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Mobile Entertainment Services in New Zealand: An Examination of Consumer Perceptions Towards Games Delivered via the Wireless Application Protocol

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Abstract

The rapid uptake and increased sophistication of mobile phones has provided an unprecedented platform for the penetration of mobile services. Among these, mobile entertainment is composed of a variety of services such as ringing tones, games, gambling and so on. Games are predicted to replace ringing tones as the main driver of mobile entertainment. This paper aims to contribute to the development of a better understanding of consumer perceptions towards WAP games. A series of focus groups were conducted to gain in-depth qualitative insight of perceptions towards WAP game services. The results indicate number of clear areas for the delivery of successful WAP game services. WAP games were perceived as lacking sophistication, but at the same time, were also seen as possessing several beneficial qualities. The paper concludes with some recommendations and predictions regarding the future of WAP games.

Keywords: Mobile entertainment, mobile services, WAP, games, consumers, perceptions

1. Introduction

In the space of just a decade, mobile phones have become one of the fastest adopted consumer products of all time (Chen 2000; de Haan 2000). By introducing the benefits of mobility to electronic commerce, a raft of opportunities for service development and provision have been created (Barnes and Huff 2003; Clarke 2001). Commonly referred to as mobile (m-) commerce, the extension of e-commerce through wireless Internet-enabled devices allows the delivery of services beyond a traditional fixed line connection (Bergeron 2001; Sadeh 2002; Barnes 2003). As a result, m-commerce reaches a larger market size than e-commerce and is capable of being delivered not only at anytime, but also anywhere. According to a study by Telecom Trends International (Telecom Trends International 2003), global revenues from m-commerce are destined to grow from US\$6.8 billion in 2003 to over US\$554 billion in 2008.

The proliferation of mobile phones, along with consistently improving network connectivity and device sophistication has provided a strong impetus to the development of mobile entertainment, a service that has the potential mass market appeal to rapidly spur the adoption of m-commerce. According to the ARC Group (2001), the market for mobile entertainment will reach 1.6 billion global users by 2006, creating extraordinary opportunities to leverage m-commerce revenues.

Mobile entertainment is composed of a variety of services, which include ringing tones, games, gambling, and many others. At the present, ringing tones and wallpapers are the dominant applications responsible for the majority of revenue in mobile entertainment. However, in the next few years, games are predicted to replace ringing tones as the main driver of mobile entertainment. The growth of mobile games can already be seen in some markets such as Japan and South Korea. Without doubt, in these markets mobile games have proven to be a killer m-commerce application (Datacomm Research 2002; Datamonitor 2002).

Even though mobile games are a relatively recent phenomenon, there are now a variety of these services available in most developed markets (Vodafone 2004). The nature of these games is heavily dependent on the boundaries created by device, network, and application. Most of the games currently available can be categorised within three mainstreams: messaging, downloadable, and online (Forum Nokia 2003a). In the future, the vision is for mobile games to be colour-interfaced, real-time, multiplayer and location sensitive (Choong 2003). These are qualities that present opportunities for all three game types, but particularly for online games. The most common type of online games available in developed markets are currently based on the wireless application protocol (WAP). WAP games have the ability to provide synchronous multiplayer gaming to a global audience, to be played using location-based services, and to be easily customized to user preferences and profile. However, because WAP games are reliant upon online connectivity, they are susceptible to the limitations of current mobile networks and are as a result typically of a start-stop nature, not too dissimilar to turn-based games.

Experience in the gaming market has shown that while a game's brand may initially be able to attract consumers, it will not guarantee the success of a game. In the long-run people embrace games that deliver them value (Kangas 2003). Furthermore, games delivered over the mobile network operate in a different paradigm to those of the traditional wired Internet, as dictated by differences in infrastructure and user behaviour. Therefore, it is interesting to observe that a good part of the problem with the initial wave of unsuccessful WAP games was due to a lack of understanding of consumer needs and expectations and how these can be met over the mobile medium. Consequently, just as with any other mobile service, it is fundamental to have appreciation of corresponding consumer perceptions in order to achieve successful deployment of these types of games (Barnes 2002; Green et al 2001).

