



A Participative Simulation Game in Mobile Business Strategy

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Abstract. This paper presents recent research on an experimental business game on Mobile Business. We argue that Mobile Business presents a formidable challenge to businesses, primarily in terms of the complexity, the uncertainty and the fast pace of change that are characteristic of this environment. Because of these characteristics, planning approaches in mobile business need to actively explore the present environment and potential future developments, by embracing principles of organizational learning. Organizational learning is an important element of every decision making process and is considered by many organizations to be a key competitive asset. This paper presents a business game in mobile business, which is intended for use for learning purposes both in a training/educational context, as well as part of the early stages of a business planning exercise..

Keywords: mobile business, strategic planning, organizational learning.

1. Introduction

Mobile Business is gradually introducing another paradigmatic shift in the information economy by adding mobility, ubiquity and location awareness to the Internet [7, 13]. But m-Business is not just e-Business with wireless connections. It is an entirely new way of designing and deploying a wide range of network applications and services [5]. Furthermore, mobile business affects a multitude of business actors, from established Web players to newcomers from more traditional industries. For example, the markets of Japan and other far-eastern countries have seen the spectacular growth in entertainment services for the youth and some corporate applications. In Europe, SMS-based

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messaging and person-to-person services (such as chatting, dating, etc) have met explosive growth [8]. In the United States where network protocols are more fragmented, individual operators have been able to launch successful mobile commerce services but widespread adoption of cellular services is still far. What does seem to be taking off in the US though is the proliferation of wireless LANs and WiFi hotspots, high-speed wireless networks using the unlicensed range of the spectrum [15]. In other words, we are observing markedly different adoption trajectories, contingent on the state of technological development, the regulatory environment and the preferences of consumers [12].

Faced with uncertain demand and a complex socio-technical environment, it is very difficult for any market player to plan its strategic position in relation to the Mobile Business market. This applies equally to mobile and fixed network operators, to content providers, to potential newcomers to the mobile market and to numerous other actors [11, 16, 17]. Such observations have lead Mylonopoulos and Doukidis [12] to define mobile business as *“an ecosystem for individuals and business actors, in given historical socioeconomic contexts, engaging in multiple successive technological frames through a learning process of co-creating new experiences of social interaction with the use of wireless and mobile technologies”*. In this complex ecosystem, the future cannot be a linear extension of the past [18]. Therefore, business planning in this context needs to take a route that will enhance the company’s ability to imagine an unprecedented, yet feasible, future and to create it. For this purpose we propose a business simulation game that engages participants in actively dealing with this complexity.

The paper is structured as follows. The next section establishes the significance of learning processes in the context of strategic planning in mobile business. Section 3 sets up the objectives of the business game. Next, section 4 presents the conditions of the simulated market, and it analyzes the different team roles. Section 5 analyses each stage of the game and section 6 gives an insight into the implementation of the game. The learning experience and outcomes are discussed in section 7. The paper concludes with a critical review of what we achieved and with directions for future research.

2. Strategic Learning in Mobile Business

To engage in strategic planning, an organization must be able to predict the course of its environment and to control it [10]. Courtney et al. [1] suggest that traditional approaches to market planning simply do not work in today’s highly uncertain business environment. Under such conditions, companies need flexible planning processes and plans in order to adapt fast enough to survive [19].

According to Hosley et al [6] and de Geus [2, 3, 4] learning is considered by many organizations to be their major competitive asset. During the learning process, the organization should be flexible in order to apprehend and act upon a complex, dynamic, unpredictable and novel environment. Therefore, in the highly complex and uncertain environment of mobile business, we need to see strategic planning as a learning activity and we need to define planning tools and ways in which these tools can support learning.

A key determinant of success in such an approach is the ability of managers and the company as a whole to acquire intimate knowledge of the industry and its dynamics, before committing significant resources to a live trial-and-error exercise. In other words, the objective is to instill early on and to the extent possible, a measure of the knowledge that is typically accumulated through successes and failures in the market. This requires a refined capability to learn, which entails assimilating information from the external environment, generating new knowledge internally, and turning this knowledge into business strategy [4, 6, 9]. There are a number of methodologies and techniques that companies may use to enhance their collective learning ability in the context of strategic planning. In this paper we present a business simulation game that we use in executive education in order to accelerate the managerial understanding of the opportunities and challenges of mobile business. This instructional game is intended for managers who are generally experienced in electronic business and aims at generating more intimate awareness of the particular dynamics in mobile business.

