Evolving role of mobile service mediary: Is the I-mode business model becoming extinct?

April 24, 2006

Jarkko Vesa
Research Fellow
Department of Business Technology / Information Systems Science
Helsinki School of Economics, Finland
jarkko.vesa@hse.fi

Abstract
Technological evolution (e.g., the "all-IP" world) and changing regulatory environment (e.g. spectrum trading in the European Union) will change the mobile services industry dramatically in the coming years. These changes will transform also the role of service mediaries, such as NTT DoCoMo and Vodafone, as their control over content providers and customers will be eroded by increasing use of Internet-type content and an active role of large retailers and "the Brands" in becoming MVNOs in order to enhance their customer relationships. Furthermore, even the technical infrastructure of mobile and cellular networks may end up being owned and managed by cost-efficient ICT service providers, and totally new types of "asset management" companies may emerge as soon as European-wide spectrum markets are created by the European Union. A conceptual model called The Service Mediary Model of Mobile Services (SM^3S) is introduced and used in the analysis of the changing role of mobile network operators and service mediaries.

Keywords: mobile services, mobile internet, cellular services, spectrum trading, MVNO, NTT DoCoMo, Vodafone, all-IP, service mediary

1 Introduction

In the last few years NTT DoCoMo has been seen as a role model for successful mobile internet services. This was also our conclusion a few years (Saarinen et al. 2002) back when analyzed the i-mode service by using the Bummat model (Kallio et al. 1999). Our conclusion was, like so many other researchers' and analysts' at that time and still today, that with the i-mode service NTT DoCoMo had managed to create a true win-win-win business model where all the stakeholders, i.e. the end-users, service and content providers, and DoCoMo itself were all winners in the game.
Furthermore, in DoCoMo we saw the first true service mediary as defined by the Bummat model. However, in any industry – and particularly in a high-clockspeed industry such as the mobile services industry – the industry structure and product architecture reflect the economic, technological and regulatory conditions that prevailed at the time. This article presents an analysis which indicates that due to technical evolution and novel regulatory environment in Europe, the i-mode –like service mediary business model will face major challenges in the coming years. Albeit the role of a service mediary will be important also in the future, its role is changing.
This article introduces also a new conceptual model called ***The Service Mediary Model of Mobile Services (SM^3S)*** which is used as the basis of the analysis of possible changes in the role of service mediaries, especially in the context of the new regulatory framework currently being prepared in the European Union.

2 Supply chain of mobile services

In our analysis of NTT DoCoMo's i-mode service (Saarinen et al. 2002) we presented a novel way of analysing and managing the emerging new multi-channel business environment called ***the Bummat model*** (Kallio et al. 1999). The model describes the key roles, and the main functions and activities for managing business in the multi-channel world (see Figure 1 below). According to Saarinen et al., "the Bummat model describes the structure of a networked economy where the goal is to provide efficient and flexible services in a multi-channel environment" (2002, p. 71).

