mobile phones and multimedia has altered the technological landscape, introducing a wide array of new uses such that the mobile is no longer only a phone. Rather, it has become a personal mobile device that, at least in principle, integrates both communication and multimedia functionality. This article will use the term 'mobile device' (rather than 'mobile phone') to emphasize that the mobile has developed into a technology that integrates multimedia functions. Multimedia functionality means that the mobile device can handle audio, video, graphics, text and animation in an interactive manner. The diffusion of handsets capable of functioning as mobile multimedia devices is constantly increasing worldwide. This diffusion is a consequence of the improved technological architecture of mobile devices and the pace of replacements.

To date, however, mobile devices are still predominantly used as interpersonal communication devices, enabling the sharing of information and the coordination of everyday life activities with family, friends and colleagues (Bolin, 2008; Bolin and Westlund, 2009; Ling, 2004; Westlund, 2007a). Katz and Aakhus (2002) concluded that mobiles are used as interpersonal communication devices in a similar way in the USA, Korea and a number of European countries. Moreover, they argue that there is a universal drive towards perpetual contact; that people from different cultures share a spirit that guides their interest in the adoption and use of mobiles. At the same time, however, the literature notes cultural differences in usage (Campbell, 2007; Oksman and Rautiainen, 2003).

Is there such a spirit guiding interest in the mobile as a multimedia device? In recent years, many of the functions previously available via other information and communication technologies have become accessible on mobile devices as well (e.g. camera, video, radio, TV, GPS, mp3 and the internet). Since the 1990s, there has been growth in internet functionality for mobiles, initially enabled in Europe through a wireless application protocol (WAP), which basically functioned as a modem. Mobile devices, protocols and networks for accessing the internet have continuously improved, enabling faster transfer rates and more user-friendly experiences. One important development has been the use of general packet radio services (GPRS), whereby data are transferred as packages. The main advantage of this system is that users can have continuous access to the internet while only paying for the data actually used, rather than needing to have a modem line always connected. A Japanese telecom operator, NTT DoCoMo, started employing such packet-switching technology with its iMode concept in 1999, but the technology did not appear in Sweden until 2002. Note that the 'i' of 'iMode' can refer to 'internet', 'information' and 'I' (myself). Payment models for mobile internet vary between operators and countries. One common model is to pay a certain amount per MB of data, while another model is based on a monthly flat rate for a set amount of usage (a model common in Japan).

A global study showed that in 2005, 28 percent of mobile subscribers had tried to use their device for accessing the internet (Church et al., 2007). Use of mobile internet has been rather limited in most countries, though it has a relatively high uptake level in Japan and Korea (World Association of Newspapers, 2007). In an extensive evaluation of mobile content ecology, Feijóo et al. (forthcoming) analyzed results from several empirical accounts of the adoption and non-adoption of mobile services. The researchers concluded that there is a large gap between the number of people who possess mobile phones and the number who use mobile internet. Similarly, in their study of actual traffic among

subscribers to telecom operator Telenor in Norway, Ling and Sundsøy (2009) report that about 90 percent of the events in Telenor's network were either calls or text messages, while internet traffic accounted for only about 5 percent.

There is a variety of internet functions one can access with mobile devices nowadays, including search engines, social networking sites, email and news. For accessing news, the mobile can be used as a news medium through radio, TV, texting or mobile internet. In this article, reference to 'mobile news' consumption includes news accessed through all these functionalities, unless otherwise specified.

Mobile news access seems to be gaining a foothold in comparison to other types of mobile commerce activities. In 2004, news and download services (for example, ring tones and images) were among the most frequently used services for mobile devices in countries such as Japan, Korea, Greece, Finland and Sweden (ECOM, 2004). In Finland, longitudinal analysis of the years 2002–6 confirms this prominent role of news in comparison to other advanced mobile services (Bouwman et al., 2008). A report on Sweden in 2007 suggests that browsing the news is the most common activity among Swedish users of mobile internet, followed by activities such as information search and email (Bohlin and Westlund, 2008).

This article explores cross-cultural perceptions related to the mobile as a multimedia, but particularly as a mobile news medium. This focus on attitudes towards the mobile device as a news medium is timely, since mobiles represent a convergent new media technology that is acquiring growing importance as a personal multimedia. Mobile access to news is but the latest in a succession of conveyance media, including hard-copy newspapers, radio, television and online news viewed on a computer screen.

The article examines 2007 survey data from Sweden and Japan, looking at different gender and age cohorts. Our analysis is based on two case studies rather than a direct comparison, since the methodological approaches used in each study differed somewhat. Each methodology and potential consequences of the different approaches are discussed in the Methodology section.