Accordingly, there exists a stream of research dedicated to understanding consumer behaviour and perceptions towards m-commerce (Chae and Kim 2001; Landor 2003; Lau, 2003; Samtami et al, 2003; Vrechopoulos et al. 2003). However, none of these studies have specifically focused in the field of mobile games. By focusing on mobile games, distinctive features that would otherwise be unobserved through broad m-commerce research can be exposed.

This paper aims to contribute to the development of a better understanding of consumer perceptions towards WAP games. In order to achieve this goal, four focus groups, each consisting of six participants, were conducted. The next section provides a background to mobile games. This is then followed by discussion regarding the research methodology. Subsequently, an examination and analysis of data gathered is provided. Finally, we conclude with a discussion of limitations, future developments and further research.

2. Background on Mobile Games

The potential market for mobile gaming is huge; worldwide, there are already over 1 billion mobile phone users, a large proportion of whom maintain mobile phones capable of gaming, and this figure is set to grow (eMarketer 2003). These devices also provide a challenge for service provision, since they restrict mobile games to small displays and limited controls. Nevertheless, they also possess advantages over other digital gaming media, most notably, mobile phones are multifunctional as opposed to a specialist devices such as a radio, thus, consumers habitually possess them wherever they go – they are both ubiquitous and networked. By working around limitations and utilising advantages, mobile games have the potential to deliver a revolutionary gaming experience. For the purposes of this paper, mobile games are defined as games played on mobile phones that are either embedded or at some stage require the use of wireless connectivity, excluding any games that are reliant upon cartridges.

Beyond simply allowing gaming at anytime and anywhere, mobile games can be massively multiplayer and can exploit information gathered such as players' location and proximity to one another to create a new concept in mobile entertainment (Datacomm 2002). The use of location-based services has created an ability to play virtual games in a 'real-world' context. An article featured in *BusinessWeek* (Kharif 2001), discussing an increasingly popular game known as *BotFighters*, epitomizes this phenomenon.

BotFighters allows players to create a robot that is housed in their mobile phone, by choosing the robot's armour, shield, and eyes, which they then set upon other robots by sending text "attack messages" to the central game server. Those messages are then relayed to their local game opponents in the form of beeps. The game has become so addictive that players have been known to play for many hours in order to defeat opponents (Kharif 2001). An involved player, who plays on average 30 minutes a day, will pay somewhere between US\$5 to US\$10 per month in addition to regular mobile phone charges.

An important component of combat games, such as *BotFighters*, is that they consist of provisions which prevent players interacting within a proximity close enough to reveal real identities. *BotFighters* (*It's Alive* 2000) is just one illustration of the pioneering location-based games starting to appear around the world.

One other notable example that helps illustrate the current diversity of location dependent gaming is *TreasureMachine* (Unwiredfactory 2001). Developed by Unwiredfactory, *TreasureMachine* releases clues to guide players to a predefined location. Whenever a player believes they physically stand on the right spot, they 'dig' for the treasure using their mobile phone. The first player to 'dig' for the treasure at the predefined location wins. Players are charged a small fee for each clue they receive and digging attempt (Unwiredfactory 2004). *BotFighters*, released in November 2001, and *TreasureMachine*, not long after, are the world's earliest location-based games (Unwiredfactory 2004; *It's Alive* 2004). Partly due to their release being at a time when WAP capable handsets were not widespread these games were made available over both short message service (SMS) and WAP platforms to increase circulation. Both messaging and WAP platforms offer distinctive capabilities for mobile games.

