A NEW CULTURAL REVOLUTION:

pervasive information in the new world order

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INTRODUCTION

The sudden and catastrophic acts of terrorism which took place on September the 11th have radically changed the sense of security enjoyed by the populations of America and Western Europe since the end of World War Two. In the weeks following these events there has been a heightening of tension and a general air of uncertainty for the future. People feel suddenly vulnerable to unseen and unknown enemies and the response of their governments has been to declare a war on terrorism that has no clear objectives, no specific battlefields and a nebulous enemy who may or may not be among us. The uncertainty that has pervaded everyday life since September the 11th will have a direct impact on the gathering and dissemination of information by and for ordinary people in everyday situations. In the wake of the terrorist attacks, the development of the social and cultural role of wireless networks and services will undoubtedly be significant and rapid.

Although terrorism is not unfamiliar in Europe, the scale of the atrocity and the apparent powerlessness of the formidable American and European security services to prevent it have lodged it more powerfully in the consciousness of people the world over. Its long term effect will mean that those who live in countries and cities that are potential targets will remain under a Damocles' Sword — unsafe from the threat of unpredictable terrorist attack. A condition that will continue as long as the spectre of terror remains and the 'ambient war' against Al-Qaida, and what it represents, is prolonged.

Critical information access and communications via wireless devices will become key components in the repertoire available to ordinary people trying to adjust to this new situation and anxious to re-establish a sense of personal security. There are good indications from the way in which news of the attacks spread out with astonishing speed — via wireless and internet communications — that use of mobile phones will increase as people check the whereabouts and safety of family and friends and demand access to rolling news reports on handheld wireless devices.

Such a scenario suggests wireless information technologies and services are set to be major areas of growth over the next few years. Wireless data technologies like WAP* have so far struggled to find a purpose and audience, but in the new climate of uncertainty they may now be found compelling if, for instance, they can be adapted to deliver targeted information services. Users who previously only used their mobile phones for business and social voice calls will have strong motivation to require access to news at their fingertips. Data traffic across mobile networks will grow exponentially as the user demand for knowledge of local and global events expands to fill the needs of millions of people worried for their own personal safety and that of their family and friends.

PERVASIVE INFORMATION

Proboscis believes that a key area of development for network providers (Vodafone, BT Wireless/O2, Orange and one2one/T-Mobile in the UK) will be additional services combining WAP and SMS to deliver location specific news and security alerts to a mobile population. Such services are likely to be made available to subscribers on a rolling basis — i.e. location-relevant news and information items sent to users as they move through network cells covering the locations affected.

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Recent years have seen a great deal of interest in the convergence of wireless telephony, the internet and personal computing — the goal often being defined in terms of 'pervasive computing'. However, Proboscis now anticipates that the trajectory of convergence is more likely to head in the direction of 'pervasive information' — delivering mission critical information to wireless subscribers using existing technologies and services. Users are less likely to demand media rich entertainment content in favour of streamlined and focused services: news headlines, alerts and transport issues etc.

RESCUE FOR THE TELECOMS SECTOR?

As revenues from voice and data calls grow over the next few years confidence in the global wireless telecoms sector is set to grow apace and further consolidation will take place, eventually leading to the emergence of around seven major networks in Europe and the US. The vast sums spent on European 3G licenses will pass into memory as the culture of remaining permanently 'on-call and in touch' grips security conscious populations. Renewed investor confidence will put the upgrading of existing GSM** networks with GPRS[†] and ultimately for UMTS[††] (3G) back on track as new services are devised and implemented to cater for these users.

The shift from circuit-switched to packet-switched wireless telephony will thus benefit both users and the networks: increased circuit-switched network activity will swamp capacity and erode the ability of users to get a strong enough signal for calls and information reception. Packet-switched networks will offer superior connectivity for users even when capacity becomes saturated in a particular area. Calls will not 'drop' and the frustrations of trying to use WAP browsers will vanish as data will arrive in packets rather than relying on an uninterrupted connection.

Fulfilling the desire for on-demand information will provide its own logic for the upgrade path already mapped out. Automation of services for devices and the provision of multiple-mode (device and web-based) access to user accounts to configure profiles and service subscriptions will encourage more users to upgrade to new services or move from anonymous buy-and-go packages to monthly subscriptions. Heavier use of GSM networks will mean short term revenue gains for providers and reinforce the validity of earlier investments in 3G systems.