Even in a country such as Japan, in which use of the mobile internet is common, employing mobile devices to access the news remains on par with the limited uptake in Sweden. While the two nations are culturally distinct, both are among the internationally leading countries with respect to the diffusion and use of ICTs such as mobiles, computers and the internet. Furthermore, both nations are newspaper-centric. The present contribution on the use of news with mobiles may help advance our understanding of attitudes towards specific ICTs in diverse cultures.

Cross-cultural comparisons of ICTs: Sweden and Japan

Haddon (2005: 29) has suggested that culture can be understood as 'a set of commonly shared symbols, values, beliefs, and attitudes, and their translation into everyday social perceptions, behaviour and material artefacts'. Previous research has begun to address the issue of cross-cultural differences in the use of ICTs. For example, Haddon (2005) proposes that social and temporal structures, values, and communication and material culture underlie such differences.

Cross-cultural comparisons have many advantages, but are also associated with multiple challenges. Livingstone (2003) has examined epistemological and practical issues related to cross-cultural research. She finds that it is common to seek out similarities and differences between cultures, but suggests that the issue of which nations to include in a comparison deserves more attention than it often receives. Livingstone further argues that ICT researchers who do not make cross-cultural comparisons should justify this choice, since there is a problem of the generalizability of conclusions. Livingstone also reminds us of difficulties in treating nations as units, given that individual nations often encompass multiple cultures. In light of Livingstone's arguments, it is fair to question whether Sweden and Japan (the loci of the present study) can be said to represent just two cultures, since there are subcultures within each nation. The present study does, however, analyze national data on gender and age (which are, themselves, cultural issues).

Haddon (2005) observes that when comparing statistics from different nations, it is often difficult to determine the importance of cultural as opposed to economic, political and technological considerations. While culture may set a context that either favours or militates against ICT adoption or use, it is generally not possible to say that culture causes ICT uptake. To help resolve the question of directionality, empirical analyses (of the sort reported on in this article) are essential.

Cross-cultural profiles

The work of Hofstede (1997) is frequently cited in discussions of cross-cultural comparisons. Hofstede originally proposed four cultural dimensions for comparing cultures, through the use of relative indexes. Although these indexes were initially applied to data from the late 1980s (and not involving ICTs), Hofstede's model is useful in interpreting cross-cultural differences in using mobile devices for accessing news in Sweden and Japan. Hofstede produced relative index rankings within organizational cultures by surveying the culturally determined values of IBM employees in 50 countries. Over time, results from this study have been applied to general cultural differences and similarities. The relative index values for each of the four cultural dimensions range from 0 (small) to 100 (large), based on a complex statistical analysis.¹

The first index focuses on power–distance (PDI), which refers to how less powerful members accept the current power distribution within a culture. According to Hofstede, the power–distance was higher in Japan (54) than Sweden (31). This means that there are more hierarchies in Japanese society than in Sweden, and that people with lower social status are used to doing as they are told. The second index concerns collectivism–individualism (IDV), that is, to what extent people in the culture are expected only to look after themselves as opposed to having a broader sense of collective obligation. Individualism ranks higher in Sweden (71) than in Japan (46). Such individualism is seen in Sweden both in the emphasis placed upon personal freedom and time, as well as in the freedom of the press.

The third index concerns femininity–masculinity and refers to the traditional assignment of how gender roles appear in a culture (MAS). In masculine cultures such as Japan (95), women are traditionally orientated to the home, children and tenderness. In feminine cultures such as Sweden (5), distinctions between men and women largely collapse.

The fourth index captures avoidance of uncertainty (UAI), which concerns formal, legal and religious approaches to unknown matters. The Japanese (92) have a high uncertainty avoidance score, meaning they tend to apply formal rules and expect much structure from organizations and institutions. Sweden (29), by contrast, is a culture with a low uncertainty avoidance score, allowing for more informal rules and relationships.

Following Hofstede's cross-cultural study, researchers have made important contributions in terms of empirical and theoretical work. Hofstede himself (1997) suggests that a fifth dimension has emerged as important, focusing on a nation's long-term compared with short-term orientation in values and philosophy. He argues that long-term orientation is especially high among East Asian countries, including Japan.

Sundqvist et al. (2005) used Hofstede's cultural dimensions to compare the diffusion of wireless communications in 64 countries. The authors identified four clusters of nations, among which Scandinavian and Central European countries constituted one. These countries were characterized by extremely low power distance, high individualism and femininity, as well as by a very high adoption of wireless communication. Sweden and Norway were the most developed nations. Sundqvist et al. concluded that wealthy countries that are culturally similar to Sweden tend to adopt wireless services early. Japan constitutes the only exception. While not culturally similar to Sweden along other dimensions, Japan nonetheless had early and high adoption of wireless services. These results lent support to the author's decision to compare mobile news access in Japan and Sweden, given their cultural differences but similarities in adoption of mobile communication.