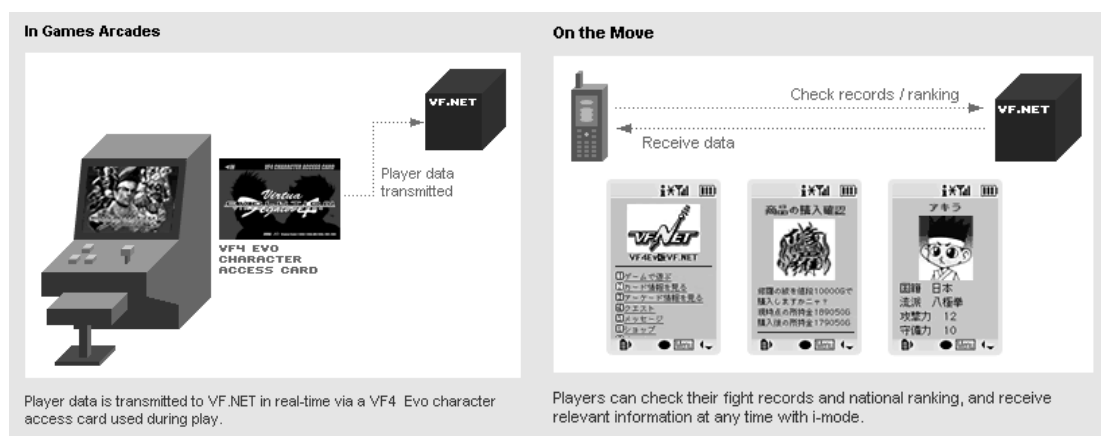
SMS together with multimedia message service (MMS) applications form a gaming category that can be classified as messaging mobile games. The means of interaction amongst these games is analogous to other data communications. To initiate game-play an SMS or MMS

message is sent to a game server. The player then receives a reply message consisting of instructions. From this point onwards, messages are sent back and forth consisting of commands from the player as well as status and directions from the game server until the game is concluded. Games that are particularly well suited for this medium include trivia, combat and strategy. Messaging games can be played either as single or multiplayer, and are able to feature location sensitive game-play.

WAP games are always played through a sustained connection to the mobile Internet. Thus, along with constraints created by device, the limitations in mobile networks restrict the dynamics and interactivity of WAP games. However, WAP is designed to accommodate these limitations by bridging the gap between wired and wireless environments. Originally, termed WAP 1.0 and written in the WML programming language, the latest version, WAP 2.0, has now progressed to employ the more advanced xHTML and adopt more recent Internet standards. WAP 2.0 attempts to optimise the usage of higher bandwidths, packet-based connections and improved device capability, while at the same time providing backward compatibility to pre-existing WAP content (WAP Forum 2002). The most significant advancement for games based on this platform is that WAP 2.0 recognizes the capabilities of users' devices, such as screen size and colour in order to maximize performance potential and bring increased consumer satisfaction. Furthermore, WAP games are easily customisable to user preferences and profile. Genres suited for this medium include role player, casino and trivia games. These games are typically of a start-stop nature.

In addition to WAP, the Japanese mobile service i-mode also provides a form of online games. I-mode originally differentiated itself from WAP 1.0 by being based on cHTML, a subset of HTML. However, the release of WAP 2.0 has signalled the unification of cHTML and xHTML. Unique to i-mode is that it has been able to provide a form of online gaming not previously seen with older versions of WAP. For example, one i-mode service links mobile phones to video arcade games. This i-mode service compliments the video games by allowing a number of functions to be played over handsets. For instance, as shown in Figure 1, the arcade game Virtual Fighter 4 allows players to check their fighting match history, national rankings, customise their characters, search for arcades with Virtual Fighter 4, and communicate with other players nationwide (NTT DoCoMo 2001).

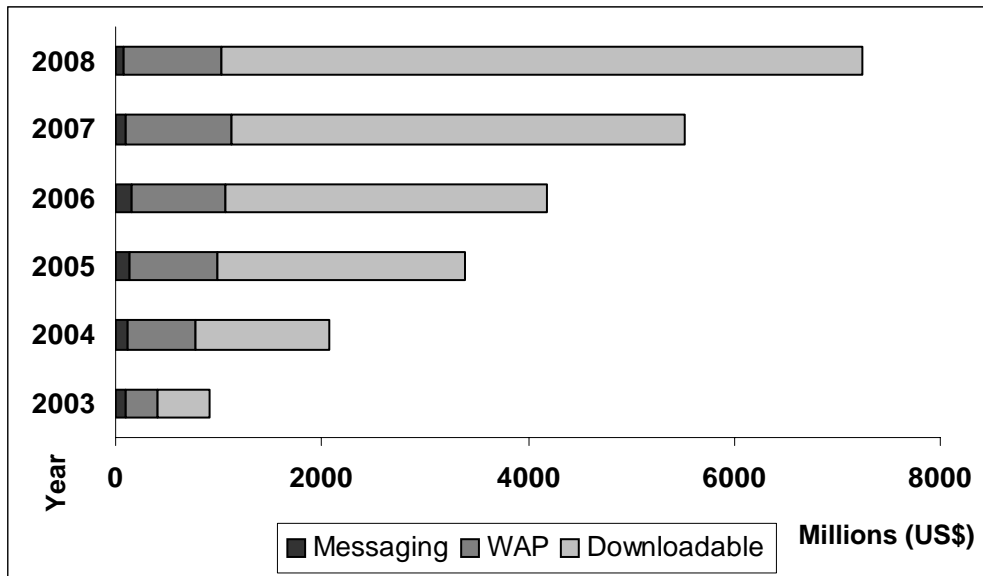
Figure 1: The Connection Between i-mode and Video Games (NTT DoCoMo 2003)



