User Involvement during the Development of Mobile Service Applications

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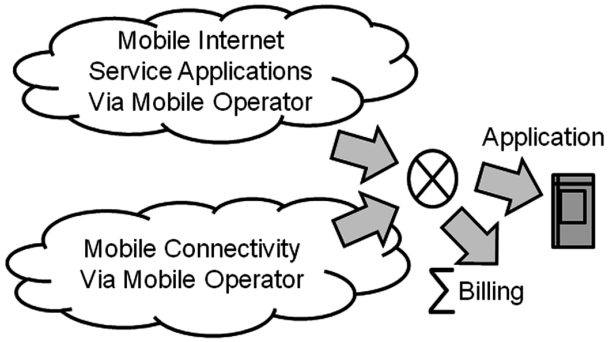
INTRODUCTION

The increasing trend towards Internet connectivity by consumers through a variety of mobile devices has altered the perceptions of consumers in terms of their access to information; applications and related services over their mobile handsets. The increasingly interconnected nature of new mobile services has impacted MNOs (mobile network operators) business structures, operations and their interaction with customers. The concept of a business model has evolved from the work on value provision which identifies the value-adding activities of a firm. Unlike the case of manufacturing industries and adding value to the process by the transformation of the physical materials through a sequence of manufacturing processes, many scholars suggested that in some industries (such as banking, insurance, advertising), Porter's value chain (1980) cannot give a clear picture of the impact of the different ways firms and customers are connected to each other (Funk, 2009; Weiner et al., 1997).

Traditionally the mobile communications industry value chain was influenced by the evolution of digital communication systems, more specifically, the transition from analogue to GSM to CDMA communication system standards at a global level (Funk, 2009). At that time the value provision was limited to basic phone calls text messages and limited data bandwidth. The traditional business model of the phone industry value chain is based around the Mobile Operator's service provision as shown in Figure 1 (Funk & Methe, 2001; King & West, 2002; Lehenkari & Miettinen, 2002; Lyytinen & Fomin, 2002; Steinbock, 2003). The subscriber not only sees the MNO as the provider of wireless connectivity (including internet access) but also their route for downloading applications. The billing mechanism is through the MNO for the entirety of the user's mobile provision.

Figure 1. Traditional business model for mobile services



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The enhanced capabilities of mobile handsets are starting to include activities previously associated with traditional desktop computing capabilities. This extends the mobile handset from being used for connectivity to a range of purposes as shown in Figure 2. From the consumer's perspective their contracted services is also part of the overall package as shown on the right of the figure. Consumers will assess their current package in light of their perceived requirements which is based on lifestyle and individual preferences. Further, consumers will be aware of the alternatives as for many demographics (such as youngsters) social image is partly portrayed through their chosen handset and services.

The significant improvement of hardware capability in the mobile computing industry has removed many of the barriers of mobile applications. Much improved processing power and better wireless access coverage and bandwidth unlocked the possibilities of rich content application as well as a more effective information flow through web gateways and distributed client-server applications (Holzer & Ondrus, 2011). This radical change to rich content of mobile services has impacted consumer data traffic by services such as video-related services which include web video streaming and video file sharing or downloading (Krogfoss, Hanson, & Vale 2011). Yet it seems that MNOs are a bit constrained in this new ecosystem of mobile content market. Customers (subscribers) do not look to mobile devices as a basic communication device anymore, but as another version of personal computers. The new trends of tablets and cloud computing services in parallel with the new capability of these smart devices and the enhancement of data bandwidth have also affected the level of usage possibilities of these devices.

There are an increasing number of mobile user devices which use differing applications – both for industrial purposes and for consumers. There has been a gradually evolving range of mobile devices which is extending as different groups of users see the benefits of wireless connectivity, for example, healthcare for home patient monitoring. The design aspects for each device, service and application needs to address the service concept aspects and the mobile user interface design to ensure usability. The focus here is the nature of the mobile service applications both current consumer telecommunication applications ranging from context based services (such as location based services) to mobile internet-based services (Ovi from Nokia for example) as well as the forthcoming applications for intelligent networks. This chapter provides an update to an earlier study that was made just as smart phones were becoming widely available which examined the development of mobile service applications for consumer and intelligent networks (De Coster & Albesher, 2013).

Figure 2. Mobile applications and billing packages for consumers