We now turn to specific cultural correlates of ICT use in Sweden and Japan. As Baron and Hård af Segerstad (2009) and Daun (1996) note, Swedes and Japanese generally share a number of social characteristics, such as being reserved, polite and rather quiet while in public space. At the same time, of course, there are marked cultural differences. Baron and Hård af Segerstad (2009) stress that Swedes (unlike Japanese) tend to treat outdoor space as public, and that Swedes are less conformist than Japanese about individual self-expression. Other research on the use of mobiles in Japan has noted that the Japanese are keen to use new technologies. Moreover, they tend to have consistent everyday routines that include long commutes on public transportation. As a result, mobile devices prove particularly useful in Japan (Ito et al., 2005).

The news media landscape

Particular news media are commonly chosen for specific functions. For example, the printed newspaper presents yesterday's news in a format that provides overview and room for lengthy articles, while online news offers more updated stories, interactivity and multimedia. For a growing number of users, online news (typically via computer) is replacing print journalism.

Both Sweden and Japan have strong track records for newspaper consumption. Sweden and Japan, alongside of Finland, Norway and Switzerland, have among the highest newspaper reach in the world.²

Consider Sweden, Japan and the USA for the year 2006. Japan had 108 printed daily newspapers, with a total reach of 92 percent of the population. In addition, 102 of the 108 newspapers had online editions. Sweden had 91 dailies in print, with an 84 percent

reach, and 75 online editions. In the USA, where there were 1478 dailies, there was a 48 percent reach. The USA also had 1674 online editions, which exceeded the number of printed dailies. (Non-daily print newspapers, which may provide online daily news, sometimes exist without associated print counterparts: World Association of Newspapers, 2008.)

In many countries, online newspapers figures are increasingly encroaching upon those of printed papers. Nonetheless, print remains an important medium for news dissemination, even in countries such as Japan and Sweden, where the use of online news is high (World Association of Newspapers, 2008). In Sweden, specific groups such as teenagers, young adults, and white-collar workers have led the transition from printed newspapers to online newspapers. This transition has been particularly prominent for the sales of single-copy evening tabloids (Färdigh, 2008; Westlund, 2008a). However, when the total numbers of frequent users of either print or online newspapers are combined for Sweden, there has been an increase in the number of news consumers since the turn of the millennium (Bergström and Wadbring, 2008). Use of online news editions has increased in parallel to the uptake of the internet. The International Telecommunication Union (ITU) reports that in 2007, the number of Swedes using the internet was 76.8 percent of the population and 36 percent had broadband. In Japan, internet usage was 69 percent, and broadband access was 22 percent. By way of comparison, in America, the levels reached were 72 percent and 24 percent, respectively. All these countries had reached an internationally high level by 2007, considering that the average for Europe was 40 percent for internet use and 14 percent for access to broadband (ITU, 2007).

Television is another important contemporary medium for accessing the news. Although the following statistics refer to TV viewing in general, not watching TV news in particular, they provide an indication of the role of TV in respective countries. The daily reach of television in 2007 was 84 percent in Japan, compared with 72 percent in Sweden and 99 percent in the United States (RTL Group, 2008). Note that the reach criteria differed slightly across countries: in Sweden, reach was defined as at least five minutes of consecutive viewing per day, while a one-minute measure was employed for the other countries. If an identical measurement were applied, the reach in Sweden would most likely be higher. The statistics do, however, support Schroeder's argument (2007) that while both Japan and Sweden are highly newspaper-centric countries, the role of TV is less prevalent than in the USA, which is a more TV-centric and less newspaper-centric nation.

The role of mobile devices

A study of the diffusion of mobile devices in 2005 (OECD, 2007: 118) revealed that there were 101 subscribers in Sweden for every 100 inhabitants, compared with 76 among the Japanese. In America, the number was 72. One measure indicating differences between Japan and Sweden over the use of mobile data services is given by Ofcom (2008), reporting on the average voice and data revenue per subscription. In Japan, about one-third of the revenue is spent on data services, compared with 11 percent in Sweden.