The forecasted growth amongst each of the various mobile game formats displays some disparity. As depicted in Figure 2, messaging and WAP games lie heavily out of favour,

perhaps even fading away towards the year 2008. At the same time, downloadable games are destined to offer the greatest potential for growth.

Figure 2: Global Revenues by Mobile Game Format (2003 – 2008) (Strategy Analytics 2003)



Downloadable games - which are made possible by way of technologies such as Java, BREW (binary runtime environment for wireless) and Symbian - are downloaded into devices and can be played repeatedly without the need for any further network interactivity. Embedded mobile phone games are essentially also included in this category. At present, due to mobile network limitations and sophistication of downloadable games, synchronous multiplayer capability is restricted to short-ranged embedded technologies such as Bluetooth, while asynchronous multiplayer functions such as the uploading of high scores is facilitated by mobile networks. Already there exists a comprehensive range of branded downloadable games, including The Lord of the Rings, Tiger Woods PGA Tour, and Pacman. Downloadable games are arcade-styled and sufficiently advanced to contribute to the ubiquitous network of gaming. In Japan, consumers are able to play portions of Sony Playstation console games over Java-enabled i-mode mobile phones (NTT DoCoMo 2001); i-mode phones plug into a Playstation console permitting games to be later played while on the move.

Regarding these three categories of mobile games, it is important to understand the peculiarities of their user demographics. Table 1 summarises the findings of Anderson (2002) regarding consumer segmentation. A consistent feature amongst the segments prescribed by the author is the young age of mobile game players. However, when considering other demographics of gender, gaming background, reason for playing, type of game preferred, success factor, proportion of a population and speed of uptake, a clearer description of mobile gaming consumer segments unfolds.

Table 1: Mobile Gaming Consumer Segmentation (Anderson 2002)

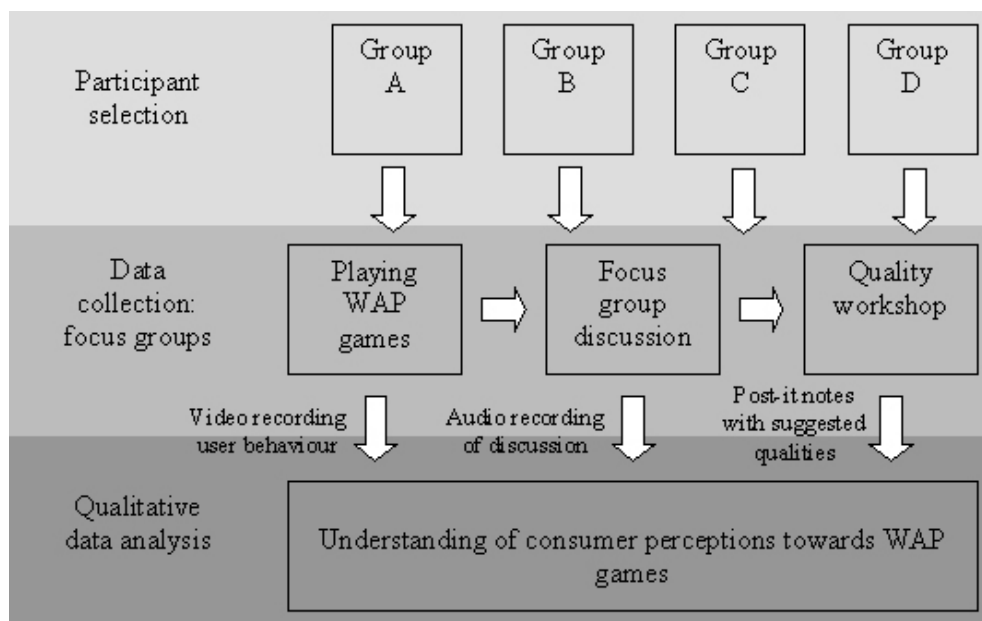
	Mobile casual gamers	Mobile hardcore gamers	
		From mobile casual gaming	From traditional hard-core gaming
Demography	Young, both sexes and all ages	Young, both sexes	Young, males
Console gaming background	Some	Most	All
Reason for mobile gaming	Time-killing	Hobby	Hobby
Type of game	Simple	Simple & complex	Complex
Success factor	Game-play	Game-play and graphics	Graphics
Mobile gaming user population	Majority	Minority	Minority
Uptake	Now	Gradual	An introduction in relevant handsets