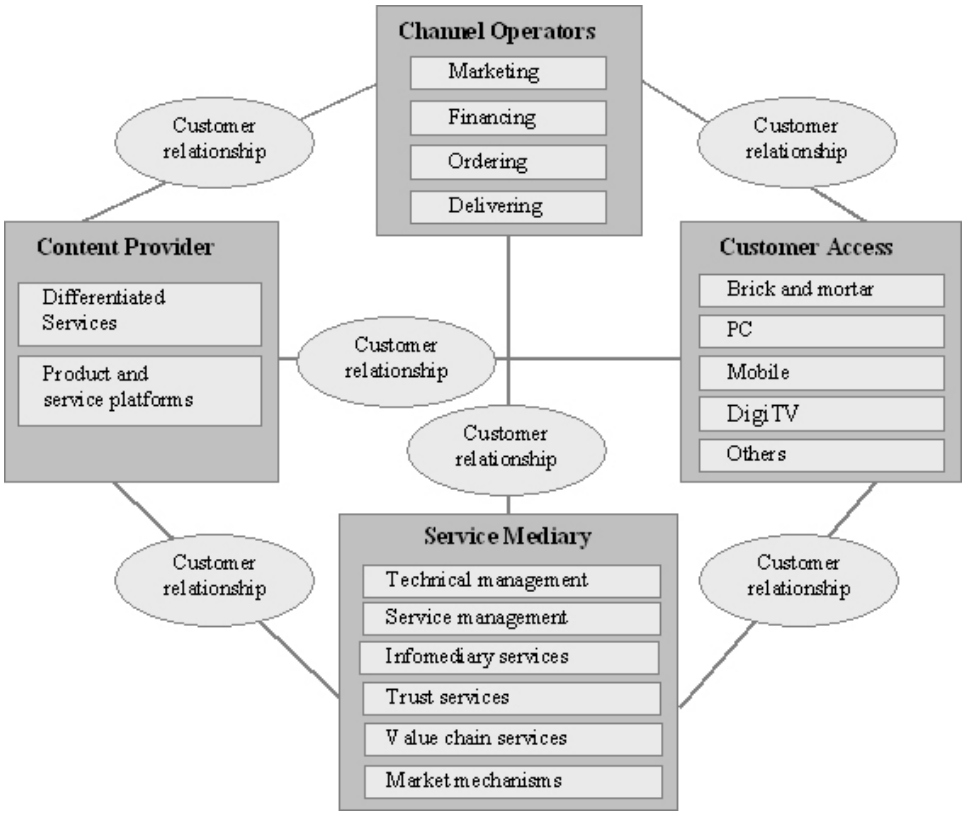

Fig. 1. The Bummat-model (Kallio et al. 1999)

As the name of the Bummat model indicates (i.e., "Business Model for Customer Channels Supported by Multiple Access Technologies"), the focus of the model is in finding efficient ways of managing customer relationships and service delivery in a business environment characterized by multiple access technologies (e.g., the Internet, mobile, and digital television). However, this article develops a new version of the service mediary approach and matches it with the special characteristics of the mobile services business environment. Next we will take a closer look at this new model called ***The Service Mediary Model of Mobile Services (SM^{3}S)*** in order to better understand how it can help in understanding the structure and dynamics of the mobile services industry.

3 Service mediaries of today and their extensive business domains

The conceptual model introduced in this article is called ***The Service Mediary Model of Mobile Services (SM^{3}S)*** and it focuses on two out of the four perspectives or roles of multi-channel services identified in the Bummat model. The two perspectives are:

- ***Customer access perspective*** or role focuses on managing the interaction with various customer types, identifying customer requirements, understanding the demand and business potential of different services, managing the context of use for various (access) technologies and services, and the execution of marketing and advertising in various channels (Saarinen et al. 2002, p. 71). In this context the term "access" refers not only to technical means of accessing (i.e., "technical access") service and content providers' service delivery systems, but also to the various ways for service and content providers to gain access to existing and potential customers (i.e., "business access"). Albeit the Bummat model is focusing on multi-channel services, in this article we will focus on a single channel, the mobile channel.
- ***Service mediary*** role concentrates on developing service concepts. Key functions or tasks are customer relationship management (including gathering, analysing and delivering customer data), service management (roadmaps for new services, or new versions of existing services etc.), technical management (identifying the type of access device used, managing back-end connections, etc.), trust-enhancing services and so forth (Saarinen et al. 2002, p 71).

As discussed earlier, the conclusion of the NTT DoCoMo case study by Saarinen et al. (2002) was that the company, with its i-mode service, operates as a service mediary in the Japanese mobile services business ecosystem. Next we will go through the various service mediary tasks in more detail – in order to build the foundations for the introduction of the SM^{3}S model.