As discussed in the previous section, the advent of mobile business raises a whole new range of challenges. Addressing these challenges in the corporate context requires a significant amount of foresight and incisive understanding of the causal powers that give rise to the phenomena we observe. Our limited experience of what might work in mobile business and what not, does not provide sufficient 'data points' for extrapolating a reliable forecast. A learning approach to strategic decision making turns out to be much more appropriate in this context. This learning orientation to understanding the dynamics of the mobile business marketplace defines our motivation for the business game described in this paper. We have developed and used this business game for use in post-experience courses in management and technology. The overall aim is to supplement traditional teaching methods with a more experiential approach [14].

3. Mobile Business Strategy Game: Background and Objectives

The objective of this business game is to enact the internal and external processes of devising, negotiating and launching a new mobile service. The questions being raised and tackled include: Which new service should a

Mobile Business company launch? What alliances can and should be formed between operators, content providers and technology companies? What are the final plans that key players agree to? The implicit objective is to help participants gain a practical understanding of the meaning and components of a mobile business model, of how to build a strategy according to their perceived core competencies, how to negotiate with other players of the market (either competitors or suppliers) and how to form alliances.

The business game is designed to take place in one location over the course of approximately eight hours or more. It evolves through three main stages wherein participants, organized in teams, are given specific instructions and rules of conduct. Teams take up the roles of different mobile industry actors (companies) and are instructed to collaborate while competing against each other. The achievements of every team during each stage are communicated to the entire simulated industry before the following stage begins, so as to foster new initiatives and business moves.

This business game promotes extensive participant involvement and interaction in workshops. During the workshops, participants have the opportunity to develop their own understanding of the multiple facets of mobile business today and into the future, to immerse themselves in strategic decision making within a complex and uncertain hi-tech environment and to engage in team decision making, using formal techniques, under conditions of diverse opinions and viewpoints.

4. Team Roles and Conditions of the Simulated Market

Participants are asked to assume that they operate in a market comprised of the companies/teams represented in the game. Participants are given some basic assumptions about the structure of the simulated market. These assumptions are intended to be representative of certain key worldwide trends or to approximate the actual conditions faced by participating managers.

In particular, in terms of regulation, governments are assumed not to provide sufficient stimulus for the diffusion of mobile services. Unclear principles for content licensing offer limited protection of intellectual property rights. Public regulation does not give individuals enough control over the type and quantity of personal information they give away in any transaction. As far as technology is concerned, several network platforms and device technologies co-exist. However, roaming between services, devices and networks remains problematic. Many areas of technological standards remain unresolved. As a result, dominant industry players impose their own technology choices for m-service delivery, access and development.

In order to make the discussion and conclusions more robust to the volatile changes we observe in different regional markets, we need to abstract from the

dominant business entities of today and consider broader roles that different players might assume. We examine three archetypal roles, namely the Mobile Network Operator, the Technology Provider and the Content Provider [11]. Clearly, the same actual business entity may assume one, or all, or any combination of these roles. Notably, an actual Mobile Network Operator today also acts as Service Provider and as Service Integrator. Each team takes up the role of one such actor and is given a written outline of their profile, core capabilities and strategic outlook. A few operators, content providers and technology providers are needed in order for this simulated industry to generate interesting dynamics. For example, if there are nine teams of participants, there will be three of each type of actor. Appendix 1 presents a summary of the strategic outlook faced by each company, which is distributed to teams. Again, various assumptions are being imposed on each participating team, in such a way as to approximate the real world conditions that we need to analyze and understand, and to provide some elementary strategic choices from which each team will have to start at the beginning of the game. In essence, these strategic profiles serve to imbue a simulated sense of corporate identification among the members of each team.