The following sections present the methodology used in this research and the respective consumer perceptions towards WAP games.

3. Methodology

The use of qualitative methods of research can be found in many disciplines. Within the domain of Information Systems, qualitative research has become increasingly used in the past decade (Myers 1997). Focus groups are especially valuable when there is a need to obtain qualitative data filled with vivid and rich descriptions. Focus groups generate data through bilateral communication between the moderator and participants. From listening to people share and compare their different perspectives a wealth of in-depth insight can be uncovered regarding opinions and attitudes (Morgan and Stinson 1997). Figure 3 illustrates the research design undertaken.

Figure 3: Research Design



3.1 Participant Selection

A total of four focus groups, each consisting of six participants, were conducted during June and July 2003 in Wellington, New Zealand. In line with recommended procedure, participants were selected and grouped according to their previous experience with the Internet, mobile phones, computer games, and WAP in order to gain insight into consumer perceptions of WAP games from a variety of perspectives (Morgan and Stinson 1997). Although participants amongst all four groups were high Internet users, groups were unique with respect to participant's level of usage of the other three technologies. With reference to Table 2, the focus groups were assembled as follows: WAP users (group A); computer game and mobile phone users (group B); mobile phone users (group C); and Internet only users (group D). Based on demographic statistics all participants were aged between 21 and 35 (Datamonitor 2001; Lipp 2002; Chang 2003). All games were played using WAP 1.2.1 over a CDMA 2000 1x mobile network. At the time of focus group exploration, these were the most advanced mobile technologies available in New Zealand – a more recent version of WAP has since been made available to the market.

Table 2: Focus Group Experience Levels

Group	Internet	Mobile phone	Computer Games	WAP Experience
A	High	High	High	Yes
B	High	High	High	No
C	High	High	Low	No
D	High	Low	Low	No

3.2 Focus Groups

At the start of each focus group, participants were presented with a mobile phone and worksheet. The worksheet included the purpose of the focus group, instructions on how to operate the participant's respective mobile phone and the proceedings of the focus group. Each participant used a unique model of mobile phone associated with the service of Telecom New Zealand. To increase the level of consumer perceptions uncovered, a variety of activities were conducted in each focus group. Focus groups ran for between 90 and 120 minutes and consisted of three stages: (i) playing WAP games; (ii) focus group discussion; and (iii) a quality workshop.

3.2.1 Playing WAP Games

Participants were provided with approximately 45 minutes to play and build familiarity with three designated games. To gain understanding of consumer perceptions with respect to a range of WAP games, each focus group was designated a unique set of three games consisting of one game from each of the following genres: multiplayer; role player; and classic. This interaction was recorded onto digital videocassette. A total of 12 games were played, represented by a unique set of three games for each of the four focus groups. Table 3 details the specific games played by each focus group.

