
Matthew Montebello

Augmenting Life Experiences Through Handheld Devices

Dr. Matthew Montebello scans the history of the smartphone and analysis its importance in today's tech-savvy culture.

EDITOR'S NOTE *Dr Matthew Montebello is a senior lecturer and deputy head at the Department of Intelligent Computer Systems at the Faculty of ICT, University of Malta. He heads the Web Science Research Group at departmental level, as well as coordinates the Mobile Technology Interest Group within the same faculty. His field of interest spans numerous areas concerning the application of Artificial Intelligence in Education, Mobile technologies, Internet technologies, Ambient Intelligence, Games and Virtual Worlds.*

Handheld devices* have slowly but surely pervaded our lives and culture. The thought of managing without one is inconceivable for a number of individuals at large as their reliance on electronic assistants is inevitably escalating. The functionality and capabilities offered over wireless devices are meant to facilitate one's life by efficiently assisting in the accomplishment of everyday activities as well as performing tasks effectively. While certain tasks and activities are taken for granted by the average person making use of a handheld device, other persons facing a variety of challenges rely on the functionality provided to conduct asmooth life with as few restrictions as possible, while enjoying as many life enhancing experiences as possible.

The sheer statistics (Figure 1) of penetration rates (ITU, 2011) is enough to convince even the most cynical person that no other physical item in the history of mankind has formed part of a human's personal accessory than handheld devices. The additional incentive to complement the inbuilt functionality with additional cheap and easy to install applications has furthermore rocketed the adoption of handheld devices to extremes that mobile-cellular telephony has reached saturation levels with a penetration rate of over 100% in developed countries (ITU, 2011) as can be seen in Figure 1. Handheld devices can be seen everywhere and at large, from young children playing games to older people who have been around well before the first automatic mobile phone system was developed by Ericsson in 1956, and definitely before Simon, the first smartphone that was launched in 1992. Apart from texting, that amounts to 6.5 trillion messages in 2010 alone (Informa, 2011), such personalised devices are being employed in every aspect of life, from politics to religion, from dating to social networking, and from paying for parking to purchasing soda from a vending machine. The application domain is limitless and as long as a financial return is guaranteed, commercial companies as well as freelance developers will keep on deploying 'apps' that fulfil the needs and necessities of society at large.

A particularly minor part of this society, but definitely equally important,is the group of people who have special needs and who, even more than others, could benefit from handheld devices to assure a better quality of life. Specific applications available over a mobile phone can not only perform and overcome the challenge required to achieve a particular task, but can also lead to a self-efficacy in handling mobile applications leading to a much sought after independence. There are a number of applications and projects currently being developed by Faculty of ICT students, at the University of Malta. The 'White Cane Device' (Attard, 2011), is one such application that guides a visually impaired person through the city. It implements image recognition, offering information about the individual's immediate vicinity. Another application (Camilleri, 2010) was developed to assist persons to identify and locate objects that have been scanned and indexed by an overlooking camera, within their own surroundings whilst communicating with the user's handheld device. Finally, augmented reality technology is also being widely employed (Buhagiar, 2010) on handheld devices to assist users to enhance their reality by complementing what is already being perceived through any of their senses.

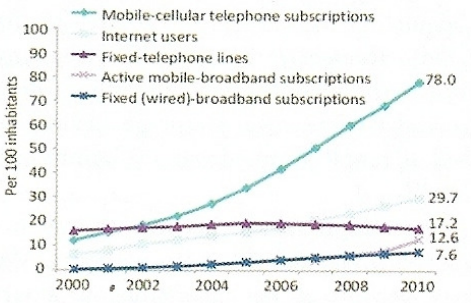

Figure 0Penetraion Rates (ITU, 2011)

The rapid escalation of handheld technologies and applications assuresan improved quality of life, augmenting living experiences irrespective of individual impairments and challenges faced daily in life. ■

** Handheld device refers to any communication device that is wireless, mobile and portable.*