According to the logic of the Bummat model, a company assuming the role of Service Mediary integrates and manages service offering for various digital channels. The key tasks required in achieving this goal were described briefly above. Mobile operators have adopted very different approaches when dealing with the service mediary tasks. Figure 2 gives a few examples of how the three Finnish mobile network operators, i.e. TeliaSonera, Elisa and the Finnet Group with their DNA brand, have positioned themselves in comparison with operators in the Japanese or the UK market. It is also interesting that one mobile operator can play different roles in different markets. For instance, Vodafone has been building a more integrated, operator-driven business model in the UK market (see e.g. Vesa 2004, Vesa 2005a, 2005b) where the company's strategy focuses strongly on services (Limkeatcherdchoo et al. 2005), whereas in Japan there has been speculations that Vodafone would adopt a wholesale business model, selling network capacity to MVNOs and other kinds of resellers – probably due to the poor success of Vodafone's business in Japan since the take-over of J-Phone a few years back. Similar shift in strategic focus from full-scale service offering towards more access-oriented, plain vanilla type business focus was seen also in Finland in summer 2005 when the Finnet Group got fed up with the losses of their mobile service operator subsidiary DNA and decided to focus on offering very basic mobile services at an attractive price.

In addition to strategic decision making and business success, as the Vodafone and DNA examples demonstrated, the differences in strategic positioning be partly explained by the regulatory framework in various markets. Vesa (2005a, 2005b) argues that the regulatory framework in Finland, with its unbundled, SIM only paradigm, has had a major impact on the industry structure in the Finnish mobile market and on the business strategies adopted by the three mobile network operators competing in the Finnish market. The long "SIM only" history of the Finnish market

becomes increasingly interesting now as similar "no-thrills, low-prices" virtual operators are entering some of the bigger European markets such as France (e.g., Debitel) and Germany (e.g., SIMYO). Furthermore, the Finnish mobile services market becomes even more intriguing topic of research once the handset subsidy will be allowed starting April 1, 2006 – as there are few, or probably none, mobile markets in the world where handset subsidy is introduced in a market, where mobile call tariffs have already been competed to extremely low levels (a typical price for mobile call 6 eurocents per minute and for SMS also 6 eurocents).

