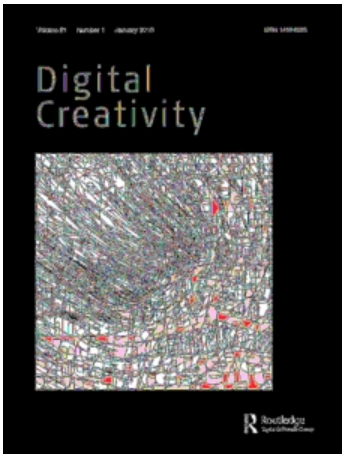

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Marketplace: From agents and avatars to the information personae

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Marketplace: from Agents and Avatars to the Information Personae

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Abstract

Enormous resources are being put towards designing online spaces that could potentially form large communites that will regularly log on to interact, exchange ideas, or spend cybercash. What seems to be neglected in the development of these spaces are the personalities that form these very communities and the issues of privacy and freedom of expression being integrated into the technologies allowing these exchanges. The author proposes the development of an agent named Information Personae, that incorporates disembodied information on the Web and re-embodies it through the data, links and people.

Keywords: *Agents; Avatars; Identity; Privacy; Information Personae*

Introduction

According to James Hillman, economics is the only effective syncretistic cult remaining in the world today, our world's only ecumenical faith (Hillman, 1995). It provides the daily ritual, uniting Christian, Hindu, Mormon, atheist, Buddhist, Sikh, Adventist, animist, evangelist, Muslim, Jew, fundamentalist and New Ager in one common temple, admitting all alike. As information replaces working capital, so intellectual assets replace physical ones — the World Wide Web becomes the electronic marketplace where ideas are shared, exchanged, bought and sold. It is an ideal environment for two very different participants — conceptual artists and multinational corporations. At the core of conceptualist aspirations is a move away from the object towards establishing the primacy of the idea, while multinational corporations always defied borders and have moved from physical product to intellectual capital.

Intellectual capital, as defined by Thomas Stewart, is knowledge, information, intellectual property and experience that can be put to use to create wealth (Stewart, 1997). It is collective brainpower. Knowledge has become the pre-eminent economic resource — more important than raw material; more important, often, than money.

With this in mind, I propose development of an Information Personae (I-Personae), a mixture of agent and avatar technologies, engineered to address the following questions. If knowledge and communication are fast

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becoming a primary economic asset, what are the implications for creative communities working on the World Wide Web? How does collective knowledge manifest itself when not directly related to corporate structure, specifically in relation to creative communities? Can we become conscious of how information that represents us travels? If artwork is no longer constrained by physical space, objecthood and gallery systems, what forms may creative knowledge assume? How is creative knowledge positioned in the world of electronic commerce? And finally, building on the heritage of conceptual artists and contemporary philosophers who question authorship, institutions and the role of commerce in the arts, how do creative concepts figure in electronic economies?