5. Game Structure

The game unfolds in three stages. During each stage, team members convene and draw a strategy, including specific decisions (e.g. launch of new services or agreements with other actors/teams). At arranged intervals, the facilitators may distribute extrinsic events, such as market reactions or regulatory interventions. In the following stage, teams reconvene in order to take such developments into account and to proceed with their strategy. In the beginning of stages 2 and 3 the facilitator debriefs all teams in plenary so that nearly all information regarding individual team work becomes public knowledge. This enables teams to plan a more effective course of action in the following stage and to solidify the learning outcomes of the preceding stage. The debriefing of stage 2 (in the beginning of stage 3) is resisted by some teams because, by that time, they are into a competitive mood and prefer to withhold some information, which they see as 'sensitive'. This request may be satisfied only for a small portion of the details about their tentative agreements (see below); for the benefit of collective learning (after all, this is an educational exercise) and for the efficiency of the game itself, it is important that a significant amount of information about tentative negotiations in stage 2 becomes public knowledge. After debriefing and before resuming the following stage, individual participants rate the performance of every team. The outcomes of this peer scoring exercise serve to introduce a measure of performance benchmark and thus to intensify the competitive mood during the game.

5.1. Stage 1: “Strategy: Developing the Next Business Model”

During Stage 1 teams discuss the situation in the market and their strategic options and set the strategic objectives and vision for their company. Teams are given the following questions for consideration. “What core capabilities (competencies) do you want to develop/establish as the main source of your competitive advantage?”; “How do you believe this competitive advantage can be sustained over time?”; “Which is your target market?”; “How do you want to position your company strategically in the market?”; “What new services do you give priority to?”; “What alliances/agreements do you want to pursue?”; “What are your negotiating tactics?”

Their primary task is to design one new business model. They have to describe some basic components of their business model, by filling in the Business Model Form (Appendix 2). Each team has to fill in details for the following business model elements: product/service offering, target market, core capabilities, value network (alliances and partnerships), value proposition (major benefits to customers), cost and revenue structure, critical success factors.

5.2. Stage 2: “Negotiation: Seeking the Right Partnerships”

In Stage 2 the objective of every team/actor is to explore potential partnerships with other teams/actors in order to get their business model launched as a new service. Each team assigns members as delegates who approach other teams/actors in order to explore the possibility of collaborating with them, keeping in mind that other actors also have an agenda regarding their own business models. At this stage every negotiation is tentative. Teams do not have to finalize any agreements. This is why each team is encouraged to explore its options with all potential partners and not just one. Teams need to explore how they would share investment, risk and revenue, what competencies and capabilities each partner would be contributing, etc. As part of their discussions, teams may find it productive to consider altering or fine-tune their business model, in collaboration with and depending on the input they receive from their potential partners. It is a good idea to discuss different business models in parallel. Teams do not have to try to negotiate a ‘package deal’ at this stage. They will do this later. For example, if a team is in talks with another for two business models, it would be better to set up two negotiation teams working in parallel, one for each business model. During the discussions teams have to get down to the essential details, namely, how they will share investment, risk and revenue, what competencies and capabilities is each partner contributing, if each partnership enhance or diminish the overall market power of each team in the medium to long run, etc. Towards the end of

stage 2, each team has to fill in the Negotiation Form with the details of their tentative agreements (Appendix 2).

5.3. Stage 3: “Execution: Finalizing the Agreements”

The objective during this last stage is to assess the alternative partnerships that have emerged from the previous stage and to come up with a strategy for the final agreements. Each team has to identify the most promising alliances, considering competing moves of their potential partner, and to negotiate the final agreement, finalizing the details of exclusivity, branding, ownership of intellectual property rights, sharing of risk/return, etc.

All team members work within the team, having returned from negotiations with other companies/teams. They assess the alternative partnerships that team members have negotiated in Stage 2, and evaluate the alliances that their competitors and potential partners consider as a result of their Stage 2 negotiations. They need to come up with a strategy for their final agreements. They have to identify the partner(s) they will give priority for doing business with. Furthermore, they have to assess the broader strategic implications of their potential alliances and to draw a negotiation strategy for the final agreement. The final task is to meet representatives of the other teams and finalize the agreements. During negotiations, each team has to fill in the Execution Form and the revised Business Model Form (Appendix 2).

6. Implementation

6.1. Before the Business Game

In order to prepare for the one-day business simulation, participants need to read an Introduction to the business simulation and a description of the team roles and conditions of the simulated market (the material referred to in section 4). Normally, participants are well acquainted with e-Business and are expected to be familiar with the basics of mobile business. Often, a lecture on mobile business is a valuable complement one day before the business game.