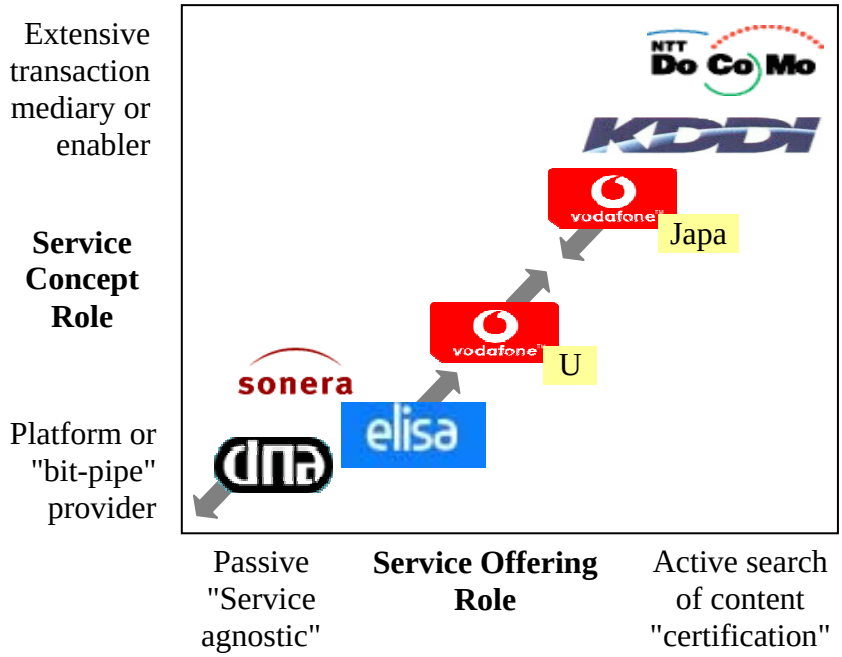

Figure 2. Different approaches to service mediary tasks by mobile operators

Next we will familiarize ourselves with the structure of the new ***The Service Mediary Model of Mobile Services (SM^{3}S)*** concept. As Figure 3 shows, the model consists of three main roles in the mobile services business network or ecosystem: ***Content and service provider role*** concentrates in producing various types of content services and applications for the mobile market; ***Service Mediary role*** focuses in developing service concepts, the technical management of service delivery platforms in order to guarantee seamless service delivery (see e.g. Hara et al. 2005), and ensuring smooth transition from one generation of services to another by offering clearly defined roadmaps; and the ***Customer access role*** deals with issues such as identifying various types of customers, understanding customer requirements, forecasting demand for different types of services, and knowing customer preferences.

What the SM^{3}S framework anticipates is that as the result of the convergence of IT and telecommunications worlds, in the form of "all-IP" development in core and access networks, and with the help of enabling solutions such as the IP Multimedia Subsystem (IMS), the traditionally integrated mobile operator role will transform itself increasingly towards a more network of multiple specialized players – each with specific core competencies and physical assets:

- ***Content providers*** own the rights of interesting content such as music and videos (often represented by content aggregators) and service providers offer applications such as location-based services, restaurant guides, weather services etc.

- ***Service mediary*** owns and manages (either by itself or increasingly together with an outsourcing partner) the mobile networks and service delivery platforms, and "orchestrates" the content centric value chain or business ecosystem.
- ***Customer access*** role will be handled either by a traditional mobile operator, by a reseller/MVNO who have a strong brand (e.g., Tesco, Virgin, Disney), who understand the consumers or business customers in their target groups, and who are expert is retail business.

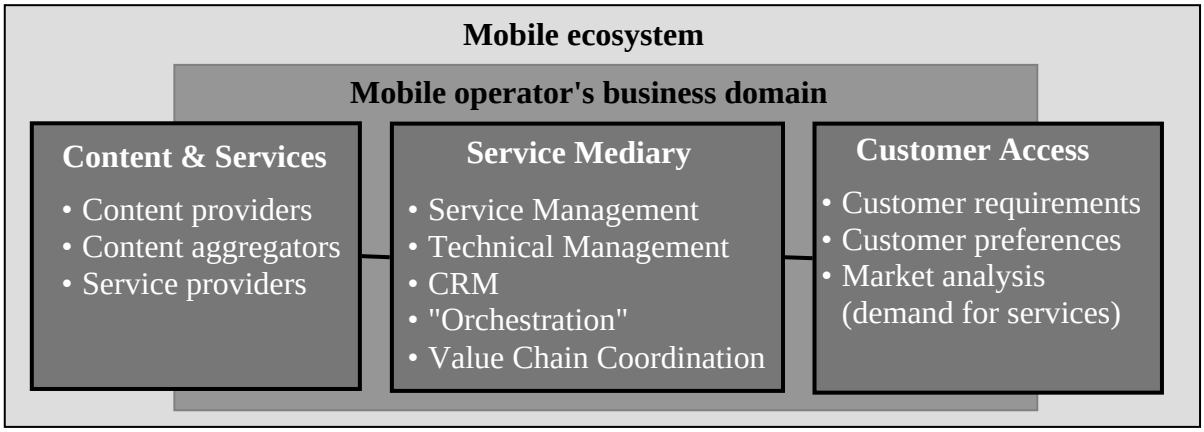

Figure 3. The Service Mediary Model of Mobile Services

As Figure 3 above demonstrates, the service mediaries (e.g. NTT DoCoMo, KDDI, Vodafone) control today reasonably large "business domain". In addition to the plethora of service mediary tasks, such as managing customer relationships, technology, and service offering, the leading mobile operators are very much involved in the content and service business through their certification processes, content standards and partner programs. Likewise, the vertically integrated mobile operators are also in a central role in analysing customer requirements and predicting business potential for different services. Furthermore, these large mobile operators act as keystones (Iansiti & Levien 2004) in their mobile business ecosystems. However, as the industry evolves, this "world-order" may become obsolete or at least face serious challenges, as we will see later in this article.