Table 3: Games Played by Focus Groups

Group	Multiplayer	Role player	Classic
A	Boy Racer	Ecowarrior	Rock, paper, scissors
B	Shark Hunter	Swingers	Tic Tac Toe
C	Trivia: Trivia Racer	Wipe Out	Hangman
D	Trivia: Woodbine	Gone Fish'n	Slots

3.2.2 Focus Group Discussion

Once participants had played the three designated games they were asked open-ended questions requiring them to draw upon their experience. A conscious effort was made to ensure questions were clearly formulated, neutral, appropriately sequenced and easily understood. Focus groups were recorded on cassette tape. Indicative questions used at each focus group include:

- What problems did you have?
- What did you find easy?
- What did you like?
- What did you not like?
- Would you play the games again? If yes, why? If not, why?

Furthermore, follow-on questions came from several sources:

- Drilldown questions on specific issues expressed by participants to clarify thought and gain a deeper understanding.
- Comments provided by participants, which fuelled questions on related issues to allow a broader comprehension.
- Observations from participants playing WAP games in stage one of the focus group.

All questions were not preconceived for specific focus groups. However, a number of distinct follow-on questions arose amongst focus groups. Most noticeably, groups consisting of experienced game players (groups A and B) considerably raised concerns regarding a lack of game functionality and media richness, while groups consisting of inexperienced game players (groups C and D) tended to raise issues concerning perceptions of control and challenge in game-play. A trend that is consistent with existing knowledge on the behaviour of mobile game players (Anderson 2002).

3.2.3 Quality Workshop

For the final stage of the focus group, a quality workshop was run to uncover perceived qualities of an excellent WAP game. Bossert (1991) recommends a three-stage process for such workshops. Participants were first provided with post-it notes and asked to answer the following question: "What are the qualities of an excellent WAP game?" Participants were instructed to work in silence, write one quality per post-it note and encouraged to also write a brief explanation and rationale for the proposed quality.

Once all participants felt they had exhausted their ideas, participants were then sorted into two groups of three to combine their post-it notes into affinity groups. Participants initially performed this task in silence, moving post-it notes around and creating headings as felt appropriate. Finally, participants worked as one group to develop one combined affinity group of demanded qualities.

4. Data Analysis

Results presented in this section represent derivatives of the data collected during all three stages of the four focus groups. Initially, data gathered from stage one, user behaviour, and stage two, focus group discussion, were organized. First and foremost, the observations concerning the qualities of an excellent WAP game were coded openly and qualitatively (Strauss and Corbin 1990). Following this, these observations were recoded axially (Strauss and Corbin 1990), converging into categories: user friendliness, media richness, interactivity, price, rewards, responsiveness, functionality, multiplayer, personalisation and enjoyable. Inherent within these results, areas were identified that could improve current WAP game offerings.

4.1 User Friendliness

The user friendliness quality consisted of the highest number of identified observations. Firstly, participants felt it was difficult to use input keys. However, this may have been due to participant's lack of experience with the mobile phone they were using. With the vast number of models of mobile phones available it is likely participants were using phones with which they lacked familiarity. Secondly, the need to scroll down through text was seen as annoying. One participant suggested that audio could be used, especially in storytelling games to remove the need to repetitively scroll. Thirdly, an important need was recognised for WAP games to have high-quality instructions, as participants were often confused and needed a longer than anticipated length of time to understand game-play. One possible explanation for this could be due to an observation that participants had extremely misguided preconceptions of the nature of WAP games. This could be attributed to a number of reasons: preconceived notions of mobile gaming derived from playing embedded games that have a much higher level of interactivity; an association of Internet-based technologies consisting of colour graphics and moving pictures; and connotations derived from the titles given to WAP games. Another explanation could be that the design of a game meant it was inherently difficult to learn to play. For example, one participant identified the display in a WAP game as not conducive to explaining the need to scroll down, the lack of a scroll bar in WAP meant the user was left perplexed. Comments provided indicated that in a real world scenario, participants would have given up playing after experiencing initial difficulty.

4.2 Media Richness

Lack of colour, sound and animation induced one participant to comment how WAP games were reminiscent of early handheld games played twenty years ago. This was a feeling that typified the expressions voiced relating to media richness. Some participants indicated that until the media richness in terms of colour, graphics, screen size and sound develops to a sufficient level, they will avoid WAP games. Additionally, the ability of a mobile phone to vibrate was identified as a possible characteristic to exploit to enhance WAP gaming.