6.2. At the Beginning of the Business Game

The facilitator should give an overview of the business game at the beginning of the seminar. Instructions about the structure of the game should be distributed to teams (refer to section 5). The role of the facilitator at this early

point is to explain a few basic facts about the course of the game, to explain the details of how to get started and to instill some enthusiasm around the game and the forthcoming competition. It is unproductive to attempt to explain details of later stages; participants easily miss the big picture. It is better to explain details of the immediate steps and only an outline of later stages.

6.3. During the Business Game

Typically we split participants into 9 teams of 5 to 10 members each. Teams are assigned identities as mobile operators, content providers and technology providers. Because during the time of negotiations (stages 2 and 3) it is difficult for participants to remember other teams' members, it is necessary for each member to wear a badge with his/her name and the team's identity.

For large numbers of participants, facilitators will find it easier if they have a few "Assistant Facilitators". The role of the assistant is to support individual teams as they learn their way through the rules of the game and the nuances of mobile business. Further, assistants are also valuable in supporting the formal processes of issuing questionnaires, entering the data and printing the results. It should be mentioned that the compressed time in which the workshop usually takes place, gives rise to difficult operational problems, since data collection, processing and analysis has to be carried out in real time.

The whole exercise does not exceed eight hours. We propose the following time-table:

09:00 – 09:30	Introduction – Instructions
09:30 – 11:00	Stage I (Breakout teams)
11:00 – 11:20	Coffee Break
11:20 – 12:50	Stage II (Breakout teams)
12:50 – 14:20	Lunch
14:20 – 15:50	Stage III (Breakout teams)
15:50 – 16:10	Coffee Break
16:10 – 17:00	Final Debriefing and Close

6.4. Peer Scoring System

In the beginning of stages 2 and 3 and in the very end of the game, each individual participant rates the performance of his or her team and the performance of every other team in the game. This takes place after all teams have been debriefed in plenary and all actions from the preceding stage are public knowledge.

Participants are given an evaluation sheet with three questions (Appendix 2). In the first two questions they are asked to rate every other team in relation to their own, and they don't rate their own team. In the third question, participants rate the performance of their own team only. In the first question, each participant rates the performance of every other group as a result of the preceding stage, relative to their own group's performance, by using a scale from 1 (inferior) to 5 (superior). In the second question, each participant rates the competitive position of every other group in relation to his or her group by using a scale from 1 (worse) to 5 (better). In the third question they are asked to rate the improvement or deterioration of their own team's performance in relation to the previous stage by using a scale from 1 (deteriorated competitive position) to 5 (improved competitive position). The results are collated and the average scores are fed back to the teams a few minutes later.

The scores fed back to the plenary comprise an average score per team. For questions 1 and 2, we take into account how participants from other groups rate a group, while for question 3 we take into account how participants rate their own group. For example, if there three teams A, B and C, the score for team A is the average of the scores received from members of teams B and C on questions 1 and 2, and of their own self-rating in question 3. This peer scoring mechanism is devised in such a way as to dissipate any attempts to intentionally downgrade competitors or upgrade one's own team in the average score. Dissipation is achieved in three ways. First, in two of the three questions, participants rate every team except their own. Second, these ratings are relative to their perception of their own team's performance. Thus, if every participant applies a similar degree of fairness or bias in their assessment toward the other teams, the average result will be fair in relative terms (no team will be discriminated for or against). Third, questionnaires are individual (as opposed to group-based) in order to attain higher statistical variance and to approximate more normally distributed scores.

The final evaluation in the end of the game is used to declare the winning team (some symbolic prize is usually awarded to winners). The objective here is to generate an extra sense of competition between the teams during the course of the game and to help them focus their attention on improving their results. However, the third evaluation represents the performance of teams during the last stage only. In order to declare a winner for the game, an overall score is computed per team, as a weighted average of the scores of all three stages. We assign increasing weights to later stages thus underlining the significance of experience and learning that build up through the three stages. The weight of the last stage is higher than that of the first two, since the objective during this last stage is to finalize decisions and this is, ultimately, what matters. Similarly, the weight assigned to the second stage is higher than that of the first stage, because most of the creativity and innovation is generated during this exploratory process.

