

# Will Humans Dream of Electric Sheep? An Examination of Ambient Intelligence and Its Representation in Popular Culture

Niamh O'Shea, D07111371

October 31st 2007

## Abstract

This paper explores the development and future of Ambient Intelligence and how popular culture has shaped society's perspective of this technology. It examines key concerns that exist for the future in an AmI world and how these are represented currently on-screen. This paper also investigates what is required universally to guarantee the successful integration of Ambient Intelligence into society by identifying the key stakeholders.

## 1 Introduction

The purpose of this paper is to explore society's relationship with technology, with particular focus on the escalation of Ambient Intelligence (AmI) and how this can be read in popular culture. This paper will avail of existing academic discourse and examples of popular culture from literature to cinema. It is aimed at those interested in exploring the relationship between technological development, popular culture and the human imagination. Firstly, it will examine the origins of Ambient Intelligence and its association with popular culture. Secondly, it will investigate a cross-section of the perceived benefits and negatives associated with this technology and how these factors are represented on-screen. Finally, it will look to the future and consider what lies ahead for AmI in the current social environment.

Technology is pervasive, it's the clothes we wear and the food we eat and it is part of our culture. It is mankind's oldest pursuit, from as early as 300,000 B.C. when Mousterian culture was developing technology that literally shaped the face of humanity. Begging the question, with full appreciation of how far technology has come and indeed brought society along with it, what now lies ahead?

## 2 Origins of the Ambient Intelligence

To explore the concept of ambient intelligence, it is important to consider its predecessor from which it owes its origins, ubiquitous computing. Weiser proposed that a society could exist, in time, where computers would be seamlessly intertwined, indistinguishable from the commonplace and impartial to social strata [Weiser, 1991]. Weiser, and since his contemporaries, striving to realise this entity understood that the foundations and implications extended beyond computer science into sociology, anthropology and psychology.

Weiser was heavily inspired by the writings of Philip K. Dick most notably his 1969 novel, *Ubik*, which deals with

parapsychology and cryogenics. In *Ubik*, Dick writes of a society in which there exists a seemingly ubiquitous though totalitarian communication network using the media of coinage and televisions. The inspiring metaphors in the novel are not far removed from the modern concept of ambient intelligence, endorsing Weiser's extrapolations.

Drawing from Weiser's theoretical exposition, Ambient Intelligence discussions were initiated in Phillips ® in 1998 as part of a larger investigation into methods of consolidating electronics industry in the future. On joining the MIT Oxygen Project in 1999, these explorations fused their visions for a society that would constitute pervasive and intrinsic technology. Similarly, since 2001, the Information Society Technologies Advisory Group (ISTAG) has been counseling the European Commission on projects that make the prospect of AmI not only appealing but tangible.

## 3 The Key Concerns of Ambient Intelligence

"If AmI is to be successful as the future techno-economic trajectory of development, it ... has to be seen as a positive force for societal and political development."  
[ISTAG, 2001]

The ISTAG vision for AmI is determinedly clear: all discourse concerning Ambient Intelligence in the public arena must be viewed as transparent, progressive and most importantly egalitarian. A dichotomy exists in society's view of technology. There are those that embrace it and welcome every new development and there are those that fear technology because it replaces them at work and causes them to record the wrong television programme.

Trust is the major component that will ultimately decide if AmI can be assimilated into society's future. Existing sensor technologies, database systems and wireless networks inform that AmI is within reach and the ISTAG [2001] 'Maria' scenario provides an illustration of what could be a typical situation. For her work, Maria is able to travel to and enter a Far Eastern country without a ticket, passport, visa or the need to stop at customs or security because of sensor based ambient intelligence. All of her requirements are anticipated in her hotel which reduces her stress levels and makes the travel an enjoyable experience thus sustaining her productivity. This scenario is idyllic and while a seductive concept, society has been trained to identify the possibilities for exploitation through popular culture. Spielberg's adaptation of P.K. Dick's *Minority Report*

[2002] is an acute example of this corruption. Anderton is both manipulated by the system and reveals the methods of how to manipulate it for his own ends, for this example his innocence is incidental. Despite the projected freedom and perfection of this world without crime, the prevailing atmosphere is claustrophobic, menacing and domineering. The society fashioned in *Minority Report* is compliant and affluent but heavily controlled by external forces.