4 The changing role of service mediaries: From technical management to service management

Several new developments in the field of technology and telecom regulation will be transforming the mobile services business landscape in the coming years. The key trends in technology are of course very much global in today's business environment, but some of the key trends in telecom regulation are more specific to certain geographic markets, such as Europe or more specifically to the EU member states. At the same time as the convergence of IT and telecommunication are opening up new avenues to cross the traditionally broad void between the worlds, the European Commission is preparing a new regulatory framework for the telecommunications industry, and in particular for the mobile services industry. According to Fabio Colasanti, director general at the Directorate General, Information Society and Media at the European Commission (EC), weaker investment in information, communications, and telecom (ICT) by the European economy has widened the productivity gap with the US ("EC: the European opportunity gap", Jan 2006). The Commission believes that one important step in boosting competition in the EU is the plan to introduce spectrum markets by 2010. Spectrum trading means buying or selling the right to use a frequency band, which could help to determine the "market value" of spectrum. If spectrum

trading was liberalized as the Commission has suggested, it would mean that allocation and assignment of radio frequencies (choice of technology and who uses it) would be based on market situation and not on regulatory decisions by national regulatory authorities in each Member State ("Unleashing Europe's Wireless Potential", Oct 2004). Against this background it is easy to see that while new technologies, such as WLAN/WiFi and WiMAX (802.16 rev. e), are getting ready to challenge more traditional mobile and cellular standards, there will most likely be major changes in the ways in which radio spectrum will be allocated to these emerging technologies and assigned to fast-moving new entrants with little or no legacy in older mobile technologies. This development will reflect itself inevitably also on the role of service mediaries in the mobile services industry, which is the focus of this article. Figure 4 presents one view of potential changes in the mobile services business landscape from a service mediary's point of view.