The quality and reliability of these scores depend to a large extent on the quality of the debriefing process. The facilitator should use the debriefing session as an opportunity to feed back critical comments on what teams do well or not. Because this is a simulated game and participants are not necessarily industry experts, teams will often make assumptions and proceed to agreements which are grossly unrealistic. Although teams should be encouraged to make their own assumptions and it is reasonable to allow some less realistic outcomes, it is important for the learning objectives of the game to critically discuss the choices made by teams.

7. Learning Outcomes

Whether it is deployed in a training context or as part of a strategy exercise, the main purpose of this business game is educational. Participants are immersed in an experiential learning process [14] and are expected to improve their understanding of the complex dynamics of the mobile services industry. We should emphasize that the game is not a substitute for other forms of learning, notably lectures. On the contrary, it is important that participant have a non-trivial prior knowledge of the technologies, the current trends and the key issues in mobile business. Therefore, this exercise should be seen as a capstone in a series of lectures, seminars and/or traditional case studies, depending on the prior knowledge and experience of participants.

As the game unfolds through the three stages and participants try to refine their business models in collaboration with competing teams, subtle issues and complex dynamics are gradually revealed. In the first stage the room tends to be rather quiet, team members are uncertain as to how to proceed, and they hesitate to respond to the guidelines and instructions they are supplied with. No matter how detailed the initial briefing, participants cannot grasp where the whole exercise is leading them and they are naturally aloof. At this point the role of the facilitator(s) is essential in kick-starting the teams. By roaming between teams, the facilitator reiterates the description and strategic outlook of each actor (section 4 above) in a more specific way, addressing the background and prior experience of individual team members. The facilitator answers queries, offers examples, explains how things will develop in later stages and generally tries to infuse the spirit of the game in a face-to-face approach. Close guidance is needed throughout the first stage. A critical discussion of business models during stage 1 debriefing is the first opportunity participants have to refine their understanding. Further, this discussion, in conjunction with the first peer review results (after the debriefing) introduce the notion of collaboration and competition between teams. The buzz in the room grows as participants start realizing the effect their ideas have on their competitive position in relation to other teams.

In the second stage the process takes off rapidly, participants identify very strongly with their team roles and as inter-team collaboration and competition heightens, they become increasingly enthusiastic and engaged. At this point, the role of the facilitator is mainly to attend to the rules of the game and the timing of the exercise, rather than supporting the content of business models and plans. Teams often need to be reminded that they should not rush to conclude agreements with particular teams; instead they should try to pursue collaboration opportunities with as many other teams as possible. Teams become quickly accustomed to negotiating different options with their counterparts. Some teams chose to move in unison from one discussion to the next, whereas other teams prefer to split up in smaller subgroups (usually pairs) and pursue tentative negotiations in a decentralized fashion. Competitive dynamics, strong collaborative ties, information asymmetries, leaders and laggards emerge quite rapidly. Participants may seek the advice of facilitators in relation to specific technological options or the feasibility of their ideas. The whole picture is rather chaotic and does not, normally, converge to any equilibrium, as new information, ideas and opportunities change the strategic orientation of teams. The facilitators should not attempt to impose any order on this process, only to urge teams to wrap up their discussions as the allotted time runs up. Stage 2 debriefing is resisted by many teams because they now feel they should protect their ideas and agreements from their competitors. The facilitator needs to emphasize the importance of at least some information sharing. As debriefing unfolds, inevitably some teams realize that their 'trusted' business partners to be may be involved in conflicting agreements with other teams, or that some other teams are coming up with highly innovative business models having a significant impact on their own strategy. The facilitator must provide additional analysis and critique on the feasibility and strategic viability of the various business models. Debriefing at this point is an essential element of the learning process. Participants often realize that they haven't quite figured it all out yet and that they need to work harder on the details of their plans. The ensuing peer evaluation fuels the competitive spirit for the third stage, as it reveals that the competitive situation in this simulated market is not exactly what participants might have thought it would be.

In the third stage teams demonstrate a higher degree of knowledge and maturity in dealing with the specifics of their business models. The process quickly converges to equilibrium with groups of teams finalizing their agreements. If there is enough time and/or if the teams are more advanced, they may go as far as announcing broader strategic alliances or even mergers with other teams in order to establish a stronghold in the market. The facilitator may have (or be asked by some teams) to act as a regulatory authority blocking agreements that would be unreasonable from the point of view of a competition committee or the telecoms regulator in the real world. Such developments are

welcome from a learning point of view because it shows that participants have been able to internalize the competitive dynamics of this industry and it also gives an opportunity to the facilitator to extend the analysis to more advanced topics during debriefing. The final peer evaluation reveals the winning team(s) that may be awarded a symbolic prize. A thorough debriefing in the end of the game is essential in order to consolidate key lessons learnt.