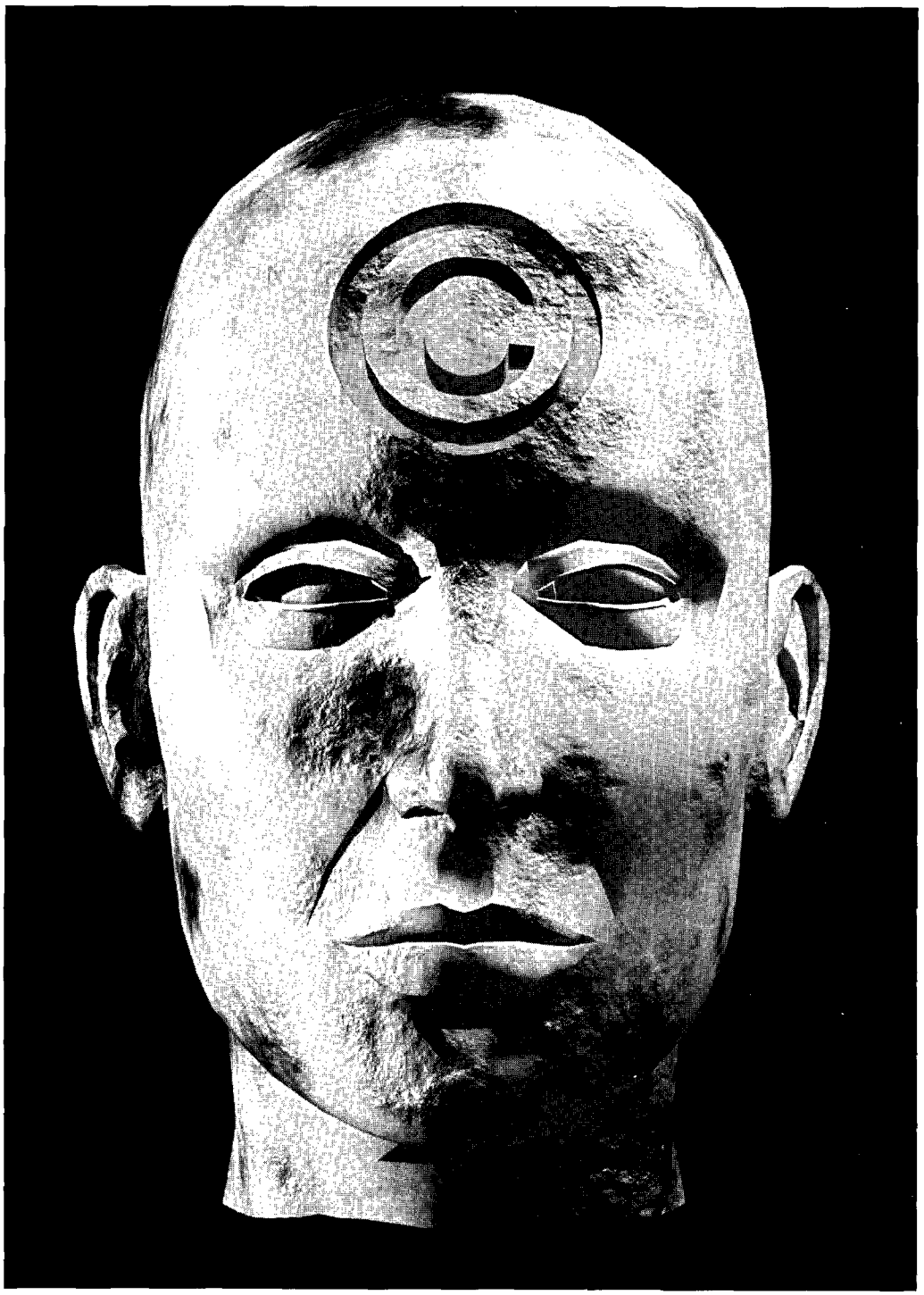
The I-Personae can be broken down into several components, which collectively provide the sets of tools and interfaces for community members. These components will handle three tasks: 1) content management; 2) mobile agent brokering; and 3) dynamic view generation. The I-Personae bypasses traditional notions of client and server by containing the capabilities of both and allowing for decentralisation of computing resources via mobile or transportable agents, a convenient paradigm for distributed computing since they hide the communication channels but not the computational location.

The Intangible Web

What is still commonly referred to as an 'intangible' realm becomes very tangible and real when we invest vast mental energies into it. This seems to have been the downfall of conceptual artists who claimed to have shunned the 'object'. By declaring the physical object tangible and expecting 'pure concept' to be somehow removed from commerce, 70's conceptualists inadvertently further reinforced the body/machine duality the West just can't seem to shake. Just as traditional economics based on management of physical ownership are challenged by intellectual capitalists, so are the art world's notions of the art and object.
The world of ubiquitous computing is a compelling move towards showing that these are not separate realities, and soon the same issues that seem to be somehow relevant only for 'cyberspace' will be equally important in the physical realm. After all, the 'virtual' needs a very physical box (hardware) to run through as well as a flesh and blood human to maintain and operate the system. What may further move this process forward is the work being done with 'intelligent' software agents or computational systems that inhabit the world of computer networks. This technology is being used in research and development of intelligent systems that help us manage the overwhelming information overload on the Internet.