A report by NTT DoCoMo (2007) for the year 2006 indicates that approximately two-thirds of the Japanese population aged 15–64 used their mobile for internet browsing at least occasionally. Barnes and Huff (2003) argue that mobile internet is highly compatible with Japanese cultural values, which includes enthusiasm for electronic devices. They also argue that the Japanese have a strong cultural tendency towards group conformity, which helps to accelerate adoption and usage once a technology reaches critical mass. Similarly, Heres et al. (2002) conclude that mobile internet has become widely diffused because Japanese spend much time outdoors due to their small living space, which offers little privacy. However, accessing news via mobile devices has not gained much traction. When specifically asked in 2006 about using the mobile to access news, only 12 percent of people indicated they did so ‘often’ (NTT DoCoMo, 2007). By 2007, the number who ‘often’ accessed mobile news had only grown to 13 percent (NTT DoCoMo, 2008).

As of 2005, only 7 percent of the Swedish public (aged 15–85) was accessing news via their mobiles at least once a month, a figure that rose to 11 percent in 2007 (Westlund, 2008b). During that same year, the equivalent measure for using mobile internet was 16 percent (Westlund, 2008c). With regard to gender, the heaviest users were men (across the age spectrum); with regard to age, the heaviest users were teenagers and young adults. Most were active users of digital media, and were likely to use their mobiles for the internet. Mobile news users tended to have subscription plans for their devices (rather than pre-paid cards), were generally interested in technology and were likely to have a 3G device (Westlund, 2008b).

Despite the availability of news functions on their mobile devices, comparatively few Swedes or Japanese appear to use their mobiles to access news. To understand why, we need to move beyond usage statistics to examine the attitudes that Japanese and Swedes have towards this particular function.

Attitudes towards accessing news with the mobile

Study rationale and research questions

We have identified competing channels through which people can access news, and seen that current use of the mobile device as a news medium is limited. For some people, the mobile is regarded essentially as an interpersonal communication tool, while others see it as a multimedia device. The former group is unlikely to desire media (such as the news) to intrude on their sphere of interpersonal communication (Westlund, 2007b). As we shall see, many Swedes fall into this category. On the contrary, the Japanese tend to view the mobile device as a multimedia tool that can and should be used to access the internet (Ito et al., 2005; Okazaki, 2006).

Earlier research indicates that several factors shape the adoption of advanced mobile services. Pagni (2004) has studied the adoption of 3G services in six countries, concluding that usability, user-friendliness, price and transfer speed are determining criteria for adoption. These results correspond well to studies by Gebauer et al. (2008), and Pedersen and Methlie (2004). Recently, touch-screen devices such as the iPhone have had a successful diffusion, owing largely to increased user-friendliness, but also the bundling with

more attractive price plans for mobile data usage. From their analysis of mobile usage patterns (based on actual traffic data), Ling and Sundsøy (2009) conclude that users of iPhones access mobile internet data much more than users of other mobile devices. Other studies stressing the importance of user-friendliness and/or perceived value include Bouwman et al. (2008), Kim and Chan (2007), and Pascu (2008).

Given the importance of usefulness and usability as factors in shaping users' attitudes towards mobile devices, our initial research question in this study was:

RQ1: How is the usefulness and usability of news on the mobile perceived?

This research question was explored through an analysis of two specific issues: first, people's felt need for being able to access news on their mobile; and second, people's judgement as to whether the mobile is a good medium for news.

Using ICTs and media most often costs money, either upon purchase and/or as running costs. News has become a commodity that, to an increasing extent, is perceived to be available for free, through radio, TV, the internet and free daily newspapers. Previous research shows that there is a cost dimension involved in users' evaluations of how they want to use their mobiles (Pagani, 2004). The present article limits its scope to economic costs, although people may perceive additional costs, including time needed to learn how to use the services, as well as time spent actually using them. There might also be perceived costs in the time spent waiting for page downloads or the recharging of batteries.

Using the mobile for news can be free of charge if users listen to the radio on their mobile or browse news on the mobile internet through wireless internet such as WLAN. However, mobile internet use typically entails extra costs, either through pay-per-use pricing, step models (fixed amounts of data/messages/calls for each step) or flat-rate pricing. All these payment models are offered to users in both Sweden and Japan, although the costs for usage vary between operators and countries. While few mobile news sites charge for content in Sweden, there are both free and fee-based news sites in Japan. This means that the Japanese sometimes pay not only for the data transfer of content, but also the content itself.

An international quantitative study (Mitomo, 2007) reported that given the option, mobile device users tend to prefer a flat-rate pricing model, since it provides a higher level of fiscal security. A Swedish qualitative study (Westlund, 2007b) demonstrated that people experience a high degree of uncertainty about the costs of using mobile internet. The reason was the absence of flat-rate pricing models. It was therefore not surprising for Swedes to avoid using their mobile to access news.

In light of these studies, our second research question inquired whether people found mobile news services to be expensive, and if they were willing to pay for such:

RQ2: What are the attitudes towards cost-related issues regarding mobile news consumption?