Our experience with this business game has shown that the whole exercise can easily deteriorate to an exercise in negotiation skills. Indeed this is an integral part of the process but the main learning objective is to enhance understanding of mobile business. Maintaining the focus on mobile business and achieving the chosen learning objectives, requires the constant attention of the facilitator to analyze, criticize and discuss the plans and choices of teams as they develop and refine their mobile business models.

As a final remark, this business game affords extensive customization to the profile and expectations of participants. It is up to the organizers and facilitators to exercise their own judgment on the choice of company roles, the respective strategic outlooks and the general assumptions about industry conditions. These can be configured to correspond to the current state of the art in the local/regional market, or to address specific strategic concerns of participants if the game forms part of an in-house executive course.

8. Conclusions

Mobile business is an exciting area for study for the complexity, uncertainty and business challenges it poses. In this paper we present a Business Simulation as a learning approach to strategic planning in order to understand emerging and future developments in this kind of environment. This game faces an important limitation. Participants act a role which may be alien to most of them, that of senior managers of a company active in mobile business. Acting that role inevitably requires a leap of imagination. Although this game is intended to produce an experiential learning outcome, participants necessarily make unrealistic assumptions and choices. However, the overall learning objectives of the simulation game are achieved. Although initially most of the participants do not usually have an extensive knowledge of the area of mobile business, after the game they state they feel much more comfortable understanding and handling the relevant concepts. The game typically follows a traditional lecture on the subject, and it is evident that the game greatly amplifies the learning effect and produces a much stronger outcome in relation to the lecture.

References

1. Courtney H., Kirkland, J., and Viguerie, P. (1997) "Strategy Under Uncertainty", *Harvard Business Review*, 75, 6, Nov-Dec.
2. De Geus, A. (1988) "Planning as Learning", *Harvard Business Review*, March-April.
3. De Geus, A. (1997) *The Living Company*, Nicholas Brealey Publishing, London, UK.
4. De Geus, A. (1999) "Strategy and Learning", *Reflections: The SOL Journal*, Aug, Volume 1, Issue 1.
5. Durlacher Research (2001) "UMTS Report: An Investment Perspective", [available at: www.durlacher.com].
6. Hosley, S.M. and Lau, A.T.W. (1994) "The Quest for the competitive Learning Organization", *Management Decision*, Vol. 32, Issue 6.
7. Kalakota, R. and Robinson, M. (2002) *M-Business The Race to Mobility*, McGraw-Hill, New York, USA.
8. Kavassalis, P., Spyropoulou N., Drossos, D., Mitrokostas E., Gikas G. and Hatzistamatiou A. (2003) "Mobile Permission Marketing: Framing the Market Inquiry", *International Journal of Electronic Commerce*, Vol.8, No.1, pp. 55-80.
9. Leitch, C. and Harrison, R. (1996) "Learning organizations: the measurement of company performance", *Journal of European Industrial Training*, Vol. 20, Issue 1
10. Mintzberg, H., Ahlstrand, B. and Lampel, J. (1998) *Strategy Safari*, Prentice Hall Europe, UK
11. Mylonopoulos N.A., Sideris, I, Fouskas K. and Pateli A. (2002) "Emerging Market Dynamics in the Mobile Services Industry", *MobiCom Consortium*, September, [available at: www.mobiforum.org]
12. Mylonopoulos N.A. and Doukidis G.J. (2003) "Mobile Business: Technological pluralism, social assimilation and growth", *International Journal of Electronic Commerce*, Forthcoming
13. Newell, F., and Newell-Lemon, K. (2001) *Wireless Rules: New marketing strategies for Customer Relationship Management Anytime, Anywhere*, McGraw-Hill, New York, USA
14. Ramiller, N. (2002) "The Virtual Interactive Project: Teaching Analysis and Design Through Narrative and Drama", *Communications of the Association for Information Systems*, Volume 9
15. Rao, B. (2002) "Wireless Broadband Networks: The U.S. Experience", *M-Business 2002 Conference*, Athens, Greece, 8-9 July
16. Tarasewich, P. Nickerson, R.C., and Warkentin, M. (2002) "Issues in Mobile Commerce", *Communications of the Association for Information Systems*, Vol. 8
17. Tsalgatidou, A. and Pitoura, E. (2001) "Business Models and Transactions in Mobile Electronic Commerce: Requirements and Properties", *Computer Networks*, Vol. 37
18. Sideris, I.A. (2002) "The Use of Scenario Planning Methodology in Mobile Business as a Learning Tool", *M-Business 2002 Conference*, Athens, Greece, 8-9 July
19. Van Doren, D.C. and Smith, D.B. (1999) "Scenario Planning: A New Approach to Teaching Marketing Strategy", *Journal of Marketing Education*, Vol. 21, No 2, August