The push towards more 'human-like' avatars[1] and the development of intelligent ways of information storage and retrieval has moved developers to give research into artificial life renewed importance. Software agents are computational systems that inhabit the world of computer networks. This technology is being used in the research and development of intelligent systems that help us manage the overwhelming information overload on the Internet. Software agents are made possible by a machine that is the pinnacle of 'rationalist' engineering, yet aspects of Artificial Life and related studies, such as fractal geometry, nonlinear dynamics and complexity theory challenge basic premises of the scientific method that is so related to the rationalist approach (Penny, 1996). Some of the most advanced work in this area is pursued by Pattie Maes and her team at MIT Media Lab. She believes that agents radically change the current user experience, and uses the metaphor of an agent that can act as a "personal assistant". The agent acquires its competence by learning from the user as well as from agents that are assisting

Head logo



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other users. Several prototypes have been built, including agents that provide personalised assistance with meeting scheduling, electronic mail handling, electronic news filtering and selection of entertainment (Maes, 1994).

Enormous resources are being put towards designing online spaces that successfully utilise text, visuals and sound while being commercially profitable. Digital libraries sponsored by large companies and government agencies, online trading, soap operas and role-playing games are examples of how information is being constructed into intellectual capital. In other words, attention by investors is placed on any space that could potentially form large communities that will regularly log on to communicate, exchange ideas or spend cybercash. What seems to be neglected in the development of these spaces are the personalities that form these very communities. Communities are envisioned as large databases of consumer likes and dislikes, thus resembling the concept of shopping malls rather than personal exchange.

The I-Personae incorporates the disembodied information on the Web and defines itself by the data, links, and people it is connected to. The I-Personae searches for data bodies who have similar interests, and functions as an extension of our physical 'selves' while participating in member's collective brain power. In other words, information is collected, stored and defined public or private by the I-Personae, while community is formed by like-minded individuals connecting and further extending their space on the web. As an extension, I-Personae functions while we are sleeping and busy doing other tasks. It is designed to behave autonomously — sitting in front of a screen for endless hours will no longer be necessary. We are updated and notified of conversations, contacts, events and any information we have asked for through a number of devices. But most important of all is that it records how our information travels — who accesses our data body, what data is gathered and for how long. Rather than becoming invisible, this tracking chart is available to the I-Personae owner.

Information Personae and Freedom of Expression

How and where our information travels from banks, credit cards and social security offices is mostly a mystery to us. Every time we buy something, subscribe to a magazine or pay our taxes, the information goes somewhere. All these documents could be linked into life dossiers with our entire financial and medical history, with details of what we buy and who we communicate with. Rather than encouraging unprecedented scrutiny and control, the Information Personae aspires towards a secure parity between individuals and organisations. It will automatically record who has accessed its body and for what purpose. This is not only in the service of paranoid thoughts of invisible control, but also for active participation in building like-minded communities. For this reason, developments in encryption technologies, such as the PGP (Pretty Good Privacy)[2] program developed by Phil Zimmerman, are an important piece of the puzzle.

Zimmerman, an anti-authoritarian agitator and academic, designed an affordable military-strength encryption program and made it available publicly. He was motivated by the belief that intelligence agencies, big arms and drug traffickers, the defence companies, oil companies and other corporate giants have access to good cryptographic technology, while ordinary people, and grassroots political organisations don't. Soon after the release of the software, the federal prosecutors threatened him with a possible 52 months' imprisonment for the export of 'munitions'. Zimmerman fought a widely publicised battle with the US government and rallied a large segment of the Internet community along with the civil rights advocates

who came to his aid. Three years later, the case was dropped while the software remains publicly available. To impose physical borders on the Internet is an impossible task, and it is just as difficult to stop the spread of an idea on the Net. The government had to come to terms with the fact that the meme, a contagious idea that replicates like a virus, passed from mind to mind, is impossible to pin down and control. Our ability to lock or unlock the door to our information body is critical in the development of the I-Personae society.

Standardised Avatars and Information Overload

Research and development into online social spaces would not be taking place with such dizzying speed if the World Wide Web were a text-only environment. Although text-based MOOs and MUDs[3] are still very active communities, and there will probably always be a place for them, investment in Web-based communities really only started with the introduction of graphical user interfaces. Avatar-filled chat rooms seem to be where most entrepreneurs are placing their bets. By the year 2000, chats are expected to generate 7.9 billion hours of online use, with $1 billion in advertising revenue (Clelan, 1996). Makers of virtual environments predict that scrolling text for chat rooms will soon be entirely replaced with 2D and 3D graphical environments, while marketers are busily exploring ways to exploit new technology for advertising.