This research question was explored through an analysis of two specific issues: first, whether using the mobile for news services was perceived to be too expensive; and

second, whether people were willing to pay for mobile news services. Respondents in Japan and Sweden presumably had experience with different payment models, a factor over which we had no control.

Methodology

A survey instrument was developed to answer the two research questions, with field work in Sweden and Japan carried out during fall 2007. In Sweden, data were collected through an ongoing postal survey project known as the Mobile Barometer. This survey explores Swedish usage patterns and attitudes regarding mobile devices among Swedes aged 16–65 years.³ The survey was mailed to 2000 randomly selected people aged 16–65. A total of 764 people responded, giving a response rate of 38 percent.⁴ The Japanese data were collected through a national website administered by the Mobile Society Research Institute, a research department within NTT DoCoMo. The Japanese web-based survey collected 2500 responses from individuals (i.e. generated through self-selection) aged 15–65. (The Swedish survey began with 16-year-olds for legal reasons.)

To address RQ1, respondents were asked to evaluate the following two statements:

- 1 'The mobile is a good medium for news.'
- 2 'I have no need of being able to access news on my mobile.'

In principle, respondents could evaluate both statements without prior personal experience with mobile news. However, evaluating the second statement without prior experience was a more reasonable task.

To address RQ2, respondents were asked to evaluate the following two statements:

- 1 'Using the mobile for news services is too expensive.'
- 2 'I am not willing to pay for news services in my mobile.'

While respondents probably needed personal experience or knowledge to evaluate the first statement, such experience was not necessary for the second.

Survey researchers strive to use the research design most suitable for a given country, while mindful of both fiscal and pragmatic constraints. For the current project, Sweden was culturally and pragmatically well-suited for conducting a postal-based survey. However, in Japan, privacy restrictions do not permit this approach. Consequently, it became problematic to use the same methodologies in both countries, yielding two major methodological concerns for a study whose goal was cross-cultural comparison.

The first major concern involves the representativeness of the sample within each nation. The Japanese survey applied a non-probability sampling technique to gather equal responses from men and women and from people of different ages. However, the subjects were not randomly selected. (Rather, they self-selected to become members of a national panel, from which the questionnaire respondents were randomly chosen.) Such a web-based survey might distort the sample towards Japanese using the internet.

Note that internet usage is widespread in Japan. One positive effect of this sampling technique is that it produces limited distortion in the sample regarding socio-demographic characteristics. One drawback with non-probability sampling is that we cannot know each element's probability of selection in the sample.

The Swedish survey, by contrast, applied a probability sampling technique, ensuring that everyone had an equal chance to participate. Yet willingness to participate generated a minor distortion in the sample in terms of socio-demographic characteristics: women and people aged 50–65 were moderately overrepresented in the sample. The resulting sample expressed a slightly lower interest in technology compared with the Swedish population at large.

For all statistical analyses (cross-tables), Pearson's chi-square test was used to assess significance levels between different groups. This test, which measures independence/goodness of fit, shows that the frequency distribution observed through the survey sample is, in fact, consistent with a particular theoretical distribution. All the test results within respective countries proved significant at the 1 percent level (0.01), except for analysis of gendered differences regarding willingness to pay among Swedes (significant at the 10 percent level (0.086).

The second concern was how the two surveys might be appropriately compared. While each sample was fairly representative of its national population, different scales were offered for measuring responses in the two countries.

The Swedish study used a 10-point agreement–disagreement scale, but also offered the option of responding 'no opinion'. We tallied scores of 7–10 as constituting agreement. In our data presentations (see below), the percent of Swedes who indicated 'no opinion' is indicated in parentheses. The Japanese study used a 5-point scale, where 1 = 'totally agree' and 5 = 'don't agree at all'. (The Japanese survey did not offer a 'no opinion' option.) We tallied Japanese scores of 1 and 2 as constituting agreement. The two survey instruments were comparable in their wording of the statements subjects were asked to evaluate.

It is critical to come to grips with the major discrepancy in survey design, whereby Swedes had the option of voicing 'no opinion' while the Japanese did not. In Sweden, the 'no opinion' option was included in the survey instrument because many respondents were assumed to lack an opinion due to unfamiliarity with the technology in question. In Japan, where usage of mobile multimedia is generally high, those ultimately responsible for survey design assumed respondents would be familiar with the technology in question and to have formed opinions on it.