Wider penetration of mobiles per population is also likely to continue growing as devices are bought for family members such as children and parents by relatives anxious to know that no-one is further than a call away.

FUTURE PROSPECTS FOR A CIVIL SOCIETY

What will this mean? Proboscis believes that the outcome of a pervasive information culture will be a two tier knowledge society: those who are permanently connected to the information network, and those who are only intermittently connected. This will not be simply an economic division, but a social, moral and political divide.

Networks and personal communications devices (PCDs) may also play a civic role, as suggested by the outlines for possible services — 'Emergency Message System',

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'Critical News Feed' & 'Transport Situation Indicator' — devised by Proboscis and attached below. These ideas have been developed as examples of the possible uses and civic roles in society that networks and PCDs could play beyond the purely commercial, roles that might well add to a sense of safety in our daily lives rather than add to a culture of paranoia and the compulsive consumption of information.

The idea that a sense of 'security' can actually be manifested through a person's ability to keep abreast of the latest news is indicative of a culture of paranoia. Whilst many may take comfort in this concept, there will be many others for whom this is not a solution but a further symptom of much wider problems. The 'new' lack of safety in our society has complex but politically contingent causes requiring difficult choices and radical solutions beyond the technological.

The issue of security is already and will increasingly be used by politicians to justify ever greater powers of surveillance over their constituents and fellow citizens. A new social, cultural and economic framework is developing and the place of the networks, their providers and of the services they offer to civil society will be fundamental within it. One result will be intense social and political debates that network providers will not be able to avoid engaging with.

PERSONAL COMMUNICATIONS DEVICES AND PRIVACY

In response to the security issues raised by September's events the UK government has called for the issue of compulsory identity cards to the UK population. Their justification has hinged on two key points: firstly that it would enable them the better to track the 'illegal immigrants' they consider a potential threat, and secondly that many other European Union countries already enforce identity cards. Thus, according to their logic, it would not be a restriction of civil liberties, but merely bringing the UK into line with the rest of mainland Europe.

As PCDs become ubiquitous their uses will widen to include secure financial transactions (such as portrayed in an IBM commercial where a canned drink is purchased from a drinks dispenser via a phone). There is a clear possibility that, as well as being one's digital wallet and personal organiser, these devices may by default become part of a national, or even international identity surveillance system.

Such a system may easily operate beyond the view of the general populace, with remote scanning of devices carried out by government agencies as well as by businesses in innocuous situations. Interrogating and cross-referencing the digital profiles encoded on SIM-cards within the devices will reveal the identity of the owner and, perhaps more importantly, will leave a digital trace of their movements through physical space as well as through the datascape of calls made and received, information requested and retrieved, and transactions enacted.

By enshrining in law police and security agency access to individuals' digital identities, governments will be able to mask their growing interdependency on a few businesses. To enforce access they will have to enter into pacts with the largest corporations to devise standards for all devices and network access. But such laws are unlikely to counter the growing problem of identity theft and impersonation. Protection will undoubtedly be left to the individual as governments and business shy away from their responsibilities for the security of personal information.

CONCLUSION

Recent and forthcoming copyright legislation in the US and the European Union (DMCA° & SSSCA°°) is placing control of information rights more and more firmly in the hands of a few transnational corporations whose economic power and willing-ness to stifle competition is itself a challenge to civil society. The issue of privacy in the coming datascape is already an area of concern for a wide spectrum of individuals and interests and will need to be addressed socially and politically precisely because of its impact on the increasingly complex and intertwined relationships between the individual, public corporations, government and supra-national entities such as the European Union and NATO.

In the coming years, businesses will continue to be challenged to address their civic responsibilities not only by activists, but also by their customers. The already blurred boundary separating commerce from government will dissolve further. The battle over intellectual property rights for the human genome was played out right to the bitter end — if we are to avoid a culture of decreasing access and opportunity then now is the time to seize the initiative by planning effective ways and means of participating in and serving society for the benefit of all.

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London, October 2001.