For quite a while now, online interactive games have been the first testbeds for the formation of online communities that spend cybercash within a collaborative space. Most recently, Rocket Science Games, a maker of interactive entertainment software, and CyberCash, a company that handles payment transactions on the Internet, are forming a partnership to develop a virtual video game arcade on the World Wide Web. Payments will come out of an 'electronic wallet' that users can replenish by transferring money from their bank accounts (Einstein, 1996).

Our ability to lock or unlock the door to our information body is critical in the development of the I-Personae society

Most recent software developments centre around two major problems — creating a community and the management of information overload. The entertainment industry is putting enormous resources into the development of more 'human-like' avatars, and the business and research communities are investing equally large resources into the management of databases. The problem is that identity and its representation is being addressed separately from the organisation of information into knowledge. A somewhat disturbing trend is the effort to create standards in the service of information management or the improved ability to profile or track down the 'users'. This, of course, is in the service of electronic commerce, which is hindered by the decentralised and diverse nature of the present state of the Internet.

In October 1996, at the Earth to Avatar Conference in San Francisco, architects of 3D graphical interfaces on the Web met to discuss the lack of avatar standards. When former Apple Computer Chairman, John Sculley, gave his analysis of the future of cyberspace at the conference, he said that once the technology is shown to work and standards are agreed, the big league players will move into cyberspace. As avatars become members of self-organising

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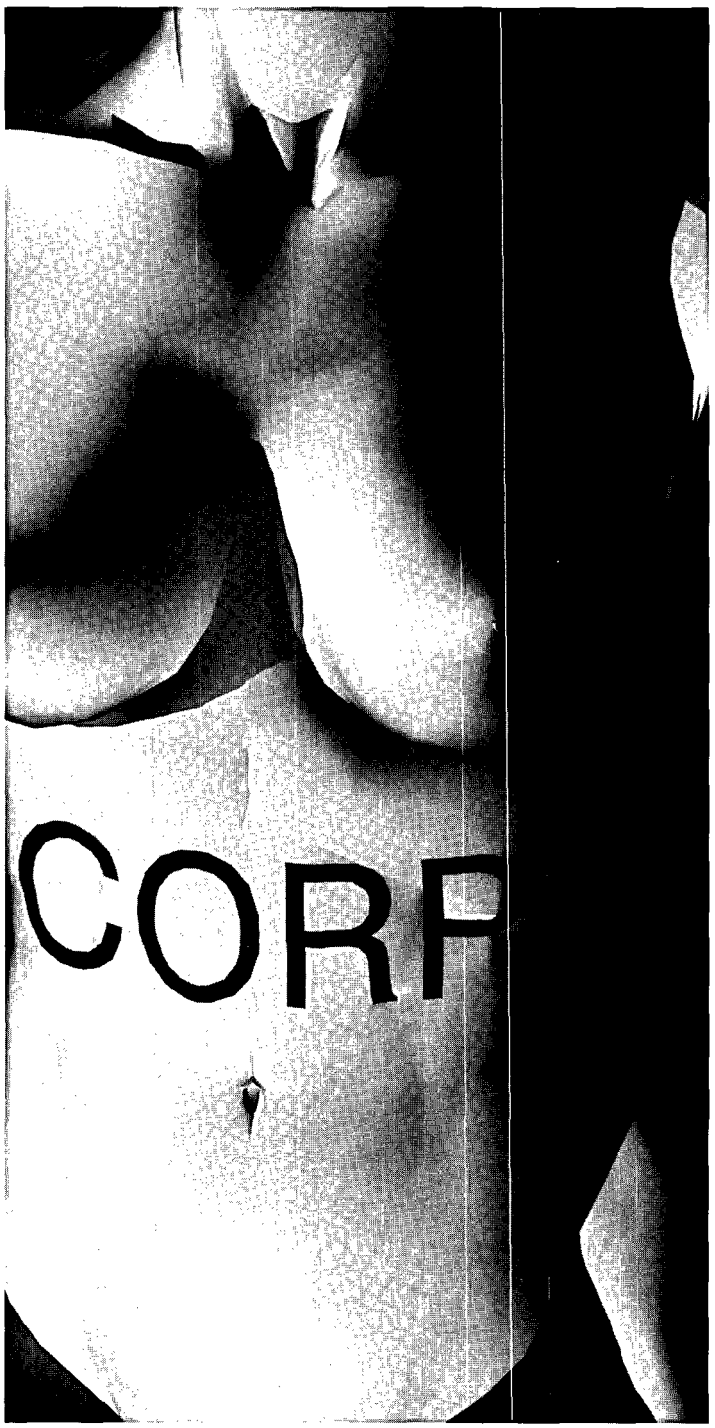