Our analysis of the Swedish data assumed that respondents who said 'no opinion' actually had no opinion, while those who marked a numeric option did have an opinion. This supposition is supported by the fact that it was more common among people not using mobiles to access news to express no opinion, in comparison with those who did access news on mobile devices (Westlund, 2008b). In the Japanese study, we might reasonably question whether all Japanese actually had an opinion for all the statements. (Recall that on the 5-point scale used in Japan, '3' represented a 'neutral' option.) It is unclear whether a neutral response (available to the Japanese) differed from the 'no opinion' option (available to the Swedes). And in fact, our survey results showed

considerable differences between the number of choices of 'no opinion' in Sweden and 'neutral' (i.e. '3') in Japan. It seems likely that if the Japanese were given the 'no opinion' option, they would have offered fewer neutral responses.

Obviously, it would have been preferable to have used identical scales in both countries. Unfortunately, such comparability was not pragmatically feasible. Despite these design differences, we suggest that data from the two surveys evidence clear trends that yield meaningful comparison of the two countries.

Case-study results: Sweden

Among the Swedish public sampled, 15 percent aged 16–65 years perceived the mobile as a good medium for news. However, Swedes also revealed considerable uncertainty, as 40 percent had no opinion on the matter. Because most Swedes do not have personal experience of using the mobile for news, many may have found it difficult to express an opinion. Uncertainty was greater among females (47%) than males (31%). Since more men than women (20% compared with 12%) agreed that the mobile was a good medium for news, the lower level of uncertainty among men may reflect greater familiarity with the medium, as it is more common among Swedish men than women to use the mobile for news services (Westlund, 2008b).

Looking at the data by age cohort, we find that 30–49-year-olds were most likely (21%) to report that they perceived the mobile as a good medium for news. Both younger (16–29 years) and older (50–65 years) cohorts were less likely to share this perception. However, the oldest cohort, in addition to having the least positive attitudes towards news on the mobile (11%), were also the most likely to have no opinion (53%).

Table 1. Percentage of Swedes holding attitudes towards the mobile as a news medium (fall 2007)

	Total	Gender		Age		
		Male	Female	16–29	30–49	50–65
RQ1: Usefulness of mobiles for accessing news						
1. 'The mobile is a good medium for news.'	15 (40)	20 (31)	12 (47)	13 (31)	21 (33)	11 (53)
2. 'I have no need of being able to access news on my mobile.'	55 (18)	54 (15)	58 (21)	60 (12)	55 (17)	54 (24)
RQ2: Cost factors						
1. 'Using the mobile for news services is too expensive.'	20 (68)	15 (75)	24 (61)	27 (57)	21 (69)	13 (76)
2. 'I am not willing to pay for news services in my mobile.'	56 (25)	59*(21)	54*(28)	60 (16)	58 (22)	52 (34)

Source: Swedish Mobile Barometer postal survey 2007.

*The Pearson chi-square test is significant only at the 10% level (0.1), and therefore gendered differences should be interpreted cautiously.

Note: Numbers in parentheses indicate % of Swedes expressing 'no opinion'.

The results from the second attitudinal question indicate that 55 percent felt they had no need for news on their mobile device, while 18 percent reported no opinion. Gender differences were not significant. As for age as a consideration, 60 percent of people aged 16–29 indicated they had no need for accessing news with their mobile. (Another 12% expressed no opinion.) Both of the next age cohorts (30–49 years and 50–65 years) were slightly less likely to indicate no need for mobile news access (55% and 54%, respectively), though the oldest cohort was most likely to express no opinion (24%).

Our second research question concerned perceptions about the importance of cost factors in shaping attitudes towards accessing news on mobile devices. Taken in the aggregate, 20 percent of subjects agreed with the statement ‘using the mobile for news services is too expensive’, though more than two-thirds (68%) marked ‘no opinion’. While the number of males judging mobile news to be too expensive was somewhat lower than among women (males 15%, females 24%), more males than females expressed no opinion (males 75%, females 61%). At the time data were collected in Sweden, there were more male users of mobile news than females (Westlund, 2008b). Since it is mostly men who have adopted the mobile as a news medium, it is not surprising that fewer males than females judged mobile news to be too expensive. This attitude declines as respondents become older (16–29 years 27%, 30–49 years 21%, 50–65 years 13%). However, at the same time, levels of uncertainty (‘no opinion’) increase with age (16–29 years 57%, 30–49 years 69%, 50–65 years 76%). This pattern is not surprising, considering that use of mobiles for news is less common among Swedes aged 50 and upwards (Westlund, 2008b).

Slightly more than half of the Swedes (56%) indicated ‘I am not willing to pay for news services in my mobile’ (the second cost-related statement). This statistic contrasts with Swedish responses to the first cost question, where only 20 percent of Swedes agreed mobile news was too expensive. Responses to the two cost questions also differed with respect to those voicing no opinion. While only 25 percent of Swedes had no opinion regarding their willingness to pay for mobile news, 68 percent had no opinion regarding whether mobile news was too expensive. As we suggested earlier, it is likely more difficult to voice an opinion about the expense of a technology with which you have little familiarity than to indicate whether or not you would personally be spending money for a service.