*   WAP — Wireless Application Protocol
**   GSM — Global Standard for Mobile Telecommunications
†   GPRS — General Packet Radio System
††   UMTS — Universal Mobile Telecommunications System
°   DMCA — Digital Millennium Copyright Act
°°   SSSCA — Security Systems Standards & Certification Act

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EMERGENCY MESSAGING SYSTEMS:
three proposals for critical information provision

INTRODUCTION

Global uncertainty regarding the security of everyday life will have a long-term effect on the value of information. A distributed 'War on Terrorism' is unlikely to remain limited to active battle-fronts in far-off countries, but is increasingly likely to be waged on the home territories of the participating Western Allies.

Information will become a crucial commodity to assuage the concerns of Western populations, especially in cities, who fear terrorist attack such as bombings and other forms of violence. In Europe and the UK the percentage of the population owning a mobile phone is very high, especially in urban centres. The mobile phone is, for many people, their principle means of communication. Services such as WAP have not so far been as successful in capturing the imaginations and thus regular use of many mobile users. But the future for convergent communication platforms and devices could be inspired by realising the civic potential of networks and wireless services. Such services could bring an additional role for convergent communications devices that ties together the datascape of wireless networks to a civic or public space.

1. EMERGENCY MESSAGING SYSTEM (EMS)

EMS is a proposal to use the existing wireless telecoms infrastructure to provide a location-based warning system for law enforcement and emergency rescue (fire and civil defence) agencies to alert mobile phone users to possible dangers in their immediate vicinity and to deliver instructions for appropriate action (such as evacuation via a pre-determined route).

Such Emergency Messages, sent via the GSM Short Message Service (SMS), would be mission critical information delivered to a target, but unknown audience within a closely defined geographic location. Authentification of the system would have to be guaranteed so that it would not be possible for malicious hoaxers to abuse or 'spoof' the system, sending fake EM-SMS to unwary users.

A closed system between the government agency authorising a message and the service providers broadcasting the message to users on their systems would be necessary. A national awareness campaign would be required to inform people of the EMS system and how they should respond if they receive a message.

2. CRITICAL NEWS FEED (CNF)

Rather than foster a culture of compulsive information consumption in times of crisis, the CNF service would send news alerts to members of the population via their mobile phones. Such messages would be originated from a central governmental information agency (such as the UK's Central Office of Information) and should be limited to news of national significance (such as a declaration of war).

3. TRANSPORT SITUATION INDICATOR (TSI)

Transport structures in major cities remain strategic targets both for terrorist and conventional enemies in times of war, as well as being being prone to accidents. Bomb alerts and derailments continue to cause considerable problems for commuters and congestion in major cities itself presents problems for the inhabitants and social and economic life. TSI proposes a system whereby public transport delays, bottlenecks, accidents and attacks are broadcast by city transport authorities to commuters and city dwellers.

Databases of user-configured parameters (detailing origin and destination points and favoured routes) could personalise each message to suggest alternative routes should the user's usual journey be interrupted or halted by an incident.

SCHEMATICS

EMS

DANGER ASSESSMENT ➤
  IDENTIFICATION OF RISK LOCATION ➤
    EMERGENCY MESSAGE DETERMINED ➤
      AUTHENTICATED MESSAGE TRANSMITTED TO SERVICE PROVIDERS ➤
        EM-SMS SENT TO ALL MOBILES PHONES IN THE CELLS AFFECTED.

CNF

INCIDENT OF NATIONAL SIGNIFICANCE ➤
  PRE-DETERMINED OR IMMEDIATE RESPONSE AUTHORISED ➤
    AUTHENTICATED MESSAGE TRANSMITTED TO SERVICE PROVIDERS ➤
      CNF-SMS SENT TO ALL MOBILES PHONES.

TSI

TRANSPORT INCIDENT ➤
  ASSESSMENT OF TRANSPORT DISRUPTION ➤
    INFORMATION FED TO USER JOURNEY DATABASES ➤
      PERSONALISED MESSAGE GENERATED ➤
        TSI-SMS SENT TO REGISTERED USERS.

Proboscis CULTURAL SNAPSHOTS are brief cultural analysis documents published alongside ongoing research projects. They are intended to provoke comment and debate on the contexts in which research by Proboscis is carried out.

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