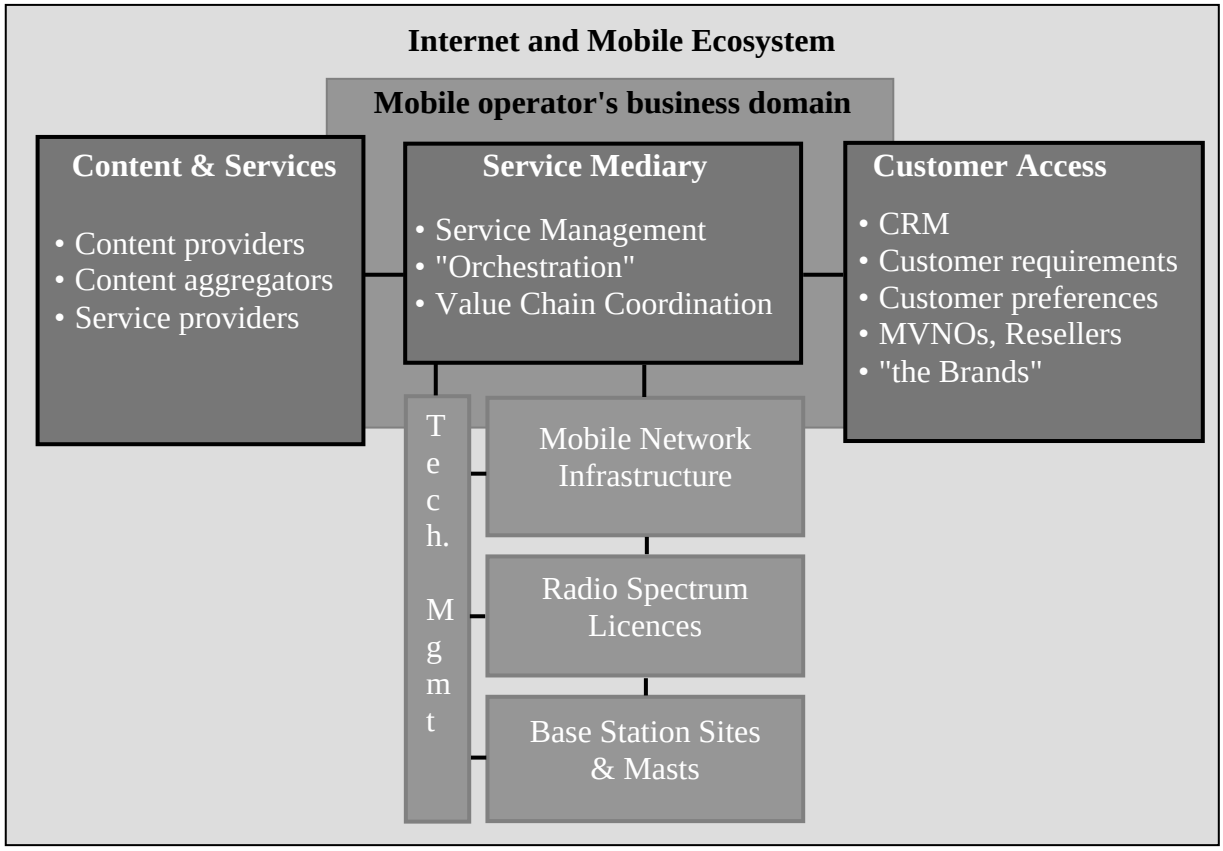

Figure 4. Future evolution of the Service Mediary role

As Figure 4 demonstrates, spectrum trading combined with technological evolution could mean major changes in the mobile services industry. As ***content management and service delivery*** systems become more standardized (see e.g. Hara et al. 2005), content and service providers can move more easily between the Internet world and the mobile world. As new standards emerge and become widely used, the need for a service mediary to set their own content formats and standards diminishes.

As the mobile network infrastructure becomes less expensive and the systems become more open, new players may enter the mobile services markets. Increasingly, leading brand companies, such as Disney or Virgin, and large retailers, such as Tesco or Carrefour, want to offer their customers also mobile services – not so much for the additional revenue but rather to deepen the relationship with their customers (Kincaide 2005). The large retailers or "the Brands" become MVNOs or resellers in the new mobile services market. They have powerful CRM systems and they are experts in understanding customer requirements and preferences, so their role in managing the ***customer access*** role increases.

Technical management was defined as one of the tasks of service mediary in the Bummat model, and it was still one element of the service mediary role in the Service Mediary Model of Mobile Services. However, as the mobile network infrastructure becomes IP-based, the cost of infrastructure decreases and functions such as network management start to resemble similar tasks in the IT world. This opens up a window of opportunity for large ICT powerhouses to offer their infrastructure and network management services to mobile operators at highly competitive prices. As a result of this development, technical management may not be anymore a core competence for service mediary – a natural evolution in the light of the standardization and maturing of technology in any industry.
Even bigger changes may take place in countries where spectrum trading will be introduced. New players may enter the market by acquiring large amounts of radio spectrum in multiple geographic markets (all EU member states, for instance) and then start to run a new kind of "asset management" business. Likewise, companies owning base station sites and masts may join forces with these new spectrum management players, and even mobile network infrastructure, such as base stations, could be offered by a specialized companies (Ericsson and Nokia have been closing major deals with mobile network operators to build and operate their mobile networks – it would be very natural for them to become MVNEs – mobile virtual network enablers).