Regarding gender, there were no statistically significant differences between females and males in Sweden concerning unwillingness to pay for mobile news services. When we compare age cohorts, the youngest group (16–29 years) was most likely to be unwilling to pay for mobile news and the least likely to have no opinion (unwilling to pay 60%; no opinion 16%). The oldest cohort (50–65 years) were the least likely to express unwillingness to pay (52%) but the most likely to have no opinion (34%). We can conclude that youths and young adults and men (taken as a single cohort) are least keen on paying for mobile news services, and that it is predominantly the youths and young adults, and women, who perceive mobile news services as expensive.

Table 2. Percentage of Japanese holding attitudes towards the mobile as a news medium (fall 2007)

	Total	Gender		Age		
		Male	Female	15–29	30–49	50–65
RQ1: Usefulness of mobiles for accessing news						
1. 'The mobile is a good medium for news.'	47	47	47	48	47	46
2. 'I have no need of being able to access news on my mobile.'	34	31	38	26	31	46
RQ2: Cost factors						
1. 'Using the mobile for news services is too expensive.'	59	57	61	51	61	64
2. 'I am not willing to pay for news services in my mobile.'	71	69	74	67	73	72

Source: Japanese NTT DoCoMo web survey 2007.

Case-study results: Japan

Taken as a whole, 47 percent of the Japanese sample perceived the mobile as a good medium for news. The Japanese attitudes were strikingly consistent across age and gender.

A total of 34 percent among the Japanese indicated they had no need of accessing news with their mobiles. However, Japanese attitudes varied across subgroups. Japanese women (38%) were more likely than Japanese men (31%) to indicate they had no need for mobile news. The youngest cohort (15–29-year-olds) were least likely to agree with the statement (i.e. they had the highest need for mobile access to news), with progressively declining perceived need for access among the second and third older cohorts. Among people aged 50–65 years, 46 percent indicated that they had no need for accessing news with their mobile.

For the attitudinal statement, 'using the mobile for news services is too expensive', 59 percent perceived mobile news services as too expensive. Slightly more women than men rendered this judgement (females 61%, males 57%). Interestingly, older Japanese had more concern about expense than younger Japanese. While only 51 percent of Japanese aged 15–29 judged mobile news to be too expensive, results were 61 percent for 30–49-year-olds and 64 percent for 50–65-year-olds. Comparing these age-clustered data with findings regarding the statement 'I have no need of being able to access news on my mobile', we find a corresponding decline, with age, in perceived need among the Japanese (i.e. increase with age in those reporting no need).

The Japanese showed strong reticence towards paying for mobile news access. As a whole, 71 percent of Japanese subjects indicated they would not be willing to pay for news services with their mobiles. Interestingly, when we look at Japanese responses by gender, slightly more Japanese females (74%) were unwilling to pay for mobile news,

compared with 69 percent of Japanese males. As for age, Japanese aged 15–29 years agreed least with the statement (67%), while the other age groups showed slightly higher agreement.

Cross-national comparison and conclusions

Cross-national analyses present a variety of challenges, from coordinating methodology with international partners, to translation issues, to possible cultural disparities in completing questionnaires. Nonetheless, cross-cultural research on mobile media is vital if we are to understand what is necessary and what is contingent about the ways in which people use the technology. Japan and Sweden are both similar and different when it comes to culture and to ICT usage, and these similarities and differences can be studied empirically. Although the survey measures we used in these two countries were not identical, there are, nonetheless, several conclusions that can be drawn based on the empirical analysis reported here.

Our first research question (RQ1) asked, ‘How is the usefulness and usability of news on the mobile perceived?’ Our data indicate that the Japanese have a more favourable perception than Swedes of the usefulness of accessing news on the mobile. The Japanese public has a relatively positive attitude towards the mobile as a good medium for news, and attitudes are rather consistent across age and gender. Few Swedes find the mobile to be a good medium for news, a result closely related to the fact that many expressed no opinion on the matter. As for attitudes concerning usefulness, a slight majority of Swedes indicated they have no need of accessing news on their mobiles, while only one-third of the Japanese shared that attitude. In Japan, fewer people among early adopter groups expressed this attitude.