4.3 Price

Relative to the entertainment value obtained, participants considered WAP games overpriced. WAP games are charged at US\$0.04 per screen, which aggregates to approximately US\$6 for every 30 minutes of game-play. The high price was suggested as a factor that would make participants reluctant to play WAP games, especially since embedded games are a 'free' alternative.

4.4 Rewards

A very strong consensus across all focus groups emerged regarding rewards. Participants believed there was a lack of some form of reward structure. They saw rewards as a way of

acknowledging skill and enthusiasm. Participants also believed that by providing rewards an incentive would be created to play WAP by increasing entertainment value in the form of indirect gambling and recompensing for the steep price paid to play games. Furthermore, it was expressed that rewards do not necessarily have to be financially based, for example, a reward may simply comprise the acquisition of entertainment value from playing an enjoyable game.

4.5 Responsiveness

Participants invariably provided adverse comments concerning the mobile network. The network was found to be slow and unreliable. “Network not responding” anecdotally appeared to be the most common WAP page cited. Participants felt that in alternative circumstances, they would have been inclined to give up playing due to the delays. A fast connection speed was desired to facilitate less frustrating and more interesting game-play.

4.6 Interactivity

User involvement was identified as a desirable quality evidenced by participant’s disappointment at the lack of control and range of tasks they could perform in determining the outcome of some WAP games. From experiencing some games that were found to be determined entirely by luck as opposed to skill, participants also felt they would tend to stay away from games that failed to provide a challenge. In contrast, Games that captivated the user by providing an interesting storyline or requiring an appropriate level of thought or skill when taking action were perceived favourably. Games that lacked any degree of complexity became uninteresting very quickly. The length of time participants were willing to play a WAP game was dependent on the game’s level of complexity.

4.7 Functionality

Games were seen as lacking a range of functions. Participants had anticipated the ability to record high scores, develop a personal gaming history, and to progress on to higher levels once a game had been mastered. The absence of functions of this nature restricted the level of value participants could derive from playing WAP games.

4.8 Multiplayer

Games that required participants to compete against others were found to have the potential to make the focus group atmosphere exciting and lively. The ability to play other people was seen as a quality that favourably differentiated WAP games to previous mobile gaming experiences. Games that were multiplayer and at the same time engrossed the user provided the most enjoyment. Additionally, it was envisaged that value would ensue from being able to talk to other players, an observation indicating perceived benefits of an online community.

4.9 Personalisation

Participants appreciated how certain games were customised by featuring the names of nearby localities. Conversely, adverse reactions were created by games that were considered gender biased or incompatible with personal morals.

4.10 Enjoyable

Participants desired WAP games to be entertaining, exciting and stimulating. When these variables were not met, games were described as boring, simplistic, too long to complete, too hard and slow to respond.

Overall, participants responded to WAP games with mixed reactions. Although WAP games were perceived as lacking sophistication, they were also seen as possessing several beneficial qualities. When combining these qualities with enhancements to design and the introduction of increasingly sophisticated technologies, WAP games were generally regarded as a promising medium of gaming. In addition to lacking sophistication, price was also seen as a significant deterrent. Table 4 presents a summary of the positive and negative perception across the different focus groups in relation to each game genre examined.

Table 4: Positive and Negative Perceptions in Relation to Game Genres

Game genre	Group	Positive perceptions	Negative perceptions
Multiplayer	A	Enjoyed for the competitive nature created by being able to play against other people. Game exercised memory skills.	Lack of ability to store personal gaming history as well as other personal gaming details. Network speed affected ability to compete. Over inflated expectations due to connotations of the game's name.
	B	Ability to play against other people	Although there are a variety of options that maybe chosen, game is entirely up to chance. After gaining familiarity with game, participants left mistaken as to how game initiated.
	C	Ability to play against other people. Requirement to think when playing.	Participants were not always aware they were competing against another person. Difficult to decipher which player is which.
	D	Ability to play against other people. Requirement to think when playing.	Slow network speed caused input to be received by the game overdue. The game disallowed answers if too much time has passed. Difficult to decipher which player is which.
Role player	A	Engaging storyline. Storyline indirectly provide instructions by describing possible allowable player actions.	The need to continually read text was not enjoyed. Need to continually scroll down through text was annoying. So many instructions to remember note taking was required.
	B	-	Only one action can be taken when playing.
	C	Game customised by naming nearby localities. Players rewarded by seeing a picture.	Requires only one button to be pressed intermittently to successfully complete. Confuses participants by featuring animation, yet requiring one button to be pressed. Pictures appeared that offended participants.
	D	Provided humour.	Does not require the player to produce any thought.
Classic	A	-	Gets boring quickly. Lack of reward even when lucky enough to win.
	B	-	Complex words used. Poorly adapted for mobile phone screen size.
	C	-	Network failure prevented testing.
	D	-	Failed to attract interest.