The political consequences of Ambient Intelligence must be considered as it has the potential to affect all governing bodies. For AmI to globally succeed, international collaboration is imperative. This involves economy, security, cultural integration, the sharing of information and resources. It would necessitate globalisation and unification from all political strata. From media representations, were society to totally commit to AmI, it is conceivable that the most advanced tech company could dictate a country's global status based on economics and ingenuity. This would surrender public opinion and render democracy void, generating a breed of politicised, technological leviathan. There are many examples of this: Tyrell Corporation, *Blade Runner* [Scott, 1982]; OCP, *RoboCop* [Verhoeven, 1987] and Skynet, *The Terminator* [Cameron, 1984]. Thus, Ambient Intelligence must be presented as a positive political direction by successive administrations to society if it is to be sustained in the future.

The question of society's reaction to Ambient Intelligence is of utmost importance to its successful implementation. AmI must be campaigned as a progressive entity, immune to social and political classification. AmI must traverse socio-economic divides both locally and globally in order to realise the full potential of what it can offer.

#### 4 What the Future Holds

Hassan [2004] reiterates that the genre of Science Fiction reflects contemporary conditions more so than those perceived for the future; often the themes signify topical anxieties and fears of technology and for what lies ahead unknown. Parallels can be drawn from the current global atmosphere with recent representations in popular culture: genetic study, security penetration, terrorism and mass communication. However, concerning the argument of Ambient Intelligence, projecting society's apprehension in a negative perspective can have far-reaching consequences for the development of technology. In this instance, universal perception has been directed towards cynicism and scepticism through popular culture. Ambient Intelligence has the potential to positively affect civilisation, providing humanity is retained and it is:

"...controllable by ordinary people" [ISTAG, 2001]

It remains that the onus will lie with the IT community and political institutions to reinforce the positive effect that Ambient Intelligence can have for society if it is to survive.

#### 5 Conclusion

Two of the 20<sup>th</sup> Century's greatest developments have been the rise of computerised technology and consequently, the rise of media. They have shaped cultural responses more dramatically than any other factor and presumably will continue to do so. It is apparent from this study that the subject of Ambient Intelligence is one that ignites both creativity and controversy in popular culture. Though if AmI is to continue and develop into a genuine social environment, the voices of these communities must unite to present a positive viewpoint. Society must be able to look to the future with anticipation and innovation and not apprehension and fear.

#### References

- [Berker, 2006] Thomas Berker, Maren Hartmann, Yves Punie and Katie J. Ward. *Domestication of Media and Technology*, Open University Press, 2006.
- [Bohn, 2005] Jürgen Bohn, Vlad Coroamă, Marc Langheinrich, Friedemann Mattern and Michael Rohs. *Ambient Intelligence*, Springer Berlin Heidelberg, 2005
- [Cameron, 1984] James Cameron, *The Terminator*, 108 minutes, Hemdale Film, UK/USA.
- [Delsing, 2005] Jerker Delsing and Per Lindgren., *Measurement Science and Technology*, Institute of Physics Publishing, Volume 16, Number 4, April 2005.
- [Dick, 1969] Philip K. Dick, *Ubik*, Orion Publishing Group, 1969.
- [Featherstone, 1995] Mike Featherstone and Roger Burrows. *Cyberspace/Cyberbodies/Cyberpunk*, Sage Publications, 1995.
- [Hassan, 2004] Robert Hassan. *Media, Politics and the Network Society*, Open University Press, 2004.
- [Heap, 1995] Nick Heap, Ray Thomas, Geoff Einon, Robin Mason and Hughie Mackay. *Information Technology and Society: A Reader*, Sage Publications, 1995.
- [ISTAG, 2001] K Ducatel, M Bogdanowicz, F Scapolo, J Leijten and J\_C Burgelman. *Scenarios for Ambient Intelligence in 2010*, <ftp.cordis.europa.eu/pub/ist/docs/istagscenarios2010.pdf>
- [ISTAG, 2003] Information Society of Technologies Advisory Group. *Ambient Intelligence: from Vision to Reality*, [ftp.cordis.europa.eu/pub/ist/docs/istag-ist2003\\_consolidated\\_report.pdf](ftp.cordis.europa.eu/pub/ist/docs/istag-ist2003_consolidated_report.pdf)
- [Kirkup, 2000] Gill Kirkup, Linda Janes, Kath Woodward and Fiona Hovenden. *The Gendered Cyborg: A Reader*, Routledge, 2000.
- [Scott, 1982] Ridley Scott, *Blade Runner*, 117 minutes, Blade Runner Partnership, USA.
- [Spielberg, 2002] Stephen Spielberg, *Minority Report*, 145 minutes, Cruise/Wagner Productions, USA.
- [Verhoeven, 1987] Paul Verhoeven, *RoboCop*, 102 minutes, Orion Pictures Corporation, USA.
- [Weiser, 1991] Mark Weiser. The Computer for the 21st Century. *Scientific American*, Volume 3, Number 265, 1991.