The second research question (RQ2) asked, ‘What are the attitudes towards cost-related issues regarding mobile news consumption?’ Our study suggests the Japanese express less willingness than Swedes to pay for mobile news, and also find it more expensive. Regarding perceptions of whether mobile news services are too expensive, the data indicate that far fewer Swedes (20%) than Japanese (59%) find such services to be too expensive. However, this finding is tempered by the fact that two-thirds of Swedes expressed ‘no opinion’ on the question, perhaps because they lacked enough personal experience to formulate a judgement. Among Swedes aged 16–49, higher numbers of people find it expensive than those aged 50–65. By comparison, in Japan, the 15–29 age group is least likely to judge mobile news services to be expensive. As for willingness to pay for mobile news services, a majority of Swedes (56%) indicate they are not willing to do so, but the number was even higher in Japan (71%). Considering age and gender, we find that Japanese women and middle-aged Japanese are least willing to pay, while the opposite situation appears in Sweden.

Undoubtedly, the mobile phone, in its role as a communication device, has had a strong impact on cultures and lifestyles. Use of the mobile as a news medium in countries such as Japan and Sweden is presently limited, compared with either use of mobiles for interpersonal communication functions or use of other news media. Our comparative attitudinal analysis may suggest the future role of this application of technology in Japan and Sweden, as well as other nations. Given how negative most respondents were about

the need for – or willingness to pay for – mobile news, it appears that most people will not use mobile news, especially if there is cost attached.

Earlier we noted Katz and Aakhus' (2002) hypothesis that people from different cultures are guided by a shared spirit regarding adoption and use of mobiles. Our data suggest that Japanese have a more favourable perception than Swedes regarding the usefulness of accessing news on the mobile, but that they are also more likely to find mobile news to be expensive and to be less willing to pay for it.

Thus, although Japan and Sweden have superficially equivalent news media systems, there would appear to be differences in the spirits among the people from these countries over the potential role of mobiles as news delivery technologies. An explanation for these differences is not obvious. This article has shown that the news media landscapes in Japan and Sweden are both similar and different, while there are predominantly differences when it comes to cultural comparisons between the countries. Considering Hofstede's model (1997), Swedes are described as doing what they feel like, placing emphasis upon personal freedom and time. Since the femininity–masculinity index for Sweden shows little distinction between men and women, these descriptions are ostensibly applicable to the entire population. From such descriptions, Swedes might be expected to be favourably oriented towards using the mobile device, as it is a personal medium that enables media usage beyond spatial and temporal boundaries. On the other hand, Japan – like Scandinavian countries such as Sweden – was an early adopter of wireless communications (Sundqvist et al., 2005), suggesting the Japanese might also be favourably oriented towards additional uses of mobile technology, such as accessing mobile news.

Our study illustrates that technological advancements do not necessarily generate immediate adoption. Although contemporary technological architecture has transformed the mobile into a multimedia device, in Sweden and Japan the mobile is still significantly used as and perceived to be an interpersonal communication device. Swedes in particular mostly use the mobile for voice calls and text messaging. Much as the internet has radically changed our global media landscape (including the way people use media and consume news), the mobile device may have a comparably profound impact in the long run. But the timing of such an impact is difficult to predict.

In tracking these trends, it will be important to consider a number of variables. Clearly, we will need to look at evolving attitudes and usage patterns regarding access to mobile news. Such studies should be contextualized with respect to other areas of mobile functionality, including music, video and still pictures. Finally, the issue of availability of internet access, along with the costs involved, must be taken into account. Already in countries such as the USA, flat-rate internet access on smart phones renders mobile news access 'free'. In countries such as Japan, most mobile internet access is charged through step plans, thereby potentially attaching additional cost for mobile news. Moreover, mobile news vendors may impose additional fees for their specific services. As mobile phones become ever 'smarter', and users increasingly rely upon them to interact not just with specific individuals but with the larger media landscape, we look forward to cross-cultural and longitudinal studies of how access to mobile news is perceived by mobile citizens of the future.

Notes

- 1 In Hofstede's survey, a scale ranging from 1 to 5 was used. First a mean score and a percentage for all particular responses in each country were computed. Then factor analysis was used to sort the survey questions into clusters, and to identify the three survey questions that best correlated with the respective cultural dimension index. To assemble an index ranging from 0 to 100, the three questions were given equal weight in a mathematic formula. The three scores were added or subtracted after multiplying each by a fixed number, and finally adding another fixed number. The indexes should be viewed as relative, not absolute, positions.
- 2 'Reach' refers to the number of individuals in a country who read newspapers frequently, here defined as newspapers distributed at least four times a week.
- 3 The project is based in the Department of Technology Management and Economics at Chalmers University of Technology in Gothenburg, Sweden. The survey is administered by Erik Bohlin and the author.
- 4 The net response rate in the survey was 39 percent. Rather than dividing the number of completed interviews by the sample, this number is divided by the sample size after subtracting natural drop-outs (e.g. people who had moved or were deceased).

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