Appendices

Appendix 1: Companies Outline

Mobile Network Operator

Each mobile network operator offers a broad menu of services, in collaboration with an increasing number of third parties supplying content, applications or just the business idea. In that sense, the operator acts as integrator of the services offered through its own network. However, the lack of proper roaming combined with the intense fight for subscribers has led to a situation, where different network providers' services are not compatible. Efforts to standardize services and interfaces are met with resistance by operators, as service differentiation is seen as the primary means of competition.

Mobile operators dominate the mobile services industry because they have strong brands and control the distribution channel and billing. They prefer to preserve control over their own customer base and, therefore, they do not want content providers to distribute content and services direct to end users. Mobile operators may choose to have exclusivity agreements with the best content providers before any other operator does so, or to distribute the content of all content owners, or both. They have invested in technology but, generally, they do not prefer to develop any kind of software application. Third party technology providers typically carry out such tasks, for some fee or percent commission.

Billing platforms have required huge investment and will take several years until they pay off. Billing platforms enable the distribution of complex value added services and the sharing of revenue between partners. Further, in order to be able to aggregate content from many sources and to distribute it, operators will have to either invest or somehow get access to Digital Rights Management (DRM) technologies. A third party application provider may offer DRM as an application provision service (ASP) or even content providers may make such an investment. DRM is a specialized area and a mobile operator would probably avoid making an investment there. They would probably join the DRM system of an ASP or third party content aggregator.

Mobile operators have invested a lot in setting up and promoting person to person MMS. However, market uptake is limited because devices are still expensive for the youth and inter-operator roaming has not been resolved. Mobile operators want to develop multimedia content distribution through MMS, targeting the professional, corporate and entertainment segments in order to boost MMS revenue. For this purpose operators will need to collaborate with content providers.

Operators see a potential competitive threat from the growing adoption of wireless WiFi hotspots, especially peer-to-peer wireless LANs. WLANs do

not use the operator infrastructure and they interconnect through Internet service provider (ISP) networks. To the extent that communications and content are channelled through WLANs, mobile operators lose a portion of potential revenue. Having said that, there is an opportunity for mobile operators to enter into this segment as well, and offer WLAN connectivity in crowded areas (e.g. airports, sports venues, museums, exhibitions etc) through prepaid time cards or subscriptions. Operators need to develop the right business models and pre-empt potential competition.

Technology Provider

The application development market is small, due to technological and financial reasons, and operators are forced to carry out a lot of application development themselves on behalf of third parties. This creates a bottleneck in new service development. The key competitive advantage of operators from an application development point of view is their investment and know how in billing systems, which are essential for any business model. Having said that, software developers and mainstream ASPs are well positioned to offer application capability for mobile services.

Technology providers primarily consider entering the mobile services industry by becoming Wireless Application Service Providers (WASPs). For example, voting on TV reality shows through SMS requires a WASP to maintain the data centre and the software that stores and counts the messages. This is a type of technology service that mobile operators and content providers can, but prefer not to invest in. Technology providers consider the option of developing third party billing services as a WASP model. Investment in billing might be a good long term option for technology providers, if they get some long term contracts with content owners and other service providers for that purpose. Alternatively, technology providers may attempt to win an outsource contract to acquire, maintain and operate the billing platform of the leading operator.