So what would it mean to service mediary, or to mobile operators in general, if the mobile industry would go through the kind of evolution described above? For the first, mobile operators' business domain would shrink in scope as their role in content and services, in technical management and in customer access would diminish. This would not necessarily mean that their business would decrease because the new industry structure could be more innovative and productive. Spectrum trading and standardized infrastructure could also open up new access to wider geographic markets.
This article suggests that a service mediary's role will increasingly focus in service management, i.e. creating exciting service offering and building roadmaps for the customer base, in the orchestration of the business network, and in the coordination of activities in the whole value chain or network by combining ideas and resources from the whole Internet and mobile ecosystem. This is to say that although the new kind of mobile services industry structure resembles the Internet world, mobile Internet services as complex goods (see e.g. Vesa 2005a) call for more coordination and integration than what is a prerequisite in the Internet world.

5 Discussion and conclusion

This article introduced a new conceptual model called the Service Mediary Model of Mobile Services, which builds on the Bummat model by Kallio et al. (1999). The model was used as the basis of an analysis of the changing role of service mediaries, such as NTT DoCoMo, in the changing technological and regulatory landscape – particularly in Europe. It is argued that albeit the service mediary business model adopted by NTT DoCoMo has been highly successful, the role of service mediaries will change in the coming years: The focus of service mediary will be increasingly in service management and orchestration of business networks or ecosystems, as ICT infrastructure and network management become increasingly standardized as a result of the all-IP development.
Albeit this article is highly descriptive, it hopefully demonstrates the magnitude of changes that await the mobile services industry, and in particular traditional mobile and cellular network operators, as technology evolves and the European Commission wishes to make new rules for the game.

References

"*EC: the European opportunity gap*", Telecommunications International, Jan 2006, Vol. 40, Iss. 1, pp. 8-11.

Fine, C.H. (1998). "*Clock speed: Winning Industry Control in the Age of Temporary Advantage*", Perseus Books, 1998.

Hara, V., Mikkonen, K., Saarinen, T., Tinnilä, M. and Vesa, J. (2005). "*Toward Seamless Multi-channel Services*". In Managing business in A Multi-Channel World: Success Factors For E-Business, eds. Timo Saarinen, Markku Tinnilä and Anne Tseng. Idea Group Publishing, Hershey, PA.

Iansiti, M. & Levien, R. (2004). "*Strategy as Ecology*", Harvard Business Review, March 2004.

Kallio, J., Saarinen, T., Tinnilä, M., Tuunainen, V.K., & Vepsäläinen, A.P.J. (1999). *Alternative Strategies for Electronic Commerce – Model of Customer Channels*. Proceedings of the Second International Conference on Telecommunications and Electronic Commerce (ICTEC), Nashville, Tennessee.

Kincaide, R. (2005). "*Achieving Strategic Brand Leveraging For Next Generation MVNOs*", MVNO Business & Partnering Strategies Conference, Nov 29, 2005. Cannes, France.

Limkeatcherdchoo, S., Whalley, J., & Ackermann, F. (2005). "*Differentation strategies in the UK mobile communications market: Services, packages & prices*". 16th European ITS Conference, 4-6 September 2005, Porto, Portugal.

Saarinen, T., Kallio, J., Tinnilä, M. & Vesa, J. (2002). *Customer Relationship management in service mediary-driven mobile services: Case i-Mode*. In T. Reponen (Ed.), Information technology-enabled global customer service (pp. 67-86). Hershey, PA: Idea Group.

"*Unleashing Europe's Wireless Potential*". European Commission, Factsheet 22, October 2004.

Vesa, J. (2004). "The impact of industry structure and product architecture on the success of mobile data services". *Austin Mobility Roundtable*, March 11-12, 2004. University of Texas in Austin.

Vesa, J. (2005a). *Mobile Services in the Networked Economy*. Hershey, PA: IRM Press.

Vesa, J. (2005b). "Regulatory framework and industry clockspeed: lessons from Finland". *InterMedia*, April 2005, Vol. 33, No. 2, pp. 10-17.