Torso CORP

groups, Sculley sees them as "a driving force shaping the economics of this industry" (Wilcox, 1997). The software industry's debate on avatars is really about object interactions passing between a variety of servers in real time. Talking about avatars personalises the discussion and brings up issues to do with the nature of identity, security, interpersonal relations and societies of the Internet.

Universal Avatar Standards (UAS) group's aim is to focus on the nature of avatars with regard to such issues as gender representation, ID authentication, personal expression versus social constraints and communication of emotion. The proposal provides an architecture for managing thousands of geographically-distant users simultaneously, with interactive behaviours, voice, 3D graphics and localised audio. The proposal discusses the creation of a link to a user profile, coded in HTML and containing data the user wishes to be known about their fantasy or true identity, and the user's history of actions on the Net. Avatar history could be with reference to games — for example, wizard status in a Role Playing Game (RPG) — or it could hold marketing information about purchases made by credit card. The issue raised with the concept of the avatar in cyberspace, as it stands now, is that it stops at the idea of visual (or descriptive) representation of a 'self' on the Net. No thought is given to the 'user's' ability to access his/her own online history and make decisions of what is made public or private. The Information Personae essentially utilises similar technologies, with one important difference — the representation is aware of the information (content) of the body. In other words, it does not perpetuate the machine/body dichotomy and allows a conscious connection to the collective brain.

The problem with the current trend of development in avatar technology is that it is designed to chat, meet people, attend events and purchase products. It is conceived as an empty shell and serves as a throughput of simple communication exchange. The graphic representation is what we are supposed to be concerned with, while the embedded database remains hidden from us and we are given very little flexibility for customised self-programming. The Information Personae reverses this by foregrounding the information it carries and our awareness of how it moves as meme. Representation of ourselves on the Net is indeed connected to the information we collect, and it is especially compelling to think of ourselves as 'embodying' the links we make on and offline. While the avatar is primarily seen as a 'puppet' and the agent as a 'servant', the Information Personae is neither. It is a malleable extension of our 'selves' — diverse and decentralised.

Note: This paper was delivered in August 1997. I am grateful to Robert Nideffer for working closely with me on conceptualising and articulating the concept of the Information Personae. We are currently collaborating on a research project entitled Online Public Spaces: Multidisciplinary Explorations in Multiuser Environments (OPS:MEME), which has made great progress in the development of the mobile agent coined the Information Personae. For an update, see: www.arts.ucsb.edu/meme

Thanks to Lorne Falk who gave me excellent editorial critique as well as generating inspiring discussion regarding the Information Personae.

Notes

1 I recently produced a more complete analysis of etymology and current use of the term 'avatar'. See Vesna, 1997.

2 PGP (Pretty Good Privacy) program can be downloaded from the International PGP Home Page: www.ifi.uio.no/pgp.

3 MOO technically means MUD-Object Oriented. MUD is a Multiple-User Dungeon (or Dimension).

MUDs started as interactive adventure games similar to Dungeons and Dragons for the computer — but a version that participants could play over the Internet. MUDs and MOOs have expanded to other sorts of games and social uses. For more information, go to MOOcentral: www.pitt.edu/~jrgst7/MOOcentral.html.

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Victoria Vesna is an artist working with electronic technology who has exhibited internationally at a number of established museums and galleries. Her work has moved from performance and video installations to experimental research that connects networked environments to physical public spaces. She is Associate Professor in the Department of Art Studio at the University of California, Santa Barbara.