Further insight can be gained by relating these results to guidelines established by Forum Nokia (Forum Nokia 2003b; Forum Nokia 2003c) for mobile game developers. By providing a series of recommendations on game design based on usability principles, Forum Nokia's guidelines suggest characteristics required to achieve games with greater user satisfaction. Because these guidelines are strictly focused on usability and are dedicated for downloadable games there are a number of disparities. Nevertheless, there are also areas which are aligned and in some instances the findings presented above are expanded. A selection of relevant guidelines is provided in Table 5.

Table 5: Relevant guidelines specified by Forum Nokia for WAP games

Variables identified from focus groups	Guidelines specified by Forum Nokia (2003a; 2003b)
User friendliness	Use natural controls. Provide a clear menu structure. Offer help when it is needed – if it is relevant to the situation it is more likely it will be remembered. The user must always understand their current status.
Media richness	Go easy on the sounds (e.g. use sound for feedback, but the game must also be playable without the sounds). The same applies for phone vibration. Use a consistent colouring scheme within the game and the navigational structure. Things that look similar should behave similarly.
Price	-
Rewards	Provide high score as a reward.
Responsiveness	Make the game launch in reasonable time, the faster the better.
Interactivity	The user needs to feel they are in control of the situation. Must be challenging enough for advanced users, but easy enough for beginners to stay motivated.
Functionality	Provide save and pause. Special levels are wonderful features that bring more variety to play. However, if the game rules for these levels are different, players must understand this.
Multiplayer	Given the difficulty of chat via mobile devices, it may be worthwhile to build a system to allow player to automatically offer, accept and break alliances and/or signal their intentions by in-game actions rather than with words. Introducing systems to match players of equivalent skill against one another i.e. an inexperienced player will be put off a multiplayer game if they are convincingly defeated at their first attempt by a skilled player.
Personalisation	It is important to understand the user's preferences. The game must preserve all the data the user has entered. Including their name, options selected before playing and options selected during the game.
Enjoyable	-

5. Conclusion

The advancement of mobile devices, networks, and applications and the ability to provide an innovative form of gaming previously unattainable is suggestive of the future direction of mobile gaming. However, even before these advances take place, by uncovering a number of consumer perceptions towards WAP games by way of focus groups, we have been able to identify areas that could improve current offerings. These areas include the introduction of functionality to allow storage of personal gaming details, such as statistics or preferences, offering rewards to compensate for high costs, recognise skill and add excitement, as well as the important role of a game title to aid the instruction of a game and guide expectations. A further key finding of the paper was the significant entertainment value gained by consumers when playing multiplayer WAP games that engaged players by providing an appropriate level of challenge.

There were a number of limitations identified in the focus groups. The mobile phones used in this research all featured monochrome screens. In addition to this, participants played WAP games within a restricted length of time and area of space, causing participants to have an unrepresentative exposure of the speed and reliability of the mobile network and preventing perceptions that would arise from a more longitudinal based study, such as the importance of game longevity, from being uncovered. It also disabled the ability to examine

location-sensitive games. Furthermore, participants were asked to play games that may have belonged to a gaming genre they find adverse, creating artificial, experiment-type conditions. Accordingly, in order to develop a better understanding of consumer perceptions towards WAP games, further research must be undertaken in areas such as human-computer interaction (HCI), mobile networks and user contexts. Undoubtedly, this is an area with great potential in which a deep understanding of its domain will be a key factor for successful consumer adoption.

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