Many technology providers are seeking opportunities to become generic service providers, offering end-user services over mobile. A company may opt for this strategic move in case billing and/or DRM do not take off. This will require partnerships with content providers for services such as real time weather reports, financial information, local information, sale of goods/services, auctions, betting, gaming, ticketing, etc. Alternatively, a technology provider will seek to become part of services offered by content providers and mobile operators by undertaking to implement and maintain the application side of the service, particularly where personalization systems are of importance.

Content Provider

Content providers have not considered mobile as an important competitive channel for their services. As roaming does not work seamlessly, the market size is limited compared to the one provided on the fixed Internet. The content providers' efforts to limit illicit copying have required substantial investments, but meager results. Copyright infringements are common, and content providers are compelled to rely on operators in order to fulfill their obligations to copyright holders. As a result, operators effectively acquire exclusive rights to content and are responsible to enforce intellectual property rights through exclusive use of their delivery channel (the network).

Content providers own vast amounts of information resources in digital or analog forms. Every content provider tries to identify appropriate business models to distribute its content electronically over the internet and mobile networks. The problem is that the technologies for the protection of intellectual property rights are not as efficient as the technologies for illicit copying and distribution of such content. Digital Right Management (DRM) is a collection of technologies that enable content aggregators to preserve the intellectual property rights of individual contributors to a collective work (e.g. an edited book or a series of music tracks from different publishers etc), to determine prices, and to pay back the correct dues. Normally, DRM as a service is offered by some sort of intermediary (e.g. a content aggregator) who collects and redistributes content. An original content provider would not invest in DRM if they cannot convince other content providers to use their system. The content provider would rather join the DRM system of a third party technology provider (ASP) or content aggregator or network operator. Because mobile operators have full control of their networks, they can promise a fairly secure distribution of digital content.

Ideally, content providers would prefer to distribute their content directly to end-users in order to strengthen their own brands and avoid dependence on the mobile operator. However, direct delivery to end-users requires investment in infrastructure and heavy promotion so that users access content directly. Therefore, content providers have to get into agreements with mobile operators (exclusive, or non-exclusive with all operators) for content distribution.

The broader strategy of content providers is to maximize synergies between their various businesses, namely TV, cinema, Internet Portals, books, music etc. So far they have achieved little in this direction but they actively seek opportunities to create complementarities with the mobile channel, of course, with the right business models. Such opportunities may include voting on reality shows, music distribution, betting, sports info & tickets, tourist information, weather info, mobile advertising, location-based services etc. Further, content providers may control large retail chains through various businesses (e.g. bookstores, cinema multiplexes, etc). They see a potential

opportunity in offering Wireless LAN connectivity in and around those sites, possibly bundled with premium or exclusive content.

Appendix 2: Forms

Business Model Form Components

- Product/Service offering
- Target market
- Core Capabilities
- Value Network (Alliances and Partnerships)
- Value Proposition
- Cost and Revenue Structure
- Critical Success Factors

Negotiation Form Components

- Partners Names and Identities
- Core Capabilities contributed from each Partner
- Exclusivity
- Branding
- IPR
- Revenue Sharing
- Investment Sharing

Execution Form Components

- Partners Names and Identities
- Core Capabilities contributed from each Partner
- Exclusivity
- Branding
- IPR
- Revenue Sharing
- Investment Sharing

Evaluation Form

Evaluation Form - Stage 1

Fill in your Group's Name: _____

Now that you have seen what each group has accomplished during the last stage, please rate how you perceive **their performance** in relation to yours. **DO NOT RATE YOUR OWN GROUP!**

1. Please rate the **performance of each other group** as a result of the last stage

	The performance of the group has been inferior than ours		The performance of the group has been as good as ours	The performance of the group has been superior than ours	
	1	2		4	5
VODAMOB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SONETA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COCOMO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MEGASOFT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JONSSON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOKIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BNN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BERTELSONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VIVALDI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please rate the **competitive position of each other group** in relation to **your group**

	The group is in a worse competitive position than ours		The group is in the same competitive position as we are	The group is in a better competitive position than ours	
	1	2		4	5
VODAMOB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SONETA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COCOMO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MEGASOFT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JONSSON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOKIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BNN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BERTELSONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VIVALDI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Please rate the **competitive position of your group** in comparison to **your position before the last stage**

The competitive position of our group has deteriorated during the last stage		The competitive position of our group has remained unchanged during the last stage		The competitive position of our group has improved during the last stage	
1	2	3	4	5	